PLEASE PRINT

# State of Wisconsin Substance Release Notification Form 04-16-208627

**24-Hour Emergency Hotline Number: 1-800-943-0003** **Form 4400-91 Rev. 11-95**

| Date and Mil. Time of Incident | Date and Mil. Time Reported |
|---|---|
| 08-04-97 1130 | 08-04-97 1430 |

| | |
|---|---|
| Person Reporting: David Stokes | Telephone #: (715) 398-3533 |
| Representing Agency, Firm, or Citizen: Murphy Oil | |
| Responsible Party: Murphy Oil | |
| Contact Name: David Stokes | Telephone #: (715) 398-3533 |
| Address: P.O. Box 2066 | City, State, Zip Code: Superior, WI 54880 |

| Substance Involved | Amount & Units Released | Amt. Recovered | Is this a 304 (11004 42 USC) spill? |
|---|---|---|---|
| "Slop Oil" | 2 Barrels | All | ☐ Yes ☐ No ☐ Unknown |

☐ Solid ☐ Semisolid ☑ Liquid ☐ Gas Color _____ Odor _____

**Exact Location** (inc. address, facility name, mileage, bldg, #, etc.)
2400 Stinson Ave

| City | County | Lat/long |
|---|---|---|
| Superior | Douglas | |
| **DNR Region** NO | ¼ ¼sec T NR (E/W) | **Weather Cond.** |

**Cause of Incident**
Equipment malfunction, overflow of tank

**Spilled Substance Impact To:**
**Check (✓) all that apply**
- ☐ Air ☐ Potential
- ☐ Soil ☐ Potential
- ☐ Groundwater ☐ Potential
- ☐ Surface Water ☐ Potential
  Name: _____
- ☐ Storm Sewer ☐ Potential
- ☐ Sanitary Sewer ☐ Potential
- ☐ Concrete/Asphalt ☐ Potential
- ☐ Private Well ☐ Potential
- ☑ Contained/Recovered
- ☐ Other: _____

**Spill Source:**
- ☐ Transportation Accident, Fuel Supply Tank Spill
- ☐ Transportation Accident, Load Spill
- ☑ Industrial Facility ☐ Paper Mill ☐ Chemical Co.
- ☐ Ag Coop/Facility/Food Factory/Facility
- ☐ Gas/Service Station/Garage/Auto Dealer, Repair Shop
- ☐ Pipeline, Terminal, Tank Farm, Oil Jobber/Wholesaler
- ☐ Public Property (city, state, church, school, etc.)
- ☐ Utility Co., Power Generating/Transfer Facility
- ☐ Private Property (home/farm)
- ☐ Construction, Excavation, Wrecking, Quarry, Mine
- ☐ Airport Facility ☐ Railroad Facility
- ☐ Other _____

**Action Taken By Spiller**
- ☐ No Action Taken
- ☐ No Action Needed
- ☐ Monitor
- ☑ Cleanup Method: vacumed
- ☐ Waste Destination: re-processed
- ☐ Containment
- ☐ Contractor Hired
  Name: _____
- ☐ Other: _____

Injuries? ☐ Yes ☑ No If yes, how many? ____ | Has an evacuation occurred? ☐ Yes ☑ No Potential? ☐ Yes ☐ No

Are there any resource damages? ☐ Yes ☑ No What kinds? _____

**Other Agencies Notified (✓ first column if notified); Check (✓) both columns if on scene**

| | | |
|---|---|---|
| ☐☐ Fire Department/Hazmat | ☑☐ Local DNR | ☐☐ EPA |
| ☐☐ Local Law Enforcement | ☐☐ Div. Emer. Gov. | ☐☐ Nat'l Resp. Ctr. 800-442-8802 |
| ☐☐ LEPC or Local Emer. Gov. | ☐☐ DATCP 608-224-4500 | ☐☐ Chemtrec 800-424-9300 |
| ☐☐ Regional Response Team | ☐☐ DHSS 608-266-2830 | ☐☐ Other _____ |

Incident Commander, if known: _____
Phone: _____

Prepared By: (Print) John Knoll (Sign) John A. Knoll Date: 08-04-97 Rpt'd to DATCP? ☐ Yes ☑ No

Person Notified: Region Notified: Time: Date:

Invstgtd By: (Print) John Knoll (Sign) John A. Knoll Date: 8-04-97 Site Closed? ☐ Yes ☐ No

Spill Coordinator Signoff: Date:

Transferred to ERP? ☐ No ☐ Yes; Case # _____

NFA Letter Sent? ☐ Yes ☐ No

Spill Packet Sent? ☐ Yes ☐ No

MURPHY
OIL USA, INC.

SUPERIOR REFINERY
P O BOX 2066
SUPERIOR WISCONSIN 54880

August 7, 1997

RECEIVED
AUG 8 1997
DNR SUPERIOR

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

RE: Slop Oil Release
Tank S-2 Area

Dear Mr. Hosch:

This letter is to provide additional information on the site clean-up for the release of slop oil that occurred August 4, 1997, at approximately 1140 hours. Verbal notification of the release was provided the WDNR on the date of the release. As reported in the notification, the release was a result of the failure of the level instrument on the tank to alarm a high level while the tank was being filled which resulted in the tank being overfilled.

At the time the spill occurred, the soil was wet with small pools of standing water. Although the original verbal report stated that approximately 2 barrels (84 gallons) were released, closer examination indicated the actual amount was approximately 1 barrel (42 gallons). The oil standing on the puddles of water gave the appearance of more released material being involved than was the actual case. This material was released within close proximity to a drainage ditch that enters the #1 API separator. At no time was there any possibility of this material moving off site.

The tank is located on the refinery property which is at 2400 Stinson Ave., Superior, WI. The map coordinates for the refinery are NW¼, NW¼, Sect. 36, T 49N, R 14N.

Clean-up activities commenced immediately after discovery of the release. The location of the spilled material was from the tank wall to the drainage which is underneath a pipe rack that runs past this area and is adjacent to the tank. All pooled materials and storm water in the area of the spill were removed with a vacuum truck and reintroduced into the refinery processing equipment by way of the #1 API separator. This allows the oil to be recovered through the refinery's slop oil system and the water from the area to be processed through the refinery's waste water treatment plant. Due to the congested

area of the spill, soil underneath the pipe rack will be flushed out with water and collected with the water used for flushing. The recovered oil and water will be introduced into the #1 API separator, after separating out the soil.

The amount of soil to be recovered is estimated to be less than one yard. The soil will be stored in the contaminated soil storage building until arrangements for disposition are made. Typically, contaminated soils are disposed of at a local asphalt plant in an asphalt roaster.

The instrument that failed to operate properly and the tank overflow system that also failed to operate properly are being investigated to determine what mechanical or instrumentation revisions need to be implemented to prevent a recurrence of this release.

Due to the existing site conditions, the type of material and quantity involved, and the immediate clean-up and follow-up remedial response at the site, Murphy Oil USA believes that obligations and requirements under the pertinent NR 700 series Wisconsin Administrative Code standards have been met.

Please contact me at (715)398-8255 if you have any questions or comments in this regard.

Sincerely,

Mark H. Miller

Mark H. Miller
Manager, Safety and Environmental Control

mm115

cc: Fred Green
Jim Britt
Jim Kowitz

11/24/97 AM/7 ; RR/ Rhinelander

TWIN PORTS TESTING INC.

1301 NORTH THIRD STREET • SUPERIOR, WISCONSIN 54880
(715) 392-7114 • FAX (715) 392-7163

728 GARFIELD AVENUE • DULUTH, MINNESOTA 55802
(218) 722-6653 • FAX (218) 722-3295

8 INDUSTRIAL PARK ROAD • NEGAUNEE, MICHIGAN 49866
(906) 226-6653 • FAX (906) 226-3699

November 4, 1997
TPT# 784-97E.MM

Wisconsin Department of Natural Resources
1705 Tower Avenue
Superior, Wisconsin 54880
Attn: Ms. Phyliss Holmbeck

Re: Soil Treatment Application for
Soil Excavated from S-1 and S-2 tank area at
Murphy Oil U.S.A in Superior, Wisconsin

Dear Ms. Holmbeck:

Enclosed is the application to thermally treat approximately 332 cubic yards of petroleum contaminated soil from a release near the S-1 and S-2 tank area at Murphy Oil's facility. The petroleum contamination is fuel oil. The sample (S-2) collected from the stockpile was analyzed for GRO, DRO, VOCs, and RCRA metals.

If you have any questions or need any additional information, please feel free to call me at (715) 392-7114.

Sincerely,

TWIN PORTS TESTING, INC.

Irvin Mossberger, Hydrogeologist

microsoft word
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State of Wisconsin
Department of Natural Resources

# NOTIFICATION TO TREAT OR DISPOSE OF PETROLEUM CONTAMINATED SOIL & WATER

Form 4400-120
Rev. 9-95

This form is required by the Department of Natural Resources (DNR) to ensure that the remediation of petroleum contaminated soil and water is in compliance with NR 500-540, NR 158, NR 419 and NR 445, Wis. Adm. Code. Failure to comply with applicable statutes and administrative rules may lead to violations of subchapters III and IV of Ch. 144, Wis. Stats. and may result in forfeitures of not less than $10 or more than $25,000 for each violation, pursuant to ss. 144.426(1), 144.74(1), 144.99, Wis. Stats., or fines of not less than $100 or more than $150,000 or imprisonment for not more than 10 years, or both, pursuant to s. 144.74(2), Wis. Stats. Each day of a continuing violation constitutes a separate violation. **Except for the remediation of virgin petroleum spills, this form needs to be submitted to the DNR 10 business days prior to the commencement of the remediation.**

DIRECTIONS: 1) Complete both sides of the form. 2) Have the responsible party sign the form. **This signature certifies that the information on this form and in all supporting documents is accurate.** 3) Submit the form with supporting documentation, lab reports and any maps to the appropriate District Air Management Program at least 10 business days prior to the commencement of remediation. 4) Submit a copy of this form to the DNR project manager and retain a copy for your records.

## PART I - GENERAL INFORMATION

| | |
|---|---|
| **Site Name & Address:** Murphy Oil USA, 2407 Stinson Ave. Superior, WI 54880 | **Date of Form Completion:** 11/4/97 |
| **Site #:** | **Do Other Remediation Systems Exist at This Site?** ☐ YES ☐ NO |
| **County:** Douglas | **Site Type:** ☐ LUST ☒ ERP ☐ CERCLA ☐ Other, Explain: |
| **Responsible Party Name & Address:** Murphy Oil U.S.A. 2407 Stinson Ave. Superior, WI 54880 | **Responsible Party Signature:** Irwin Mossberger for Bill Gustafson<br>**Telephone #:** (715) 378-8217 |
| **Consulting Firm Name & Address:** Twin Ports Testing Inc 1301 N 3rd St. Superior, WI 54880 | **Consulting Firm Contact:** Irwin Mossberger<br>**Telephone #:** (715) 392-7114 |

## PART II - SOIL AND WATER DATA (Attach Lab Reports and Calculations)

**Type of Contamination:** ☐ Gasoline ☐ Diesel ☒ Fuel Oil ☐ Waste Oil ☐ Chlorinated Organics ☐ Other: _____

**Soil Concentration:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GRO: | 1610 | mg/kg/$10^6$ | x 2,800 lb/$yd^3$ | x | 332 | $yd^3$ | = | 1496.7 lb |
| DRO: | 3400 | mg/kg/$10^6$ | x 2,800 lb/$yd^3$ | x | 332 | $yd^3$ | = | 3160.4 lb |
| Benzene: | 0.503 | mg/kg/$10^6$ | x 2,800 lb/$yd^3$ | x | 332 | $yd^3$ | = | .4676 lb |
| Chlorinated Organics: | _____ | mg/kg/$10^6$ | x 2,800 lb/$yd^3$ | x | _____ | $yd^3$ | = | _____ lb |
| Other: | _____ | mg/kg/$10^6$ | x 2,800 lb/$yd^3$ | x | _____ | $yd^3$ | = | _____ lb |

**Water Concentration:** GRO: _____ mg/L DRO: _____ mg/L Benzene: _____ mg/L

Chlorinated Organics: _____ mg/L Other: _____ mg/L

## PART III - TREATMENT OR DISPOSAL FACILITY INFORMATION

| | |
|---|---|
| Treatment/Disposal Facility Name & Address: Lakeland Blacktop & Materials 5800 Albany Ave. Superior, WI 54880 | Facility ID: 816037640 |
| | Air Pollution Control Permit #: 93-BAB-802 |
| Facility Contact: Bob Peterson<br>Telephone #: (715) 392-3844 | Facility Located in 10-county Area in Southeast Wisconsin: No<br>Distance to Nearest Residence or Business: ~5,000 ft |
| Headquarter Address: 6327 Tower Ave Superior, WI 54880 | Portable Sources Only: Has a Portable Source Relocation Notification (Form 4500-25) Been Submitted for this Location: ☐ YES ☐ NO N/A |

## PART III - SOIL VACUUM EXTRACTION OR GROUNDWATER REMEDIATION

| | |
|---|---|
| Site Contact & Telephone #: | Proposed Operations (Attach Calculations)<br>Anticipated Start-Up Date:<br>Estimated Project Duration:<br># of Wells: |
| Is Site Located in the 10-county Area in Southeastern WI | |
| Distance to Nearest Residence or Business: | # of Emission Points: |
| Pilot Test/Soil Venting Only<br>(Attach Lab Reports and Calculations)<br>Date of Test:<br>Flow Rate (scfm):<br>Total Withdrawal of Air (scf):<br>Total VOC Emission Rate (lb/hr):<br>Benzene Emission Rate (lb/hr): | Stack Height:<br>Maximum Equipment Flow Rate (scfm or gpm):<br>Total VOC Emission Rate (lb/hr):<br>Benzene Emission Rate (lb/hr):<br>Benzene Emission Rate (lb/yr): |

## PART III - OTHER REMEDIATION METHODS

Proposing Other Remediation Method: ☐ YES Method Name:_____

Attach a project description for other remediation methods including landspreading, passive aeration and bioremediation. At a minimum, the information submitted should include the following items (with any supporting lab reports and calculations):

✓ Address/Location of Remediation Site - Indicate if this location is in the 10-county area in Southeast Wisconsin and the distance to the nearest residence or business. Include a map or site plan if appropriate.
✓ Description of Remediation Method
✓ Project Contact & Telephone #
✓ Anticipated Start-Up and Estimated Project Duration
✓ Highest Estimated Hourly VOC Emissions
✓ Highest Estimated Hourly and Annual Benzene Emissions
✓ Emission Testing Methodology
✓ Final Destination of Soil

EMISSION CALCULATIONS
CONTAMINATED SOIL EXCAVATED FROM
S-1 AND S-2 TANK AREA AT
MURPHY OIL USA
SUPERIOR, WISCONSIN

GRO CALCULATION:

S-2 = 1610 ppm for GRO

$$\frac{1610 \text{ ppm}}{1{,}000{,}000 \text{ ppm}} \times \frac{2{,}800 \text{ lbs.}}{\text{yd}^3} \times 332 \text{ yd}^3 = 1496.656 \text{ lbs. of GRO}$$

DRO CALCULATION:

S-2 = 34000 ppm for DRO

$$\frac{34000 \text{ ppm}}{1{,}000{,}000 \text{ ppm}} \times \frac{2{,}800 \text{ lbs.}}{\text{yd}^3} \times 332 \text{ yd}^3 = 31606.4 \text{ lbs. of DRO}$$

BENZENE CALCULATION:

S-2 = 0.503 ppm for benzene

$$\frac{0.503 \text{ ppm}}{1{,}000{,}000 \text{ ppm}} \times \frac{2{,}800 \text{ lbs.}}{\text{yd}^3} \times 332 \text{ yd}^3 = 0.4675888 \text{ lbs. of benzene}$$

THE SOIL VAPOR READING FOR SOIL SAMPLE SP-1 WAS 253 PPM USING A MODEL 580 OVM EQUIPPED WITH A 10.6 eV LAMP.

330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156

LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

October 8, 1997

Irvin Mossberger
Twin Ports Testing
728 Garfield Avenue
Duluth, MN 55802

| | | |
|---|---|---|
| Project ID: | 784-97E | |
| Chain of Custody: | 22484 | |
| Date Sampled: | 09-23-97 | |
| Date Received: | 09-25-97 | |
| Matrix: | Soil | |
| Sample Identification: | | |
| Lab ID: | 20965 | S-1 |
| | 20966 | S-2 |
| | 20967 | Trip Blank |

REC'D OCT 14 1997

Samples were analyzed for GRO and DRO by the Wisconsin Modified GRO and DRO procedures and for VOC by Minnesota Department of Health Method 465-E. The results are reported on the following pages.

Sincerely,

Chad Holznagel 10/9

Chad Holznagel
Chemist

Brian Anderson 10/8
Brian Anderson
Inorganic Group Leader

Date Analyzed: 09-30-97

| Parameter: | Total Hydrocarbons as GRO | DRO | Percent Moisture |
|---|---|---|---|
| **Units:** | (mg/kg) | (mg/kg) | (%) |
| **MDL:** | 10.0 | 10.0 | |
| 20965 S-1 | BDL | BDL* | 3.6 |
| 20966 S-2 | 1610 | 34000 | 5.1 |
| 20967 Trip Blank | BDL | | |

| Parameter | 20965 S-1 | 20966 S-2 | Date Analyzed |
|---|---|---|---|
| Arsenic (mg/kg db) | < 6.36 | < 6.60 | 10-02-97 |
| Barium (mg/kg db) | 85.7 | 74.9 | 10-02-97 |
| Cadmium (mg/kg db) | 5.54 | 4.66 | 10-02-97 |
| Chromium (mg/kg db) | 1.91 | 17.4 | 10-02-97 |
| Lead (mg/kg db) | < 12.0 | 24.4 | 09-29-97 |
| Mercury (mg/kg db) | < 0.089 | 0.121 | 10-02-97 |
| Selenium (mg/kg db) | < 4.90 | < 5.08 | 10-02-97 |
| Silver (mg/kg db) | < 1.60 | < 1.80 | 09-29-97 |

BDL = Below Detection Limit, MDL = Method Detection Limit

Date Analyzed: 09-30-97

| **Lab ID:** | **MDL (mg/kg)** | **20965 S-1 (mg/kg)** | **20966 S-2 (mg/kg)** | **20967 Trip Blank (mg/kg)** |
|---|---|---|---|---|
| Dichlorodifluoromethane | 0.005 | BDL | < 0.200 | BDL |
| Chloromethane | 0.010 | BDL | < 0.200 | BDL |
| Vinyl chloride | 0.008 | BDL | < 0.200 | BDL |
| Bromomethane | 0.010 | 0.050* | < 0.200 | 0.143* |
| Chloroethane | 0.010 | BDL | < 0.200 | BDL |
| Dichlorofluoromethane | 0.010 | BDL | < 0.200 | BDL |
| Trichlorofluoromethane | 0.013 | BDL | < 0.200 | BDL |
| Ethyl ether | 0.015 | BDL | < 0.200 | BDL |
| Acetone | 0.008 | BDL | < 0.200 | BDL |
| 1,1-Dichloroethene | 0.013 | BDL | < 0.200 | BDL |
| Methylene chloride | 0.015 | BDL | < 0.200 | BDL |
| Allyl chloride | 0.010 | BDL | < 0.200 | BDL |
| Trichlorotrifluoroethane | 0.025 | BDL | < 0.200 | BDL |
| Methyl tert-butyl ether | 0.008 | BDL | 5.839 | BDL |
| trans-1,2-Dichloroethene | 0.010 | BDL | < 0.200 | BDL |
| 1,1-Dichloroethane | 0.008 | BDL | < 0.200 | BDL |
| Methyl ethyl ketone | 0.070 | BDL | 0.311 | BDL |
| cis-1,2-Dichloroethene | 0.008 | BDL | < 0.200 | BDL |
| Bromochloromethane | 0.005 | BDL | < 0.200 | BDL |
| Chloroform | 0.005 | BDL | < 0.200 | BDL |
| 2,2-Dichloropropane | 0.020 | BDL | < 0.200 | BDL |
| Tetrahydrofuran | 0.015 | BDL | < 0.200 | BDL |
| 1,2-Dichloroethane | 0.008 | BDL | < 0.200 | BDL |
| 1,1,1-Trichloroethane | 0.010 | BDL | < 0.200 | BDL |
| 1,1-Dichloropropene | 0.008 | BDL | < 0.200 | BDL |
| Carbon tetrachloride | 0.010 | BDL | < 0.200 | BDL |
| Benzene | 0.013 | BDL | 0.503 | BDL |
| Dibromomethane | 0.008 | BDL | < 0.200 | BDL |
| 1,2-Dichloropropane | 0.008 | BDL | < 0.200 | BDL |
| Trichloroethene | 0.008 | BDL | < 0.200 | BDL |
| Bromodichloromethane | 0.010 | BDL | < 0.200 | BDL |
| cis-1,3-Dichloropropene | 0.008 | BDL | < 0.200 | BDL |
| Methyl isobutyl ketone | 0.018 | 0.033 | 12.739 | BDL |
| trans-1,3-Dichloropropene | 0.005 | BDL | < 0.200 | BDL |

BDL = Below Detection Limit, MDL = Method Detection Limit
* = Laboratory contamination

Date Analyzed: 09-30-97

| **Lab ID:** | **MDL (mg/kg)** | **20965 S-1 (mg/kg)** | **20966 S-2 (mg/kg)** | **20967 Trip Blank (mg/kg)** |
|---|---|---|---|---|
| 1,1,2-Trichloroethane | 0.008 | BDL | < 0.200 | BDL |
| Toluene | 0.010 | 0.026 | 11.070 | 0.015 |
| 1,3-Dichloropropane | 0.008 | BDL | < 0.200 | BDL |
| Dibromochloromethane | 0.008 | BDL | < 0.200 | BDL |
| 1,2-Dibromoethane | 0.020 | BDL | < 0.200 | BDL |
| Tetrachloroethene | 0.010 | BDL | < 0.200 | BDL |
| 1,1,1,2-Tetrachloroethane | 0.035 | BDL | < 0.200 | BDL |
| Chlorobenzene | 0.010 | BDL | < 0 200 | BDL |
| Ethylbenzene | 0.010 | 0.014 | 8.995 | 0.018 |
| m- and p-Xylene | 0.013 | BDL | 77.332 | BDL |
| Bromoform | 0.013 | BDL | < 0.200 | BDL |
| Styrene | 0.013 | BDL | < 0.200 | BDL |
| O-Xylene | 0.008 | 0.011 | 44.414 | BDL |
| 1,1,2,2-Tetrachloroethane | 0.010 | BDL | < 0.200 | BDL |
| 1,2,3-Trichloropropane | 0.013 | BDL | < 0.200 | BDL |
| Isopropyl benzene | 0.018 | BDL | 5.135 | BDL |
| Bromobenzene | 0.005 | BDL | < 0.200 | BDL |
| n-Propyl benzene | 0.020 | BDL | 6.053 | BDL |
| 2-Chlorotoluene | 0.008 | BDL | < 0.200 | BDL |
| 4-Chlorotoluene | 0.008 | BDL | < 0.200 | BDL |
| 1,3,5-Trimethylbenzene | 0.005 | 0.014 | 36.435 | BDL |
| tert-Butyl benzene | 0.015 | BDL | 1.171 | BDL |
| 1,2,4-Trimethylbenzene | 0.018 | BDL | 94.243 | BDL |
| sec-Butyl benzene | 0.013 | BDL | 6.844 | BDL |
| 1,3-Dichlorobenzene | 0.010 | BDL | < 0.200 | BDL |
| 1,4-Dichlorobenzene | 0.010 | BDL | < 0.200 | BDL |
| p-Isopropyl toluene | 0.010 | BDL | 5.999 | BDL |
| 1,2-Dichlorobenzene | 0.013 | BDL | < 0.200 | BDL |
| n-Butyl benzene | 0.008 | BDL | 57.475 | BDL |
| 1,2-Dibromo-3-chloropropane | 0.010 | BDL | < 0.200 | BDL |
| 1,2,4-Trichlorobenzene | 0.013 | BDL | < 0.200 | BDL |
| Naphthalene | 0.018 | BDL | 33.395 | BDL |
| Hexachlorobutadiene | 0.013 | BDL | < 0.200 | BDL |
| 1,2,3-Trichlorobenzene | 0.005 | BDL | < 0.200 | BDL |

MIDWEST ANALYTICAL SERVICES
330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

# CHAIN OF CUSTODY RECORD
AND
# REQUEST FOR ANALYSIS
(Instructions on Back of Form)

№ 22464

LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

CLIENT: 784-97E

SAMPLER NAME: Irvin G. Mossberger

PROJECT I.D.:

SAMPLER SIGNATURE: Irvin G. Mossberger

REPORTS TO BE SENT TO: Twin Ports Testing 728 Garfield Ave Irvin Mossberger Duluth MN 55802

REMARKS:

SHADED AREAS FOR LABORATORY USE ONLY

| NO. OF CONTAINERS | COMP. | GRAB | DATE | TIME | MATRIX: WATER | MATRIX: SOIL | MATRIX: OTHER | SAMPLE IDENTIFICATION: SAMPLE | SAMPLE NO. | LABORATORY ID NO. | GRO (Includes BTEX) | DRO | BTEX | VOC (465-D) | pH | Pb (Diss. or Total) | RCRA 8 METALS | BOD or CBOD | TSS | FCOL or TCOL | | | | | | | PRESERVATIVE: HCl | $HNO_3$ | $H_2SO_4$ | ICE | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | | X | 7/23/97 | 8:00 | | X | | S-1 | | [illegible] | X | X | | X | | | X | | | | | | | | | | | | | X | MeOH |
| 3 | | X | 7/23/97 | 8:25 | | X | | S-2 | | [illegible] | X | X | | X | | | X | | | | | | | | | | | | | X | MeOH |
| 1 | | | | | | | X | Trip Blank | | [illegible] | | | | X | | | | | | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| Irvin G. Mossberger | 7/23/97 9:45 | [signature] | | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| | | | | | |
| Relinquished by: (Signature) | Date / Time | [illegible] | Temperature: | Comments: | |

CHECK HERE FOR DRINKING WATER DETECTION LIMITS ☐

TURNAROUND TIME REQUIRED: ☒ NORMAL ☐ RUSH

DATE REQUIRED: 1/07/97

eder associates
A division of Gannett Fleming
ENGINEERS AND PLANNERS

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

March 2, 1998
File #34265.004 / 367-18.4

RECEIVED
MAR 4 1998
DNR SUPERIOR

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

Re: Request for Closure of Tanks S-1 and S-2, Slop Oil Release Site

Dear Mr. Hosch:

On behalf of Murphy Oil USA, Inc., Eder Associates is requesting closure from the Wisconsin Department of Natural Resources (WDNR) for the release of slop oil from tanks S-1 and S-2 at Murphy's Superior refinery. Soil affected by the releases was removed to the extent practical, and the analytical results for confirmation soil samples collected from the base of the excavated area show no petroleum volatile organic compounds (PVOCs) above applicable NR 720 residual contaminant levels (RCLs) remain. In addition, naphthalene, the polynuclear aromatic hydrocarbon (PAH) of most concern to the WDNR because of its mobility, was not present in either sample at or above the method detection limit.

## Background

On August 1, 1997, about one barrel (42 gallons) of slop oil was released from tank S-2 at the refinery. The tank was overfilled because the high-level alarm failed. Murphy began cleanup activities immediately after the release was discovered. The area affected by the release extended from the tank to a drainage way about 10 feet from the tank and then downgradient in the drainage way about 10 feet. All the pooled slop oil and the storm water in the affected area were removed with a vacuum truck. In an August 7, 1997, letter, Murphy provided the WDNR with additional details of the release and the initial cleanup activities.

On September 4, 1997, about 10 barrels (420 gallons) of slop oil were released from tank S-1 at the refinery. This release resulted when an operator left a valve to the tank open while pumping into another slop tank through a common line. Again, Murphy began cleanup activities immediately after the release was discovered. The area affected by this release extended from the tank to the drainage way about 40 feet from the tank and then downgradient in the drainage way about 50 feet. Because



Continued . . .

tank S-1 is only about 10 feet from tank S-2, much of the area affected by the release was the same as that affected by the August 1997 release from tank S-2. All the pooled material in the affected area was removed with a vacuum truck. In a September 9, 1997, letter, Murphy provided you with additional details of the release and the initial cleanup activities.

Murphy stopped using tanks S-1 and S-2 on September 4, 1997, pending an engineering evaluation to identify appropriate operational and equipment changes that will prevent future releases. These tanks still are not being used to store slop oil.

**Follow-Up Soil Excavation**

Because the area affected by the releases was immediately adjacent to tanks S-1 and S-2 and under a pipe rack that follows the drainage way, a backhoe could not be used to remove the affected soils. It is Murphy's policy to remove any visibly affected soil following a release of petroleum product, and the refinery retained a construction company to remove the contaminated soil from around the tanks and drainage way using shovels. Hand digging of this soil began on October 20 and ended on October 28, 1997. During this time, approximately 125 cubic yards of soil were removed at considerable expense to Murphy. All the accessible soil, considering the locations of the two tanks and pipe rack relative to the affected area, was removed.

The soil was stored in Murphy's contaminated soil storage building. A sample from the stockpile was collected by Twin Ports Testing and submitted to Midwest Analytical Services in Cambridge, Minnesota, for gasoline range organic (GRO), diesel range organic (DRO), RCRA metal, and volatile organic compound (VOC) analysis. A copy of the laboratory report for that sample, designated S-2, is included in Attachment A. Using the analytical data from this sample, Twin Ports Testing completed a soil treatment application and submitted it to Ms. Phyllis Holmbeck of the WDNR on November 4, 1997. The soil was subsequently transported to Lakehead Blacktop and Materials in Superior where it was thermally treated on November 10. The actual volume of soil treated was 185.4 tons.

**Confirmation Soil Sampling**

On September 23, 1997, Twin Ports Testing collected a closure soil sample (S-1) at the base of the excavated area next to tank S-1. The location of this sample corresponded to the area initially affected by the September 4th slop oil release. On October 9, 1997, Twin Ports Testing collected a closure soil sample (S-2A) at the base of the excavated area next to tank S-2. The location of this soil sample corresponded to the area initially affected by the August 1st release. Both samples were sent to Midwest Analytical Services for GRO, DRO, RCRA metals, and VOC analysis. Copies of the laboratory reports for the closure samples, S-1 and S-2A, are also included in Attachment A.

Neither of the samples contained any PVOCs above applicable NR 720 RCLs. Sample S-1 did not contain any GRO or DRO above the method detection limit of 10 mg/kg, while sample S-2A contained 76.8 mg/kg of GRO and 5,239 mg/kg of DRO.

At sites where soils are contaminated with diesel fuel or heavier petroleum products, the WDNR consider PAHs to be the contaminants of concern. As noted in NR 720.11, with the exception of naphthalene, PAH compounds are generally only of concern for direct contact due to their relatively low migration potential. Because the releases from tanks S-1 and S-2 consisted of slop oil, we believe the concentration of naphthalene in the two closure samples should be used to determine whether the cleanup actions taken by Murphy were adequate. The stockpile soil sample results show that naphthalene, at 33.4 mg/kg, was one of the major constituents of the slop oil. In contrast, neither of the two closure soil samples contained naphthalene at or above the detection limit.

**Request for Closure**

The analytical results for the two closure soil samples show that no PVOCs above applicable NR 720 RCLs remain and that there are no detectable levels of naphthalene, the WDNR's PAH compound of concern where diesel fuel or heavier petroleum products are released. The elevated level of DRO measured in the one closure sample (S-2A) is likely due to the presence of PAHs other than naphthalene. Again, due to their relatively low migration potential, NR 720.11 states that PAH compounds are generally only of concern for direct contact. Direct contact is not an issue because



Continued . . .

Mr. James A. Hosch
Wisconsin Department of Natural Resources
March 2, 1998



there would be no reason for Murphy employees to be in contact with these soils for any extended length of time.

As noted earlier, because the area affected by the releases was immediately adjacent to the two aboveground slop oil tanks and underneath an aboveground pipe rack, further excavation of soils is not practical. Although difficult and expensive, all the soil that could be reached by hand digging was removed. Also, the analytical results indicate that it is not necessary to remove additional soil to protect the environment.

For these reasons, Murphy is requesting closure from the WDNR of the Tanks S-1 and S-2 slop oil release site.

We look forward to your favorable response to this request; if you have any questions or need additional information, please contact us.

Very truly yours,

EDER ASSOCIATES

Dennis F. Kugle
Vice President

DFK/jec

cc: M. Miller (Murphy)
L. Vail (Murphy)
R. Lewandowski (DeWitt Ross & Stevens)

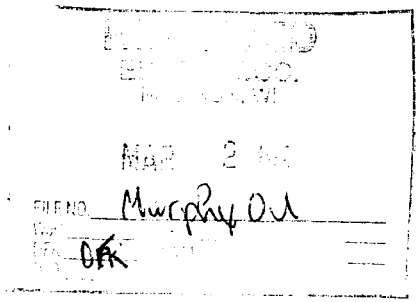
330 SC. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

**MIDWEST ANALYTICAL SERVICES**

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156

LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

November 10, 1997




Irvin Mossberger
Twin Ports Testing
1301 North 3rd Street
Superior, WI 54880

| | |
|---|---|
| Project ID: | 784-97E |
| Chain of Custody: | 22529 |
| Date Sampled: | 10-09-97 |
| Date Received: | 10-10-97 |
| Matrix: | Soil |
| Sample Identification: | |
| Lab ID: 21765 | S-2A SITE S2 |

(Closure sample for Tank S-2 8/97 slop oil release)

Samples were analyzed for GRO and DRO by the Wisconsin Modified GRO and DRO procedures and VOC by EPA Method 8021. The results are reported on the following pages.

Sincerely,

Chad Holznagel
Chemist

Brian Anderson 11/10
Brian Anderson
Inorganic Group Leader

Date Analyzed: 10-20-97

| Lab ID: | MDL/PQL (mg/kg) | 21765 S-2A (mg/kg) |
|---|---|---|
| Dichlorodifluoromethane | 0.0005/0.005 | < 0.250 |
| Chloromethane | 0.0010/0.010 | < 0.250 |
| Vinyl chloride | 0.0008/0.008 | < 0.250 |
| Bromomethane | 0.0010/0.010 | < 0.250 |
| Chloroethane | 0.0010/0.010 | < 0.250 |
| Dichlorofluoromethane | 0.0010/0.010 | < 0.250 |
| Trichlorofluoromethane | 0.0013/0.013 | < 0.250 |
| Ethyl ether | 0.0015/0.015 | < 0.250 |
| Acetone | 0.0008/0.008 | < 0.250 |
| 1,1-Dichloroethene | 0.0013/0.013 | < 0.250 |
| Methylene chloride | 0.0015/0.015 | < 0.250 |
| Allyl chloride | 0.0010/0.010 | < 0.250 |
| Trichlorotrifluoroethane | 0.0025/0.025 | < 0.250 |
| Methyl tert-butyl ether | 0.0008/0.008 | < 0.250 |
| trans-1,2-Dichloroethene | 0.0010/0.010 | < 0.250 |
| 1,1-Dichloroethane | 0.0008/0.008 | < 0.250 |
| Methyl ethyl ketone | 0.0070/0.070 | < 0.250 |
| cis-1,2-Dichloroethene | 0.0008/0.008 | < 0.250 |
| Bromochloromethane | 0.0005/0.005 | < 0.250 |
| Chloroform | 0.0005/0.005 | < 0.250 |
| 2,2-Dichloropropane | 0.0020/0.020 | < 0.250 |
| Tetrahydrofuran | 0.0015/0.015 | < 0.250 |
| 1,2-Dichloroethane | 0.0008/0.008 | < 0.250 |
| 1,1,1-Trichloroethane | 0.0010/0.010 | < 0.250 |
| 1,1-Dichloropropene | 0.0008/0.008 | < 0.250 |
| Carbon tetrachloride | 0.0010/0.010 | < 0.250 |
| Benzene | 0.0013/0.013 | < 0.250 |
| Dibromomethane | 0.0008/0.008 | < 0.250 |
| 1,2-Dichloropropane | 0.0008/0.008 | < 0.250 |
| Trichloroethene | 0.0008/0.008 | < 0.250 |
| Bromodichloromethane | 0.0010/0.010 | < 0.250 |
| cis-1,3-Dichloropropene | 0.0008/0.008 | < 0.250 |
| Methyl isobutyl ketone | 0.0018/0.018 | < 0.250 |
| trans-1,3-Dichloropropene | 0.0005/0.005 | < 0.250 |

BDL = Below Detection Limit, MDL = Method Detection Limit, PQL = Practical Quantitation Limit

**MIDWEST ANALYTICAL SERVICES**

330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

# CHAIN OF CUSTODY RECORD
AND
# REQUEST FOR ANALYSIS
(Instructions on Back of Form)

NO 22529

LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660

CLIENT: Twin Ports Testing
SAMPLER NAME: Irvin Mossberger
PROJECT I.D.: 784-97E
SAMPLER SIGNATURE: Irvin D Mossberger
REPORTS TO BE SENT TO: Irvin Mossberger Twin Ports Testing 1301 N 3rd St. Superior, WI 54880
REMARKS: WI samples

SHADED AREAS FOR LABORATORY USE

| NO. OF CONTAINERS | COMP. | GRAB | DATE | TIME | MATRIX: WATER | MATRIX: SOIL | MATRIX: OTHER | SAMPLE IDENTIFICATION: SAMPLE | SAMPLE NO. | LABORATORY I.D. NO. | GRO (Includes BTEX) | DRO | BTEX | VOC (465-D) | pH | Pb (Diss. or Total) | RCRA 8 METALS | BOD or CBOD | TSS | FcoL or TcoL | PRESERVATIVE: HCl | HNO3 | H2SO4 | ICE | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | | X | 10/9/97 | 3:24 | | X | | S-2A | | [redacted] | X | X | | X | | | X | | | X | | | | | |

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
|---|---|---|---|---|---|
| Irvin D Mossberger | 10/10/97 9:05 | Timothy A. Buck | Timothy A. Buck | | |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature) |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Temperature: | Comments: |
| | | [illegible] | 10/10/97 | | |

CHECK HERE FOR DRINKING WATER DETECTION LIMITS ☐

TURNAROUND TIME REQUIRED:
☒ NORMAL ☐ RUSH
DATE REQUIRED: 10/28/97

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary

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

April 6, 1998

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

SUBJECT: Request for closure of August 1, 1997 Slop Oil Spill at Tank S-1
and September 4, 1997 Slop Oil Spill at Tank S-2

Dear: Mr. Miller:

The Department is in receipt of a request for closure submitted on Murphy Oil's behalf by Dennis Kugle of Eder Associates. The letter requests closure of two spills, an August 1, 1997 spill at Tank S-1, and a September 4, 1997 spill at Tank S-2. The Department has communicated with Murphy on a number of occasions regarding the requirement for an NR 716 field investigation of significant spills at Murphy's Superior Refinery. We consider the August 4, 1997 spill one of the significant spills for which an investigation is required. This letter is provided to inform you that we will not consider closure of this site until Murphy performs an NR 716.11 Wis. Adm. Code investigation, and submits an NR 716.15 Wis. Adm. Code report to the Department.

The report states ". . . no petroleum volatile organic compounds (PVOCs) above applicable NR 720 residual contaminant levels (RCLs) remain." Please note s. NR 720.02 Wis. Adm. Code states that Chapter NR 720 only applies after an investigation has been conducted at a site.

Mr. Kugle states that "direct contact is not an issue because there would be no reason for Murphy employees to be in contact for any extended length of time." Without further information we cannot agree that direct contact is not a concern for the remaining PAH contamination at the site. The information we require to evaluate this issue is the extent and degree of PAH contamination. Additionally, your consultant must follow the NR 720 Wis. Adm. Code process for determining a site specific residual contaminant level for the PAH's found during the investigation. Further information on PAH residual contaminant levels is available at the Department's website at http://www.dnr.state.wi.us/org/aw/rr/errhw/.

Once an investigation is conducted, you may wish to consider that the results of chemical analysis of the soil sample S-2A for diesel range organics was 5239 mg/kg. This is above the 250 milligram per kilogram soil standard for DRO set forth in NR 720.09(4)(a)2. Wis. Adm. Code for soils having hydraulic conductivity 1 x $10^{-6}$ cm/s or less. Because of this exceedance, s. NR 720.09(4)(b) Wis. Adm. Code requires that you follow the process in NR 720.19 Wis. Adm. Code for determining a soil cleanup standard specific to the site.

In his discussion of NR 720 residual contaminant levels for soil, Mr. Kugle refers to naphthalene as "the WDNR's PAH of concern where diesel fuel or heavier petroleum products are released." Your consultant is incorrect, the Department does not have one single PAH of concern, the Department is concerned with all PAH's in soil which may be above acceptable residual contaminants levels.

Finally, please submit an NR 716.09 Wis. Adm. Code workplan for an investigation as requested in previous correspondence.

If you have any questions regarding this letter please feel free to call me at (715)392-0802.

Sincerely,
NORTHERN REGION

James A. Hosch
Spills Coordinator

cc: Gary Kulibert - Rhinelander
Mick Michaelsen - Spooner
Linda Meyer - LC/5
Dennis Kugle, Eder Associates, 8025 Excelsior Drive, Madison WI 53717-1900
R. Lee Vail, Murphy Oil, PO Box 61780, New Orleans, LA 70161-1780
Richard Lewandowski, DeWitt Ross & Stevens,
Capitol Square Office, Two East Mifflin Street, Suite 600, Madison, WI 53703-2865

Murphy Oil  S-1 and S-2

April 6, 1998 @ 10:25 a.m.

Hosch left message that he would need an additional 10 days to review closure of S-1 and S-2 Slop oil spills.

eder associates
A division of Gannett Fleming
ENGINEERS AND PLANNERS

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

RECEIVED
APR 20 1998
DNR SUPERIOR

April 17, 1998
File #34265.004 / 367-18.4

James A. Hosch
Wisconsin Department of Natural Resources
1705 Tower Avenue
Superior, WI 548880

Re: Murphy Oil USA, Inc.
Tanks S-1 and S-2 Slop Oil Release Site

Dear Mr. Hosch:

This letter responds to your April 6, 1998, letter to Mr. Mark Miller of Murphy Oil USA, Inc., which in turn responded to Eder Associates' March 2, 1998, request for closure (under NR 726.07 and pursuant to meeting the "no further response" criteria under NR 708.09) of the slop oil releases from tanks S-1 and S-2 at Murphy's Superior, Wisconsin, refinery. In your letter, you stated that the Wisconsin Department of Natural Resources (WDNR) will not consider closure of the slop oil release site until Murphy performs an NR 716.11 investigation and submits an NR 716.15 report to the WDNR. You also took issue with some of the information presented in our March 2nd closure request letter. Our responses follow.

We do not believe the slop oil release should be governed by NR 716 for the reasons discussed below. As stated in our March 2nd letter to you (copy attached), Murphy began cleanup activities immediately after the slop oil releases from tanks S-1 and S-2 occurred. All pooled slop oil on the low-permeability clay in the affected areas was removed with a vacuum truck. After that, visibly affected clay soil was removed from the spill areas by an outside contractor using shovels to hand dig affected soils. Over a nine-day period, at considerable cost to Murphy, four men hand-dug 125 tons of affected soil from areas adjacent to the two tanks and under a low-hanging pipe rack. The soil dug from under the pipe rack was placed on plastic snow sleds that were dragged to a nearby truck. We consider these activities to be an immediate, non-emergency action, as described in NR 708.05(3). That is, as the responsible party, Murphy took all necessary, non-emergency immediate actions to halt the discharge of the hazardous substance and to contain, treat, or remove the discharged hazardous substance, environmental media or both, in order to minimize the harmful effects of the discharge to the air, land, and waters of the state and to restore the environment to the extent practicable. This was a non-emergency immediate action because:



Continued . . .

1. The discharge did not pose an imminent threat to public health, safety, and welfare and the environment.

2. The responses to the two releases did not result in the excavation and disposal, treatment, or storage of more than 200 cubic yards of contaminated soil (less than 100 cubic yards per site).

3. Murphy responded immediately after the slop oil release was discovered, and Murphy notified the WDNR of the hazardous substance discharge immediately, in accordance with requirements of Chapter NR 706.

It is important to note that, as stated in NR 708, the principal distinction between a non-emergency immediate action and an interim action is that a site investigation is required in conjunction with an interim action, but not with a non-emergency immediate action. Even though this was a non-emergency immediate action not requiring any investigation, Murphy collected two closure samples for laboratory analyses to confirm that soil containing petroleum-related compounds of concern, due to their mobility, had been removed. Non-emergency immediate actions are closed out using the "no further action" criteria in NR 708.09, rather than the criteria in NR 726.

We believe the information included in our March 2, 1998, letter addressed the "no further response action" criteria stated in NR 708.09. We offer the following additional clarification to selected criteria:

- The potential for the slop oil release to migrate was minimal because of the low-permeability clay at the site and the absence of any nearby surface water bodies, drains, or storm sewers.

- All soil with visual or olfactory evidence of being affected by the slop oil was removed.

- There are no groundwater receptors at the site, and direct contact is not an issue because the excavated area was filled back in with clean material.



Continued . . .

- The present and anticipated future land use is industrial.

- The environment has been restored to the extent practicable because all the accessible soil, considering the location of the two tanks and pipe rack relative to the affected area, was removed by hand digging using shovels.

In summary, since Murphy took a non-emergency, immediate action to address the release of slop oil from tanks S-1 and S-2 and has submitted the equivalent of a "no further response action" report that addresses the criteria in NR 708.09, a NR 716 investigation is not required for these spills. These spills are no different than the hundreds of others that occur every year in Wisconsin where cleanup consists solely of soil removal and closure sampling.

In your comments on our March 2nd closure request, you stated that the generic residual contaminant levels (RCLs) in NR 720 only apply after an investigation has been conducted at a site. It has been our experience working on scores of hazardous substance release sites since the code was promulgated in 1994 that the WDNR applies the NR 720 generic RCLs to sites whether or not an investigation has been conducted. Underground storage tank assessment sampling is the most common example of an instance in which NR 720 RCLs are applied when no investigation work has been done. If either of the two closure samples cited in our March 2nd letter had contained any petroleum volatile organic compounds (PVOCs) above the NR 720 generic RCLs, we feel sure you would have noted this in your response letter to point out that standards were not met.

To further clarify the direct contact issue, after the affected soil was excavated, the area was filled in with clean material. We do not believe that any PVOCs or PAHs at levels of environmental significance remain in the soils at the site of the spills, but even if they did, the clean backfill provides an effective barrier to any direct contact with that soil.

We acknowledge that one of the two closure samples contained DRO above the 250 mg/kg RCL set forth in NR 720. However, as noted in the report, all affected soil was removed to the extent practicable, and the closure samples did not contain any PVOCs above NR 720 RCLs or any detectable levels of naphthalene, the most mobile of the PAH compounds.



Continued . . .

I would also like to correct an error in your April 6th letter, in which you misquoted me. You stated that I referred to naphthalene as "the WDNR's PAH of concern where diesel fuel or heavier petroleum products are released." This is inaccurate; if you will refer to page 3 of the attached copy of my March 2nd letter, you will see that I actually wrote:

> At sites where soils are contaminated with diesel fuel or heavier petroleum products, the WDNR considers PAHs to be the contaminants of concern. As noted in NR 720.11, with the exception of naphthalene, PAH compounds are generally only of concern for direct contact due to their relatively low migration potential.

As noted earlier in this letter, direct contact is not an issue at these two spill sites. Because of this, we believe the concentration of naphthalene, the most mobile PAH, that is measured in the two closure samples should be used to determine whether cleanup actions taken by Murphy were adequate. The laboratory results for the sample collected from the contaminated soil stockpile show that naphthalene, at 33.4 mg/kg, was one of the major constituents of the slop oil. In contrast, neither of the two closure soil samples contained naphthalene at or above the detection limit.

In summary, because Murphy took non-emergency immediate actions to clean up the slop oil releases from tanks S-1 and S-2 to the extent practicable and because no PVOCs or naphthalene, the most mobile PAH, were present in the closure samples, a formal NR 716 investigation is not necessary, nor is additional remedial action warranted. Murphy took immediate, environmentally responsible actions to address these releases. An investigation or further remedial action would do nothing to further the protection of the environment.

In addition, Murphy and Eder believe the geological conditions at its Superior site justify levels that are much less restrictive than the generic cleanup levels found in NR 720. The pond closure soil sampling and low hazard exemption work done at the Superior site, the results of which were provided to the WDNR, support this statement. For these reasons, we conducted modeling to develop a site-specific benzene cleanup standard for the Murphy site; the results of this modeling were submitted as a formal report to the WDNR in March 1998. That report indicated the intention to develop site-specific cleanup standards for compounds associated with diesel fuel and heavy oils once Murphy receives the WDNR's concurrence on the benzene modeling report. Until then,



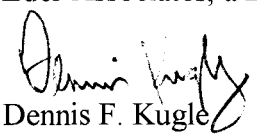
Continued

Murphy plans no further work at the tanks S-1 and S-2 slop oil release site or any other historical spill site on the property.

If you have any questions or comments on this response letter, please call me. If you prefer, we can discuss this letter at our upcoming meeting in Spooner, which will also be attended by Linda Meyer, Carol McCurry, and Mick Michaelson.

Very truly yours,

Eder Associates, a Division of Gannett Fleming, Inc.



Dennis F. Kugler
Vice President

DFK/jec
Enc.

cc: Gary Kulibert (WDNR/Rhinelander)
Mick Michaelson (WDNR/Spooner)
Linda Meyer (WDNR/Madison)
Lee Vail (Murphy)
Mark Miller (Murphy)
Kevin Melnyk (Murphy)
Rick Lewandowski (DeWitt, Ross & Stevens)

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary

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

May 29, 1998

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

SUBJECT: Murphy Oil USA, Inc. August 1, 1997 Slop Oil Spill at Tank S-1 and September 4, 1997 Slop Oil Spill at Tank S-2

Dear: Mr. Miller:

This letter is in response to correspondence from Mr. Dennis Kugle of Eder Associates dated April 17, 1998. Mr. Kugle's letter was sent in response to a Department determination that the September 4, 1997 discharge of slop oil at Tank S-2 requires an NR716 Wis. Adm. Code site investigation. In his letter, Mr. Kugle goes over much of the same ground which has already been covered in our previous meetings and correspondence. Please refer to Mick Michaelsen's letter dated December 12, 1997 and its attachments.

Mr. Kugle states: "It is important to note that, as stated in NR 708, the principal distinction between a non-emergency immediate action and an interim action is that a site investigation is required in conjunction with an interim action, but not with a non-emergency action."

We do not agree with Mr. Kugle's interpretation of NR 708. Section NR 708.07 Wis. Adm. Code states that the Department may direct responsible parties to take additional response actions, including a site investigation in accordance with the requirements of ch. NR 716 Wis. Adm. Code. The Department has directed Murphy to perform such a site investigation for this site, as well as for other spills on the refinery property.

Section NR716.05 (1) states:

> "Responsible parties shall conduct a site investigation that meets the requirements of this chapter when site-specific or facility-specific information indicates that soil, sediment, groundwater surface water, air or other environmental media at a site or facility may have become contaminated."

The result from sample S-2A for diesel range organics was 5239 mg/kg clearly indicating residual contamination in the soil. The extent and degree of that residual contamination must be defined before an argument can be made that no further action is required.

Once a completed site investigation report is submitted, Murphy can propose what levels of contaminants can remain at the site, what soil can be left in place until access is gained, site specific residual contaminant levels, and engineering and institutional controls. However, until this discharge is characterized by an adequate site investigation, all the statements regarding human health, safety, and the environment are merely speculative in nature because it cannot definitively be determined what degree or extent of contamination remains at the site.