eder associates
consulting engineers, p. c.

OFFICES:
Locust Valley, NY
Madison, WI
Ann Arbor, MI
Augusta, GA

04-16-047258 3 Add

February 1, 1993
File #367-18.1

6/10

Mr. Steven LaValley
Solid & Hazardous Waste Specialist
Wisconsin Dept. of Natural Resources
1705 Tower Avenue
Superior, WI 54880

Re: Murphy Oil USA, Inc.
Work Plan for Tank #25 Release

Dear Mr. LaValley:

Thank you for your January 21, 1993, conditional approval of Eder Associates Consulting Engineers, P.C.'s (Eder) confirmation soil sampling work plan, dated November 12, 1992. That work plan is related to the June 1992 release of no. 2 fuel oil from tank #25 at the Murphy Oil USA, Inc. (Murphy) facility in Superior. Mr. Bill Gustafson of Murphy is currently arranging to have Twin Ports Testing collect the soil samples. We will notify you before samples are collected in case you want to be present during the sampling.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES CONSULTING ENGINEERS, P.C.

Dennis F. Kugle

Dennis F. Kugle

DFK/skk

cc: W. Gustafson
R. Lewandowski
J. Hallett
J. Dumas
J. Giesick
B. Rowe

RECEIVED
FEB 02 1993
DNR SUPERIOR

4L367-18.009

8000 EXCELSIOR DRIVE, SUITE 302, MADISON, WISCONSIN 53717-1914 • (608) 836-1500 • FAX (608) 831-3337

State of Wisconsin
Department of Natural Resources

TOXIC AND HAZARDOUS SPILL REPORT

F 4400-91 Rev. 6-86

.te Div. Emergency Gov't. (608) 266-3232
U.S. Nat'l. Response Center (800) 424-8802
Chemtrec/Pesticides/Chlorine (800) 424-9300

Spill ID Number 04-16-047753 closed
Y Y M M D D 0-99

Date of Incident	Day of Week	Time of Incident	Reported By (Name)	Telephone Number
06-10-92	Wednesday	6:30 ☒ A.M. ☐ P.M.	Mark Mille	(715) 398-3533
Date Reported	**Day of Week**	**Time Reported**	**Agency or Firm Reporting**	**Reported thru Div. Emergen. Gov't.**
		☐ A.M. ☐ P.M.	Murphy Oil	☒ Yes ☐ No

Substance Involved	Quantity	Units	Person or Firm Responsible
No. 6 fuel oil	10,500	gallons	Murphy Oil
Substance Involved	**Quantity**	**Units**	**Contact Name** / **Telephone Number**
			Jim Kowitz / (715) 398-3533

Physical Characteristics
☐ Solid ☒ Liquid Color dark
☐ Semisolid ☐ Gas Odor oil

Address — Street or Route
PO BOX 2066

City, State, Zip Code
Superior WI 54880

Cause of Incident
Ruptured gasket

Exact Location Description (intersection, mileage, etc.)
Murphy Oil near tank # 25

County Location
Douglas

¼¼, ¼, Section, Town, Range
__, __, __, T__ N, R__

DNR Dist NWD **DNR Area** Brule

Groundwaters Affected ☐ Yes ☒ No ☐ Potential

Surface Waters Affected ☐ Yes ☒ No ☐ Potential

Name of Surface Water

Date District Notified	Day of Week	Time District Notified
06-11-92	Thursday	10:00 ☒ A.M. ☐ P.M.

District Person Notified Marcha Johnson
Telephone Number (715) 635-4051

Date Investigated	Day of Week	Time Investigated
06-11-92	Thursday	9:00 ☒ A.M. ☐ P.M.

Person Investigating S. LaValley, J. Davidowski
Telephone Number (715) 392-7988

Action Taken By DNR
☐ No Action Taken ☒ Investigation ☐ Supervise/Conduct Cleanup
☐ Spiller Required To Take Action; Type
☐ Contractor Hired By DNR; Name
☐ Amount Recovered
☐ 29.29 Enforcement

Other Agencies on Scene
Local
State DNR
Federal

Action Taken By Spiller
☐ No Action Taken ☐ No Notification ☒ Investigate
☒ Containment; Type in dyke by tank 25
☒ Cleanup; Method vac trucks
☐ Amount Recovered
☐ Monitor
☒ Contractor Hired; Name O.S.I.
☐ Other Action

Spill Location
☐ Industrial Facilit
☐ Gas/Service Stati
☐ Ag Coop/Facility/
☐ Other Small Busi
☐ Public Property (
☐ Utility Co., Powe
☐ Private Property
☐ Pipeline, Termina
☐ Transportation A
☐ Transportation A
☐ Construction, Exc
☒ Other Refin

DNRing - three3 week old tank 6/19
6/22

Spilled Substance Des
☐ Air
☒ Soil
☐ Groundwater
☐ Surface Water
☐ Storm Sewer
☐ Sanitary Sewer
☐ Contained/Recovered
☐ Other

Person Filing This Report (print name)
Steve L. Valley / Joe Davidowski

Signature Steve LaValley / J.E.D.
Date Signed 06-12-92

Additional Comments:
This spill was reported to us by Emergency Government on 6-11-92 after Steve LaValley asked John about it. Murphy Oil never did call Superior DNR to report this spill. Pump was engaged while the pipe still blocked resulting in the blow-out of pipe seal. OSI vacuumed up all free product. Murphy will send a remediation report.
LW

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Superior Office

1705 Tower Avenue
Superior, Wisconsin 54880
TELEPHONE 715-392-7988
FAX 715-392-7993

August 13, 1992

Mr. Bill Gustafson
Murphy Oil U.S.A.
2400 Stinson Ave.
Superior, WI 54880

Dear Mr. Gustafson:

I have received and reviewed the analytical results of a sample labeled tank #25 spill. It is my understanding that you would like the Department to decide if the material is a solid waste or a hazardous waste. From the results submitted to me dated July 1, 1992, the material would be a solid waste.

Murphy Oil needs to submit documentation to the Department showing that the site has been remediated to the extent practicable. This documentation must be submitted in a timely manner.

If I can be of additional help, or if you have any questions regarding this letter, please call me at (715)392-7831.

Sincerely,

Steven LaValley
Solid and Hazardous Waste Specialist

SAL:jk
cc: Dave Kufura - Spooner
Mary Bell Pratt - Spooner
Tim Mulholland - SW/3
Superior Files

RECEIVED
AUG 14 1992
NORTHWEST

(1)

APPLICATION TO TREAT OR DISPOSE OF PETROLEUM CONTAMINATED SOIL
ASPHALT PLANT OR OTHER TYPE OF THERMAL TREATMENT UNIT

Form 4400-149

This form is required by the Department of Natural Resources for leaking underground storage tank sites to ensure that petroleum contaminated soil is treated or disposed o;f in compliance with NR 500-540, NR 158, and NR 419, 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), and 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. Department approval of this form is required prior to site remediation, except for soils to be buried in landfills.

DIRECTIONS: 1) Complete parts I and II. 2) Submit the application to the DNR project manager for approval. 3) Have the treatment facility complete part III of the approved form after the soil has been treated. 4) Return the ORIGINAL form to the DNR project manager. 5) Keep a copy for your files.

ALL SITES MUST COMPLETE PART I.

Part I. Source of Soil

Site/Facility Name: Murphy Oil USA, Inc.

Site I.D. # (for DNR use only):

Site Address: Stinson Avenue

Contact Name: Mr. Bill Gustafson

City, State, Zip Code: Superior, WI 54880

1/4, 1/4, Section, Township, and Range: NW 1/4, NW 1/4, Section 36, T49N, R14W

The information on this form is accurate to the best of my knowledge.

Signature of Soil Generator: Dennis J. Kugle for Bill Gustafson

Telephone Number (include area code): (218) 722-1911 (Murphy)

Consulting Firm: Eder Associates Consulting Engineers

Contact: Dennis Kugle

Telephone Number: (608) 836-1500

Estimated Volume Contaminated Soil: 400 Tons/cubic yards (circle one)

Type of Petroleum Contamination (Circle):

Gasoline Diesel Fuel/#2 Fuel Oil

Other #6 Fuel Oil (TANK 25)

Soil Type (USCS)

- ___ sand (SP, SW)
- ___ silty/clayey sands (SM, SC)
- ___ silt (ML, MH, OL)
- X clay (CI, CH, OH)
- ___ gravel (GC, GM, GP, GW)
- ___ peat (PT)

Distance to Nearest Residence/Business 1/4 mile

Contaminant concentration:

One screened sample for each 15 yds³ and one laboratory analysis for each 300 yds³ of contaminated soil when the field instrument *registers contamination* OR one laboratory analysis for each 100 yds³ when the field instrument *does not register contamination* on soil shown to be contaminated during the site investigation/excavation or stockpiling. PLEASE ATTACH A TABLE LISTING RESULTS OF BOTH FIELD SCREENING AND LAB ANALYSES, AND INCLUDE SUPPORTING LAB REPORTS, IN ADDITION TO THE TPH AND BENZENE INFORMATION REQUESTED BELOW. NOTE: DILHR requires a minimum of 3 laboratory samples on excavated soil for PECFA claims.

Total Benzene in soil to be remediated (attach calculations) <0.005 lbs

Total Recoverable Petroleum Hydrocarbons (TRPH) in soil to be remediated (attach calculations) 22,764 lbs

Total TPH as _____

Rev. 5-91

SLV

ATTACH EMISSIONS CALCULATIONS

(a/1,000,000) x (2,800 lbs/yd^3) x b = benzene emission in lbs., where a = benzene concentration of soil sample in ppm or mg/kg dry weight basis, and b = amount of contaminated soil in yds^3. NOTE: This calculation can also be used to estimate TPH emissions by substituting TPH concentration (ppm or mg/kg) for "a". It may also be used to calculate VOCs.

Part II: Proposed Treatment Facility

Name of Plant: Lakehead Blacktop and Materials of Superior, Inc.

Plant number and Model: Madsen 4000# Batch Plant

Contact: Mr. Joseph Kummes

DNR Facility I.D. No. 816037640

Address (or location of portable plant): 5800 Albany Avenue Superior WI

Distance to Nearest Residence/Business: 5,000 feet

LEAVE BLANK - DEPARTMENT OF NATURAL RESOURCES USE ONLY

Application Concurrence:

Air Management _____ Date _____

Project Manager _____ Date _____

Comments: (Point of approval previously given - additional from site) See attached -

THIS SECTION TO BE COMPLETED BY THE ASPHALT/THERMAL UNIT PROCESSING THE CONTAMINATED SOIL
AFTER PROCESSING IS COMPLETED

Part III

WDNR Air Pollution Control Permit Number

Actual Volume of Soil Treated (tons/cubic yards): 7 cy

Date of transport to plant: September 23, 1993

Date of treatment: November 6, 1993

Transporter Name: Murphy Oil USA, Inc. (Mary Kaas Trucking, Inc.)

Transporter License Number: 11041.

Circle One: Roasted and Incorporated Roasted Only

Total Benzene emissions in pounds for this batch (apply 50% destruction factor if no after burner is used) (99% w/afterburner): 0.001 LBS

Benzene emissions to date for this plant (including this batch) for this calendar year: 0.1356 LBS

Signature of Treatment plant representative: Paul E. Pettman

Telephone Number at Plant: 715 392 1989

POST BURN SAMPLE RESULTS: COMPLETE ONLY FOR SOILS NOT INCORPORATED!

(One representative sample for each 100 cubic yards-not composites)

Sample Number _____ _____ _____ _____

TPH _____ _____ _____ _____

DNR APPROVAL IS REQUIRED BEFORE USING AS COMMON FILL.

Date of backfilling or use as common fill _____ Location of fill site ____1/4____1/4____S____T____R

MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

TABLE 2

CALCULATION OF TRPH AND BENZENE MASS VOLUMES

Mass of Soil to be Thermally Treated:

400 yd^3 x 2,800 lb/yd^3 = 1,120,000 lbs

Mass of TRPH:

TRPH concentration in stockpiled soil =

$$\frac{18{,}300\ ppm + 20{,}500\ ppm\ 21{,}600\ ppm + 20{,}900\ ppm}{four\ samples} = 20{,}325\ ppm$$

$$\frac{20{,}325\ ppm}{1{,}000{,}000} \times 1{,}120{,}000\ lbs = 22{,}764\ lbs\ of\ TRPH$$

Mass of Benzene:

Benzene concentration in stockpiled soil =

$$\frac{<0.004\ ppm + <0.008\ ppm + <0.008\ ppm + <0.002\ ppm}{four\ samples} = <0.005\ ppm$$

$$\frac{0.005\ ppm}{1{,}000{,}000} \times 1{,}120{,}000\ lbs = <0.006\ lbs\ of\ benzene$$

$\frac{0.005}{1{,}000{,}000}$ X 2800 X 7 yds = 0.098 lbs

99% factor = 0.001 lbs

difference used

DFK\4L367-18.006

MURPHY OIL USA, INC.

SUPERIOR, WISCONSIN

TABLE 1

TANK #25 - NO. 6 FUEL OIL RELEASE

SOIL STOCKPILE SAMPLE RESULTS

Parameter	Result	Regulatory Limit	Units
Total Recoverable Petroleum Hydrocarbons	18,300	NA	µg/g
	20,500	NA	µg/g
	21,600	NA	µg/g
	20,900	NA	µg/g
Benzene	<4.2	NA	ng/g
	<8.5	NA	ng/g
	<8.4	NA	ng/g
	<2.2	NA	ng/g
Flashpoint	>200	NA for solids	°F
Reactive Cyanide	<50	NA	mg/kg
Reactive Sulfide	<125	NA	mg/kg
TCLP METALS			
Arsenic	<0.10	5.0	mg/l
Barium	<0.01	100.0	mg/l
Cadmium	<0.01	1.0	mg/l
Chromium	<0.01	5.0	mg/l
Lead	<0.10	5.0	mg/l
Selenium	<0.10	1.0	mg/l
Silver	<0.01	5.0	mg/l
Mercury	<0.05	0.2	mg/l
TCLP VOLATILES			
Benzene	<0.50	0.5	mg/l
Carbon Tetrachloride	<0.5	0.5	mg/l
Chlorobenzene	<100	100	mg/l
Chloroform	<6.0	6.0	mg/l
1,4-Dichlorobenzene	<7.5	7.5	mg/l

TABLE 1 (CONTINUED):

Parameter	Result	Regulatory Limit	Units
1,2-Dichloroethane	<0.5	0.5	mg/l
1,1-Dichloroethylene	<0.7	0.7	mg/l
Methyl Ethyl Ketone	<200	200	mg/l
Tetrachloroethylene	<0.70	0.7	mg/l
Trichloroethylene	0.50	0.5	mg/l
Vinyl Chloride	0.20	0.2	mg/l
TCLP SEMI-VOLATILES			
o-Cresol	<200	200	mg/l
m-Cresol	<200	200	mg/l
p-Cresol	<200	200	mg/l
Pentachlorophenol	<100	100	mg/l
2,4,5-Trichlorophenol	<400	400	mg/l
2,4,6-Trichlorophenol	<2.0	2.0	mg/l
2,4-Dinitrotoluene	<0.13	0.13	mg/l
Hexachlorobenzene	<0.13	0.13	mg/l
Hexachlorobutadiene	<0.5	0.5	mg/l
Hexachloroethane	<3.0	3.0	mg/l
Nitrobenzene	<2.0	2.0	mg/l
Pyridine	<5.0	5.0	mg/l
TCLP PESTICIDES			
TCLP pesticide values were all below the practical quantification limits which are equal to the regulatory limits.			

Note:

NA means not applicable

MURPHY OIL USA, INC.
SUPERIOR, WISCONSIN

TANK #25
#6 FUEL OIL

TABLE 2

CALCULATION OF TRPH AND BENZENE MASS VOLUMES

Mass of Soil to be Thermally Treated:

400 yd^3 x 2,800 lb/yd^3 = 1,120,000 lbs

Mass of TRPH:

TRPH concentration in stockpiled soil =

$$\frac{18{,}300\ ppm + 20{,}500\ ppm\ 21{,}600\ ppm + 20{,}900\ ppm}{four\ samples} = 20{,}325\ ppm$$

$$\frac{20{,}325\ ppm}{1{,}000{,}000} \times 1{,}120{,}000\ lbs = 22{,}764\ lbs\ of\ TRPH$$

Mass of Benzene:

Benzene concentration in stockpiled soil =

$$\frac{<0.004\ ppm + <0.008\ ppm + <0.008\ ppm + <0.002\ ppm}{four\ samples} = <0.005\ ppm$$

$$\frac{0.005\ ppm}{1{,}000{,}000} \times 1{,}120{,}000\ lbs = <0.006\ lbs\ of\ benzene$$

1388 yds x 2800 lbs/yd3 = 3,886,400 Lbs

$\frac{0.005\ ppm}{1{,}000{,}000}$ x 3886,400 Lbs = 0.200 Lbs

99% Factor = 0.198

Amount used = 0.020 Lbs

DFK\4L367-18.006