file

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
John Gozdzialski, Regional Director

Northern Region Headquarters
107 Sutliff Ave.
Rhinelander, Wisconsin 54501-3349
Telephone 715-365-8900
FAX 715-365-8932
TTY Access via relay - 711

November 9, 2004

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

Subject: Final Case Closure By Closure Committee
Murphy Oil –Crude Unit Process Area, 2400 Stinson Ave, Superior, WI
BRRTS # 02-16-222638 and 04-16-046256

Dear Ms. Lundmark:

On September 2, 1999, your site as described above was reviewed for closure by the Northern Closure Committee. This committee reviews environmental remediation cases for compliance with state laws and standards to maintain consistency in the closure of these cases. On October 1, 1999, you were notified that the Closure Committee had granted conditional closure to this case.

On November 4, 2004, the Department received correspondence indicating that you have complied with the conditions of closure, specifically, recording of a deed restriction for the site. Based on the correspondence and data provided, it appears your case has been remediated to Department standards in accordance with s. NR 726.05, Wis. Adm. Code. The Department considers this case closed and no further investigation, remediation or other action is required at this time.

Your site will be listed on the DNR Remediation and Redevelopment GIS Registry of Closed Remediation Sites. Information that was submitted with your closure request application will be included on the registry. To review the sites on the GIS Registry web page, visit http://gomapout.dnr.state.wi.us/org/at/et/geo/gwur/index.htm If your property is listed on the GIS Registry due to groundwater contamination exceeding ch. NR 140 standards at the time of closure, and you intend to construct or reconstruct a well, you will need Department approval. Department approval is required before construction or reconstruction of a well on a property listed on the GIS Registry, in accordance with s. NR 812.09(4)(w). To obtain approval, Form 3300-254 needs to be completed and submitted to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line at the web address listed above.

If this is a PECFA site, section 101.143, Wis. Stats., requires that PECFA claimants seeking reimbursement of interest costs, for sites with petroleum contamination, submit a final reimbursement claim within 120 days after they receive a closure letter on their site. For claims not received by the PECFA Program within 120 days of the date of this letter, interest costs after 60 days of the date of this letter will not be eligible for PECFA reimbursement.

If there is equipment purchased with PECFA funds remaining at the site, contact the Commerce PECFA Program to determine the method for salvaging the equipment.

Please be aware that this case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code, if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety or welfare, or the environment.

The Department appreciates your efforts to restore the environment at this site. If you have any questions regarding this letter, please contact me at 715-365-8990.

Sincerely,
NORTHERN REGION

Janet Kazda

Janet Kazda
Remediation & Redevelopment Program

cc: File
Jim Hosch, Superior

Dennis Kugle
Gannett Fleming, Inc.
8025 Excelsior Dr
Madison, WI 53717-1900

Gannett Fleming

GANNETT FLEMING, INC.
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www.gannettfleming.com

October 1, 2004
File #34265.003

Janet Kazda
Program Assistant
Wisconsin Department Natural Resources
107 Sutliff Avenue
Rhinelander, WI 54501

Re: Soil GIS Registry Packet
Superior Refinery/Murphy Oil – Crude Unit Process Area
2400 Stinson Avenue, Superior
WDNR BRRTS No.: 02-16-222638

Dear Ms. Kazda:

On behalf of Murphy Oil USA, Inc., Gannett Fleming, Inc. is submitting this Geographic Information System (GIS) Registry Packet for the Crude Unit Process Area release site at Murphy's Superior refinery. In an October 1, 1999, letter to Mark Miller of Murphy, the Wisconsin Department of Natural Resources (WDNR) conditionally closed the Crude Unit Process Area site. The condition of closure was that Murphy file a deed restriction for the remaining petroleum-contaminated soils at the site and the inspection and maintenance of the concrete surface cap.

On April 7, 2004, Gannett Fleming sent a draft deed restriction to the WDNR that included the Crude Unit Process Area site. On April 23rd, you emailed WDNR's requested changes to the "draft" deed restriction to Jeff King in our office. These changes have been incorporated, and a "final" deed restriction was sent to Douglas County on September 29th for recording.

It is our understanding that registry of the site on the WDNR's GIS system is also required to complete final closure of the site. Following is the GIS registry required information:

1. *One-time fee of $200.00 for soil registry:* A check from Murphy Oil for $200.00 made out to the WDNR is attached.

2. *Copies of the most recent deed:* See Attachment A for a copy of the most recent deed.

3. *A copy of the certified survey map or the relevant section of the recorded plat map for those properties where the legal description in the most recent deed refers to a certified survey map or a recorded plat map*: See Attachment B for a copy of the recorded plat map provided by the Douglas County Clerk's office and dated 29 June 1992.

4. *Geographic position of all properties within or partially within the contaminated site boundaries:* Based on WTM91 projection, representative coordinates for the site are 361569 and 692846. These coordinates were obtained from the following WDNR website: http://gomapout.dnr.state.wi.us/org/at/et/geo/gwur/index.htm. To determine the WTM91 coordinates, the scale of 1:3,239 was used when recording the coordinates.

5. *Parcel identification number for each property:* The parcel number for the Murphy property is 01-801-0339.00. The Douglas County treasurer's office provided the parcel number. An outline of the property can be seen on the recorded plat map (Attachment B)

6. *A location map:* Enclosed Figure 1 is a location map of the Murphy Oil refinery. The Crude Unit Process Area is located in the approximate south-central portion of the refinery property, just south of the maintenance shop (see Figure 2).

7. *A map of all contaminated properties within site boundaries, showing buildings, roads, property boundaries, contaminant sources, utility lines, monitoring wells, and potable wells:* Enclosed Figure 2 is a site plan of the refinery. Figure 3 shows the Crude Unit Process Area in detail and the locations of the soil samples associated with this release investigation.

8. *A table of the most recent analytical results, with sample collection dates for soils samples:* Enclosed Table 1 presents the results for the samples collected from the two soil sample locations for this investigation.

9. *An iso-concentration map, if required as part of the site investigation:* An iso-concentration map was not prepared as part of the site investigation. Enclosed Figure 3 shows the approximate horizontal extent of petroleum-contaminated soil remaining at this release site.

10. *A table of the previous four water level elevation measurements from all monitoring wells, at a minimum, with the date measurements were made:* No groundwater monitoring wells were installed for the Crude Unit Process Area site investigation.

11. *A map showing the location of all soil samples and a single contour showing the horizontal extent of residual soil contamination that exceeds generic or site-specific RCLs:* Enclosed Figure 3 shows the locations of all soil samples collected during this site investigation and the approximate horizontal extent of soil exceeding NR 720 standards.

12. *A geologic cross section, if required as part of the site investigation:* A geological cross section was not required as part of the site investigation. However, enclosed Figure 4 is a cross section that encompasses the Tanks 35, 67, 53,65 and 15 basins and that represents geological conditions in the refinery site.

13. *A statement signed by the responsible party, which states that he or she believes that the legal descriptions attached to the statement are complete and accurate:* See Attachment C for a signed statement by Murphy Oil USA, Inc. stating that the legal description of the property is complete and accurate.

14. *A copy of a letter sent by the RP to all owners of properties with groundwater exceeding ESs:* This item is not applicable. There is no documented groundwater contamination associated with the Crude Unit Process Area.

15. *A copy of notification provided to city/village/municipality/state agency responsible for maintenance of a public road right-of-way, within or partially within the boundaries of the contaminated site:* This item is not applicable. There is no documented groundwater contamination associated with the Crude Unit Process Area.

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)

Gannett Fleming

GANNETT FLEMING, INC.
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May 6, 2004
File #34265.003

Ms. Janet Kazda
Program Assistant
Wisconsin Department of Natural Resources
Rhinelander Office
107 Sutliff Avenue
Rhinelander, WI 54501

Re: Murphy Oil USA, Inc.
Superior, Wisconsin
Maintenance Plans for Surface Caps
Crude Unit Process Area, Tanks S-1 and S-2 Basin and Slop Oil Manifold Area

Dear Janet:

On April 7th, Gannett Fleming, Inc. sent, to the attention of Ms. Danielle Wincentsen in WDNR's Antigo office, a "draft" deed restriction for the above-referenced sites located at the Murphy refinery. On April 23rd, you sent Jeff King of our office the WDNR's suggested changes to the "draft" deed restriction, which were prepared by Ms. Linda Meyer, a staff attorney with the Bureau of Legal Services.

One of Ms. Meyer's suggested changes was to include a reference to the approved maintenance plan for the surface caps in place at the following release sites:

Crude Unit Process Area – BRRTS No. 02-16-222638
Tanks S-1 and S-2 Basin – BRRTS No. 02-16-222670
Slop Oil Manifold Area – BRRTS No. 02-16-246715

On behalf of Murphy Oil, we are providing the maintenance plans for the surface caps located at the three above release sites. We request WDNR's review and written approval of the plans. Once we have that approval, we can include the date in the deed restriction in the appropriate places.

Please call if you have any questions about the maintenance plans; otherwise, we look forward to the WDNR's approval so that we can finalize and file the deed restriction.

Sincerely,

GANNETT FLEMING, INC.

Dennis F. Kugle
Senior Associate

DFK/jec/Enc.

cc: Liz Lundmark (Murphy, Superior)
Lee Vail (Murphy, New Orleans)
Rick Lewandowski (DeWitt, Ross & Stevens)
Jim Hosch (WDNR, Superior)

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN, REFINERY

MAINTENANCE PLAN FOR SURFACE CAP
CURRENT CRUDE UNIT PROCESS AREA
WDNR ACTIVITY NUMBER 02-16-222638
MAY 2004

The owner of the property described in this Notice of Contamination to Property (Notice) and with the surveyed metes and bounds description listed in the Crude Unit Process Area section of this Notice shall maintain the existing concrete paved surface that currently provides a barrier (i.e., surface cap) to minimize the infiltration of precipitation into the underlying residual petroleum-contaminated soils.

Maintenance of the cap shall consist of, but not be limited to, annual visual inspections of the cap for cracks, gaps, holes, or other defects that would allow precipitation to reach the underlying soils. If any such defects are observed, they will be repaired in such a way as to minimize infiltration and be relatively permanent. Repair activities may include one or more of, but not be limited to, the following: caulking, sealing, or replacement of the defective portion of the cap. Repair activities shall be initiated in a reasonable period of time.

Written documentation of each annual inspection of the concrete paved surface and any repair activities taken shall be kept on file at the site.

Site Contact

Liz Lundmark, Environmental Manager
Murphy Oil USA, Inc.
Superior, Wisconsin
Phone: (715) 398-3533

Kazda, Janet L

From: Kazda, Janet L
Sent: Friday, April 23, 2004 1:28 PM
To: 'Jking@GFNET.com'
Subject: FW: Murphy Oil USA Superior Refinery Draft Deed Restriction

Hi, Jeff. I am forwarding to you our attorney's (Linda Meyer) and the Commerce project manager's (Will Myers) comments and approvals for the draft deed restrictions you submitted for several sites at Murphy Oil. Please follow Ms. Meyer's directions for changes to the instrument. When the restriction has been signed and recorded, please be sure to send a copy to me and to Will Myers at Commerce.

I will issue a final closure letter for the DNR-managed sites when I have received the copy. Please call me if you have questions.

Janet Kazda
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
phone: (715) 365-8990
fax: (715) 365-8977
e-mail: Janet.Kazda@dnr.state.wi.us

-----Original Message-----
From: Myers, Will [mailto:wmmyers@commerce.state.wi.us]
Sent: Thursday, April 22, 2004 3:18 PM
To: Meyer, Linda L.; Kazda, Janet L
Subject: RE: Murphy Oil USA Superior Refinery Draft Deed Restriction

I have reviewed the suggested changes for the Deed Instrument. I do not have any objections to the changes purposed by Linda Meyer.

Per the telephone conversation with Ms. Meyer, someone from the DNR will contact Jeffery King at Gannett Fleming with the changes.

Please ensure that Jeffery sends a copy of the filed Deed Instrument to me at the Department of Commerce.

If I can be of further assistance, do not hesitate to contact me.

Will (Woody) Myers
Geologist
Wisconsin Department of Commerce
Environmental and Regulatory Services
Voice (608) 261-7718
Fax. (608) 267-1381
wmmyers@commerce.state.wi.us

> -----Original Message-----
> From: Meyer, Linda L. [mailto:Linda.Meyer@dnr.state.wi.us]
> Sent: Thursday, April 22, 2004 3:00 PM
> To: Myers, Will
> Cc: Kazda, Janet L
> Subject: Murphy Oil USA Superior Refinery Draft Deed Restriction
>
> Will: Last week Janet Kazda sent me a draft deed restriction that she had
> received from Gannett Fleming for several sites at the Murphy Oil refinery
> in Superior. As you know, they want to combine the deed restrictions for
> several Department of Commerce sites with the deed restrictions for the

> three DNR sites at the refinery. Janet suggested that if I thought that
> any major changes were required in the draft deed restriction, I should
> contact you directly to share my comments with you. The following changes
> will need to be made to make the proposed deed restriction acceptable to
> DNR:
>
> (1) Crude Unit Process Area and Tanks S-1 and S-2 Basin: The following
> paragraph (or similar wording) needs to be inserted into the deed
> restriction to specify the kind of cap that is required in the Crude Unit
> Process Area and in the area of the Tanks S-1 and S-2 Basin if the
> existing concrete caps are ever removed, and to require compliance with a
> submitted maintenance plan:
>
> "The concrete surface barrier cap shall be maintained in the Crude Unit
> Process Area shown on Exhibit 9 unless another barrier, with an
> infiltration rate of 10?7 cm/sec or less, is installed and maintained in
> its place. The existing cap, and any replacement barrier with an
> infiltration rate of 10?7 cm/sec or less, shall be maintained in the
> above-described area in compliance with the "[Insert title of the approved
> maintenance plan]" dated [Insert date], that was submitted to the
> Wisconsin Department of Natural Resources by [Insert name of the
> responsible parties], as required by section NR 724.13(2), Wis. Adm. Code
> (1997)."
>
> (2) Slop Oil Manifold Area: The following paragraph (or similar wording)
> needs to be inserted into the deed restriction to require sampling of
> contaminated soil that is currently inaccessible if it becomes accessible
> in the future:
>
> "Structural impediments existing at the time of clean-up made complete
> [choose the correct wording: investigation and/or remediation] of the soil
> contamination in this area of the property impracticable. If the
> structural impediments in this area are removed, the property owner shall
> conduct an investigation of the degree and extent of petroleum
> contamination. To the extent that contamination is found at that time,
> the Wisconsin Department of Natural Resources shall be immediately
> notified and the contamination shall be properly remediated in accordance
> with applicable statutes and rules."
>
> The e-mail that Janet Kazda sent to me, summarizing the reasons for the
> deed restrictions for the DNR sites at the Murphy Oil Superior Refinery,
> did not mention that a surface barrier cap was required for the Slop Oil
> Manifold Area. If a cap is required as a condition of case closure for
> the Slop Oil Manifold Area, the same paragraph that is quoted above for
> the Crude Unit Process Area and Tanks S-1 and S-2 Basin will need to be
> inserted in the section dealing with the Slop Oil Manifold Area as well.
>
> (3) The title of the document needs to be changed to read "Notice of
> Restrictions on Property" or "Deed Restriction" so that it is clear that
> land use restrictions are contained in the document, and that the document
> is not just a notice of the existence of residual contamination.
>
> (4) Regarding the legal description: I think that it is acceptable for
> them to simply reference the legal description found in the deed recorded
> at Volume 266, pages 647 to 655, as long as the phrase "The property" or
> "All of the property" is inserted before "described in Douglas County
> Warranty Deed No. 453215 and filed as Volume 266, Pages 647 through 655,
> on April 19, 1961. It obviously would be a very long legal description
> and it does not make sense to require them to include such a long legal
> description in the deed restriction document itself.
>
> Please let me know if you have any questions or concerns about any of the
> changes that I will be requesting. Thank you.

>
> Linda Meyer
> Staff Attorney
> Bureau of Legal Services
> Wisconsin Department of Natural Resources
> (*) phone: (608) 266-7588
> (*) fax: (608) 266-6983
> (*) e-mail: Linda.Meyer@dnr.state.wi.us
>

02-16-22638

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: April 13, 2004

TO: Linda Meyer, LS/5

FROM: Janet Kazda, NOR - Rhinelander

SUBJECT: Murphy Oil USA Superior Refinery Draft Deed Restricton

Linda,

Attached is a draft deed restriction for several sites at Murphy Oil in Superior. The correspondence from their consultant, Gannett Fleming, indicates that they wish to record the restrictions for a number of different areas on their property. The restriction is very complicated, and there are a number of attachments and diagrams included in the review.

You will note that Gannett Fleming wishes to include restrictions for sites that are conditionally closed by the Department of Commerce. I have spoken to Woody (Will) Myers, who is the Commerce project manager. He informed me that he had looked at the restrictions and approves of them as they are. He asked that if you required any major changes, the DNR allow him to review the document again. I suggest that if you have major problems with the document, that you may want to speak to Woody directly, as well. His phone number is 608-261-7718.

Please let me know if there's anything you need in order to complete your review. You can call me at 715-365-8990.

Thanks.

C: File

Woody Myers
Wisconsin Dept of Commerce
PO Box 8044
Madison, WI 53708-8044

Gannett Fleming

GANNETT FLEMING, INC.
8025 Excelsior Drive
Madison, WI 53717-1900
Office: (608) 836-1500
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April 7, 2004
File #34265.003

Ms. Danielle Wincentsen
Wisconsin Department of Natural Resources
223 E. Steinfest Road
Antigo, WI 54409

Re: Draft Deed Restriction
Murphy Oil USA, Inc., Superior Refinery

Dear Danielle:

Attached is a draft copy of a deed restriction for Murphy Oil USA, Inc.'s Superior refinery property. The recording of this document with Douglas County is necessary in order for Murphy to obtain final closure for the following sites managed by the Wisconsin Department of Natural Resources (WDNR):

- Crude Unit Process Areas (BRRTS No. 02-16-222638).
- Tanks S-1 and S-2 (BRRTS No. 02-16-222670).
- Slop Oil Manifold (BRRTS No. 02-16-246715).

All three of these sites have been conditionally closed by the WDNR; however, as a condition of closure, WDNR requires that a deed restriction be recorded for these three sites. Murphy plans to record one deed restriction that includes the above listed sites, as well as four sites managed by the Wisconsin Department of Commerce (Tanks 65/66 Basin, Propane/Butane Loading Area, Tanks 32/33 Basin, and the Vapor Recovery Unit). The attached draft deed restriction also includes language associated with these four Commerce-managed sites. We have sent a copy of the draft deed restriction to Commerce, under a separate cover letter.

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Ms. Danielle Wincentsen
Wisconsin Department of Natural Resources
April 7, 2004

On behalf of Murphy, we request that the WDNR review the attached draft deed restriction language for the three WDNR-managed sites and provide Murphy with any comments it may have regarding this draft document. Once Murphy has received WDNR's and Commerce's approvals of the draft deed restriction language, we will record the deed restriction with Douglas County and send a copy of the recorded deed restriction to WDNR and Commerce so that these sites can be formally closed.

Please let us know if you have any questions or need any additional information.

Sincerely,

GANNETT FLEMING, INC.

Jeffrey J. King, P.G.
Project Hydrogeologist

Dennis F. Kugle
Senior Associate

JJK/jec
Enc.

cc: Liz Lundmark (Murphy-Superior)
Lee Vail (Murphy-New Orleans)
Dave Podratz (Murphy-Superior)
James Baine (Murphy-El Dorado)
Rick Lewandowski (DeWitt, Ross & Stevens)

DRAFT FOR AGENCY REVIEW

Document Number	**NOTICE OF CONTAMINATION TO PROPERTY**

Legal Description of the Property:
Described in Douglas County Warranty Deed No. 453215 and filed as Volume 266, Pages 647 through 655, on April 19, 1961

(legal description)

STATE OF WISCONSIN)
) ss.
COUNTY OF DOUGLAS)

Return to:
David Podratz
Refinery Manager
2400 Stinson Ave.,
Superior, WI 54880

Parcel Identification Number
01-801-03339-00

Section 1. Murphy Oil USA, Inc. is the owner of the above-described property, and within this property lie the following six areas where the discharge of petroleum products has occurred:

(a) Crude Unit Process Area [Wisconsin Department of Natural Resources (WDNR) Activity Number: 02-16-222638],
(b) Tanks S-1 and S-2 (WDNR Activity Number: 02-16-222670),
(c) Slop Oil Manifold (WDNR Activity Number: 02-16-246715),
(d) Tanks 65/66 Basin [WDNR Activity Number: 02-16-222617 and Wisconsin Department of Commerce ("Commerce") Number: 54880-0456-07-L],
(e) Propane/Butane Loading Area (WDNR Activity Number: 02-16-222628 and Commerce Number: 54880-0456-07-X), and
(f) Tanks 32/33 Basin (WDNR Activity Number: 02-16-222721 and Commerce Number: 54880-0456-07-S) .
(g) Vapor Recovery Unit (WDNR Activity Number: 02-16-242301 and Commerce Number: 54880-0456-07-Q)

Exhibit 1, which is attached hereto and incorporated by reference, and labeled "Figure 1," shows the above described property and the locations of the Crude Unit Process Area, Tanks S-1 and S-2, Slop Oil Manifold, Tanks 65/66 Basin, Propane/Butane Loading Area, and Tanks 32/33 Basin. More detail regarding the location and layout for each of the six areas described above can be found in Exhibit 2, which is attached hereto and incorporated by reference, and labeled "Figure 2" for the Crude Unit Process Area; Exhibit 3, which is attached hereto and incorporated by reference, and labeled "Figure 3" for Tanks S-1 and S-2;

Exhibit 4, which is attached hereto and incorporated by reference, and labeled "Figure 4" for the Slop Oil Manifold; Exhibit 5, which is attached hereto and incorporated by reference, and labeled "Figure 5" for the Tanks 65/66 Basin; Exhibit 6, which is attached hereto and incorporated by reference, and labeled "Figure 6" for Propane/Butane Loading Area; Exhibit 7, which is attached hereto and incorporated by reference, and labeled "Figure 7" for Tanks 32/33 Basin, and Exhibit 8, which is attached hereto and incorporated by reference, and labeled "Figure 8" for the Vapor Recovery Unit.

Section 2. Petroleum discharges have occurred at this property. Soils with concentrations of petroleum-related compounds above applicable Wisconsin Administrative Code NR 720.09 residual contaminant levels exist on this property at the Crude Unit Process Area, Tanks S-1 and S-2, Slop Oil Manifold, Tanks 65/66 Basin, Propane/Butane Loading Area, and Tanks 32/33 Basin. Soils with concentrations of petroleum-related compounds above applicable Wisconsin Administrative Code NR 746.06 direct-contact levels exist on this property at Tanks S-1 and S-2, Slop Oil Manifold, Tanks 65/66 Basin, Propane/Butane Loading Area, and Tanks 32/33 Basin.

Section 3. It is the desire and intention of the property owner to impose restrictions on the designated portions of the property that will not make it necessary to conduct additional soil remediation activities at the above-described six areas at the present time. The owner hereby declares that all such designated portions of the property described herein are held and shall be held, conveyed or encumbered, leased, rented, used, occupied, and improved subject to the following limitations and/or restrictions described for each of the six areas noted above.

Crude Unit Process Area

That the location of the Crude Unit Process Area (WDNR #02-16-222638) has been surveyed and identified as follows:

All that part of Block 18, West 27th Street, Townsite of Superior, Douglas County, Wisconsin, described as follows:

Commencing at the most easterly Corner of Block 18, West 27th Street, Townsite of Superior; thence South 48 degrees 50 minutes 03 seconds West, along the southeasterly line of said Block 18, a distance of 56.46 feet; thence North 41 degrees 09 minutes 57 seconds West, a distance of 6.35 feet to the Point of Beginning; thence South 46 degrees 05 minutes 39 seconds West, a distance of 23.58 feet; thence North 42 degrees 02 minutes 43 seconds West, 35.27 feet; thence North 49 degrees 34 minutes 13 seconds East, a distance of 24.60 feet; thence South 40 degrees 19 minutes 17 seconds East, a distance of 33.82 feet to the Point of Beginning.

Exhibit 9, which is attached hereto and incorporated herein by reference, and labeled "Sheet 3 of 15," is a survey drawing showing the Crude Unit Process Area with its legal description.

Soil containing concentrations of petroleum compounds above the applicable NR 720.09 residual contaminant levels (RCLs) that were in effect on the signature date of this document remains at this location at depths from approximately 1 foot to at least 5 feet below ground surface. The compounds that remain with concentrations above their applicable RCLs include diesel range organic (DRO) compounds, with concentrations as high as 1,500 milligrams per kilogram (mg/kg) and benzene, with concentrations as high as 0.366 mg/kg.

It has been shown that these residual contaminant levels are protective of the environment (groundwater) with the installation and maintenance of a barrier cap. In the event that petroleum-impacted soil is excavated from this area in the future, it will have to be managed in accordance with all applicable regulations and standards in effect at that time and may be considered a solid waste.

A surface barrier cap, currently consisting of concrete, shall be maintained over the area of petroleum-contaminated soil for the protection of groundwater until such time that 1) the soil is actively remediated or removed or 2) sampling shows contamination has degraded to concentrations that meet applicable regulatory requirements. The property owner shall maintain the integrity of the surface barrier cap in this area.

Tanks S-1 and S-2 Basin

That the location of the Tanks S-1 and S-2 Basin (WDNR #02-16-222670) has been surveyed and identified as follows:

All that part of Block 17, West 27th Street, Townsite of Superior, Douglas County, Wisconsin described as follows:

Commencing at the most southerly corner of Block 17, West 27th Street, Townsite of Superior; thence North 48 degrees 50 minutes 03 seconds East, along the southeasterly line of said Block 17, a distance of 141.61 feet; thence North 41 degrees 09 minutes 57 seconds West, a distance of 37.37 feet to the Point of Beginning; thence North 39 degrees 54 minutes 44 seconds West, a distance of 38.44 feet; thence North 47 degrees 09 minutes 10 seconds East, a distance of 39.69 feet; thence North 33 degrees 46 minutes 23 seconds West, a distance of 1.00 feet; thence North 47 degrees 13 minutes 41 seconds East, a distance of 13.45 feet; thence South 41 degrees 51 minutes 06 seconds East, a distance of 39.85 feet; thence South 47 degrees 39 minutes 25 seconds West, a distance of 54.58 feet to the Point of Beginning.

Exhibit 10, which is attached hereto and incorporated herein by reference, and labeled "Sheet 6 of 15," is a survey drawing showing the Tanks S-1 and S-2 basin with its legal description.

Soil containing concentrations of petroleum compounds above the applicable NR 720.09 RCLs that were in effect on the signature date of this document remains at this location to a depth of at least 0.5 feet bgs. The compounds that remain with concentrations above their applicable RCLs include DRO, with concentrations as high as 43,200 mg/kg; benzene, with concentrations as high as 6.362 mg/kg; ethylbenzene, with concentrations as high as 20.915 mg/kg; and total xylenes, with concentrations as high as 64.48 mg/kg. In addition, soil containing concentrations of

petroleum compounds that exceed the NR 746.06 direct-contact concentrations for benzene, ethylbenzene, toluene, total xylenes, trimethylbenzenes, and naphthalene also remains within 4 feet of the ground surface.

It has been shown that these residual contaminant levels are protective of human health and the environment with the installation and maintenance of a barrier cap. In the event that petroleum-impacted soil is excavated from this area in the future, it will have to be managed in accordance with all applicable regulations and standards in effect at that time and may be considered a solid waste.

A surface barrier cap, currently consisting of concrete, shall be maintained over the area of petroleum-contaminated soil for the protection of groundwater and for the protection of human health from direct contact until such time that 1) the soil is actively remediated or removed or 2) sampling shows contamination has degraded to concentrations that meet applicable regulatory requirements. The property owner shall maintain the integrity of the surface barrier cap in this area.

Slop Oil Manifold Area

That the location of the Slop Oil Manifold Area (WDNR #02-16-246715) has been surveyed and identified as follows:

That part of Block 15, West 27th Street and that part of vacated Thompson Avenue (23rd Avenue East), Townsite of Superior, Douglas County, Wisconsin described as follows:

Commencing at the most westerly Corner of Block 15, West 27th Street, Townsite of Superior; thence North 48 degrees 50 minutes 03 seconds East, along the northwesterly line of said Block 15, a distance of 120.16 feet to the Point of Beginning; thence North 40 degrees 37 minutes 53 seconds West, a distance of 50.00 feet; thence North 48 degrees 50 minutes 03 seconds East, along the centerline of said vacated Thompson Avenue, a distance of 32.93 feet; thence South 40 degrees 26 minutes 04 seconds West, a distance of 39.48 feet; thence South 50 degrees 06 minutes 04 seconds West, a distance of 7.37 feet; thence 40 degrees 33 minutes 29 seconds East, a distance of 5.33 feet; thence North 49 degrees 26 minutes 31 seconds East, a distance of 29.52 feet; thence South 40 degrees 37 minutes 53 seconds East, a distance of 22.11 feet; thence South 49 degrees 22 minutes 07 seconds West, a distance of 54.94 feet; thence North 40 degrees 37 minutes 53 seconds West, a distance of 16.56 feet to the Point of Beginning.

Exhibit 11, which is attached hereto and incorporated herein by reference, and labeled "Sheet 4 of 15," is a survey drawing showing the Slop Oil Manifold Area with its legal description.

Soil containing concentrations of petroleum compounds above the applicable NR 720.09 RCLs that were in effect on the signature date of his document remains at this location to a depth of at least 1.5 feet bgs. The compounds that remain with concentrations above their applicable RCLs include DRO, with concentrations as high as 11,600 mg/kg; gasoline range organic compounds, with concentrations as high as 830 mg/kg; benzene, with concentrations as high as 2.252 mg/kg; ethylbenzene, with concentrations as high as 48.615 mg/kg; toluene, with concentrations as high

as 25.399 mg/kg; and total xylenes, with concentrations as high as 185.035 mg/kg. In addition, soil containing concentrations of petroleum compounds that exceed the NR 746.06 direct-contact concentrations for benzene, ethylbenzene, total xylenes, trimethylbenzenes, and naphthalene also remains within 4 feet of the ground surface.

It has been shown that these residual contaminant levels are protective of human health and the environment with the installation and maintenance of a barrier cap. In the event that petroleum-impacted soil is excavated from this area in the future, it will have to be managed in accordance with all applicable regulations and standards in effect at that time and may be considered a solid waste.

A surface barrier cap, currently consisting of a 60-mil, high-density polyethylene (HDPE) liner, shall be maintained over the area of petroleum-contaminated soil for the protection of groundwater and for the protection of human health from direct contact until such time that 1) the soil is actively remediated or removed or 2) sampling shows contamination has degraded to concentrations protective of the environment and human health. The property owner shall maintain the integrity of the surface barrier cap in this area.

Tanks 65/66 Basin

That the location of the Tanks 65/66 Basin (WDNR #02-16-222617) has been surveyed and identified as follows:

All those parts of Block 17, 18, 19 & 20, West 25th Street, together with those parts of vacated Becker Avenue and 25th Street, all in the Townsite of Superior, Douglas County, Wisconsin, described as follows:

Commencing at the most westerly Corner of Block 17, West 25th Street, Townsite of Superior; thence North 48 degrees 50 minutes 03 seconds East, along the northwesterly line of sad Block 17, a distance of 73.65 feet to the Point of Beginning; thence South 37 degrees 38 minutes 12 seconds East, a distance of 134.76 feet; thence South 52 degrees 21 minutes 48 seconds West, a distance of 155.00 feet; thence North 37 degrees 38 minutes 12 seconds West, a distance of 270.00 feet; thence North 52 degrees 21 minutes 48 seconds East, a distance of 155.00 feet; thence South 37 degrees 38 minutes 12 seconds East, a distance of 135.24 feet to the Point of Beginning.

Exhibit 12, which is attached hereto and incorporated herein by reference, and labeled "Sheet 7 of 15," is a survey drawing showing the Tanks 65/66 Basin with its legal description.

Residual petroleum-contaminated soils have been identified within the Tanks 65/66 Basin at concentrations that exceed the NR 746.06 direct-contact standards. The residual contaminated soils are believed to be present throughout the tank basin. Commerce has agreed that enforcement of the "**limited access**" requirements included in this restriction will be protective of human health. If contaminated soil is removed, it shall be handled in accordance with all applicable laws and regulations (File references: Commerce #54880-0456-07 and WDNR BRRTS #02-16-222617).

This restriction requires "**limited access**" to the site, which includes (at a minimum) the area outlined with a thicker black line, as the "*Approximate Extent of Soil Exceeding NR 720 And/Or NR 746 Standards*" on attached Exhibit 13 (labeled "Figure 9"). To comply with the requirement of "**limited access**," gated fencing of an appropriate height that encompasses the refinery site and that restricts access to the Tanks 65/66 Basin shall remain in place until it is determined that the risk to human health from direct contact has been remediated. Any person entering the Tanks 65/66 Basin must be knowledgeable of the soil contamination that is present and take appropriate measures to protect themselves from the identified direct-contact risk. Exhibit 14 (labeled "Figure 10") shows the post-excavation soil sample locations collected from the Tank 65 basin. Exhibit 15, which is attached hereto and incorporated herein by reference, and labeled "Tables 1 through 5," present the results for the soil samples collected during this Tanks 65/66 Basin investigation. Exhibits 13 and 14 (labeled "Figures 9 and 10") show the sample locations.

Propane/Butane Loading Area

That the location of the Propane/Butane Loading Area (WDNR #02-16-222628) has been surveyed and identified as follows:

All that part of Block 19, West 25th Street, Townsite of Superior, Douglas County, Wisconsin, described as follows:

Commencing at the most northerly Corner of Block 19, West 25th Street, Townsite of Superior; thence South 41 degrees 10 minutes 13 seconds East, along the northeasterly line of said Block 19, a distance of 143.20 feet; thence South 48 degrees 49 minutes 47 seconds West, a distance of 29.73 feet to the Point of Beginning; thence South 40 degrees 55 minutes 55 seconds East, a distance of 58.00 feet; thence South 49 degrees 04 minutes 05 seconds West, a distance of 39.00 feet; thence North 40 degrees 55 minutes 55 seconds West, a distance of 58.00 feet; thence North 49 degrees 04 minutes 05 seconds East, a distance of 39.00 feet to the Point of Beginning.

Exhibit 16, which is attached hereto and incorporated herein by reference, and labeled "Sheet 8 of 15," is a survey drawing of the Propane/Butane Loading Area with its legal description.

Residual petroleum-contaminated soils have been identified within the Propane/Butane Loading Area at concentrations that exceed the NR 746.06 direct-contact standards. Residual contaminated soil was identified in soil boring GP-25. Commerce has agreed that enforcement of the "**limited access**" requirements included in this restriction will be protective of human health. If contaminated soil is removed, it shall be handled in accordance with all applicable laws and regulations (File references: Commerce #54880-0456-07-L and WDNR BRRTS #02-16-222628).

This restriction requires "**limited access**" to the site. To comply with the requirement of "**limited access**," gated fencing of an appropriate height that encompasses the refinery site and that restricts access to the Propane/Butane Loading Area shall remain in place until it is determined that the risk to human health from direct contact has been remediated. Any person

entering the Propane/Butane Loading Area must be knowledgeable of the soil contamination that is present and take appropriate measures to protect themselves from the identified direct-contact risk. Exhibit 17, which is attached hereto and incorporated herein by reference, and labeled "Figure 11," shows the locations of all soil samples collected during the investigation of the Propane/Butane Loading Area and the approximate extent of soil exceeding NR 720.09 and/or NR 746 standards. Exhibit 18 (labeled Table 6) presents the results for the soil samples collected during this investigation.

Tanks 32/33 Basin

That the location of the Tanks 32/33 Basin (WDNR #02-16-222721) has been surveyed and identified as follows:

Those parts of Blocks 17 and 19, West 27th Street together with those parts of vacated Becker Avenue and West 27th Street, Townsite of Superior, Douglas County, Wisconsin, described as follows:

Commencing at the most northerly Corner of Block 17, West 27th Street, Townsite of Superior; thence South 48 degrees 50 minutes 03 seconds West along the northwesterly line of said Block 17, a distance of 71.10 feet to the Point of Beginning; thence South 41 degrees 10 minutes 13 seconds East, a distance of 25.00 feet; thence South 48 degrees 50 minutes 03 seconds West along a line 25.00 feet distant, measured at right angles to and parallel with the northwesterly line of said Block17, a distance of 217.00 feet, thence North 41 degrees 10 minutes 13 seconds West along a line 8.00 feet distant, measured at right angles to and parallel with the centerline of vacated West 27th Street, a distance of 117.00 feet; thence North 48 degrees 50 minute 03 seconds East, a distance of 217.00 feet; thence South 41 degrees 10 minutes 13 seconds East, a distance of 92.00 feet to the Point of Beginning.

Exhibit 19, which is attached hereto and incorporated herein by reference, and labeled "Sheet 13 of 15," is a survey drawing showing the Tanks 32/33 Basin with its legal description.

Residual petroleum-contaminated soils have been identified within the Tanks 32/33 Basin at concentrations that exceed the NR 746.06 direct-contact standards. Residual contaminated soil was identified in soil borings B32-1 through B32-4, B33-1, and B33-3. Commerce has agreed that enforcement of the "**limited access**" requirements included in this restriction will be protective of human health. If contaminated soil is removed, it shall be dealt with in accordance with all applicable laws and regulations (File references: Commerce #54880-0456-07-S and WDNR BRRTS #02-16-222721).

This restriction requires "**limited access**" to the site. To comply with the requirement of "**limited access**," gated fencing of an appropriate height that encompasses the refinery site that restricts access to the Tanks 32/33 Basin shall remain in place until it is determined that the risk to human health from direct contact has been remediated. Any person entering the site must be knowledgeable of the contamination that is present and take appropriate measures to protect themselves from the identified direct-contact risk. Exhibit 7, which is attached hereto and incorporated herein by reference, and labeled "Figure 7," shows the locations of all soil samples

collected during the investigation of the Tanks 32/33 Basin and the approximate extent of soil exceeding NR 720.09 and/or NR 746.06 standards. Exhibit 20, which is attached hereto and incorporated herein by reference, and labeled "Table 7," presents the results for the soil samples collected during this investigation.

Vapor Recovery Unit

That the location of the Vapor Recovery Unit (COMM #54880-0456-07-Q and WDNR #02-16-242301) has been surveyed and identified as follows:

All that part of Block 16, West 25th Street, Townsite of Superior, Douglas County, Wisconsin, described as follows:

Commencing at the most easterly corner of Block 16, West 25th Street, Townsite of Superior; thence North 41 degrees 10 minutes 13 seconds West, along the northeasterly line of said Block 16, a distance of 152.22 feet; thence South 48 degrees 49 minutes 47 seconds West, a distance of 134.72 feet to the Point of Beginning; thence South 47 degrees 54 minutes 34 seconds West, a distance of 12.50 feet; thence North 41 degrees 27 minutes 49 seconds West, a distance of 26.50 feet; thence North 48 degrees 32 minutes 11 seconds East, a distance of 12.50 feet; thence South 41 degrees 27 minutes 49 seconds East, a distance of 26.37 feet to the Point of Beginning.

Exhibit 21, which is attached hereto and incorporated herein by reference, and labeled "Sheet 5 of 15," is a survey drawing showing the Vapor Recovery unit with its legal description.

Soil containing concentrations of petroleum compounds above the applicable NR 720.09 RCLs that were in effect on the signature date of his document remains at this location to a depth of at least 2 feet bgs. The compounds that remain with concentrations above their applicable RCLs include gasoline range organics, with concentrations as high as 2,700 mg/kg; benzene, with concentrations as high as 4.0 mg/kg; ethylbenzene, with concentrations as high as 3.8 mg/kg; toluene, with concentrations as high as 4.4 mg/kg; and total xylenes, with concentrations as high as 131 mg/kg. In addition, soil containing concentrations of petroleum compounds that exceed the NR 746.06 direct-contact concentrations for benzene and total xylenes also remain within 4 feet of the ground surface.

It has been shown that these residual contaminant levels are protective of human health and the environment with the installation and maintenance of a barrier cap. In the event that petroleum-impacted soil is excavated from this area in the future, it will have to be managed in accordance with all applicable regulations and standards in effect at that time and may be considered a solid waste.

A surface barrier cap, currently consisting of concrete, shall be maintained over the area of petroleum-contaminated soil for the protection of groundwater and for the protection of human health from direct contact until such time that 1) the soil is actively remediated or removed or 2) sampling shows contamination has degraded to concentrations protective of the environment and human health.

Any person who is or becomes owner of the property described above may request that the Wisconsin Department of Natural Resources or Wisconsin Department of Commerce (as applicable), or its successor, issue a determination that the restrictions set forth in the covenant are no longer required. That property owner shall provide any and all necessary information to the applicable Department in order for the applicable Department to be able to make a determination. Upon receipt of such a request, the applicable Department shall determine whether or not the restrictions contained herein can be extinguished. Conditions under which a restriction may be extinguished will be determined in accordance with the standards, rules, and laws in effect at the time of such request. If the applicable Department determines that the restrictions can be extinguished, an affidavit, with a copy of the applicable Department's written determination, may be recorded to give notice that this restriction or portions of this restriction are no longer binding. Any restriction placed upon this property shall not be extinguished without the applicable Department's written determination.

IN WITNESS WHEREOF, the owner of the property has executed this document, this _____ day of April 2004.

By signing this document, [he/she] acknowledges that [he/she] is duly authorized to sign this document on behalf of Murphy Oil USA, Inc.

Signature: _____

Printed Name: _____

Title: _____

Subscribed and sworn to before me this ___ day of April 2004.

Signature:_____

Notary Public, State of Wisconsin

My commission expires on _____

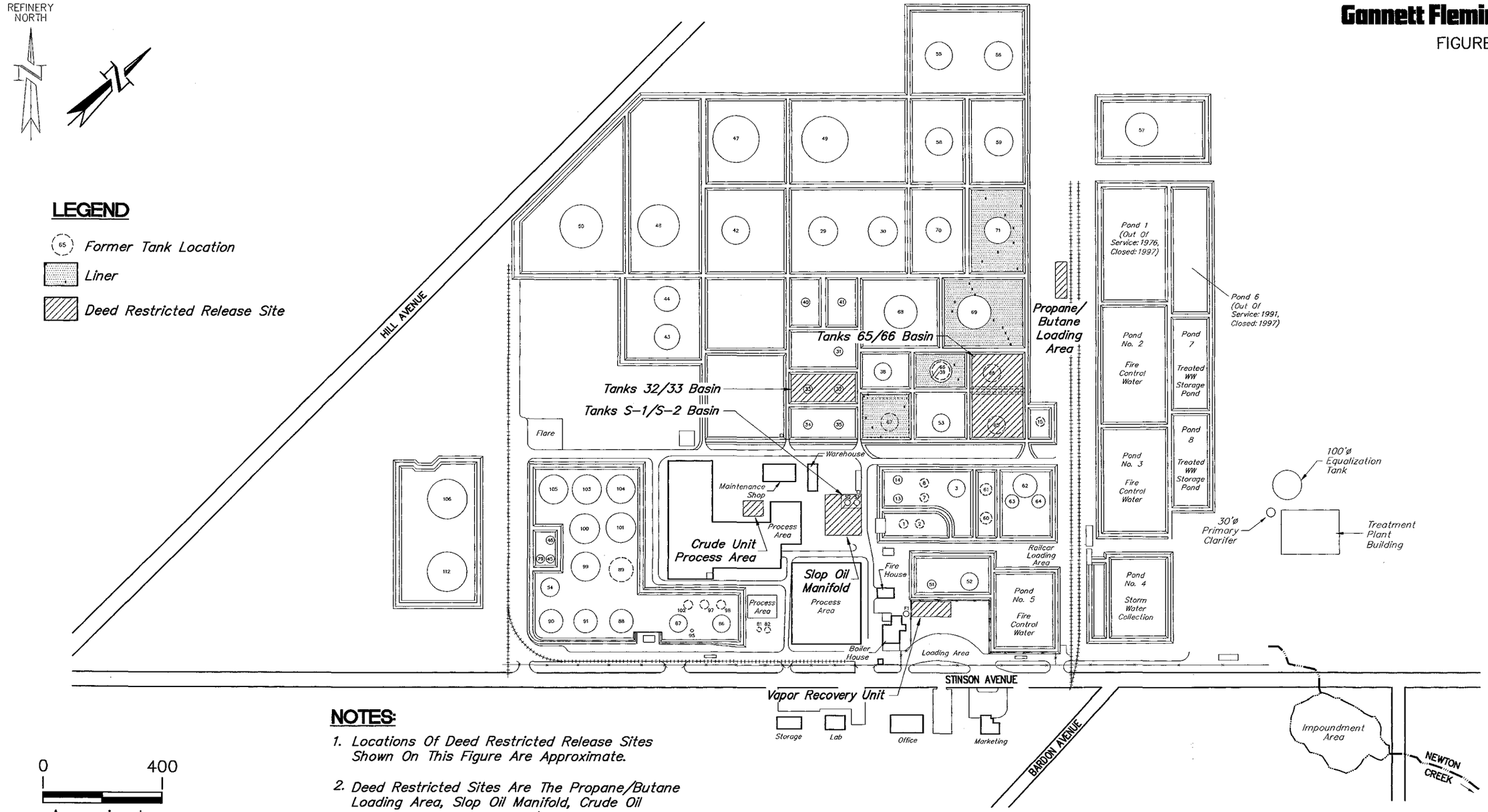
This document was drafted by:

Atty Richard J. Lewandowski
DeWitt Ross & Stevens, S.C.
2 E. Mifflin St., Suite 600
Madison, WI 53703

Tel: 608-255-8891

Gannett Fleming

FIGURE 1



NOTES:

1. *Locations Of Deed Restricted Release Sites Shown On This Figure Are Approximate.*
2. *Deed Restricted Sites Are The Propane/Butane Loading Area, Slop Oil Manifold, Crude Oil Process Area, Tanks S-1/S-2 Basin, Tanks 32/33 Basin, And Tanks 65/66 Basin.*

0 400

Approximate Scale In Feet

SITE PLAN

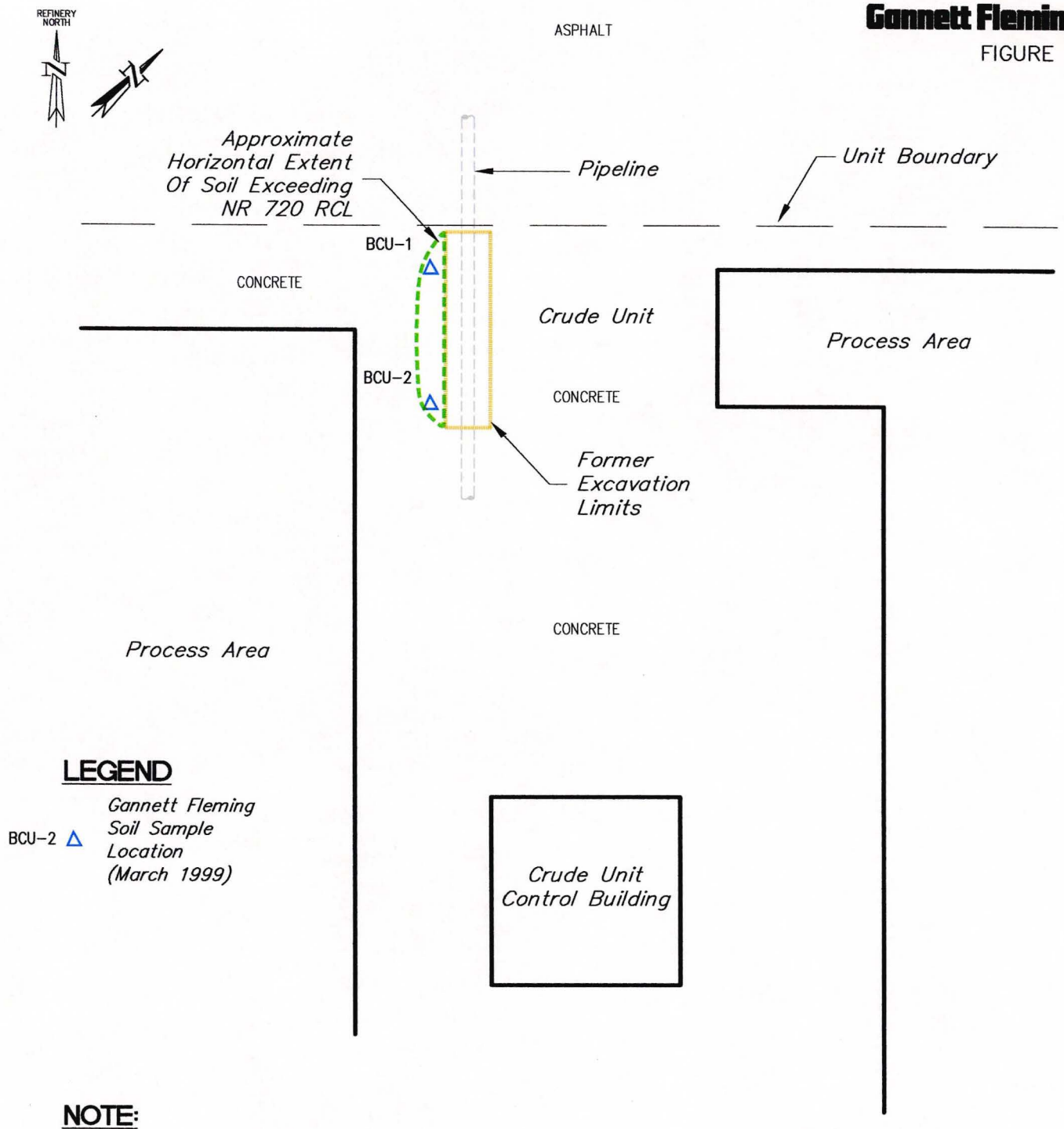
MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

031704 34265WDY

Gannett Fleming

FIGURE 2



LEGEND

BCU-2 △ *Gannett Fleming Soil Sample Location (March 1999)*

NOTE:

Site Layout And Sample Locations Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.

0 20

Approximate Scale In Feet

SOIL SAMPLE LOCATIONS AT CRUDE UNIT PROCESS AREA

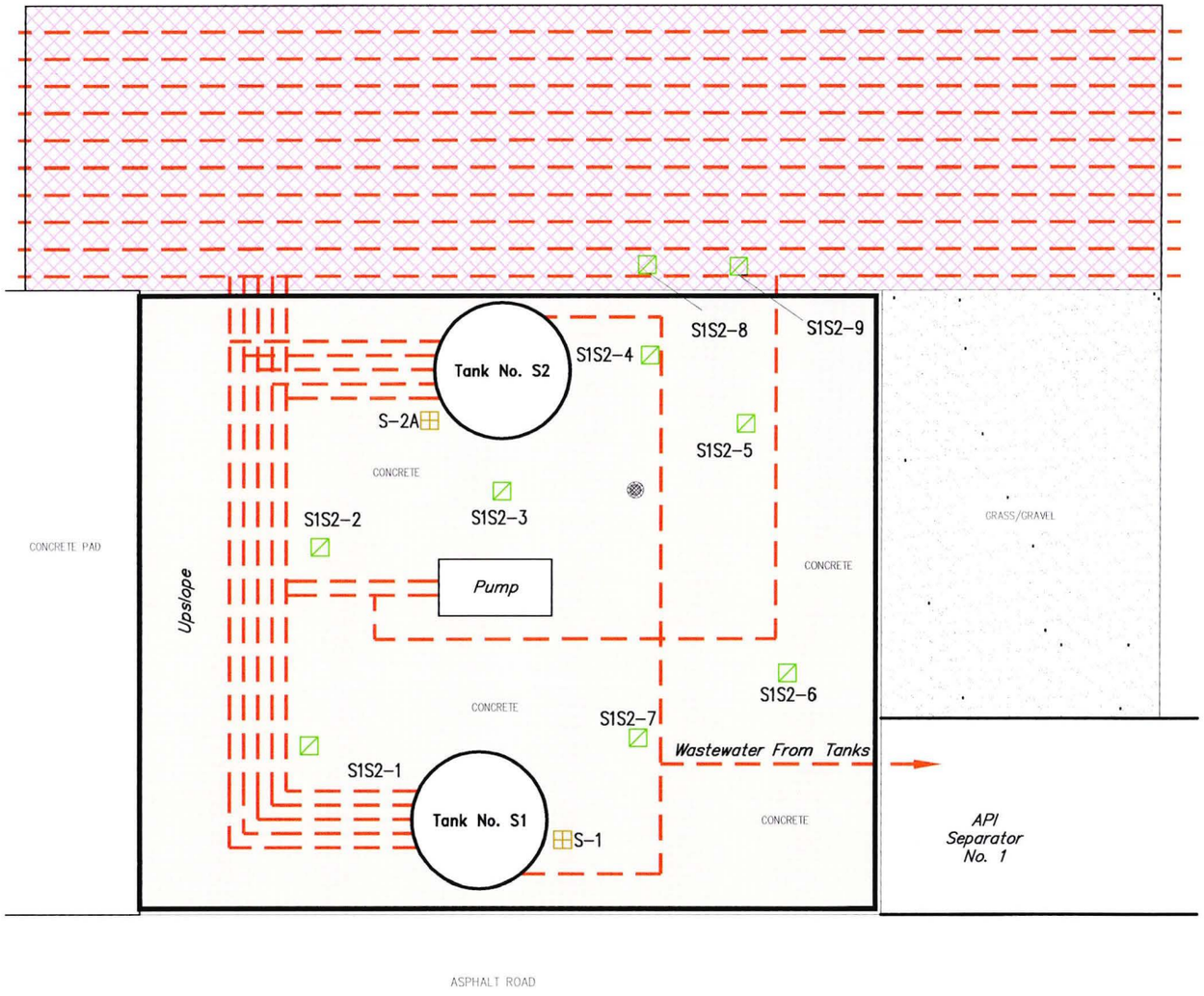
MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

031704
34265WAM

Gannett Fleming

FIGURE 3



LEGEND

- *Area Covered With Pea Gravel Over 60 MIL HDPE Liner*
- *Area Covered With Concrete Slab With 6" High Curb*
- S-2A — *Twin Ports Testing Post-Excavation Soil Sample Location (September/October 1997)*
- S1S2-1 — *Gannett Fleming Soil Sample Location @ 0.5' Depth (June 1999)*
- *Aboveground Piping*
- *Concrete Sump*

NOTE:

The Location Of Tanks, Piping, And Soil Samples Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.

0 15

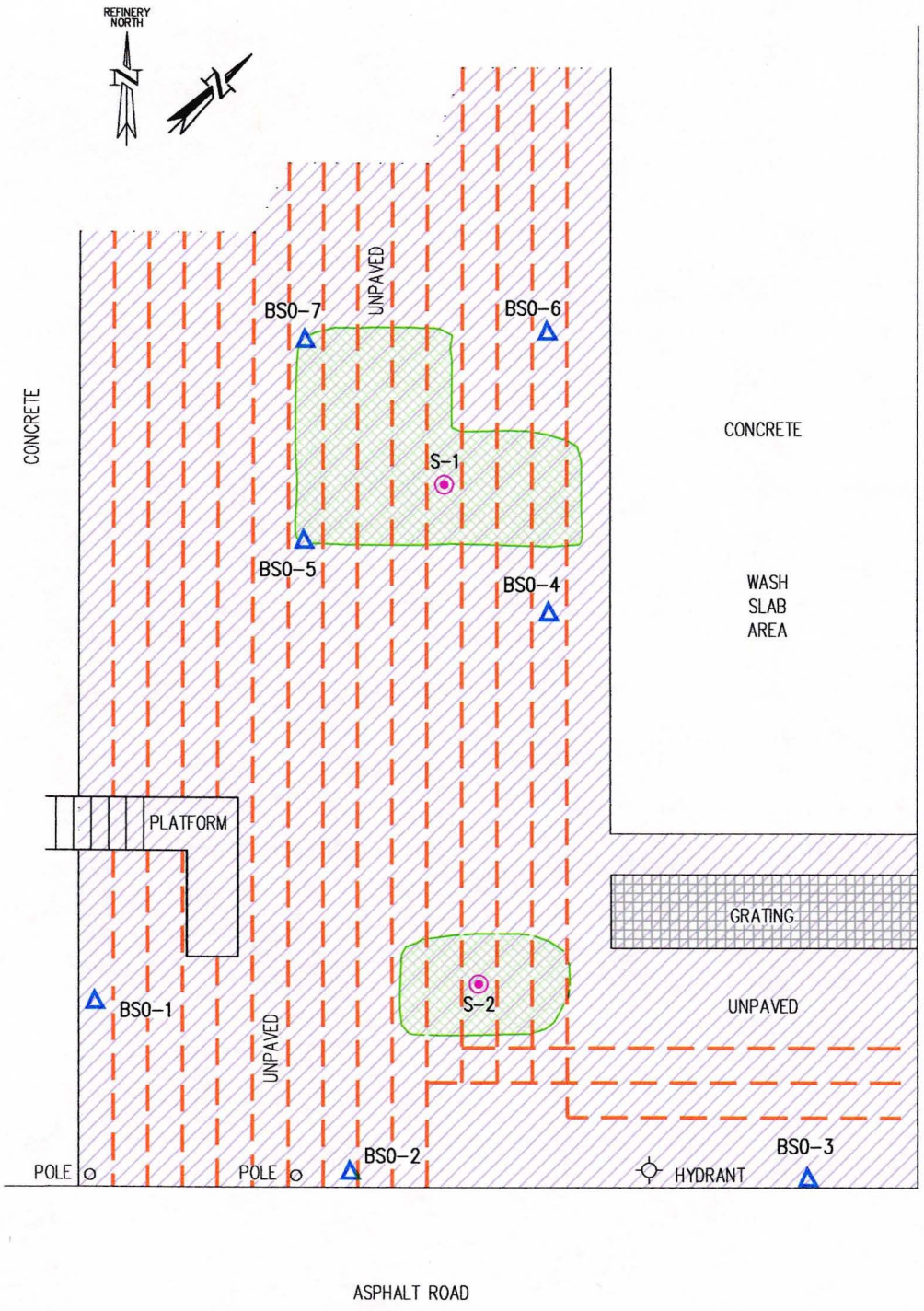
Approximate Scale In Feet

SOIL SAMPLE LOCATIONS AT SLOP OIL TANKS S1 AND S2

MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

031704 34265WDE



Gannett Fleming

FIGURE 4

LEGEND

- Area Covered With 60 MIL HDPE Liner Following The Collection Of Soil Samples And Excavation Of Soil
- S–1: Twin Ports Soil Sample Location (December 1999)
- BS0–5: Gannett Fleming Soil Sample Location (August 1999)
- Aboveground Piping
- Extent Of December 1999 Soil Excavation

NOTES:

1. Site Layout And Sample Locations Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.
2. This Figure Is Based On A Twin Ports Testing Site Plan Of The Slop Oil Area Showing The Extent Of The 12/99 Excavation.
3. Piping Shown On Figure Is Approximately 3 Feet Above Grade.
4. Not Shown On Figure Is An Upper Piping Manifold Approximately 20 Feet Above Grade In The Eastern And Southeastern Areas Of Site.

0 10

Approximate Scale In Feet

SITE PLAN: SLOP OIL MANIFOLD AREA

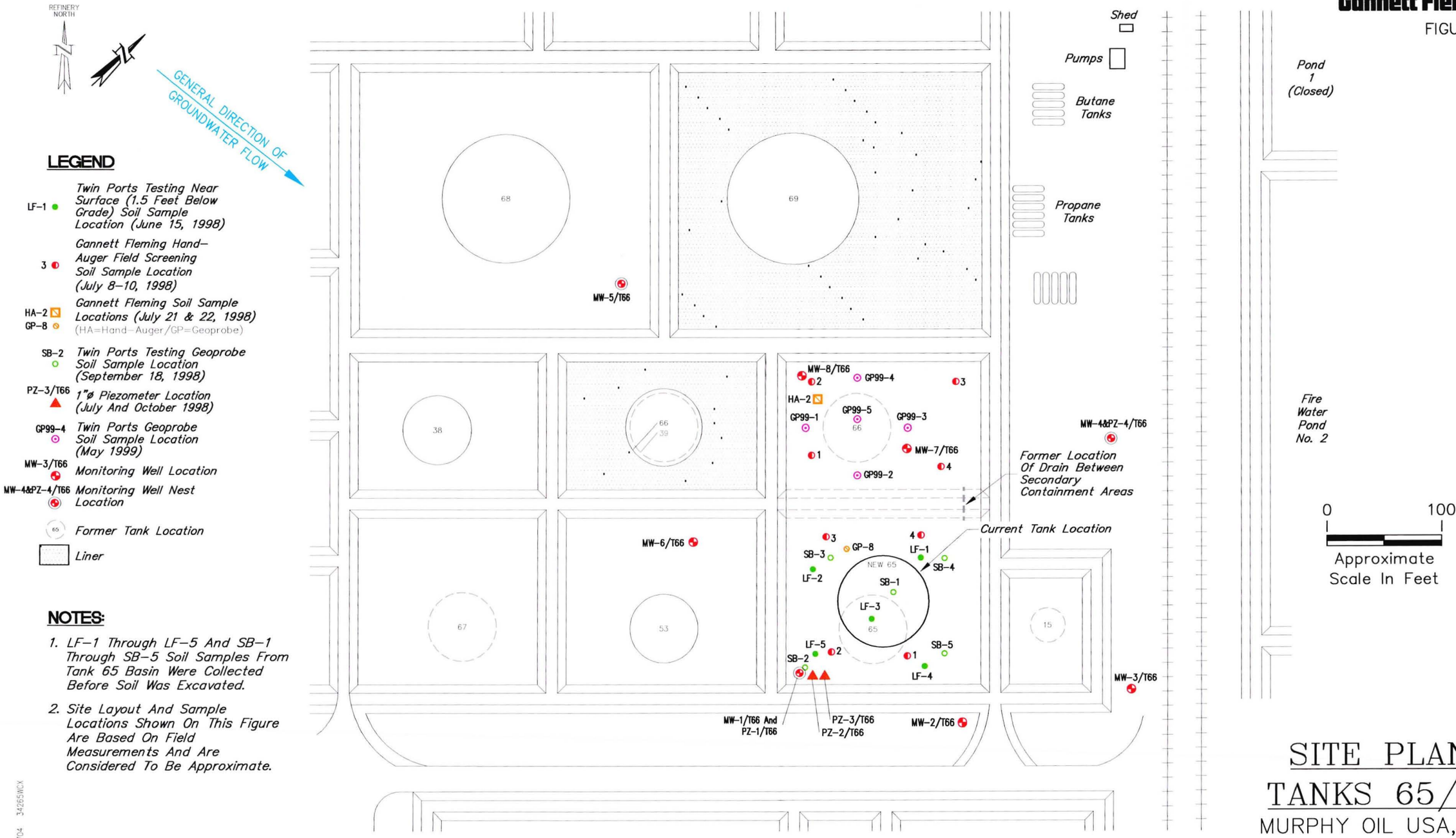
MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

031704 3426WDF

Gannett Fleming

FIGURE 5



LEGEND

- LF-1 — Twin Ports Testing Near Surface (1.5 Feet Below Grade) Soil Sample Location (June 15, 1998)
- 3 — Gannett Fleming Hand-Auger Field Screening Soil Sample Location (July 8-10, 1998)
- HA-2 / GP-8 — Gannett Fleming Soil Sample Locations (July 21 & 22, 1998) (HA=Hand-Auger/GP=Geoprobe)
- SB-2 — Twin Ports Testing Geoprobe Soil Sample Location (September 18, 1998)
- PZ-3/T66 — 1"ø Piezometer Location (July And October 1998)
- GP99-4 — Twin Ports Geoprobe Soil Sample Location (May 1999)
- MW-3/T66 — Monitoring Well Location
- MW-4&PZ-4/T66 — Monitoring Well Nest Location
- 65 — Former Tank Location
- Liner

NOTES:

1. LF-1 Through LF-5 And SB-1 Through SB-5 Soil Samples From Tank 65 Basin Were Collected Before Soil Was Excavated.
2. Site Layout And Sample Locations Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.

SITE PLAN: TANKS 65/66

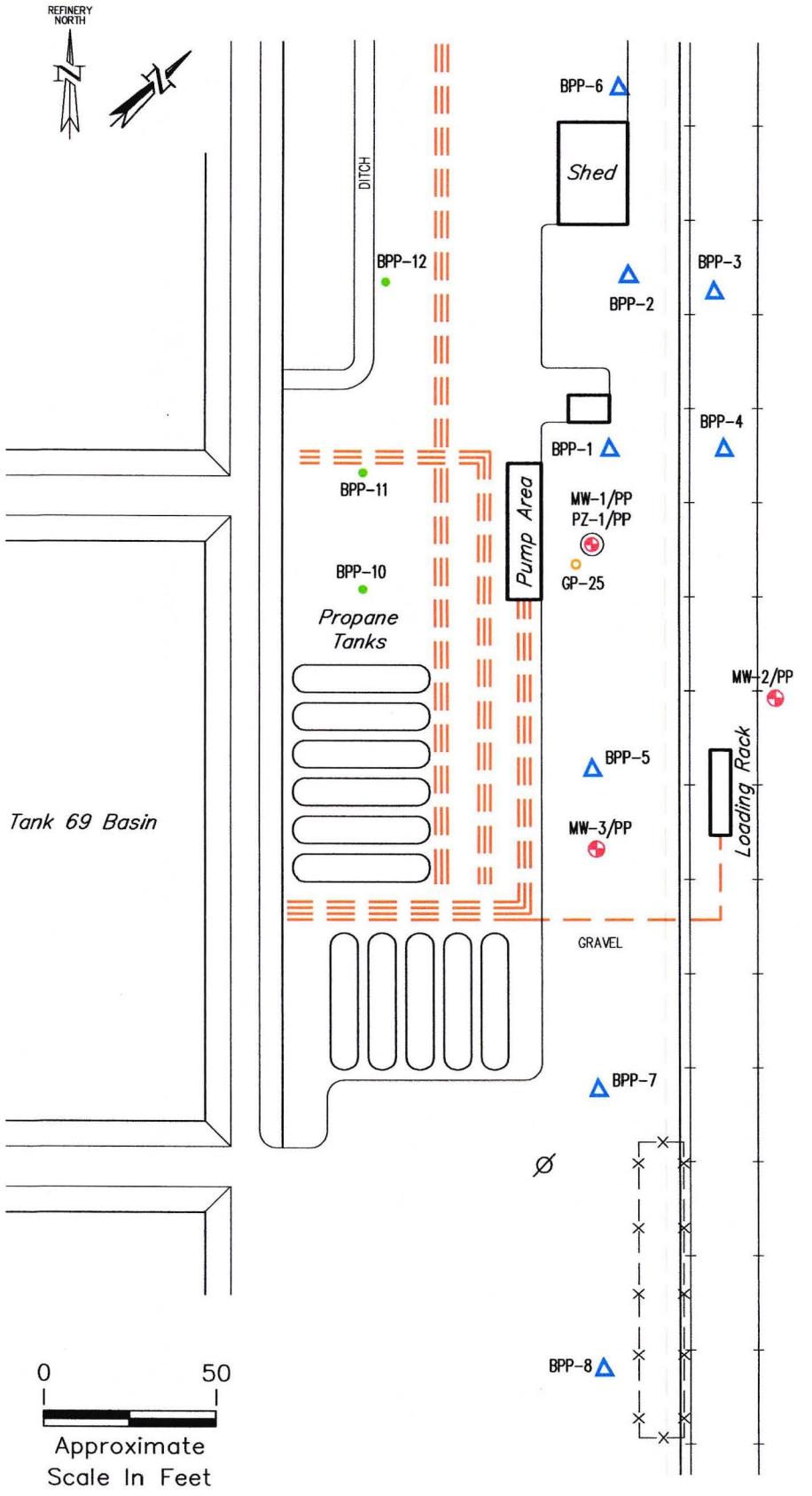
MURPHY OIL USA, INC

SUPERIOR, WISCONSIN

031704 34265WCK

Gannett Fleming

FIGURE 6



LEGEND

- Monitoring Well Location
- Nested Monitoring Well Location
- Twin Ports Testing Soil Sample Location (June 1999)
- Gannett Fleming Soil Sample Location (June 1999)
- Gannett Fleming Geoprobe Soil Sample Location (July 1998)
- Aboveground Pipeline
- Underground Pipeline
- Railroad Tracks
- Utility Pole

NOTE:

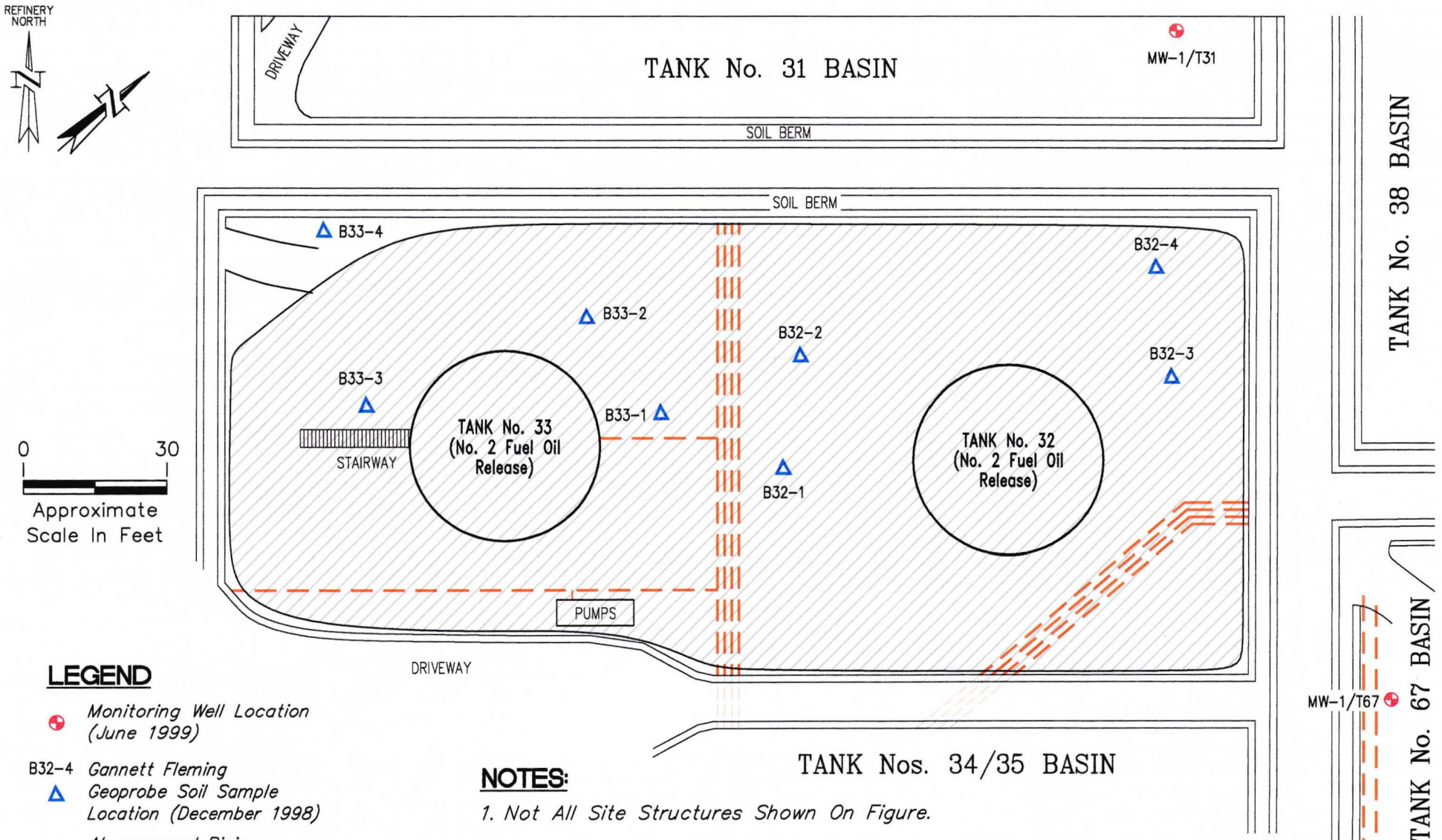
Site Layout And Sample Locations Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.

SAMPLE LOCATIONS AT PROPANE/BUTANE LOADING AREA

MURPHY OIL USA, INC

SUPERIOR, WISCONSIN

031704 34265WDB



LEGEND

- Monitoring Well Location (June 1999)
- B32-4 Gannett Fleming Geoprobe Soil Sample Location (December 1998)
- Aboveground Piping
- Underground Piping
- Approximate Horizontal Extent Of Soil Exceeding NR 720 And/Or NR 746 Standards

NOTES:

1. Not All Site Structures Shown On Figure.
2. Site Layout And Sample Locations Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.

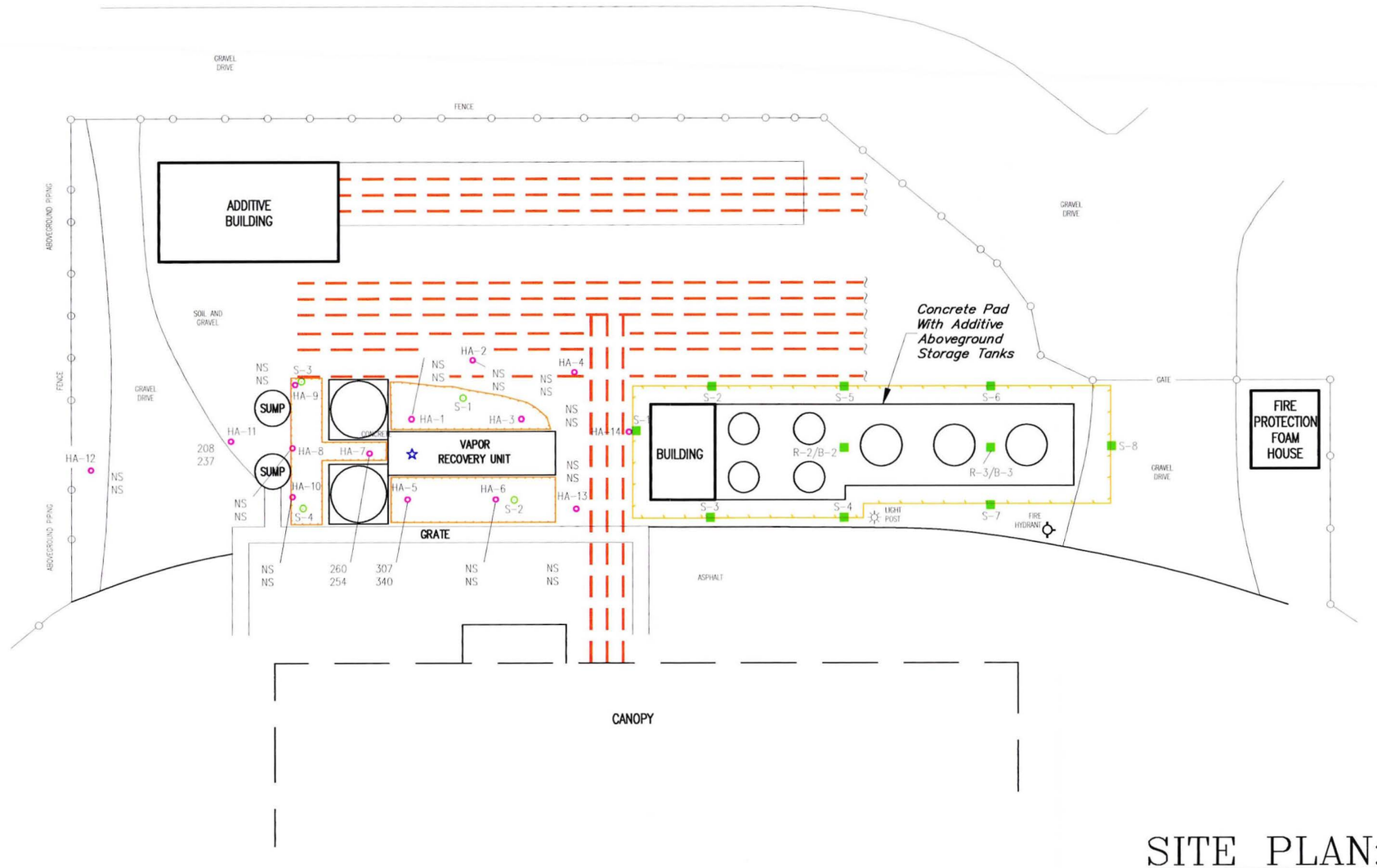
SITE PLAN:
TANK NOS. 32 AND 33

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

031704
34265WDZ

Gannett Fleming

FIGURE 7



LEGEND

- Extent Of Soil Excavation (July 2000)
- S-2 ■ Twin Ports Soil Sample Location (July 2000)
- Extent Of Soil Excavation (December 1999)
- S-2 ○ Twin Ports Soil Sample Location (December 1999)
- HA-7 ○ Twin Ports Field Screening Soil Sample Location (October 1999)
- ☆ Source Of October 1999 Release (200-Gallons Of Gasoline)
- Aboveground Piping

307 = PID Reading At 1 Foot Depth
340 = PID Reading At 2 Foot Depth
NS = Not Sampled

NOTES:

1. Site Layout And Sample Locations Shown On This Figure Are Based On Field Measurements And Are To Be Considered Approximate.
2. It Should Be Noted That Due To The Presence Of A Significant Amount Of Aboveground And Underground Utilities, As Well As Other Structures In This Area, There Is Extremely Limited Access.
3. Sample Locations Based On Site Plan Prepared By Twin Ports Testing.
4. Concrete Pad With Additive Aboveground Storage Tanks Installed In September 2000.

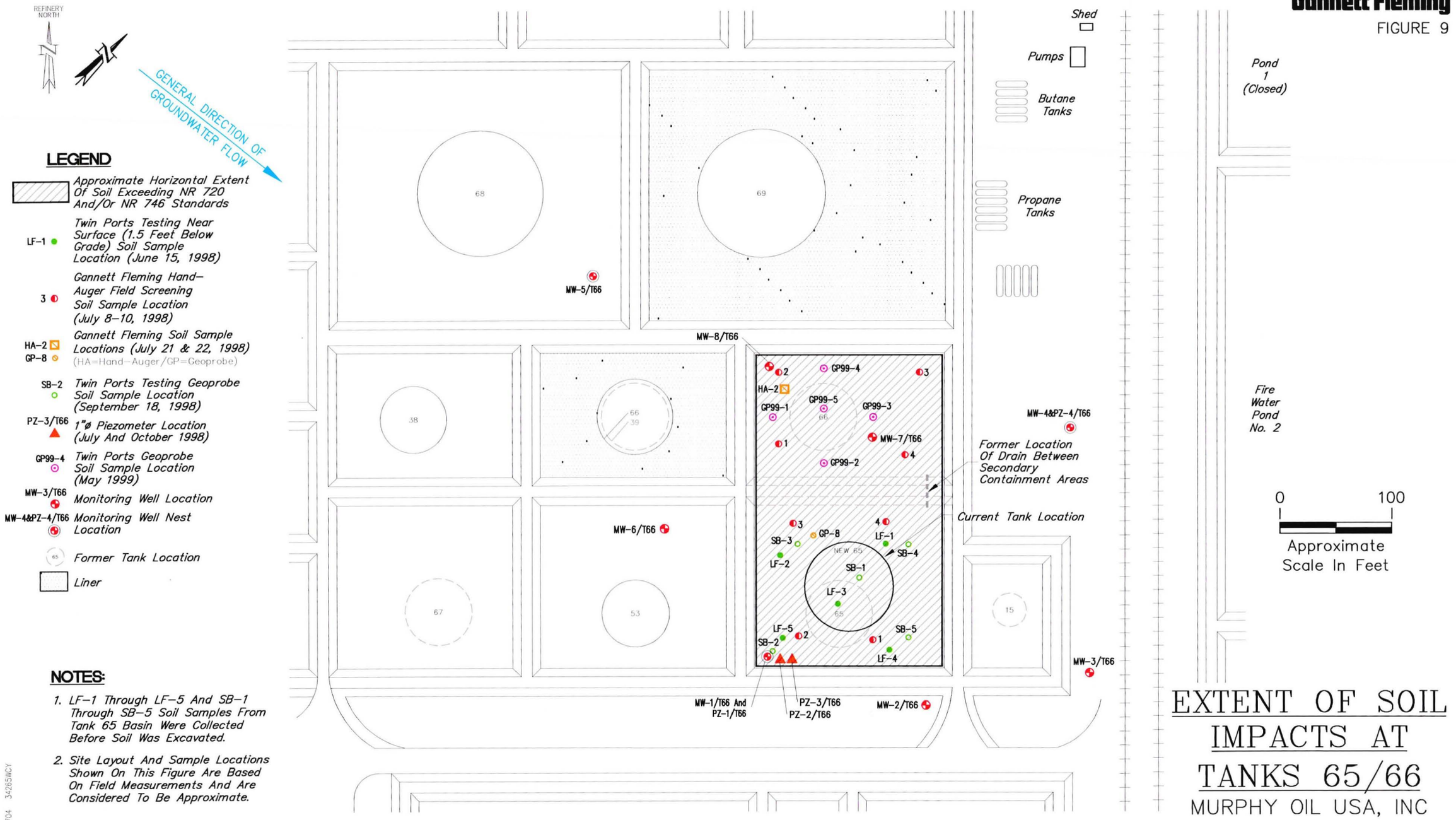
0 30
Approximate Scale In Feet

SITE PLAN:
VAPOR RECOVERY UNIT
MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

040704 34265WEB

Gannett Fleming

FIGURE 9



NOTES:

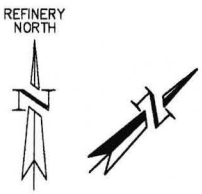
1. LF-1 Through LF-5 And SB-1 Through SB-5 Soil Samples From Tank 65 Basin Were Collected Before Soil Was Excavated.
2. Site Layout And Sample Locations Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.

EXTENT OF SOIL IMPACTS AT TANKS 65/66

MURPHY OIL USA, INC

SUPERIOR, WISCONSIN

040704 34265WCY



LEGEND

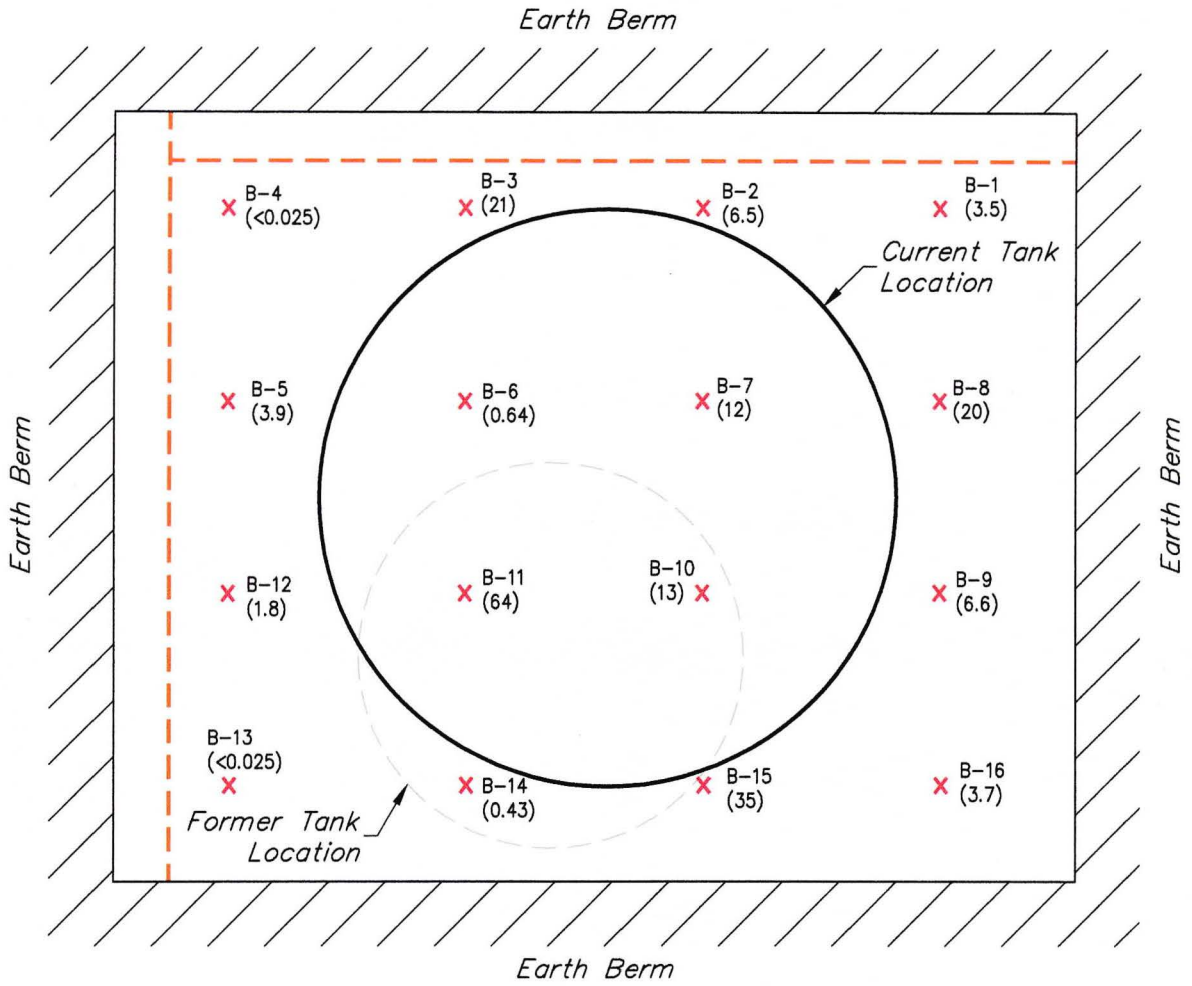
B-5 (3.9) × Gannett Fleming Soil Sample Location With Benzene Concentration (mg/kg)

– – Aboveground Piping

NOTES

1. Soil Samples Were Collected On 10/20/98 At Approximately 0.5 Feet Below Grade Following The Removal Of Approximately 2 Feet Of Soil From The Base Of The Basin.

2. Soil Sample And Piping Locations And Basin Dimensions Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.



0 30

Approximate Scale In Feet

POST–EXCAVATION SOIL SAMPLE LOCATIONS FROM BASE OF TANK 65 BASIN

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

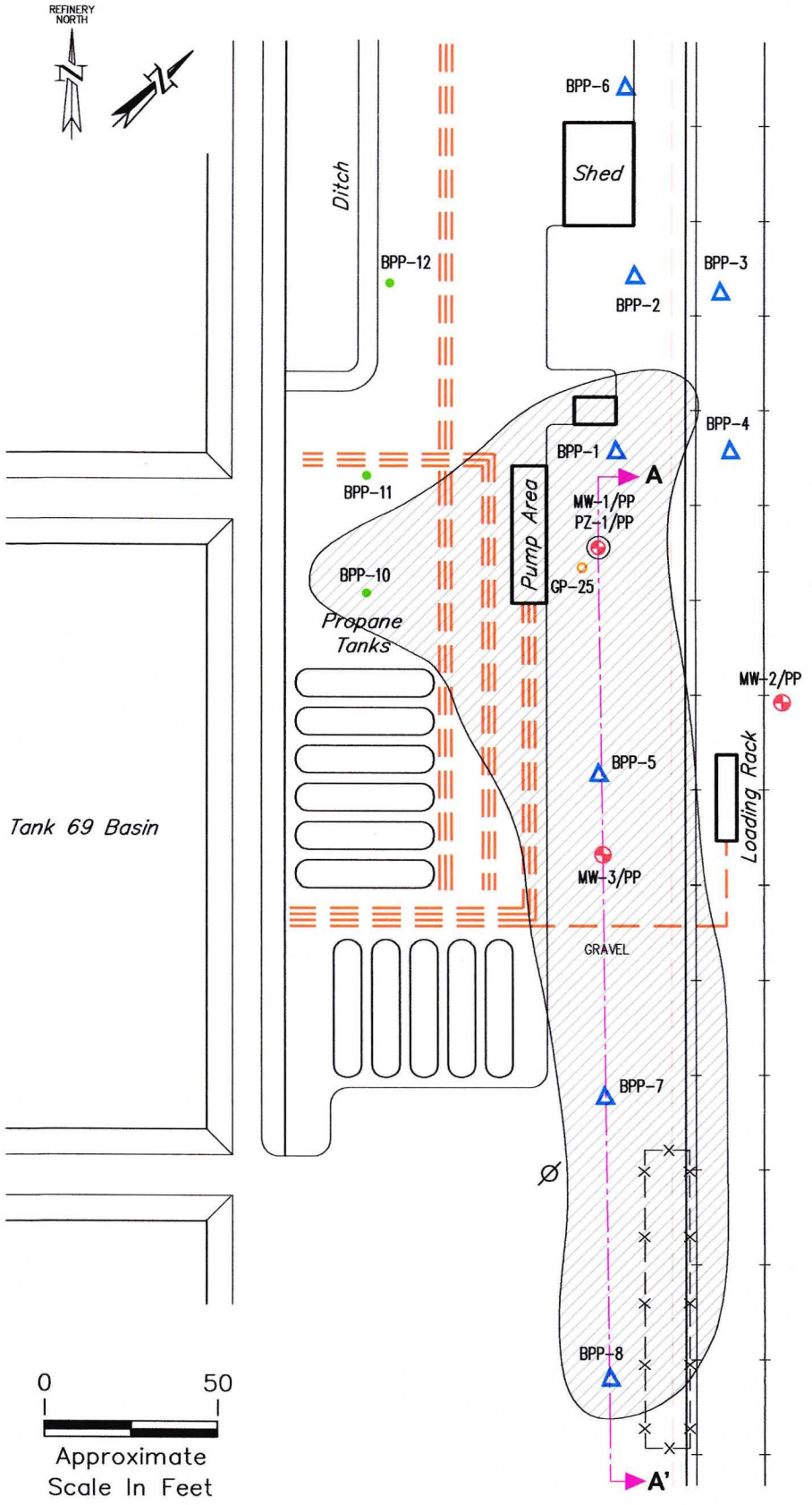
040704: FIG# REV.
031704
34265WAA

Gannett Fleming

FIGURE 10

Gannett Fleming

FIGURE 11



LEGEND

- Approximate Horizontal Extent Of Soil Exceeding NR 720 And/Or NR 746 Standards
- Monitoring Well Location
- Nested Monitoring Well Location
- Twin Ports Testing Soil Sample Location (June 1999)
- Gannett Fleming Soil Sample Location (June 1999)
- Gannett Fleming Geoprobe Soil Sample Location (July 1998)
- Aboveground Pipeline
- Underground Pipeline
- Railroad Tracks
- Utility Pole
- A — Cross Section Cut (See Figure 7)

NOTE:

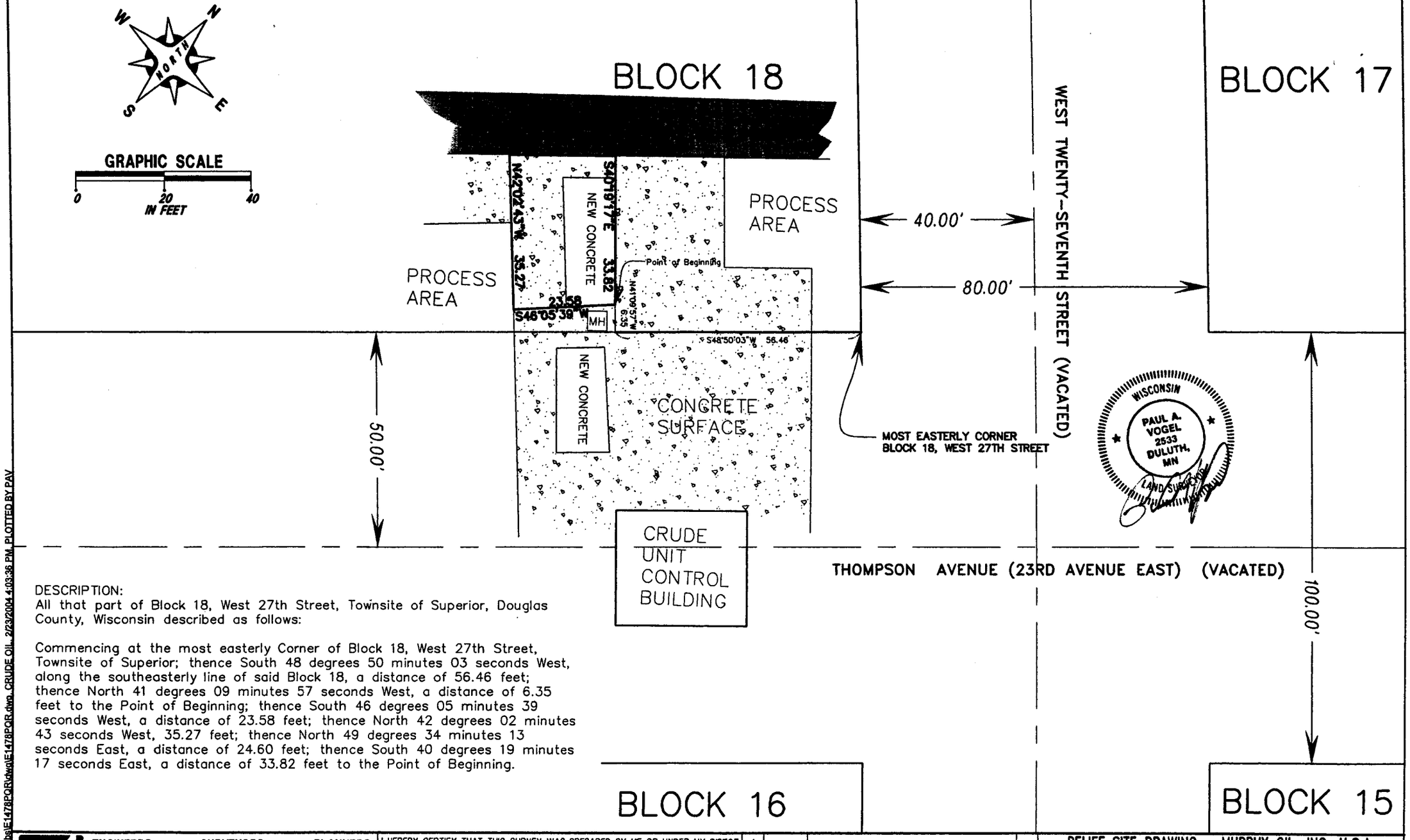
Site Layout And Sample Locations Shown On This Figure Are Based On Field Measurements And Are Considered To Be Approximate.

EXTENT OF SOIL IMPACTS AT PROPANE/BUTANE LOADING AREA

MURPHY OIL USA, INC

SUPERIOR, WISCONSIN

040704 34265WCW



DESCRIPTION:
All that part of Block 18, West 27th Street, Townsite of Superior, Douglas County, Wisconsin described as follows:

Commencing at the most easterly Corner of Block 18, West 27th Street, Townsite of Superior; thence South 48 degrees 50 minutes 03 seconds West, along the southeasterly line of said Block 18, a distance of 56.46 feet; thence North 41 degrees 09 minutes 57 seconds West, a distance of 6.35 feet to the Point of Beginning; thence South 46 degrees 05 minutes 39 seconds West, a distance of 23.58 feet; thence North 42 degrees 02 minutes 43 seconds West, 35.27 feet; thence North 49 degrees 34 minutes 13 seconds East, a distance of 24.60 feet; thence South 40 degrees 19 minutes 17 seconds East, a distance of 33.82 feet to the Point of Beginning.

ENGINEERS - SURVEYORS - PLANNERS
SALO ENGINEERING, INC.
15 East First Street - Duluth, Minnesota 55802 - 218/727-8796

I HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH CHAPTER AE-7 AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

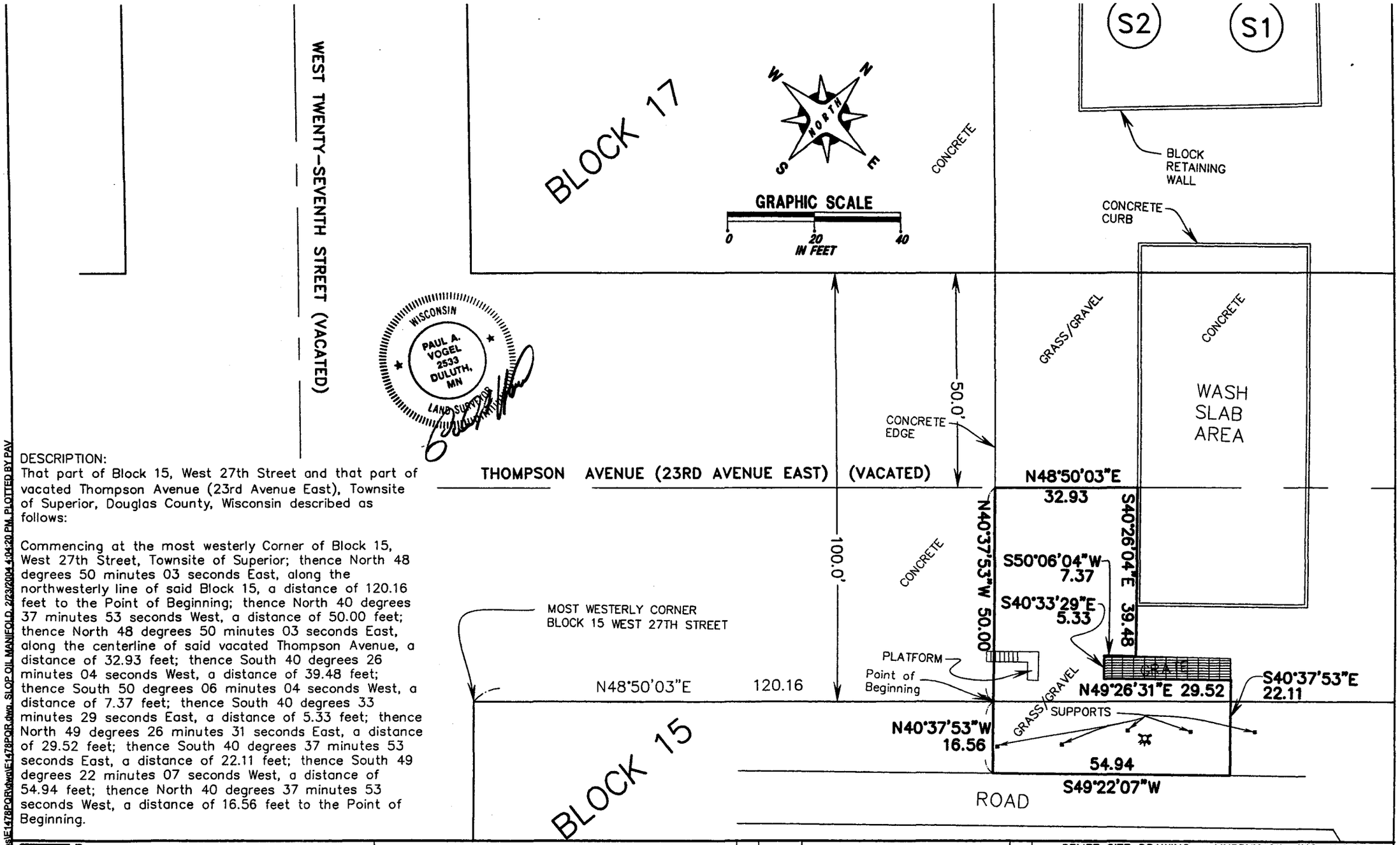
DATE

WI. LIC. NO. 2533

NO	DATE	REVISION	BY
1			
2			
3			

RELIEF SITE DRAWING - MURPHY OIL, INC. U.S.A.
CRUDE UNIT PROCESS AREA
SHEET 3 OF 15

JOB NO. E-1478R DATE 2/18/04



DESCRIPTION:
That part of Block 15, West 27th Street and that part of vacated Thompson Avenue (23rd Avenue East), Townsite of Superior, Douglas County, Wisconsin described as follows:

Commencing at the most westerly Corner of Block 15, West 27th Street, Townsite of Superior; thence North 48 degrees 50 minutes 03 seconds East, along the northwesterly line of said Block 15, a distance of 120.16 feet to the Point of Beginning; thence North 40 degrees 37 minutes 53 seconds West, a distance of 50.00 feet; thence North 48 degrees 50 minutes 03 seconds East, along the centerline of said vacated Thompson Avenue, a distance of 32.93 feet; thence South 40 degrees 26 minutes 04 seconds West, a distance of 39.48 feet; thence South 50 degrees 06 minutes 04 seconds West, a distance of 7.37 feet; thence South 40 degrees 33 minutes 29 seconds East, a distance of 5.33 feet; thence North 49 degrees 26 minutes 31 seconds East, a distance of 29.52 feet; thence South 40 degrees 37 minutes 53 seconds East, a distance of 22.11 feet; thence South 49 degrees 22 minutes 07 seconds West, a distance of 54.94 feet; thence North 40 degrees 37 minutes 53 seconds West, a distance of 16.56 feet to the Point of Beginning.

ENGINEERS • SURVEYORS • PLANNERS
SALO ENGINEERING, INC.
15 East First Street • Duluth, Minnesota 55802 • 218/727-8796

I HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH CHAPTER AE-7 AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE

WI. LIC. NO. 2533

NO	DATE	REVISION	BY
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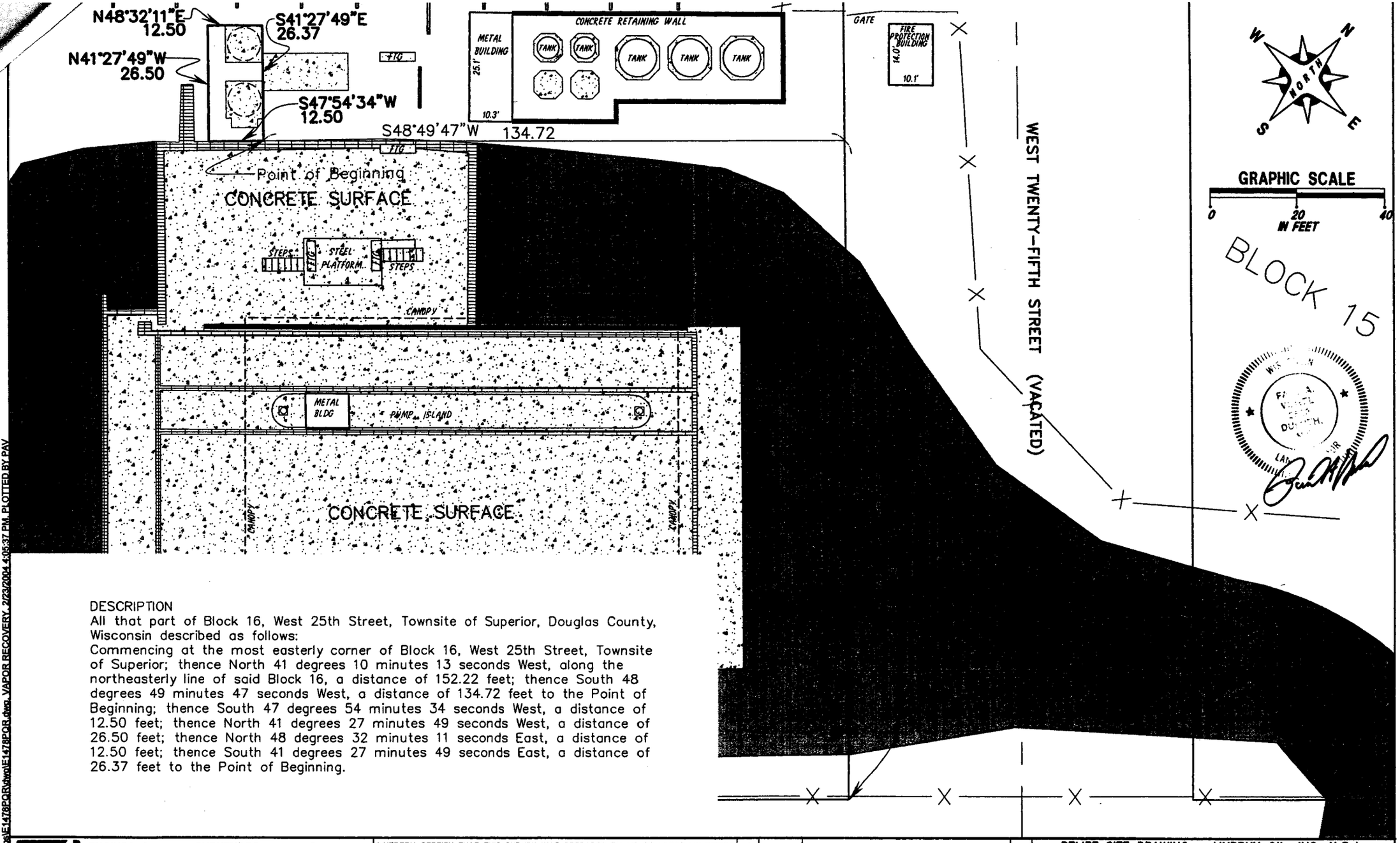
RELIEF SITE DRAWING - MURPHY OIL, INC. U.S.A.
SLOP OIL MANIFOLD AREA
SHEET 4 OF 15

JOB NO. E-1478R DATE 2/18/04



DESCRIPTION
All that part of Block 16, West 25th Street, Townsite of Superior, Douglas County, Wisconsin described as follows:
Commencing at the most easterly corner of Block 16, West 25th Street, Townsite of Superior; thence North 41 degrees 10 minutes 13 seconds West, along the northeasterly line of said Block 16, a distance of 152.22 feet; thence South 48 degrees 49 minutes 47 seconds West, a distance of 134.72 feet to the Point of Beginning; thence South 47 degrees 54 minutes 34 seconds West, a distance of 12.50 feet; thence North 41 degrees 27 minutes 49 seconds West, a distance of 26.50 feet; thence North 48 degrees 32 minutes 11 seconds East, a distance of 12.50 feet; thence South 41 degrees 27 minutes 49 seconds East, a distance of 26.37 feet to the Point of Beginning.

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SALO ENGINEERING, INC.
15 East First Street • Duluth, Minnesota 55802 • 218/727-8796

I HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH CHAPTER AE-7 AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.
DATE
WI. LIC. NO. 2533

NO	DATE	REVISION	BY
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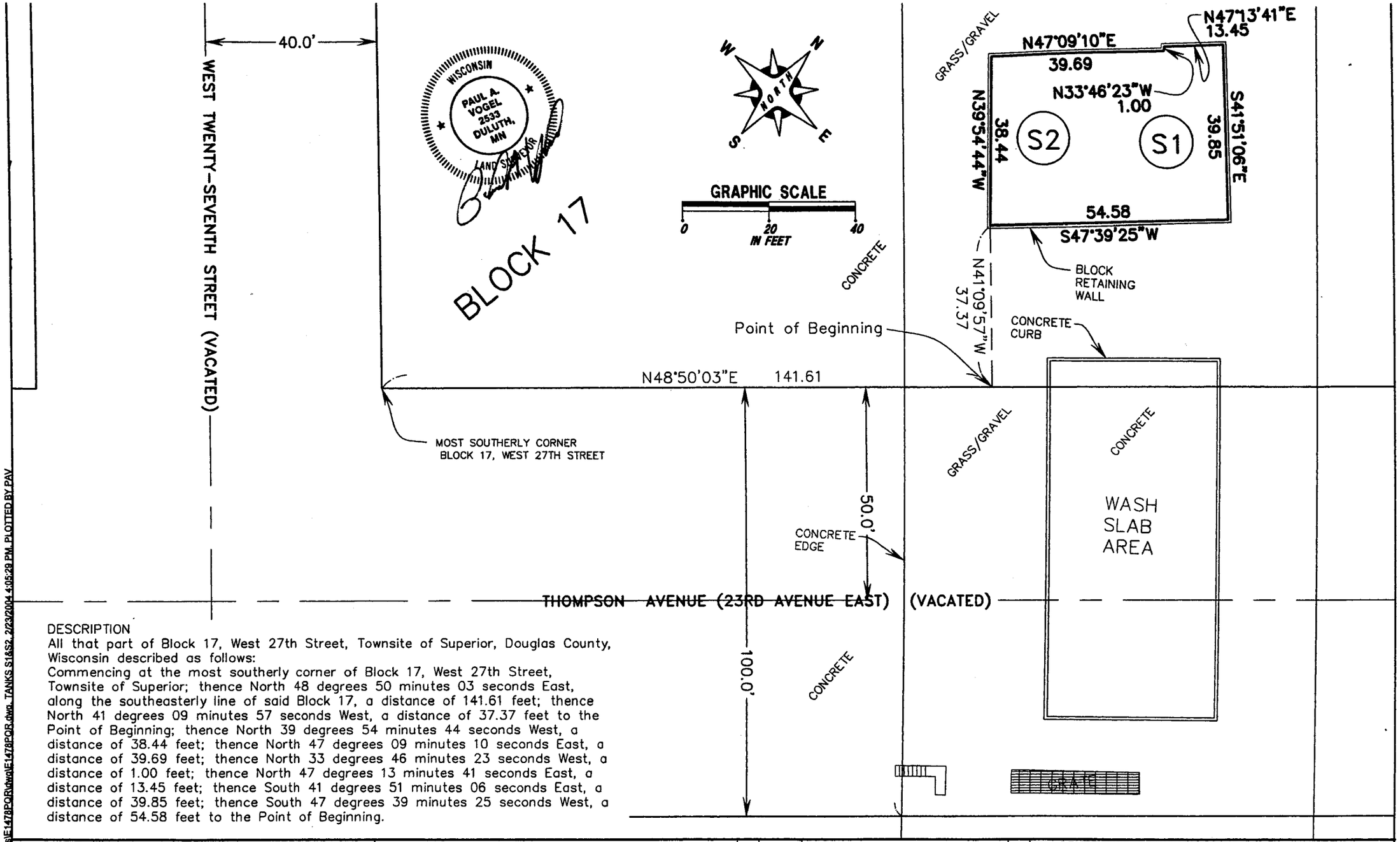
RELIEF SITE DRAWING – MURPHY OIL, INC. U.S.A.
VAPOR RECOVERY
SHEET 5 OF 15

JOB NO. E-1478R DATE 2/18/04



DESCRIPTION
All that part of Block 17, West 27th Street, Townsite of Superior, Douglas County, Wisconsin described as follows:
Commencing at the most southerly corner of Block 17, West 27th Street, Townsite of Superior; thence North 48 degrees 50 minutes 03 seconds East, along the southeasterly line of said Block 17, a distance of 141.61 feet; thence North 41 degrees 09 minutes 57 seconds West, a distance of 37.37 feet to the Point of Beginning; thence North 39 degrees 54 minutes 44 seconds West, a distance of 38.44 feet; thence North 47 degrees 09 minutes 10 seconds East, a distance of 39.69 feet; thence North 33 degrees 46 minutes 23 seconds West, a distance of 1.00 feet; thence North 47 degrees 13 minutes 41 seconds East, a distance of 13.45 feet; thence South 41 degrees 51 minutes 06 seconds East, a distance of 39.85 feet; thence South 47 degrees 39 minutes 25 seconds West, a distance of 54.58 feet to the Point of Beginning.

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15 East First Street • Duluth, Minnesota 55802 • 218/727-8796

I HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH CHAPTER AE-7 AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.
DATE
WI. LIC. NO. 2533

NO	DATE	REVISION	BY
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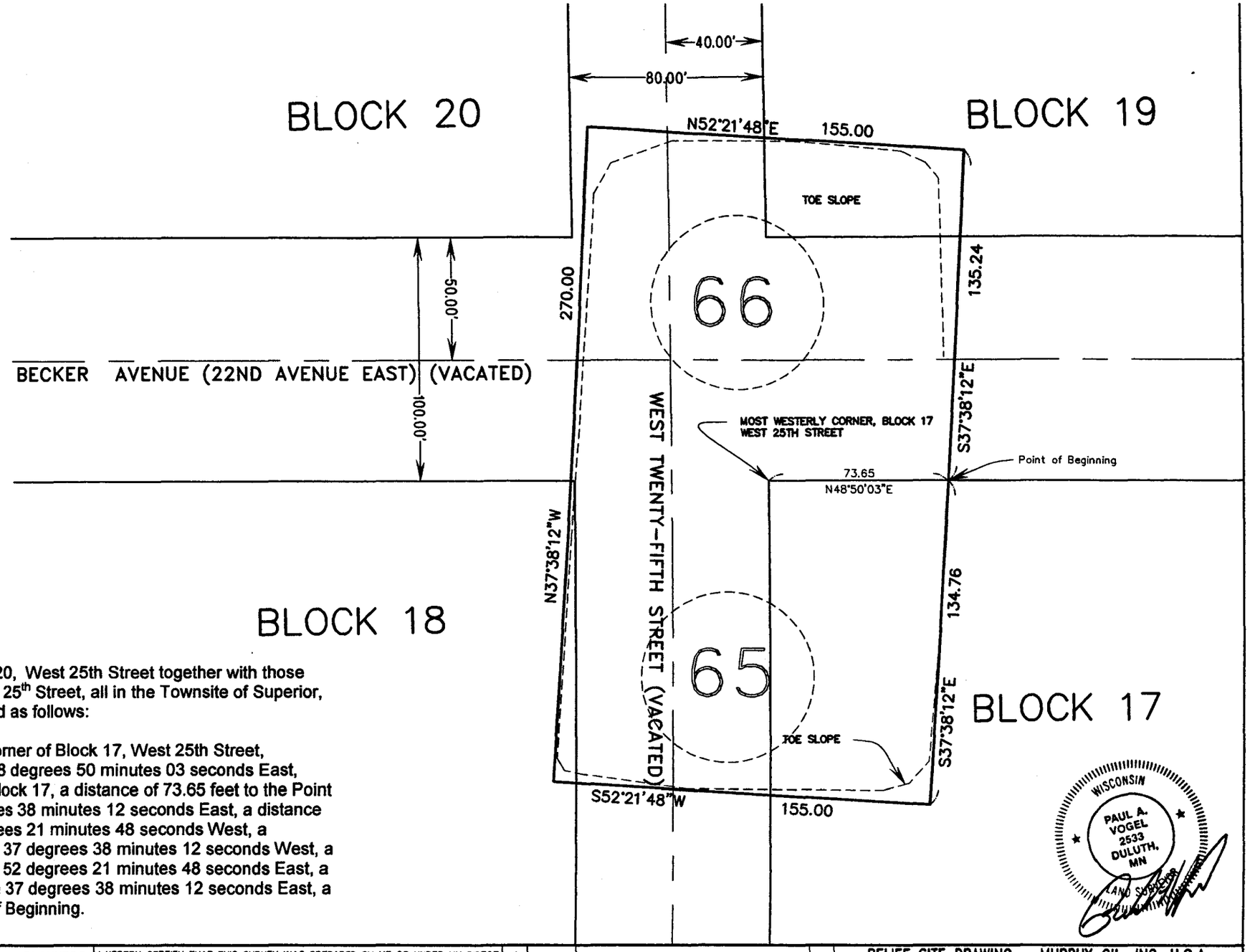
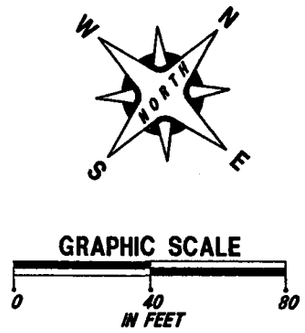
RELIEF SITE DRAWING - MURPHY OIL, INC. U.S.A.
TANKS S1 AND S2 AREA
SHEET 6 OF 15

JOB NO. E-1478R DATE 2/18/04





DESCRIPTION:
All those parts of Block 17, 18, 19 & 20, West 25th Street together with those parts of vacated Becker Avenue and 25th Street, all in the Townsite of Superior, Douglas County, Wisconsin described as follows:

Commencing at the most westerly Corner of Block 17, West 25th Street, Townsite of Superior; thence North 48 degrees 50 minutes 03 seconds East, along the northwesterly line of said Block 17, a distance of 73.65 feet to the Point of Beginning; thence South 37 degrees 38 minutes 12 seconds East, a distance of 134.76 feet; thence South 52 degrees 21 minutes 48 seconds West, a distance of 155.00 feet; thence North 37 degrees 38 minutes 12 seconds West, a distance of 270.00 feet; thence North 52 degrees 21 minutes 48 seconds East, a distance of 155.00 feet; thence South 37 degrees 38 minutes 12 seconds East, a distance of 135.24 feet to the Point of Beginning.

ENGINEERS • SURVEYORS • PLANNERS
SALO ENGINEERING, INC.
15 East First Street • Duluth, Minnesota 55802 • 218/727-8796

I HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH CHAPTER AE-7 AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE

WI. LIC. NO. 2533

NO	DATE	REVISION	BY
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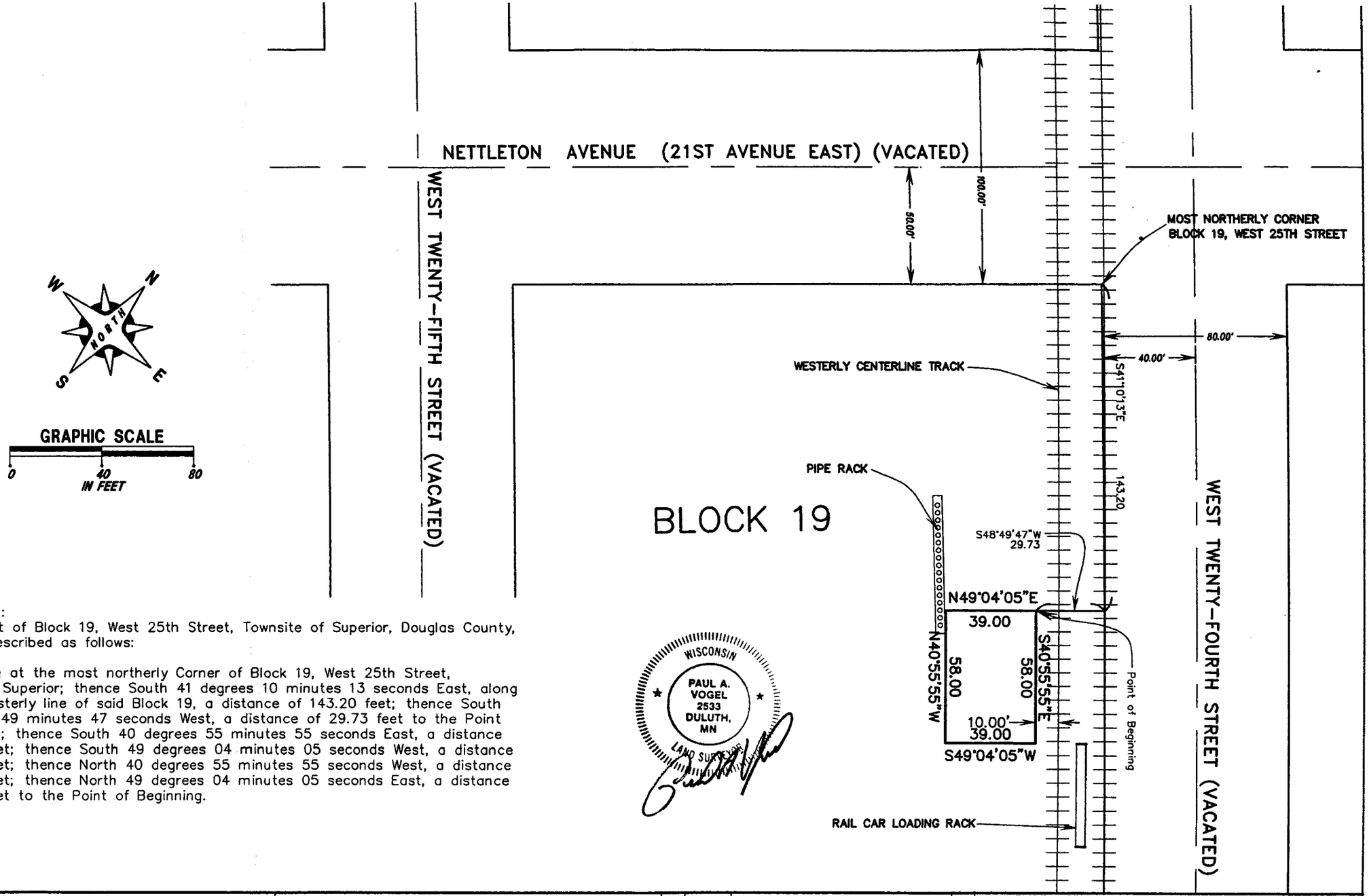
RELIEF SITE DRAWING – MURPHY OIL, INC. U.S.A.
TANKS 65 & 66
SHEET 7 OF 15

JOB NO. E-1478R DATE 2/18./04



DESCRIPTION:
All that part of Block 19, West 25th Street, Townsite of Superior, Douglas County, Wisconsin described as follows:

Commencing at the most northerly Corner of Block 19, West 25th Street, Townsite of Superior; thence South 41 degrees 10 minutes 13 seconds East, along the northeasterly line of said Block 19, a distance of 143.20 feet; thence South 48 degrees 49 minutes 47 seconds West, a distance of 29.73 feet to the Point of Beginning; thence South 40 degrees 55 minutes 55 seconds East, a distance of 58.00 feet; thence South 49 degrees 04 minutes 05 seconds West, a distance of 39.00 feet; thence North 40 degrees 55 minutes 55 seconds West, a distance of 58.00 feet; thence North 49 degrees 04 minutes 05 seconds East, a distance of 39.00 feet to the Point of Beginning.

WISCONSIN
PAUL A. VOGEL
2533
DULUTH, MN
LAND SURVEYOR

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ENGINEERS • SURVEYORS • PLANNERS
SALO ENGINEERING, INC.
15 East First Street • Duluth, Minnesota 55802 • 218/727-8796

I HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH CHAPTER AE-7 AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE

WI. LIC. NO. 2533

NO	DATE	REVISION	BY
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RELIEF SITE DRAWING - MURPHY OIL, INC. U.S.A.
PROPANE LOADING AREA
SHEET 8 OF 15

JOB NO. E-1478R DATE 2/18/04

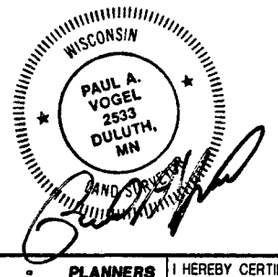
GRAPHIC SCALE

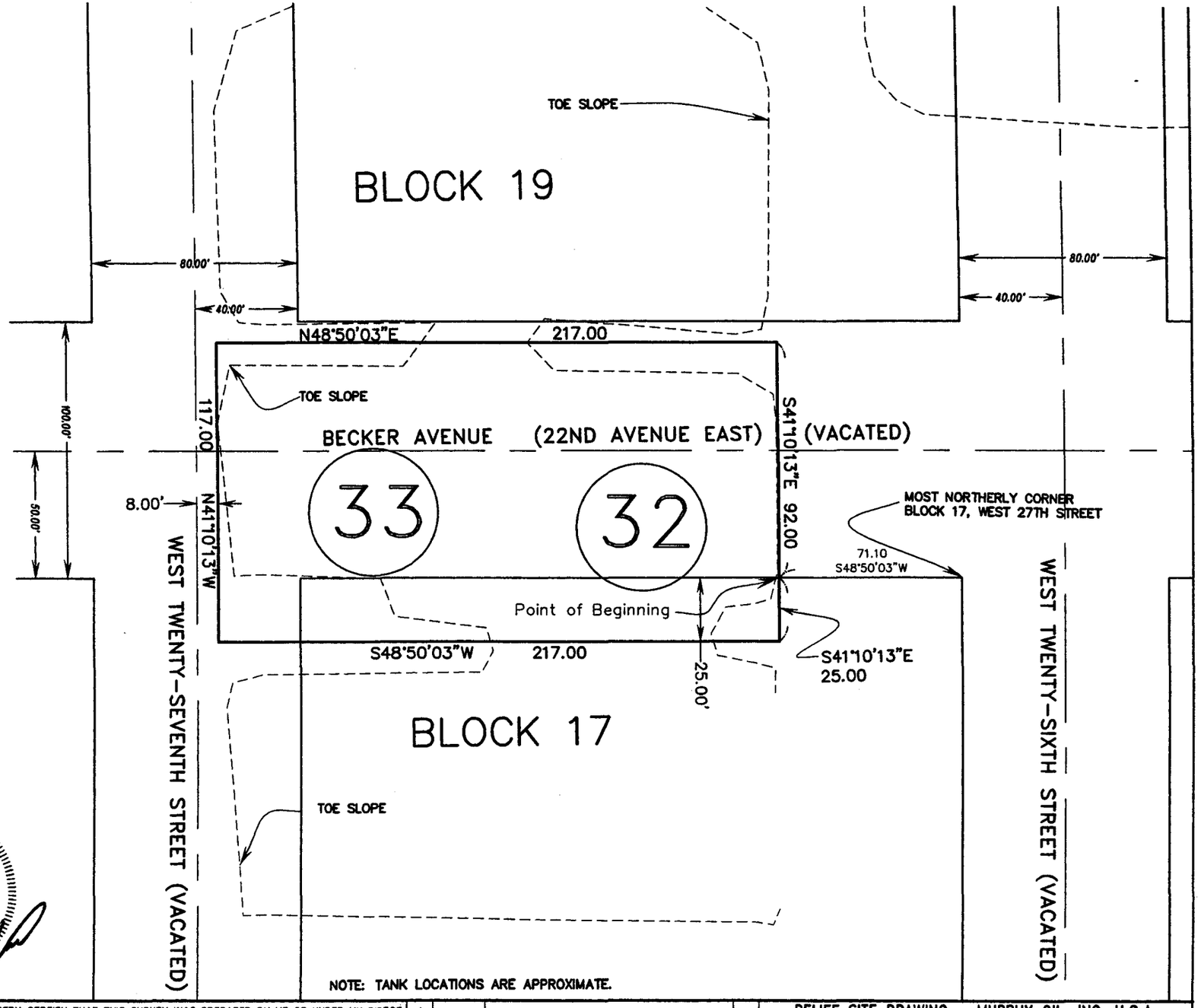
0 40 80

IN FEET

DESCRIPTION:
Those parts of Blocks 17 and 19, West 27th Street together with those parts of vacated Becker Avenue and West 27th Street, Townsite of Superior, Douglas County, Wisconsin described as follows:

Commencing at the most northerly Corner of Block 17, West 27th Street, Townsite of Superior; thence South 48 degrees 50 minutes 03 seconds West along the northwesterly line of said Block 17, a distance of 71.10 feet to the Point of Beginning; thence South 41 degrees 10 minutes 13 seconds East, a distance of 25.00 feet; thence South 48 degrees 50 minutes 03 seconds West along a line 25.00 feet distant, measured at right angles to and parallel with the northwesterly line of said Block 17, a distance of 217.00 feet, thence North 41 degrees 10 minutes 13 seconds West along a line 8.00 feet distant, measured at right angles to and parallel with the centerline of vacated West 27th Street, a distance of 117.00 feet; thence North 48 degrees 50 minutes 03 seconds East, a distance of 217.00 feet; thence South 41 degrees 10 minutes 13 seconds East, a distance of 92.00 feet to the Point of Beginning.





NOTE: TANK LOCATIONS ARE APPROXIMATE.

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SALO ENGINEERING, INC.
15 East First Street • Duluth, Minnesota 55802 • 218/727-8796

I HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH CHAPTER AE-7 AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE

WI. LIC. NO. 2533

NO	DATE	REVISION	BY
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RELIEF SITE DRAWING – MURPHY OIL, INC. U.S.A.
TANKS 32 & 33 AREA
SHEET 13 OF 15

JOB NO. E-1478Q DATE 2/18/04

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 1

PRE-EXCAVATION SOIL SAMPLING RESULTS (mg/kg)
FORMER TANK 65 BASIN
JUNE 19, 1998

Sample ID & Sample Depth (ft)	GRO	Benzene	Ethylbenzene	MTBE	Toluene	1,3,5-TMB	1,2,4-TMB	Total Xylenes
LF-1 (1.5')	**5,900**	**150**	**43**	56	**68**	100	240	**430**
LF-2 (1.5')	**3,000**	**1.7**	**10**	<1.0	**5.6**	82	180	**171**
LF-3 (1.5')	**4,200**	**55**	**42**	26	**180**	48	150	**390**
LF-4 (1.5')	14	**0.27**	0.042	<0.025	0.037	0.037	<0.25	0.091
LF-5 (1.5')	**10,000**	**120**	**220**	20	**700**	150	450	**1,140**
NR 720 RCL	**250**	**0.0055**	**2.9**	**NS**	**1.5**	**NS**	**NS**	**4.1**

NOTES:

Samples collected by Twin Ports Testing, Inc. and analyzed by EnChem Inc.
Results reported in units of milligrams per kilogram (mg/kg) on a dry-weight basis.
Results in bold exceed applicable generic NR 720 RCLs.
NR 720 RCL = Wisconsin Administrative Code NR 720 residual contaminant level.
NS = No standard.

Gannett Fleming

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 2

SOIL SAMPLING RESULTS (mg/kg)
TANKS 65 AND 66 BASINS - JULY 21 AND 22, 1998

Parameter	Sample ID and Sample Depth (feet)	
	GP-8	
	1-1.5	4.5-5
DRO	110	130
GRO	**1,000**	**740**
Benzene	**13**	**19**
Ethylbenzene	**20**	**15**
Toluene	**42**	**67**
Xylenes	**156**	**110**
MTBE	<0.45	<0.45
1,2,4-TMB	66	48
1,3,5-TMB	27	20
Ethylene dibromide (EDB)	<0.35	<0.35
Lead	11.6	NA
Detected Polycyclic Aromatic Hydrocarbons		
Acenaphthene	<0.048	<0.048
Acenaphthylene	<0.051	0.34
Anthracene	<0.023	<0.023
Benzo(a)anthracene	<0.0020	<0.0020
Benzo(a)pyrene	<0.0015	<0.0015
Benzo(b)fluoranthene	<0.0015	<0.0015
Benzo(k)fluoranthene	<0.0015	<0.0015
Fluoranthene	<0.0049	0.032
Fluorene	<0.0086	<0.0086
Indeno(1,2,3-cd)pyrene	<0.0094	<0.0094
Naphthalene	1.6	0.93
1-Methyl Naphthalene	1.0	0.47
2-Methyl Naphthalene	2.3	1.1
Phenanthrene	0.045	<0.0035
Pyrene	0.20	0.052

Table 2 Continued . . .

Parameter	Sample ID and Sample Depth (feet)	
	HA-2	
	1-1.5	4.5-5
DRO	**350**	**990**
GRO	**1,700**	**850**
Benzene	**1.3**	<0.38
Ethylbenzene	<0.11	<0.22
Toluene	**1.8**	<0.22
Xylenes	**6.3**	<0.68
MTBE	<0.090	<0.18
1,2,4-TMB	22	20
1,3,5-TMB	5.7	7.9
Ethylene dibromide (EDB)	<0.28	<0.14
Lead	11.4	NA
Detected Polycyclic Aromatic Hydrocarbons		
Acenaphthene	<0.048	<0.048
Acenaphthylene	<0.051	<0.051
Anthracene	<0.023	<0.023
Benzo(a)anthracene	<0.0020	<0.0020
Benzo(a)pyrene	<0.0015	<0.0015
Benzo(b)fluoranthene	<0.0015	<0.0015
Benzo(k)fluoranthene	<0.0015	<0.0015
Fluoranthene	<0.0049	<0.0049
Fluorene	<0.0086	0.76
Indeno(1,2,3-cd)pyrene	<0.0094	<0.0094
Naphthalene	<0.031	3.2
1-Methyl Naphthalene	<0.047	6.9
2-Methyl Naphthalene	0.076	11
Phenanthrene	<0.0035	0.72
Pyrene	0.018	<0.0062

NOTES:
Results reported in units of milligrams per kilogram (mg/kg) on a dry-weight basis.
Results in bold exceed applicable NR 720 RCL.
Only detected polycyclic aromatic hydrocarbons (PAHs) included in table.
NA = Not analyzed.

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 3

PRE-EXCAVATION GEOPROBE SOIL SAMPLING RESULTS (mg/kg)
FORMER TANK 65 BASIN
SEPTEMBER 18, 1998

Boring No. & Sample Depth (ft)	Benzene	Ethylbenzene	MTBE	Toluene	1,3,5-TMB	1,2,4-TMB	Total Xylenes
SB-1 (0-2')	**24**	**17**	5	**46**	11	35	**77**
SB-1 (2-4')	**28**	**24**	2.1	**83**	16	48	**114**
SB-1 (4-6')	**9**	**3.5**	0.27	**15**	2	6.4	**16.9**
SB-1 (6-8')	**9.7**	**8.1**	0.66	**27**	4.9	15	**38**
SB-1 (20-22')	**0.49**	0.75	<0.025	**2.7**	0.06	.2	2.82
SB-2 (0-2')	**23**	**21**	1.7	**69**	14	44	**102**
SB-2 (2-4')	**12**	**4.7**	.15	**24**	2.7	8.7	**23.8**
SB-2 (4-6')	**13**	2.8	<0.05	**20**	1.3	4.2	**14.3**
SB-2 (6-8')	**8.9**	2.4	<0.05	**16**	1	3.5	**11.9**
SB-2 (8-10')	**8.4**	**3.2**	0.083	**17**	1.4	4.7	**15.5**
SB-3 (0-2')	**25**	**19**	1.9	**69**	13	39	**95**
SB-3 (2-4')	**21**	**19**	1.2	**68**	13	41	**94**
SB-3 (4-6')	**15**	**4.7**	0.18	**27**	2.4	7.5	**22.8**
SB-3 (6-8')	**11**	**4**	0.19	**23**	2	6.4	**19.8**
SB-3 (8-10')	**8.6**	**3.7**	0.17	**21**	1.7	5.5	**18.3**
NR 720 RCL	**0.0055**	**2.9**	**NS**	**1.5**	**NS**	**NS**	**4.1**

Table 3 Continued . . .

Boring No. & Sample Depth (ft)	Benzene	Ethylbenzene	MTBE	Toluene	1,3,5-TMB	1,2,4-TMB	Total Xylenes
SB-4 (0-2')	**22**	**31**	2.2	**94**	23	68	**154**
SB-4 (2-4')	**10**	**8.2**	0.71	**29**	5.6	17	**42**
SB-4 (4-6')	**14**	**22**	1.9	**61**	17	52	**114**
SB-4 (6-8')	**7.9**	**7.1**	0.33	**26**	5	15	**36**
SB-4 (8-10')	**6.1**	2	0.087	**12**	.97	3.2	**10.5**
SB-5 (0-2')	**21**	**33**	2.1	**60**	28	92	**178**
SB-5 (2-4')	**6.1**	4	1.2	**12**	2.9	9.3	**20.7**
SB-5 (4-6')	**6.3**	1.8	0.43	**9**	1.1	3.8	**10.4**
SB-5 (6-8')	**3.4**	1.3	0.28	**6.3**	0.88	3	**7.8**
SB- 5 (8-10')	**2.5**	1.2	0.21	**5.7**	0.75	2.6	**7.1**
Field Blank	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Method Blank	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
NR 720 RCL	**0.0055**	**2.9**	**NS**	**1.5**	**NS**	**NS**	**4.1**

NOTES:

Samples collected by Twin Ports Testing, Inc. and analyzed by EnChem Inc.
Results reported in units of milligrams per kilogram (mg/kg) on a dry-weight basis.
Results in bold exceed applicable generic NR 720 RCLs.
NR 720 RCL = Wisconsin Administrative Code NR 720 residual contaminant level.
NS = No standard.

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 4

POST-EXCAVATION SOIL SAMPLING RESULTS
FORMER TANK 65 BASIN (mg/kg)
OCTOBER 20, 1998

Parameter	Sample I.D.								NR 720 RCL	NR 746 Residual Petroleum Product in Soil Screening Levels	NR 746 Direct Contact Standards in Upper 4 Feet of Soil
	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8			
Lead	11.4	13.1	13.7	11.9	10.5	13.6	11.4	9.94	500	NS	NS
GRO	**490**	**980**	**1,600**	3.8	**490**	210	**1,300**	**1,800**	250	NS	NS
Benzene	**3.5**	**6.5**	**21**	<0.025	**3.9**	**0.64**	**12**	**20**	0.0055	8.5	1.10
Ethylbenzene	**7.1**	**22**	**48**	<0.025	2.4	2.3	**27**	**30**	2.9	4.6	4.6
Toluene	**8.3**	**56**	**140**	0.064	0.6	**3.4**	**63**	**59**	1.5	38	38
Total Xylenes	**39**	**143**	**253**	0.1	**13.3**	**11.4**	**126**	**178**	4.1	42	42
Trimethylbenzenes	34.8	94	156	0.196	25.9	16.7	90	138	NS	94	94
MTBE	<1.2	<1.2	<2.5	<0.025	<0.25	<0.25	7.1	7.2	NS	NS	NS

Parameter	Sample I.D.								NR 720 RCL	NR 746 Residual Petroleum Product in Soil Screening Levels	NR 746 Direct Contact Standards in Upper 4 Feet of Soil
	B-9	B-10	B-11	B-12	B-13	B-14	B-15	B-16			
Lead	8.18	13.6	15.3	81	9.81	11.4	12.6	9.45	500	NS	NS
GRO	**960**	**1,500**	**3,700**	**350**	6.7	77	**2,700**	190	250	NS	NS
Benzene	**6.6**	**13**	**64**	**1.8**	<0.025	**0.43**	**35**	**3.7**	0.0055	8.5	1.10
Ethylbenzene	**16**	**29**	**85**	**8.7**	<0.025	0.99	**68**	1.7	2.9	4.6	4.6
Toluene	**9.9**	**62**	**260**	**18**	<0.025	1.1	**160**	0.46	1.5	38	38
Total Xylenes	**77**	**123**	**400**	**47**	0.081	3.3	**293**	4.1	4.1	42	42
Trimethylbenzenes	67	86	250	31.2	0.34	5.6	181	13.2	NS	94	94
MTBE	4.9	<2.5	11	<0.25	<0.025	<0.25	7.6	0.77	NS	NS	NS

NOTES:
All samples collected at a depth of 0.5 feet below grade.
Results reported in units of milligrams per kilogram (mg/kg) on a dry-weight basis.
Results in bold exceed applicable generic NR 720 RCLs.
NR 720 RCL = Wisconsin Administrative Code NR 720 residual contaminant level.
NS = No standard.

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 5

FORMER TANK 66 BASIN SOIL SAMPLING RESULTS (mg/kg)
MAY 1999

Parameter	Sample I.D. and Depth						NR 720 RCL	NR 746 Residual Petroleum Product in Soil Screening Levels	NR 746 Direct Contact Standards in Upper 4 Feet of Soil
	GP99-1		GP99-2		GP99-3				
	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.			
Lead	1.4	6.77	1.14	9.95	49.3	12.9	500	NS	NS
GRO	**954**	**752**	51.3	**698**	**5,100**	**3,280**	250	NS	NS
Benzene	**22.8**	**2.6**	<0.030	**3.71**	<13.3	**5.94**	0.0055	8.5	1.10
Ethylbenzene	**113**	2.76	0.041	**14.2**	<26.6	**80.7**	2.9	4.6	4.6
Toluene	**73.4**	<0.53	0.057	**35.2**	<26.6	**67**	1.5	38	38
Total Xylenes	**757**	**5.49**	0.239	**92.3**	**53.4**	**572**	4.1	42	42
Trimethylbenzenes	746	23.2	1.097	87.9	455	375	NS	94	94
MTBE	<1.14	<0.53	<0.030	<0.534	<26.6	<3.03	NS	NS	NS

Parameter	Sample I.D. and Depth				NR 720 RCL	NR 746 Residual Petroleum Product in Soil Screening Levels	NR 746 Direct Contact Standards in Upper 4 Feet of Soil
	GP99-4		GP99-5				
	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.			
Lead	5.98	4.95	2.23	22.3	500	NS	NS
GRO	223	**258**	**2,230**	19.4	250	NS	NS
Benzene	**0.298**	**0.177**	<0.218	**2.84**	0.0055	8.5	1.10
Ethylbenzene	**2.98**	2.28	<0.435	0.944	2.9	4.6	4.6
Toluene	0.617	0.532	<0.435	**1.95**	1.5	38	38
Total Xylenes	**6.426**	2.59	0.789	**5.35**	4.1	42	42
Trimethylbenzenes	7.79	5.44	57.3	1.63	NS	94	94
MTBE	<0.033	<0.031	<0.435	<0.033	NS	NS	NS

NOTES:
Results reported in units of milligrams per kilogram (mg/kg) on a dry-weight basis.
Soil samples collected by Twin Ports Testing using a Geoprobe.
Concentrations in bold exceed applicable NR 720 RCLs.
NS = No standard.

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 6

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM PROPANE LOADING AREA (mg/kg)

Parameter	Sample I.D. and Depth						NR 720 RCL	NR 746 Direct-Contact Standard in Upper 4 Feet of Soil	NR 746 Indicators of Residual Petroleum Product in Soil Pores
	GP-25		BPP-1		BPP-2				
	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.			
FID (ppm)	NM	NM	1	>1000	0.8	>1000	NS	NS	NS
Lead	15.4	NA	9.74	4.08	<0.56	5.58	500	NS	NS
DRO	**1,100**	120	NA	NA	NA	NA	250	NS	NS
GRO	**540**	**880**	<5.2	**280**	<5.3	79	250	NS	NS
Benzene	**5.7**	**13**	<0.026	**4.816**	<0.026	<0.033	0.0055	1.1	8.5
Ethylbenzene	<0.55	**19**	0.036	**5.479**	<0.026	0.075	2.9	4.6	4.6
Toluene	<0.55	**66**	0.051	**16.099**	<0.026	<0.033	1.5	38	38
Total Xylenes	**21**	**145**	0.187	**35.723**	<0.052	0.14	4.1	42	42
Trimethylbenzenes	49	98	0.073	22.149	<0.052	2.496	NS	94	94
MTBE	<0.45	<0.45	<0.026	<0.536	<0.026	<0.033	NS	NS	NS
Ethylene Dibromide	<0.35	<0.35	NA	NA	NA	NA	NS	NS	NS
Fluoranthene	3.9	0.068	NA	NA	NA	NA	NS	NS	NS
Indeno(1,2,3-cd)pyrene	0.17	<0.0094	NA	NA	NA	NA	NS	NS	NS
Naphthalene	19	1.8	NA	NA	NA	NA	NS	2.7	2.7
1-Methyl Naphthalene	13	1	NA	NA	NA	NA	NS	NS	NS
2-Methyl Naphthalene	27	2.4	NA	NA	NA	NA	NS	NS	NS
Phenanthrene	0.77	0.054	NA	NA	NA	NA	NS	NS	NS
Pyrene	5.1	0.094	NA	NA	NA	NA	NS	NS	NS

TABLE 6

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM PROPANE LOADING AREA (mg/kg)

Parameter	Sample I.D. and Depth						NR 720 RCL	NR 746 Direct-Contact Standard in Upper 4 Feet of Soil	NR 746 Indicators of Residual Petroleum Product in Soil Pores
	BPP-3		BPP-4		BPP-5				
	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.			
FID (ppm)	0.4	NM	1.4	>1000	6.4	>1000	NS	NS	NS
Lead	9.57	4.8	5.5	5.85	39.9	3.78	500	NS	NS
DRO	NA	NA	NA	NA	NA	NA	250	NS	NS
GRO	<5.4	**845**	<5.5	14.1	12.9	**743**	250	NS	NS
Benzene	<0.027	<0.270	<0.027	<0.031	<0.028	**0.855**	0.0055	1.1	8.5
Ethylbenzene	<0.027	0.888	<0.027	0.327	<0.028	**5.533**	2.9	4.6	4.6
Toluene	<0.027	<0.540	<0.027	0.033	<0.028	**12.732**	1.5	38	38
Total Xylenes	<0.054	0.861	<0.054	0.147	<0.056	**24.176**	4.1	42	42
Trimethylbenzenes	<0.054	34.397	<0.054	0.207	<0.056	32.385	NS	94	94
MTBE	<0.027	<0.540	<0.027	<0.031	<0.028	<0.269	NS	NS	NS
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NS	NS	NS
Fluoranthene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Naphthalene	NA	NA	NA	NA	NA	NA	NS	2.7	2.7
1-Methyl Naphthalene	NA	NA	NA	NA	NA	NA	NS	NS	NS
2-Methyl Naphthalene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Phenanthrene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Pyrene	NA	NA	NA	NA	NA	NA	NS	NS	NS

TABLE 6

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM PROPANE LOADING AREA (mg/kg)

Parameter	Sample I.D. and Depth						NR 720 RCL	NR 746 Direct-Contact Standard in Upper 4 Feet of Soil	NR 746 Indicators of Residual Petroleum Product in Soil Pores
	BPP-6		BPP-7		BPP-8				
	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.			
FID (ppm)	0.4	1.2	400	>1000	600	4	NS	NS	NS
Lead	13.6	4.77	20.5	5.91	8.63	5.18	500	NS	NS
DRO	NA	NA	NA	NA	NA	NA	250	NS	NS
GRO	<7.4	<6.8	25.6	**668**	216	<6.3	250	NS	NS
Benzene	<0.037	<0.034	**0.076**	**2.048**	**0.954**	<0.032	0.0055	1.1	8.5
Ethylbenzene	<0.037	<0.034	0.133	**4.871**	1.477	<0.032	2.9	4.6	4.6
Toluene	<0.037	<0.034	<0.028	**14.578**	0.589	<0.032	1.5	38	38
Total Xylenes	<0.074	<0.068	0.345	**22.58**	**18.118**	<0.064	4.1	42	42
Trimethylbenzenes	<0.074	<0.068	0.564	23.642	24.355	<0.064	NS	94	94
MTBE	<0.037	<0.034	<0.028	<0.545	<0.570	<0.032	NS	NS	NS
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NS	NS	NS
Fluoranthene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Naphthalene	NA	NA	NA	NA	NA	NA	NS	2.7	2.7
1-Methyl Naphthalene	NA	NA	NA	NA	NA	NA	NS	NS	NS
2-Methyl Naphthalene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Phenanthrene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Pyrene	NA	NA	NA	NA	NA	NA	NS	NS	NS

TABLE 6

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM PROPANE LOADING AREA (mg/kg)

Parameter	BPP-10		BPP-11		BPP-12		NR 720 RCL	NR 746 Direct-Contact Standard in Upper 4 Feet of Soil	NR 746 Indicators of Residual Petroleum Product in Soil Pores
	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.	1-1.5 ft.	4.5-5 ft.			
FID (ppm)	264	4,500	62	3,400	105	1,511	NS	NS	NS
Lead	**695**	5.46	319	4.71	5.59	21.9	500	NS	NS
DRO	NA	NA	NA	NA	NA	NA	250	NS	NS
GRO	**417**	**702**	22.7	45.4	35.9	**266**	250	NS	NS
Benzene	<0.140	**0.824**	<0.035	<0.272	<0.131	<0.138	0.0055	1.1	8.5
Ethylbenzene	<0.280	**4.85**	<0.035	0.867	<0.261	0.627	2.9	4.6	4.6
Toluene	0.303	**2.12**	<0.035	<0.544	<0.261	<0.277	1.5	38	38
Total Xylenes	0.884	**22.8**	0.064	1.15	<0.522	0.859	4.1	42	42
Trimethylbenzenes	<0.560	47.2	<0.070	<0.070	<0.522	13.6	NS	94	94
MTBE	<0.280	<1.37	0.04*	<0.544	<0.261	<0.277	NS	NS	NS
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NS	NS	NS
Fluoranthene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Naphthalene	NA	NA	NA	NA	NA	NA	NS	2.7	2.7
1-Methyl Naphthalene	NA	NA	NA	NA	NA	NA	NS	NS	NS
2-Methyl Naphthalene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Phenanthrene	NA	NA	NA	NA	NA	NA	NS	NS	NS
Pyrene	NA	NA	NA	NA	NA	NA	NS	NS	NS

TABLE 6

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM PROPANE LOADING AREA (mg/kg)

NOTES:
Sample GP-25 collected by Gannett Fleming on July 22, 1998.
Samples BPP-1 through BPP-8 collected by Gannett Fleming on June 2 and 3, 1999.
Samples BPP-10 through BPP-12 collected by Twin Ports Testing on June 14, 1999.
Results reported in units of milligrams per kilogram (mg/kg) on a dry-weight basis.
Results in bold exceed applicable NR 720 RCL.
Result shaded exceed applicable NR 746 direct contact standard.

FID	= Flame ionization detector.
ppm	= Parts per million.
NA	= Not analyzed.
NS	= No standard.
*	= Questionable result due to possible manufacturer derived contaminant in methanol.

M:\CLERICAL\PROJECTS\34200\34265.003\tables\DFK\[3T34265.003_005.xls]Table 6

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 7

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM TANKS 32/33 BASIN (mg/kg)

Parameter	Sample I.D. and Depth								NR 720 RCL	NR 746 Direct-Contact Standard in Upper 4 Feet of Soil	NR 746 Indicators of Residual Petroleum Product in Soil Pores
	B32-1		B32-2		B32-3		B32-4				
	1-2 ft.	4-5 ft.	1-2 ft.	4-5 ft.	1-2 ft.	4-5 ft.	1-2 ft.	4-5 ft.			
DRO	**45,000**	**400**	**390**	35	**1,200**	**880**	**380**	**550**	250		NS
Benzene	**13**	**1.1**	**0.91***	**1.2**	**3.4**	**9.7**	**6.6**	NA	0.0055	1.1	8.5
Ethylbenzene	**46**	2.8	**7.4**	**3.4**	**6**	**30**	**31**	NA	2.9	4.6	4.6
Toluene	**6.8**	0.95	1.3	0.52	0.94	<1.2	**3.2***	NA	1.5	38	38
Total Xylenes	**121**	**6.1**	**15.7**	**7.9**	**7.8**	**47**	**45**	NA	4.1	42	42
Trimethylbenzenes	146	3.1	11.1	8.2	21	46	45	NA	NS	83	83
MTBE	<2.5	<0.62	<0.62	0.46*	0.69	2.4	<2.5	NA	NS	NS	NS
Detected Polycyclic Aromatic Hydrocarbons											
Fluoranthene	<0.61	<0.0049	0.32	<0.0049	5.4	3.3	4	1.5	NS	NS	NS
Naphthalene	<3.9	0.066*	<0.062	<0.031	<1.2	0.81	<0.31	<0.16	NS	2.7	2.7
Phenanthrene	7.9	0.32	0.15	<0.0035	<0.14	<0.018	<0.035	<0.018	NS	NS	NS
Pyrene	20	1.1	0.64	0.014*	11	<0.031	<0.062	<0.031	NS	NS	NS
1-Methyl naphthalene	42	0.91	1.1	<0.047	<1.9	8.8	2.2	1.8	NS	NS	NS
2-Methyl naphthalene	78	1.6	1.2	<0.031	<1.2	15	5.5	4.1	NS	NS	NS

Parameter	Sample I.D. and Depth								NR 720 RCL	NR 746 Direct-Contact Standard in Upper 4 Feet of Soil	NR 746 Indicators of Residual Petroleum Product in Soil Pores
	B33-1		B33-2		B33-3		B33-4				
	1-2 ft.	4-5 ft.	1-2 ft.	4-5 ft.	1-2 ft.	4-5 ft.	1-2 ft.	4-5 ft.			
DRO	**1,800**	**630**	160	**900**	**640**	**360**	<1.4	74	250		NS
Benzene	<0.50	<0.50	<0.50	<0.50	<1.2	<2.5	<0.025	**0.71***	0.0055	1.1	8.5
Ethylbenzene	**6.4**	1.6	<0.50	**6.6**	**6.6**	**6.2**	<0.025	1.6	2.9	4.6	4.6
Toluene	<0.50	<0.50	<0.50	**1.9**	<1.2	<2.5	<0.025	<0.50	1.5	38	38
Total Xylenes	**7.7**	<1.0	<1.0	<1.0	**11.1**	**14.5**	<0.050	4.9	4.1	42	42
Trimethylbenzenes	7.1	3.9	2.3	8.9	16.7	20.5	<0.050	3.4	NS	83	83
MTBE	<0.50	<0.50	<0.50	<0.50	<1.2	<2.5	<0.025	<0.50	NS	NS	NS
Detected Polycyclic Aromatic Hydrocarbons											
Fluoranthene	3.9	0.75	0.23	<0.025	4	0.42	<0.0049	<0.0049	NS	NS	NS
Naphthalene	4.1	<0.16	<0.031	<0.16	8.5	0.59	<0.031	<0.031	NS	2.7	2.7
Phenanthrene	1.6	0.11	0.012	0.07	2.1	0.21	<0.0035	<0.0035	NS	NS	NS
Pyrene	5.9	1.1	0.5	1.4	3.3	0.35	<0.0062	0.013*	NS	NS	NS
1-Methyl naphthalene	17	1.7	<0.047	2	22	2.5	<0.047	<0.047	NS	NS	NS
2-Methyl naphthalene	19	2.4	<0.031	3	33	3.3	<0.031	<0.031	NS	NS	NS

NOTES:
Samples collected on December 16 and 17, 1998.
Results reported in units of milligrams per kilogram (mg/kg) on a dry weight basis.
Results in bold exceed applicable NR 720 RCLs.
NR 720 RCL = Wisconsin Administrative Code NR 720 residual contaminant level.
NS = No standard
* = Reported concentration below the quantitation limit.

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Bruce Moss, Acting Regional Director

1401 Tower Avenue
Superior, Wisconsin 54880
Telephone 715-392-7988
FAX 715-392-7993

February 13, 2004

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

Subject: Open Spill Sites

Dear Ms. Lundmark:

This letter is in response to a new Department initiative regarding contaminated sites where we have not heard from the responsible parties in a period of two years. The purpose of the initiative is to insure progress is being made in the cleanup and progression of the site towards case closure.

As a practical matter we believe that all open cases should progress towards closure. As such we are contacting on all of your open cases regardless of whether they fall under this initiative or not. Our records indicate that the following cases are open:

BRRTs No.	Site Name	Murphy's Last Action Date
02-16-000508	Bardon Avenue	January 19, 1987*
02-16-190544	Tank 29	May 18, 1998*
02-16-221947	Tank 8	May 15, 2002
02-16-222638	Crude Unit	July 14, 1999*
02-16-222670	S-1, S-2	September 2, 1999*
02-16-222712	Tank 40	May 15, 2002
02-16-223154	Tank 70	September 18, 2002
02-16-226861	Under Road	February 26, 1993
02-16-246715	Slop Oil Tank	August 9, 2000*
02-16-515749	Loading Dock	January 2, 2004
03-16-000320	Marine Terminal	November 28, 1990*

* 128A Case

Among the aforementioned cases, there are three, which have been conditionally closed 02-16-222638, Crude Unit; 02-16-222670, S-1, S-2 Tanks; and 02-16-246715 Slop Oil Tank. Deed restrictions need to be recorded for each site as outlined below:

1. **02-16-222638, Crude Unit**
   Deed Restriction for maintenance of the concrete/asphalt engineering control on the crude unit process area.

2. **02-16-246715 Slop Oil Tank**
   Deed Restriction for inaccessible soil under slop oil manifold. A Class 1 public notice is no longer required because administrative code changes have eliminated this requirement.

3. **02-16-222670, S-1 and S-2 Tanks**
   Deed Restriction Required for Investigation and Remediation of Inaccessible soil. Maintenance & inspection plan also needed. Again, the public notice is no longer required in this case.

02-16-515749, Loading Dock
Since we have recently received a work plan for this case, no additional information is required at this time. You should keep us informed of the progress of this case as milestones are achieved, or as quarterly monitoring data is received.

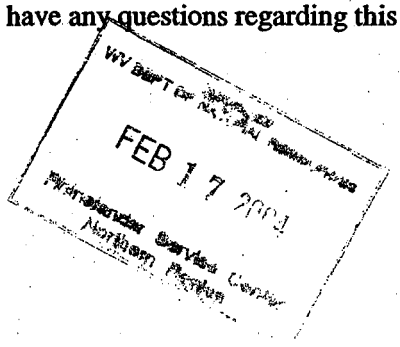
Remaining Cases
At this time we are requesting that you provide the Department with a status update for each site including your future plans for progressing each of the aforementioned sites to closure, and a proposed schedule for these future actions if available. These updates should include a summary of any remedial actions and monitoring results since that the last time we heard from you. We will be contacting you about April 2, 2004, to discuss progress of these sites.

Please contact me at 392-0802, if you have any questions regarding this letter.

Sincerely,

James A. Hosch

James A. Hosch
Hydrogeologist



Cc: Janet Kazda – Rhinelander
John Robinson – Rhinelander
R. Lee Vail, Murphy Oil USA, P.O. Box 61780, New Orleans, LA 70161-1780
Jeff King – Gannett Fleming, 8025 Excelsior Drive Madison, WI 53717-1900

Kazda, Janet L

From: Kazda, Janet L
Sent: Monday, February 02, 2004 2:22 PM
To: Hosch, James A
Subject: RE: Murphy sites

Importance: High

Hi, Jim.

Here's a run-down of the reasons for the deed restrictions on the various Murphy sites:

02-16-222670 Deed Restriction Required for Investigation and Remediation of Inaccessible soil. Maintenance & inspection plan also needed. Public notice required, never submitted.

02-16-246715 Deed Restriction for inaccessible soil under slop oil manifold and class one public notice required.

02-16-222638 Deed Restriction for maintenance of the concrete/asphalt engineering control on the crude unit process area.

I think this answers your voice message questions from last week. I agree that one letter should be written, and include all these items.

Please be sure to send me a copy of the letter so that I can include them in my files. Thanks.

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

-----Original Message-----
From: Wincentsen, Danielle A
Sent: Friday, January 30, 2004 11:00 AM
To: Hosch, James A; Robinson, John H.; Kazda, Janet L
Subject: RE: Murphy sites

Jim,

The only one that qualifies as a 128 a site is the Crude Unit. The other ones are pretty up to date on their status. I will add that one though.

-----Original Message-----
From: Hosch, James A
Sent: Friday, January 30, 2004 10:35 AM
To: Robinson, John H.; Kazda, Janet L; Wincentsen, Danielle A
Subject: Murphy sites

John,

I would like to include all of the Murphy Sites that currently remain open in my list of 128 sites if it is not too late. I think you will agree that it is more efficient to do them all at once. Please let me know what you think.

BRRTs No.	Site Name
02-16-000508	Bardon Avenue
02-16-190544	Tank 29
02-16-221947	Tank 8
02-16-222638	Crude Unit
02-16-222670	S-1, S-2
02-16-222712	Tank 40
02-16-223154	Tank 70
02-16-226861	Under Road
02-16-246715	Slop Oil Tank
02-16-515749	Loading Dock
03-16-000320	Marine Terminal

The sites listed in green font are ones which have closures pending. I don't have the file for these any more, but I am planning on talking to Janet about these to see what their current standing is.

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wiscons NATURAL RESOURCES

Tommy G. Thompson,
George E. Meyer, Secr
William H. Smith, Regi

1705 Tower Avenue
Superior, Wisconsin 54880
Telephone 715-392-0802
FAX 715-392-7993

Danielle
LANCOUR - Rhinelander
Closed Sites

June 29, 1999

Mr. R. Lee Vail
Environmental Affairs Manufacturing Department
P.O. Box 61780
New Orleans, LA 70161-1780

Subject: Crude Unit Process Area, Murphy Oil Refinery
BRRTs No.: 02-16-222638

Dear Lee,

In an effort to reduce the costs of environmental cleanup, the Department of Natural Resources is trying to identify contaminated sites that may be ready for case closure. Your site appears to be such a candidate. However, a formal review is required in order to confirm closure data and specify any conditions of closure, or to clarify what further activity is necessary before closure can be approved.

We have completed our review of the document titled "Site Status Report, Crude Unit Process Area, Murphy Oil USA, Inc. Superior, Wisconsin." Although you have not requested case closure for this site, based on our review the Department believes that case closure may be appropriate at this time. A decision to grant case closure means that the Department will not require further remediation at your site. If closure is granted, you will receive a case closure letter outlining any special conditions of the closure. These conditions may include the recording of a deed instrument if residual contamination above standards remains on the property.

If you would like the Department to review this site for closure, please submit a case closure request (form 4400-202), along with the $750 case closure review fee. You can then expect to receive a case closure determination letter from this office. If review of your closure request indicates that closure is not yet possible, you will not be assessed another closure review fee for closure review at a later date.

If you choose not to request case closure, please let us know how you plan to continue the remediation of this property. However, you should be aware that the Department of Commerce may determine that you are not eligible for continued reimbursement from the PECFA program if you choose to continue your remedial actions beyond the point at which closure is possible.

If you have any questions please call me at 715-392-0802. If you have questions about PECFA eligibility, please contact Shanna Laube at the Department of Commerce.

Sincerely,
NORTHERN REGION

James A. Hosch
Hydrogeologist/Spills Coordinator

cc: Mark Stokstad - Rhinelander
Linda Meyer - LS/5
Mick Michaelsen - Spooner
Herb Fox, Murphy Oil U.S.A., P.O. Box 7000, El Dorado, AR 71731-7000
Dennis Kugle, Eder Associates, 8025 Excelsior Drive, Madison WI 53717-1900
Dale Ziege, RR/3
Lori Huntoon, Department of Commerce

BRR Tracking System - Activity Action Report

Activity: 02-16-222638 MURPHY OIL - CRUDE UNIT PROCESS AREA

Activity Type: ERP **AST:** ☐ **DryCleaner Activity:** ☐

Start Date: 09/08/1991 **End Date:** OPEN **VPLE:** ☐ **Gen Prop:** ☐

Co-Contamination: ☐ **Transferred DCom:** ☐ **Pecfa Eligible:** ☐

Tracked by DCom: ☐ **Pecfa 80k:** ☐

Pecfa 80k Failure: ☐

Location: MURPHY OIL - SLOP OIL MANIFOLD AREA
SLOP OIL MANIFOLD (STINSON)
SUPERIOR

Code	Action Name	Action Date
1	Notification	09/08/1991
PER SPILL 04-16-046256		
79	Closure Review Request Received with Fee	07/14/1999
$750. HOSCH		
84	Conditional Closure	09/02/1999
DEED RESTRICTION REQD		

Kazda, Janet L

From: Kazda, Janet L
Sent: Tuesday, March 14, 2000 10:17 AM
To: Hosch, James A
Cc: Kazda, Janet L
Subject: Murphy Oil Closures

Hi, Jim.

I called Jeff King this morning to ask about the status of conditional closures for the following sites:

02-16-222~~650~~ 638	Deed Restriction with Maintenance Agreement	Approved for Closure 9/2/99
02-16-222670	Deed Restriction and Public Notice	Approved for Closure 9/2/99

Jeff indicated that Murphy had intended to wait until all their sites had closed, then put one big deed restriction on the property. I explained that the legislature was holding our feet to the fire to complete the requirements for closure on sites, and Jeff understood our point. He said that he would get things rolling.

You do not have to do anything about this. Just in case it comes up in negotiations or something, I want you to know what I said and did.

Janet

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, Regional Director

Northern Region Headquarters
107 Sutliff Ave.
Rhinelander, Wisconsin 54501-0818
Telephone 715-365-8900
FAX 715-365-8932
TDD 715-365-8957

October 1, 1999

Spill # 04-16-046256

Mr. Mark Miller
Murphy Oil USA, Inc
PO Box 2066
Superior, WI 54880

Subject: Murphy Oil USA, Inc., Crude Unit Process Area, 2400 Stinson Ave, Superior, WI
BRRTS # 02-16-~~222638~~

Dear Mr. Miller:

The Department of Natural Resources provided a notice to you that the degree and extent of crude oil contamination at the above-named site was required to be investigated and remediated. We have since been informed that the required investigation and remediation has been accomplished.

On September 2, 1999, the above-named site was reviewed by the Northern Region Closeout Committee for a determination as to whether or not the case qualified for close out under ch. NR 726, Wis. Adm. Code.

Based on the investigative and remedial documentation provided to the Department, it appears that the crude oil contamination at the above-named site has been remediated to the extent practicable under current site conditions, and that no further action is necessary at this time. Therefore, the Department will consider the case "closed," pursuant to NR 726.05(8), if the responsible party sign and record a deed restriction for the property. To document that this condition has been complied with, the responsible party must submit to the Department a copy of the recorded deed restriction, with the recording information stamped on it, within 15 days after the County Register of Deeds returns the deed restriction to the responsible party. The deed restriction may be amended in the future with the approval of DNR if conditions change at the site and the residual contamination is remediated.

The deed restriction is an option that the Department can offer to you in order to close this site. If you choose not to accept this option, you may perform additional investigation and cleanup of the remaining contamination. Note that this additional work may not be eligible for reimbursement through the Petroleum Environmental Cleanup Fund Award (PECFA) Program. You should contact the Department of Commerce to determine eligibility of the additional work for reimbursement.

Enclosed is an example of a deed restriction. Please ask your attorney to draft a specific deed restriction for this site and submit the draft to me. This deed restriction should require regular inspection and maintenance of the concrete and asphalt surface over the site. Department of Natural Resources attorneys will review the draft and return it to your attorney with revisions. After your attorney has made the revisions, you may sign and record the restriction with the County Register of Deeds. A copy of the recorded restriction must be then filed with the Department of Natural Resources.

Please note that this case closure is contingent upon proper documentation of proper abandonment of the

monitoring wells on site. If monitoring wells remain at this site, please provide the documentation that this action has been completed, or have your consultant do so. Please complete Form 3300-5B and send it to my attention at the above address.

If you have any additional information which was not formerly provided to the Department, and which you feel would significantly impact this closure decision, you may submit that information for our re-evaluation of case closure.

If you have any questions, please call me at 715-365-8990.

Sincerely,
NORTHERN REGION

Janet Kazda

Janet Kazda
Case Closeout Committee

cc: File
Lori Huntoon, Dept of Commerce
Jim Hosch, Superior

Dennis Kugle
Gannet Fleming, Inc
8025 Excelsior Dr
Madison, WI 53717

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 29, 1999

FILE REF: 02-16-222638 ~~02-16-222650~~

TO: Chris Saari - Brule

FROM: Jim Hosch - Superior

SUBJECT: 125 Gallon Spill of Crude Oil from a Pipeline on September 8, 1991 Spill at the Crude Unit

General
The site investigation for this site is minimal. However, considering the size of the spill and the immediate response it appears to be adequate. This site appears to be eligible for Comm 46 groundwater and soils standards for low permeability soil.

Soil
Four soil samples were collected at this site, two at each end of the excavation. Samples at the site indicate levels are slightly over the NR 720 Wis. Adm. Code for benzene. The 1 to 1.5 foot sample had a high result of 0.366 ppm, and the 4.5 to 5.5 foot sample had 0.098 ppm in one sample. Because the site currently has a barrier of concrete over the site, I believe that adequate precautions have been taken to protect the groundwater pathway. Murphy had proposed a site-specific RCL during previous modeling (SESOIL) of 200 ppm for benzene.

Groundwater
Other studies at the Refinery indicate groundwater depth at 4 to 6 feet.

Recommendation
I am recommending closure for this site based on the low levels, the barriers to infiltration, and the low permeability of the clay.

I concur, as long as they record a deed restriction.

CAS

I concur with the deed restriction for soil, and the barrier

J.A.H.

Printed on Recycled Paper

~~22638~~ NOR Case Closeout
~~22650~~ Buck Slip

~~22638~~

UID#: 02-16-[redacted] Date Rec'd: 7/14/99 (FI)

SITE NAME: Murphy Oil - Crude Area

ADDRESS: Superior

COUNTY: Douglas GMU: Lake Super

FROM: GMU Designee or Project Manager Hosch
Signature

_____ Based on my review, I recommend: closure additional actions (circle one) of this case.

__X__ A memo is attached to explain my recommendation. Required for committee reviews. Just in case

TO: Fast Track Review

~~Chris Saari~~

_____ ~~Jamie Dunn~~ (Lake Superior & St. Croix Basins)

_____ Ken Markart (Upper Wisconsin & Upper Chippewa Basins)

_____ Chuck Weister (All Basins)

Final case closure is contingent upon:

_____ Final abandonment of monitoring wells

_____ Removal of wastes (e.g., excavated impacted soils, drummed investigative wastes) from the site for proper treatment or disposal.

_____ Completion of excavated soil remediation through:

___ Landspreading
___ RP Managed - exsitu bioremediation pile(s)
___ RP Managed - on site bioremediation pile(s)

__X__ Deed Instrument for: Residual soil contamination / maintain cover

_____ Other: _____

Closure letter should include a variance for PAL exceedances. Yes (No)

_____ Committee action complete; route to Janet Kazda for processing

Date: 7-29-99 (FO) By: James G. Hosch

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CASE SUMMARY AND CLOSE OUT FORM

Form 4400-202
5-98

~~650~~ 638

WDNR BRRTS Case #: 02 - 16 - 222 ~~638~~ WDNR Site Name: Crude Unit Process Area

NOTE: Use of this form is required by the Department for any case close out application filed pursuant to ch. 292, Wis. Stats. and ch. NR 726, Wis. Adm. Code. Completion of this form is mandatory for applications for case closure. The Department will not consider or act upon your application unless you complete and submit this application form. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than reviewing close out requests and determining the need for additional response action.

I certify that, to the best of my knowledge, the information presented on and attached to this form is true and accurate. This recommendation for case closure is based upon all available data as of 7/9/99 (date). I have read the Case Summary and Close Out Form Instructions and all required information has been included.

Form Completed By: Jeffrey J. King 7/9/99
(Signature) (Date)

Printed Name: Jeffrey J. King Company Name: Gannett Fleming, Inc.

If not site owner, relationship to site owner: Environmental Consultant

Address: 8025 Excelsior Drive, Madison, WI 53717

Telephone Number: (608) 836-1500 FAX Number: (608) 831-3337

Environmental Consultant (if different then above): Same as above

Address: Same

Telephone Number: ( ) Same FAX Number: ( ) Same

FOR DEPARTMENT USE ONLY

Type of Case: LUST Spill ER Land Recycling Other_____ DNR Reviewer:_____

WDNR Site Name: Murphy Crude Unit – Crude Process Area

Complete Site Address: 2400 Stinson Ave., Superior, WI 54880

WDNR BRRTS Case #: 02 - 16 - 222 ~~638~~ FID #: _____

~~650~~

PECFA Claim #: NA

Responsible Party Name: Murphy Oil USA, Inc.

Complete Responsible Party Address: 2407 Stinson Ave., Superior, WI 54880

Site Legal Description : NW 1/4, NE 1/4, NW 1/4, Sec 36, T 49 N, R 14 (E/W) Town: Superior

County: Douglas Latitude: 46 ° 41 : 4′ ___ ″ Longitude: 92 ° 04 : 3′ ___ ″

Type Of Closure Requested:

Soil	Groundwater
___ < NR 720.09/720.11 Generic RCLs	___ < NR 140.10 Table 1 & Table 2 Values
X NR 720.19(2) Soil Performance Stds.	___ NR 140.28(2) PAL Exemption
___ NR 720.19(3) Site Specific Stds.	___ NR 726.05(2)(b) Natural Attenuation

WDNR BRRTS Case #: 02-16-222638 WDNR Site Name: Crude Unit Process Area

Contaminant Type(s): Crude oil Quantity Released: 125 gallons

Date of Incident/Discovery: _____ Zoning of Property: Industrial Fee Attached: Yes X No ____

Enforcement Actions Closed Out? ____Yes ____No X NA Permits Closed Out? ____Yes ____No X NA

1. CASE HISTORY AND JUSTIFICATION FOR CLOSURE ATTACHED? X Yes ___No

2. SOIL PRE-REMEDIATION OR INVESTIGATION ANALYTICAL RESULTS

Extent Defined? X Yes ___No Soil Type(s): CL (clay) Depth to Bedrock: 260 feet

Potential Receptors for Direct Contact (i.e. vapor migration, contaminated soil left in place): NA- Impacted soil under approx. 4-inches of concrete

Tables of Pre-remedial Analytical Results Attached? __Yes X No Maps of Pre-remedial Sample Locations Attached? __Yes X No

3. SOIL POST REMEDIATION ANALYTICAL RESULTS

Remedial Action Completed? X Yes ___No 720.19 Analysis? X Yes ___No (If yes, attach supporting documentation)

Were Soils Excavated? X Yes ____No Quantity: 30 yds. Disposal Method: _____

Final Confirmation Sampling Methods: Grab Soil Samples collected with Drill Rig in March 1999

Soil Disposal Form Attached? ____Yes X No Final Disposal Location: _____

Estimated volume of insitu soils exceeding NR 720 RCLs: Approximately 35 yds^3

Tables for Post Remedial Analytical Results Attached? X Yes __No Maps of Post Remedial Sample Locations Attached? X Yes No

Brief Description of Remedial Action Taken:

4. GROUNDWATER ANALYTICAL RESULTS

Potential Receptors for Groundwater Migration Pathway: one potential water supply well approximately 800 feet east at Lakehead Pipeline Co. This well may have been abandoned, as Lakehead claims to have no knowledge of it, and Newton Creek

Extent of Contamination Defined? ____Yes ____No X NA Remedial Action Completed? ____Yes ____No ____NA

# of Sample Rounds: ____ Depth(s) to Groundwater/Flow Direction(s): 3 to 5 feet / East

Field Analyses? ____Yes ____No Lab Analyses? ____Yes ____No # of Sampling Points: _____

NR 141 Monitoring Wells Sampled: _____ # Temporary Groundwater Sampling Points Sampled: _____

Recovery Sumps Sampled: _____ # Municipal Wells Sampled: _____ # Private Wells Sampled: _____

Has DNR Been Notified of Substances in Groundwater w/o Standards? ___Yes ___No

Any Potable Wells Within 1200 Feet of Site? ___Yes ___No If Yes, How Many? _____

Have They Been Sampled? ___Yes ___No Have Well Owners/Occupants Been Notified of Results? ___Yes___No

Preventive Action Limit Exceeded? ____Yes ____No (If Yes, identify location(s) _____

Enforcement Standard Exceeded? ____Yes ____No (If Yes, identify location(s) _____

Tables of Analytical Results Attached? ___Yes ___No Map of Groundwater Sample Locations Attached? ___Yes___No

Brief Description of Remedial Action Taken:

~~1551~~ 638

WDNR BRRTS Case #: 02-16-222638 WDNR Site Name: Crude Unit Process Area

FOR DEPARTMENT USE ONLY

FIRST REVIEW DATE: _____ [X] **Approved** [ ] **Denied**

(Signature) 7-29-99 Approved (Signature) 8/10/99 (Signature) (Signature)

SECOND REVIEW DATE: _____ [ ] **Approved** [ ] **Denied**

(Signature) (Signature) (Signature) (Signature)

COMMITTEE RECOMMENDATION:

X **Closure Approved Per:**

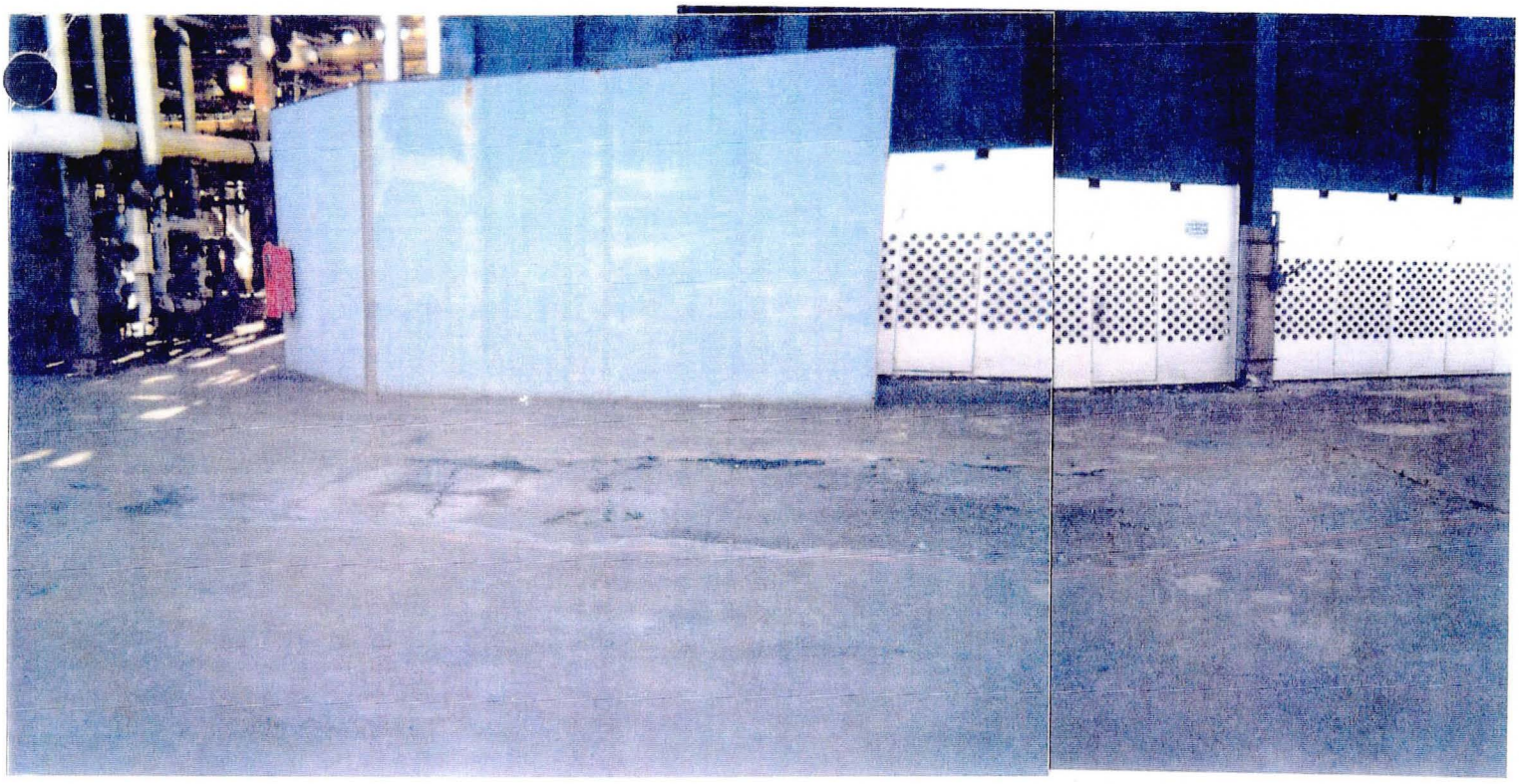
- _____ No Restrictions
- _____ Groundwater Use Restriction
- _____ Zoning Verification
- X Deed Restriction
- _____ Deed Affidavit
- _____ Site Specific Close Out Letter Necessary
- _____ Well Abandonment Documentation
- _____ Soil Disposal Documentation
- _____ Public Notice Needed
- _____ NR 140 Exemption For: _____
- _____ Specific Comments: I would approve closure as long as a deed restriction is recorded requiring maintence of the concrete/asphalt engineering control.

_____ **Closure Denied, Needs More:**

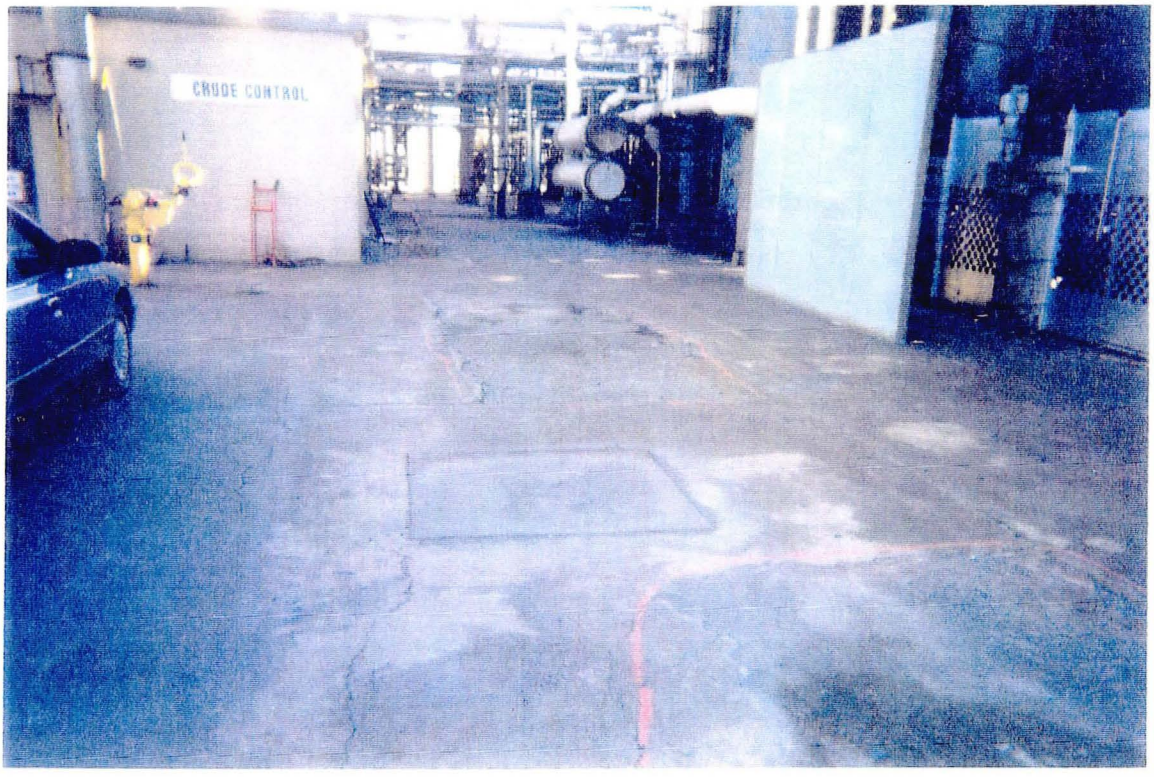
- _____ Investigation
- _____ Groundwater Monitoring
- _____ Soil Remediation
- _____ Groundwater Remediation
- _____ Documentation Of Soil Landspreading Or Biopile Destiny
- _____ Specific Comments: _____

ATTACHMENT B

PHOTOGRAPHS OF PIPELINE RELEASE AREA



Panoramic view of crude unit process area showing section of cut out concrete where underground pipeline release of crude oil occurred in September 1991 (two photos were matched together to form this picture).



View of crude unit process area - September 1991 underground pipeline release of crude oil occurred where concrete is cut out.

ATTACHMENT C

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

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	14 W	Douglas
SE and SW	of	25	49	14 W	Douglas
SE	of	26	49	14 W	Douglas
NE	of	35	49	14 W	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.

WELL CONSTRUCTION REPO

WISCONSIN STATE BOARD OF HEALTH

WELL DRILLING DIVISION

AUG 28 19

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

Owner Williams Hdw Co Driller Masters Bro

Street or RFD Norman Roadside Post Office Wentworth Ex

Post Office Superior Date Feb 27/941 Permit No. 2

LOCATION OF PREMISES

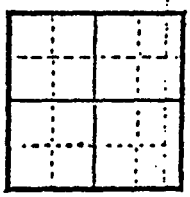
~~Bayfield~~ Douglas County City of Superior Town

Blk 12 Hammond add Lot 27

Describe further by subdivision, plat, district, lake, lot, block, nearest principal highway, etc., whichever apply.

S ½ of sec 28 Sec 26?

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



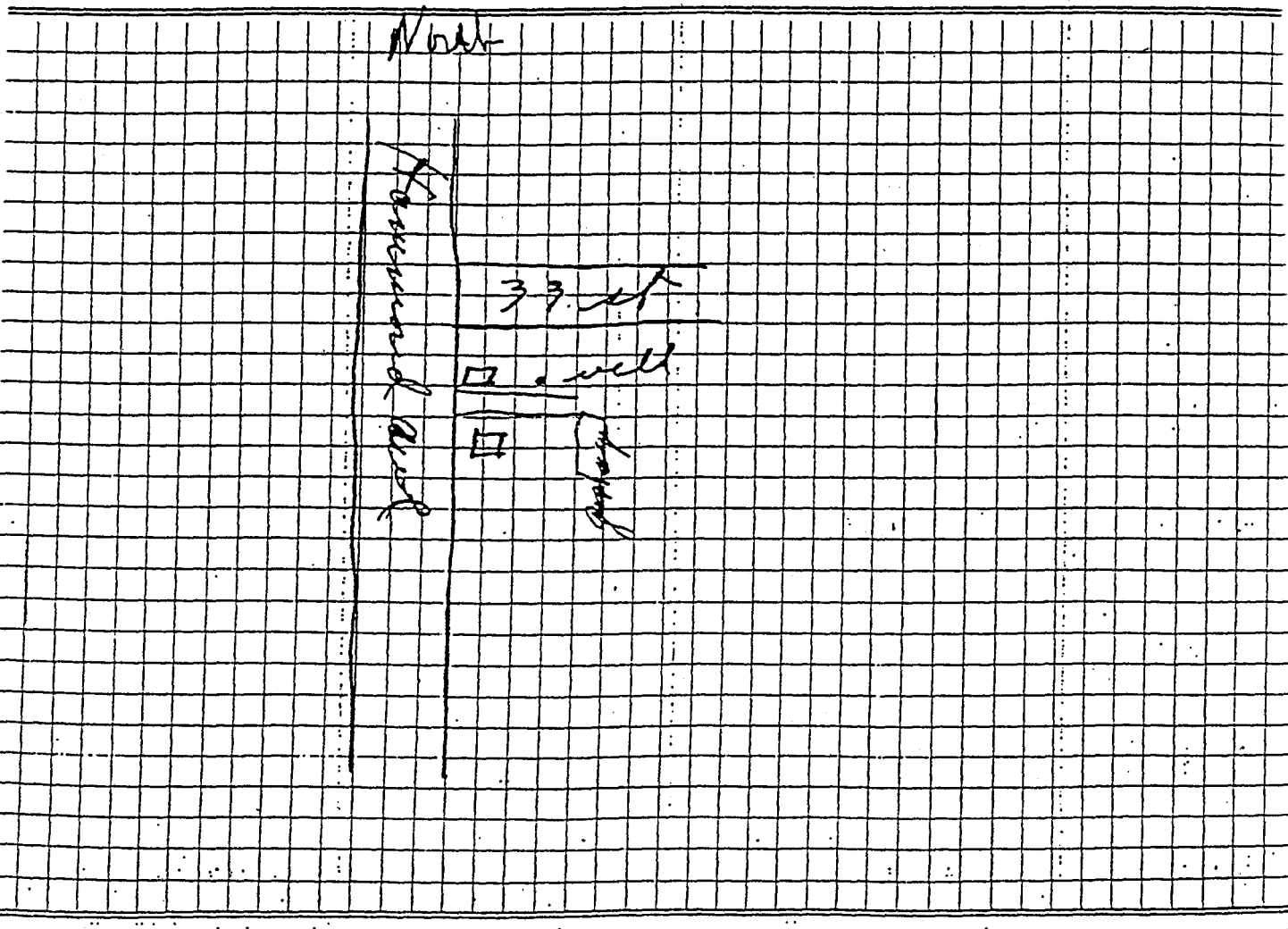
Sec. 28

Twp. 49

Range 14

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 distance between lines. Be sure to indicate NORTH.



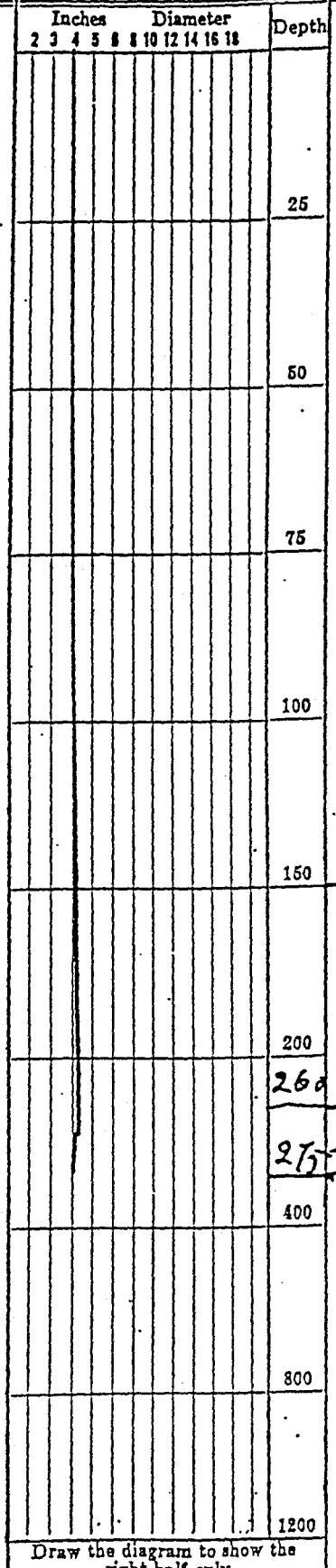
Additional copies of this form may be obtained in lots of 12 for 25¢. Send remittance with order to State Board of Health, Well Drilling Division, Madison, Wis.

WELL 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 specials
Well pipe
Drive shoe
steel

Casing to
260 ft.
rock 15



Draw the diagram to show the right half only

Red clay
150 ft

Hard pan
Boulders
110 ft

Sand stone
15 ft

Duration of test
Hours 24 hr

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?
Lagerwall
Date Feb 29 41

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 27-41

Well Driller
M. Mortenson
Signature

RECEIVED
JAN 14 1954
ENVIRONMENTAL SANITATION

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

Sec 36
T 49
R 14 W

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

2. Location City of Superior Stinson and Belknap Sts
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 19 53

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: Superior on ~ 19~

Signature Hartman Bros
Registered Well Driller

Superior 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 ~

ATTACHMENT D

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.		**BCU-1**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear (Mike Mueller)	**03/11/99**	**03/11/99**	**HSA**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**3.0** Inches

Boring Location
State Plane N, E
NE 1/4 of **NW** 1/4 of Section **36** 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
0.33-2.3	14		1	Concrete Black-red CLAY, trace fine gravel, petroleum-like odor	CL									
2.33-4.3			2											
			3											
			4											
4.33-6.3	24		5	Red CLAY, no odor										
			6											
				End of boring										

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

Signature

Firm Gannett Fleming, Inc.
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

e To:
☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☐ Underground Tanks
☐ 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.		**BCU-2**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear (Mike Mueller)	**03/11/99**	**03/11/99**	**HSA**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**3.0** Inches

Boring Location
State Plane N, E
NE 1/4 of **NW** 1/4 of Section **36** T **49** N,R **14 W**
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N Feet ☐ S ☐ E 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
				Concrete										
0.33-2.3	18		1	Black-red CLAY, trace silt and fine gravel, petroleum-like odor	CL									
2.33-4.3	18		2 3	Red CLAY, petroleum-like odor										
4.33-6.3	22		4 5 6	Same as above, no odor										
				End of boring										

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

Signature

Firm: Gannett Fleming, Inc.
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

NE 1/4 of NW 1/4 of Sec. 36 ; 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

Street Address of Well: 2407 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): BCU-1

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

Reason For Abandonment: Samples collected, no longer needed

Date of Abandonment: 3/11/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

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

(Date) 3/11/99

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☒ Yes ☐ No

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

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 6.33 Casing Diameter (ins.) 3"
(From groundsurface)

Casing Depth (ft.) _____

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

(4) Depth to Water (Feet) ~4

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	6.33	12 lbs	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear / Gannett Fleming, Inc.

Signature of Person Doing Work: [signature] of GF
Date Signed: 4/12/99

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	

DNR/COUNTY

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

NE 1/4 of NW 1/4 of Sec. 36 ; 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

Street Address of Well: 2407 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): BCU-2

WI Unique Well No.

Reason For Abandonment: Samples collected, no longer needed

Date of Abandonment: 3/11/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

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

(Date) 3/11/99

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☒ Yes ☐ No

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

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 6.33 Casing Diameter (ins.) 3"
(From groundsurface)

Casing Depth (ft.)

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

(4) Depth to Water (Feet) ~4

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	6.33	12 lbs	

(8) Comments:

(9) Name of Person or Firm Doing Sealing Work
Board Longyear / Gannett Fleming Inc.

Signature of Person Doing Work: Jeff Zeng of GF
Date Signed: 4/12/99
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	

DNR/COUNTY

ATTACHMENT E

COPIES OF THE LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS

USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

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

Crude Unit & Fuel Loading

March 30, 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 March 12, 1999. Calculations for percent organic matter is added.

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
General Manager

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/30/99
PREPARED BY: JRS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

Sample ID	TOC %	Qualifiers	Organic Matter, %	Qualifiers	Analytical No.
BCU-2 0-1.25	0.742		1.69		65049
BCU-2 1.25-2.5	0.532		1.31		65050
BCU-2 2.5-3.75	0.607		1.44		65051
BCU-2 3.75-5	0.465		1.19		65052
BFL-1 0-1.25	1.70		3.41		65053
BFL-1 1.25-2.5	0.989		2.13		65054
BFL-1 2.5-3.75	2.60		5.03		65055
BFL-1 3.75-5	0.923		2.01		65056
Date Analyzed:	03/23/99		03/23/99		

Organic Matter,% = 0.35 + (1.8 X TOC,%)

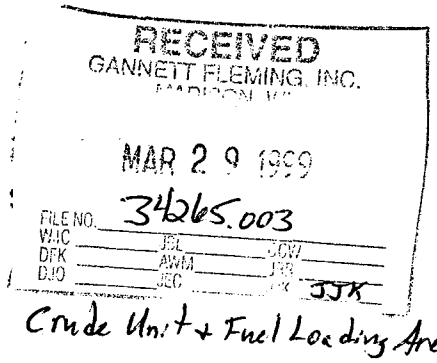
USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

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

March 26, 1999

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



Crude Unit + Fuel Loading Area

Attn: Jeff King/ Liz Lundmark

Re: 34265.003

Please find enclosed the analytical results for the samples received March 12, 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

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	BCU-1 1-1.5 03/11/99	Qualifiers	Date Analyzed	By
EPA 8310						
Acenaphthene	mg/kg	0.0037	ND	SL	03/25/99	GLS
Acenaphthylene	mg/kg	0.0013	ND	SL	03/25/99	GLS
Anthracene	mg/kg	0.0041	ND	SL	03/25/99	GLS
Benzo(a)Anthracene	mg/kg	0.0018	ND	SL	03/25/99	GLS
Benzo(a)Pyrene	mg/kg	0.0052	ND	SL CSL	03/25/99	GLS
Benzo(b)Fluoranthene	mg/kg	0.0031	ND	SL	03/25/99	GLS
Benzo(k)Fluoranthene	mg/kg	0.0031	ND	SL	03/25/99	GLS
Benzo(ghi)Perylene	mg/kg	0.0041	ND	SL	03/25/99	GLS
Chrysene	mg/kg	0.002	ND	SL	03/25/99	GLS
Dibenzo(a,h)Anthracene	mg/kg	0.0043	ND	SL	03/25/99	GLS
Fluoranthene	mg/kg	0.0033	ND	SL	03/25/99	GLS
Fluorene	mg/kg	0.0034	0.362	SL	03/25/99	GLS
Indeno(1,2,3-cd)Pyrene	mg/kg	0.0036	ND	SL	03/25/99	GLS
1-Methyl Naphthalene	mg/kg	0.0047	1.39		03/25/99	GLS
2-Methyl Naphthalene	mg/kg	0.0055	2.12		03/25/99	GLS
Naphthalene	mg/kg	0.0015	0.344	SL	03/25/99	GLS
Phenanthrene	mg/kg	0.0028	0.779		03/25/99	GLS
Pyrene	mg/kg	0.0047	ND	SL	03/25/99	GLS
Solid Organic Extraction		-	COMP		03/24/99	CKV
MOSA21-2						
Total Solids	%	-	78.4		03/16/99	GAG
WI DNR						
Soil Diesel Range Organics	mg/kg	6.4	1,500.	D2 D5	03/17/99	DJB
Soil Org Ext - DRO		-	COMP		03/16/99	CKV
Analytical No.:			65035			

ND = Analyzed but not detected.
Results calculated on a dry weight basis.

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	BCU-1 4.5-5 03/11/99	Qualifiers	Date Analyzed	By
EPA 8310						
Acenaphthene	mg/kg	0.0037	ND		03/25/99	GLS
Acenaphthylene	mg/kg	0.0013	ND		03/25/99	GLS
Anthracene	mg/kg	0.0041	ND		03/25/99	GLS
Benzo(a)Anthracene	mg/kg	0.0018	ND		03/25/99	GLS
Benzo(a)Pyrene	mg/kg	0.0053	ND	CSL	03/25/99	GLS
Benzo(b)Fluoranthene	mg/kg	0.0031	ND		03/25/99	GLS
Benzo(k)Fluoranthene	mg/kg	0.0031	ND		03/25/99	GLS
Benzo(ghi)Perylene	mg/kg	0.0041	ND		03/25/99	GLS
Chrysene	mg/kg	0.0021	ND		03/25/99	GLS
Dibenzo(a,h)Anthracene	mg/kg	0.0044	ND		03/25/99	GLS
Fluoranthene	mg/kg	0.0033	ND		03/25/99	GLS
Fluorene	mg/kg	0.0035	ND		03/25/99	GLS
Indeno(1,2,3-cd)Pyrene	mg/kg	0.0036	ND		03/25/99	GLS
1-Methyl Naphthalene	mg/kg	0.0048	ND		03/25/99	GLS
2-Methyl Naphthalene	mg/kg	0.0055	ND		03/25/99	GLS
Naphthalene	mg/kg	0.0015	ND		03/25/99	GLS
Phenanthrene	mg/kg	0.0028	ND		03/25/99	GLS
Pyrene	mg/kg	0.0048	ND		03/25/99	GLS
Solid Organic Extraction		-	COMP		03/24/99	CKV
MOSA21-2						
Total Solids	%	-	77.8		03/16/99	GAG
WI DNR						
Soil Diesel Range Organics	mg/kg	6.4	20.2	D2 D5	03/17/99	DJB
Soil Org Ext - DRO		-	COMP		03/16/99	CKV
Analytical No.:			65036			

ND = Analyzed but not detected.
Results calculated on a dry weight basis.

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	BCU-2 1-1.5 03/11/99	Qualifiers	Date Analyzed	By
EPA 8310						
Acenaphthene	mg/kg	0.0038	ND		03/25/99	GLS
Acenaphthylene	mg/kg	0.0013	ND		03/25/99	GLS
Anthracene	mg/kg	0.0041	ND		03/25/99	GLS
Benzo(a)Anthracene	mg/kg	0.0018	ND		03/25/99	GLS
Benzo(a)Pyrene	mg/kg	0.0053	ND	CSL	03/25/99	GLS
Benzo(b)Fluoranthene	mg/kg	0.0031	0.00349		03/25/99	GLS
Benzo(k)Fluoranthene	mg/kg	0.0031	ND		03/25/99	GLS
Benzo(ghi)Perylene	mg/kg	0.0041	ND		03/25/99	GLS
Chrysene	mg/kg	0.0021	ND		03/25/99	GLS
Dibenzo(a,h)Anthracene	mg/kg	0.0044	ND		03/25/99	GLS
Fluoranthene	mg/kg	0.0034	ND		03/25/99	GLS
Fluorene	mg/kg	0.0035	0.0511		03/25/99	GLS
Indeno(1,2,3-cd)Pyrene	mg/kg	0.0036	ND		03/25/99	GLS
1-Methyl Naphthalene	mg/kg	0.0048	0.111		03/25/99	GLS
2-Methyl Naphthalene	mg/kg	0.0056	0.169		03/25/99	GLS
Naphthalene	mg/kg	0.0016	0.0334		03/25/99	GLS
Phenanthrene	mg/kg	0.0028	0.135		03/25/99	GLS
Pyrene	mg/kg	0.0048	ND		03/25/99	GLS
Solid Organic Extraction		-	COMP		03/24/99	CKV
MOSA21-2						
Total Solids	%	-	77.3		03/16/99	GAG
WI DNR						
Soil Diesel Range Organics	mg/kg	6.5	230	D2B D5	03/16/99	DJB
Soil Org Ext - DRO		-	COMP		03/16/99	CKV
Analytical No.:			65037			

ND = Analyzed but not detected.
Results calculated on a dry weight basis.

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	BCU-2 4.5-5 03/11/99	Qualifiers	Date Analyzed	By
EPA 8310						
Acenaphthene	mg/kg	0.0039	ND		03/25/99	GLS
Acenaphthylene	mg/kg	0.0013	ND		03/25/99	GLS
Anthracene	mg/kg	0.0043	ND		03/25/99	GLS
Benzo(a)Anthracene	mg/kg	0.0019	ND		03/25/99	GLS
Benzo(a)Pyrene	mg/kg	0.0055	ND	CSL	03/25/99	GLS
Benzo(b)Fluoranthene	mg/kg	0.0032	ND		03/25/99	GLS
Benzo(k)Fluoranthene	mg/kg	0.0032	ND		03/25/99	GLS
Benzo(ghi)Perylene	mg/kg	0.0043	ND		03/25/99	GLS
Chrysene	mg/kg	0.0021	ND		03/25/99	GLS
Dibenzo(a,h)Anthracene	mg/kg	0.0045	ND		03/25/99	GLS
Fluoranthene	mg/kg	0.0035	ND		03/25/99	GLS
Fluorene	mg/kg	0.0036	ND		03/25/99	GLS
Indeno(1,2,3-cd)Pyrene	mg/kg	0.0037	ND		03/25/99	GLS
1-Methyl Naphthalene	mg/kg	0.0049	ND		03/25/99	GLS
2-Methyl Naphthalene	mg/kg	0.0057	ND		03/25/99	GLS
Naphthalene	mg/kg	0.0016	ND		03/25/99	GLS
Phenanthrene	mg/kg	0.0029	ND		03/25/99	GLS
Pyrene	mg/kg	0.0049	ND		03/25/99	GLS
Solid Organic Extraction		-	COMP		03/24/99	CKV
MOSA21-2						
Total Solids	%	-	74.9		03/16/99	GAG
WI DNR						
Soil Diesel Range Organics	mg/kg	6.7	7.85	D3	03/16/99	DJB
Soil Org Ext - DRO		-	COMP		03/16/99	CKV
Analytical No.:			65038			

ND = Analyzed but not detected.
Results calculated on a dry weight basis.

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

Attn: Jeff King/ Liz Lundmark

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Client Sample BCU-1 1-1.5 , Enviroscan Analytical # 65035, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet	RESULT Dry	Quality Control Qualifiers	Analysis Date
Benzene	0.120	0.025	0.060	0.287	0.366		03/19/99
Ethylbenzene	0.060	0.025	0.060	0.215	0.274		03/19/99
Methyl tert Butyl Ether	0.164	0.025	0.060	< 0.200	< 0.255		03/19/99
1,2,4-Trimethylbenzene	0.070	0.025	0.060	< 0.200	< 0.255		03/19/99
1,3,5-Trimethylbenzene	0.190	0.025	0.060	< 0.200	< 0.255		03/19/99
m- & p-Xylene	0.110	0.025	0.060	0.229	0.292		03/19/99
o-Xylene & Styrene	0.103	0.025	0.060	< 0.200	< 0.255		03/19/99
Toluene	0.035	0.025	0.060	< 0.200	< 0.255		03/19/99

Client Sample BCU-1 4.5-5 , Enviroscan Analytical # 65036, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet	RESULT Dry	Quality Control Qualifiers	Analysis Date
Benzene	0.012	0.025	0.060	0.076	0.098		03/19/99
Ethylbenzene	0.006	0.025	0.060	0.031	0.040	MB	03/19/99
Methyl tert Butyl Ether	0.016	0.025	0.060	< 0.025	< 0.032		03/19/99
1,2,4-Trimethylbenzene	0.007	0.025	0.060	< 0.025	< 0.032		03/19/99
1,3,5-Trimethylbenzene	0.019	0.025	0.060	< 0.025	< 0.032		03/19/99
m- & p-Xylene	0.011	0.025	0.060	0.039	0.050		03/19/99
o-Xylene & Styrene	0.010	0.025	0.060	< 0.025	< 0.032		03/19/99
Toluene	0.003	0.025	0.060	0.045	0.058		03/19/99

Client Sample BCU-2 1-1.5 , Enviroscan Analytical # 65037, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet	RESULT Dry	Quality Control Qualifiers	Analysis Date
Benzene	0.012	0.025	0.060	0.051	0.066		03/19/99
Ethylbenzene	0.006	0.025	0.060	0.036	0.047	MB	03/19/99
Methyl tert Butyl Ether	0.017	0.025	0.060	< 0.025	< 0.032		03/19/99
1,2,4-Trimethylbenzene	0.007	0.025	0.060	< 0.025	< 0.032		03/19/99
1,3,5-Trimethylbenzene	0.020	0.025	0.060	< 0.025	< 0.032		03/19/99
m- & p-Xylene	0.011	0.025	0.060	0.069	0.089		03/19/99
o-Xylene & Styrene	0.011	0.025	0.060	< 0.025	< 0.032		03/19/99
Toluene	0.004	0.025	0.060	0.101	0.131		03/19/99

Client Sample BCU-2 4.5-5 , Enviroscan Analytical # 65038, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet	RESULT Dry	Quality Control Qualifiers	Analysis Date
Benzene	0.012	0.025	0.060	< 0.025	< 0.033		03/19/99
Ethylbenzene	0.006	0.025	0.060	0.035	0.047	MB	03/19/99
Methyl tert Butyl Ether	0.016	0.025	0.060	< 0.025	< 0.033		03/19/99
1,2,4-Trimethylbenzene	0.007	0.025	0.060	< 0.025	< 0.033		03/19/99
1,3,5-Trimethylbenzene	0.019	0.025	0.060	< 0.025	< 0.033		03/19/99
m- & p-Xylene	0.011	0.025	0.060	0.064	0.085		03/19/99
o-Xylene & Styrene	0.010	0.025	0.060	0.026	0.035		03/19/99
Toluene	0.003	0.025	0.060	0.135	0.180		03/19/99

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

Qualifier Descriptions

SL	Surrogate recovery was low. Result for sample may be biased low.
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.
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.
MB	Analyte observed in method blank. Sample results may be biased high.
D2B	The chromatogram is characteristic for a heavier petroleum product other than diesel. (i.e. motor oil, hydraulic oil, etc.)
D3	The chromatogram is not characteristic for diesel or any single common petroleum product.
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.

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 #: CU0000000000
Work Order: 9903000416
Report Date: 03/23/99
Date Received: 03/16/99
Arrival Temperature: On Ice

U.S. FILTER
PROJECT FILE
301 W. MILITARY ROAD
ROTHSCHILD, WI 54474

Report Submitted By: _____
Record Reviewer

Note: None

Project Name: Project Number: **10065049**

Sample I.D. #: 232190 **Sample Description:** 10065049 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.40	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232191 **Sample Description:** 10065050 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.46	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232192 **Sample Description:** 10065051 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.39	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232193 **Sample Description:** 10065052 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.40	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232194 **Sample Description:** 10065053 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.23	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232195 **Sample Description:** 10065054 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	0.92	gTS/cm3					03/19/99	GJM	MOSA 13-2

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
847-967-6666
FAX: 847-967-6735

LABORATORY REPORT

194624

US Filter/Enviroscan
301 W. Military Road
Rothschild, WI 54474

Report Date: 3/22/99
Sample Received On Ice: 3/16/99
Date Sampled: 3/12/99

Project No.: 10065049
Sample Description: Soil Grab

Sample No.	Location	Total Organic Carbon Method 9060(6)	Date Analyzed
064961	10065049	7420	3/18/99
064962	10065050	5320	3/18/99
064963	10065051	6070	3/18/99
064964	10065052	4650	3/18/99
064965	10065053	17000	3/18/99
064966	10065054	9890	3/18/99
064967	10065055	26000	3/18/99
064968	10065056	9230	3/18/99

Wisconsin Certified Laboratory #999888890.

All results expressed as ppm unless otherwise indicated.

(6)Methods performed according to SW-846, "Test Methods for Evaluating Solid Waste".

Danny W. Wright

LABORATORY DIRECTOR

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
847-967-6666
FAX: 847-967-6735

LABORATORY REPORT

194623

US Filter/Enviroscan
301 W. Military Road
Rothschild, WI 54474

Report Date: 3/22/99
Sample Received On Ice: 3/16/99
Date Sampled: 3/12/99

Project No.: 10065057
Sample Description: Soil Grab

Sample No.	Location	Total Organic Carbon Method 9060(6)	Date Analyzed
064947	10065057	9070	3/17/99
064948	10065058	5580	3/17/99
064949	10065059	8130	3/17/99
064950	10065060	3700	3/17/99

Wisconsin Certified Laboratory #999888890.

All results expressed as ppm unless otherwise indicated.

(6)Methods performed according to SW-846, "Test Methods for Evaluating Solid Waste".

Danny W. Wright

LABORATORY DIRECTOR

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
Phone: (608) 836-1500
P. O. #
Project # 34265.003 Quote #
Locatioon

BILL TO: (if different from Report To info)
Name: Liz Lundmark
Company: Murphy Oil USA
Address: 2407 Stinson Ave, P.O. Box 2066 Superior, WI 54880
Phone: ( )

1 of 2

ANALYTICAL REQUESTS
(use separate sheet if necessary)

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

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

Date Needed
Approved By

LAB USE ONLY	DATE	TIME	No. of Containers COMP	No. of Containers GRAB	SAMPLE ID	DRO	PVOC	PAH	GRO/PVOC	PB	REMARKS
10065035	3/11/99	AM		3	BCH-1(1-1.5)	✓	✓	✓			
10065036				3	BCH-1(4.5-5)	✓	✓	✓			
10065037				3	BCH-2(1-1.5)	✓	✓	✓			
10065038				3	BCH-2(4.5-5)	✓	✓	✓			
10065039				2	BFL-1(1-1.5)				✓	✓	
10065040				2	BFL-1(4.5-5)				✓	✓	
10065041				2	BFL-2(1-1.5)				✓	✓	
10065042				2	BFL-2(4.5-5)				✓	✓	
10065043				2	BFL-3(1-1.5)				✓	✓	
10065044				2	BFL-3(4.5-5)				✓	✓	
10065045				2	BFL-4(1-1.5)				✓	✓	

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)* Jeff King		
RELINQUISHED BY: *(Signature)* Jeff King	DATE/TIME 3/11/99 11:00	RECEIVED BY: *(Signature)*
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED FOR LABORATORY BY: *(Signature)* Melissa Hudson — DATE/TIME 3-12-99 1103

REQUEST FOR SERVICES USFilter

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

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

Phone: (_____)
P. O. #
Project # 34265.003 Quote #
Locatioon

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

Phone: (_____)

2 of 2

Sample Type
(Check all that apply)
- ☐ Groundwater
- ☐ Wastewaater
- ☒ 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	GRAB	SAMPLE ID	GRO/PVOC	Pb	organic carbon fraction (TOC replaces)	bulk density		REMARKS
10065046	3/1/99	AM		2	BFL-4(4.5-5)	✓	✓				
10065047				2	BFL-5(1-1.5)	✓	✓				Not in cooler - Cancel will not be rec'd per Jeff 3-15-99
10065048		Held		2	BFL-5(4.5-5)	✓	✓				
10065049				1	BCU-2(0-1.25)			✓	✓		Zip-lock bag
10065050				1	BCU-2(1.25-2.5)			✓	✓		
10065051				1	BCU-2(2.5-3.75)			✓	✓		
10065052				1	BCU-2(3.75-5)			✓	✓		
10065053				1	BFL-1 (0-1.25)			✓	✓		
10065054				1	BFL-1 (1.25-2.5)			✓	✓		
10065055				1	BFL-1 (2.5-3.75)			✓	✓		
10065056	↓	✓		1	BFL-1 (3.75-5)			✓	✓		↓

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 Jeff to notify him of missing samples. He is out for the day. Left message
~~Cancel per Jeff 3-15-99~~

CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature) Jeff King		
RELINQUISHED BY: (Signature) Jeff King	DATE/TIME 3/1/99 14:00	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED FOR LABORATORY BY: (Signature) [signature] — DATE/TIME 3-12-99 1200

JJK

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

July 12, 1999
File #34265.003 / 367-18.3

RECEIVED
JUL 14 1999
DNR-SUPERIOR

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

Re: Crude Unit Process Area Release Site Investigation Results and Request for Closure
Murphy Oil USA, Inc., Superior, Wisconsin
WDNR BRRTS Case #02-16-~~222650~~ 222638

Dear Mr. Hosch:

On behalf of Murphy Oil USA, Inc., Gannett Fleming, Inc. (fka Eder Associates) is submitting this report describing our 1999 site investigation associated with a 1991 release of approximately 125 gallons of crude oil from an underground pipeline in the Crude Unit Process Area at Murphy's refinery in Superior, Wisconsin. Immediately following the release, Murphy removed the visibly contaminated soil. The investigation results document that the release resulted in only very localized soil contamination that exceeds applicable NR 720 residual contaminant levels (RCLs). The release area is within the process operating unit, and the entire area above and surrounding the release location is paved with either concrete or asphalt. The pavement provides an engineered barrier that prevents the infiltration of surface water through the soil and prevents any direct contact risks from the affected soil.

Based on the investigation results and on the presence of an engineered barrier over the release area, on behalf of Murphy, we are requesting closure of this release site from Wisconsin Department of Natural Resources (WDNR). A completed WDNR "Case Summary and Close Out" form is included with this report as Attachment A.

Background

The release of 125 gallons from an underground pipeline was reported to the WDNR on September 8, 1991. Murphy immediately responded to the release by excavating all soil surrounding the pipeline that visual and olfactory evidence indicated had been affected. This soil included both fill that immediately surrounded the pipeline and native clay. Given the impermeable nature of the native clay and the relatively viscous nature of crude oil, field observations were sufficient to remove almost all the affected soil. Because of this, no soil confirmation samples were collected.

Continued . . .

Mr. James Hosch
Wisconsin Department of Natural Resources
July 12, 1999

Figure 1 is a USGS map showing the location of the refinery, and Figure 2 is a refinery site plan. The Crude Unit pipeline release area is located on relatively flat land in the south-central portion of the refinery, as shown on Figure 2. This area is unique, in that it is within a process operating unit and the entire area above and surrounding the release location is paved with either concrete or asphalt, as shown in the attached photographs in Attachment B. The land surrounding the process operating unit is also owned by Murphy and is part of the refinery. Rainwater and snow melt within the process area drains into and collects in Murphy's process sewer system, which ultimately runs to Murphy's wastewater treatment plant. Newton Creek, about 2,200 feet to the east, is the closest surface water body to the Crude Unit pipeline release area.

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 that is required, and the type of monitoring (i.e., field screening, air monitoring) that is 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 real or potential chance of impact on 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. The well is no longer in service, and Lakehead now obtains its water from the City of Superior. Copies of the well records request form and the two well logs are

Continued . . .

included as Attachment C. There are no active private or public water supply wells at or in the area around the refinery.

The site is underlain by 300 feet of clay, as documented by a boring done on refinery property, meaning there is no developable groundwater available within the clay unit. There is moist clay at about 3 to 5 feet below grade throughout the refinery. Monitoring wells screened in the moist clay have been installed throughout the refinery for other investigations. Based on physical parameter testing of the soil from boreholes of these wells, the moist clay underlying the refinery meets the definition of low-permeability material as defined in the April 23rd draft amendments to emergency rule COMM 46. This conclusion is confirmed by the fact that it takes weeks for the water table wells to recover after they are purged.

The WDNR subsequently notified Murphy that it was required under NR 716.05(2)(b) to conduct an investigation of the September 1991 Crude Process Area pipeline release. Murphy retained Gannett Fleming to conduct the site investigation.

March 1999 Investigation

As described in our April 16, 1999, site status report, a work plan for investigating the Crude Unit Process Area was submitted to you on November 12, 1998, and conditionally approved on December 7, 1998. On March 11, 1999, Gannett Fleming staff implemented the work plan to determine if there was any significant petroleum contamination remaining in the unsaturated soils. As noted earlier, the entire area above and surrounding the release location is paved with either concrete or asphalt. In addition, the spill was relatively small and the source had been removed immediately. There had been no further investigation of this area since the contaminated soil was removed.

Boart Longyear (Boart) of Rothschild, Wisconsin, drilled two boreholes using a standard ATV-mounted drill rig equipped with hollow-stem augers. The boreholes were advanced with 4¼-inch inside-diameter, hollow-stem augers. Figure 3 shows the locations of these boreholes. Each of the boreholes was advanced to a depth of 6 feet below ground surface (bgs). Soil samples for chemical analysis were collected at depths of 1 to 1.5 and 4.5 to 5 feet in each borehole. In one borehole, a Shelby tube was used to collect a sample from a depth of 2 to 4 feet for permeability testing, and four other samples were collected at various depths throughout the borehole for organic carbon fraction

Continued . . .

testing. The Shelby tube sample was not submitted for permeability testing because the frost had penetrated to a depth of 4 to 5 feet at the site, and the sample within the tube was frozen.

Boart used clean augers to advance each borehole. The split-spoon samplers were washed with a detergent and potable water solution and rinsed with potable water after each sample was collected.

Soil samples were collected from 1 to 1.5 feet and 4.5 to 5 feet bgs in each borehole; placed in laboratory-supplied containers; preserved as necessary; placed on ice; and shipped to U.S. Filter in Rothschild, Wisconsin, for diesel range organic (DRO), petroleum volatile organic compound (PVOC), and polynuclear aromatic hydrocarbon (PAH) analysis. Four samples from various depths were also analyzed for their organic carbon fraction. Table 1 lists all the analytical results for the chemical testing of the two samples from the Crude Unit Process Area. Table 2 contains the results of the organic carbon fraction tests. Attachment D contains copies of the boring logs and abandonment forms for the March 1999 boreholes, while Attachment E contains copies of the laboratory reports and chain of custody forms for all samples.

Results

Soil encountered during the site investigation consisted of black-red to red clay (Unified Soil Classification System [USCS] OL) from directly below the surficial concrete to 6 feet bgs, the maximum depth explored.

Table 1 lists the chemical analytical results for the soil samples collected from BCU-1 and BCU-2. Except for DRO at 1 to 2.5 feet bgs in BCU-1 and benzene at 1.5 feet and 4.5 to 5 feet in BCU-1 and 1 to 1.5 feet bgs in BCU-2, all contaminant concentrations were below the applicable RCLs.

As indicated in Table 2, organic carbon fractions were highest in the upper 1.25 feet (1.7 percent) and remained relatively constant in the samples collected from 1.25 to 5 feet bgs (1.2 to 1.4 percent).

Summary

On September 8, 1991, 125 gallons of crude oil were released from an underground pipeline in the Crude Unit Process Area at the Murphy refinery. Using visual and olfactory indications, Murphy

Continued . . .

personnel removed all affected soil adjacent to the release location immediately after the release. Murphy did not collect soil samples from the edges of the excavation, nor did the WDNR request that Murphy collect samples at that time.

The WDNR subsequently notified Murphy that it was required to investigate the September 1991 release from the crude oil pipeline. In March 1999, Gannett Fleming conducted subsurface site investigations to define the extent and degree of petroleum contamination in the soil adjacent to the release location.

Analytical results confirm that soil samples collected near the ground surface at both sample locations exceeded the applicable generic NR 720 RCL for benzene and exceeded the applicable generic NR 720 RCL for DRO at one location. All DRO concentrations were below the applicable RCL near the unsaturated/saturated interface, while benzene continued to be slightly above the applicable RCL near the unsaturated/saturated interface at one of the two sample locations. However, the benzene concentration at this sample location was over 70 percent less than its concentration near the ground surface.

The residual contaminated soil does not pose a direct-contact threat to refinery workers. The release area is within the process operating unit, and the entire area above and surrounding the release location is paved with either concrete or asphalt. The pavement provides an engineered barrier that prevents the infiltration of surface water through the soil and prevents any direct-contact risks from the affected soil.

Request for Closure

Based on the facts that the release was crude oil, the volume of the release was relatively small, the source has been removed, the concentrations of individual chemical contaminants in all the samples are low, the release site is within a process operating unit, and the entire area above and surrounding the release site is paved, it is our professional opinion that this site does not pose a risk to human health or the environment and does not warrant further investigation.

Murphy plans to maintain the existing pavement over this area as a permanent engineering control to prevent surface water infiltration through the soil and any direct contact risks from the residual

Continued . . .

Mr. James Hosch
Wisconsin Department of Natural Resources
July 12, 1999

concentrations. NR 720.19(2) allows the use of a performance standard, such as an engineering control, even though soil contaminants exceed an RCL.

Based on the investigation results and on the presence of an engineered barrier over the release area, we are requesting that the WDNR issue a closure letter for this release site. A $750 check is enclosed for the WDNR's review of this request.

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

Sincerely,

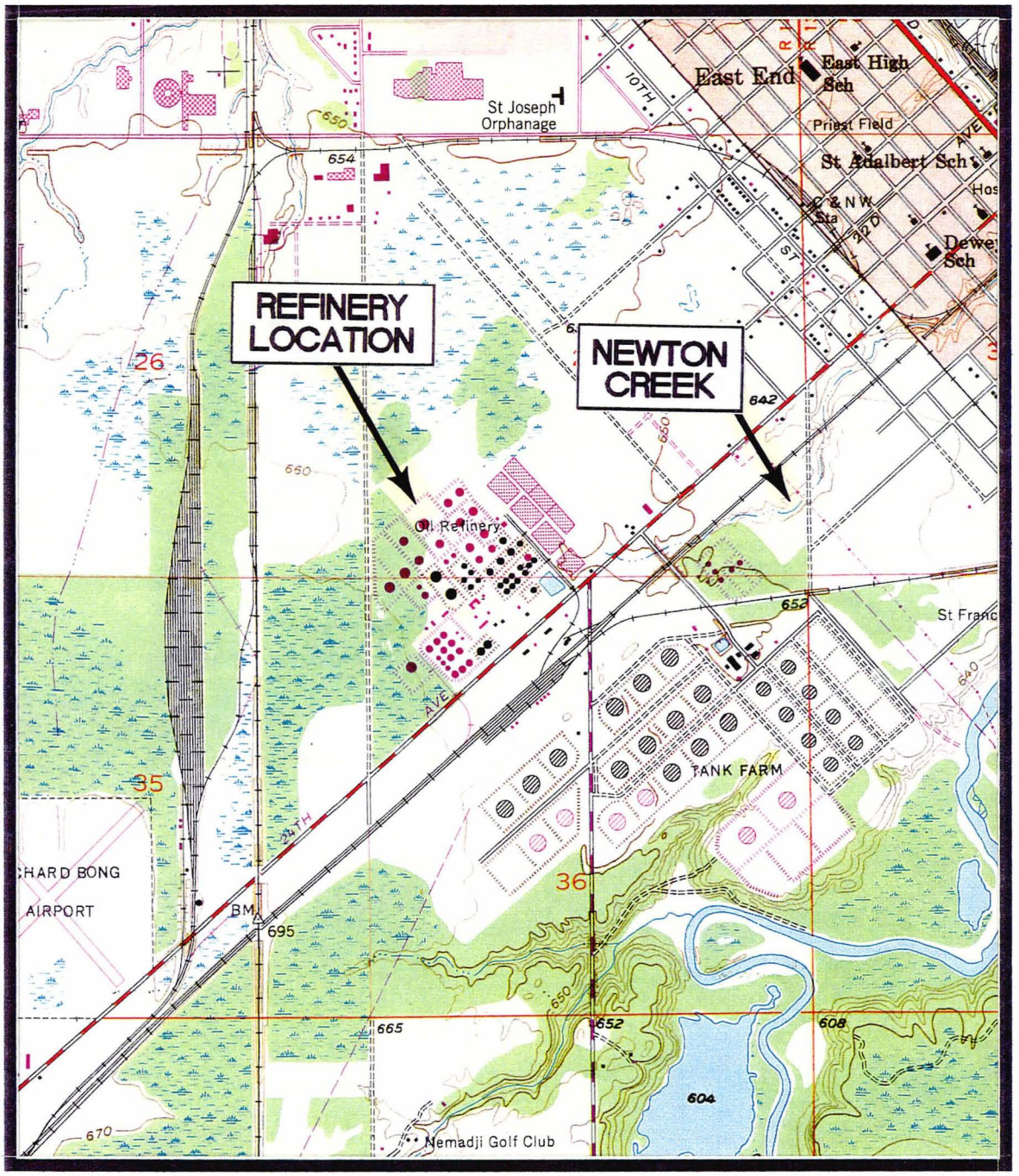
GANNETT FLEMING, INC.

Jeffrey J. King
Staff Hydrogeologist

Dennis F. Kugle
Vice President

JJK/jec
Enc.

cc: Lee Vail (Murphy/New Orleans)
Greg Neve (Murphy/Superior)
Liz Lundmark (Murphy/Superior)
Kevin Melnyk (Murphy/El Dorado)
Richard Lewandowski (DeWitt, Ross & Stevens)



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

- Crude Oil Pipeline Release Area
- 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-1/T29

MW-2/T59

MW-1&PZ-1/T59

MW-1

MW-2

MW-3B

MW-1/PP

PZ-1/PP

MW-2/PP

Propane/ Butane Loading Area

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-1/T8

MW-2/T8

Flare

Warehouse

Maintenance Shop

Process Area

Fire House

Railcar Loading Area

Boiler House

Loading Area

Pond 1 (Closed)

Pond 6 (Closed)

Pond 7

Aeration Pond

Pond 8

Settling Pond

Fire Water Pond No. 2

Fire Water Pond No. 3

Fire Water Pond No. 5

Storm Water Collection Pond No. 4

100'ø Equalization Tank

30'ø Primary Clarifer

Treatment Plant Building

MW-9

MW-10

MW-11

MW-12

MW-13

MW-14

STINSON AVENUE

BARDON AVENUE

Storage

Lab

Office

Marketing

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

070899
34265WBB

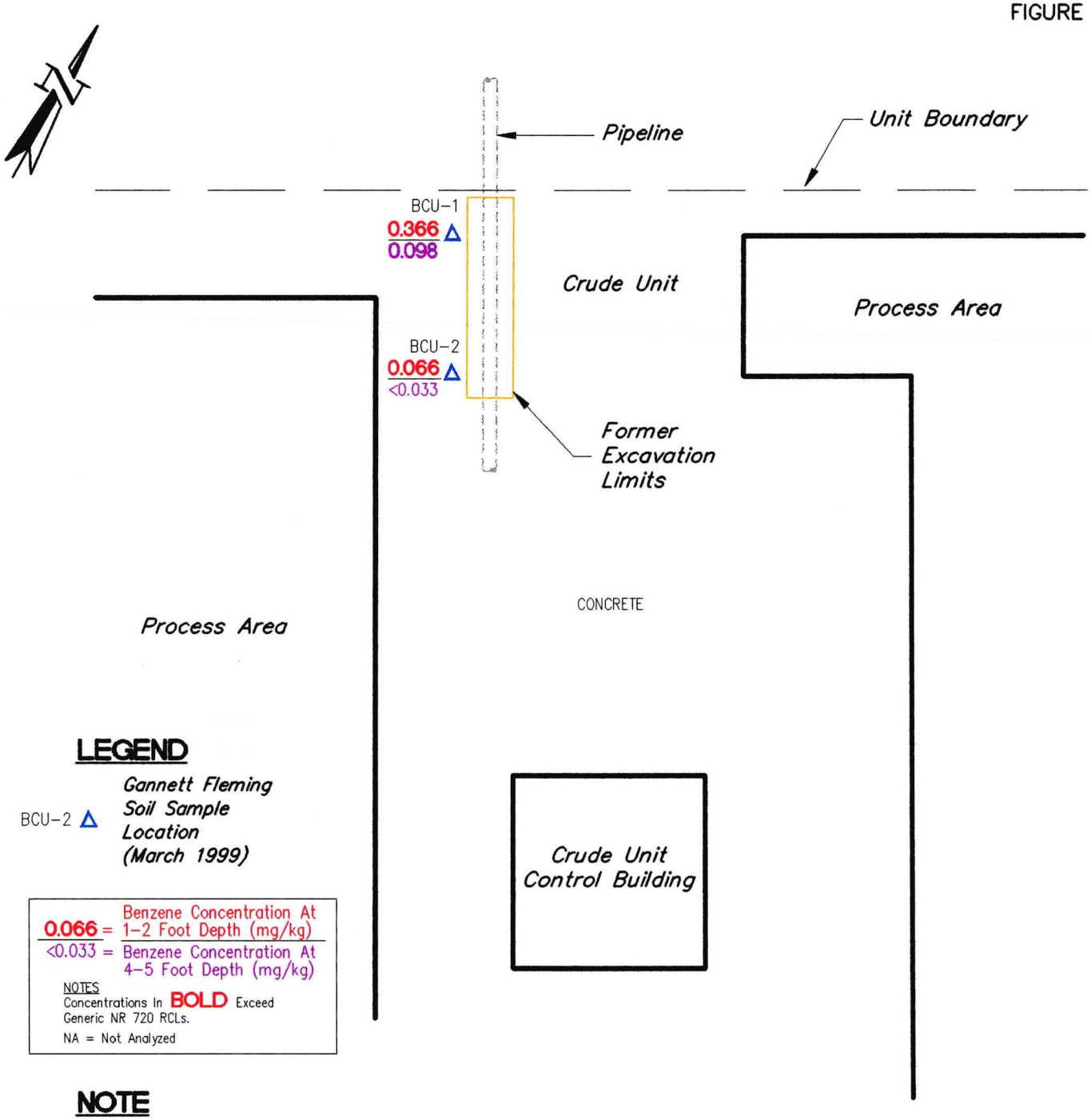
SITE PLAN

MURPHY OIL USA, INC

SUPERIOR, WISCONSIN

Gannett Fleming

FIGURE 3



LEGEND

BCU-2 Δ — *Gannett Fleming Soil Sample Location (March 1999)*

0.066 = Benzene Concentration At 1-2 Foot Depth (mg/kg)

<0.033 = Benzene Concentration At 4-5 Foot Depth (mg/kg)

NOTES

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

NA = Not Analyzed

NOTE

Locations Are Approximate Based On Field Measurements; Site Not Surveyed

0 — 20

Scale In Feet

SAMPLE LOCATIONS AT CRUDE UNIT PROCESS AREA

MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

070999
34265WAM

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 1

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM CRUDE UNIT PROCESS AREA (mg/kg)

Parameter	Sample I.D. and Depth				NR 720 RCL
	BCU-1		BCU-2		
	1-1.5 ft.	4.5-5 ft.	1-1.5	4-4.5	
DRO	**1,500**	20.2	230	7.85	250
Benzene	**0.366**	**0.098**	**0.066**	<0.033	0.0055
Ethylbenzene	0.274	0.04	0.047	0.047	2.9
Toluene	<0.255	0.058	0.131	0.18	1.5
Total Xylenes	0.547	0.082	0.121	0.12	4.1
Trimethylbenzenes	<0.510	<0.064	<0.064	<0.066	
MTBE	<0.255	<0.032	<0.032	<0.033	
Detected Polycyclic Aromatic Hydrocarbons					
Benzo(b)fluoranthene	<0.0031	<0.0031	0.00349	<0.0031	
Fluorene	<0.0033	<0.0033	0.0511	<0.0033	
Phenanthrene	0.779	<0.0028	0.135	<0.0028	
Naphthalene	0.344	<0.0015	0.0334	<0.0015	
1-methyl naphthalene	1.39	<0.0048	0.111	<0.0048	
2-methyl naphthalene	2.12	<0.0055	0.169	<0.0055	

NOTES:

Samples collected on March 11, 1999.

Results reported on a dry-weight basis.

Results in bold exceed applicable NR 720 RCL.

NR 720 RCL = Wisconsin Administrative Code NR 720 residual contaminant level.

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 2

ORGANIC CARBON FRACTION IN SOIL SAMPLES
COLLECTED FROM CRUDE UNIT PROCESS AREA

Sample I.D.	Sample Depth (ft)	Organic Carbon Fraction
BCU-2	0-1.25	0.0169
	1.25-2.5	0.0131
	2.5-3.75	0.0144
	3.75-5	0.0119

ATTACHMENT A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

CASE SUMMARY AND CLOSE OUT FORM

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, Regional Director

1705 Tower Avenue
Superior, Wisconsin 54880
Telephone 715-392-0802
FAX 715-392-7993

June 29, 1999

Mr. R. Lee Vail
Environmental Affairs Manufacturing Department
P.O. Box 61780
New Orleans, LA 70161-1780

Subject: Crude Unit Process Area, Murphy Oil Refinery
BRRTs No.: 02-16-222638

Dear Lee,

In an effort to reduce the costs of environmental cleanup, the Department of Natural Resources is trying to identify contaminated sites that may be ready for case closure. Your site appears to be such a candidate. However, a formal review is required in order to confirm closure data and specify any conditions of closure, or to clarify what further activity is necessary before closure can be approved.

We have completed our review of the document titled "Site Status Report, Crude Unit Process Area, Murphy Oil USA, Inc. Superior, Wisconsin." Although you have not requested case closure for this site, based on our review the Department believes that case closure may be appropriate at this time. A decision to grant case closure means that the Department will not require further remediation at your site. If closure is granted, you will receive a case closure letter outlining any special conditions of the closure. These conditions may include the recording of a deed instrument if residual contamination above standards remains on the property.

If you would like the Department to review this site for closure, please submit a case closure request (form 4400-202), along with the $750 case closure review fee. You can then expect to receive a case closure determination letter from this office. If review of your closure request indicates that closure is not yet possible, you will not be assessed another closure review fee for closure review at a later date.

If you choose not to request case closure, please let us know how you plan to continue the remediation of this property. However, you should be aware that the Department of Commerce may determine that you are not eligible for continued reimbursement from the PECFA program if you choose to continue your remedial actions beyond the point at which closure is possible.

If you have any questions please call me at 715-392-0802. If you have questions about PECFA eligibility, please contact Shanna Laube at the Department of Commerce.

Sincerely,
NORTHERN REGION

James A. Hosch
Hydrogeologist/Spills Coordinator

cc: Mark Stokstad - Rhinelander
Linda Meyer - LS/5
Mick Michaelsen - Spooner
Herb Fox, Murphy Oil U.S.A., P.O. Box 7000, El Dorado, AR 71731-7000
Dennis Kugle, Eder Associates, 8025 Excelsior Drive, Madison WI 53717-1900
Dale Ziege, RR/3
Lori Huntoon, Department of Commerce

COPY

Recd Apr. 19, 99

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 16, 1999
File #34265.008

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

Re: Site Status Report, Crude Unit Process Area, 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 1999 site investigation of the area affected by a single release of crude oil from an underground pipeline in the Crude Unit Process Area at Murphy's Superior refinery.

Background

The release of 125 gallons, which occurred from an underground pipeline, was reported to the Wisconsin Department of Natural Resources (WDNR) in September 1991.

March 1999 Geoprobe Investigation

A work plan for investigating the Crude Unit Process Area was submitted to you on November 12, 1998, and conditionally approved on December 7, 1998. In March 1999, Gannett Fleming staff implemented the work plan to determine whether there was any significant petroleum contamination remaining in the unsaturated soils. This area is unique, in that it is within a process operating unit and the entire area above and surrounding the release location is paved with either concrete or asphalt, as shown in the attached photographs. In addition, the spill was relatively small and the source was removed immediately. There has been no further investigation of this area since the contaminated soil was removed.

Two probe holes were completed during the March 1999 investigation. The attached Figure 1 shows the locations of these probe holes. Each of the probe holes in the basin was advanced to a depth of 6 feet below ground surface (bgs). Soil samples for chemical analysis were collected at depths of 1 to 2 and 4 to 5 feet in each probe hole. In one probe hole, a Shelby tube was used to collect a sample

Continued . . .

from a depth of 2 to 4 feet for permeability testing, and four other samples were collected at various depths throughout the probe hole for organic carbon fraction testing. The Shelby tube sample was not submitted for permeability testing because the frost had penetrated to a depth of 4 to 5 feet at the site, and the sample within the tube was frozen.

The samples collected for chemical analysis were submitted to U.S. Filter in Rothschild, Wisconsin, for diesel range organics (DRO), petroleum volatile organic compounds (PVOCs), polynuclear aromatic hydrocarbons (PAH) analysis. Four samples from various depths were also analyzed for their organic carbon fraction. Table 1, which is attached, contains all the analytical results for the chemical testing of the samples from the Crude Unit Process Area. Table 2 contains the results of the organic carbon fraction tests. The boring logs and abandonment forms for the March 1999 probe holes and the laboratory reports and chain of custody forms for all analyses are attached.

This report provides you with an update of the recent investigation activities at this site. Based on the facts that the release was crude oil, the volume of the release was relatively small, the source has been removed, the concentrations of individual chemical contaminants in all the samples are low, it is within a process operating unit, and the entire area above and surrounding the release site is paved, it is our professional opinion that this site does not pose a risk to human health or the environment and does not warrant further investigation.

Murphy plans to maintain the existing pavement over this area as a permanent engineering control to prevent surface water infiltration through the soil and any direct contact risks from the residual concentrations. NR 720.19(2) allows the use of a performance standard, such as an engineering control, even though soil contaminants exceed a residual contaminant level.

As soon as we submit our report on the Tank 59 site and discuss that information with you, we will submit this site to you for closure.

Continued . . .

Mr. James A. Hosch
Wisconsin Department of Natural Resources
April 16, 1999

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)

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TABLE 1

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM CRUDE UNIT PROCESS AREA (mg/kg)

Parameter	Sample I.D. and Depth				NR 720 RCL
	BCU-1		BCU-2		
	1-1.5 ft.	4.5-5 ft.	1-1.5	4-4.5	
DRO	**1,500**	20.2	230	7.85	250
Benzene	**0.366**	**0.098**	**0.066**	<0.033	0.0055
Ethylbenzene	0.274	0.04	0.047	0.047	2.9
Toluene	<0.255	0.058	0.131	0.18	1.5
Total Xylenes	0.547	0.082	0.121	0.12	4.1
Trimethylbenzenes	<0.510	<0.064	<0.064	<0.066	
MTBE	<0.255	<0.032	<0.032	<0.033	
Detected Polycyclic Aromatic Hydrocarbons					
Benzo(b)fluoranthene	<0.0031	<0.0031	0.00349	<0.0031	
Fluorene	<0.0033	<0.0033	0.0511	<0.0033	
Phenanthrene	0.779	<0.0028	0.135	<0.0028	
Naphthalene	0.344	<0.0015	0.0334	<0.0015	
1-methyl naphthalene	1.39	<0.0048	0.111	<0.0048	
2-methyl naphthalene	2.12	<0.0055	0.169	<0.0055	

NOTES:

Samples collected on March 11, 1999.

Results reported on a dry-weight basis.

Results in bold exceed applicable NR 720 RCL.

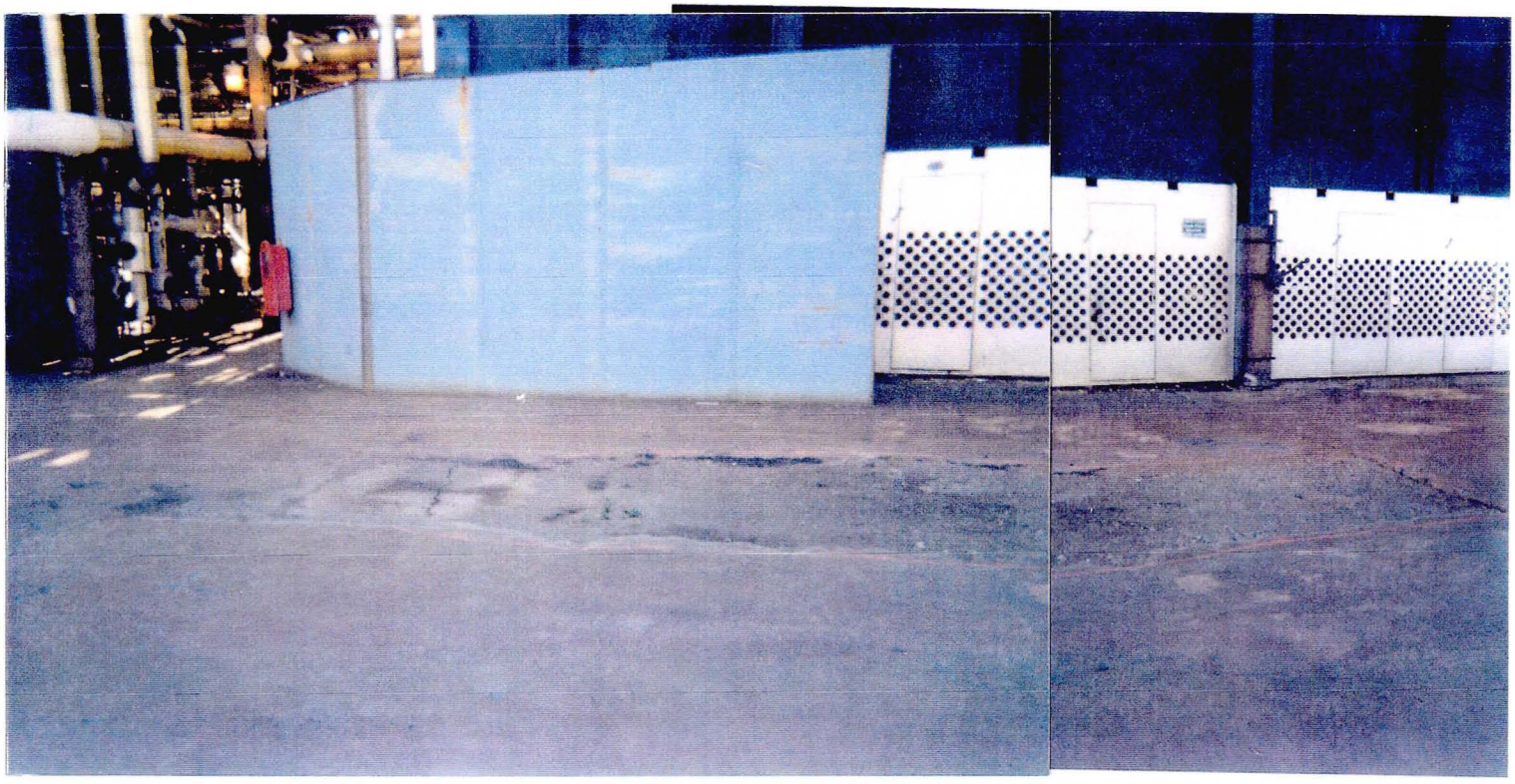
NR 720 RCL = Wisconsin Administrative Code NR 720 residual contaminant level.

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

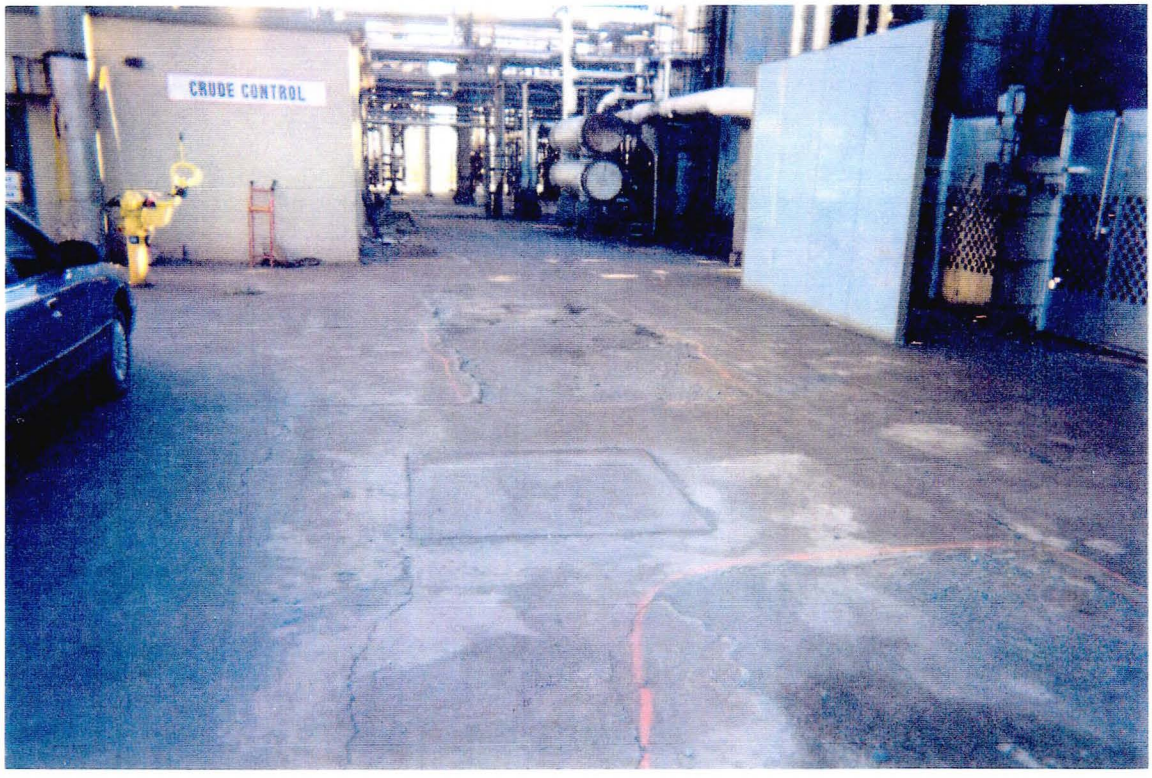
TABLE 2

ORGANIC CARBON FRACTION IN SOIL SAMPLES
COLLECTED FROM CRUDE UNIT PROCESS AREA

Sample I.D.	Sample Depth (ft)	Organic Carbon Fraction
BCU-2	0-1.25	0.0169
	1.25-2.5	0.0131
	2.5-3.75	0.0144
	3.75-5	0.0119



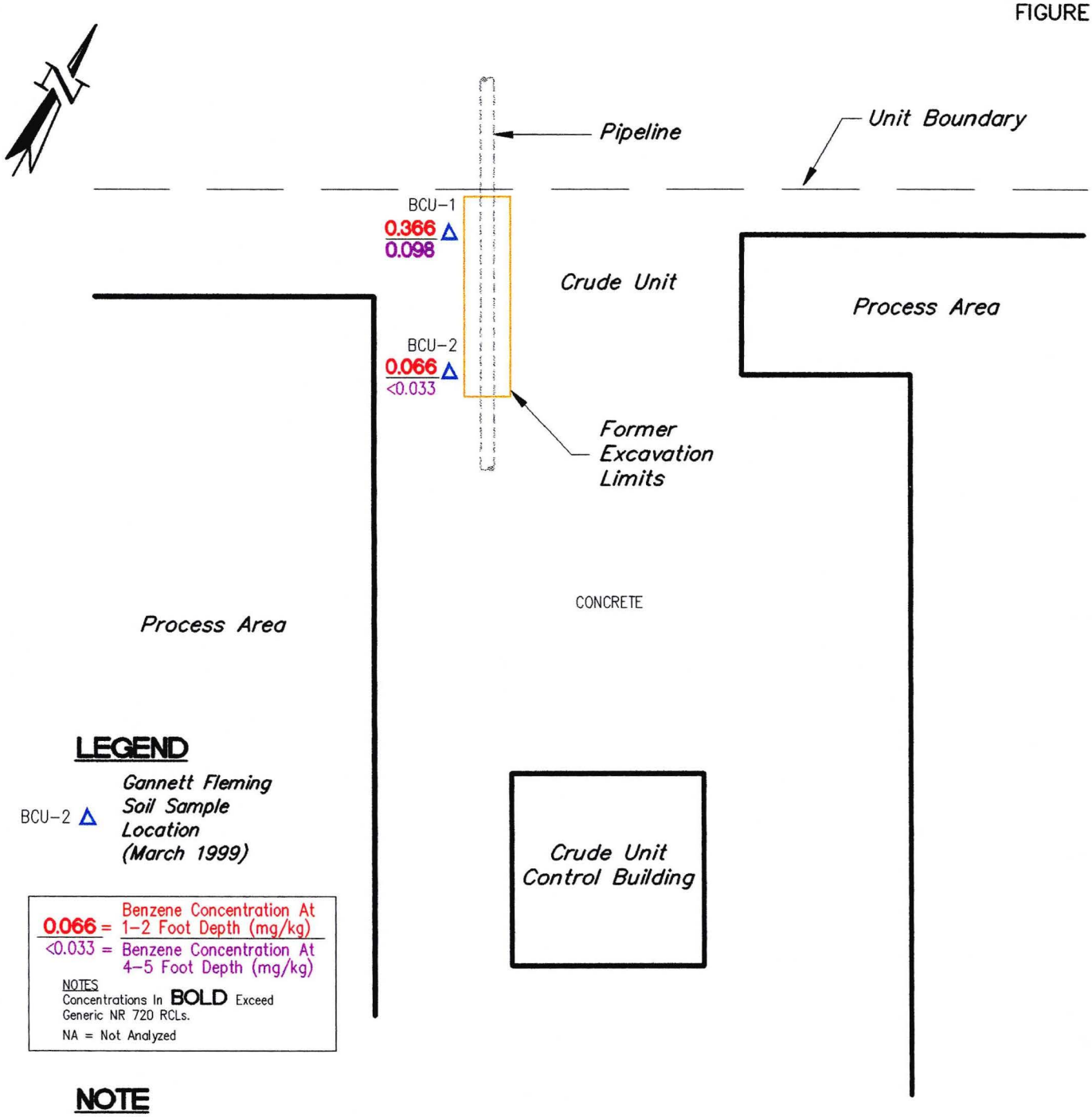
Panoramic view of crude unit process area showing section of cut out concrete where underground pipeline release of crude oil occurred in September 1991 (two photos were matched together to form this picture).



View of crude unit process area - September 1991 underground pipeline release of crude oil occurred where concrete is cut out.

Gannett Fleming

FIGURE 1



SAMPLE LOCATIONS AT CRUDE UNIT PROCESS AREA

MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

041599
34265WAM

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.		**BCU-1**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear (Mike Mueller)	**03/11/99**	**03/11/99**	**HSA**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**3.0** Inches

Boring Location
State Plane N, E
NE 1/4 of **NW** 1/4 of Section **36** 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
0.33-2.3	14		1	Concrete Black-red CLAY, trace fine gravel, petroleum-like odor	CL									
2.33-4.3			2											
			3											
			4											
4.33-6.3	24		5	Red CLAY, no odor										
			6	End of boring										

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

Signature

Firm Gannett Fleming, Inc.
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.		**BCU-2**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear (Mike Mueller)	**03/11/99**	**03/11/99**	**HSA**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**3.0** Inches

Boring Location
State Plane N, E
NE 1/4 of **NW** 1/4 of Section **36** 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
0.33-2.3	18		1	Concrete Black-red CLAY, trace silt and fine gravel, petroleum-like odor	CL									
2.33-4.3	18		2 3 4	Red CLAY, petroleum-like odor										
4.33-6.3	22		5 6	Same as above, no odor										
				End of boring										

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

Signature

Firm Gannett Fleming, Inc.
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

NE 1/4 of NW 1/4 of Sec. 36 : 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

Street Address of Well: 2407 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): BCU-1

WI Unique Well No. _ _ _ _ _ _

Reason For Abandonment: Samples collected, no longer needed

Date of Abandonment: 3/11/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

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

(Date) 3/11/99

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☒ Yes ☐ No

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

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 6.33 (From groundsurface) Casing Diameter (ins.) 3"

Casing Depth (ft.) _____

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

(4) Depth to Water (Feet) ~4

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	6.33	12 lbs	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear / Gannett Fleming, Inc.

Signature of Person Doing Work: Jeff Zeng of GF
Date Signed: 4/12/99
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	

DNR/COUNTY

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

NE 1/4 of NW 1/4 of Sec. 36 ; 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

Street Address of Well: 2407 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): BCU-2

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

Reason For Abandonment: Samples collected, no longer needed

Date of Abandonment: 3/11/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

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

(Date) 3/11/99

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☒ Yes ☐ No

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

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 6.33 Casing Diameter (ins.) 3"
(From groundsurface)

Casing Depth (ft.) _____

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

(4) Depth to Water (Feet) ~4

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	6.33	12 lbs	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Board Longyear / Gannett Fleming, Inc.

Signature of Person Doing Work: [signature] of GF
Date Signed: 4/12/99
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	

DNR/COUNTY

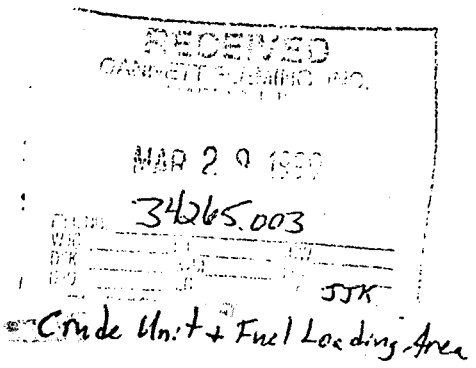
USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

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

March 26, 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 samples received March 12, 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

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	BCU-1 1-1.5 03/11/99	Qualifiers		Date Analyzed	By
EPA 8310							
Acenaphthene	mg/kg	0.0037	ND		SL	03/25/99	GLS
Acenaphthylene	mg/kg	0.0013	ND		SL	03/25/99	GLS
Anthracene	mg/kg	0.0041	ND		SL	03/25/99	GLS
Benzo(a)Anthracene	mg/kg	0.0018	ND		SL	03/25/99	GLS
Benzo(a)Pyrene	mg/kg	0.0052	ND	SL	CSL	03/25/99	GLS
Benzo(b)Fluoranthene	mg/kg	0.0031	ND		SL	03/25/99	GLS
Benzo(k)Fluoranthene	mg/kg	0.0031	ND		SL	03/25/99	GLS
Benzo(ghi)Perylene	mg/kg	0.0041	ND		SL	03/25/99	GLS
Chrysene	mg/kg	0.002	ND		SL	03/25/99	GLS
Dibenzo(a,h)Anthracene	mg/kg	0.0043	ND		SL	03/25/99	GLS
Fluoranthene	mg/kg	0.0033	ND		SL	03/25/99	GLS
Fluorene	mg/kg	0.0034	0.362		SL	03/25/99	GLS
Indeno(1,2,3-cd)Pyrene	mg/kg	0.0036	ND		SL	03/25/99	GLS
1-Methyl Naphthalene	mg/kg	0.0047	1.39			03/25/99	GLS
2-Methyl Naphthalene	mg/kg	0.0055	2.12			03/25/99	GLS
Naphthalene	mg/kg	0.0015	0.344		SL	03/25/99	GLS
Phenanthrene	mg/kg	0.0028	0.779			03/25/99	GLS
Pyrene	mg/kg	0.0047	ND		SL	03/25/99	GLS
Solid Organic Extraction		-	COMP			03/24/99	CKV
MOSA21-2							
Total Solids	%	-	78.4			03/16/99	GAG
WI DNR							
Soil Diesel Range Organics	mg/kg	6.4	1,500.	D2	D5	03/17/99	DJB
Soil Org Ext - DRO		-	COMP			03/16/99	CKV
Analytical No.:			65035				

ND = Analyzed but not detected.
Results calculated on a dry weight basis.

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	BCU-1 4.5-5 03/11/99	Qualifiers	Date Analyzed	By
EPA 8310						
Acenaphthene	mg/kg	0.0037	ND		03/25/99	GLS
Acenaphthylene	mg/kg	0.0013	ND		03/25/99	GLS
Anthracene	mg/kg	0.0041	ND		03/25/99	GLS
Benzo(a)Anthracene	mg/kg	0.0018	ND		03/25/99	GLS
Benzo(a)Pyrene	mg/kg	0.0053	ND	CSL	03/25/99	GLS
Benzo(b)Fluoranthene	mg/kg	0.0031	ND		03/25/99	GLS
Benzo(k)Fluoranthene	mg/kg	0.0031	ND		03/25/99	GLS
Benzo(ghi)Perylene	mg/kg	0.0041	ND		03/25/99	GLS
Chrysene	mg/kg	0.0021	ND		03/25/99	GLS
Dibenzo(a,h)Anthracene	mg/kg	0.0044	ND		03/25/99	GLS
Fluoranthene	mg/kg	0.0033	ND		03/25/99	GLS
Fluorene	mg/kg	0.0035	ND		03/25/99	GLS
Indeno(1,2,3-cd)Pyrene	mg/kg	0.0036	ND		03/25/99	GLS
1-Methyl Naphthalene	mg/kg	0.0048	ND		03/25/99	GLS
2-Methyl Naphthalene	mg/kg	0.0055	ND		03/25/99	GLS
Naphthalene	mg/kg	0.0015	ND		03/25/99	GLS
Phenanthrene	mg/kg	0.0028	ND		03/25/99	GLS
Pyrene	mg/kg	0.0048	ND		03/25/99	GLS
Solid Organic Extraction		-	COMP		03/24/99	CKV
MOSA21-2						
Total Solids	%	-	77.8		03/16/99	GAG
WI DNR						
Soil Diesel Range Organics	mg/kg	6.4	20.2	D2 D5	03/17/99	DJB
Soil Org Ext - DRO		-	COMP		03/16/99	CKV
Analytical No.:			65036			

ND = Analyzed but not detected.
Results calculated on a dry weight basis.

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	BCU-2 1-1.5 03/11/99	Qualifiers	Date Analyzed	By
EPA 8310						
Acenaphthene	mg/kg	0.0038	ND		03/25/99	GLS
Acenaphthylene	mg/kg	0.0013	ND		03/25/99	GLS
Anthracene	mg/kg	0.0041	ND		03/25/99	GLS
Benzo(a)Anthracene	mg/kg	0.0018	ND		03/25/99	GLS
Benzo(a)Pyrene	mg/kg	0.0053	ND	CSL	03/25/99	GLS
Benzo(b)Fluoranthene	mg/kg	0.0031	0.00349		03/25/99	GLS
Benzo(k)Fluoranthene	mg/kg	0.0031	ND		03/25/99	GLS
Benzo(ghi)Perylene	mg/kg	0.0041	ND		03/25/99	GLS
Chrysene	mg/kg	0.0021	ND		03/25/99	GLS
Dibenzo(a,h)Anthracene	mg/kg	0.0044	ND		03/25/99	GLS
Fluoranthene	mg/kg	0.0034	ND		03/25/99	GLS
Fluorene	mg/kg	0.0035	0.0511		03/25/99	GLS
Indeno(1,2,3-cd)Pyrene	mg/kg	0.0036	ND		03/25/99	GLS
1-Methyl Naphthalene	mg/kg	0.0048	0.111		03/25/99	GLS
2-Methyl Naphthalene	mg/kg	0.0056	0.169		03/25/99	GLS
Naphthalene	mg/kg	0.0016	0.0334		03/25/99	GLS
Phenanthrene	mg/kg	0.0028	0.135		03/25/99	GLS
Pyrene	mg/kg	0.0048	ND		03/25/99	GLS
Solid Organic Extraction		-	COMP		03/24/99	CKV
MOSA21-2						
Total Solids	%	-	77.3		03/16/99	GAG
WI DNR						
Soil Diesel Range Organics	mg/kg	6.5	230	D2B D5	03/16/99	DJB
Soil Org Ext - DRO		-	COMP		03/16/99	CKV
Analytical No.:			65037			

ND = Analyzed but not detected.
Results calculated on a dry weight basis.

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

	Units	Limit of Detection	BCU-2 4.5-5 03/11/99	Qualifiers	Date Analyzed	By
EPA 8310						
Acenaphthene	mg/kg	0.0039	ND		03/25/99	GLS
Acenaphthylene	mg/kg	0.0013	ND		03/25/99	GLS
Anthracene	mg/kg	0.0043	ND		03/25/99	GLS
Benzo(a)Anthracene	mg/kg	0.0019	ND		03/25/99	GLS
Benzo(a)Pyrene	mg/kg	0.0055	ND	CSL	03/25/99	GLS
Benzo(b)Fluoranthene	mg/kg	0.0032	ND		03/25/99	GLS
Benzo(k)Fluoranthene	mg/kg	0.0032	ND		03/25/99	GLS
Benzo(ghi)Perylene	mg/kg	0.0043	ND		03/25/99	GLS
Chrysene	mg/kg	0.0021	ND		03/25/99	GLS
Dibenzo(a,h)Anthracene	mg/kg	0.0045	ND		03/25/99	GLS
Fluoranthene	mg/kg	0.0035	ND		03/25/99	GLS
Fluorene	mg/kg	0.0036	ND		03/25/99	GLS
Indeno(1,2,3-cd)Pyrene	mg/kg	0.0037	ND		03/25/99	GLS
1-Methyl Naphthalene	mg/kg	0.0049	ND		03/25/99	GLS
2-Methyl Naphthalene	mg/kg	0.0057	ND		03/25/99	GLS
Naphthalene	mg/kg	0.0016	ND		03/25/99	GLS
Phenanthrene	mg/kg	0.0029	ND		03/25/99	GLS
Pyrene	mg/kg	0.0049	ND		03/25/99	GLS
Solid Organic Extraction		-	COMP		03/24/99	CKV
MOSA21-2						
Total Solids	%	-	74.9		03/16/99	GAG
WI DNR						
Soil Diesel Range Organics	mg/kg	6.7	7.85	D3	03/16/99	DJB
Soil Org Ext - DRO		-	COMP		03/16/99	CKV
Analytical No.:			65038			

ND = Analyzed but not detected.
Results calculated on a dry weight basis.

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

Attn: Jeff King/ Liz Lundmark

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Client Sample BCU-1 1-1.5 , Enviroscan Analytical # 65035, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet	RESULT Dry	Quality Control Qualifiers	Analysis Date
Benzene	0.120	0.025	0.060	0.287	0.366		03/19/99
Ethylbenzene	0.060	0.025	0.060	0.215	0.274		03/19/99
Methyl tert Butyl Ether	0.164	0.025	0.060	< 0.200	< 0.255		03/19/99
1,2,4-Trimethylbenzene	0.070	0.025	0.060	< 0.200	< 0.255		03/19/99
1,3,5-Trimethylbenzene	0.190	0.025	0.060	< 0.200	< 0.255		03/19/99
m- & p-Xylene	0.110	0.025	0.060	0.229	0.292		03/19/99
o-Xylene & Styrene	0.103	0.025	0.060	< 0.200	< 0.255		03/19/99
Toluene	0.035	0.025	0.060	< 0.200	< 0.255		03/19/99

Client Sample BCU-1 4.5-5 , Enviroscan Analytical # 65036, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet	RESULT Dry	Quality Control Qualifiers	Analysis Date
Benzene	0.012	0.025	0.060	0.076	0.098		03/19/99
Ethylbenzene	0.006	0.025	0.060	0.031	0.040	MB	03/19/99
Methyl tert Butyl Ether	0.016	0.025	0.060	< 0.025	< 0.032		03/19/99
1,2,4-Trimethylbenzene	0.007	0.025	0.060	< 0.025	< 0.032		03/19/99
1,3,5-Trimethylbenzene	0.019	0.025	0.060	< 0.025	< 0.032		03/19/99
m- & p-Xylene	0.011	0.025	0.060	0.039	0.050		03/19/99
o-Xylene & Styrene	0.010	0.025	0.060	< 0.025	< 0.032		03/19/99
Toluene	0.003	0.025	0.060	0.045	0.058		03/19/99

Client Sample BCU-2 1-1.5 , Enviroscan Analytical # 65037, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet	RESULT Dry	Quality Control Qualifiers	Analysis Date
Benzene	0.012	0.025	0.060	0.051	0.066		03/19/99
Ethylbenzene	0.006	0.025	0.060	0.036	0.047	MB	03/19/99
Methyl tert Butyl Ether	0.017	0.025	0.060	< 0.025	< 0.032		03/19/99
1,2,4-Trimethylbenzene	0.007	0.025	0.060	< 0.025	< 0.032		03/19/99
1,3,5-Trimethylbenzene	0.020	0.025	0.060	< 0.025	< 0.032		03/19/99
m- & p-Xylene	0.011	0.025	0.060	0.069	0.089		03/19/99
o-Xylene & Styrene	0.011	0.025	0.060	< 0.025	< 0.032		03/19/99
Toluene	0.004	0.025	0.060	0.101	0.131		03/19/99

Client Sample BCU-2 4.5-5 , Enviroscan Analytical # 65038, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet	RESULT Dry	Quality Control Qualifiers	Analysis Date
Benzene	0.012	0.025	0.060	< 0.025	< 0.033		03/19/99
Ethylbenzene	0.006	0.025	0.060	0.035	0.047	MB	03/19/99
Methyl tert Butyl Ether	0.016	0.025	0.060	< 0.025	< 0.033		03/19/99
1,2,4-Trimethylbenzene	0.007	0.025	0.060	< 0.025	< 0.033		03/19/99
1,3,5-Trimethylbenzene	0.019	0.025	0.060	< 0.025	< 0.033		03/19/99
m- & p-Xylene	0.011	0.025	0.060	0.064	0.085		03/19/99
o-Xylene & Styrene	0.010	0.025	0.060	0.026	0.035		03/19/99
Toluene	0.003	0.025	0.060	0.135	0.180		03/19/99

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/26/99
PREPARED BY: GLS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

Qualifier Descriptions

SL	Surrogate recovery was low. Result for sample may be biased low.
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.
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.
MB	Analyte observed in method blank. Sample results may be biased high.
D2B	The chromatogram is characteristic for a heavier petroleum product other than diesel. (i.e. motor oil, hydraulic oil, etc.)
D3	The chromatogram is not characteristic for diesel or any single common petroleum product.
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.

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 #: CU0000000000
Work Order: 9903000416
Report Date: 03/23/99
Date Received: 03/16/99
Arrival Temperature: On Ice

Report Submitted By: _____
Record Reviewer

U.S. FILTER
PROJECT FILE
301 W. MILITARY ROAD
ROTHSCHILD, WI 54474

Note: None

Project Name: Project Number: **10065049**

Sample I.D. #: 232190 **Sample Description:** 10065049 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.40	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232191 **Sample Description:** 10065050 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.46	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232192 **Sample Description:** 10065051 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.39	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232193 **Sample Description:** 10065052 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.40	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232194 **Sample Description:** 10065053 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.23	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232195 **Sample Description:** 10065054 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	0.92	gTS/cm3					03/19/99	GJM	MOSA 13-2

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 #: CU0000000000
Work Order: 9903000416
Report Date: 03/23/99
Date Received: 03/16/99
Arrival Temperature: On Ice

U.S. FILTER
PROJECT FILE
301 W. MILITARY ROAD
ROTHSCHILD, WI 54474

Report Submitted By: HGC
Record Reviewer

Note: None

Project Name: Project Number: **10065049**

Sample I.D. #: 232196 **Sample Description:** 10065055 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.39	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232197 **Sample Description:** 10065056 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.34	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232198 **Sample Description:** 10065057 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	0.96	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232199 **Sample Description:** 10065058 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.81	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232200 **Sample Description:** 10065059 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.23	gTS/cm3					03/19/99	GJM	MOSA 13-2

Sample I.D. #: 232201 **Sample Description:** 10065060 **Date Sampled:** 03/12/99

Analyte	Result	Units	Qualifier	LOD	LOQ	Extracted	Analyzed	Analyst	Method
Bulk Density	1.34	gTS/cm3					03/19/99	GJM	MOSA 13-2

Tank 67 Samples - Should not have been included in this report.
– J. King 3/30/99

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

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
847-967-6666
FAX: 847-967-6735

LABORATORY REPORT

194624

US Filter/Enviroscan
301 W. Military Road
Rothschild, WI 54474

Report Date: 3/22/99
Sample Received On Ice: 3/16/99
Date Sampled: 3/12/99

Project No.: 10065049
Sample Description: Soil Grab

Sample No.	Location	Total Organic Carbon Method 9060(6)	Date Analyzed
064961	10065049	7420	3/18/99
064962	10065050	5320	3/18/99
064963	10065051	6070	3/18/99
064964	10065052	4650	3/18/99
064965	10065053	17000	3/18/99
064966	10065054	9890	3/18/99
064967	10065055	26000	3/18/99
064968	10065056	9230	3/18/99

Wisconsin Certified Laboratory #999888890.

All results expressed as ppm unless otherwise indicated.

(6)Methods performed according to SW-846, "Test Methods for Evaluating Solid Waste".

Dawn W. Wright

LABORATORY DIRECTOR

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
847-967-6666
FAX: 847-967-6735

LABORATORY REPORT

194623

US Filter/Enviroscan
301 W. Military Road
Rothschild, WI 54474

Report Date: 3/22/99
Sample Received On Ice: 3/16/99
Date Sampled: 3/12/99

Project No.: 10065057
Sample Description: Soil Grab

Sample No.	Location	Total Organic Carbon Method 9060(6)	Date Analyzed
064947	10065057	9070	3/17/99
064948	10065058	5580	3/17/99
064949	10065059	8130	3/17/99
064950	10065060	3700	3/17/99

Wisconsin Certified Laboratory #999888890.

All results expressed as ppm unless otherwise indicated.

(6)Methods performed according to SW-846. "Test Methods for Evaluating Solid Waste".

LABORATORY DIRECTOR

REQUEST FOR SERVICES USFilter

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

REPORT TO:
Name: Jeff King
Company: Cianratt Planning
Address:
Phone: ( )
P. O. #
Project # 34265.003 Quote #
Locatioon

BILL TO: (if different from Report To info)
Name: Liz Lindmark
Company: Murphy Oil USA
Address:
Phone: ( )

2 of 2

ANALYTICAL REQUESTS
(use separate sheet if necessary)

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

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

Date Needed
Approved By

LAB USE ONLY	DATE	TIME	No. of Containers COMP	No. of Containers GRAB	SAMPLE ID	GRO/PVOC	PB	Organic Carbon fraction	Bulk density	REMARKS
10065046	3/11/99	AM		2	BFL-4(4.5-5)	✓	✓			
10065047				2	BFL-5(1-1.5)	✓	✓	✓		Not in cooler - Cancel will not be needed per Jeff 3-15-99 sm
10065048		Held		2	BFL-5(4.5-5)	✓	✓	✓		
10065049				1	BCU-2(0-1.25)			✓	✓	Zip-lock bag
10065050				1	BCU-2(1.25-2.5)			✓	✓	
10065051				1	BCU-2(2.5-3.75)			✓	✓	
10065052				1	BCU-2(3.75-5)			✓	✓	
10065053				1	BFL-1 (0-1.25)			✓	✓	
10065054				1	BFL-1 (1.25-2.5)			✓	✓	
10065055				1	BFL-1 (2.5-3.75)			✓	✓	
10065056				1	BFL-1 (3.75-5)			✓	✓	

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: Client did not think of missing samples. He is out the day. Left message Cancel per Jeff 3-15-99

CHAIN OF CUSTODY RECORD

SAMPLERS: *(Signature)* Jeff King

RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
Jeff King	3/11/99 14:00	
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED FOR LABORATORY BY: *(Signature)* — DATE/TIME: 3/12/99 12:00

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
Phone: (608) 836-1500
P. O. #
Project # 34265.003 Quote #
Locatioon

BILL TO: (if different from Report To info)
Name: Liz Lundmark
Company: Murphy Oil USA
Address: 2404 Stinson Ave, P.O Box 2066
Superior, WI 54880
Phone: ( )

1 of 2

ANALYTICAL REQUESTS
(use separate sheet if necessary)

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

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

Date Needed
Approved By

LAB USE ONLY	DATE	TIME	No. of Containers COMP	No. of Containers GRAB	SAMPLE ID	DRO	PVOC	PAH	GRO/PVOC	PB	REMARKS
10065035	3/11/99	AM		3	BCU-1(1-1.5)	✓	✓	✓			
10065036				3	BCU-1(4.5-5)	✓	✓	✓			
10065037				3	BCU-2(1-1.5)	✓	✓	✓			
10065038				3	BCU-2(4.5-5)	✓	✓	✓			
10065039				2	BFL-1(1-1.5)				✓	✓	
10065040				2	BFL-1(4.5-5)				✓	✓	
10065041				2	BFL-2(1-1.5)				✓	✓	
10065042				2	BFL-2(4.5-5)				✓	✓	
10065043				2	BFL-3(1-1.5)				✓	✓	
10065044				2	BFL-3(4.5-5)				✓	✓	
10065045				2	BFL-4(1-1.5)				✓	✓	

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

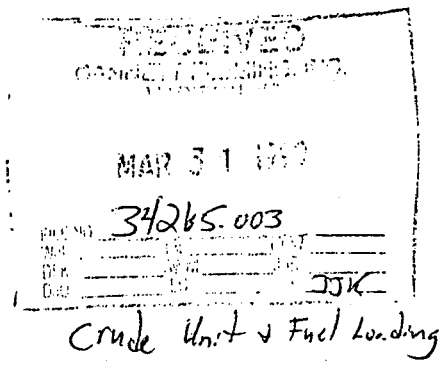
SAMPLERS: *(Signature)* Jeff King

RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
Jeff King	3/11/99 11:00	
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED BY: *(Signature)*
RELINQUISHED BY: *(Signature)*	DATE/TIME	RECEIVED FOR LABORATORY BY: *(Signature)* Kristin Hedeen — DATE/TIME 3-12-99

USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

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



March 30, 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 March 12, 1999. Calculations for percent organic matter is added.

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
General Manager

U.S. FILTER

UNITED STATES FILTER CORPORATION

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

CUST NUMBER: 34265.003
SAMPLED BY: Client
DATE REC'D: 03/12/99
REPORT DATE: 03/30/99
PREPARED BY: JRS
REVIEWED BY:

Attn: Jeff King/ Liz Lundmark

Sample ID	TOC %	Qualifiers	Organic Matter, %	Qualifiers	Analytical No.
BCU-2 0-1.25	0.742		1.69		65049
BCU-2 1.25-2.5	0.532		1.31		65050
BCU-2 2.5-3.75	0.607		1.44		65051
BCU-2 3.75-5	0.465		1.19		65052
BFL-1 0-1.25	1.70		3.41		65053
BFL-1 1.25-2.5	0.989		2.13		65054
BFL-1 2.5-3.75	2.60		5.03		65055
BFL-1 3.75-5	0.923		2.01		65056
Date Analyzed:	03/23/99		03/23/99		

Organic Matter,% = 0.35 + (1.8 X TOC,%)

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

November 19, 1998
File #34265.003

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

Re: Work Plan for Soil Investigation — Crude Unit Process Area Release
Murphy Oil USA, Inc., Superior, Wisconsin

Dear Mr. Hosch:

On November 12, 1998, Gannett Fleming, Inc. sent you the work plan noted above. In that plan, we referred to photographs of the area where crude oil was released from an underground pipeline in September 1991. Because our records do not clearly indicate that those photographs were sent with the work plan, we are enclosing a set of the photographs with this letter.

If you have any questions about the photos or the work plan, please call.

Sincerely,

GANNETT FLEMING, INC.

Dennis F. Kugle
Vice President

DFK/jec
Enc.

cc: Lee Vail (Murphy/New Orleans)
Liz Lundmark (Murphy/Superior)
Kevin Melynk (Murphy/El Dorado)
Rick Lewandowski (DeWitt, Ross & Stevens)
Mark Stokstad (WDNR/Rhinelander)

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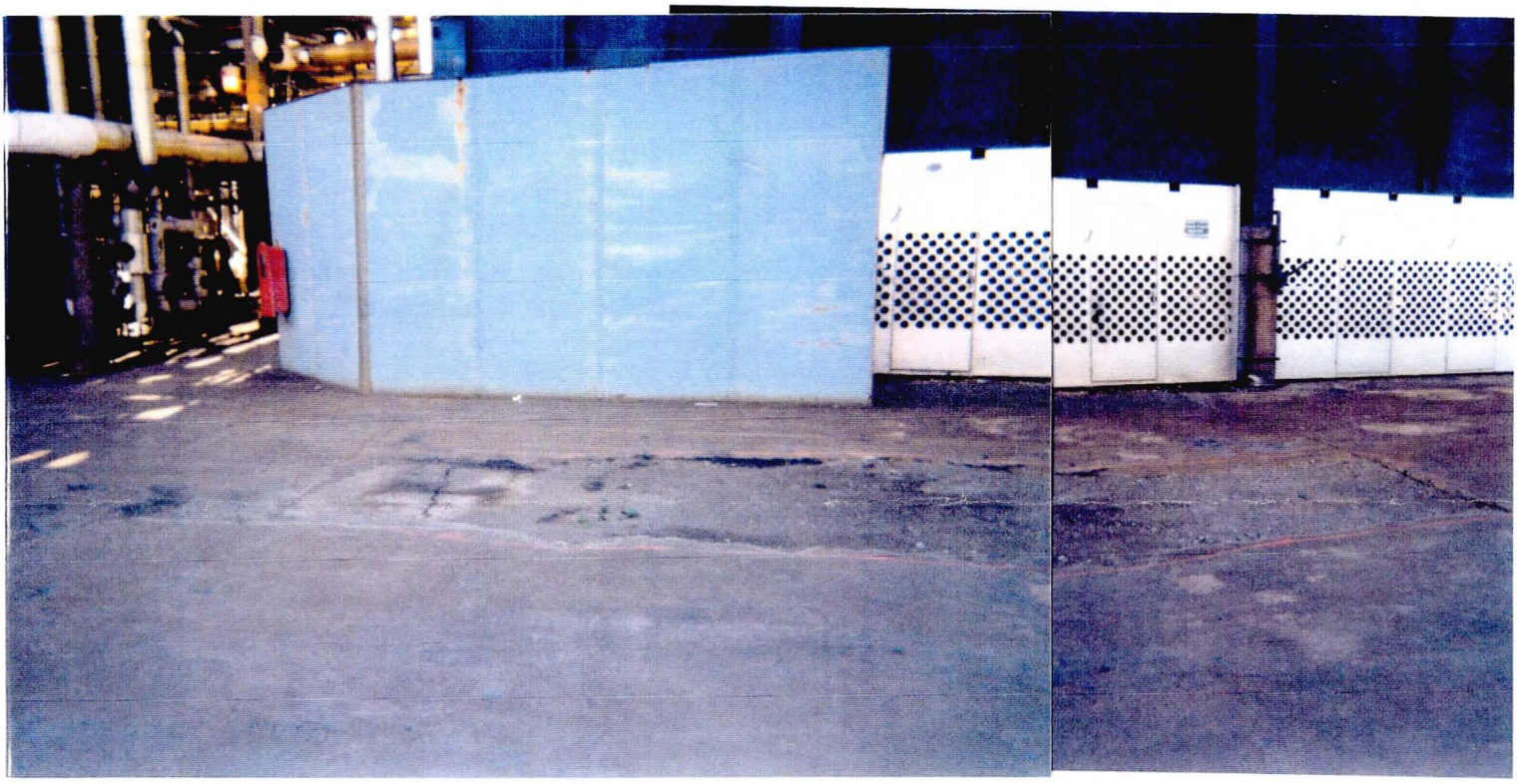
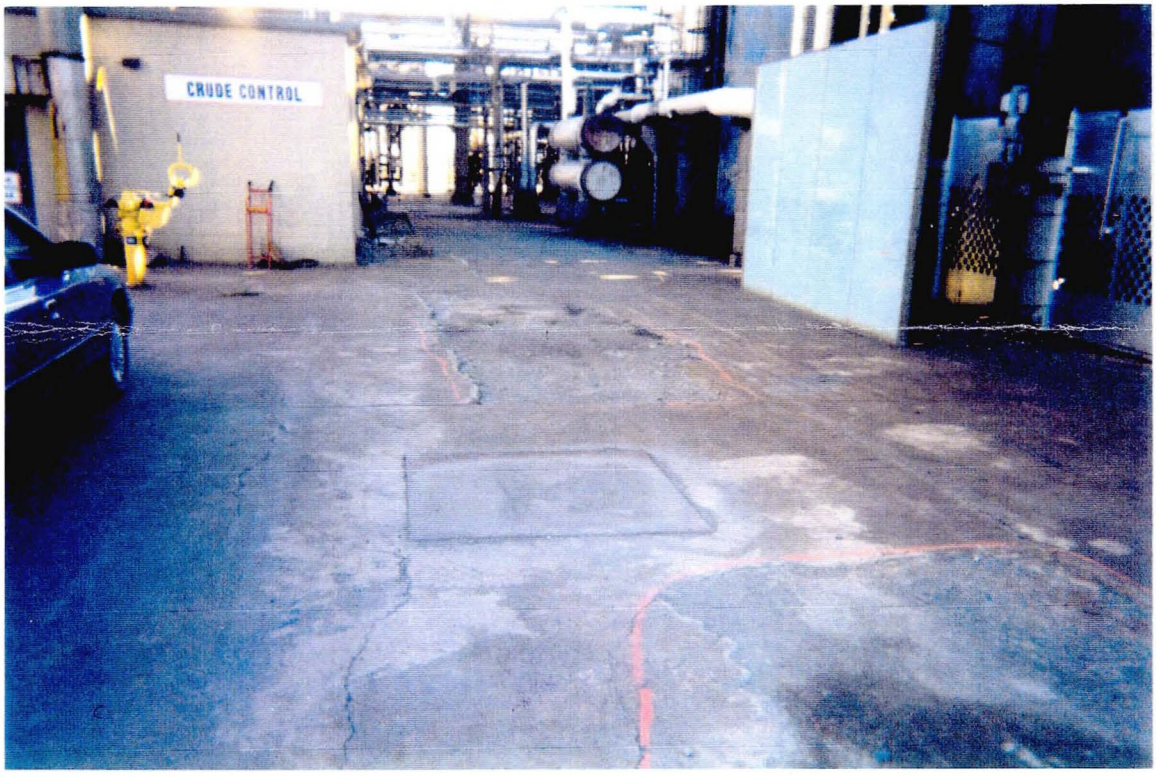


Panoramic view of crude unit process area showing section of cut out concrete where underground pipeline release of crude oil occurred in September 1991 (two photos were matched together to form this picture).



View of crude unit process area - September 1991 underground pipeline release of crude oil occurred where concrete is cut out.

Gannett Fleming

GANNETT FLEMING, INC.
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November 12, 1998
File #34265.003

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

04-16-046256

Re: Work Plan for Soil Investigation — Crude Unit Process Area Release
Murphy Oil USA, Inc., Superior, Wisconsin

Dear Mr. Hosch:

This letter provides the proposed work plan for an investigation to determine the degree of unsaturated soil contamination at the crude unit process area at Murphy Oil's Superior refinery. A release of about 125 gallons of crude oil from an underground pipeline occurred in this area in September 1991. During the investigation, we will also collect samples for physical parameter testing, and these data will be used in our contaminant transport modeling. This work plan is being submitted in response to your October 1, 1998, letter to Mr. Lee Vail requesting investigation of this release.

Previous Work

When the release occurred in September 1991, Murphy took prompt action to remove the soil affected by the release. Because the entire area was paved, a section of concrete was cut out (1991) to access the leaking pipeline, as shown on the attached photograph. Since crude oil was released, a cleanup end-point could be determined by visual observation. No follow-up investigation has been done since the affected soils were removed following the release.

Proposed Scope of Work

Gannett Fleming, Inc. proposes to advance two Geoprobe boreholes in the immediate area where this pipeline release occurred to determine if there is any significant petroleum contamination remaining in the unsaturated soils. Since the affected area has not been re-paved, as you can see in the photograph, locating the boreholes will be a straightforward exercise. Boreholes will be advanced

Continued . . .

at both ends of the former excavation to 6 feet below ground surface (bgs). Please note that drilling in this area is limited by structures, piping, utilities, etc.
Soil samples will be collected from each borehole for chemical analysis and for testing of physical parameters. Figure 1 is a schematic representation of a typical borehole, showing the depths from which the samples for chemical and physical analysis will be collected from each borehole.

Soil Sampling (Chemical Parameters)

All the boreholes will be advanced with a Geoprobe equipped with a 4-foot-long, 2-inch-diameter, macro-core sampler. A new acetate liner will be inserted into the sampler to collect each soil core, and we will collect continuous soil samples from each borehole. The samples will be visually classified and logged. Soil samples will be collected from each borehole at 1 to 2 feet and 4 to 5 feet bgs. These samples will be placed in laboratory-supplied containers, preserved as necessary, placed on ice, and shipped to Commonwealth Technology, Inc. (CTI), a Wisconsin-certified laboratory in Baraboo, Wisconsin, for analysis of diesel range organics (DRO), petroleum volatile organic compounds (PVOCs), and polynuclear aromatic hydrocarbons (PAHs).

Soil Sampling (Physical Parameters)

Soil samples for physical testing (organic carbon and permeability) will be collected from only one of the two boreholes. Soil samples from each 1.25-foot interval to a depth of 5 feet in one of the two boreholes will be shipped to CTI for analysis of the organic carbon fraction in the sample. A separate macro-core sampler will also be advanced next to one of the two boreholes in order to collect an undisturbed sample at 2 to 4 feet bgs. This sample will be shipped to a qualified laboratory for falling head permeability testing. The permeability and organic carbon results will be used to calibrate the model that will be used to develop site-specific residual contaminant levels (RCLs), as discussed in our September 10, 1998, report.

Equipment Decontamination

All non-disposable sampling equipment will be decontaminated between samples using a detergent/ potable water solution and rinsed with either potable or distilled water.

Continued . . .

Mr. James A. Hosch
Wisconsin Department of Natural Resources
November 12, 1998

Project Documentation

The following required forms will be completed and submitted to the Wisconsin Department of Natural Resources (WDNR) with the investigation report:

- Soil Boring Log Information (Form 4400-122).
- Well/Drill Hole/Borehole Abandonment (Form 3300-5B).

We will begin soliciting bids from Geoprobe operators and coordinating the proposed work immediately. If you have any questions or comments about this work plan, please call.

Sincerely,

GANNETT FLEMING, INC.

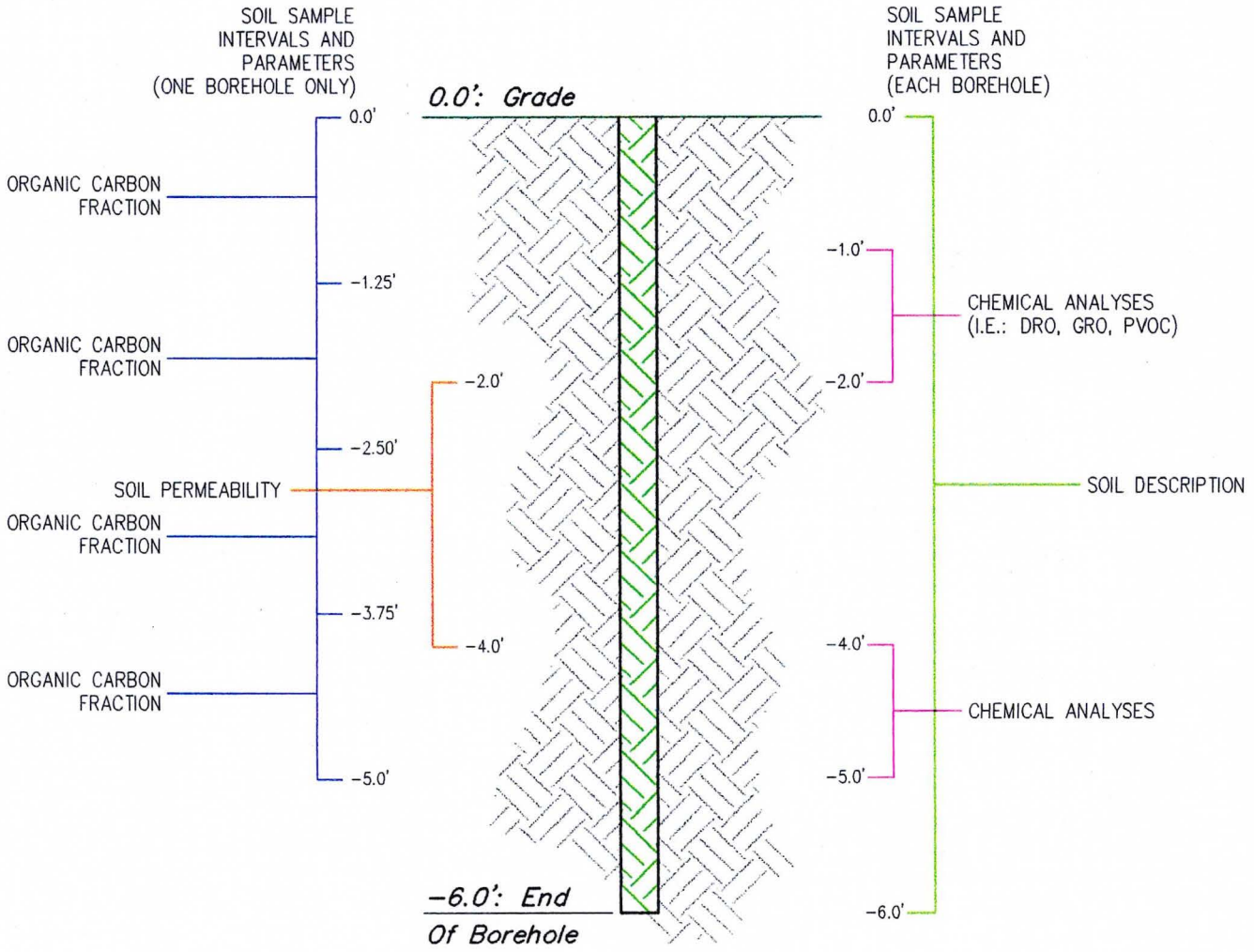
David J. Olig, P.G.
Senior Project Manager

Jeffrey J. King
Project Hydrogeologist

DJO/jec
Enc.

Gannett Fleming

FIGURE 1



NOTES

1. *One Soil Sample Will Be Collected Per Tank Basin For Soil Permeability And Samples For Organic Carbon Fraction Analytes Will Only Be Collected From One Probehole Per Basin.*
2. *Samples For Chemical Analysis At Gasoline And Gasoline Blended Stock Release Sites Will Be Analyzed For GRO, PVOCs, And Lead.*
3. *Samples For Chemical Analysis At Fuel Oil And Crude Sites Will Be Analyzed For DRO, PVOCs, And PAHs.*

Not To Scale

PROPOSED SOIL SAMPLE INTERVALS AND ANALYTES

MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

111298
34265WV