Wenzel, Shawn

From: King, Jeffrey J. [jking@GFNET.com]
Sent: Monday, October 20, 2003 2:52 PM
To: Kazda, Janet L
Cc: 'Wenzel, Shawn'; Liz Lundmark (E-mail); Kugle, Dennis F.
Subject: RE: Superior Refinery/Murphy Oil - Tank 31 - 54880-0456-07-R/02-1 6-22 1933 - GIS Registry Fees

Janet-

As stated in Shawn Wenzel's below email, Murphy Oil USA, Inc. paid $250.00 to have its Tank 31 release site (02-16-221933 and 54880-0456-07-R) registered on the WDNR's groundwater GIS registry as a condition for closure. As stated below, registering this site on the groundwater GIS registry was not necessary; therefore, the payment of the $250.00 fee was also not necessary. Since this fee cannot be transferred to a future Murphy release site where it will be necessary to close with a groundwater GIS registry, we request WDNR refund the $250.00 to Murphy Oil. The refund check should be made out to Murphy Oil USA, Inc. and sent to:

Murphy Oil USA, Inc.
c/o Liz Lundmark
2407 Stinson Ave.
Superior, WI 54880

Please let me know if you have any questions.

Jeff King, P.G.
Hydrogeologist
Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717
ph. (608) 836-1500
fax (608) 831-3337
jking@gfnet.com

-----Original Message-----
From: Wenzel, Shawn [mailto:swenzel@commerce.state.wi.us]
Sent: Monday, October 20, 2003 11:07 AM
To: Kazda, Janet L
Cc: Jeff King (E-mail)
Subject: Superior Refinery/Murphy Oil - Tank 31 - 54880-0456-07-R/02-16-22 1933 - GIS Registry Fees

Regarding the site referenced above and GIS fees, the site is being closed with the requirement of being place on the DNR's Soil GIS Registry, and not the Groundwater GIS Registry as initially required. Based on a recent review of data provided to Commerce, contaminant concentrations in groundwater are below NR 140 enforcement standards, resulting in the site not being required to be placed on the registry. Therefore, the $250.00 fee that has already been paid to the DNR for the site, is inappropriate.

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

Wenzel, Shawn

From: Wenzel, Shawn
Sent: Monday, October 20, 2003 11:07 AM
To: Kazda, Janet L
Cc: Jeff King (E-mail)
Subject: Superior Refinery/Murphy Oil - Tank 31 - 54880-0456-07-R/02-16-221933 - GIS Registry Fees

Regarding the site referenced above and GIS fees, the site is being closed with the requirement of being place on the DNR's Soil GIS Registry, and not the Groundwater GIS Registry as initially required. Based on a recent review of data provided to Commerce, contaminant concentrations in groundwater are below NR 140 enforcement standards, resulting in the site not being required to be placed on the registry. Therefore, the $250.00 fee that has already been paid to the DNR for the site, is inappropriate.

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

Wenzel, Shawn

From: Wenzel, Shawn
Sent: Monday, October 20, 2003 10:50 AM
To: Wincentsen, Danielle A
Subject: 54880-0456-07-R - Superior Refinery_Murphy Oil - GIS Packet - 02-16-221933

Hello,

Attached below is a GIS packet for the site referenced above.

0216221933.pdf

Let me know if you have any questions or concerns about it.

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

Wenzel, Shawn

From: Wenzel, Shawn
Sent: Monday, October 20, 2003 9:00 AM
To: Kazda, Janet L; Wincentsen, Danielle A
Cc: Jeff King (E-mail)
Subject: 54880-0456-07-R - Unnecessary GIS Fee paid - 02-16-221933

The consultant for the site is Gannett Fleming out of Madison - 608-836-1500. I cc'd Jeff King on this email as well. He does the field work and several submittals.

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

Wenzel, Shawn

From: Kazda, Janet L
Sent: Monday, October 20, 2003 8:45 AM
To: Wenzel, Shawn
Subject: RE: 54880-0456-07-R - Unnecessary GIS Fee paid - 02-16-222193

Hi, Shawn. Could you please retype the BRRTS number here? Something is wrong with the number, as BRRTS says no such activity exists. Otherwise, I can search for it by name - what is the name of the site? Who is the consultant?

Janet
Wisconsin Dept of Natural Resources
Remediation and Redevelopment Program
715-365-8990

-----Original Message-----
From: Wenzel, Shawn
Sent: Monday, October 20, 2003 8:40 AM
To: Kazda, Janet L
Subject: 54880-0456-07-R - Unnecessary GIS Fee paid - 02-16-222193

Good morning,

Not sure how DNR will deal with the issue, however, the consultant for the site referenced above has paid the GW GIS fee and data indicates that is it not necessary. They indicated in a letter that they are requesting "credit" for the fee as it is likely that they will need GIS on a different occurrence at the site. If they haven't done so already, they will likely be contacting you about this.

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

Wenzel, Shawn

From: Wenzel, Shawn
Sent: Monday, October 20, 2003 8:40 AM
To: Kazda, Janet L
Subject: 54880-0456-07-R - Unnecessary GIS Fee paid - 02-16-222193

Good morning,

Not sure how DNR will deal with the issue, however, the consultant for the site referenced above has paid the GW GIS fee and data indicates that is it not necessary. They indicated in a letter that they are requesting "credit" for the fee as it is likely that they will need GIS on a different occurrence at the site. If they haven't done so already, they will likely be contacting you about this.

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

Jeff

J.King@gfnet.com

Gannett Fleming

GANNETT FLEMING, INC.
8025 Excelsior Drive
Madison, WI 53717-1900
Office: (608) 836-1500
Fax: (608) 831-3337
www.gannettfleming.com

October 6, 2003
File #34265.003

Shawn Wenzel, Hydrogeologist
Wisconsin Department of Commerce
Site Review Section
201 West Washington Avenue
P.O. Box 8044
Madison, WI 53708-8044

Re: Murphy Oil USA, Inc., 2400 Stinson Avenue, Superior
Tank 31 Release Site
BRRTS No.: 02-16-221933
COMM No.: 54880-0456-07-R

Dear Shawn:

This letter is a follow-up to your conversation with Jeff King in our office on September 15th. In that conversation, you indicated that the signed statement by Liz Lundmark included in our July 25th supplemental GIS registry submittal for the Tank 31 release site (to include soils registry documentation) did not include a reference to soils. A revised statement signed by Ms. Lundmark is enclosed. ← Part of Packet.

Please note that this revised statement does not reference groundwater, even though we submitted a groundwater registry packet to you for the Tank 31 site on June 26, 2003. That submittal was made at the specific request of the Wisconsin Department of Natural Resources (WDNR) in its letter to Ms. Lundmark dated June 17, 2003. In the June 17th letter, the WDNR indicated that we should either record a groundwater use restriction at the Register of Deeds office or prepare the necessary documents to list the site on the groundwater GIS Registry. Murphy chose to pursue the GIS Registry route and, as indicated above, submitted a groundwater GIS packet on June 26, 2003.

In your conversation with Jeff King on September 15th, you indicated that it would not be necessary to list this site on the groundwater GIS registry, because the most recent groundwater data did not show any NR 140 Enforcement Standard exceedances. Although the WDNR requested a groundwater GIS registry for this site, based on Jeff's conversation with you and the fact that the Wisconsin Department of Commerce (COMM) has regulatory jurisdiction of this site, we are requesting withdrawal of the groundwater GIS registry packet we submitted for this site on June 26, 2003. Murphy wants this site (Tank 31) included on the soils GIS registry only.

Shawn Wenzel, Hydrogeologist
Wisconsin Department of Commerce
October 6, 2003

Murphy understands that obtaining a refund for the groundwater GIS registry fee of $250.00 from the WDNR would be very difficult. However, Murphy would like credit for this registry fee and apply it to a future site where a groundwater GIS registry is required.

If you have any questions about our specific request for not including this site on the groundwater GIS registry or our request to obtain credit for the paid groundwater GIS fee, please give either Jeff King or me a call.

Sincerely,

GANNETT FLEMING, INC.

Dennis F. Kugle
Vice President

DFK/JJK/jec
Enc.

cc: Lee Vail (Murphy)
Liz Lundmark (Murphy)

Kazda, Janet L

From: Wenzel, Shawn
Sent: Thursday, July 31, 2003 9:12 AM
To: Kazda, Janet L; Scott, Eric
Subject: Murphy Oil - Tank 31 - 54880-0456-07-R / 02-16-221933 - NOV follow-up

Just wanted to pass to word that the soil and groundwater GIS packets have been received and fees paid. I have not reviewed the packets for completeness yet, however I believe the receipt of the packets and fees fulfills the requirements of the NOV letter at this time.

Should you require any further information regarding this site and the status of the NOV, feel free to contact me.

Sincerely;

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

Gannett Fleming

GANNETT FLEMING, INC.
8025 Excelsior Drive
Madison, WI 53717-1900
Office: (608) 836-1500
Fax: (608) 831-3337
www.gannettfleming.com

July 25, 2003
File #34265.003

Shawn Wenzel, Hydrogeologist
Wisconsin Department of Commerce
Site Review Section
201 West Washington Avenue
P.O. Box 8044
Madison, WI 53708-8044

Re: Supplemental GIS Registry Information
Superior Refinery/Murphy Oil - Tank 31
2400 Stinson Avenue, Superior
WDNR BRRTS No.: 02-16-221933
COMM ID No: 54880-0456-07-R

Dear Mr. Wenzel:

As a follow-up to our telephone conversation on July 21, 2003, Gannett Fleming, Inc. is submitting supplemental information to the Geographical Information System (GIS) Registry Packet sent to you on June 26, 2003, for the conditionally-closed Tank 31 release site at Murphy's Superior refinery. The packet sent to you on June 26th included the information required to record Murphy's Tank 31 release site on Wisconsin Department of Natural Resources' (WDNR) Registry of Closed Remediation Sites with residual groundwater contamination. Through an oversight, we did not provide information in that packet to include the release site on WDNR's GIS Registry of Closed Remediation Sites with residual soil contamination

Enclosed is the information needed to register the Tank 31 site on the GIS soil registry:

1. Table 4, which presents the analytical results of the soil samples collected during the Tank 31 investigation.

2. Figure 3A, which shows the locations of the soil samples collected during the Tank 31 site investigation and the approximate extent of soil exceeding NR 720 and/or NR 746 standards.

3. A revised signed statement by Murphy Oil USA, Inc. stating that the legal description of the property is complete and accurate. This signed statement replaces the one that was included as Attachment C in the June 26th registration packet we sent to you.

M:\CLERICAL\PROJECTS\34200\34265.003\corres\dfk\3L34265.003_006.doc

Shawn Wenzel, Hydrogeologist
Wisconsin Department of Commerce
July 25, 2003

Please note that a check for $200 made out to the WDNR was sent to Janet Kazda in WDNR's Rhinelander office.

We trust that this supplemental information is sufficient for Commerce to include Murphy's Tank 31 release site on WDNR's GIS Registry of Closed Remediation Sites with both residual groundwater and soil contamination.

Please call if you have any questions or need any additional information.

Sincerely,

GANNETT FLEMING, INC.

Dennis F. Kugle
Vice President

DFK/jec
Enc.

cc: Liz Lundmark (Murphy Oil)
Lee Vail (Murphy Oil)
Janet Kazda (WDNR) w/o attachments but w/$200 check

NOV Issue.

Wenzel, Shawn

From: Kazda, Janet L
Sent: Monday, July 21, 2003 3:56 PM
To: 'Kugle, Dennis F.'; Wenzel, Shawn
Cc: Liz Lundmark (E-mail); lee vail (E-mail); King, Jeffrey J.
Subject: RE: Tank 31 Release Site GIS Registration

Please be sure the check goes to my attention at the Department of Natural Resources, 107 Sutliff Avenue, Rhinelander, WI 54501. Along with the check, I will need a copy of your cover letter or some other document stating what site (the name, BRRTS number, and PECFA number) the check is for.

Janet Kazda
Wisconsin Dept of Natural Resources
Remediation and Redevelopment Program
715-365-8990

-----Original Message-----
From: Kugle, Dennis F. [mailto:dkugle@GFNET.com]
Sent: Monday, July 21, 2003 1:35 PM
To: Wenzel, Shawn
Cc: Kazda, Janet L; Liz Lundmark (E-mail); lee vail (E-mail); King, Jeffrey J.
Subject: Tank 31 Release Site GIS Registration

Shawn,

`As we just discussed, here is the email I sent to Dave Edwards re: the Tank 31 NOV. Per your request, we will provide Commerce with supplemental information necessary to register the Tank 31 site for soils also. Based on the NOV letter, we believed that GIS groundwater registration was only needed, not soils also. We will try to get the soils registration information to you by early next week. Murphy will send another check for $200 for the soil registry along with the information.

Dennis
Gannett Fleming
8025 Excelsior Drive
Madison, 53717-1900
608-836-1500

cc: Tank 31 GIS Registry File

> -----Original Message-----
> From: Kugle, Dennis F.
> Sent: Thursday, July 10, 2003 1:50 PM
> To: 'david.edwards@dnr.state.wi.us'
> Subject: FW: Murphy Oil - Notice of Violation
>
> Dave, let's try this again. Dennis
>
> -----Original Message-----
> From: Kugle, Dennis F.
> Sent: Thursday, July 10, 2003 1:46 PM
> To: 'dedwards@dnr.state.wi.us'
> Cc: Liz Lundmark (E-mail); lee vail (E-mail); Dave Podratz (E-mail);
> King, Jeffrey J.
> Subject: Murphy Oil - Notice of Violation
>

> Dear Mr. Edwards,
>
> On June 17, 2003 you sent a Notice of Violation to Liz Lundmark at
> Murphy Oil for failure to list its conditionally closed Tank 31 release
> site (DNR BRRTS ID#026221933) on the GIS Registry of Closed Remediation
> Sites. The letter said that Murphy needed to provide written
> confirmation, no later than 30 days from Murphy's receipt of the letter,
> of its intent to include the Tank 31 release site on the Registry.
> On behalf of Murphy Oil, Gannett Fleming submitted a complete GIS
> Registry Packet for the conditionally-closed Tank 31 site to Shawn Wenzel
> of the Dept. of Commerce on June 26, 2003. A copy of the cover letter
> that was part of that packet was sent to your attention. We sent you a
> copy of the cover letter to satisfy the 30-day requirement that Murphy
> notify the WDNR of its intent to register the Tank 31 release site. I
> called you on July 10th to confirm this fact, but your voice mail system
> indicated you would not be back in the office until Monday, July 14th.
> The Murphy representatives cc'd on this email and I would like a
> response to this email from you confirming that the June 17, 2003 Notice
> of Violation for the Tank 31 release site has been satisfied by the
> submittal of the Registry Packet to Mr.Wenzel on June 26th. We also want
> to assure the WDNR that we are moving forward on preparing GIS Registry
> Packets and/or Deed Notices for all of the other COMM or WDNR
> conditionally closed sites at the Murphy refinery.
> If you have any questions about this email or the status of
> submittal of the GIS Registry Packets for the other sites, please call me.
> We want to avoid any future Notice of Violations related to this issue.
>
> Sincerely,
> Dennis Kugle
> Gannett Fleming
> 8025 Excelsior Drive
> Madison, 53717-1900
> 608-836-1500
>
> cc: Tank 31 GIS Registry File
>
>

NOV Issue

Wenzel, Shawn

From: Wenzel, Shawn
Sent: Monday, July 21, 2003 1:38 PM
To: 'Kugle, Dennis F.'
Cc: Kazda, Janet L; Liz Lundmark (E-mail); lee vail (E-mail); King, Jeffrey J.
Subject: RE: Tank 31 Release Site GIS Registration

Follow Up Flag: Follow up
Due By: Monday, July 21, 2003 3:00 PM
Flag Status: Flagged

The $200 soil GIS Registry fee must be paid directly to DNR. If Commerce receives the check, it will be returned to the sender.

Thank you for your cooperation.

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

-----Original Message-----
From: Kugle, Dennis F. [mailto:dkugle@GFNET.com]
Sent: Monday, July 21, 2003 1:35 PM
To: 'swenzel@commerce.state.wi.us'
Cc: 'janet.kazda@dnr.state.wi.us'; Liz Lundmark (E-mail); lee vail (E-mail); King, Jeffrey J.
Subject: Tank 31 Release Site GIS Registration

Shawn,
`As we just discussed, here is the email I sent to Dave Edwards re: the Tank 31 NOV. Per your request, we will provide Commerce with supplemental information necessary to register the Tank 31 site for soils also. Based on the NOV letter, we believed that GIS groundwater registration was only needed, not soils also. We will try to get the soils registration information to you by early next week. Murphy will send another check for $200 for the soil registry along with the information.

Dennis
Gannett Fleming
8025 Excelsior Drive
Madison, 53717-1900
608-836-1500

cc: Tank 31 GIS Registry File

> -----Original Message-----
> From: Kugle, Dennis F.
> Sent: Thursday, July 10, 2003 1:50 PM
> To: 'david.edwards@dnr.state.wi.us'
> Subject: FW: Murphy Oil - Notice of Violation
>
> Dave, let's try this again. Dennis
>

> -----Original Message-----
> From: Kugle, Dennis F.
> Sent: Thursday, July 10, 2003 1:46 PM
> To: 'dedwards@dnr.state.wi.us'
> Cc: Liz Lundmark (E-mail); lee vail (E-mail); Dave Podratz (E-mail);
> King, Jeffrey J.
> Subject: Murphy Oil - Notice of Violation
>
> Dear Mr. Edwards,
>
> On June 17, 2003 you sent a Notice of Violation to Liz Lundmark at
> Murphy Oil for failure to list its conditionally closed Tank 31 release
> site (DNR BRRTS ID#026221933) on the GIS Registry of Closed Remediation
> Sites. The letter said that Murphy needed to provide written
> confirmation, no later than 30 days from Murphy's receipt of the letter,
> of its intent to include the Tank 31 release site on the Registry.
> On behalf of Murphy Oil, Gannett Fleming submitted a complete GIS
> Registry Packet for the conditionally-closed Tank 31 site to Shawn Wenzel
> of the Dept. of Commerce on June 26, 2003. A copy of the cover letter
> that was part of that packet was sent to your attention. We sent you a
> copy of the cover letter to satisfy the 30-day requirement that Murphy
> notify the WDNR of its intent to register the Tank 31 release site. I
> called you on July 10th to confirm this fact, but your voice mail system
> indicated you would not be back in the office until Monday, July 14th.
> The Murphy representatives cc'd on this email and I would like a
> response to this email from you confirming that the June 17, 2003 Notice
> of Violation for the Tank 31 release site has been satisfied by the
> submittal of the Registry Packet to Mr.Wenzel on June 26th. We also want
> to assure the WDNR that we are moving forward on preparing GIS Registry
> Packets and/or Deed Notices for all of the other COMM or WDNR
> conditionally closed sites at the Murphy refinery.
> If you have any questions about this email or the status of
> submittal of the GIS Registry Packets for the other sites, please call me.
> We want to avoid any future Notice of Violations related to this issue.
>
> Sincerely,
> Dennis Kugle
> Gannett Fleming
> 8025 Excelsior Drive
> Madison, 53717-1900
> 608-836-1500
>
> cc: Tank 31 GIS Registry File
>
>

Kazda, Janet L

From: Wenzel, Shawn
Sent: Monday, July 07, 2003 7:18 AM
To: Kazda, Janet L
Cc: Zeichert, Timothy
Subject: RE: Technical Assistance for a NOV site

Good morning Janet. I was briefly looking into the history of the site, and it turns out that Tim Zeichert (715-345-5307), working out of Commerce's Stevens Point office, is working on this particular occurrence.

Tim, can you follow through with calling this consultant back? I haven't looked for the case file, but since you have done some work on this occurrence, you most likely have the file at your office. Thanks.

Shawn A. Wenzel, Hydrogeologist
Department of Commerce PECFA Bureau
Environmental & Regulatory Services Division
Site Review Section, Madison
Phone (608) 261-5401
Fax (608) 267-1381
http://www.commerce.state.wi.us/ER/ER-PECFA-Home.html

-----Original Message-----
From: Kazda, Janet L
Sent: Monday, June 23, 2003 1:22 PM
To: Wenzel, Shawn
Subject: Technical Assistance for a NOV site

Hi, Shawn.

The consultant for the Superior Refinery/Murphy Oil site (PECFA # 54880045607R) has technical questions regarding their site. His name is Dennis Kluge, and his phone number is 608-836-1500. Please call him at your earliest convenience.

Janet
Wisconsin Dept of Natural Resources
Remediation and Redevelopment Program
715-365-8990

Kazda, Janet L

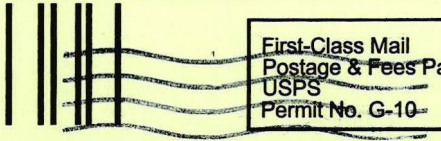
From: Kazda, Janet L
Sent: Monday, June 23, 2003 1:22 PM
To: Wenzel, Shawn
Subject: Technical Assistance for a NOV site

Hi, Shawn.

The consultant for the Superior Refinery/Murphy Oil site (PECFA # 54880045607R) has technical questions regarding their site. His name is Dennis Kluge, and his phone number is 608-836-1500. Please call him at your earliest convenience.

Janet
Wisconsin Dept of Natural Resources
Remediation and Redevelopment Program
715-365-8990

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

Janet Kazda
WI DNR
107 Sutliff Avenue
Rhinelander WI 54501

54501+3343

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Liz Lundmark
Murphy Oil USA Inc
2407 Stinson Ave
Superior WI 54880

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Stacy Olson ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery 6-1-03

D. Is delivery address different from item 1? ☐ Yes
if YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7006 0520 0012 6778 4892

PS Form 3811, August 2001 Domestic Return Receipt 2ACPRI-03-Z-0985

Certified Mail Provides:

- A mailing receipt
- A unique identifier for your mailpiece
- A signature upon delivery
- A record of delivery kept by the Postal Service for two years

Important Reminders:

- Certified Mail may ONLY be combined with First-Class Mail or Priority Mail.
- Certified Mail is not available for any class of international mail.
- NO INSURANCE COVERAGE IS PROVIDED with Certified Mail. For valuables, please consider Insured or Registered Mail.
- For an additional fee, a Return Receipt may be requested to provide proof of delivery. To obtain Return Receipt service, please complete and attach a Return Receipt (PS Form 3811) to the article and add applicable postage to cover the fee. Endorse mailpiece "Return Receipt Requested". To receive a fee waiver for a duplicate return receipt, a USPS postmark on your Certified Mail receipt is required.
- For an additional fee, delivery may be restricted to the addressee or addressee's authorized agent. Advise the clerk or mark the mailpiece with the endorsement "Restricted Delivery".
- If a postmark on the Certified Mail receipt is desired, please present the article at the post office for postmarking. If a postmark on the Certified Mail receipt is not needed, detach and affix label with postage and mail.

IMPORTANT: Save this receipt and present it when making an inquiry.

U.S. Postal Service

CERTIFIED MAIL RECEIPT

(Domestic Mail Only; No Insurance Coverage Provided)

7000 0520 0012 6778 4892

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Tot	

Postmark Here

Superior Refinery/Murphy Oil

0216221933

JK

Rec ailer)

Stre

City,

PS Form 3800, February 2000 See Reverse for Instructions

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary

101 S. Webster St.
Box 7921
Madison, Wisconsin 53707-7921
Telephone 608-266-2621
FAX 608-267-3579
TTY 608-267-6897

June 17, 2003

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Liz Lundmark
Murphy Oil USA Inc
2407 Stinson Ave
Superior WI 54880

SUBJECT: NOTICE OF VIOLATION
Superior Refinery/Murphy Oil, 2400 Stinson Ave, Superior, Wisconsin
DNR BRRTS ID # 0216221933
Commerce ID #: 54880045607R

Dear Responsible Party:

In June 2002, you were sent a letter outlining your options for obtaining final closure of the above named site. Those options included either recording a groundwater use restriction at the appropriate Register of Deeds Office or preparing the necessary documents and submitting them to the Department, along with a $250.00 fee, for listing your property on the GIS Registry of Closed Remediation Sites (Registry). You did reply on August 13, 2002, indicating that you intended to submit the necessary paperwork and associated fee in order to list your property on the Registry. However, as of the date on this letter, we still have not received verification that these steps have been taken or further notification from you that you are continuing to work toward that goal.

Should you choose to not pursue either of these closure options your site will remain as an open site; and, you may be required to conduct additional remedial actions, including continued monitoring of the groundwater quality. You need to understand that section NR 746.09(2), Wisconsin Administrative Code, does not allow reimbursement from PECFA for any additional work once conditional closure has been granted to your site. Any costs associated with further remedial actions including the collection and analysis of groundwater samples would be borne by you.

We are asking you to provide us with written confirmation, no later than 30 days from your receipt of this letter, of your intent to either record a groundwater use restriction or include your property on the GIS Registry.

If we do not hear from you by this date, we will assume that you do not plan to follow through with either option. Please be advised that if you do not complete one of the options you will not

have met the final requirements for closure of your site as required by ch. NR 726, Wis. Admin. Code. In addition to potentially requiring additional groundwater monitoring, the Department will have little choice but to recommend referral of this matter to the Wisconsin Department of Justice. Referral would result in prosecution to obtain court ordered compliance, costs of prosecution and appropriate forfeitures, which can be as high as $5,000 per violation per day pursuant to s. 292.99 (1), Stats. In addition to forfeitures and associated costs, we will administratively list your site on the Registry. As part of the lawsuit, we will seek monetary reimbursement for our time and the fees associated with listing your site on the Registry.

The Department encourages you to take the last steps necessary to obtain final closure of your site. If you have questions about how to record a groundwater use restriction or record your site on the GIS registry, please contact Janet Kazda in Rhinelander at (715)365-8990. If you have questions about this letter or the Department's enforcement procedures, please contact me in Madison at (608)261-0779.

Sincerely,

Dave Edwards

Enforcement Specialist

Gannett Fleming

GANNETT FLEMING, INC.
8025 Excelsior Drive
Madison, WI 53717-1900
Office: (608) 836-1500
Fax: (608) 831-3337
www.gannettfleming.com

August 7, 2002
File #34265.003

Mr. Tim Zeichert
PECFA Site Review Program
Wisconsin Department of Commerce
2715 Post Road
Stevens Point, WI 54481

RE: Notification of Future Site Closure via GIS Registry
Comm ID#: 54880-0456-07-R, BRRTS#: 02-16-221933
Tank 31 Release Site, Superior Refinery, Murphy Oil USA, Inc.

Dear Mr. Zeichert:

In June 2002, the Wisconsin Department of Commerce (COMM) sent a letter to Liz Lundmark of Murphy Oil USA, Inc. requesting Murphy Oil's plans for obtaining final closure for the Tank 31 release site (Comm ID#: 54880-0456-07-R, BRRTS#: 02-16-221933). This can be done either by recording a Groundwater Use Restriction at the county register of deeds office or by placing the site on the Geographic Information Systems Registry of Closed Remediation Sites (GIS Registry) with the State of Wisconsin. As indicated in my July 19, 2002, email to you, on behalf of Murphy Oil USA, Inc., Gannett Fleming, Inc. is notifying COMM that Murphy Oil plans to obtain final closure for its Tank 31 release site by having the site placed on the GIS Registry.

Please let me know if you have any questions or need any additional information regarding this notification.

Sincerely,

GANNETT FLEMING, INC.

Jeffrey J. King
Staff Hydrogeologist

JJK/jec
cc: Liz Lundmark (Murphy-Superior)
Lee Vail (Murphy-New Orleans)
Rick Lewandowski (DeWitt, Ross & Stevens)

M:\CLERICAL\PROJECTS\34200\34265.003\Corres\JJK\3L34265_001

54880-0456-07-R

Wisconsin Department of Natural Resources

WI DNR Activities at Discharge Sites

Help

BRRTS data comes from many sources inside and outside of DNR. There may be gaps and errors in the data, or delays in updating new information. Please see our disclaimers page for more information.

DNR Activity Number:	02-16-221933 * See pg 2
Activity Type:	ERP
Activity Name:	MURPHY OIL - TANK #31
Start Date:	01/17/1994
End Date:	
Site Name:	MURPHY OIL CORP
Address:	2400 STINSON AVE
Municipality:	SUPERIOR
Zip:	548800456
County:	Douglas
DNR Region:	Northern Region
Facility Acres:	365
Degrees of Latitude:	46
Minutes of Latitude:	41
Seconds of Latitude:	27.6
Degrees of Longitude:	92
Minutes of Longitude:	4
Seconds of Longitude:	16.4
Lat/Long Datum:	1927 (NAD27)
Lat/Long Method:	Digitized from a map @ larger than 1:24,000 scale [40 meters]
Quarter Quarter Section:	NW
Quarter Section:	NW
Survey Section:	36
Survey Township:	49
Survey Range:	14W

FID Number: 816009590

Jurisdiction: DNR

Eligible for PECFA Funds: N

AST at Site: Y

Tracked by Commerce Database: Y

Priority: Unknown

Risk: Unknown

Persons or Companies associated with this DNR Activity

Person or Company	Role	Address	Address 2	PO Box	Municipality	State	Zip
HOSCH, JIM	Project Manager	1401 TOWER AVE	WDNR		SUPERIOR	WI	54880

Record 1 of 1

Download

Actions performed during this DNR Activity

Action Name	Action Description	Comment	Date Action Occurred
Notification	Date the DNR is notified of the discovery of the contamination.	PER SPILL 04-16-049241	01/17/1994

Record 1 of 1

Download

Impacts

Impact Description	Comment
Soil Contamination	

Record 1 of 1

Substance

Substance Description	Substance Name	Amount Released	Units
Fuel Oil			

Record 1 of 1

Spiller Action

No Records returned

- Person or Company
- Distance
- PLSS
- Lat/Long

- **Return Links**
  - BRRTS on the Web

Send DNR Feedback About This DNR Activity
BRRTS on the Web Feedback Form

WI DNR Activities at Discharge Sites

BRRTS data comes from many sources inside and outside of DNR. There may be gaps and errors in the data, or delays in updating new information. Please see our disclaimers page for more information.

DNR Activity Number:	04-16-049241
Activity Type:	Spills
Activity Name:	MURPHY OIL - TANK #31
Start Date:	01/17/1994
End Date:	
Site Name:	MURPHY OIL CORP
Address:	2400 STINSON AVE
Municipality:	SUPERIOR
Zip:	548800456
County:	Douglas
DNR Region:	Northern Region
Facility Acres:	365
Degrees of Latitude:	46
Minutes of Latitude:	41
Seconds of Latitude:	27.6
Degrees of Longitude:	92
Minutes of Longitude:	4
Seconds of Longitude:	16.4
Lat/Long Datum:	1927 (NAD27)
Lat/Long Method:	Digitized from a map @ larger than 1:24,000 scale [40 meters]
Quarter Quarter Section:	NW
Quarter Section:	NW
Survey Section:	36
Survey Township:	49
Survey Range:	14W

FID Number: 816009590
Activity Comment: OLD SPILL ID: 940117-02
Jurisdiction: DNR

Incident Time: 01/17/1994 12:30:00 pm

Spill Cause: OVERFILL

Spill Source Description: Pipeline, Terminal, Tank Farm, Oil Jobber/Wholesaler

Notified DNR Immediately: Y
DNR Investigator: J DAVIDOWSKI

Persons or Companies associated with this DNR Activity

Person or Company	Role	Address	Address 2	PO Box	Municipality	State	Zip
MURPHY OIL REFINERY	Responsible Party						

Record 1 of 1

Download

Actions performed during this DNR Activity

Action Name	Action Description	Comment	Date Action Occurred
Notification	Date the DNR is notified of the discovery of the contamination.	Auto populated via migration process	01/17/1994
Activity Transferred to ERP	This case was not closed out shortly after occurrence and is now tracked as an activity in ERP program.	02-16-221933	06/03/1999

Records 1 to 2 of 2

Download

Impacts

Impact Description	Comment
Contained/Recovered	CONTAINED/RECOVERED

Record 1 of 1

Substance

Substance Description	Substance Name	Amount Released	Units
Fuel Oil	1 FUEL OIL	5500	Gallon

Record 1 of 1

Spiller Action

Spiller Action	Comment
Cleanup Method	CONTAINED/RECOVERED

Record 1 of 1

- Person or Company
- Distance
- PLSS
- Lat/Long

- **Return Links**
  - BRRTS on the Web

Send DNR Feedback About This DNR Activity

BRRTS on the Web Feedback Form

Wisconsin
Department of Commerce

P. O. Box 530
Park Falls, Wisconsin 54552
(715) 762-5557
FAX (715) 762-0054

Tommy G. Thompson, Governor
Brenda J. Blanchard, Secretary

April 12, 2000

Ms Liz Lundmark
Murphy Oil USA, Inc.
2407 Stinson Ave
Superior, WI 54880

Subject: **Close-out of Case # 54880-0456-07-R/ BRRTS #02-16-221933**
Murphy Oil Tank 31

Dear Ms. Lundmark:

On April 6, 2000 the above site was reviewed for closure by the Site Review staff of the PECFA Bureau. Because the site met the criteria for transfer to the Department of Commerce, all issues relating to this site are administered by the staff within the Department of Commerce's PECFA Bureau. Using the standards established in NR 700, the Department has determined that this site has been remediated to a level protective of the environment and human health. The Department considers this site to meet environmental standards for closure with a deed notification and groundwater use restriction.

Please have your consultant complete a draft deed notice and groundwater use restriction and submit these to me for review. Once they are approved you may have them attached to the deed for this property and send me final copies with a copy of the receipt indicating they have been filed. Once this is done your site will be officially closed on our tracking system. Also, if you are no longer using the monitoring wells associated with this area please have them abandoned and submit this documentation to me as well.

This is based upon the information provided to us by your consultant. If, in the future, site conditions indicate that any contamination that might remain poses a threat, the need for further remediation would be determined and required if necessary.

Be sure to include a copy of this letter with your PECFA claim package, if your site is eligible for reimbursement. Please be sure to keep all documentation related to the investigation and remediation of your site in case you ever decide to sell this property. The department has made the decision that after 3 years the files we hold for your site will be destroyed. So you are responsible for maintaining this file and passing it on to any future owners.

Thank you for your efforts in the protection of the environment. If you have any additional questions, please call me at 715-762-5557.

Sincerely,

Shanna L. Laube, P.G.
Hydrogeologist
PECFA Program

cc: Gannett Fleming, Inc., Jeff King

Gannett Fleming

GANNETT FLEMING, INC.
8025 Excelsior Drive
Madison, WI 53717-1900
Office: (608) 836-1500
Fax: (608) 831-3337
www.gannettfleming.com

January 27, 2000
File #34265.003/367-18.3

Ms. Shanna Laube, Hydrogeologist
Wisconsin Department of Commerce
Env. & Regulatory Services
214 North Fourth Avenue
P.O. Box 530
Park Falls, WI 54552

Re: Tank 31 Site Investigation Results and Request for Closure
Murphy Oil USA, Inc., Superior, Wisconsin
WDNR BRRTS #02-16-221933

Dear Ms. Laube:

On behalf of Murphy Oil USA, Inc., Gannett Fleming, Inc. (fka Eder Associates) is submitting this report describing our 1998 and 1999 site investigation of a historical release of No. 1 fuel oil from aboveground storage Tank 31 at Murphy's Superior refinery. The investigation results document that the remedial action taken by Murphy following the release removed all product and all significantly contaminated soil from the basin. Post-remediation sampling near the surface water drainage outlet for this tank basin, the most likely area in which the fuel oil ponded following the release, showed that no proposed COMM 46/NR 746 direct contact standards for low-permeability sites were exceeded. The most recent samples of non-developable groundwater, collected in December 1999, from a monitoring well installed in the low-permeability clay soils within the Tank 31 basin did not contain any contaminants above applicable NR 140 enforcement standards (ESs). None of the five samples collected from this well since December 1998 have contained any contaminants at concentrations above the proposed COMM 46/NR 746 standards for groundwater within low-permeability materials.

Based on these analytical results, we are requesting closure of this release site on behalf of Murphy. This request is being sent to the Wisconsin Department of Commerce (COMM) because none of the four environmental factors that define a "high-risk site" are present at this site, as defined by Wisconsin Act 9, Section 101.144(1)(aq); thus, the site is considered a low-priority site and is the responsibility of COMM. A completed COMM Case Closure and Summary Form is enclosed. By a copy of this report to Jim Hosch of the Wisconsin Department of Natural Resources (WDNR), we are requesting that the WDNR transfer its files on this release site to your attention.

Site Conditions

Figure 1 is a location map based on the USGS map for the area and showing the location of the refinery, and Figure 2 is a refinery site plan. Tank 31 is located on relatively flat land near the center of the refinery, as shown on Figure 2. The closest surface water is Newton Creek, located about 2,000 feet east-northeast of the tank. The creek is shown on both Figures 1 and 2. The land surrounding Tank 31 is also owned by Murphy and is part of the refinery. The tank basin is enclosed by an approximately 4-foot-high clay dike. The ground surface in the basin is unpaved but consists of low-permeability clay. Rainwater and snow melt within the diked area drain and collect in the east corner of the basin.

Access to the refinery property, which is zoned industrial, is restricted to Murphy employees and subcontractors. The entire property is fenced, and security guards are on duty 24 hours a day. Any work done on refinery property requires a "safe work permit" that is issued by trained Murphy personnel. This permit must be reissued daily and is updated if conditions warrant. The work permits detail the type of work to be performed, who will be doing the work, the equipment/machinery to be used, the type of personal protective equipment required, and the monitoring (e.g., field screening, air monitoring) required. In those circumstances where contaminated soil is encountered, only HAZWOPER-trained personnel are allowed to do the work.

These institutional controls prevent exposure to the general public and minimize the likelihood of any workers being exposed to potentially harmful levels of petroleum-related constituents. This level of control goes far beyond the typical fence in a remote or unused industrial area. Further, there is no possibility of real or potential impact to other off-site receptors of concern, such as humans, plants, and animals; water supply wells; basements; or water and sewer utility lines.

The potable and process water supply for the refinery and the area around the refinery is provided by the City of Superior, which obtains its water from Lake Superior. On April 21, 1999, we requested a well records search of the area around the refinery from the Wisconsin Geological & Natural History Survey. Only two private wells were located: One is about one mile northwest of the refinery and was installed in 1941, and the other is less than a quarter-mile southeast of the refinery at Lakehead Pipeline and was installed in 1953. Murphy contacted Lakehead Pipeline to inquire about the status of this well. It is no longer in service, and Lakehead now obtains its water

Continued . . .

from the City of Superior. Copies of the well records request form and the two well logs are included as Attachment A. There are no active private or public water supply wells at or in the area around the refinery.

The site is underlain by 250 to 300 feet of clay, as documented by a boring done on refinery property, so there is no developable groundwater available. There is moist clay at about 3 to 5 feet below grade across the site. Soil samples collected from a number of locations at the refinery have documented the low permeability of the native clay at the refinery. Based on these permeability results and the homogeneous nature of the native clay, we believe the moist clay under the basin meets the definition of low-permeability material as defined in COMM 46 and NR 746. This conclusion is confirmed by the fact that it takes weeks for the water table wells to recover after they are purged.

Background of Releases

The release that occurred in this basin, which was due to accidental overfill and consisted of 5,500 gallons of No. 1 fuel oil, was reported to the Wisconsin Department of Natural Resources (WDNR) in January 1994. Because the tank basin is bounded by berms and because of the generally impermeable nature of the clay soils at the site, the fuel oil ponded on the soil surface, allowing Murphy personnel time to use a suction pump to recover most of the released fuel oil. Murphy did not collect soil samples after recovering the ponded product, and the WDNR did not initially request that Murphy conduct site investigations.

Subsequently, in a letter dated October 1, 1998, the WDNR notified Murphy that it was required under NR 716.05(2)(b) to conduct an investigation of the historical release at the Tank 31 basin. Murphy retained Gannett Fleming to conduct the site investigation.

Site Investigations

Hand-Auger and Geoprobe Investigations (July 1998)

To qualitatively assess the degree and extent of contamination and to focus future soil sampling, Gannett Fleming used a hand auger to collect shallow (1 to 1.5 feet below ground surface [bgs]) soil

Continued . . .

samples from seven locations (#1 through #7) within the Tank 31 basin in early July 1998. These samples were field-screened with a flame-ionization detector (FID). Figure 3 is a site plan showing the locations of the field-screened samples and the field-screening results.

In late July 1998, Twin Ports Testing of Superior advanced two probeholes (GP-12 and GP-13) using a Geoprobe. Figure 3 also shows the locations of these two Geoprobe samples. These samples were collected in order to define the degree of contamination near the surface water drainage outlet for the tank basin, the most likely area to contain residual fuel oil-contaminated soil. Soil samples were collected from GP-12 at 1 to 1.5 feet bgs; however, because of difficulties obtaining a sufficient sample volume at deeper depths, we moved over and collected a deeper sample (4.5 to 5 feet bgs) from GP-13. Both samples were submitted to Commonwealth Technology, Inc. (CTI) of Baraboo for gasoline range organics (GRO), diesel range organics (DRO), petroleum volatile organic compounds (PVOCs), ethylene dibromide, and polycyclic aromatic hydrocarbons (PAHs) analysis. Table 1 contains the analytical results for the samples collected from GP-12 and GP-13. Copies of the boring logs and abandonment forms for GP-12 and GP-13 are provided in Attachment B. Copies of the laboratory reports and chain of custody records for the soil samples are in Attachment C.

Groundwater Investigation

In October 1998, Gannett Fleming supervised the installation of a water table monitoring well (MW-1/T31) in the eastern corner of the Tank 31 basin. Figure 3 shows the well location. Figure 4 is a groundwater contour map created from groundwater elevations measured in the refinery wells in March 1999. As noted above, MW-1/T31 is located where the surface water drains and collects, and as shown on Figure 4, is on the downgradient boundary of the basin.

Monitoring well MW-1/T31 was constructed of 2-inch-diameter Schedule 40 PVC and screened from 3 to 18 feet below grade with a slot size of 0.006 inches. Attachment D contains copies of the boring log and well construction report forms for MW-1/T31.

Due to the low permeability of the subsurface clay, the well could be bailed dry. The WDNR requested that the well be purged dry at least two times to develop the well. Twin Ports Testing purged the well dry two times, following the requirements in NR 141.21(2). Attachment D also contains a copy of the well development form.

Continued . . .

Groundwater samples were collected from MW-1/T31 in December 1998 and in April, June, September, and December 1999. Each sample was collected using a new, single-use, disposable PVC bailer and new polyethylene rope. The December 1998 samples were placed in laboratory-supplied containers, preserved as necessary, placed on ice, and shipped to CTI for analysis of volatile organic compounds, DRO, PAHs, GRO, dissolved lead, and natural attenuation parameters. The second and third round of samples were handled in the same manner, with these samples analyzed for GRO, PVOCs, natural attenuation, and dissolved lead. The second round of samples was also analyzed for PAHs. The fourth and fifth round of samples were analyzed for DRO, PVOCs, and PAHs; the fourth round was also analyzed for natural attenuation parameters. All the samples collected in 1999 were analyzed by U.S. Filter of Rothschild, Wisconsin, which had submitted the low bid for 1999 PECFA sample analysis to Gannett Fleming. Tables 2 and 3 list the petroleum and natural attenuation analytical results, respectively, for groundwater samples from MW-1/T31. Attachment E contains copies of the laboratory reports and chain of custody forms for the groundwater samples.

Results

As shown in Table 2, the results show that the most recent round of groundwater samples collected from monitoring well MW-1/T31, located at the downgradient boundary of the release site, did not contain any concentrations of fuel oil-related compounds above NR 140 ESs. In addition, none of the five separate samples collected from MW-1/T31 contained any concentrations of fuel oil-related compounds above the proposed COMM 46/NR 746 standards for groundwater within low-permeability materials.

Table 3 provides the laboratory results for the natural attenuation parameters in the groundwater samples collected from MW-1/T31. These groundwater samples were collected and analyzed to assess the assimilative capacity of the shallow aquifer to naturally remediate residual petroleum-contaminated groundwater. Because there were relatively low levels of fuel oil-related parameters in the groundwater and an extremely low groundwater velocity, a formal remediation by natural attenuation evaluation was not conducted. However, note that the dissolved oxygen levels measured in the water table well were as high as 3.3 milligrams per liter (mg/ℓ). These are above the 2.0 mg/ℓ threshold generally considered necessary to sustain aerobic biodegradation. In addition, the pH of the groundwater was well within the 5.6 to 7.3 range that is considered optimal for BTEX-degrading

Continued . . .

microbes, and the alkalinity levels (436 to 515 mg/ℓ) in the shallow groundwater should be sufficient to buffer any changes in pH that could occur during BTEX biodegradation.

Soils encountered during the site investigation generally consisted of 0.5 feet of silty loam (Unified Soil Classification System [USCS] OL) underlain by red-brown clay (USCS CL) to 5 feet, the maximum depth explored.

As shown in Table 1, each of the two Geoprobe soil samples contained at least one parameter that exceeded an applicable NR 720 RCL; however, the concentrations of all fuel-related parameters except benzene were significantly lower in the 4.5 to 5-foot sample than in the 1 to 1.5-foot sample. None of the samples contained fuel oil-related compounds that exceeded an NR 746/COMM 46 direct-contact standard.

Request for Closure

The results of the soil sampling near the surface water drainage outlet for this tank basin, the area most likely to contain elevated residual fuel oil-related concentrations as a result of the January 1994 release, showed that no proposed COMM 46/NR 746 direct-contact standards for low permeability sites were exceeded. The detection limit for benzene in the sample collected 1 to 1.5 feet bgs from GP-12 was slightly above the applicable proposed COMM 46/NR 746 standard. However, based on the complete analytical results for soil samples, we do not believe that the limited area of affected surface soils poses any risk to the Murphy workers, who may on a very infrequent basis be in the diked area for short periods of time.

The most recent results of groundwater sampling show that groundwater at the downgradient boundary of the Tank 31 basin did not contain any concentrations of fuel oil-related compounds above NR 140 ESs. In addition, none of the five separate samples collected from MW-1/T31 contained any concentrations of fuel oil-related compounds above the proposed COMM 46/NR 746 standards for groundwater within low-permeability materials. In addition, there are no groundwater receptors (private or public wells) within a quarter-mile of Murphy's property boundary.

Continued . . .

Ms. Shanna Laube, Hydrogeologist
Wisconsin Department of Commerce
January 27, 2000

Given these facts and because none of the five environmental factors, as defined in COMM 47, are present at the site, on behalf of Murphy, we are requesting that COMM issue a closure letter for the historical release of No. 1 fuel oil at the Tank 31 site.

Please call if you have any questions or need additional information.

Sincerely,

GANNETT FLEMING, INC.

Jeffrey J. King
Staff Hydrogeologist

Dennis F. Kugle
Vice President

JJK/reb
Enc.
cc: Jim Hosch (WDNR/Superior)
Lee Vail (Murphy/New Orleans)
Greg Neve (Murphy/Superior)
Liz Lundmark (Murphy/Superior)
Kevin Melnyk (Murphy/El Dorado)
Richard Lewandowski (DeWitt, Ross & Stevens)

Wisconsin Department of Commerce
Environmental and Regulatory Services Division

Bureau of PECFA
Site Review Section

COMMERCE
CASE SUMMARY AND CLOSE OUT

Personal information you provide may be used for secondary purposes [Privacy Act, s. 15.04(1)(M)].

SEE INSTRUCTIONS ON THE BACK OF THIS PAGE

Date Received (office use only)

A. COMMERCE NUMBER: ___ ___ ___ ___ ___ - ___ ___ ___ ___ -

DNR BRRTS NUMBER (optional): 02-16-221933

B. Responsible Party or Owner Name	C. Responsible Party or Owner Phone Number
Murphy Oil USA, Inc. **C/o Liz Lundmark**	**(715) 398-3533**
D. Responsible Party or Owner Address, City, State and Zip Code	**D. Remedial Action Site Name, Address, City and Zip Code**
2407 Stinson Avenue **Superior, WI 54880**	**Tank 31** **2400 Stinson Avenue** **Superior, WI 54880**

Enforcement Actions or Permits Closed Out? ___ Y __X__ N Contaminant Type(s): No. 1 Fuel Oil

Quantity Released: 5,500 gallons Potential Receptors: Newton Creek located approx. 2,000 feet east of tank basin
Status of water supply wells within 1200 feet of the site? None within 1,200 feet of site

SOIL

Soil Type: Clay (USCS CL) Depth to Bedrock: 260 feet

Site Specific Soil Standards (NR 720.19)? ___ Y __X__ N Final Confirmation Sampling Method: Field screening and analytical testing of soil samples collected from the basin

Remedial Action Taken: Vacuumed released product Were Soils Excavated? ___ Y __X__ N Quantity: ___ Tons

Treatment/Disposal Method: NA Treatment/Disposal Location: NA

GROUNDWATER (if applicable)

Groundwater Encountered? __X__ Y ___ N Monitoring Well(s) Installed? __X__ Y ___ N

Depth to Groundwater & Flow Direction: 2-3 ft, flow to east Perched Water? ___ Y __X__ N Depth: NA feet

Preventive Action Limit exceeded at this time? __X__ Y ___ N (If yes, location) MW-1/T31

Enforcement Standard exceeded at this time? ___ Y __X__ N (If yes, location) NA

Environmental Consultant Name and Phone Number	Environmental Consultant Address, City, State and Zip Code
Jeff King **Gannett Fleming, Inc.** **(608) 836-1500**	**8025 Excelsior Drive** **Madison, WI 53717**

I, the environmental consultant, certify with my signature that the information presented is true and accurate and recommend that no further action be required at this site.

Consultant Signature: _____ Date: 1/26/00

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 1

ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED FROM TANK 31 BASIN (mg/kg)

Parameter	Sample I.D.		NR 720 RCLs	Proposed COMM 46/ NR 746 Direct Contact Standards in Upper 4 Feet of Soil
	GP-12	GP-13		
Sample Depth (ft)	1-1.5	4.5-5		
DRO	**930**	87	250	NS
GRO	**740**	120	250	NS
Benzene	**<1.9**	**4.9**	0.0055	1.1
Ethylbenzene	**7.4**	2.4	2.9	400
Toluene	<1.1	0.39	1.5	670
Xylenes	<3.4	2.9	4.1	470
MTBE	<0.90	<0.090	NS	NS
Trimethlybenzenes	55	6.5	NS	NS
Ethylene dibromide (EDB)	<0.70	<0.070	NS	NS
Detected Polycyclic Aromatic Hydrocarbons				
Acenaphthylene	<0.051	0.061		
Fluoranthene	<0.0049	0.14		
Fluorene	0.70	<0.0086		
Naphthalene	3.2	0.12		
1-Methyl Naphthalene	5.2	0.20		
2-Methyl Naphthalene	7.6	0.48		
Phenanthrene	0.45	0.057		
Pyrene	<0.0062	0.13		

NOTES:
Samples collected on July 21, 1998.
Results reported in units of milligrams per kilogram (mg/kg) on a dry-weight basis.
Results in bold exceed applicable generic NR 720 RCL.
NS = No standard.

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 2

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
FROM MONITORING WELL AT TANK 31 (ug/l)

Well I.D. and Sample Date	Parameter									
	DRO	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	Trimethlybenzenes	MTBE	Naphthalene	Dissolved Lead
MW-1/T31										
12/17/98	NSC	33*	0.40*	<0.20	<0.20	<0.80	2.1	<0.20	<1.1	<1.0
04/06/99	NSC	498	**195**	24.1	<0.5	30.8	18.9	<0.3	<0.27	<1.0
06/02/99	NSC	284	**13.3**	2.98	<0.5	5.71	19.5	<0.3	NSC	<1.0
09/08/99	5,980	NSC	**17.8**	<0.5	<0.4	6.31	7.62	<0.3	<0.08	NSC
12/09/99	3,900	NSC	0.831	<0.5	<0.4	<0.55	1.69	<0.3	<0.08	NSC
NR 140 PAL	NS	NS	0.5	140	68.6	124	96	12	8	1.5
NR 140 ES	NS	NS	5	700	343	620	480	60	40	15
Proposed Limits in Low Permeability Soils	NS	NS	1,500	7,100	20,000	7,800	NS	NS	NS	NS

NOTES:
Results reported in units of micrograms per liter (ug/l).
Results in bold exceed applicable NR 140 ES.
Samples collected on 12/17/98 analyzed for VOCs.
Samples collected on all sample dates except 06/02/99 also analyzed for PAHs.
Only detected parameters shown on table.
NSC = No samples collected.
NS = No standard.
* = Estimated concentration below laboratory quantitation level.

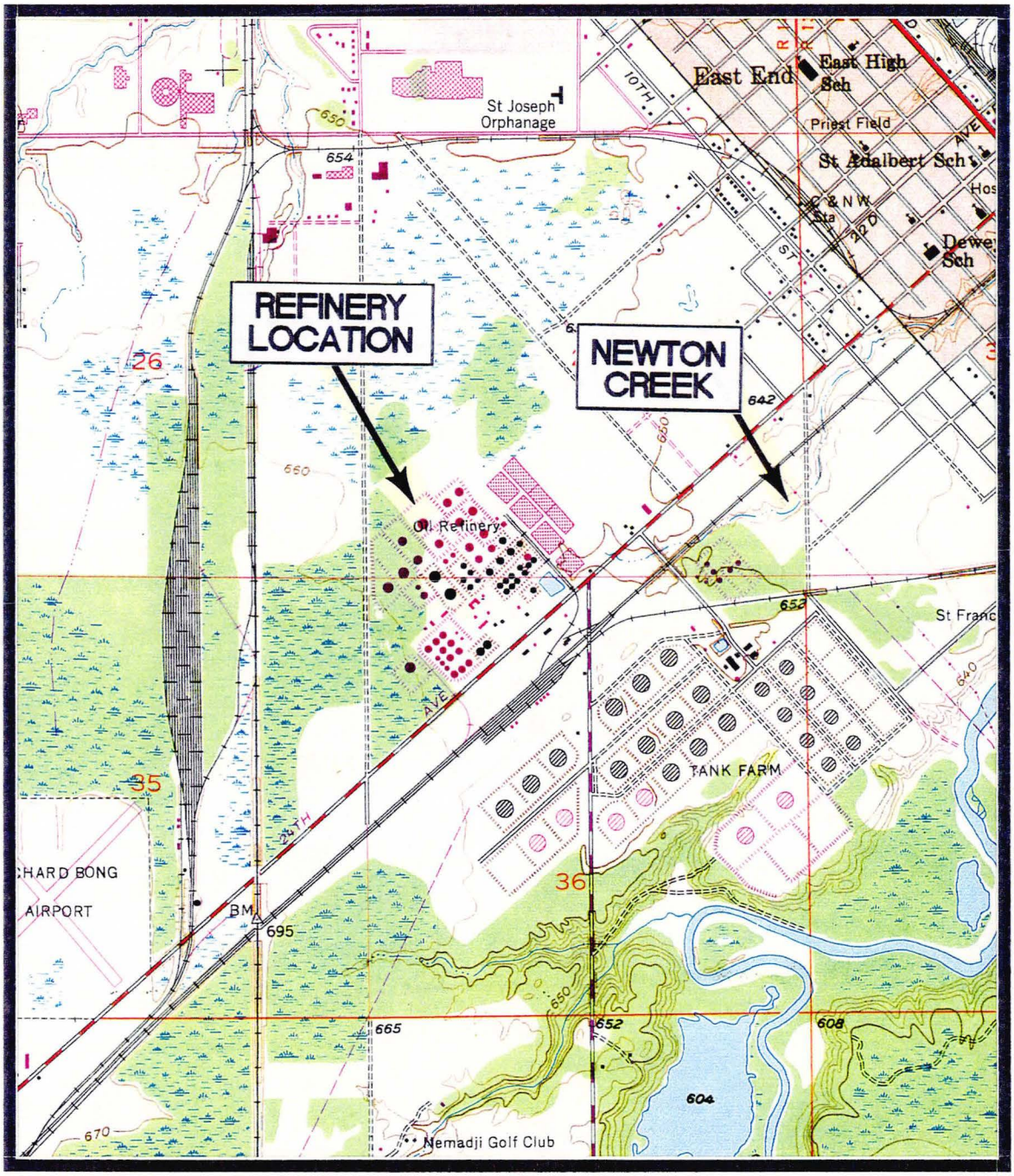
MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 3

NATURAL ATTENUATION PARAMETER RESULTS FOR GROUNDWATER SAMPLES
FROM MONITORING WELL AT TANK 31

Well I.D. and Sample Date	Parameter								
	Alkalinity	Dissolved Iron	Dissolved Manganese	Nitrate	Sulfate	Dissolved Oxygen	pH	Temperature (C)	Redox Potential (mV)
MW-1/T31									
12/17/98	436	0.627	0.326	<0.14	16.9	3.3	5.6	9.6	52
04/06/99	429	0.304	0.573	<0.3	9.78	3.2	7.3	8.4	25
06/02/99	515	0.238	0.38	<0.3	3.17	<1	NM	7.7	NM
09/08/99	486	1.14	0.159	<0.3	7.21	1.2	6.9	11.3	10

NOTES:
Concentrations reported in units of milligrams per liter (mg/l), unless otherwise noted.
NM = Not measured.



SCALE: 1 INCH = 2000 FEET

7.5 MIN TOPOGRAPHIC MAP
SUPERIOR, WISCONSIN
1954
PHOTOREVISED 1983

LOCATION MAP

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

070199
34265.000

Gannett Fleming

FIGURE 2

GENERAL DIRECTION OF GROUNDWATER FLOW

LEGEND

- Monitoring Well Location
- Monitoring Well Nest Location
- (65) Former Tank Location
- Liner

HILL AVENUE

MW-8

MW-6

MW-4

MW-5

MW-7

MW-2/T59

MW-1&PZ-1/T59

MW-1

MW-2

MW-1/T29

MW-1/T70

MW-1/PP

PZ-1/PP

MW-2/PP

MW-3B

Propane/ Butane Loading Area

MW-3/PP

MW-1/T40

MW-1/T31

MW-5/T66

MW-4&PZ-4/T66

MW-7/T66

MW-1/T67

MW-6/T66

MW-1&PZ-1/T66

MW-2/T67

PZ-2/T66

PZ-3/T66

MW-2/T66

MW-3/T66

MW-9

Flare

Warehouse

Maintenance Shop

Process Area

Process Area

Process Area

MW-1/T8

MW-2/T8

Railcar Loading Area

Fire House

Boiler House

Loading Area

Fire Water Pond No. 3

Fire Water Pond No. 5

Storm Water Collection Pond No. 4

Pond 1 (Closed)

Pond 6 (Closed)

Pond 7 Aeration Pond

Pond 8 Settling Pond

100'ø Equalization Tank

30'ø Primary Clarifer

Treatment Plant Building

MW-10

STINSON AVENUE

MW-11

Storage

Lab

Office

Marketing

MW-14

MW-13

MW-12

BARDON AVENUE

Impoundment Area

NEWTON CREEK

NOTE

Monitoring Well Locations Are Based On Field Sketches From The Field Investigation Reports And Are Approximate.

0 300

Approximate Scale In Feet

081999
34265WBB

SITE PLAN

MURPHY OIL USA, INC

SUPERIOR, WISCONSIN

Gannett Fleming

FIGURE 4

LEGEND

- Groundwater Contour With Flow Direction (Dashed Where Inferred)
- MW-10 (648.91) — Monitoring Well Location With Groundwater Elevation (ft-AMSL)
- MW-1&PZ-1/T59 (656.19) — Monitoring Well Nest Location With Groundwater Elevation (ft-AMSL)
- (NM) Not Measured
- (NS) Water Level Not Yet Stabilized
- 1"ø Piezometer Location (July And October 1998)
- (65) Former Tank Location
- Liner

HILL AVENUE

MW-6 (662.21)

MW-2/T59 (656.50)

MW-1&PZ-1/T59 (656.19)

MW-1 (652.22)

MW-2 (650.12)

PZ-3 PZ-3A MW-3B (NM)

MW-1&PZ-1/PP (NS)

MW-2/PP (NS)

Pond 1 (Closed)

Pond 6 (Closed)

Propane/ Butane Loading Area

PZ-4

MW-4 (NS)

MW-5 (NS)

MW-1/T31 (657.11)

MW-5/T66 (NS)

MW-7/T66 (NS)

MW-6/T66 (655.75)

MW-4&PZ-4/T66 (NM)

Fire Water Pond No. 2

Pond 7 Aeration Pond

MW-9 (NM)

MW-1&PZ-1/T66 (NS)

Flare

MW-7 (655.49)

PZ-53A PZ-53 PZ-2/T66 PZ-3/T66

MW-2/T66 (NS)

MW-3/T66 (653.79)

Pond 8 Settling Pond

Warehouse

Maintenance Shop

Process Area

Fire House

Railcar Loading Area

Fire Water Pond No. 3

100'ø Equalization Tank

30'ø Primary Clarifer

Treatment Plant Building

MW-10 (648.91)

Storm Water Collection Pond No. 4

Fire Water Pond No. 5

Boiler House

Loading Area

PZ-8

MW-8 (659.17)

STINSON AVENUE

MW-11 (NM)

Storage

Lab

Office

Marketing

MW-12 (650.36)

MW-14 (654.83)

PZ-13

MW-13 (NM)

BARDON AVENUE

662 660 658 656 654 652 650

NOTES

1. Monitoring Well Locations Are Based On Field Sketches From The Field Investigation Reports.
2. Groundwater Elevations Were Measured On March 10 And 11, 1999, Except For MW-2/T59, Which Was Measured On March 3, 1999.

0 300

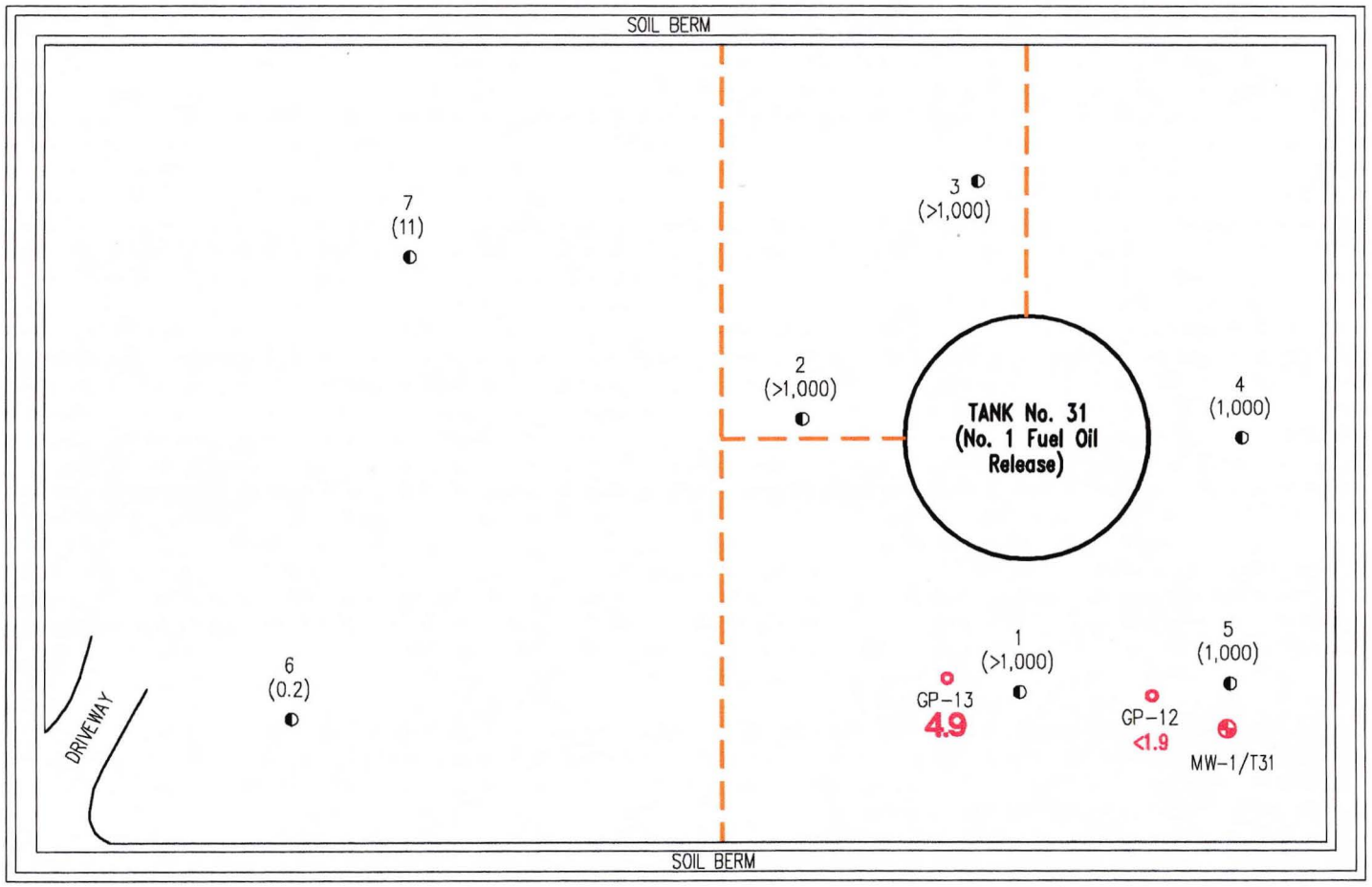
Approximate Scale In Feet

081899
34265WAL

GROUNDWATER CONTOUR MAP (MARCH 1999)

MURPHY OIL USA, INC

SUPERIOR, WISCONSIN



LEGEND

- Gannett Fleming Hand-Auger Field Screening Soil Sample Location (October 1998)
- Gannett Fleming Geoprobe Soil Sample Location (July 1998)
- Monitoring Well Location
- Aboveground Piping

(0.2) = FID Reading At 1.5 Foot Depth (ppm)

<1.9 = Benzene Concentration At 1-1.5 Foot Depth (mg/kg)

4.9 = Benzene Concentration At 4.5-5 Foot Depth (mg/kg)

NOTE
Concentrations In **BOLD** Exceed Generic NR 720 RCLs.

NOTE

Locations Are Approximate Based On Field Measurements; Site Not Surveyed

0 30
Scale In Feet

SAMPLE LOCATIONS AND FID READINGS AT TANK NO. 31

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

012500
34265WAN

Gannett Fleming
FIGURE 3

ATTACHMENT A

WISCONSIN GEOLOGICAL SURVEY WELL RECORDS REQUEST FORM AND COPIES OF AREA WELL LOGS

RECEIVED JAN 14 1954 ENVIRONMENTAL SANITATION

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

Sec 36? T49 R14W

1. County Douglas — Town ☐ Village ☐ City ☒ Check one and give name

2. Location City of Superior Stinson and B[illegible] ave
Name of street and number of premise or Section, Town and Range numbers

3. Owner ☐ or Agent ☐ Lake Head Pipe Line co
Name of individual, partnership or firm

4. Mail Address East End Superior Wis
Complete address required

5. From well to nearest: Building ✓ ft; sewer ✓ ft; drain ✓ ft; septic tank ✓ ft;
dry well or filter bed ✓ ft; abandoned well ✓ ft.

6. Well is intended to supply water for: Drinking

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
4	standard	0	179

9. GROUT:

Kind	From (ft.)	To (ft.)

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Red clay	0	135
Hardpan	135	175
water gravel	175	179

Construction of the well was completed on: Oct 9 1953

The well is terminated 22 inches ☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes ✓ No

Was the well sealed watertight upon completion? Yes ✓ No

11. MISCELLANEOUS DATA:

Yield test: 5 Hrs. at 7 GPM.

Depth from surface to water-level: ______ ft.

Water-level when pumping: same ft.

Water sample was sent to the state laboratory at: By mail on ______ 19__
City

Signature Hautron Bros — Registered Well Driller
Wentworth Wis — Complete Mail Address

Please do not write in space below

Rec'd ______ No. ______

Ans'd ______

Interpretation ______

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner ______

WELL LOG *and* REPORT

In this column indicate the kind of casing, liner, shoe and other accessories used.	WELL DIAGRAM Use a red line to show casing or liner pipe. Use black for drill or borehole.	In this column state the kind of formations penetrated, their thickness in feet and if water bearing.	Record of FINAL Pumping test
4 in special Well pipe Drive shoe steel	Inches Diameter: 2 3 4 5 6 8 10 12 14 16 18 Depth: 25, 50, 75, 100, 150, 200, 260, 275, 400, 800, 1200	Red clay 150 ft Had pan Boulders 110 ft sand stone 15 ft	Duration of test Hours 24 Pumping rate G.P.M. 3 Depth of pump in well. Ft. 108 Standing water-level (from surface) Ft. 43 Water-level when pumping Ft. 106 Water. End of test. Clear ✓ Cloudy ____ Turbid ____ Was the well sterilized? Yes ✓ No ____ To which laboratory was sample sent? Superior Date Feb 29 Was the well sealed on completion? Yes ✓ No ____ How high did you leave the casing-pipe above grade? 1 ft Well was completed Date Feb 27-4 Well Driller Signature
Casing to 260 ft. rock 15			

Draw the diagram to show the right half only

WELL CONSTRUCTION REPO

WISCONSIN STATE BOARD OF HEALTH

AUG 28 1941

WELL DRILLING DIVISION

Note: Section 32 of the Wisconsin Well Drilling Sanitary Code, having the force and effect of law, provides that within thirty days after completion of every well the driller shall submit a report covering all essential details of construction to the State Board of Health on a form provided by the Board.

Owner William Hakk [illegible] Driller Mastrian Bros

Street or RFD Norman Road [illegible] Post Office Wentworth [illegible]

Post Office Superior Date Feb 27, 1941 Permit No. 232

LOCATION OF PREMISES

~~Bayfield~~ Douglas City of Superior

County Town

Blk 12 Hammond add Lot 27

Describe further by subdivision, plat, district, lake, lot,

S ½ of sec 28 [Sec 26?]

block, nearest principal highway, etc., whichever apply.

The square below represents a section of land divided into 40 acre tracts. Mark the position of the premises in the section.

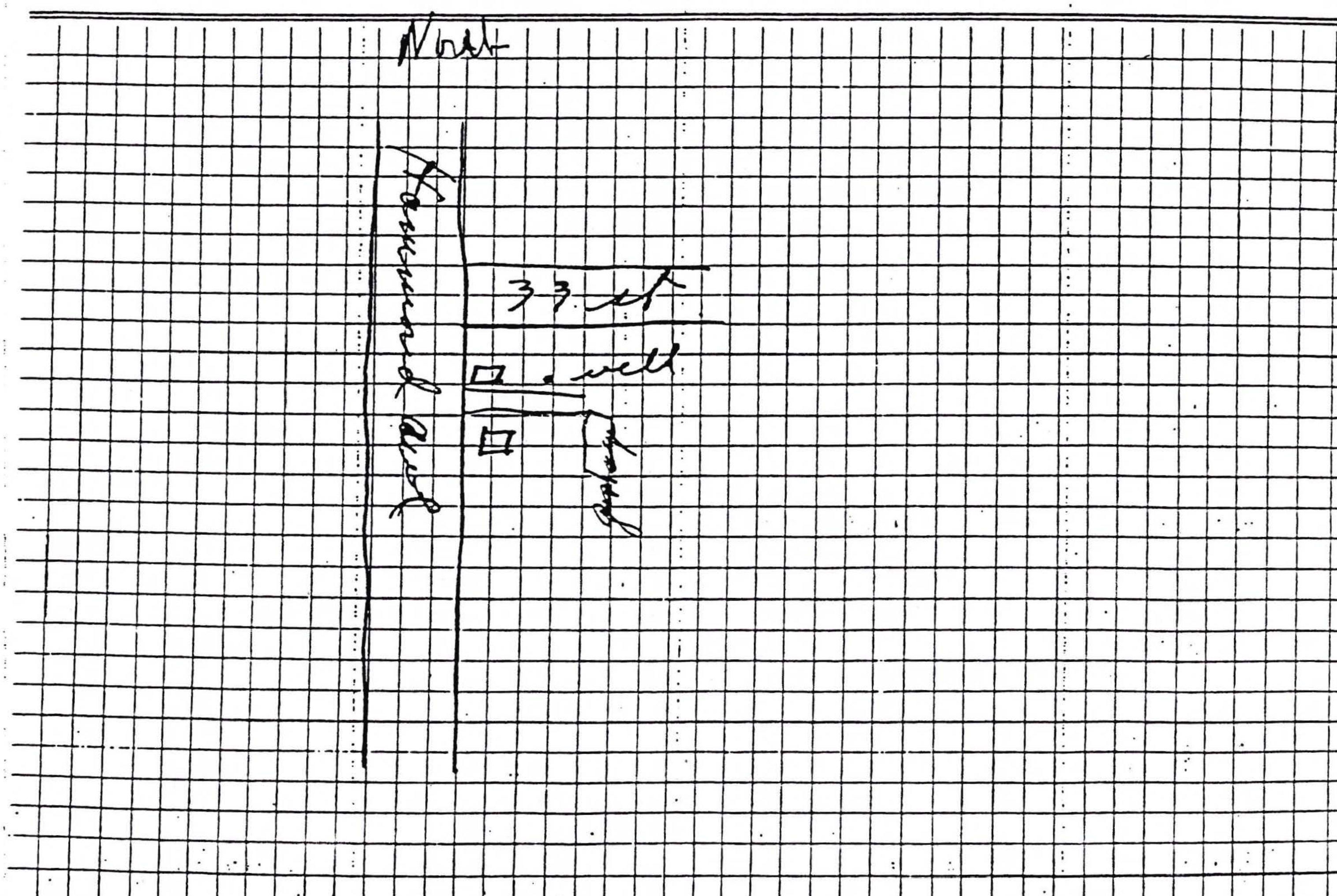
Sec. 28

Twp. 49

Range 14 { E / W }

DIAGRAM OF PREMISES

See discussion and illustration in Part III Well Drilling Code. In making the diagram in the space below consider 10 ft. as the distance between lines. Be sure to indicate NORTH.



Additional copies of this form may be obtained in lots of 12 for 25¢. Send remittance with order to State Board of Health, Well Drilling Division, Madison, Wis.

WELL RECORDS REQUEST FORM - *FOR AN AREA*

(may be faxed or mailed)

Send to: Wisconsin Geological and Natural History Survey
3817 Mineral Point Road, Madison, WI 53705-5100

Fax: 608-262-8086 Telephone: 608-262-7430 Irene Lippelt | 608-263-7387 Roger Peters | 608-262-1705 Main Office

Date 4/21/99 Page 1 of 1

From: Name Jeff King
Company Gannett Fleming, Inc. (fna Eder Associates)
Mailing Address 8025 Excelsior Dr.
Madison, WI 53717

Telephone Number 608-836-1500 Fax Number 608-831-3337

Project number or billing code for order 34265.003

Note: Prepayment is required unless your company has an account with our map sales department.

Where should invoice be sent? to person ordering? X OR to company's accounting department? ____

If prepaying, Mastercard ___ **or Visa** ___ **#** _____ _____ _____ _____, **expires:** _____-_____

TYPE OF RECORDS REQUESTED: (PLEASE CHECK ALL THAT APPLY)

1. ***WELL CONSTRUCTOR'S REPORTS***: 1936-79 X 1980-89 X ≥1990 X
   If there are only a few reports (or none) in the area you requested, do you want us to expand the search area? ___yes X no. If you are ordering less than an entire section, do you want reports that do not list a ¼ section included? X yes ___no. If you are ordering ¼ ¼ section(s) do you want reports that list just one ¼ section included? X yes ___no.
   Most reports (except in Milwaukee & Waukesha Counties) do NOT list more than one quarter section.
2. ***GEOLOGIC LOGS***: only within area requested X or up to ~1 mile away if few or none in area ____

AREA(S) FOR WHICH RECORDS ARE BEING REQUESTED:

Quarter Section(s) (please use "of" or "and")		Section	Township	Range (list E or W)	County
	of	36	49	14W	Douglas
SE and SW	of	25	49	14W	Douglas
SE	of	26	49	14W	Douglas
NE	of	35	49	14W	Douglas
	of				
	of				
	of				
	of				

Special Instructions (if any):

Please call when ready, We will pick-up

Note: All orders are sent first class mail unless other arrangements are requested.
If you need this material in an alternative format, please contact the Wisconsin Geological and Natural History Survey (608/262.1705) or the UWEX Affirmative Action Office.

ATTACHMENT B

BORING LOGS AND ABANDONMENT FORMS

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Information

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Murphy Oil USA, Inc.		**GP-12**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Twin Ports Testing	**07/21/98**	**07/21/98**	**Geoprobe**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**1.3** Inches

Boring Location
State Plane N, E
SW 1/4 of **SW** 1/4 of Section **25** T **49** N,R **14 W**
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Douglas	**16**	**Superior**

Sample Number	Sample Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				Black SILTY LOAM with organic material	OL CL									
1-3	20		1	Red CLAY with some black staining, petroleum-like odor, slightly moist becoming more moist with depth						M				
			2											
3-5	12		3	Same as above with trace unsorted coarse sand						M				
			4											
			5	End of boring at 5 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm Eder Associates
8025 Excelsior Drive Madison, WI 53717
Tel: (608)836-1500 Fax: (608)831-3337

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Information
Form 4400-122 7-91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Murphy Oil USA, Inc.		**GP-13**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Twin Ports Testing	**07/21/98**	**07/21/98**	**Geoprobe**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**1.3** Inches

Boring Location
State Plane N, E
SW 1/4 of **SW** 1/4 of Section **25** T **49** N,R **14 W**
Lat ° ' "
Long ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Douglas	**16**	**Superior**

Sample Number	Sample Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			1	Blind drill to 3 feet										
			2											
3-5	12		3	Red CLAY, slightly moist, petroleum-like odor, no fractures	CL					M				
			4											
			5	End of boring at 5 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm Eder Associates
8025 Excelsior Drive Madison, WI 53717
Tel: (608)836-1500 Fax: (608)831-3337

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 12-91

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Douglas

SW 1/4 of SW 1/4 of Sec. 25 ; T. 49 N; R. 14 ☐ E ☒ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name: Superior

Street Address of Well: 2400 Stinson Ave.

City, Village: Superior

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: Murphy Oil USA, Inc.

Street or Route: 2407 Stinson Ave.

City, State, Zip Code: Superior, WI 54880

Facility Well No. and/or Name (If Applicable): GP-12

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Samples collected, no longer needed

Date of Abandonment: 7/21/98

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 7/21/98

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) Geoprobe

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 5 (From groundsurface)

~~Casing~~ Boring Diameter (ins.) 2

Casing Depth (ft.) _____

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown

If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) 2-3

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☒ Yes	☐ No	☐ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material

☒ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials

☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only

☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite - Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Granular Bentonite	Surface	5	10 lbs	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: Twin Ports Testing + Gannett Fleming, Inc.

Signature of Person Doing Work: Jeff Zins of GF

Date Signed: 7/26/00

Street or Route: 8025 Excelsior Dr.

Telephone Number: (608) 836-1500

City, State, Zip Code: Madison, WI 53717

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 12-91

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Douglas

SW 1/4 of SW 1/4 of Sec. 25 ; T. 49 N; R. 14 ☐ E ☒ W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. ☐ N. ☐ S., ____ ft. ☐ E. ☐ W.

Civil Town Name: Superior

Street Address of Well: 2400 Stinson Ave.

City, Village: Superior

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: Murphy Oil USA, Inc.

Street or Route: 2407 Stinson Ave.

City, State, Zip Code: Superior WI 54880

Facility Well No. and/or Name (If Applicable): GP-13

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Samples collected, no longer needed

Date of Abandonment: 7/21/98

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 7/21/98

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify): Geoprobe

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) (From groundsurface): 5

Casing Diameter (ins.): 2 Boring

Casing Depth (ft.): ____

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet): 2-3

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☒ Yes	☐ No	☐ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain ____

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite
☐ Bentonite - Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Granular Bentonite	Surface	5	10 lbs	

(8) Comments: ____

(9) Name of Person or Firm Doing Sealing Work: Iron Ports Testing + Garrett Fleming, Inc

Signature of Person Doing Work: Jeff Bris of GF

Date Signed: 1/26/00

Street or Route: 8025 Excelsior Dr.

Telephone Number: (608) 836-1500

City, State, Zip Code: Madison, WI 53717

(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

ATTACHMENT C

COPIES OF CHAIN OF CUSTODY RECORDS AND LABORATORY REPORTS FOR SOIL SAMPLES

Commonwealth
Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

August 12, 1998

Eder Associates
Jeff King
8025 Excelsior Dr.
Madison, WI 53717-1900

Project: Murphy Oil
Project No.: 367-18.3
Received: 07/24/98

Sample ID: 206235
206238
206268

Dear Jeff:

I have enclosed a revised analytical report for the project and sample listed above. This report is labeled "Revised Analytical Report" and supercedes any previous reports.

The bulk density results were inadvertently not reported for samples 206235 and 206238. The results have been added to page 18 and 20 of the revised report, respectively.

The bulk density result for sample 206268 was incorrect in the initial report. The correct concentration value is listed on page 33 of the revised report.

We regret the errors and any inconvenience this may have caused. If you have any questions or comments regarding this report, please feel free to contact me.

Sincerely,

Harley G. Cliff
Chemistry Laboratory Manager

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

REVISED
ANALYTICAL REPORT

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HGC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206224 **Sample Description:** GP-11(4.5-5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
o-Xylene	<0.24	mg/Kg		0.012	0.042	07/24/98	07/31/98	RLD	EPA 8021A
Toluene	<0.22	mg/Kg		0.011	0.037	07/24/98	07/31/98	RLD	EPA 8021A
Diesel Range Organics	100	mg/kg	K	1.4	4.7	07/27/98	08/02/98	PML	WDNR DRO
1-Methyl Naphthalene	1.1	mg/kg		0.047	0.16	07/28/98	07/29/98	CMK	EPA 8310
2-Methyl Naphthalene	1.5	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthene	<0.048	mg/kg		0.048	0.16	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthylene	0.071	mg/kg	J	0.051	0.17	07/28/98	07/29/98	CMK	EPA 8310
Anthracene	<0.023	mg/kg		0.023	0.077	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)anthracene	<0.0020	mg/kg		0.002	0.006	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)pyrene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(b)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(g,h,i)perylene	<0.0041	mg/kg		0.004	0.014	07/28/98	07/29/98	CMK	EPA 8310
Benzo(k)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Chrysene	<0.092	mg/kg		0.092	0.31	07/28/98	07/29/98	CMK	EPA 8310
Dibenzo(a,h)anthracene	<0.23	mg/kg		0.23	0.77	07/28/98	07/29/98	CMK	EPA 8310
Fluoranthene	<0.0049	mg/kg		0.004	0.016	07/28/98	07/29/98	CMK	EPA 8310
Fluorene	<0.0086	mg/kg		0.008	0.029	07/28/98	07/29/98	CMK	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0094	mg/kg		0.009	0.031	07/28/98	07/29/98	CMK	EPA 8310
Naphthalene	0.41	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Phenanthrene	0.11	mg/kg		0.003	0.012	07/28/98	07/29/98	CMK	EPA 8310
Pyrene	<0.0062	mg/kg		0.006	0.021	07/28/98	07/29/98	CMK	EPA 8310

Sample I.D. #: 206225 **Sample Description:** GP-12(1-1.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Percent Solids	71.7	%					07/27/98	NMP	EPA 5030
Gasoline Range Organics	740	mg/kg	L	1.3	4.5	07/24/98	07/29/98	EMH	WDNR GRO
1,2,4-Trimethylbenzene	38	mg/Kg		0.014	0.048	07/24/98	07/31/98	RLD	EPA 8021A
1,2-Dibromoethane (EDB)	<0.70	mg/Kg		0.007	0.023	07/24/98	07/31/98	RLD	EPA 8021A
1,3,5-Trimethylbenzene	17	mg/Kg		0.012	0.039	07/24/98	07/31/98	RLD	EPA 8021A
Benzene	<1.9	mg/Kg	V	0.019	0.063	07/24/98	07/31/98	RLD	EPA 8021A
Ethylbenzene	7.4	mg/Kg		0.011	0.036	07/24/98	07/31/98	RLD	EPA 8021A
m&p-Xylene	<2.2	mg/Kg		0.022	0.075	07/24/98	07/31/98	RLD	EPA 8021A
Methyl-tert-butyl ether	<0.90	mg/Kg		0.009	0.030	07/24/98	07/31/98	RLD	EPA 8021A
o-Xylene	<1.2	mg/Kg		0.012	0.042	07/24/98	07/31/98	RLD	EPA 8021A
Toluene	<1.1	mg/Kg		0.011	0.037	07/24/98	07/31/98	RLD	EPA 8021A
Diesel Range Organics	930	mg/kg	K	1.4	4.7	07/27/98	08/05/98	PML	WDNR DRO
1-Methyl Naphthalene	5.2	mg/kg	S	0.047	0.16	07/28/98	07/29/98	CMK	EPA 8310
2-Methyl Naphthalene	7.6	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthene	<0.048	mg/kg		0.048	0.16	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthylene	<0.051	mg/kg		0.051	0.17	07/28/98	07/29/98	CMK	EPA 8310
Anthracene	<0.023	mg/kg		0.023	0.077	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)anthracene	<0.0020	mg/kg		0.002	0.006	07/28/98	07/29/98	CMK	EPA 8310

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

REVISED
ANALYTICAL REPORT

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HGC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206225 **Sample Description:** GP-12(1-1.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Benzo(a)pyrene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(b)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(g,h,i)perylene	<0.0041	mg/kg		0.004	0.014	07/28/98	07/29/98	CMK	EPA 8310
Benzo(k)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Chrysene	<0.092	mg/kg		0.092	0.31	07/28/98	07/29/98	CMK	EPA 8310
Dibenzo(a,h)anthracene	<0.23	mg/kg		0.23	0.77	07/28/98	07/29/98	CMK	EPA 8310
Fluoranthene	<0.0049	mg/kg		0.004	0.016	07/28/98	07/29/98	CMK	EPA 8310
Fluorene	0.70	mg/kg		0.008	0.029	07/28/98	07/29/98	CMK	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0094	mg/kg		0.009	0.031	07/28/98	07/29/98	CMK	EPA 8310
Naphthalene	3.2	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Phenanthrene	0.45	mg/kg		0.003	0.012	07/28/98	07/29/98	CMK	EPA 8310
Pyrene	<0.0062	mg/kg		0.006	0.021	07/28/98	07/29/98	CMK	EPA 8310

Sample I.D. #: 206226 **Sample Description:** GP-13(4.5-5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Percent Solids	70.9	%					07/27/98	NMP	EPA 5030
Gasoline Range Organics	120	mg/kg	KL	1.3	4.5	07/24/98	07/30/98	EMH	WDNR GRO
1,2,4-Trimethylbenzene	4.8	mg/Kg		0.014	0.048	07/24/98	07/31/98	RLD	EPA 8021A
1,2-Dibromoethane (EDB)	<0.070	mg/Kg		0.007	0.023	07/24/98	07/31/98	RLD	EPA 8021A
1,3,5-Trimethylbenzene	1.7	mg/Kg		0.012	0.039	07/24/98	07/31/98	RLD	EPA 8021A
Benzene	4.9	mg/Kg	V	0.019	0.063	07/24/98	07/31/98	RLD	EPA 8021A
Ethylbenzene	2.4	mg/Kg		0.011	0.036	07/24/98	07/31/98	RLD	EPA 8021A
m&p-Xylene	2.8	mg/Kg		0.022	0.075	07/24/98	07/31/98	RLD	EPA 8021A
Methyl-tert-butyl ether	<0.090	mg/Kg		0.009	0.030	07/24/98	07/31/98	RLD	EPA 8021A
o-Xylene	<0.12	mg/Kg		0.012	0.042	07/24/98	07/31/98	RLD	EPA 8021A
Toluene	0.39	mg/Kg	J	0.011	0.037	07/24/98	07/31/98	RLD	EPA 8021A
Diesel Range Organics	87	mg/kg	K	1.4	4.7	07/27/98	08/02/98	PML	WDNR DRO
1-Methyl Naphthalene	0.20	mg/kg		0.047	0.16	07/28/98	07/29/98	CMK	EPA 8310
2-Methyl Naphthalene	0.48	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthene	<0.048	mg/kg		0.048	0.16	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthylene	0.061	mg/kg	J	0.051	0.17	07/28/98	07/29/98	CMK	EPA 8310
Anthracene	<0.023	mg/kg		0.023	0.077	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)anthracene	<0.0020	mg/kg		0.002	0.006	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)pyrene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(b)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(g,h,i)perylene	<0.0041	mg/kg		0.004	0.014	07/28/98	07/29/98	CMK	EPA 8310
Benzo(k)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Chrysene	<0.092	mg/kg		0.092	0.31	07/28/98	07/29/98	CMK	EPA 8310
Dibenzo(a,h)anthracene	<0.23	mg/kg		0.23	0.77	07/28/98	07/29/98	CMK	EPA 8310
Fluoranthene	0.14	mg/kg		0.004	0.016	07/28/98	07/29/98	CMK	EPA 8310
Fluorene	<0.0086	mg/kg		0.008	0.029	07/28/98	07/29/98	CMK	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0094	mg/kg		0.009	0.031	07/28/98	07/29/98	CMK	EPA 8310

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

REVISED
ANALYTICAL REPORT

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HGC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206226 **Sample Description:** GP-13(4.5-5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Naphthalene	0.12	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Phenanthrene	0.057	mg/kg		0.003	0.012	07/28/98	07/29/98	CMK	EPA 8310
Pyrene	0.13	mg/kg		0.006	0.021	07/28/98	07/29/98	CMK	EPA 8310

Sample I.D. #: 206227 **Sample Description:** GP-14(1-1.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Percent Solids	76.9	%					07/27/98	NMP	EPA 5030
Gasoline Range Organics	180	mg/kg	L	1.3	4.5	07/24/98	07/30/98	EMH	WDNR GRO
1,2,4-Trimethylbenzene	7.6	mg/Kg		0.014	0.048	07/24/98	07/30/98	RLD	EPA 8021A
1,2-Dibromoethane (EDB)	<0.070	mg/Kg		0.007	0.023	07/24/98	07/30/98	RLD	EPA 8021A
1,3.5-Trimethylbenzene	4.2	mg/Kg		0.012	0.039	07/24/98	07/30/98	RLD	EPA 8021A
Benzene	2.2	mg/Kg	V	0.019	0.063	07/24/98	07/30/98	RLD	EPA 8021A
Ethylbenzene	<0.11	mg/Kg		0.011	0.036	07/24/98	07/30/98	RLD	EPA 8021A
m&p-Xylene	<0.22	mg/Kg		0.022	0.075	07/24/98	07/30/98	RLD	EPA 8021A
Methyl-tert-butyl ether	<0.090	mg/Kg		0.009	0.030	07/24/98	07/30/98	RLD	EPA 8021A
o-Xylene	<0.12	mg/Kg		0.012	0.042	07/24/98	07/30/98	RLD	EPA 8021A
Toluene	<0.11	mg/Kg		0.011	0.037	07/24/98	07/30/98	RLD	EPA 8021A
Diesel Range Organics	380	mg/kg		1.4	4.7	07/27/98	08/05/98	PML	WDNR DRO
1-Methyl Naphthalene	1.0	mg/kg	M	0.047	0.16	07/28/98	07/29/98	CMK	EPA 8310
2-Methyl Naphthalene	1.7	mg/kg	M	0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthene	<0.048	mg/kg		0.048	0.16	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthylene	<0.051	mg/kg		0.051	0.17	07/28/98	07/29/98	CMK	EPA 8310
Anthracene	<0.023	mg/kg		0.023	0.077	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)anthracene	<0.0020	mg/kg		0.002	0.006	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)pyrene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(b)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(g,h,i)perylene	<0.0041	mg/kg		0.004	0.014	07/28/98	07/29/98	CMK	EPA 8310
Benzo(k)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Chrysene	<0.092	mg/kg		0.092	0.31	07/28/98	07/29/98	CMK	EPA 8310
Dibenzo(a,h)anthracene	<0.23	mg/kg		0.23	0.77	07/28/98	07/29/98	CMK	EPA 8310
Fluoranthene	<0.0049	mg/kg		0.004	0.016	07/28/98	07/29/98	CMK	EPA 8310
Fluorene	<0.0086	mg/kg		0.008	0.029	07/28/98	07/29/98	CMK	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0094	mg/kg		0.009	0.031	07/28/98	07/29/98	CMK	EPA 8310
Naphthalene	0.14	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Phenanthrene	<0.0035	mg/kg		0.003	0.012	07/28/98	07/29/98	CMK	EPA 8310
Pyrene	<0.0062	mg/kg		0.006	0.021	07/28/98	07/29/98	CMK	EPA 8310

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

REVISED
ANALYTICAL REPORT

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HOC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206273 **Sample Description:** GP-9(4-4.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Porosity	0.498						08/06/98	ETK	MOSA 18-2
% Moisture/ %SMHC	65.2	%					08/06/98	ETK	MOSA 36-2
Moisture Holding Capacity	34.8	%					08/06/98	ETK	MOSA 36-2
Bulk Density	1.33	gTS/cm3					08/06/98	ETK	MOSA 13-2
Total Percent Solids	78.1	%					07/27/98	NMP	EPA 5030
pH (Soil)(Lab)	7.87	S.U.'s					07/27/98	JDC	EPA 9040
TOC as % Organic Matter	1.08	%		0.01	NA		07/29/98	KJF	MOSA 29.4

Sample I.D. #: 206274 **Sample Description:** GP-11(4-4.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Air-filled Porosity	0	%					08/06/98	ETK	MOSA 18-2
Total Porosity	0.453						08/06/98	ETK	MOSA 18-2
% Moisture/ %SMHC	66.3	%					08/06/98	ETK	MOSA 36-2
Moisture Holding Capacity	36.5	%					08/06/98	ETK	MOSA 36-2
Bulk Density	1.45	gTS/cm3					08/06/98	ETK	MOSA 13-2
Total Percent Solids	73.4	%					07/27/98	NMP	EPA 5030
pH (Soil)(Lab)	7.74	S.U.'s					07/27/98	JDC	EPA 9040
TOC as % Organic Matter	1.35	%		0.01	NA		07/29/98	KJF	MOSA 29.4

Sample I.D. #: 206276 **Sample Description:** GP-13(4-4.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Air-filled Porosity	20.3	%					08/06/98	ETK	MOSA 18-2
Total Porosity	0.562						08/06/98	ETK	MOSA 18-2
% Moisture/ %SMHC	65.6	%					08/06/98	ETK	MOSA 36-2
Moisture Holding Capacity	42.4	%					08/06/98	ETK	MOSA 36-2
Bulk Density	1.16	gTS/cm3					08/06/98	ETK	MOSA 13-2
Total Percent Solids	72.3	%					07/27/98	NMP	EPA 5030
pH (Soil)(Lab)	7.85	S.U.'s					07/27/98	JDC	EPA 9040
TOC as % Organic Matter	1.24	%		0.01	NA		07/29/98	KJF	MOSA 29.4

Commonwealth Technology, Inc. (CTI)

ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 Lange Court
Baraboo, WI 53913
1-800-228-3012 (608) 356-2760 FAX: (608) 356-2766

FILL IN ANALYSIS NEEDED BELOW

Remarks: 02705

689

Project #: 367-18.3

Proj. Name: Murphy Oil

Client Name / Number: Eder Associates

Space Below For Laboratory Use

Date	Time	Comp	Grab	Sample Description	Sample #	Number of Containers	Porosity/% moisture	fraction organic carbon	bulk density	pH	GRO/BTEX + chlorinated hydrocarbons	DRO	PAH	Pres.	Sample I.D. #'s:
7/21/98	PM	Soil	X		GP-11(4.5-5)	3					✓	✓	✓		206224
					GP-11(4-4.5)	1	✓	✓	✓	✓					206 [illegible] 274
					GP-12(1-1.5)	3					✓	✓	✓		206225
					GP-13(4.5-5)	3					✓	✓	✓		206226
					GP-13(4-4.5)	1	✓	✓	✓	✓					206 [illegible] 276
					GP-14(1-1.5)	3					✓	✓	✓		206227
					GP-14(4.5-5)	3					✓	✓	✓		206228
					GP-14(4-4.5)	1	✓	✓	✓	✓					206229
7/22/98	9:20				GP-15(1-1.5)	3					✓	✓	✓		206230
	9:35				GP-15(4.5-5)	3					✓	✓	✓		206231
	9:35				GP-15(4-4.5)	1	✓	✓	✓	✓					206232
	9:55				GP-16(1-1.5)	3					✓	✓	✓		206233
	10:05				GP-16(4.5-5)	3					✓	✓	✓		206234
	10:05				GP-16(4-4.5)	1	✓	✓	✓	✓					206235
	10:20				GP-17(1-1.5)	3					✓	✓	✓		206236
	10:30				GP-17(4.5-5)	3					✓	✓	✓		206 [illegible] 237
	10:30				GP-17(4-4.5)	1	✓	✓	✓	✓					206 [illegible] 238
	10:45				GP-18(1-1.5)	3					✓	✓	✓		206239
	10:55				GP-18(4.5-5)	3					✓	✓	✓		206240
	10:55				GP-18(4-4.5)	1	✓	✓	✓	✓					206241
	11:15				GP-19(1-1.5)	3					✓	✓	✓		206242

Sampled By: Jeff King (JJK)

Relinquished By: Jeff King — Date: 7/23/98 — Time: 7:15

Received By: — Date: — Time:

Received By Lab: 8:00 AM — Date: 7/23/98 — Time:

Remarks:

Date Sample Disposed of:

Sample Shipped Via: _____ UPS _____ Fed. Exp. _____ Hand _____ U.S. Mail

Sublab: _____

Is this a PECFA project? (Please indicate "Yes" or "No") Yes

Sample Status: on ice

Deg. C: _____ pH:

ATTACHMENT D

BORING LOG, WELL CONSTRUCTION REPORT, AND DEVELOPMENT FORM FOR MONITORING WELL MW-1/T31

State of Wisconsin
Department of Natural Resources

SC BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☐ Other ☐ _____

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Murphy Oil USA, Inc. - Tank 31		MW-1/T31

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Mike Last Name: Mueller Firm: Boart Longyear	10/28/98	10/28/98	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
JM778			0 Feet MSL	0 Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 0 N, 0 E S/C/N
SW 1/4 of SW 1/4 of Section 25, T 49 N, R 14 E/W

Lat 0 ° 0 ' 0 "
Long 0 ° 0 ' 0 "

Local Grid Location
0 Feet ☐ N ☐ S 0 Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
0	DOUGLAS	16	Superior

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-2	8		1	Black-red silty sandy clayey LOAM, slight petroleum-like odor	OL									
			2	Black-red CLAY, trace fine sand, strong petroleum-like odor, possible staining	CL									
2-4	12		4	Same	CL									
4-6	14		6	Red CLAY, petroleum-like odor	CL									
6-8	23		8	Same, slight petroleum-like odor, trace gray fracture planes	CL									
8-10	24		10	Same, no fractures, no odor, <1% fine angular gravel	CL									
10-12	24		12	Same	CL									
12-14	8		14	Same	CL									
14-16	24		16	Same	CL									
16-18	24		18	Same, end of boring at 18 feet	CL									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Jeff Sims	Gannett Fleming, Inc., Madison, WI

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources Route To: W...rshed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 6-97

Facility/Project Name: Murphy Oil	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-1 / T-31
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well Number
Facility ID: 3410-9761	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 10/28/1998
Type of Well: Well Code 11/mw	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____ T. ____ N, R. ____ ☐E ☐W	Well Installed By: (Person's Name and Firm) Mike Mueller
Distance Well Is From Waste/Source Boundary ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Boart Longyear

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 2.50 ft. MSL
C. Land surface elevation ____ ft. MSL
D. Surface seal, bottom ____ ft. MSL or 2.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

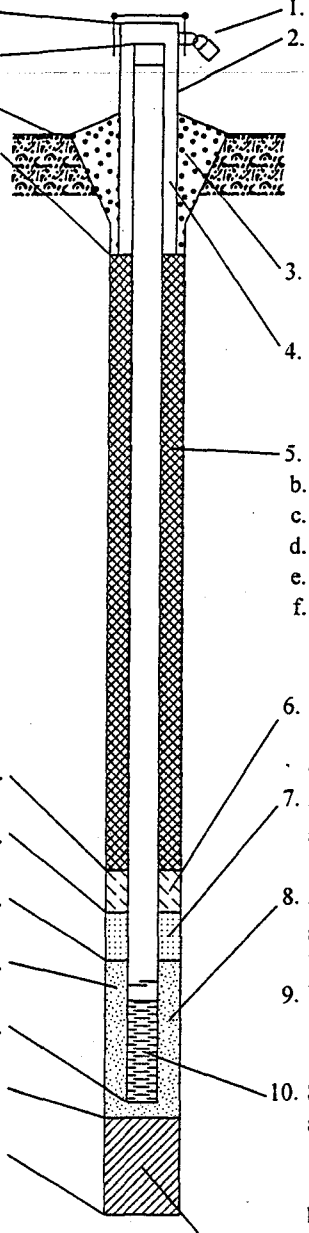
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
____ Other ☐ ____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis):
____

E. Bentonite seal, top ____ ft. MSL or -0.2 ft.
F. Fine sand, top ____ ft. MSL or ____ ft.
G. Filter pack, top ____ ft. MSL or 2.5 ft.
H. Screen joint, top ____ ft. MSL or 3.0 ft.
I. Well bottom ____ ft. MSL or 18.0 ft.
J. Filter pack, bottom ____ ft. MSL or 19.0 ft.
K. Borehole, bottom ____ ft. MSL or 19.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 4.5 ft.
c. Material: Steel ☒ 04
____ Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 30
Concrete ☐ 01
____ Other ☐ ____
4. Material between well casing and protective pipe:
Bentonite ☐ 30
#7 Badger Other ☒ ____
5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name and mesh size
a. None ____
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material ____
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
____ Other ☐ ____
10. Screen material: PVC ____
a. Screen Type: Factory cut ☒ 11
Continuous slot ☐ 01
____ Other ☐ ____
b. Manufacturer Boart Longyear
c. Slot size: 0.006 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 14
____ Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm BOART LONGYEAR Tel: 715-359-7090
101 ALDERSON ST., P.O. BOX 109 SCHOFIELD, WI 54476 Fax:

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
	Douglas	MW-1 / TK31
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well Number**
_____	16		

	Before Development	After Development
1. Can this well be purged dry?	■ Yes ☐ No	
2. Well development method		
surged with bailer and bailed	■ 41	
surged with bailer and pumped	☐ 61	
surged with block and bailed	☐ 42	
surged with block and pumped	☐ 62	
surged with block, bailed and pumped	☐ 70	
compressed air	☐ 20	
bailed only	☐ 10	
pumped only	☐ 51	
pumped slowly	☐ 50	
Other _____	☐ ___	
3. Time spent developing well	14 min.	
4. Depth of well (from top of well casisng)	20.7 ft.	
5. Inside diameter of well	2.05 in.	
6. Volume of water in filter pack and well casing	5.5 gal.	
7. Volume of water removed from well	5.0 gal.	
8. Volume of water added (if any)	____.__ gal.	
9. Source of water added	_____	
10. Analysis performed on water added? (If yes, attach results)	☐ Yes ☐ No	
11. Depth to Water (from top of well casing)	a. 14.85 ft.	____.__ ft.
Date	b. 12/02/98 (m m d d y y)	12/10/98 (m m d d y y)
Time	c. 02:35 ☐ a.m. ■ p.m.	9:44 ☐ a.m. ■ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ■ 10 Turbid ☐ 15	Clear ■ 20 Turbid ☐ 25
(Describe)	clear top, red-brown bottom	clear top, light red-brown bottom
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

On 12/2/98, 3 gallons were removed from 2:35-2:45pm.

On 12/10/98, 2 gallons were removed from 9:40-9:44am.

Well developed by: Person's Name and Firm	I hereby certify that the above information is true and correct to the best of my knowledge.
Name: Irvin G. Mossberger	Signature: Irvin G. Mossberger
Firm: Twin Ports Testing	Print Initials: IGM
	Firm: Twin Ports Testing

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

ATTACHMENT E

COPIES OF CHAIN OF CUSTODY RECORDS AND LABORATORY REPORTS FOR GROUNDWATER SAMPLES COLLECTED FROM MONITORING WELL MW-1/T31

USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 715-359-7226
FACSIMILE 715-355-3221

Propane Tank 31 gw results

December 28, 1999

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

Attn: Jeff King/ Liz Lundmark

Re: 98E0899

Please find enclosed the analytical results for the sample(s) received December 11, 1999.

The chain of custody document is enclosed.

If you have any questions about the results, please call. Thank you for using US Filter/Enviroscan for your analytical needs.

Sincerely,

US Filter/Enviroscan

James R. Salkowski

James R. Salkowski
Laboratory Director

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

PROJECT NO.: 98E0899
SAMPLED BY : Client
DATE REC'D : 12/11/99
REPORT DATE: 12/28/99
PREPARED BY: JRS

Attn: Jeff King/ Liz Lundmark

Sample ID: **MW1 TK31** Matrix: **GRDWTR** Sample Date: **12/09/99** Lab No. **026310**

	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 8021								
Benzene	0.831	µg/l	0.15	0.5	1.0		12/22/99	LMP
Ethylbenzene	<0.5	µg/l	0.5	1.67	1.0		12/22/99	LMP
Methyl tert-butyl ether	<0.3	µg/l	0.3	0.999	1.0		12/22/99	LMP
Toluene	<0.4	µg/l	0.4	1.33	1.0		12/22/99	LMP
1,2,4-Trimethylbenzene	1.61	µg/l	0.4	1.33	1.0	DUP	12/22/99	LMP
1,3,5-Trimethylbenzene	<0.15	µg/l	0.15	0.5	1.0		12/22/99	LMP
m- & p-Xylene	<0.4	µg/l	0.4	1.33	1.0		12/22/99	LMP
o-Xylene & Styrene	<0.15	µg/l	0.15	0.5	1.0		12/22/99	LMP
EPA 8310								
Acenaphthene	<0.1	µg/l	0.1	0.333	1.0		12/20/99	GLS
Acenaphthylene	<0.1	µg/l	0.1	0.333	1.0		12/20/99	GLS
Anthracene	<0.09	µg/l	0.09	0.3	1.0		12/20/99	GLS
Benzo(a)Anthracene	<0.05	µg/l	0.05	0.167	1.0		12/20/99	GLS
Benzo(a)Pyrene	<0.04	µg/l	0.04	0.133	1.0	DUP	12/20/99	GLS
Benzo(b)Fluoranthene	<0.04	µg/l	0.04	0.133	1.0		12/20/99	GLS
Benzo(k)Fluoranthene	<0.06	µg/l	0.06	0.2	1.0		12/20/99	GLS
Benzo(ghi)Perylene	<0.06	µg/l	0.06	0.2	1.0	DUP	12/20/99	GLS
Chrysene	<0.05	µg/l	0.05	0.167	1.0		12/20/99	GLS
Dibenzo(a,h)Anthracene	<0.1	µg/l	0.1	0.333	1.0	DUP	12/20/99	GLS
Fluoranthene	<0.06	µg/l	0.06	0.2	1.0		12/20/99	GLS
Fluorene	<0.07	µg/l	0.07	0.233	1.0		12/20/99	GLS
Indeno(1,2,3-cd)Pyrene	<0.07	µg/l	0.07	0.233	1.0	DUP	12/20/99	GLS
1-Methyl Naphthalene	<0.09	µg/l	0.09	0.3	1.0		12/20/99	GLS
2-Methyl Naphthalene	<0.08	µg/l	0.08	0.266	1.0		12/20/99	GLS
Naphthalene	<0.08	µg/l	0.08	0.266	1.0		12/20/99	GLS
Phenanthrene	<0.08	µg/l	0.08	0.266	1.0		12/20/99	GLS
Pyrene	<0.11	µg/l	0.11	0.366	1.0		12/20/99	GLS
Liquid Organic Extraction	COMP		-	-	-		12/14/99	CKV
WI DNR								
Diesel Range Organics	3,900	µg/l	100.	333.	1.0	D2 D5	12/15/99	DJB
Water Org Ext - DRO	COMP		-	-	-		12/14/99	CKV

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

PROJECT NO.: 98E0899
SAMPLED BY : Client
DATE REC'D : 12/11/99
REPORT DATE: 12/28/99
PREPARED BY: JRS

Attn: Jeff King/ Liz Lundmark

Sample ID: **FIELD BLANK** Matrix: **GRDWTR** Sample Date: **12/09/99** Lab No. **026315**

	Result	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 8021								
Benzene	0.573	µg/l	0.15	0.5	1.0		12/22/99	LMP
Ethylbenzene	<0.5	µg/l	0.5	1.67	1.0		12/22/99	LMP
Methyl tert-butyl ether	<0.3	µg/l	0.3	0.999	1.0		12/22/99	LMP
Toluene	1.37	µg/l	0.4	1.33	1.0	J	12/22/99	LMP
1,2,4-Trimethylbenzene	0.625	µg/l	0.4	1.33	1.0	J	12/22/99	LMP
1,3,5-Trimethylbenzene	0.17	µg/l	0.15	0.5	1.0	J	12/22/99	LMP
m- & p-Xylene	1.37	µg/l	0.4	1.33	1.0	J	12/22/99	LMP
o-Xylene & Styrene	0.586	µg/l	0.15	0.5	1.0		12/22/99	LMP
WI DNR								
Gasoline Range Organics	<50.0	µg/l	50.0	167.	1.0		12/22/99	LMP

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

PROJECT NO.: 98E0899
SAMPLED BY : Client
DATE REC'D : 12/11/99
REPORT DATE: 12/28/99
PREPARED BY: JRS

Attn: Jeff King/ Liz Lundmark

Qualifier Descriptions

DUP	Result of duplicate analysis in this quality assurance batch exceeds the limits for precision.
D2	The chromatogram is not characteristic for diesel. It has the characteristics of a product which has significant peaks within the DRO window.
D5	The chromatogram contained significant peaks and a raised baseline outside the DRO window.
G8	The chromatogram is characteristic for aged gasoline, however either additional peaks are present or PVOC peaks are not propotrional to aged gasoline indicating the presence of additional compounds.
J	Estimated concentration below laboratory quantitation level.

REQUEST FOR SERVICES USFilter

ENVIROSCAN SERVICES 301 W. MILITARY RD. ROTHSCHILD, WI 54474 1-800-338-SCAN

REPORT TO:
Name: Jeff King
Company: Gannett Fleming
Address: 8025 Excelsior Dr.
Madison, WI 53717-1900
Phone: (608) 836-1500
P. O. #
Project # 98E0899 Quote #
Location Superior, WI

BILL TO: (if different from Report To info)
Name: Liz Lundmark
Company: MOUSA
Address: P.O. Box 2066
Superior, WI 54880
Phone: (715) 398-8204

Sample Type
(Check all that apply)
- ■ Groundwater
- ☐ Wastewater
- ☐ Soil/Solid
- ☐ Drinking Water
- ☐ Oil
- ☐ Vapor
- ☐ Other

Turnaround Time
- ■ Normal
- ☐ Rush (Pre-approved by Lab)

Date Needed
Approved By

ANALYTICAL REQUESTS
(use separate sheet if necessary)

LAB USE ONLY	DATE	TIME	No. of Containers COMP	No. of Containers GRAB	SAMPLE ID	GRO	PVOC	Dissolved Pb				REMARKS
21026310	12/9			4	MW-1/TK31		X	~~X~~*	~~X~~ X	X	X	*~~Except Pb for MW-1/TK31~~
21026311				3	MW-1/PP	X	X	X	~~X~~ X			
21026312				3	PZ-1/PP	X	X	X	~~X~~ X			
21026313				3	MW-2/PP	X	X	X	~~X~~ X			
21026314				3	MW-3/PP	X	X	X	~~X~~ X			
21026315				2	FIELD BLANK		X					

Del'v: Hand Comm
Ship. Cont. OK Y N N/A
Samples leaking? Y N N/A
Seals OK? Y N N/A
Rec'd on ice? Y N N/A °C

Comments: called to verify Apple data. Left message.

CHAIN OF CUSTODY RECORD

SAMPLERS: *(Signature)* Irving D. Mosley

RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
Irving D. Mosley	12/10/99 12:00	
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED FOR LABORATORY BY: *(Signature)* / DATE/TIME
		12-11-99 1120

USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 715-359-7226
FACSIMILE 715-355-3221

September 24, 1999

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

Attn: Jeff King/ Liz Lundmark

Re: 98E0899

Propane and Tank 31 groundwater samples

Please find enclosed the analytical results for the samples received September 10, 1999.

All analyses were completed in accordance with appropriate EPA methodologies. Methods and dates of analysis are included in the report tables.

The chain of custody document is also enclosed.

If you have any questions about the results, please call. Thank you for using US Filter/Enviroscan for your analytical needs.

Sincerely,

US Filter/Enviroscan

Gary L. Scharrer
Organic Laboratory Supervisor

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 98E0899
SAMPLED BY: Client
DATE REC'D: 09/10/99
REPORT DATE: 09/24/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	MW-1 TK31 09/08/99	Qualifiers	Date Analyzed	By
EPA 300.0						
Sol. Sulfate	mg/l	3.0	7.21		09/22/99	GAG
EPA 310.1						
Alkalinity as CaCO3	mg/l	20.0	486.		09/16/99	ELW
EPA 353.1						
NO3+NO2-N	mg/l	0.3	ND		09/21/99	LCK
EPA 6010						
Sol. Iron	mg/l	0.01	1.14		09/13/99	BMS
Sol. Manganese	mg/l	0.002	0.159		09/14/99	BMS
EPA 8021						
Benzene	µg/l	0.15	17.8		09/20/99	LMP
Ethylbenzene	µg/l	0.5	ND		09/20/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		09/20/99	LMP
Toluene	µg/l	0.4	ND		09/20/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.4	5.21		09/20/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.15	2.41		09/20/99	LMP
m- & p-Xylene	µg/l	0.4	0.859	J	09/20/99	LMP
o-Xylene & Styrene	µg/l	0.15	5.45		09/20/99	LMP
EPA 8310						
Acenaphthene	µg/l	0.1	ND		09/23/99	GLS
Acenaphthylene	µg/l	0.1	ND		09/23/99	GLS
Anthracene	µg/l	0.09	ND		09/23/99	GLS
Benzo(a)Anthracene	µg/l	0.05	ND		09/23/99	GLS
Benzo(a)Pyrene	µg/l	0.04	ND		09/23/99	GLS
Benzo(b)Fluoranthene	µg/l	0.04	ND		09/23/99	GLS
Benzo(k)Fluoranthene	µg/l	0.06	ND		09/23/99	GLS
Benzo(ghi)Perylene	µg/l	0.06	ND		09/23/99	GLS
Chrysene	µg/l	0.05	ND		09/23/99	GLS
Dibenzo(a,h)Anthracene	µg/l	0.1	ND		09/23/99	GLS
Fluoranthene	µg/l	0.06	ND		09/23/99	GLS
Fluorene	µg/l	0.07	ND		09/23/99	GLS
Indeno(1,2,3-cd)Pyrene	µg/l	0.07	ND		09/23/99	GLS
1-Methyl Naphthalene	µg/l	0.09	ND		09/23/99	GLS
2-Methyl Naphthalene	µg/l	0.08	ND		09/23/99	GLS
Naphthalene	µg/l	0.08	ND		09/23/99	GLS
Phenanthrene	µg/l	0.08	ND		09/23/99	GLS
Pyrene	µg/l	0.11	ND		09/23/99	GLS
Liquid Organic Extraction		-	COMP		09/15/99	CKV
WI DNR						
Diesel Range Organics	µg/l	100.0	5,980.	D2 D4	09/15/99	DJB
Water Org Ext - DRO		-	COMP		09/14/99	CKV
Analytical No.:			17271			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 98E0899
SAMPLED BY: Client
DATE REC'D: 09/10/99
REPORT DATE: 09/24/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	FIELD BLANK 09/08/99	Qualifiers	Date Analyzed	By
EPA 8021						
Benzene	µg/l	0.15	ND		09/20/99	LMP
Ethylbenzene	µg/l	0.5	ND		09/20/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		09/20/99	LMP
Toluene	µg/l	0.4	ND		09/20/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.4	ND		09/20/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.15	ND		09/20/99	LMP
m- & p-Xylene	µg/l	0.4	ND		09/20/99	LMP
o-Xylene & Styrene	µg/l	0.15	ND		09/20/99	LMP
Analytical No.:			17276			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 98E0899
SAMPLED BY: Client
DATE REC'D: 09/10/99
REPORT DATE: 09/24/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	TRIP BLANK-USF 09/08/99	Qualifiers	Date Analyzed	By
EPA 8021						
Benzene	µg/l	0.15	ND		09/18/99	LMP
Bromobenzene	µg/l	0.15	ND		09/18/99	LMP
Bromodichloromethane	µg/l	0.13	ND		09/18/99	LMP
n-Butylbenzene	µg/l	0.15	ND		09/18/99	LMP
sec-Butylbenzene	µg/l	0.15	ND		09/18/99	LMP
tert-Butylbenzene	µg/l	0.15	ND		09/18/99	LMP
Carbon Tetrachloride	µg/l	0.15	ND		09/18/99	LMP
Chlorobenzene	µg/l	0.15	ND		09/18/99	LMP
Chlorodibromomethane	µg/l	0.15	ND		09/18/99	LMP
Chloroethane	µg/l	0.15	ND	CSL	09/18/99	LMP
Chloroform	µg/l	0.14	ND		09/18/99	LMP
Chloromethane	µg/l	0.15	ND	CSL	09/18/99	LMP
o-Chlorotoluene	µg/l	0.15	ND		09/18/99	LMP
p-Chlorotoluene	µg/l	0.15	ND		09/18/99	LMP
Dibromochloropropane(DBCP)	µg/l	0.25	ND		09/18/99	LMP
1,2-Dibromoethane(EDB)	µg/l	0.12	ND		09/18/99	LMP
1,2-Dichlorobenzene	µg/l	0.15	ND		09/18/99	LMP
1,3-Dichlorobenzene	µg/l	0.15	ND		09/18/99	LMP
1,4-Dichlorobenzene	µg/l	0.15	ND		09/18/99	LMP
Dichlorodifluoromethane	µg/l	0.25	ND		09/18/99	LMP
1,1-Dichloroethane	µg/l	0.15	ND		09/18/99	LMP
1,2-Dichloroethane	µg/l	0.15	ND		09/18/99	LMP
1,1-Dichloroeth(yl)ene	µg/l	0.15	ND		09/18/99	LMP
cis-1,2-Dichloroeth(yl)ene	µg/l	0.15	ND		09/18/99	LMP
trans-1,2-Dichloroethylene	µg/l	0.15	ND		09/18/99	LMP
1,2-Dichloropropane	µg/l	0.15	ND		09/18/99	LMP
1,3-Dichloropropane	µg/l	0.2	ND	CSL	09/18/99	LMP
2,2-Dichloropropane	µg/l	0.15	ND	CSL	09/18/99	LMP
Ethylbenzene	µg/l	0.5	ND		09/18/99	LMP
Hexachlorobutadiene	µg/l	1.0	ND		09/18/99	LMP
Isopropylbenzene	µg/l	0.15	ND		09/18/99	LMP
Isopropyl Ether	µg/l	0.25	ND		09/18/99	LMP
p-Isopropyltoluene	µg/l	0.2	ND		09/18/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		09/18/99	LMP
Methylene Chloride	µg/l	0.39	ND	CSL	09/18/99	LMP
Naphthalene	µg/l	0.8	ND	CSH	09/18/99	LMP
n-Propylbenzene	µg/l	0.15	ND		09/18/99	LMP
Tetrachloroeth(yl)ene	µg/l	0.15	ND		09/18/99	LMP
1,1,2,2-Tetrachloroethane	µg/l	0.13	ND	CSL	09/18/99	LMP
Toluene	µg/l	0.4	ND		09/18/99	LMP
1,2,3-Trichlorobenzene	µg/l	0.5	ND		09/18/99	LMP
1,2,4-Trichlorobenzene	µg/l	0.5	ND	SPL	09/18/99	LMP
1,1,1-Trichloroethane	µg/l	0.15	ND		09/18/99	LMP
1,1,2-Trichloroethane	µg/l	0.14	ND	DUP	09/18/99	LMP
Trichloroeth(yl)ene	µg/l	0.4	ND	CSH	09/18/99	LMP

Analytical No.: 17277

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 98E0899
SAMPLED BY: Client
DATE REC'D: 09/10/99
REPORT DATE: 09/24/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	TRIP BLANK-USF 09/08/99	Qualifiers	Date Analyzed	By
EPA 8021						
Trichlorofluoromethane	µg/l	0.15	ND		09/18/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.4	ND		09/18/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.15	ND		09/18/99	LMP
Vinyl Chloride	µg/l	0.11	ND		09/18/99	LMP
m- & p-Xylene	µg/l	0.4	ND		09/18/99	LMP
o-Xylene & Styrene	µg/l	0.15	ND		09/18/99	LMP
WI DNR						
Gasoline Range Organics	µg/l	50.	ND		09/19/99	LMP
Analytical No.:			17277			

ND = Analyzed but not detected.

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 98E0899
SAMPLED BY: Client
DATE REC'D: 09/10/99
REPORT DATE: 09/24/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

Qualifier Descriptions

J	Estimated concentration below laboratory quantitation level.
D2	The chromatogram is not characteristic for diesel. It has the characteristics of a product which has significant peaks within the DRO window.
D4	The chromatogram contained significant peaks outside the DRO window.
G7	The chromatogram is characteristic for gasoline, however either additional peaks are present or PVOC peaks are not proportional to gasoline, indicating the presence of additional compounds.
CSL	Check standard for this analyte exhibited a low bias. Sample results may also be biased low.
SPL	Matrix spike recovery within analytical batch was low. Sample matrix appears similar to your sample; result may be biased low.
G8	The chromatogram is characteristic for aged gasoline, however either additional peaks are present or PVOC peaks are not propotrional to aged gasoline indicating the presence of additional compounds.
G3	The chromatogram in not characteristic for either gas or aged gas. It has a reportable concentration of peaks/area within the GRO window.

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 98E0899
SAMPLED BY: Client
DATE REC'D: 09/10/99
REPORT DATE: 09/24/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

Qualifier Descriptions

G6	The chromatogram contains a significant number of peaks and a raised baseline outside the GRO window.
CSH	Check standard for this analyte exhibited a high bias. Sample results may also be biased high.
SPH	Matrix spike recovery within analytical batch was high. Sample matrix appears similar to your sample; result may be biased high.
DUP	Result of duplicate analysis in this quality assurance batch exceeds the limits for precision.
G5	The chromatogram contains a significant number of peaks outside the GRO window.

REQUEST FOR SERVICES USFilter

ENVIROSCAN SERVICES 301 W. MILITARY RD. ROTHSCHILD, WI 54474 1-800-338-SCAN

REPORT TO:
Name: Jeff King
Company: Gannett-Fleming
Address: 8025 Excelsior Dr.
Madison, WI 53717-1900
Phone: (608) 836-1500
P. O. #
Project # 98E0599 Quote #
Location Superior, WI

BILL TO: (if different from Report To info)
Name: Liz Lundmark
Company: MDSA
Address: P.O. Box 2066
Superior, WI 54880
Phone: (715) 398-8204

Sample Type
(Check all that apply)
- [x] Groundwater
- [ ] Wastewater
- [ ] Soil/Solid
- [ ] Drinking Water
- [ ] Oil
- [ ] Vapor
- [ ] Other

Turnaround Time
- [x] Normal
- [ ] Rush (Pre-approved by Lab)

Date Needed
Approved By

ANALYTICAL REQUESTS
(use separate sheet if necessary)

LAB USE ONLY	DATE	TIME	No. of Containers COMP	No. of Containers GRAB	SAMPLE ID	GRO	PVOC	VOC	Dissolved Fe, Pb, Mn	Alkalinity, Sulfate	Nitrate + Nitrite	DRO	PAH	REMARKS
17017271	9/8/99	1:50		7	MW-1/TK31		X		X*	X	X	X	X	* except Pb for MW-1/TK31
17017272		2:45		5	MW-1/PP	X	X		X	X	X			
17017273		3:00		5	P2-1/PP	X	X		X	X	X			
17017274		3:10		5	MW-2/PP	X	X		X	X	X			
17017275		2:25		7	MW-3/PP	X		X	X	X	X			
17017276		2:00		2	FIELD BLANK		X							
17017277					Trip Blank									

Del'v: Hand Comm.
Ship. Cont. OK Y N N/A
Samples leaking? Y N N/A
Seals OK? Y N N/A
Rec'd on ice? Y N N/A °C

Comments:

CHAIN OF CUSTODY RECORD

SAMPLERS: *(Signature)* Jeffrey S. Moody

RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*	
Jeffrey S. Moody	9/9/99 4:45		
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*	
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED FOR LABORATORY BY: *(Signature)*	DATE/TIME
		[illegible]	9-10-99 11:30

USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 715-359-7226
FACSIMILE 715-355-3221

S1/S2 + Propane + TK31

June 24, 1999

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

Attn: Jeff King/ Liz Lundmark

Re: 34265.003

Please find enclosed the analytical results for the sample(s) received June 5, 1999.

The chain of custody document is enclosed.

If you have any questions about the results, please call. Thank you for using US Filter/Enviroscan for your analytical needs.

Sincerely,

US Filter/Enviroscan

Laurie Pietrowski

Laurie M. Pietrowski
Senior Analytical Chemist

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 06/05/99
REPORT DATE: 06/24/99
PREPARED BY: LMP
REVIEWED BY: MW

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	MW-1 T31 06/02/99	Qualifiers	Date Analyzed	By
EPA 239.2						
Sol. Lead (GFAAS)	µg/l	1.0	ND		06/11/99	JCH
EPA 310.1						
Alkalinity as CaCO3	mg/l	25.0	515.		06/15/99	LMW
EPA 353.1						
NO3+NO2-N	mg/l	0.3	ND		06/08/99	LMW
EPA 375.4						
Sol. Sulfate	mg/l	1.5	3.17		06/16/99	LMW
EPA 6010						
Sol. Iron	mg/l	0.013	0.238		06/08/99	BMS
Sol. Manganese	mg/l	0.003	0.380		06/08/99	BMS
EPA 8021						
Benzene	µg/l	0.2	13.3		06/13/99	LMP
Ethylbenzene	µg/l	0.5	2.98		06/13/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		06/13/99	LMP
Toluene	µg/l	0.5	ND		06/13/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.5	5.32		06/13/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.5	14.2		06/13/99	LMP
m- & p-Xylene	µg/l	0.5	2.43		06/13/99	LMP
o-Xylene & Styrene	µg/l	0.5	3.28		06/13/99	LMP
WI DNR						
Gasoline Range Organics	µg/l	5.0	284.	G3 G6	06/13/99	LMP
Analytical No.:			6687			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 06/05/99
REPORT DATE: 06/24/99
PREPARED BY: LMP
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

Qualifier Descriptions

CSL	Check standard for this analyte exhibited a low bias. Sample results may also be biased low. Non-detects verified with a low standard comparison.
G7	The chromatogram is characteristic for gasoline, however either additional peaks are present or PVOC peaks are not proportional to gasoline, indicating the presence of additional compounds.
CSH	Check standard for this analyte exhibited a high bias. Sample results may also be biased high.
S1H	Sample matrix spike recovery was high. Sample result may be biased high.
S2H	Sample matrix spike duplicate recovery was high. Sample result may be biased high.
J	Estimated concentration below laboratory quantitation level.
G8	The chromatogram is characteristic for aged gasoline, however either additional peaks are present or PVOC peaks are not propotrional to aged gasoline indicating the presence of additional compounds.
G3	The chromatogram in not characteristic for either gas or aged gas. It has a reportable concentration of peaks/area within the GRO window.
G6	The chromatogram contains a significant number of peaks and a raised baseline outside the GRO window.

REQUEST FOR SERVICES USFilter

ENVIROSCAN SERVICES 301 W. MILITARY RD. ROTHSCHILD, WI 54474 1-800-338-SCAN

REPORT TO:
Name: Jeff King
Company: Gannett Fleming
Address:

Phone: ( )
P. O. #
Project # 34265.003 Quote #
Location

BILL TO: (if different from Report To info)
Name: Liz Lundmark
Company: Murphy Oil USA, Inc
Address:

Phone: ( )

3 of 3

ANALYTICAL REQUESTS
(use separate sheet if necessary)

Sample Type
(Check all that apply)
- [x] Groundwater
- [ ] Wastewater
- [ ] Soil/Solid
- [ ] Drinking Water
- [ ] Oil
- [ ] Vapor
- [ ] Other

Turnaround Time
- [x] Normal
- [ ] Rush (Pre-approved by Lab)

Date Needed
Approved By

LAB USE ONLY	DATE	TIME	No. of Containers COMP	GRAB	SAMPLE ID	PVOC	GRO	VOC	Diss. Pb Fe Mn	NO2-NO3	Sulfate, Alk.	REMARKS
10006682	6/3/99	PM		5	MW-1/PP	✓	✓		✓	✓	✓	
10006683	↓	↓		5	MW-2/PP	✓	✓		✓	✓	✓	
10006684	↓	↓		2	MW-2D/PP	✓						
10006685	↓	↓		7	PZ-1/PP		✓	✓	✓	✓	✓	
10006686	↓	↓		2	FB/PP	✓						
10006687	6/2/99	AM		5	MW-1/T31	✓	✓		✓	✓	✓	

Del'v: Hand Comm
Ship. Cont. OK Y N N/A
Samples leaking? Y N N/A
Seals OK? Y N N/A
Rec'd on ice? Y N N/A __°C

Comments: Metal samples filtered 6/3/99 MW-1/T31 on 6/2/99

CHAIN OF CUSTODY RECORD

SAMPLERS: *(Signature)* Jeff King

RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
Jeff King	6/4/99 9:00	
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED FOR LABORATORY BY: *(Signature)*
		[signature] — DATE/TIME: 6/5/99 11:00 am

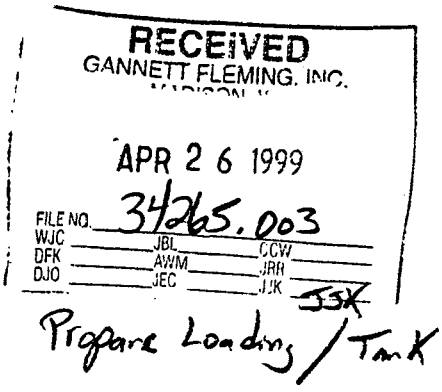
USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 715-359-7226
FACSIMILE 715-355-3221

April 21, 1999

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717



Prepare Loading / Tank 31

Attn: J King/ I Mossberger/ L

Re: 899-98E

Please find enclosed the analytical results for the samples received April 8, 1999.

All analyses were completed in accordance with appropriate EPA methodologies. Methods and dates of analysis are included in the report tables.

The chain of custody document is also enclosed.

If you have any questions about the results, please call. Thank you for using US Filter/Enviroscan for your analytical needs.

Sincerely,

US Filter/Enviroscan

Gary L. Scharrer
Organic Laboratory Supervisor

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY:

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	MW-1 TK31 04/06/99	Qualifiers	Date Analyzed	By
EPA 239.2						
Sol. Lead (GFAAS)	µg/l	1.0	ND		04/12/99	JCH
EPA 300.0						
Sol. Sulfate	mg/l	1.5	9.78		04/16/99	GAG
EPA 310.1						
Alkalinity as CaCO3	mg/l	20.0	429.		04/14/99	DAR
EPA 353.1						
NO3+NO2-N	mg/l	0.3	ND		04/13/99	LCK
EPA 6010						
Sol. Iron	mg/l	0.01	0.304		04/12/99	BMS
Sol. Manganese	mg/l	0.002	0.573		04/11/99	BMS
EPA 8021						
Benzene	µg/l	0.2	195.		04/14/99	LMP
Ethylbenzene	µg/l	0.5	24.1		04/14/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		04/14/99	LMP
Toluene	µg/l	0.5	ND		04/14/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.5	7.41		04/14/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.5	11.5		04/14/99	LMP
m- & p-Xylene	µg/l	0.5	27.2		04/14/99	LMP
o-Xylene & Styrene	µg/l	0.5	3.65		04/14/99	LMP
EPA 8310						
Acenaphthene	µg/l	0.33	ND		04/19/99	GLS
Acenaphthylene	µg/l	0.33	ND		04/19/99	GLS
Anthracene	µg/l	0.3	ND		04/19/99	GLS
Benzo(a)Anthracene	µg/l	0.17	ND		04/19/99	GLS
Benzo(a)Pyrene	µg/l	0.13	ND	CSL S1L	04/19/99	GLS
Benzo(b)Fluoranthene	µg/l	0.13	ND		04/19/99	GLS
Benzo(k)Fluoranthene	µg/l	0.2	ND		04/19/99	GLS
Benzo(ghi)Perylene	µg/l	0.2	ND		04/19/99	GLS
Chrysene	µg/l	0.17	ND		04/19/99	GLS
Dibenzo(a,h)Anthracene	µg/l	0.33	ND		04/19/99	GLS
Fluoranthene	µg/l	0.2	ND		04/19/99	GLS
Fluorene	µg/l	0.23	ND		04/19/99	GLS
Indeno(1,2,3-cd)Pyrene	µg/l	0.23	ND		04/19/99	GLS
1-Methyl Naphthalene	µg/l	0.3	ND		04/19/99	GLS
2-Methyl Naphthalene	µg/l	0.27	ND		04/19/99	GLS
Naphthalene	µg/l	0.27	ND		04/19/99	GLS
Phenanthrene	µg/l	0.27	ND		04/19/99	GLS
Pyrene	µg/l	0.37	ND		04/19/99	GLS
Liquid Organic Extraction		-	COMP		04/13/99	CKV
WI DNR						
Gasoline Range Organics	µg/l	50.0	498.	G3	04/14/99	LMP
Analytical No.:			568			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY:

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	FIELD BLANK 04/06/99	Qualifiers	Date Analyzed	By
EPA 8021						
Benzene	µg/l	0.2	ND		04/09/99	LMP
Bromobenzene	µg/l	0.5	ND		04/09/99	LMP
Bromodichloromethane	µg/l	0.2	0.699		04/09/99	LMP
n-Butylbenzene	µg/l	0.5	ND		04/09/99	LMP
sec-Butylbenzene	µg/l	0.5	ND	SPL	04/09/99	LMP
tert-Butylbenzene	µg/l	0.5	ND	SPL	04/09/99	LMP
Carbon Tetrachloride	µg/l	0.5	ND		04/09/99	LMP
Chlorobenzene	µg/l	0.5	ND		04/09/99	LMP
Chlorodibromomethane	µg/l	0.5	ND		04/09/99	LMP
Chloroethane	µg/l	0.5	ND		04/09/99	LMP
Chloroform	µg/l	0.2	4.61		04/09/99	LMP
Chloromethane	µg/l	0.2	ND	CSH	04/09/99	LMP
o-Chlorotoluene	µg/l	0.5	ND		04/09/99	LMP
p-Chlorotoluene	µg/l	0.5	ND		04/09/99	LMP
1,2-Dibromo-3-chloropropane	µg/l	0.3	ND		04/09/99	LMP
1,2-Dibromoethane	µg/l	0.2	ND		04/09/99	LMP
1,2-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,3-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,4-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
Dichlorodifluoromethane	µg/l	0.5	ND		04/09/99	LMP
1,1-Dichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,2-Dichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,1-Dichloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
cis-1,2-Dichloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
trans-1,2-Dichloroethylene	µg/l	0.5	ND		04/09/99	LMP
1,2-Dichloropropane	µg/l	0.5	ND		04/09/99	LMP
1,3-Dichloropropane	µg/l	0.5	ND		04/09/99	LMP
2,2-Dichloropropane	µg/l	0.5	ND	CSL	04/09/99	LMP
Ethylbenzene	µg/l	0.5	ND		04/09/99	LMP
Hexachlorobutadiene	µg/l	0.5	ND	SPL	04/09/99	LMP
Isopropylbenzene	µg/l	0.5	ND		04/09/99	LMP
Isopropyl Ether	µg/l	0.5	ND		04/09/99	LMP
p-Isopropyltoluene	µg/l	0.5	ND	SPH	04/09/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		04/09/99	LMP
Methylene Chloride	µg/l	0.5	ND		04/09/99	LMP
Naphthalene	µg/l	1.0	ND		04/09/99	LMP
n-Propylbenzene	µg/l	0.5	ND		04/09/99	LMP
Tetrachloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
1,1,2,2-Tetrachloroethane	µg/l	0.2	ND	CSL	04/09/99	LMP
Toluene	µg/l	0.5	2.09		04/09/99	LMP
1,2,3-Trichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,2,4-Trichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,1,1-Trichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,1,2-Trichloroethane	µg/l	0.2	ND		04/09/99	LMP
Trichloroeth(yl)ene	µg/l	0.4	ND	CSH	04/09/99	LMP
Analytical No.:			571			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY:

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	FIELD BLANK 04/06/99	Qualifiers	Date Analyzed	By
EPA 8021						
Trichlorofluoromethane	µg/l	0.5	ND		04/09/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.5	ND		04/09/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.5	ND		04/09/99	LMP
Vinyl Chloride	µg/l	0.15	ND		04/09/99	LMP
m- & p-Xylene	µg/l	0.5	ND		04/09/99	LMP
o-Xylene & Styrene	µg/l	0.5	ND		04/09/99	LMP
WI DNR						
Gasoline Range Organics	µg/l	50.	ND		04/09/99	LMP
Analytical No.:			571			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY:

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	TRIP BLANK-USF 04/06/99	Qualifiers	Date Analyzed	By
EPA 8021						
Benzene	µg/l	0.2	ND		04/09/99	LMP
Bromobenzene	µg/l	0.5	ND		04/09/99	LMP
Bromodichloromethane	µg/l	0.2	ND		04/09/99	LMP
n-Butylbenzene	µg/l	0.5	ND		04/09/99	LMP
sec-Butylbenzene	µg/l	0.5	ND	SPL	04/09/99	LMP
tert-Butylbenzene	µg/l	0.5	ND	SPL	04/09/99	LMP
Carbon Tetrachloride	µg/l	0.5	ND		04/09/99	LMP
Chlorobenzene	µg/l	0.5	ND		04/09/99	LMP
Chlorodibromomethane	µg/l	0.5	ND		04/09/99	LMP
Chloroethane	µg/l	0.5	ND		04/09/99	LMP
Chloroform	µg/l	0.2	ND		04/09/99	LMP
Chloromethane	µg/l	0.2	ND	CSH	04/09/99	LMP
o-Chlorotoluene	µg/l	0.5	ND		04/09/99	LMP
p-Chlorotoluene	µg/l	0.5	ND		04/09/99	LMP
1,2-Dibromo-3-chloropropane	µg/l	0.3	ND		04/09/99	LMP
1,2-Dibromoethane	µg/l	0.2	ND		04/09/99	LMP
1,2-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,3-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,4-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
Dichlorodifluoromethane	µg/l	0.5	ND		04/09/99	LMP
1,1-Dichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,2-Dichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,1-Dichloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
cis-1,2-Dichloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
trans-1,2-Dichloroethylene	µg/l	0.5	ND		04/09/99	LMP
1,2-Dichloropropane	µg/l	0.5	ND		04/09/99	LMP
1,3-Dichloropropane	µg/l	0.5	ND		04/09/99	LMP
2,2-Dichloropropane	µg/l	0.5	ND	CSL	04/09/99	LMP
Ethylbenzene	µg/l	0.5	ND		04/09/99	LMP
Hexachlorobutadiene	µg/l	0.5	ND	SPL	04/09/99	LMP
Isopropylbenzene	µg/l	0.5	ND		04/09/99	LMP
Isopropyl Ether	µg/l	0.5	ND		04/09/99	LMP
p-Isopropyltoluene	µg/l	0.5	ND	SPH	04/09/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		04/09/99	LMP
Methylene Chloride	µg/l	0.5	ND		04/09/99	LMP
Naphthalene	µg/l	1.0	ND		04/09/99	LMP
n-Propylbenzene	µg/l	0.5	ND		04/09/99	LMP
Tetrachloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
1,1,2,2-Tetrachloroethane	µg/l	0.2	ND	CSL	04/09/99	LMP
Toluene	µg/l	0.5	ND		04/09/99	LMP
1,2,3-Trichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,2,4-Trichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,1,1-Trichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,1,2-Trichloroethane	µg/l	0.2	ND		04/09/99	LMP
Trichloroeth(yl)ene	µg/l	0.4	ND	CSH	04/09/99	LMP
Analytical No.:			572			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY:

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	TRIP BLANK-USF 04/06/99	Qualifiers	Date Analyzed	By
EPA 8021						
Trichlorofluoromethane	µg/l	0.5	ND		04/09/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.5	ND		04/09/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.5	ND		04/09/99	LMP
Vinyl Chloride	µg/l	0.15	ND		04/09/99	LMP
m- & p-Xylene	µg/l	0.5	ND		04/09/99	LMP
o-Xylene & Styrene	µg/l	0.5	ND		04/09/99	LMP
Analytical No.:			572			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY:

Attn: J King/ I Mossberger/ L

Qualifier Descriptions

CSL	Check standard for this analyte exhibited a low bias. Sample results may also be biased low. Non-detects verified with a low standard comparison.
S1L	Sample matrix spike recovery was low. Sample result may be biased low.
G3	The chromatogram in not characteristic for either gas or aged gas. It has a reportable concentration of peaks/area within the GRO window.
G1	The chromatogram is characteristic for gasoline.
SPL	Matrix spike recovery within analytical batch was low. Sample matrix appears similar to your sample; result may be biased low.
CSH	Check standard for this analyte exhibited a high bias. Sample results may also be biased high.
SPH	Matrix spike recovery within analytical batch was high. Sample matrix appears similar to your sample; result may be biased high.

REQUEST FOR SERVICES USFilter

ENVIROSCAN SERVICES 301 W. MILITARY RD. ROTHSCHILD, WI 54474 1-800-338-SCAN

REPORT TO:
Name: Irvin Mossberger
Company: Twin Ports Testing (c/o Gannett Fleming)
Address: 1301 N. 3rd St.
Superior, WI 54880
Phone: (715) 392-7114
P. O. #
Project # 899-98E Quote # 6440-4
Location Superior, WI - PECFA

BILL TO: (if different from Report To info)
Name: Liz Lundmark
Company: Murphy Oil
Address: 2400 Stinson Ave, P.O. Box 2066
Superior, WI 54880
Phone: (715) 398-8204

* please fax preliminary wsh result to:
Jeff King
Gannett Fleming
Fax #: (608) 831-3337
by/on 4/13/99

Sample Type (Check all that apply)
- [x] Groundwater
- [ ] Wastewater
- [ ] Soil/Solid
- [ ] Drinking Water
- [ ] Oil
- [ ] Vapor
- [ ] Other

Turnaround Time
- [x] Normal
- [x] Rush (Pre-approved by Lab)

Date Needed 4/13/99
Approved By 4-22-99 21078 3

MW-2 PP organics only
"D"

* Use Gannett-Fleming PECFA bid prices

ANALYTICAL REQUESTS
(use separate sheet if necessary)

LAB USE ONLY	DATE	TIME	No. of Containers COMP	No. of Containers GRAB	SAMPLE ID	GRO	PVOC	VOC	Dissolved Pb, Fe, Mn (field-filtered)	Total Alkalinity, Sulfate	Nitrate-Nitrite	PAH	REMARKS
90000568	4/6/99	11:50		6	MW-1/TRIP	X	X		X	X	X	X	
90000569	4/6/99	12:30		5	MW-1/PP	X	X		X	X	X		
90000570	4/6/99	12:45		7	MW-2/PP	(X)		(X)	X	X	X		
90000571	4/6/99	10:10		4	Field Blank	X		X					
90000572				1	Trip Blank			✓					
	Gantle	Matrix											

Del'v: Hand (Courier)
Ship. Cont. OK (Y) N N/A
Samples leaking? Y (N) N/A
Seals OK? (Y) N N/A
Rec'd on Ice? (Y) N N/A °C

Comments: Rush MW-2PP

CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature) Irvin D. Mossberger

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Irvin D. Mossberger	4/7/99 9:00	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED FOR LABORATORY BY: (Signature) DATE/TIME

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

ANALYTICAL REPORT

Customer #: LE8000012374
Work Order: 9812000714
Report Date: 01/18/99
Date Received: 12/18/98
Arrival Temperature: On Ice

GANNETT FLEMING
JEFF KING
8025 EXCELSIOR DRIVE
MADISON, WI 53717

Report Submitted By: PAB
Record Reviewer

Note: None

Project Name: **MURPHY TANK 31** Project Number: **34265.003**

Sample I.D. #: 224706 **Sample Description:** MW-1/ TK 31 **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Iron, Dissolved	0.627	mg/L		0.020	0.067		12/22/98	NAH	EPA 6010B
Lead, Dissolved	<1	µg/L		1	5		12/22/98	NAH	EPA 6010B
Manganese, Dissolved	326	µg/L		0.3	1.0		12/22/98	NAH	EPA 6010B
Alkalinity	436	mg/L		20	60		12/23/98	KJF	EPA 310.1
Nitrate + Nitrite Nitrogen	<0.14	mg/L		0.14	0.43		12/23/98	KJF	EPA 353.2
Sulfate-Filtered (Dissolved)	16.9	mg/L		1	4		12/22/98	KJF	EPA 9036
Gasoline Range Organics	33	µg/L	J	30	81		12/27/98	KMC	WDNR GRO
1,1,1-Trichloroethane	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
1,1,2,2-Tetrachloroethane	<0.20	µg/L		0.2	0.6		12/21/98	RLD	WDNR 8021A
1,1,2-Trichloroethane	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
1,1-Dichloroethane	<0.20	µg/L		0.2	0.8		12/21/98	RLD	WDNR 8021A
1,1-Dichloroethene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
1,2,3-Trichlorobenzene	<0.40	µg/L		0.4	1.3		12/21/98	RLD	WDNR 8021A
1,2,4-Trichlorobenzene	<0.30	µg/L		0.3	1.2		12/21/98	RLD	WDNR 8021A
1,2,4-Trimethylbenzene	<0.60	µg/L		0.6	1.8		12/21/98	RLD	WDNR 8021A
1,2-Dibromo-3-chloropropane	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
1,2-Dibromoethane (EDB)	<0.40	µg/L		0.4	1.2		12/21/98	RLD	WDNR 8021A
1,2-Dichlorobenzene	<0.30	µg/L		0.3	1.1		12/21/98	RLD	WDNR 8021A
1,2-Dichloroethane	<0.20	µg/L		0.2	0.5		12/21/98	RLD	WDNR 8021A
1,2-Dichloropropane	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
1,3,5-Trimethylbenzene	1.5	µg/L		0.3	0.9		12/21/98	RLD	WDNR 8021A
1,3-Dichlorobenzene	<0.40	µg/L		0.4	1.3		12/21/98	RLD	WDNR 8021A
1,3-Dichloropropane	<0.60	µg/L		0.6	2.0		12/21/98	RLD	WDNR 8021A
1,4-Dichlorobenzene	<0.30	µg/L		0.3	1.1		12/21/98	RLD	WDNR 8021A
2,2-Dichloropropane	<0.50	µg/L		0.5	1.7		12/21/98	RLD	WDNR 8021A
2-Chlorotoluene	<0.30	µg/L		0.3	0.9		12/21/98	RLD	WDNR 8021A
4-Chlorotoluene	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
Benzene	0.40	µg/L	J	0.3	1.1		12/21/98	RLD	WDNR 8021A
Bromobenzene	<0.20	µg/L		0.2	0.6		12/21/98	RLD	WDNR 8021A
Bromodichloromethane	<0.20	µg/L		0.2	0.8		12/21/98	RLD	WDNR 8021A
Carbon tetrachloride	<0.40	µg/L		0.4	1.3		12/21/98	RLD	WDNR 8021A
Chlorobenzene	<0.30	µg/L		0.3	0.9		12/21/98	RLD	WDNR 8021A
Chlorodibromomethane	<0.30	µg/L		0.3	0.9		12/21/98	RLD	WDNR 8021A
Chloroethane	<0.80	µg/L		0.8	2.5		12/21/98	RLD	WDNR 8021A
Chloroform	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
Chloromethane	<0.90	µg/L		0.9	2.9		12/21/98	RLD	WDNR 8021A
cis-1,2-Dichloroethene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
Dichlorodifluoromethane	<1.2	µg/L		1.2	4.0		12/21/98	RLD	WDNR 8021A
Diisopropyl ether	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
Ethylbenzene	<0.20	µg/L		0.2	0.6		12/21/98	RLD	WDNR 8021A
Hexachlorobutadiene	<0.60	µg/L		0.6	1.9		12/21/98	RLD	WDNR 8021A
Isopropylbenzene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
m&p-Xylene	<0.30	µg/L		0.3	0.8		12/21/98	RLD	WDNR 8021A
Methyl-tert-butyl ether	<0.20	µg/L		0.2	0.8		12/21/98	RLD	WDNR 8021A
Methylene chloride	<0.50	µg/L		0.5	1.5		12/21/98	RLD	WDNR 8021A
n-Butylbenzene	0.30	µg/L	J	0.3	1.0		12/21/98	RLD	WDNR 8021A

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

ANALYTICAL REPORT

Customer #: LE8000012374
Work Order: 9812000714
Report Date: 01/18/99
Date Received: 12/18/98
Arrival Temperature: On Ice

GANNETT FLEMING
JEFF KING
8025 EXCELSIOR DRIVE
MADISON, WI 53717

Report Submitted By: PAB
Record Reviewer

Note: None

Project Name: **MURPHY TANK 31** Project Number: **34265.003**

Sample I.D. #: 224706 **Sample Description:** MW-1/ TK 31 **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
n-Propylbenzene	<0.20	µg/L		0.2	0.5		12/21/98	RLD	WDNR 8021A
Naphthalene	<1.1	µg/L		1.1	3.6		12/21/98	RLD	WDNR 8021A
o-Xylene	<0.50	µg/L		0.5	1.7		12/21/98	RLD	WDNR 8021A
p-Isopropyltoluene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
sec-Butylbenzene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
tert-Butylbenzene	<0.30	µg/L		0.3	0.7		12/21/98	RLD	WDNR 8021A
Tetrachloroethene	<0.60	µg/L		0.6	2.0		12/21/98	RLD	WDNR 8021A
Toluene	<0.20	µg/L		0.2	0.6		12/21/98	RLD	WDNR 8021A
trans-1,2-Dichloroethene	<0.30	µg/L		0.3	1.1		12/21/98	RLD	WDNR 8021A
Trichloroethene	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
Trichlorofluoromethane	<0.60	µg/L		0.6	2.0		12/21/98	RLD	WDNR 8021A
Vinyl chloride	<0.50	µg/L		0.5	1.6		12/21/98	RLD	WDNR 8021A

Sample I.D. #: 224707 **Sample Description:** MW-1/ PP **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Iron, Dissolved	0.479	mg/L		0.020	0.067		12/22/98	NAH	EPA 6010B
Lead, Dissolved	18	µg/L		1	5		12/22/98	NAH	EPA 6010B
Manganese, Dissolved	1200	µg/L		0.3	1.0		12/22/98	NAH	EPA 6010B
Alkalinity	560	mg/L		20	60		12/23/98	KJF	EPA 310.1
Nitrate + Nitrite Nitrogen	<0.14	mg/L		0.14	0.43		12/23/98	KJF	EPA 353.2
Sulfate-Filtered (Dissolved)	20.0	mg/L		1	4		12/22/98	KJF	EPA 9036
Gasoline Range Organics	37000	µg/L	K	30	81		12/27/98	KMC	WDNR GRO
1,1,1-Trichloroethane	<3.0	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
1,1,2,2-Tetrachloroethane	<2.0	µg/L		0.2	0.6		12/22/98	RLD	WDNR 8021A
1,1,2-Trichloroethane	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
1,1-Dichloroethane	<2.0	µg/L		0.2	0.8		12/22/98	RLD	WDNR 8021A
1,1-Dichloroethene	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
1,2,3-Trichlorobenzene	<4.0	µg/L		0.4	1.3		12/22/98	RLD	WDNR 8021A
1,2,4-Trichlorobenzene	<3.0	µg/L		0.3	1.2		12/22/98	RLD	WDNR 8021A
1,2,4-Trimethylbenzene	1600	µg/L	D	0.6	1.8		12/22/98	RLD	WDNR 8021A
1,2-Dibromo-3-chloropropane	<3.0	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
1,2-Dibromoethane (EDB)	<4.0	µg/L		0.4	1.2		12/22/98	RLD	WDNR 8021A
1,2-Dichlorobenzene	<3.0	µg/L		0.3	1.1		12/22/98	RLD	WDNR 8021A
1,2-Dichloroethane	210	µg/L		0.2	0.5		12/22/98	RLD	WDNR 8021A
1,2-Dichloropropane	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
1,3,5-Trimethylbenzene	1600	µg/L	D	0.3	0.9		12/22/98	RLD	WDNR 8021A
1,3-Dichlorobenzene	<4.0	µg/L		0.4	1.3		12/22/98	RLD	WDNR 8021A
1,3-Dichloropropane	<6.0	µg/L		0.6	2.0		12/22/98	RLD	WDNR 8021A
1,4-Dichlorobenzene	<3.0	µg/L		0.3	1.1		12/22/98	RLD	WDNR 8021A
2,2-Dichloropropane	<5.0	µg/L		0.5	1.7		12/22/98	RLD	WDNR 8021A
2-Chlorotoluene	<3.0	µg/L		0.3	0.9		12/22/98	RLD	WDNR 8021A
4-Chlorotoluene	<3.0	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

ANALYTICAL REPORT

Customer #: LE8000012374
Work Order: 9812000714
Report Date: 01/18/99
Date Received: 12/18/98
Arrival Temperature: On Ice

GANNETT FLEMING
JEFF KING
8025 EXCELSIOR DRIVE
MADISON, WI 53717

Report Submitted By: PAB
Record Reviewer

Note: None

Project Name: **MURPHY TANK 31** Project Number: **34265.003**

Sample I.D. #: 224707 **Sample Description:** MW-1/ PP **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Benzene	12000	µg/L	VD	0.3	1.1		12/22/98	RLD	WDNR 8021A
Bromobenzene	<2.0	µg/L		0.2	0.6		12/22/98	RLD	WDNR 8021A
Bromodichloromethane	<2.0	µg/L		0.2	0.8		12/22/98	RLD	WDNR 8021A
Carbon tetrachloride	<4.0	µg/L		0.4	1.3		12/22/98	RLD	WDNR 8021A
Chlorobenzene	<3.0	µg/L		0.3	0.9		12/22/98	RLD	WDNR 8021A
Chlorodibromomethane	<3.0	µg/L		0.3	0.9		12/22/98	RLD	WDNR 8021A
Chloroethane	<8.0	µg/L		0.8	2.5		12/22/98	RLD	WDNR 8021A
Chloroform	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
Chloromethane	<9.0	µg/L		0.9	2.9		12/22/98	RLD	WDNR 8021A
cis-1,2-Dichloroethene	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
Dichlorodifluoromethane	<12	µg/L		1.2	4.0		12/22/98	RLD	WDNR 8021A
Diisopropyl ether	68	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
Ethylbenzene	700	µg/L	D	0.2	0.6		12/22/98	RLD	WDNR 8021A
Hexachlorobutadiene	<6.0	µg/L		0.6	1.9		12/22/98	RLD	WDNR 8021A
Isopropylbenzene	42	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
m&p-Xylene	5500	µg/L	D	0.3	0.8		12/22/98	RLD	WDNR 8021A
Methyl-tert-butyl ether	<2.0	µg/L		0.2	0.8		12/22/98	RLD	WDNR 8021A
Methylene chloride	<5.0	µg/L		0.5	1.5		12/22/98	RLD	WDNR 8021A
n-Butylbenzene	270	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
n-Propylbenzene	56	µg/L		0.2	0.5		12/22/98	RLD	WDNR 8021A
Naphthalene	100	µg/L	Z	1.1	3.6		12/22/98	RLD	WDNR 8021A
o-Xylene	8000	µg/L	D	0.5	1.7		12/22/98	RLD	WDNR 8021A
p-Isopropyltoluene	3.0	µg/L	J	0.2	0.7		12/22/98	RLD	WDNR 8021A
sec-Butylbenzene	12	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
tert-Butylbenzene	<3.0	µg/L		0.3	0.7		12/22/98	RLD	WDNR 8021A
Tetrachloroethene	<6.0	µg/L		0.6	2.0		12/22/98	RLD	WDNR 8021A
Toluene	22000	µg/L	DE	0.2	0.6		12/22/98	RLD	WDNR 8021A
trans-1,2-Dichloroethene	<3.0	µg/L		0.3	1.1		12/22/98	RLD	WDNR 8021A
Trichloroethene	<3.0	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
Trichlorofluoromethane	<6.0	µg/L		0.6	2.0		12/22/98	RLD	WDNR 8021A
Vinyl chloride	<5.0	µg/L		0.5	1.6		12/22/98	RLD	WDNR 8021A

Sample I.D. #: 224708 **Sample Description:** FIELD BLANK **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
1,1,1-Trichloroethane	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
1,1,2,2-Tetrachloroethane	<0.20	µg/L		0.2	0.6		12/23/98	RLD	WDNR 8021A
1,1,2-Trichloroethane	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
1,1-Dichloroethane	<0.20	µg/L		0.2	0.8		12/23/98	RLD	WDNR 8021A
1,1-Dichloroethene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
1,2,3-Trichlorobenzene	<0.40	µg/L		0.4	1.3		12/23/98	RLD	WDNR 8021A
1,2,4-Trichlorobenzene	<0.30	µg/L		0.3	1.2		12/23/98	RLD	WDNR 8021A
1,2,4-Trimethylbenzene	<0.60	µg/L		0.6	1.8		12/23/98	RLD	WDNR 8021A

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

ANALYTICAL REPORT

Customer #: LE8000012374
Work Order: 9812000714
Report Date: 01/18/99
Date Received: 12/18/98
Arrival Temperature: On Ice

GANNETT FLEMING
JEFF KING
8025 EXCELSIOR DRIVE
MADISON, WI 53717

Report Submitted By: _____
Record Reviewer

Note: None

Project Name: **MURPHY TANK 31** Project Number: **34265.003**

Sample I.D. #: 224708 **Sample Description:** FIELD BLANK **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
1,2-Dibromo-3-chloropropane	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
1,2-Dibromoethane (EDB)	<0.40	µg/L		0.4	1.2		12/23/98	RLD	WDNR 8021A
1,2-Dichlorobenzene	<0.30	µg/L		0.3	1.1		12/23/98	RLD	WDNR 8021A
1,2-Dichloroethane	<0.20	µg/L		0.2	0.5		12/23/98	RLD	WDNR 8021A
1,2-Dichloropropane	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
1,3,5-Trimethylbenzene	<0.30	µg/L		0.3	0.9		12/23/98	RLD	WDNR 8021A
1,3-Dichlorobenzene	<0.40	µg/L		0.4	1.3		12/23/98	RLD	WDNR 8021A
1,3-Dichloropropane	<0.60	µg/L		0.6	2.0		12/23/98	RLD	WDNR 8021A
1,4-Dichlorobenzene	<0.30	µg/L		0.3	1.1		12/23/98	RLD	WDNR 8021A
2,2-Dichloropropane	<0.50	µg/L		0.5	1.7		12/23/98	RLD	WDNR 8021A
2-Chlorotoluene	<0.30	µg/L		0.3	0.9		12/23/98	RLD	WDNR 8021A
4-Chlorotoluene	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
Benzene	<0.30	µg/L		0.3	1.1		12/23/98	RLD	WDNR 8021A
Bromobenzene	<0.20	µg/L		0.2	0.6		12/23/98	RLD	WDNR 8021A
Bromodichloromethane	<0.20	µg/L		0.2	0.8		12/23/98	RLD	WDNR 8021A
Carbon tetrachloride	<0.40	µg/L		0.4	1.3		12/23/98	RLD	WDNR 8021A
Chlorobenzene	<0.30	µg/L		0.3	0.9		12/23/98	RLD	WDNR 8021A
Chlorodibromomethane	<0.30	µg/L		0.3	0.9		12/23/98	RLD	WDNR 8021A
Chloroethane	<0.80	µg/L		0.8	2.5		12/23/98	RLD	WDNR 8021A
Chloroform	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
Chloromethane	<0.90	µg/L		0.9	2.9		12/23/98	RLD	WDNR 8021A
cis-1,2-Dichloroethene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
Dichlorodifluoromethane	<1.2	µg/L		1.2	4.0		12/23/98	RLD	WDNR 8021A
Diisopropyl ether	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
Ethylbenzene	<0.20	µg/L		0.2	0.6		12/23/98	RLD	WDNR 8021A
Hexachlorobutadiene	<0.60	µg/L		0.6	1.9		12/23/98	RLD	WDNR 8021A
Isopropylbenzene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
m&p-Xylene	<0.30	µg/L		0.3	0.8		12/23/98	RLD	WDNR 8021A
Methyl-tert-butyl ether	<0.20	µg/L		0.2	0.8		12/23/98	RLD	WDNR 8021A
Methylene chloride	<0.50	µg/L		0.5	1.5		12/23/98	RLD	WDNR 8021A
n-Butylbenzene	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
n-Propylbenzene	<0.20	µg/L		0.2	0.5		12/23/98	RLD	WDNR 8021A
Naphthalene	<1.1	µg/L		1.1	3.6		12/23/98	RLD	WDNR 8021A
o-Xylene	<0.50	µg/L		0.5	1.7		12/23/98	RLD	WDNR 8021A
p-Isopropyltoluene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
sec-Butylbenzene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
tert-Butylbenzene	<0.30	µg/L		0.3	0.7		12/23/98	RLD	WDNR 8021A
Tetrachloroethene	<0.60	µg/L		0.6	2.0		12/23/98	RLD	WDNR 8021A
Toluene	<0.20	µg/L		0.2	0.6		12/23/98	RLD	WDNR 8021A
trans-1,2-Dichloroethene	<0.30	µg/L		0.3	1.1		12/23/98	RLD	WDNR 8021A
Trichloroethene	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
Trichlorofluoromethane	<0.60	µg/L		0.6	2.0		12/23/98	RLD	WDNR 8021A
Vinyl chloride	<0.50	µg/L		0.5	1.6		12/23/98	RLD	WDNR 8021A

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

Data Qualifiers

A	Sample analyzed with a dilution. Surrogates were diluted outside the calibration range. Applies to all analytes for this method.
B	Analyte detected in associated Method Blank.
C	Sample result confirmed by alternate analysis.
D	Results reported from higher dilution.
E	Analyte concentration exceeded calibration range.
F	Unable to analyze due to sample matrix interference. Applies to all analytes for this method.
G	Insufficient sample for analysis. Applies to all analytes for this method.
H	Sample was received past the established holding time. Applies to all analytes for this method.
I	Sample was analyzed past the established holding time. Applies to all analytes for this method.
J	Reported concentration below the Quantitation Limit.
K	Sample contained lighter hydrocarbon fractions.
L	Sample contained heavier hydrocarbon fractions.
M	Matrix Spike and/or Matrix Spike Duplicate outside acceptance limits.
O	Hydrocarbons atypical of gasoline.
P	Hydrocarbons atypical of diesel #2 fuel.
Q	Laboratory Control Sample outside acceptance limits.
S	Surrogate outside acceptance limits. Applies to all analytes for this method.
T	Sample received exceeding proper preservation criteria. Applies to all analytes for this method.
V	Raised Quantitation Limit due to dilution for background interference. Applies to all analytes for this method.
W	Raised Quantitation Limit due to limited sample volume. Applies to all analytes for this method.
Y	Replicate outside acceptance limits.
Z	Calibration criteria exceeded.
1	Safe, No Total Coliform detected.
2	Unsafe, Total Coliform detected, no E. coli detected.
3	Unsafe, Total Coliform detected, E. coli detected.
4	Sample weight was below program minimum. Applies to all analytes for this method.
5	Insufficient oxygen depletion.
6	Complete oxygen depletion.
7	Sliding BOD, toxicity present in sample.

CTI Wisconsin Division Laboratory Certification #'s:
IA DNR: 146
KY Dept. of Environmental Protection: 90110
WI DNR: 157066030
DATCP: 289

H:\MSWORD\DATQUAL.DOC

Commonwealth Technology, Inc.

Nº 5950

Is this a PECFA project? (Please indicate "Yes" or "No") No

AMPLE COLLECTOR: Irvin Mossberger | COMPANY: Eder Assoc. / TPT | TELEPHONE # (include area code): (715)

ROJECT NUMBER: 34265,003 / 399-98E | PROJECT NAME: Tank 31

HEREBY CERTIFY THAT I RECEIVED, PROPERLY HANDLED, AND DISPOSED OF THESE SAMPLES AS NOTED BELOW:

VOICE ADDRESS (must be completed): Murphy Oil 2407 Stinson Ave, Superior, WI 54880

REPORT ADDRESS (must be completed): Jeff King, Eder Assoc, 8025 Excelsior Dr Ma

ATE & TIME OF RELINQUISHMENT:	RELINQUISHED BY (signature):	RECEIVED BY (signature):
12/17/98 4:10pm	Irvin Mossberger	
ATE & TIME OF RELINQUISHMENT:	RELINQUISHED BY (signature):	RECEIVED BY LABORATORY (signature): [signature]

FIELD ID NUMBER	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE	SAMPLE DEVICE	PRESERV. TYPE	LOCATION / DESCRIPTION	TYPE OF ANALYSES REQUIRED (please ci			CHECKED		ARRIVAL
MW-1/ TK 31	12/17/98	12:40	H_2O				DRO (GRO) GRO/PVOC PVOC (Pb) Cd % SOLIDS FL (VOC-LUST) VOC-8021 SIEVE #200 SIEVE PAINT FILTER Other (please list): Fe, Mn, Alkalinity, Sulfate, Nitrate					
MW-1/ DP	12/17/98	12:55	H_2O				DRO (GRO) GRO/PVOC PVOC (Pb) Cd % SOLIDS FLA (VOC-LUST) VOC-8021 SIEVE #200 SIEVE PAINT FILTER Other (please list): Fe, Mn, Alkalinity, Sulfate, Nitrate					
Field Blank	12/17/98	10:30	H_2O				DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASH (VOC-LUST) VOC-8021 SIEVE #200 SIEVE PAINT FILTER Other (please list):					224708
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):					
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):					
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):					
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):					
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):					

DITIONS / COMMENTS:

CHECKED ARRIVAL

eder associates
a division of Gannett Fleming

GANNETT FLEMING, INC.
8025 Excelsior Drive
Madison, WI 53717-1900
Office: (608) 836-1500
Fax: (608) 831-3337

April 23, 1999
File #34265.003

Mr. James A. Hosch
Wisconsin Department of Natural Resources
1705 Tower Avenue
Superior, WI 54880

Re: Site Status Report, Tank 31, Murphy Oil USA, Inc., Superior, Wisconsin

Dear Mr. Hosch:

On behalf of Murphy Oil USA, Inc., Gannett Fleming, Inc. is submitting this status report describing our 1998/1999 site investigation activities in the area affected by a single release of petroleum product in the Tank 31 basin at Murphy's Superior refinery.

Background

The release from this tank, consisting of 5,500 gallons of #1 fuel oil, was reported to the Wisconsin Department of Natural Resources (WDNR) in January 1994.

In early July 1998, Gannett Fleming collected and field-screened shallow (1 to 1.5 feet below ground surface [bgs]) soil samples from seven locations within the Tank 31 basin to identify the lateral extent of contamination within the basin. In late July 1998, a Geoprobe was used to collect soil samples from two locations (GP-12 and -13). The results of all previous soil screening and sampling from this basin have been provided in previous reports to the WDNR. The attached Figure 1 identifies all the sampling locations, along with the field-screening results for the samples collected.

Installation and Sampling of Monitoring Well

Our September 10, 1998, report to you recommended installing a groundwater monitoring well in the Tank 31 basin in order to investigate groundwater quality. In response to your letter of October 1, 1998, one monitoring well (MW-1/T31) was installed in October 1998, near the location of probe hole GP-12. The location of the well is shown on Figure 1. Copies of the boring log and well construction and development forms for the well are attached.

The well was sampled on December 17, 1998, and again on April 6, 1999. Both samples were submitted for laboratory analysis of diesel range organics (DRO), gasoline range organics (GRO), petroleum volatile organic compounds (PVOCs), polynuclear aromatic hydrocarbons, and lead.

Continued . . .

Table 1 contains the analytical results for both samples. During each sampling round groundwater samples were also collected and analyzed for RNA parameters. Table 2 contains the results for both sets of samples analyzed for RNA. The laboratory reports for all samples are attached.

Because the results from the first two rounds of groundwater sampling are inconsistent, we will collect two more rounds of samples before evaluating the data. We will assess the need for further investigation in this tank basin after receiving and reviewing the data from the two additional sampling rounds.

If you have any questions about this status report, please call.

Sincerely,

GANNETT FLEMING, INC.

David J. Olig, P.G.
Senior Project Manager

Jeffrey J. King
Staff Hydrogeologist

Dennis F. Kugle
Vice President

DJO/reb
Enc.
cc: Lee Vail (Murphy/New Orleans)
Liz Lundmark (Murphy/Superior)
Kevin Melnyk (Murphy/El Dorado)
Greg Neve (Murphy/Superior)
Rick Lewandowski (DeWitt, Ross & Stevens/Madison)

LEGEND

- Gannett Fleming Hand-Auger Field Screening Soil Sample Location (October 1998)
- Gannett Fleming Geoprobe Soil Sample Location (July 1998)
- Monitoring Well Location
- Aboveground Piping

(0.2) = FID Reading At 1.5 Foot Depth (ppm)

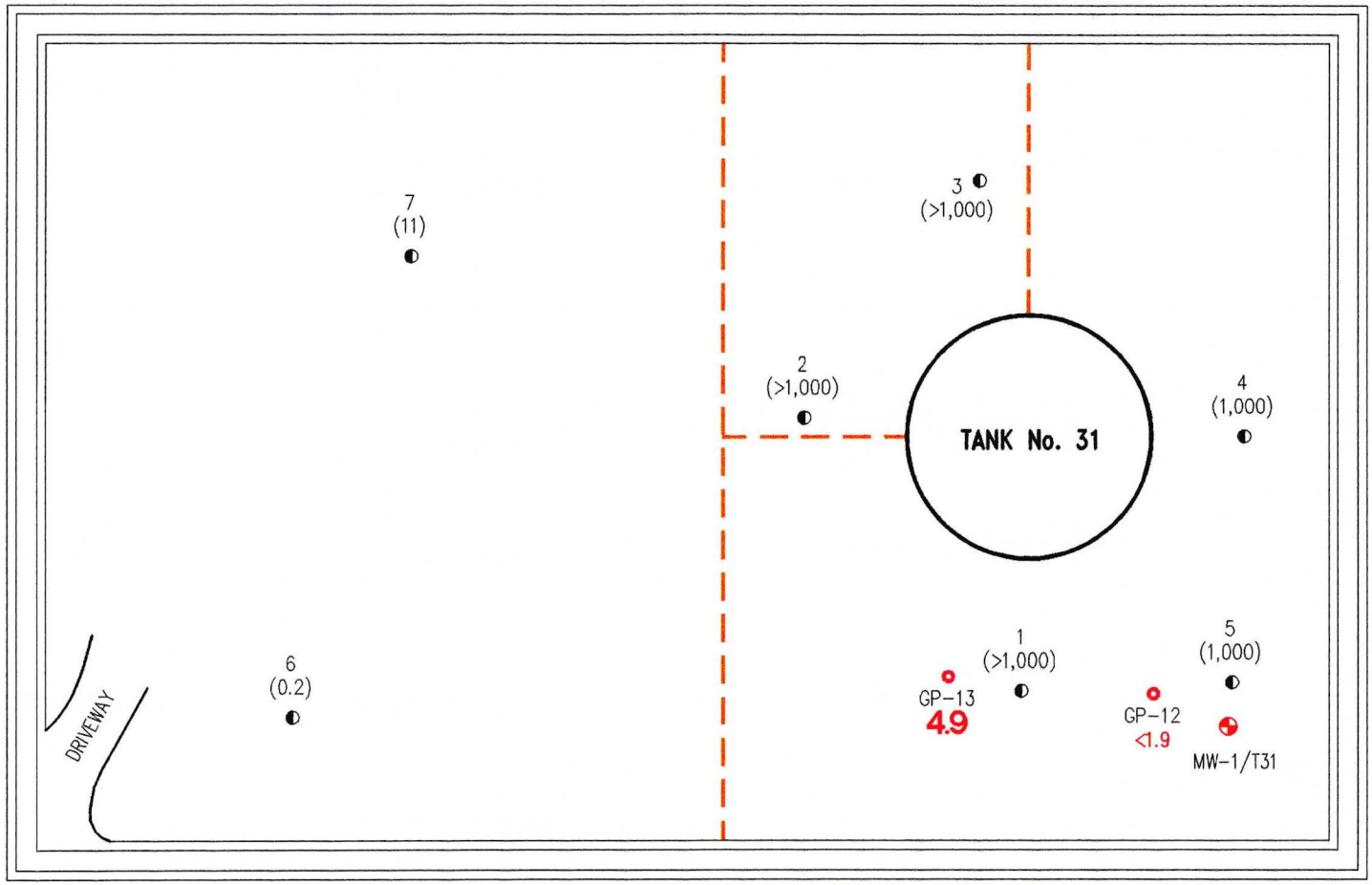
<1.9 = Benzene Concentration At 1-1.5 Foot Depth (mg/kg)

4.9 = Benzene Concentration At 4.5-5 Foot Depth (mg/kg)

NOTE
Concentrations In **BOLD** Exceed Generic NR 720 RCLs.

NOTE

Locations Are Approximate Based On Field Measurements; Site Not Surveyed



0 30

Scale In Feet

SAMPLE LOCATIONS AND FID READINGS AT TANK NO. 31

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

042299
34265WAN

Gannett Fleming
FIGURE 1

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 1

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
FROM MONITORING WELL AT TANK 31(ug/l)

Well I.D. and	Parameter								
Sample Date	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	Trimethlybenzenes	MTBE	Naphthalene	n-Butylbenzene
MW-1/T31									
12/17/98	33*	0.40*	<0.20	<0.20	<0.80	2.1	<0.20	<1.1	0.30*
04/06/99	498	**195**	24.1	<0.5	30.8	18.9	<0.3	<0.27	NA
NR 140 PAL	NS	0.5	140	68.6	124	96	12	8	NS
NR 140 ES	NS	5	700	343	620	480	60	40	NS

M:\CLERICAL\PROJECTS\0300\367-18\TABLES\JJK\TANK31A.WB3

Table 1 Continued...

Well I.D. and Sample Date	Parameter						
	sec-Butylbenzene	1,2-Dichloroethane	Diisopropyl ether	Isopropylbenzene	p-Isopropyltoluene	n-Propylbenzene	Dissolved Lead
MW-1/T31							
12/17/98	<0.20	<0.20	<0.30	<0.20	<0.20	<0.20	<1
04/06/99	NA	NA	NA	NA	NA	NA	<1
NR 140 PAL	NS	0.5	NS	NS	NS	NS	1.5
NR 140 ES	NS	5	NS	NS	NS	NS	15

NOTES:
Results reported in units of micrograms per liter (ug/l).
Samples collected on 12/17/98 analyzed for VOCs.
Samples collected on 12/17/98 and 04/06/99 also analyzed for PAHs.
Only detected parameters shown on table.
NA = Not sampled.
NS = No standard.
* = Estimated concentration below laboratory quantitation level.

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 2

NATURAL ATTENUATION PARAMETER RESULTS FOR GROUNDWATER SAMPLES
FROM MONITORING WELL AT TANK 31

Well I.D. and Sample Date	Parameter								
	Alkalinity	Dissolved Iron	Dissolved Manganese	Nitrate	Sulfate	Dissolved Oxygen	pH	Temperature (C)	Redox Potential (mV)
MW-1/T31									
12/17/98	436	0.627	0.326	<0.14	16.9	3.3	5.6	9.6	52
04/06/99	429	0.304	0.573	<0.3	9.78	3.2	7.3	8.4	25

NOTES:
Concentrations reported in units of milligrams per liter (mg/l), unless otherwise noted.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY: ____

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	MW-1 TK31 04/06/99	Qualifiers	Date Analyzed	By
EPA 239.2						
Sol. Lead (GFAAS)	µg/l	1.0	ND		04/12/99	JCH
EPA 300.0						
Sol. Sulfate	mg/l	1.5	9.78		04/16/99	GAG
EPA 310.1						
Alkalinity as CaCO3	mg/l	20.0	429.		04/14/99	DAR
EPA 353.1						
NO3+NO2-N	mg/l	0.3	ND		04/13/99	LCK
EPA 6010						
Sol. Iron	mg/l	0.01	0.304		04/12/99	BMS
Sol. Manganese	mg/l	0.002	0.573		04/11/99	BMS
EPA 8021						
Benzene	µg/l	0.2	195.		04/14/99	LMP
Ethylbenzene	µg/l	0.5	24.1		04/14/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		04/14/99	LMP
Toluene	µg/l	0.5	ND		04/14/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.5	7.41		04/14/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.5	11.5		04/14/99	LMP
m- & p-Xylene	µg/l	0.5	27.2		04/14/99	LMP
o-Xylene & Styrene	µg/l	0.5	3.65		04/14/99	LMP
EPA 8310						
Acenaphthene	µg/l	0.33	ND		04/19/99	GLS
Acenaphthylene	µg/l	0.33	ND		04/19/99	GLS
Anthracene	µg/l	0.3	ND		04/19/99	GLS
Benzo(a)Anthracene	µg/l	0.17	ND		04/19/99	GLS
Benzo(a)Pyrene	µg/l	0.13	ND	CSL S1L	04/19/99	GLS
Benzo(b)Fluoranthene	µg/l	0.13	ND		04/19/99	GLS
Benzo(k)Fluoranthene	µg/l	0.2	ND		04/19/99	GLS
Benzo(ghi)Perylene	µg/l	0.2	ND		04/19/99	GLS
Chrysene	µg/l	0.17	ND		04/19/99	GLS
Dibenzo(a,h)Anthracene	µg/l	0.33	ND		04/19/99	GLS
Fluoranthene	µg/l	0.2	ND		04/19/99	GLS
Fluorene	µg/l	0.23	ND		04/19/99	GLS
Indeno(1,2,3-cd)Pyrene	µg/l	0.23	ND		04/19/99	GLS
1-Methyl Naphthalene	µg/l	0.3	ND		04/19/99	GLS
2-Methyl Naphthalene	µg/l	0.27	ND		04/19/99	GLS
Naphthalene	µg/l	0.27	ND		04/19/99	GLS
Phenanthrene	µg/l	0.27	ND		04/19/99	GLS
Pyrene	µg/l	0.37	ND		04/19/99	GLS
Liquid Organic Extraction		-	COMP		04/13/99	CKV
WI DNR						
Gasoline Range Organics	µg/l	50.0	498.	G3	04/14/99	LMP
Analytical No.:			568			

ND = Analyzed but not detected.

REQUEST FOR SERVICES USFilter

ENVIROSCAN SERVICES 301 W. MILITARY RD. ROTHSCHILD, WI 54474 1-800-338-SCAN

REPORT TO:
Name: Irvin Mossberger
Company: Twin Ports Testing c/o Gannett Fleming
Address: 1301 N. 3rd St.
Superior, WI 54880
Phone: (715) 392-7114
P. O. #
Project # 899-98E Quote # G440-4
Location Superior, WI - PECFA

BILL TO: (if different from Report To info)
Name: Liz Lindmark
Company: Murphy Oil
Address: 2400 Stinson Ave, P.O. Box 2066
Superior, WI 54880
Phone: (715) 398-8204

* please fax preliminary rush result to: Jeff King Gannett Fleming Fax #: (608) 831-3337 by/on 4/13/99

Sample Type (Check all that apply)
- ■ Groundwater
- ☐ Wastewater
- ☐ Soil/Solid
- ☐ Drinking Water
- ☐ Oil
- ☐ Vapor
- ☐ Other

Turnaround Time
- ■ Normal
- ■ Rush (Pre-approved by Lab) — MW-2/PP organics only

Date Needed 4/13/99
Approved By 4-22-99 21079.2 "D"

* Use Gannett-Fleming PECFA bid prices

ANALYTICAL REQUESTS
(use separate sheet if necessary)

LAB USE ONLY	DATE	TIME	No. of Containers COMP	No. of Containers GRAB	SAMPLE ID	GRO	PVOC	VOC	Dissolved Pb Fe Mn (field filtered)	Total Alkalinity	Sulfate Nitrate-Nitrite	PAH ("D" bottle)	REMARKS
	4/6/99	11:50		6	MW-1/TPC31	X	X		X	X	X	X	
	4/6/99	12:30		5	MW-1/[illegible]	X	X		X	X	X		
	4/6/99	12:45		7	MW-2/PP	(X)		(X)	X	X	X		
	4/6/99	10:10		4	Field Blank	X		X					
				1	Trip Blank			✓					
	Gunfle	[illegible]											

CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature) Irvin G. Mossberger

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Irvin G. Mossberger	4/7/99 9:30	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	

Comments: Rush MW-2PP for organics only. VOC held (Bruce & Jennifer informed)

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY: _____

Attn: J King/ I Mossberger/ L

Qualifier Descriptions

CSL	Check standard for this analyte exhibited a low bias. Sample results may also be biased low. Non-detects verified with a low standard comparison.
S1L	Sample matrix spike recovery was low. Sample result may be biased low.
G3	The chromatogram in not characteristic for either gas or aged gas. It has a reportable concentration of peaks/area within the GRO window.
G1	The chromatogram is characteristic for gasoline.
SPL	Matrix spike recovery within analytical batch was low. Sample matrix appears similar to your sample; result may be biased low.
CSH	Check standard for this analyte exhibited a high bias. Sample results may also be biased high.
SPH	Matrix spike recovery within analytical batch was high. Sample matrix appears similar to your sample; result may be biased high.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
6025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY: ____

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	TRIP BLANK-USF 04/06/99	Qualifiers	Date Analyzed	By
EPA 8021						
Benzene	µg/l	0.2	ND		04/09/99	LMP
Bromobenzene	µg/l	0.5	ND		04/09/99	LMP
Bromodichloromethane	µg/l	0.2	ND		04/09/99	LMP
n-Butylbenzene	µg/l	0.5	ND		04/09/99	LMP
sec-Butylbenzene	µg/l	0.5	ND	SPL	04/09/99	LMP
tert-Butylbenzene	µg/l	0.5	ND	SPL	04/09/99	LMP
Carbon Tetrachloride	µg/l	0.5	ND		04/09/99	LMP
Chlorobenzene	µg/l	0.5	ND		04/09/99	LMP
Chlorodibromomethane	µg/l	0.5	ND		04/09/99	LMP
Chloroethane	µg/l	0.5	ND		04/09/99	LMP
Chloroform	µg/l	0.2	ND		04/09/99	LMP
Chloromethane	µg/l	0.2	ND	CSH	04/09/99	LMP
o-Chlorotoluene	µg/l	0.5	ND		04/09/99	LMP
p-Chlorotoluene	µg/l	0.5	ND		04/09/99	LMP
1,2-Dibromo-3-chloropropane	µg/l	0.3	ND		04/09/99	LMP
1,2-Dibromoethane	µg/l	0.2	ND		04/09/99	LMP
1,2-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,3-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,4-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
Dichlorodifluoromethane	µg/l	0.5	ND		04/09/99	LMP
1,1-Dichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,2-Dichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,1-Dichloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
cis-1,2-Dichloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
trans-1,2-Dichloroethylene	µg/l	0.5	ND		04/09/99	LMP
1,2-Dichloropropane	µg/l	0.5	ND		04/09/99	LMP
1,3-Dichloropropane	µg/l	0.5	ND		04/09/99	LMP
2,2-Dichloropropane	µg/l	0.5	ND	CSL	04/09/99	LMP
Ethylbenzene	µg/l	0.5	ND		04/09/99	LMP
Hexachlorobutadiene	µg/l	0.5	ND	SPL	04/09/99	LMP
Isopropylbenzene	µg/l	0.5	ND		04/09/99	LMP
Isopropyl Ether	µg/l	0.5	ND		04/09/99	LMP
p-Isopropyltoluene	µg/l	0.5	ND	SPH	04/09/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		04/09/99	LMP
Methylene Chloride	µg/l	0.5	ND		04/09/99	LMP
Naphthalene	µg/l	1.0	ND		04/09/99	LMP
n-Propylbenzene	µg/l	0.5	ND		04/09/99	LMP
Tetrachloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
1,1,2,2-Tetrachloroethane	µg/l	0.2	ND	CSL	04/09/99	LMP
Toluene	µg/l	0.5	ND		04/09/99	LMP
1,2,3-Trichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,2,4-Trichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,1,1-Trichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,1,2-Trichloroethane	µg/l	0.2	ND		04/09/99	LMP
Trichloroeth(yl)ene	µg/l	0.4	ND	CSH	04/09/99	LMP
Analytical No.:			572			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY: ____

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	TRIP BLANK-USF 04/06/99	Qualifiers	Date Analyzed	By
EPA 8021						
Trichlorofluoromethane	µg/l	0.5	ND		04/09/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.5	ND		04/09/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.5	ND		04/09/99	LMP
Vinyl Chloride	µg/l	0.15	ND		04/09/99	LMP
m- & p-Xylene	µg/l	0.5	ND		04/09/99	LMP
o-Xylene & Styrene	µg/l	0.5	ND		04/09/99	LMP
Analytical No.:			572			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY: ____

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	FIELD BLANK 04/06/99	Qualifiers	Date Analyzed	By
EPA 8021						
Benzene	µg/l	0.2	ND		04/09/99	LMP
Bromobenzene	µg/l	0.5	ND		04/09/99	LMP
Bromodichloromethane	µg/l	0.2	0.699		04/09/99	LMP
n-Butylbenzene	µg/l	0.5	ND		04/09/99	LMP
sec-Butylbenzene	µg/l	0.5	ND	SPL	04/09/99	LMP
tert-Butylbenzene	µg/l	0.5	ND	SPL	04/09/99	LMP
Carbon Tetrachloride	µg/l	0.5	ND		04/09/99	LMP
Chlorobenzene	µg/l	0.5	ND		04/09/99	LMP
Chlorodibromomethane	µg/l	0.5	ND		04/09/99	LMP
Chloroethane	µg/l	0.5	ND		04/09/99	LMP
Chloroform	µg/l	0.2	4.61		04/09/99	LMP
Chloromethane	µg/l	0.2	ND	CSH	04/09/99	LMP
o-Chlorotoluene	µg/l	0.5	ND		04/09/99	LMP
p-Chlorotoluene	µg/l	0.5	ND		04/09/99	LMP
1,2-Dibromo-3-chloropropane	µg/l	0.3	ND		04/09/99	LMP
1,2-Dibromoethane	µg/l	0.2	ND		04/09/99	LMP
1,2-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,3-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,4-Dichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
Dichlorodifluoromethane	µg/l	0.5	ND		04/09/99	LMP
1,1-Dichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,2-Dichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,1-Dichloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
cis-1,2-Dichloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
trans-1,2-Dichloroethylene	µg/l	0.5	ND		04/09/99	LMP
1,2-Dichloropropane	µg/l	0.5	ND		04/09/99	LMP
1,3-Dichloropropane	µg/l	0.5	ND		04/09/99	LMP
2,2-Dichloropropane	µg/l	0.5	ND	CSL	04/09/99	LMP
Ethylbenzene	µg/l	0.5	ND		04/09/99	LMP
Hexachlorobutadiene	µg/l	0.5	ND	SPL	04/09/99	LMP
Isopropylbenzene	µg/l	0.5	ND		04/09/99	LMP
Isopropyl Ether	µg/l	0.5	ND		04/09/99	LMP
p-Isopropyltoluene	µg/l	0.5	ND	SPH	04/09/99	LMP
Methyl tert-butyl ether	µg/l	0.3	ND		04/09/99	LMP
Methylene Chloride	µg/l	0.5	ND		04/09/99	LMP
Naphthalene	µg/l	1.0	ND		04/09/99	LMP
n-Propylbenzene	µg/l	0.5	ND		04/09/99	LMP
Tetrachloroeth(yl)ene	µg/l	0.5	ND		04/09/99	LMP
1,1,2,2-Tetrachloroethane	µg/l	0.2	ND	CSL	04/09/99	LMP
Toluene	µg/l	0.5	2.09		04/09/99	LMP
1,2,3-Trichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,2,4-Trichlorobenzene	µg/l	0.5	ND		04/09/99	LMP
1,1,1-Trichloroethane	µg/l	0.5	ND		04/09/99	LMP
1,1,2-Trichloroethane	µg/l	0.2	ND		04/09/99	LMP
Trichloroeth(yl)ene	µg/l	0.4	ND	CSH	04/09/99	LMP
Analytical No.:			571			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

Gannett Fleming, Inc.
8025 Excelsior Drive
Madison, WI 53717

CUST NUMBER: 899-98E
SAMPLED BY: Client
DATE REC'D: 04/08/99
REPORT DATE: 04/21/99
PREPARED BY: GLS
REVIEWED BY: ____

Attn: J King/ I Mossberger/ L

	Units	Limit of Detection	FIELD BLANK 04/06/99	Qualifiers	Date Analyzed	By
EPA 8021						
Trichlorofluoromethane	µg/l	0.5	ND		04/09/99	LMP
1,2,4-Trimethylbenzene	µg/l	0.5	ND		04/09/99	LMP
1,3,5-Trimethylbenzene	µg/l	0.5	ND		04/09/99	LMP
Vinyl Chloride	µg/l	0.15	ND		04/09/99	LMP
m- & p-Xylene	µg/l	0.5	ND		04/09/99	LMP
o-Xylene & Styrene	µg/l	0.5	ND		04/09/99	LMP
WI DNR						
Gasoline Range Organics	µg/l	50.	ND		04/09/99	LMP
Analytical No.:			571			

ND = Analyzed but not detected.

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

ANALYTICAL REPORT

Customer #: LE8000012374
Work Order: 9812000714
Report Date: 01/18/99
Date Received: 12/18/98
Arrival Temperature: On Ice

Report Submitted By: PAB
Record Reviewer

GANNETT FLEMING
JEFF KING
8025 EXCELSIOR DRIVE
MADISON, WI 53717

Note: None

Project Name: **MURPHY TANK 31** Project Number: **34265.003**

Sample I.D. #: 224706 **Sample Description:** MW-1/ TK 31 **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Iron, Dissolved	0.627	mg/L		0.020	0.067		12/22/98	NAH	EPA 6010B
Lead, Dissolved	<1	µg/L		1	5		12/22/98	NAH	EPA 6010B
Manganese, Dissolved	326	µg/L		0.3	1.0		12/22/98	NAH	EPA 6010B
Alkalinity	436	mg/L		20	60		12/23/98	KJF	EPA 310.1
Nitrate + Nitrite Nitrogen	<0.14	mg/L		0.14	0.43		12/23/98	KJF	EPA 353.2
Sulfate-Filtered (Dissolved)	16.9	mg/L		1	4		12/22/98	KJF	EPA 9036
Gasoline Range Organics	33	µg/L	J	30	81		12/27/98	KMC	WDNR GRO
1,1,1-Trichloroethane	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
1,1,2,2-Tetrachloroethane	<0.20	µg/L		0.2	0.6		12/21/98	RLD	WDNR 8021A
1,1,2-Trichloroethane	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
1,1-Dichloroethane	<0.20	µg/L		0.2	0.8		12/21/98	RLD	WDNR 8021A
1,1-Dichloroethene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
1,2,3-Trichlorobenzene	<0.40	µg/L		0.4	1.3		12/21/98	RLD	WDNR 8021A
1,2,4-Trichlorobenzene	<0.30	µg/L		0.3	1.2		12/21/98	RLD	WDNR 8021A
1,2,4-Trimethylbenzene	<0.60	µg/L		0.6	1.8		12/21/98	RLD	WDNR 8021A
1,2-Dibromo-3-chloropropane	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
1,2-Dibromoethane (EDB)	<0.40	µg/L		0.4	1.2		12/21/98	RLD	WDNR 8021A
1,2-Dichlorobenzene	<0.30	µg/L		0.3	1.1		12/21/98	RLD	WDNR 8021A
1,2-Dichloroethane	<0.20	µg/L		0.2	0.5		12/21/98	RLD	WDNR 8021A
1,2-Dichloropropane	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
1,3,5-Trimethylbenzene	1.5	µg/L		0.3	0.9		12/21/98	RLD	WDNR 8021A
1,3-Dichlorobenzene	<0.40	µg/L		0.4	1.3		12/21/98	RLD	WDNR 8021A
1,3-Dichloropropane	<0.60	µg/L		0.6	2.0		12/21/98	RLD	WDNR 8021A
1,4-Dichlorobenzene	<0.30	µg/L		0.3	1.1		12/21/98	RLD	WDNR 8021A
2,2-Dichloropropane	<0.50	µg/L		0.5	1.7		12/21/98	RLD	WDNR 8021A
2-Chlorotoluene	<0.30	µg/L		0.3	0.9		12/21/98	RLD	WDNR 8021A
4-Chlorotoluene	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
Benzene	0.40	µg/L	J	0.3	1.1		12/21/98	RLD	WDNR 8021A
Bromobenzene	<0.20	µg/L		0.2	0.6		12/21/98	RLD	WDNR 8021A
Bromodichloromethane	<0.20	µg/L		0.2	0.8		12/21/98	RLD	WDNR 8021A
Carbon tetrachloride	<0.40	µg/L		0.4	1.3		12/21/98	RLD	WDNR 8021A
Chlorobenzene	<0.30	µg/L		0.3	0.9		12/21/98	RLD	WDNR 8021A
Chlorodibromomethane	<0.30	µg/L		0.3	0.9		12/21/98	RLD	WDNR 8021A
Chloroethane	<0.80	µg/L		0.8	2.5		12/21/98	RLD	WDNR 8021A
Chloroform	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
Chloromethane	<0.90	µg/L		0.9	2.9		12/21/98	RLD	WDNR 8021A
cis-1,2-Dichloroethene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
Dichlorodifluoromethane	<1.2	µg/L		1.2	4.0		12/21/98	RLD	WDNR 8021A
Diisopropyl ether	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
Ethylbenzene	<0.20	µg/L		0.2	0.6		12/21/98	RLD	WDNR 8021A
Hexachlorobutadiene	<0.60	µg/L		0.6	1.9		12/21/98	RLD	WDNR 8021A
Isopropylbenzene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
m&p-Xylene	<0.30	µg/L		0.3	0.8		12/21/98	RLD	WDNR 8021A
Methyl-tert-butyl ether	<0.20	µg/L		0.2	0.8		12/21/98	RLD	WDNR 8021A
Methylene chloride	<0.50	µg/L		0.5	1.5		12/21/98	RLD	WDNR 8021A
n-Butylbenzene	0.30	µg/L	J	0.3	1.0		12/21/98	RLD	WDNR 8021A

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

ANALYTICAL REPORT

Customer #: LE8000012374
Work Order: 9812000714
Report Date: 01/18/99
Date Received: 12/18/98
Arrival Temperature: On Ice

GANNETT FLEMING
JEFF KING
8025 EXCELSIOR DRIVE
MADISON, WI 53717

Report Submitted By: PAB
Record Reviewer

Note: None

Project Name: **MURPHY TANK 31** Project Number: **34265.003**

Sample I.D. #: 224706 **Sample Description:** MW-1/ TK 31 **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
n-Propylbenzene	<0.20	µg/L		0.2	0.5		12/21/98	RLD	WDNR 8021A
Naphthalene	<1.1	µg/L		1.1	3.6		12/21/98	RLD	WDNR 8021A
o-Xylene	<0.50	µg/L		0.5	1.7		12/21/98	RLD	WDNR 8021A
p-Isopropyltoluene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
sec-Butylbenzene	<0.20	µg/L		0.2	0.7		12/21/98	RLD	WDNR 8021A
tert-Butylbenzene	<0.30	µg/L		0.3	0.7		12/21/98	RLD	WDNR 8021A
Tetrachloroethene	<0.60	µg/L		0.6	2.0		12/21/98	RLD	WDNR 8021A
Toluene	<0.20	µg/L		0.2	0.6		12/21/98	RLD	WDNR 8021A
trans-1,2-Dichloroethene	<0.30	µg/L		0.3	1.1		12/21/98	RLD	WDNR 8021A
Trichloroethene	<0.30	µg/L		0.3	1.0		12/21/98	RLD	WDNR 8021A
Trichlorofluoromethane	<0.60	µg/L		0.6	2.0		12/21/98	RLD	WDNR 8021A
Vinyl chloride	<0.50	µg/L		0.5	1.6		12/21/98	RLD	WDNR 8021A

Sample I.D. #: 224707 **Sample Description:** MW-1/ PP **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Iron, Dissolved	0.479	mg/L		0.020	0.067		12/22/98	NAH	EPA 6010B
Lead, Dissolved	18	µg/L		1	5		12/22/98	NAH	EPA 6010B
Manganese, Dissolved	1200	µg/L		0.3	1.0		12/22/98	NAH	EPA 6010B
Alkalinity	560	mg/L		20	60		12/23/98	KJF	EPA 310.1
Nitrate + Nitrite Nitrogen	<0.14	mg/L		0.14	0.43		12/23/98	KJF	EPA 353.2
Sulfate-Filtered (Dissolved)	20.0	mg/L		1	4		12/22/98	KJF	EPA 9036
Gasoline Range Organics	37000	µg/L	K	30	81		12/27/98	KMC	WDNR GRO
1,1,1-Trichloroethane	<3.0	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
1,1,2,2-Tetrachloroethane	<2.0	µg/L		0.2	0.6		12/22/98	RLD	WDNR 8021A
1,1,2-Trichloroethane	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
1,1-Dichloroethane	<2.0	µg/L		0.2	0.8		12/22/98	RLD	WDNR 8021A
1,1-Dichloroethene	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
1,2,3-Trichlorobenzene	<4.0	µg/L		0.4	1.3		12/22/98	RLD	WDNR 8021A
1,2,4-Trichlorobenzene	<3.0	µg/L		0.3	1.2		12/22/98	RLD	WDNR 8021A
1,2,4-Trimethylbenzene	1600	µg/L	D	0.6	1.8		12/22/98	RLD	WDNR 8021A
1,2-Dibromo-3-chloropropane	<3.0	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
1,2-Dibromoethane (EDB)	<4.0	µg/L		0.4	1.2		12/22/98	RLD	WDNR 8021A
1,2-Dichlorobenzene	<3.0	µg/L		0.3	1.1		12/22/98	RLD	WDNR 8021A
1,2-Dichloroethane	210	µg/L		0.2	0.5		12/22/98	RLD	WDNR 8021A
1,2-Dichloropropane	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
1,3,5-Trimethylbenzene	1600	µg/L	D	0.3	0.9		12/22/98	RLD	WDNR 8021A
1,3-Dichlorobenzene	<4.0	µg/L		0.4	1.3		12/22/98	RLD	WDNR 8021A
1,3-Dichloropropane	<6.0	µg/L		0.6	2.0		12/22/98	RLD	WDNR 8021A
1,4-Dichlorobenzene	<3.0	µg/L		0.3	1.1		12/22/98	RLD	WDNR 8021A
2,2-Dichloropropane	<5.0	µg/L		0.5	1.7		12/22/98	RLD	WDNR 8021A
2-Chlorotoluene	<3.0	µg/L		0.3	0.9		12/22/98	RLD	WDNR 8021A
4-Chlorotoluene	<3.0	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

ANALYTICAL REPORT

Customer #: LE8000012374
Work Order: 9812000714
Report Date: 01/18/99
Date Received: 12/18/98
Arrival Temperature: On Ice

GANNETT FLEMING
JEFF KING
8025 EXCELSIOR DRIVE
MADISON, WI 53717

Report Submitted By: PAB
Record Reviewer

Note: None

Project Name: **MURPHY TANK 31** Project Number: **34265.003**

Sample I.D. #: 224707 **Sample Description:** MW-1/ PP **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Benzene	12000	µg/L	VD	0.3	1.1		12/22/98	RLD	WDNR 8021A
Bromobenzene	<2.0	µg/L		0.2	0.6		12/22/98	RLD	WDNR 8021A
Bromodichloromethane	<2.0	µg/L		0.2	0.8		12/22/98	RLD	WDNR 8021A
Carbon tetrachloride	<4.0	µg/L		0.4	1.3		12/22/98	RLD	WDNR 8021A
Chlorobenzene	<3.0	µg/L		0.3	0.9		12/22/98	RLD	WDNR 8021A
Chlorodibromomethane	<3.0	µg/L		0.3	0.9		12/22/98	RLD	WDNR 8021A
Chloroethane	<8.0	µg/L		0.8	2.5		12/22/98	RLD	WDNR 8021A
Chloroform	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
Chloromethane	<9.0	µg/L		0.9	2.9		12/22/98	RLD	WDNR 8021A
cis-1,2-Dichloroethene	<2.0	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
Dichlorodifluoromethane	<12	µg/L		1.2	4.0		12/22/98	RLD	WDNR 8021A
Diisopropyl ether	68	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
Ethylbenzene	700	µg/L	D	0.2	0.6		12/22/98	RLD	WDNR 8021A
Hexachlorobutadiene	<6.0	µg/L		0.6	1.9		12/22/98	RLD	WDNR 8021A
Isopropylbenzene	42	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
m&p-Xylene	5500	µg/L	D	0.3	0.8		12/22/98	RLD	WDNR 8021A
Methyl-tert-butyl ether	<2.0	µg/L		0.2	0.8		12/22/98	RLD	WDNR 8021A
Methylene chloride	<5.0	µg/L		0.5	1.5		12/22/98	RLD	WDNR 8021A
n-Butylbenzene	270	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
n-Propylbenzene	56	µg/L		0.2	0.5		12/22/98	RLD	WDNR 8021A
Naphthalene	100	µg/L	Z	1.1	3.6		12/22/98	RLD	WDNR 8021A
o-Xylene	8000	µg/L	D	0.5	1.7		12/22/98	RLD	WDNR 8021A
p-Isopropyltoluene	3.0	µg/L	J	0.2	0.7		12/22/98	RLD	WDNR 8021A
sec-Butylbenzene	12	µg/L		0.2	0.7		12/22/98	RLD	WDNR 8021A
tert-Butylbenzene	<3.0	µg/L		0.3	0.7		12/22/98	RLD	WDNR 8021A
Tetrachloroethene	<6.0	µg/L		0.6	2.0		12/22/98	RLD	WDNR 8021A
Toluene	22000	µg/L	DE	0.2	0.6		12/22/98	RLD	WDNR 8021A
trans-1,2-Dichloroethene	<3.0	µg/L		0.3	1.1		12/22/98	RLD	WDNR 8021A
Trichloroethene	<3.0	µg/L		0.3	1.0		12/22/98	RLD	WDNR 8021A
Trichlorofluoromethane	<6.0	µg/L		0.6	2.0		12/22/98	RLD	WDNR 8021A
Vinyl chloride	<5.0	µg/L		0.5	1.6		12/22/98	RLD	WDNR 8021A

Sample I.D. #: 224708 **Sample Description:** FIELD BLANK **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
1,1,1-Trichloroethane	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
1,1,2,2-Tetrachloroethane	<0.20	µg/L		0.2	0.6		12/23/98	RLD	WDNR 8021A
1,1,2-Trichloroethane	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
1,1-Dichloroethane	<0.20	µg/L		0.2	0.8		12/23/98	RLD	WDNR 8021A
1,1-Dichloroethene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
1,2,3-Trichlorobenzene	<0.40	µg/L		0.4	1.3		12/23/98	RLD	WDNR 8021A
1,2,4-Trichlorobenzene	<0.30	µg/L		0.3	1.2		12/23/98	RLD	WDNR 8021A
1,2,4-Trimethylbenzene	<0.60	µg/L		0.6	1.8		12/23/98	RLD	WDNR 8021A

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

ANALYTICAL REPORT

Customer #: LE8000012374
Work Order: 9812000714
Report Date: 01/18/99
Date Received: 12/18/98
Arrival Temperature: On Ice

GANNETT FLEMING
JEFF KING
8025 EXCELSIOR DRIVE
MADISON, WI 53717

Report Submitted By: _____
Record Reviewer

Note: None

Project Name: **MURPHY TANK 31** Project Number: **34265.003**

Sample I.D. #: 224708 **Sample Description:** FIELD BLANK **Date Sampled:** 12/17/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
1,2-Dibromo-3-chloropropane	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
1,2-Dibromoethane (EDB)	<0.40	µg/L		0.4	1.2		12/23/98	RLD	WDNR 8021A
1,2-Dichlorobenzene	<0.30	µg/L		0.3	1.1		12/23/98	RLD	WDNR 8021A
1,2-Dichloroethane	<0.20	µg/L		0.2	0.5		12/23/98	RLD	WDNR 8021A
1,2-Dichloropropane	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
1,3,5-Trimethylbenzene	<0.30	µg/L		0.3	0.9		12/23/98	RLD	WDNR 8021A
1,3-Dichlorobenzene	<0.40	µg/L		0.4	1.3		12/23/98	RLD	WDNR 8021A
1,3-Dichloropropane	<0.60	µg/L		0.6	2.0		12/23/98	RLD	WDNR 8021A
1,4-Dichlorobenzene	<0.30	µg/L		0.3	1.1		12/23/98	RLD	WDNR 8021A
2,2-Dichloropropane	<0.50	µg/L		0.5	1.7		12/23/98	RLD	WDNR 8021A
2-Chlorotoluene	<0.30	µg/L		0.3	0.9		12/23/98	RLD	WDNR 8021A
4-Chlorotoluene	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
Benzene	<0.30	µg/L		0.3	1.1		12/23/98	RLD	WDNR 8021A
Bromobenzene	<0.20	µg/L		0.2	0.6		12/23/98	RLD	WDNR 8021A
Bromodichloromethane	<0.20	µg/L		0.2	0.8		12/23/98	RLD	WDNR 8021A
Carbon tetrachloride	<0.40	µg/L		0.4	1.3		12/23/98	RLD	WDNR 8021A
Chlorobenzene	<0.30	µg/L		0.3	0.9		12/23/98	RLD	WDNR 8021A
Chlorodibromomethane	<0.30	µg/L		0.3	0.9		12/23/98	RLD	WDNR 8021A
Chloroethane	<0.80	µg/L		0.8	2.5		12/23/98	RLD	WDNR 8021A
Chloroform	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
Chloromethane	<0.90	µg/L		0.9	2.9		12/23/98	RLD	WDNR 8021A
cis-1,2-Dichloroethene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
Dichlorodifluoromethane	<1.2	µg/L		1.2	4.0		12/23/98	RLD	WDNR 8021A
Diisopropyl ether	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
Ethylbenzene	<0.20	µg/L		0.2	0.6		12/23/98	RLD	WDNR 8021A
Hexachlorobutadiene	<0.60	µg/L		0.6	1.9		12/23/98	RLD	WDNR 8021A
Isopropylbenzene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
m&p-Xylene	<0.30	µg/L		0.3	0.8		12/23/98	RLD	WDNR 8021A
Methyl-tert-butyl ether	<0.20	µg/L		0.2	0.8		12/23/98	RLD	WDNR 8021A
Methylene chloride	<0.50	µg/L		0.5	1.5		12/23/98	RLD	WDNR 8021A
n-Butylbenzene	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
n-Propylbenzene	<0.20	µg/L		0.2	0.5		12/23/98	RLD	WDNR 8021A
Naphthalene	<1.1	µg/L		1.1	3.6		12/23/98	RLD	WDNR 8021A
o-Xylene	<0.50	µg/L		0.5	1.7		12/23/98	RLD	WDNR 8021A
p-Isopropyltoluene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
sec-Butylbenzene	<0.20	µg/L		0.2	0.7		12/23/98	RLD	WDNR 8021A
tert-Butylbenzene	<0.30	µg/L		0.3	0.7		12/23/98	RLD	WDNR 8021A
Tetrachloroethene	<0.60	µg/L		0.6	2.0		12/23/98	RLD	WDNR 8021A
Toluene	<0.20	µg/L		0.2	0.6		12/23/98	RLD	WDNR 8021A
trans-1,2-Dichloroethene	<0.30	µg/L		0.3	1.1		12/23/98	RLD	WDNR 8021A
Trichloroethene	<0.30	µg/L		0.3	1.0		12/23/98	RLD	WDNR 8021A
Trichlorofluoromethane	<0.60	µg/L		0.6	2.0		12/23/98	RLD	WDNR 8021A
Vinyl chloride	<0.50	µg/L		0.5	1.6		12/23/98	RLD	WDNR 8021A

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth
Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

Data Qualifiers

A	Sample analyzed with a dilution. Surrogates were diluted outside the calibration range. Applies to all analytes for this method.
B	Analyte detected in associated Method Blank.
C	Sample result confirmed by alternate analysis.
D	Results reported from higher dilution.
E	Analyte concentration exceeded calibration range.
F	Unable to analyze due to sample matrix interference. Applies to all analytes for this method.
G	Insufficient sample for analysis. Applies to all analytes for this method.
H	Sample was received past the established holding time. Applies to all analytes for this method.
I	Sample was analyzed past the established holding time. Applies to all analytes for this method.
J	Reported concentration below the Quantitation Limit.
K	Sample contained lighter hydrocarbon fractions.
L	Sample contained heavier hydrocarbon fractions.
M	Matrix Spike and/or Matrix Spike Duplicate outside acceptance limits.
O	Hydrocarbons atypical of gasoline.
P	Hydrocarbons atypical of diesel #2 fuel.
Q	Laboratory Control Sample outside acceptance limits.
S	Surrogate outside acceptance limits. Applies to all analytes for this method.
T	Sample received exceeding proper preservation criteria. Applies to all analytes for this method.
V	Raised Quantitation Limit due to dilution for background interference. Applies to all analytes for this method.
W	Raised Quantitation Limit due to limited sample volume. Applies to all analytes for this method.
Y	Replicate outside acceptance limits.
Z	Calibration criteria exceeded.

1	Safe, No Total Coliform detected.
2	Unsafe, Total Coliform detected, no E. coli detected.
3	Unsafe, Total Coliform detected, E. coli detected.
4	Sample weight was below program minimum. Applies to all analytes for this method.
5	Insufficient oxygen depletion.
6	Complete oxygen depletion.
7	Sliding BOD, toxicity present in sample.

CTI Wisconsin Division Laboratory Certification #'s:
IA DNR: 146
KY Dept. of Environmental Protection: 90110
WI DNR: 157066030
DATCP: 289

H:\MSWORD\DATQUAL.DOC

714

Commonwealth Technology, Inc.

1-800-228-3012
1230 Lange Court
Baraboo, WI 53913
(608) 356-2760
FAX: (608) 356-2766

No. 5950

Is this a PECFA project? (Please indicate "Yes" or "No") No

SAMPLE COLLECTOR: Irvin Mossberger | COMPANY: Eder Assoc. / TPT | TELEPHONE # (include area code): (715) 392-7114

PROJECT NUMBER: 31265.003 / 399-98E | PROJECT NAME: Tank 31

I HEREBY CERTIFY THAT I RECEIVED, PROPERLY HANDLED, AND DISPOSED OF THESE SAMPLES AS NOTED BELOW:

INVOICE ADDRESS (must be completed): Liz Lindmark Murphy Oil 2407 Stinson Ave, Superior, WI 54880

REPORT ADDRESS (must be completed): Jeff King, Eder Assoc. 8025 Excelsior Dr. Madison, WI 53717-1900

DATE & TIME OF RELINQUISHMENT:	RELINQUISHED BY (signature):	RECEIVED BY (signature):	DATE / TIME OF RECEPTION:
12/17/98 4:10 pm	Irvin Mossberger		

DATE & TIME OF RELINQUISHMENT:	RELINQUISHED BY (signature):	RECEIVED BY LABORATORY (signature):	DATE / TIME OF RECEPTION:
		[signature]	12-18-98 15C

FIELD ID NUMBER	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE	SAMPLE DEVICE	PRESERV. TYPE	LOCATION / DESCRIPTION	TYPE OF ANALYSES REQUIRED (please circle)	LAB USE ONLY PROF. W/MeOH? "X" IF YES	NO./TYPE OF CONTAINERS	LAB I.D.
MW-1/TK 31	12/17/98	12:40	H2O				DRO (GRO) GRO/PVOC PVOC (Pb) Cd % SOLIDS FLASHPOINT (VOC-LUST) VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list): Fe, Mn, Alkalinity, Sulfate, Nitrate–Nitrite			224706
MW-1/PP	12/17/98	12:55	H2O				DRO (GRO) GRO/PVOC PVOC (Pb) Cd % SOLIDS FLASHPOINT (VOC-LUST) VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list): Fe, Mn, Alkalinity, Sulfate, Nitrate–Nitrite			224707
Field Blank	12/17/98	10:30	H2O				DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT (VOC-LUST) VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):			224708
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):			
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):			
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):			
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):			
							DRO GRO GRO/PVOC PVOC Pb Cd % SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH Other (please list):			

SAMPLE CONDITIONS / COMMENTS:

CHECKED

ARRIVAL TEMPERATURE

Commonwealth
Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

August 12, 1998

Eder Associates
Jeff King
8025 Excelsior Dr.
Madison, WI 53717-1900

Project: Murphy Oil
Project No.: 367-18.3
Received: 07/24/98

Sample ID: 206235
206238
206268

Dear Jeff:

I have enclosed a revised analytical report for the project and sample listed above. This report is labeled "Revised Analytical Report" and supercedes any previous reports.

The bulk density results were inadvertently not reported for samples 206235 and 206238. The results have been added to page 18 and 20 of the revised report, respectively.

The bulk density result for sample 206268 was incorrect in the initial report. The correct concentration value is listed on page 33 of the revised report.

We regret the errors and any inconvenience this may have caused. If you have any questions or comments regarding this report, please feel free to contact me.

Sincerely,

Harley G. Cliff
Chemistry Laboratory Manager

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

REVISED
ANALYTICAL REPORT

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HGC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206224 **Sample Description:** GP-11(4.5-5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
o-Xylene	<0.24	mg/Kg		0.012	0.042	07/24/98	07/31/98	RLD	EPA 8021A
Toluene	<0.22	mg/Kg		0.011	0.037	07/24/98	07/31/98	RLD	EPA 8021A
Diesel Range Organics	100	mg/kg	K	1.4	4.7	07/27/98	08/02/98	PML	WDNR DRO
1-Methyl Naphthalene	1.1	mg/kg		0.047	0.16	07/28/98	07/29/98	CMK	EPA 8310
2-Methyl Naphthalene	1.5	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthene	<0.048	mg/kg		0.048	0.16	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthylene	0.071	mg/kg	J	0.051	0.17	07/28/98	07/29/98	CMK	EPA 8310
Anthracene	<0.023	mg/kg		0.023	0.077	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)anthracene	<0.0020	mg/kg		0.002	0.006	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)pyrene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(b)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(g,h,i)perylene	<0.0041	mg/kg		0.004	0.014	07/28/98	07/29/98	CMK	EPA 8310
Benzo(k)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Chrysene	<0.092	mg/kg		0.092	0.31	07/28/98	07/29/98	CMK	EPA 8310
Dibenzo(a,h)anthracene	<0.23	mg/kg		0.23	0.77	07/28/98	07/29/98	CMK	EPA 8310
Fluoranthene	<0.0049	mg/kg		0.004	0.016	07/28/98	07/29/98	CMK	EPA 8310
Fluorene	<0.0086	mg/kg		0.008	0.029	07/28/98	07/29/98	CMK	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0094	mg/kg		0.009	0.031	07/28/98	07/29/98	CMK	EPA 8310
Naphthalene	0.41	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Phenanthrene	0.11	mg/kg		0.003	0.012	07/28/98	07/29/98	CMK	EPA 8310
Pyrene	<0.0062	mg/kg		0.006	0.021	07/28/98	07/29/98	CMK	EPA 8310

Sample I.D. #: 206225 **Sample Description:** GP-12(1-1.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Percent Solids	71.7	%					07/27/98	NMP	EPA 5030
Gasoline Range Organics	740	mg/kg	L	1.3	4.5	07/24/98	07/29/98	EMH	WDNR GRO
1,2,4-Trimethylbenzene	38	mg/Kg		0.014	0.048	07/24/98	07/31/98	RLD	EPA 8021A
1,2-Dibromoethane (EDB)	<0.70	mg/Kg		0.007	0.023	07/24/98	07/31/98	RLD	EPA 8021A
1,3,5-Trimethylbenzene	17	mg/Kg		0.012	0.039	07/24/98	07/31/98	RLD	EPA 8021A
Benzene	<1.9	mg/Kg	V	0.019	0.063	07/24/98	07/31/98	RLD	EPA 8021A
Ethylbenzene	7.4	mg/Kg		0.011	0.036	07/24/98	07/31/98	RLD	EPA 8021A
m&p-Xylene	<2.2	mg/Kg		0.022	0.075	07/24/98	07/31/98	RLD	EPA 8021A
Methyl-tert-butyl ether	<0.90	mg/Kg		0.009	0.030	07/24/98	07/31/98	RLD	EPA 8021A
o-Xylene	<1.2	mg/Kg		0.012	0.042	07/24/98	07/31/98	RLD	EPA 8021A
Toluene	<1.1	mg/Kg		0.011	0.037	07/24/98	07/31/98	RLD	EPA 8021A
Diesel Range Organics	930	mg/kg	K	1.4	4.7	07/27/98	08/05/98	PML	WDNR DRO
1-Methyl Naphthalene	5.2	mg/kg	S	0.047	0.16	07/28/98	07/29/98	CMK	EPA 8310
2-Methyl Naphthalene	7.6	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthene	<0.048	mg/kg		0.048	0.16	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthylene	<0.051	mg/kg		0.051	0.17	07/28/98	07/29/98	CMK	EPA 8310
Anthracene	<0.023	mg/kg		0.023	0.077	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)anthracene	<0.0020	mg/kg		0.002	0.006	07/28/98	07/29/98	CMK	EPA 8310

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

REVISED
ANALYTICAL REPORT

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HGC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206225 **Sample Description:** GP-12(1-1.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Benzo(a)pyrene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(b)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(g,h,i)perylene	<0.0041	mg/kg		0.004	0.014	07/28/98	07/29/98	CMK	EPA 8310
Benzo(k)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Chrysene	<0.092	mg/kg		0.092	0.31	07/28/98	07/29/98	CMK	EPA 8310
Dibenzo(a,h)anthracene	<0.23	mg/kg		0.23	0.77	07/28/98	07/29/98	CMK	EPA 8310
Fluoranthene	<0.0049	mg/kg		0.004	0.016	07/28/98	07/29/98	CMK	EPA 8310
Fluorene	0.70	mg/kg		0.008	0.029	07/28/98	07/29/98	CMK	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0094	mg/kg		0.009	0.031	07/28/98	07/29/98	CMK	EPA 8310
Naphthalene	3.2	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Phenanthrene	0.45	mg/kg		0.003	0.012	07/28/98	07/29/98	CMK	EPA 8310
Pyrene	<0.0062	mg/kg		0.006	0.021	07/28/98	07/29/98	CMK	EPA 8310

Sample I.D. #: 206226 **Sample Description:** GP-13(4.5-5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Percent Solids	70.9	%					07/27/98	NMP	EPA 5030
Gasoline Range Organics	120	mg/kg	KL	1.3	4.5	07/24/98	07/30/98	EMH	WDNR GRO
1,2,4-Trimethylbenzene	4.8	mg/Kg		0.014	0.048	07/24/98	07/31/98	RLD	EPA 8021A
1,2-Dibromoethane (EDB)	<0.070	mg/Kg		0.007	0.023	07/24/98	07/31/98	RLD	EPA 8021A
1,3,5-Trimethylbenzene	1.7	mg/Kg		0.012	0.039	07/24/98	07/31/98	RLD	EPA 8021A
Benzene	4.9	mg/Kg	V	0.019	0.063	07/24/98	07/31/98	RLD	EPA 8021A
Ethylbenzene	2.4	mg/Kg		0.011	0.036	07/24/98	07/31/98	RLD	EPA 8021A
m&p-Xylene	2.8	mg/Kg		0.022	0.075	07/24/98	07/31/98	RLD	EPA 8021A
Methyl-tert-butyl ether	<0.090	mg/Kg		0.009	0.030	07/24/98	07/31/98	RLD	EPA 8021A
o-Xylene	<0.12	mg/Kg		0.012	0.042	07/24/98	07/31/98	RLD	EPA 8021A
Toluene	0.39	mg/Kg	J	0.011	0.037	07/24/98	07/31/98	RLD	EPA 8021A
Diesel Range Organics	87	mg/kg	K	1.4	4.7	07/27/98	08/02/98	PML	WDNR DRO
1-Methyl Naphthalene	0.20	mg/kg		0.047	0.16	07/28/98	07/29/98	CMK	EPA 8310
2-Methyl Naphthalene	0.48	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthene	<0.048	mg/kg		0.048	0.16	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthylene	0.061	mg/kg	J	0.051	0.17	07/28/98	07/29/98	CMK	EPA 8310
Anthracene	<0.023	mg/kg		0.023	0.077	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)anthracene	<0.0020	mg/kg		0.002	0.006	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)pyrene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(b)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(g,h,i)perylene	<0.0041	mg/kg		0.004	0.014	07/28/98	07/29/98	CMK	EPA 8310
Benzo(k)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Chrysene	<0.092	mg/kg		0.092	0.31	07/28/98	07/29/98	CMK	EPA 8310
Dibenzo(a,h)anthracene	<0.23	mg/kg		0.23	0.77	07/28/98	07/29/98	CMK	EPA 8310
Fluoranthene	0.14	mg/kg		0.004	0.016	07/28/98	07/29/98	CMK	EPA 8310
Fluorene	<0.0086	mg/kg		0.008	0.029	07/28/98	07/29/98	CMK	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0094	mg/kg		0.009	0.031	07/28/98	07/29/98	CMK	EPA 8310

WI DNR Lab Certification Number: 157066030 DATCP Certification Number: 000289

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

REVISED
ANALYTICAL REPORT

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HGC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206226 **Sample Description:** GP-13(4.5-5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Naphthalene	0.12	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Phenanthrene	0.057	mg/kg		0.003	0.012	07/28/98	07/29/98	CMK	EPA 8310
Pyrene	0.13	mg/kg		0.006	0.021	07/28/98	07/29/98	CMK	EPA 8310

Sample I.D. #: 206227 **Sample Description:** GP-14(1-1.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Percent Solids	76.9	%					07/27/98	NMP	EPA 5030
Gasoline Range Organics	180	mg/kg	L	1.3	4.5	07/24/98	07/30/98	EMH	WDNR GRO
1,2,4-Trimethylbenzene	7.6	mg/Kg		0.014	0.048	07/24/98	07/30/98	RLD	EPA 8021A
1,2-Dibromoethane (EDB)	<0.070	mg/Kg		0.007	0.023	07/24/98	07/30/98	RLD	EPA 8021A
1,3,5-Trimethylbenzene	4.2	mg/Kg		0.012	0.039	07/24/98	07/30/98	RLD	EPA 8021A
Benzene	2.2	mg/Kg	V	0.019	0.063	07/24/98	07/30/98	RLD	EPA 8021A
Ethylbenzene	<0.11	mg/Kg		0.011	0.036	07/24/98	07/30/98	RLD	EPA 8021A
m&p-Xylene	<0.22	mg/Kg		0.022	0.075	07/24/98	07/30/98	RLD	EPA 8021A
Methyl-tert-butyl ether	<0.090	mg/Kg		0.009	0.030	07/24/98	07/30/98	RLD	EPA 8021A
o-Xylene	<0.12	mg/Kg		0.012	0.042	07/24/98	07/30/98	RLD	EPA 8021A
Toluene	<0.11	mg/Kg		0.011	0.037	07/24/98	07/30/98	RLD	EPA 8021A
Diesel Range Organics	380	mg/kg		1.4	4.7	07/27/98	08/05/98	PML	WDNR DRO
1-Methyl Naphthalene	1.0	mg/kg	M	0.047	0.16	07/28/98	07/29/98	CMK	EPA 8310
2-Methyl Naphthalene	1.7	mg/kg	M	0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthene	<0.048	mg/kg		0.048	0.16	07/28/98	07/29/98	CMK	EPA 8310
Acenaphthylene	<0.051	mg/kg		0.051	0.17	07/28/98	07/29/98	CMK	EPA 8310
Anthracene	<0.023	mg/kg		0.023	0.077	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)anthracene	<0.0020	mg/kg		0.002	0.006	07/28/98	07/29/98	CMK	EPA 8310
Benzo(a)pyrene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(b)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Benzo(g,h,i)perylene	<0.0041	mg/kg		0.004	0.014	07/28/98	07/29/98	CMK	EPA 8310
Benzo(k)fluoranthene	<0.0015	mg/kg		0.001	0.005	07/28/98	07/29/98	CMK	EPA 8310
Chrysene	<0.092	mg/kg		0.092	0.31	07/28/98	07/29/98	CMK	EPA 8310
Dibenzo(a,h)anthracene	<0.23	mg/kg		0.23	0.77	07/28/98	07/29/98	CMK	EPA 8310
Fluoranthene	<0.0049	mg/kg		0.004	0.016	07/28/98	07/29/98	CMK	EPA 8310
Fluorene	<0.0086	mg/kg		0.008	0.029	07/28/98	07/29/98	CMK	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0094	mg/kg		0.009	0.031	07/28/98	07/29/98	CMK	EPA 8310
Naphthalene	0.14	mg/kg		0.031	0.10	07/28/98	07/29/98	CMK	EPA 8310
Phenanthrene	<0.0035	mg/kg		0.003	0.012	07/28/98	07/29/98	CMK	EPA 8310
Pyrene	<0.0062	mg/kg		0.006	0.021	07/28/98	07/29/98	CMK	EPA 8310

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

REVISED
ANALYTICAL REPORT

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HOC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206263 **Sample Description:** GP-7(1.5-2) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
1,2-Dibromoethane (EDB)	<2.8	mg/Kg		0.007	0.023	07/24/98	07/30/98	RLD	EPA 8021A
1,3,5-Trimethylbenzene	220	mg/Kg		0.012	0.039	07/24/98	07/30/98	RLD	EPA 8021A
Benzene	210	mg/Kg	V	0.019	0.063	07/24/98	07/30/98	RLD	EPA 8021A
Ethylbenzene	220	mg/Kg		0.011	0.036	07/24/98	07/30/98	RLD	EPA 8021A
m&p-Xylene	1000	mg/Kg		0.022	0.075	07/24/98	07/30/98	RLD	EPA 8021A
Methyl-tert-butyl ether	<3.6	mg/Kg		0.009	0.030	07/24/98	07/30/98	RLD	EPA 8021A
o-Xylene	410	mg/Kg		0.012	0.042	07/24/98	07/30/98	RLD	EPA 8021A
Toluene	980	mg/Kg		0.011	0.037	07/24/98	07/30/98	RLD	EPA 8021A
Diesel Range Organics	540	mg/kg	K	1.4	4.7	07/30/98	08/05/98	PML	WDNR DRO

Sample I.D. #: 206265 **Sample Description:** GP12(3.5-4) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Percent Solids	69.8	%					07/27/98	NMP	EPA 5030
Gasoline Range Organics	1000	mg/kg	L	1.3	4.5	07/24/98	07/29/98	EMH	WDNR GRO
1,2,4-Trimethylbenzene	49	mg/Kg		0.014	0.048	07/24/98	07/30/98	RLD	EPA 8021A
1,2-Dibromoethane (EDB)	<0.70	mg/Kg		0.007	0.023	07/24/98	07/30/98	RLD	EPA 8021A
1,3,5-Trimethylbenzene	18	mg/Kg		0.012	0.039	07/24/98	07/30/98	RLD	EPA 8021A
Benzene	6.6	mg/Kg	VJ	0.019	0.063	07/24/98	07/30/98	RLD	EPA 8021A
Ethylbenzene	31	mg/Kg		0.011	0.036	07/24/98	07/30/98	RLD	EPA 8021A
m&p-Xylene	3.8	mg/Kg	J	0.022	0.075	07/24/98	07/30/98	RLD	EPA 8021A
Methyl-tert-butyl ether	<0.90	mg/Kg		0.009	0.030	07/24/98	07/30/98	RLD	EPA 8021A
o-Xylene	<1.2	mg/Kg		0.012	0.042	07/24/98	07/30/98	RLD	EPA 8021A
Toluene	5.8	mg/Kg		0.011	0.037	07/24/98	07/30/98	RLD	EPA 8021A
Diesel Range Organics	190	mg/kg	K	1.4	4.7	07/30/98	08/05/98	PML	WDNR DRO

Sample I.D. #: 206268 **Sample Description:** GP-5(4-4.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Air-filled Porosity	38.4	%					08/06/98	ETK	MOSA 18-2
Total Porosity	0.615						08/06/98	ETK	MOSA 18-2
% Moisture/ %SMHC	69.0	%					08/06/98	ETK	MOSA 36-2
Moisture Holding Capacity	39.1	%					08/06/98	ETK	MOSA 36-2
Bulk Density	1.02	gTS/cm3					08/06/98	ETK	MOSA 13-2
Total Percent Solids	71.2	%					07/27/98	NMP	EPA 5030
pH (Soil)(Lab)	7.49	S.U.'s					07/27/98	JDC	EPA 9040
TOC as % Organic Matter	0.88	%		0.01	NA		07/29/98	KJF	MOSA 29.4

Commonwealth Technology, Inc.
Laboratory Division
Accredited Lab Data for Today's Environment

REVISED
ANALYTICAL REPORT

1230 Lange Court
Baraboo, WI 53913-3901
Phone: 800-228-3012
Fax: 608-356-2766
email: fyi@ctienv.com

Customer #: LE8000006752
Work Order: 9807000689
Date Revised: 08/12/98
Date Received: 07/24/98
Arrival Temperature: On Ice

EDER ASSOCIATES
JEFF KING
8025 EXCELSIOR DR
MADISON, WI 53717-1900

Report Submitted By: HGC
Record Reviewer

Note: None

Project Name: **MURPHY OIL** Project Number: **367-18.3**

Sample I.D. #: 206273 **Sample Description:** GP-9(4-4.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Total Porosity	0.498						08/06/98	ETK	MOSA 18-2
% Moisture/ %SMHC	65.2	%					08/06/98	ETK	MOSA 36-2
Moisture Holding Capacity	34.8	%					08/06/98	ETK	MOSA 36-2
Bulk Density	1.33	gTS/cm3					08/06/98	ETK	MOSA 13-2
Total Percent Solids	78.1	%					07/27/98	NMP	EPA 5030
pH (Soil)(Lab)	7.87	S.U.'s					07/27/98	JDC	EPA 9040
TOC as % Organic Matter	1.08	%		0.01	NA		07/29/98	KJF	MOSA 29.4

Sample I.D. #: 206274 **Sample Description:** GP-11(4-4.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Air-filled Porosity	0	%					08/06/98	ETK	MOSA 18-2
Total Porosity	0.453						08/06/98	ETK	MOSA 18-2
% Moisture/ %SMHC	66.3	%					08/06/98	ETK	MOSA 36-2
Moisture Holding Capacity	36.5	%					08/06/98	ETK	MOSA 36-2
Bulk Density	1.45	gTS/cm3					08/06/98	ETK	MOSA 13-2
Total Percent Solids	73.4	%					07/27/98	NMP	EPA 5030
pH (Soil)(Lab)	7.74	S.U.'s					07/27/98	JDC	EPA 9040
TOC as % Organic Matter	1.35	%		0.01	NA		07/29/98	KJF	MOSA 29.4

Sample I.D. #: 206276 **Sample Description:** GP-13(4-4.5) **Date Sampled:** 07/21/98

Analyte	Result	Units	Qualifier	LOD	LOQ	Date Extracted	Date Analyzed	Analyst	Method
Air-filled Porosity	20.3	%					08/06/98	ETK	MOSA 18-2
Total Porosity	0.562						08/06/98	ETK	MOSA 18-2
% Moisture/ %SMHC	65.6	%					08/06/98	ETK	MOSA 36-2
Moisture Holding Capacity	42.4	%					08/06/98	ETK	MOSA 36-2
Bulk Density	1.16	gTS/cm3					08/06/98	ETK	MOSA 13-2
Total Percent Solids	72.3	%					07/27/98	NMP	EPA 5030
pH (Soil)(Lab)	7.85	S.U.'s					07/27/98	JDC	EPA 9040
TOC as % Organic Matter	1.24	%		0.01	NA		07/29/98	KJF	MOSA 29.4

Commonwealth Technology, Inc.

ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 Lange Court
Baraboo, WI 53913
1-800-228-3012 (608) 356-2760 FAX: (608) 356-2766

Project #: 367-183
Proj. Name: Murphy Oil
Client Name / Number: Eder Associates

Remarks: 02704
Report to: Jeff King, Eder Assoc
8025 Excelsior Dr.
Madison, WI 53717
Bill to: Lee Vail, Murphy Oil USA
689

FILL IN ANALYSIS NEEDED BELOW

Date	Time	Comp	Grab	Sample Description	Sample #	Number of Containers	Porosity/% moisture	fraction organic carbon	bulk density	PH	GRO/PVOC + ethylene dibromide	DRO	PAHs	Pres.	Sample I.D. #'s:
7/21/98	Am	soil	X	Ziplock bag	GP-1A(4-5)	1	✓								206209
	Am		X		~~GP-1B~~ GP-2A(6-7)	1	✓								206210
	Am		X		GP-2B(4-5)	1	✓								206211
	Am		X	↓	GP-3A(4-5)	1	✓								206212
	Pm		X		GP-5(1-1.5)	3					✓	✓	✓		206213
	Pm		X		GP-5(4.5-5)	3					✓	✓	✓		206214
	Pm		X		GP-5(4-4.5)	1	✓	✓	✓	✓					206268
	Pm		X		GP-6(1-1.5)	3					✓	✓	✓		206215
	Pm		X		GP-6(4.5-5)	3					✓	✓	✓		206216
	Pm		X		GP-6(4-4.5)	1	✓	✓	✓	✓					206270
	Pm		X		GP-7(1-1.5)	3					✓	✓	✓		206217
	Pm		X		GP-7(4.5-5)	3					✓	✓	✓		206218
	Pm		X		GP-7(4-4.5)	1	✓	✓	✓	✓					206271
					GP-8(1-1.5)	3					✓	✓	✓		206219
					GP-8(4.5-5)	3					✓	✓	✓		206220
					GP-8(4-4.5)	1	✓	✓	✓	✓					206272
					GP-9(1-1.5)	3					✓	✓	✓		206221
					GP-9(4.5-5)	3					✓	✓	✓		206222
					GP-9(4-4.5)	1	✓	✓	✓	✓					206273
				Ziplock bag	GP-10(4-5)	1	✓							no sample. DD	
↓	↓	↓	↓		GP-11(1-1.5)	3					✓	✓	✓		206223

Space Below For Laboratory Use

Sampled By: Jeff King (JJK)

Relinquished By: Jeff King — Date: 7/23/98 — Time: 7:15

Received By: — Date: — Time:

Received By Lab: S.O'M — Date: 7/23/98 — Time:

Remarks:

Date Sample Disposed of:

Sample Shipped Via: ___ UPS ___ Fed. Exp. X Hand ___ U.S. Mail

Sublab: ___
Is this a PECFA project? (Please indicate "Yes" or "No") yes

Sample Status: Deg. C: on ice pH:

Commonwealth Technology, Inc.

ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 Lange Court
Baraboo, WI 53913
1-800-228-3012 (608) 356-2760 FAX: (608) 356-2766

Project #: 367-18.3

Proj. Name: Murphy Oil

Client Name / Number: Eder Associates

FILL IN ANALYSIS NEEDED BELOW

Remarks: 02705

689

Space Below For Laboratory Use

Date	Time	Comp	Grab	Sample Description	Sample #	Number of Containers	Porosity/% moisture	fraction organic Carbon	bulk density	pH	GRO/PVC + alkyl dibromide	DRO	PAHs	Pres.	Sample I.D. #'s:
7/21/98	8am	50:1	X		GP-11(4.5-5)	3					✓	✓	✓		206224
					GP-11(4-4.5)	1	✓	✓	✓	✓					206274
					GP-12(1-1.5)	3					✓	✓	✓		206225
					GP-13(4.5-5)	3					✓	✓	✓		206226
					GP-13(4-4.5)	1	✓	✓	✓	✓					206276
					GP-14(1-1.5)	3					✓	✓	✓		206227
					GP-14(4.5-5)	3					✓	✓	✓		206228
↓	↓				GP-14(4-4.5)	1	✓	✓	✓	✓					206229
7/22/98	9:20				GP-15(1-1.5)	3					✓	✓	✓		206230
	9:35				GP-15(4.5-5)	3					✓	✓	✓		206231
	9:35				GP-15(4-4.5)	1	✓	✓	✓	✓					206232
	9:55				GP-16(1-1.5)	3					✓	✓	✓		206233
	10:05				GP-16(4.5-5)	3					✓	✓	✓		206234
	10:05				GP-16(4-4.5)	1	✓	✓	✓	✓					206235
	10:20				GP-17(1-1.5)	3					✓	✓	✓		206236
	10:30				GP-17(4.5-5)	3					✓	✓	✓		206237
	10:30				GP-17(4-4.5)	1	✓	✓	✓	✓					206238
	10:45				GP-18(1-1.5)	3					✓	✓	✓		206239
	10:55				GP-18(4.5-5)	3					✓	✓	✓		206240
	10:55				GP-18(4-4.5)	1	✓	✓	✓	✓					206241
↓	11:15	↓	↓		GP-19(1-1.5)	3					✓	✓	✓		206242

Sampled By: Jeff King (JJK)

Relinquished By: Jeff King — Date: 7/23/98 — Time: 7:15

Received By: — Date: — Time:

Received By Lab: — Date: 7/23/98 — Time:

Remarks:

Date Sample Disposed of:

Sample Shipped Via: _____ UPS _____ Fed. Exp. _____ Hand _____ U.S. Mail

Sublab: _____

Is this a PECFA project? (Please indicate "Yes" or "No") Yes

Sample Status: on ice

Deg. C: _____ pH: _____

Commonwealth Technology, Inc.

ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 Lange Court
Baraboo, WI 53913
1-800-228-3012 (608) 356-2760 FAX: (608) 356-2766

Project #: 367-18.3
Proj. Name: Murphy Oil
Client Name / Number: Edor Associates

FILL IN ANALYSIS NEEDED BELOW

Remarks: 02706

Space Below For Laboratory Use

Date	Time	Comp	Grab	Sample Description	Sample #	Number of Containers	Porosity/% moisture	fraction organic Carbon	bulk density	pH	GRO/BTEX + ethyl dibromide	DRO	PAHs	Pres.	Sample I.D. #'s:
7/22/98	11:20	Soil	X		GP-19(4.5-5)	3					✓	✓	✓		206243
	11:20				GP-19(4-4.5)	1	✓	✓	✓	✓					206244
	13:30			Ziplock bag	GP-20(6-7)	1	✓								206245
	14:00				GP-21(1-1.5)	3					✓	✓	✓		206246
	14:10				GP-21(4.5-5)	3					✓	✓	✓		206247
	14:10				GP-21(4-4.5)	1	✓	✓	✓	✓					206248
	14:20				HA-1(1-1.5)	3					✓	✓	✓		206249
	14:35				HA-1(4.5-5)	3					✓	✓	✓		206250
	14:35				HA-1(4-4.5)	1	✓	✓	✓	✓					206252
	14:45				HA-2(1-1.5)	3					✓	✓	✓		206253
	14:55				HA-2(4.5-5)	3					✓	✓	✓		206254
	14:55				HA-2(4-4.5)	1	✓	✓	✓	✓					206255
	15:55				GP-25(1-1.5)	3					✓	✓	✓		206257
	16:00				GP-25(4.5-5)	3					✓	✓	✓		206258
↓	16:00	↓	↓		GP-25(4-4.5)	1	✓	✓	✓	✓					206259
↓	8:45	↓	↓	Ziplock bag	GP-4A(4-5)	1	✓								206261
7/21/98	PM	↓	↓		GP-7(1.5-2)	3					✓	✓			206263
				DD	GP12(3.5-4)						X	X			206265

Sampled By: Jeff King (JSK)

Relinquished By: [signature] Date: 7/23/98 Time: 7:15

Received By: Date: Time:

Received By Lab: [signature] Date: 7/23/98 Time:

Remarks:

Date Sample Disposed of:

Sample Shipped Via: ___ UPS ___ Fed. Exp. X Hand ___ U.S. Mail

Sublab: ___ Is this a PECFA project? (Please indicate "Yes" or "No") Yes

Sample Status: Deg. C: on ice pH:

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
	Douglas	MW-1 / TK31
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well Number**
_____	16		

	Before Development	After Development
1. Can this well be purged dry?	■ Yes ☐ No	
2. Well development method		
surged with bailer and bailed	■ 41	
surged with bailer and pumped	☐ 61	
surged with block and bailed	☐ 42	
surged with block and pumped	☐ 62	
surged with block, bailed and pumped	☐ 70	
compressed air	☐ 20	
bailed only	☐ 10	
pumped only	☐ 51	
pumped slowly	☐ 50	
Other _____	☐	
3. Time spent developing well	14 min.	
4. Depth of well (from top of well casisng)	20.7 ft.	
5. Inside diameter of well	2.05 in.	
6. Volume of water in filter pack and well casing	5.5 gal.	
7. Volume of water removed from well	5.0 gal.	
8. Volume of water added (if any)	____.__ gal.	
9. Source of water added	_____	
10. Analysis performed on water added? (If yes, attach results)	☐ Yes ☐ No	
11. Depth to Water (from top of well casing)	a. 14.85 ft.	____.__ ft.
Date	b. 12/02/98 (m m d d y y)	12/10/98 (m m d d y y)
Time	c. 02:35 ☐ a.m. ■ p.m.	9:44 ☐ a.m. ■ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ■ 10 Turbid ☐ 15	Clear ■ 20 Turbid ☐ 25
(Describe)	clear top, red-brown bottom	clear top, light red-brown bottom
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

On 12/2/98, 3 gallons were removed from 2:35-2:45pm.

On 12/10/98, 2 gallons were removed from 9:40-9:44am.

Well developed by: Person's Name and Firm	I hereby certify that the above information is true and correct to the best of my knowledge.
Name: Irvin G. Mossberger	Signature: Irvin G. Mossberger
Firm: Twin Ports Testing	Print Initials: IGM
	Firm: Twin Ports Testing

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 6-97

Facility/Project Name: Murphy Oil	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: MW-1 / T-31
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or St. Plane ____ ft. N, ____ ft. E. S/C/N	Wis. Unique Well No. / DNR Well Number
Facility ID: 3410-9761	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____ T. ____ N, R. ____ ☐ E ☐ W	Date Well Installed: 10/28/1998
Type of Well: Well Code 11/mw	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Mike Mueller, Boart Longyear
Distance Well Is From Waste/Source Boundary ____ ft.		

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 2.50 ft. MSL
C. Land surface elevation ____ ft. MSL
D. Surface seal, bottom ____ ft. MSL or 2.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

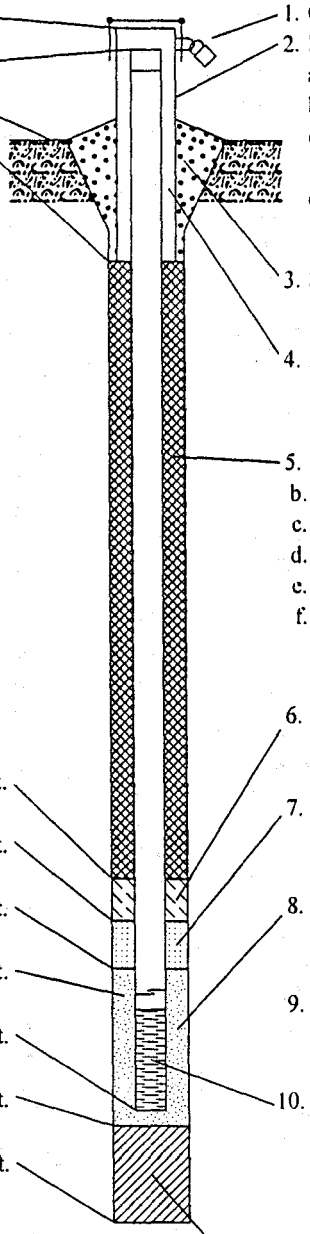
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; ____ Other ☐ __

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis): ____

E. Bentonite seal, top ____ ft. MSL or -0.2 ft.
F. Fine sand, top ____ ft. MSL or ____ ft.
G. Filter pack, top ____ ft. MSL or 2.5 ft.
H. Screen joint, top ____ ft. MSL or 3.0 ft.
I. Well bottom ____ ft. MSL or 18.0 ft.
J. Filter pack, bottom ____ ft. MSL or 19.0 ft.
K. Borehole, bottom ____ ft. MSL or 19.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 4.5 ft.
c. Material: Steel ☒ 04; ____ Other ☐ __
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; ____ Other ☐ __
4. Material between well casing and protective pipe: Bentonite ☐ 30; #7 Badger Other ☒ __
5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐ __
7. Fine sand material: Manufacturer, product name and mesh size
a. None __
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material __
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; ____ Other ☐ __
10. Screen material: PVC __
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; ____ Other ☐ __
b. Manufacturer Boart Longyear
c. Slot size: 0.006 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 14; ____ Other ☐ __

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm BOART LONGYEAR, 101 ALDERSON ST., P.O. BOX 109 SCHOFIELD, WI 54476 Tel: 715-359-7090 Fax:

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

SC **BORING LOG INFORMATION**
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☐ Other ☐ _____

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Murphy Oil USA, Inc. - Tank 31		MW-1/T31

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Mike Last Name: Mueller Firm: Boart Longyear	10/28/98	10/28/98	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
JM778			0 Feet MSL	0 Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 0 N, 0 E S/C/N
SW 1/4 of SW 1/4 of Section 25, T 49 N, R 14 E/W
Lat 0° 0' 0"
Long 0° 0' 0"
Local Grid Location ☐ N ☐ E
0 Feet ☐ S 0 Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
0	DOUGLAS	16	Superior

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0-2	8		1	Black-red silty sandy clayey LOAM, slight petroleum-like odor	OL									
			2	Black-red CLAY, trace fine sand, strong petroleum-like odor, possible staining	CL									
2-4	12		4	Same	CL									
4-6	14		6	Red CLAY, petroleum-like odor	CL									
6-8	23		8	Same, slight petroleum-like odor, trace gray fracture planes	CL									
8-10	24		10	Same, no fractures, no odor, <1% fine angular gravel	CL									
10-12	24		12	Same	CL									
12-14	8		14	Same	CL									
14-16	24		16	Same	CL									
16-18	24		18	Same, end of boring at 18 feet	CL									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Jeff Zinn	Gannett Fleming, Inc., Madison, WI

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.