

August 4, 1994

Ms. Pamela A. Mylotta
Hydrogeologist, Environmental Repair Program
Wisconsin Department of Natural Resources
4041 North Richards Street
Milwaukee, WI 53212

RE: Tecumseh Products Company
Grafton, Wisconsin, Plant

Dear Pam:

Representatives of the Wisconsin Department of Natural Resources (WDNR), Tecumseh Products Company, and RMT, Inc., met on July 20, 1994, at your office to discuss the comments contained in your letter dated April 26, 1994, to Tecumseh Products regarding a series of underground storage tank-related documents that E&K Hazardous Waste Services and Fox Environmental Services had submitted. This letter has been prepared on behalf of Tecumseh Products to document that meeting and to respond to the WDNR's concerns raised in your letter.

Comment 1: The latest soil samples, taken in the area of the concrete pad storage area, east of the Stoddard solvent UST, document the presence of chlorinated volatile organic compounds (VOCs) in the soil at the site. The extent and degree and the possible source(s) of this contamination must be evaluated.

Response: As agreed to at the meeting, the scope of an investigation of vadose zone contamination in the source area will be evaluated on the basis of the results of the investigation of the extent of chlorinated solvents in the groundwater (see also the response to Comment 2).

Comment 2: The extent and degree of groundwater contamination must be determined. One or more piezometers are needed at the site to provide information about the vertical movement of contaminants in the saturated zone.

Response: A Workplan to Evaluate the Extent of Chlorinated VOCs in Groundwater at the Tecumseh Products Company, Grafton, Wisconsin, Facility (Workplan) is enclosed for the WDNR's review. It is our understanding that you verbally approved the technical approach and scope of the investigation at our meeting, but that we should not proceed with the field program until you have reviewed and approved the field methods (these are presented in Appendices A and B of the Workplan). The scope of the investigation includes up to seven borings, which will be drilled to the top of the bedrock, and in which vertical profiling of groundwater quality using a portable gas chromatograph will be performed. Three piezometers will be installed to evaluate vertical gradients and the horizontal flow direction and gradient in the deeper groundwater flow system.



RMT, INC. — MADISON, WI
744 HEARTLAND TRAIL = 53717-1934
P.O. Box 8923 = 53708-8923
608/831-4444 = 608/831-3334 FAX

Comment 3: Tecumseh must submit a hazardous waste determination for the soil and groundwater contaminated by chlorinated VOCs, which is subject to removal from the subsurface. The determination shall comply with Section NR 610.05, Wisconsin Administrative Code.

Response: Tecumseh Products is unaware of the precise origin of the chlorinated solvents detected in the soil and groundwater. It therefore cannot determine whether the media has been contaminated by a listed hazardous waste. In addition, Tecumseh Products has no documented evidence of any spill since at least 1980. Further, it does not believe the contaminated groundwater and soil exhibit the characteristics of ignitability, reactivity, or corrosivity. Accordingly, the only characteristic that needs to be evaluated is toxicity. Tecumseh Products intends to perform TCLP tests on the soil to determine if it exhibits a toxicity characteristic.

Comment 4: A more comprehensive map of the site is needed. A complete layout of the facility features should be provided, and the location of the nearest water supply well(s) should be shown if possible. Any underground utilities should also be shown on this map.

Response: A map of the Grafton facility with the underground utility lines is shown on Figure 2 in the enclosed Workplan. The Village of Grafton municipal water supply wells located in the vicinity of the plant are shown on Figure 1 in the Workplan.

Comment 5: Although several groundwater monitoring wells have been installed at the site, no water table measurements have been provided to the WDNR. The elevation of all monitoring wells installed at the site must be established, based on a local USGS reference point. The groundwater elevation should be determined for each well on a regular basis, and a water table map should be prepared and submitted each time groundwater elevations are measured. If this has not been done for the existing wells, it must be accomplished prior to submitting a scope of work for additional investigation.

Response: The water levels at the site have been measured quarterly since May 1993. The most recent round of water level measurements was taken on June 9, 1994. The water table elevations for this date are shown on Figure 3 in the Workplan, which also shows our interpretation of the water table surface. The water level in MW-3 has been anomalously, but consistently, higher than that measured in the other wells. The reference elevations of each of the wells were rechecked to rule out the possibility of a data manipulation error. Our hypothesis to explain this situation is that the vitrified clay sanitary sewer line, which reportedly is at least 40 years old, and that runs about 15 feet north of MW-3, may be leaking and, if so, causing a localized groundwater mound near MW-3. The Workplan includes the collection of a sample from MW-3 for the analysis of parameters that would be indicative of sanitary sewer water.

Comment 6: Based on the letter report by E&K regarding the gasoline USTs in the southeast part of the plant, dated 12/21/88, soil samples were apparently taken from the over-excavated area on 12/16/88. The results of these samples were not submitted to the

WDNR. Contamination was noted when the first two tanks were removed, but no documentation of the investigation or remediation of that area was submitted. This information should be submitted for review. If you will be seeking PECFA reimbursement for the excavation done in this area, you must provide adequate documentation for both the presence of contamination and its appropriate remediation.

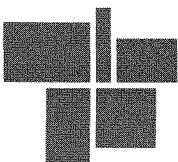
Response: Four gasoline USTs were removed from the southeast side of the facility (shown on Attachment 1) during 1988 and 1989. They were as follows:

<u>TA #</u>	<u>WI Tank ID#</u>	<u>Size (Gallons)</u>	<u>Contents</u>	<u>Date Removed</u>
5	45040-41	500	Gasoline	10-18-89
6	45040-36	1,000	Gasoline	10-18-89
7	45040-38	300	Gasoline	12-06-88
8	45040-43	300	Gasoline	12-06-88

TA8 was removed first. A release from this tank was confirmed and reported to the WDNR. Over-excavation of the contaminated soil to the north was halted though, due to the presence of TA7. TA7 was determined to be nonessential to facility operations and was removed to further facilitate over-excavation of contaminated soil. The TA7 excavation showed signs of gasoline contamination, but the source may have been TA8 (E&K December 6, 1988, letter). The combined TA7/TA8 tank pits were over-excavated to the extent practicable. The total excavated area was 20 feet long by 8 feet deep by 8 feet wide. Sixty-five cubic yards of contaminated soil were removed and hauled to the Omega Landfill.

Four samples (1 from each wall of the excavation) were collected from the combined TA7/TA8 excavation on December 16, 1988; however, the analytical results for these samples cannot be located in Tecumseh Products' files. Tecumseh Products has requested the analytical reports from E&K.

TA5 and TA6, which were nested together, were removed approximately 10 months after TA7 and TA8. Four samples from the TA5/TA6 excavation were collected. The results were all less than 4 ppm TPH. Sample 4925 was located on the western wall of the combined TA5/TA6 excavation. Tecumseh Products is waiting for a response from Superior Environmental (formerly E&K) and/or CBC. The results will be forwarded to Pam Mylotta upon receipt by Tecumseh Products.



As indicated during our meeting on July 20, 1994, at present, Tecumseh Products does not intend to pursue PECFA reimbursement for the above-mentioned tank removal activities. Tecumseh Products' objective is to properly close out these former tank sites. Pam Mylotta indicated that, if for some reason the December 16, 1988, analytical results cannot be found, additional data or possibly deed restrictions would be required for closure.

Comment 7: The type of oil in the 11,000-gallon "oil" UST was not identified. It is difficult to determine whether appropriate analyses were done to investigate the release from the piping of this tank. Additionally, the report dated October 1992, which documented the remedial action taken for this tank area, indicated that approximately 9 cubic yards of soil were removed, but did not provide documentation as to the disposition of this soil.

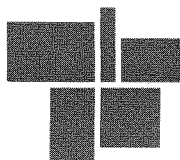
Response: The oil in the 11,000-gallon UST was virgin crankcase motor oil that is used in the process of manufacturing compressors. Attachment 2 includes documents relating to the profiling of the contaminated soil for disposal at the Parkview Landfill.

Comment 8: Contaminated soil remains in the area of the kerosene UST. The reports submitted for this tank area have not adequately defined the extent and degree of this remaining contamination, and have not provided adequate arguments for leaving this contaminated soil in place.

Response: Great difficulty was encountered during attempts to install soil borings in and around this tank excavation (which is located in a small maintenance addition to the original facility) because of space limitations for the drill rig. After three attempts with three different drill rigs, three soil borings were installed around the tank excavation to a depth of 10 feet. One boring was located to the south, one to the east, and one to the north. Soil DRO concentrations were all less than the detection limits. One soil boring that was located in the tank excavation had a maximum soil DRO concentration of 390 ppm.

The majority of the soil contamination is along the western wall of the tank excavation, which was formerly the exterior wall of the original facility. Contamination exists underneath the footing of this wall. It was not possible to place soil borings on the western side of the old wall because of space limitations in the maintenance shop. In the kerosene UST closure report, dated October 1993, Fox Environmental estimated the total volume of impacted soil to be less than 30 cubic yards.

After discussing the efforts undertaken to address the extent of contamination during our July 20, 1994, meeting, it was agreed that Tecumseh Products would continue to monitor groundwater in this area for kerosene constituents. A final decision as to whether additional work is needed will depend on the groundwater quality data collected during the next two quarters.



Ms. Pamela A. Mylotta
August 4, 1994
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Since Kerry DeKeyser of Tecumseh Products and RMT worked together in preparing these responses to your comments, please call me if you have any questions about the responses to Comments 1, 2, 4, or 5, and Kerry if you have questions about the responses to Comments 3, 6, 7, or 8. We would appreciate receiving your comments on, or your approval of, the field methods contained in the Workplan on or before August 11, 1994, as we are making arrangements to begin drilling on Monday, August 15, 1994.

Sincerely,

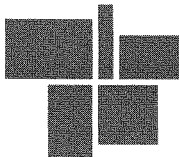
Linda Hicken

Linda E. Hicken, P.E.
Senior Project Manager

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Enclosures

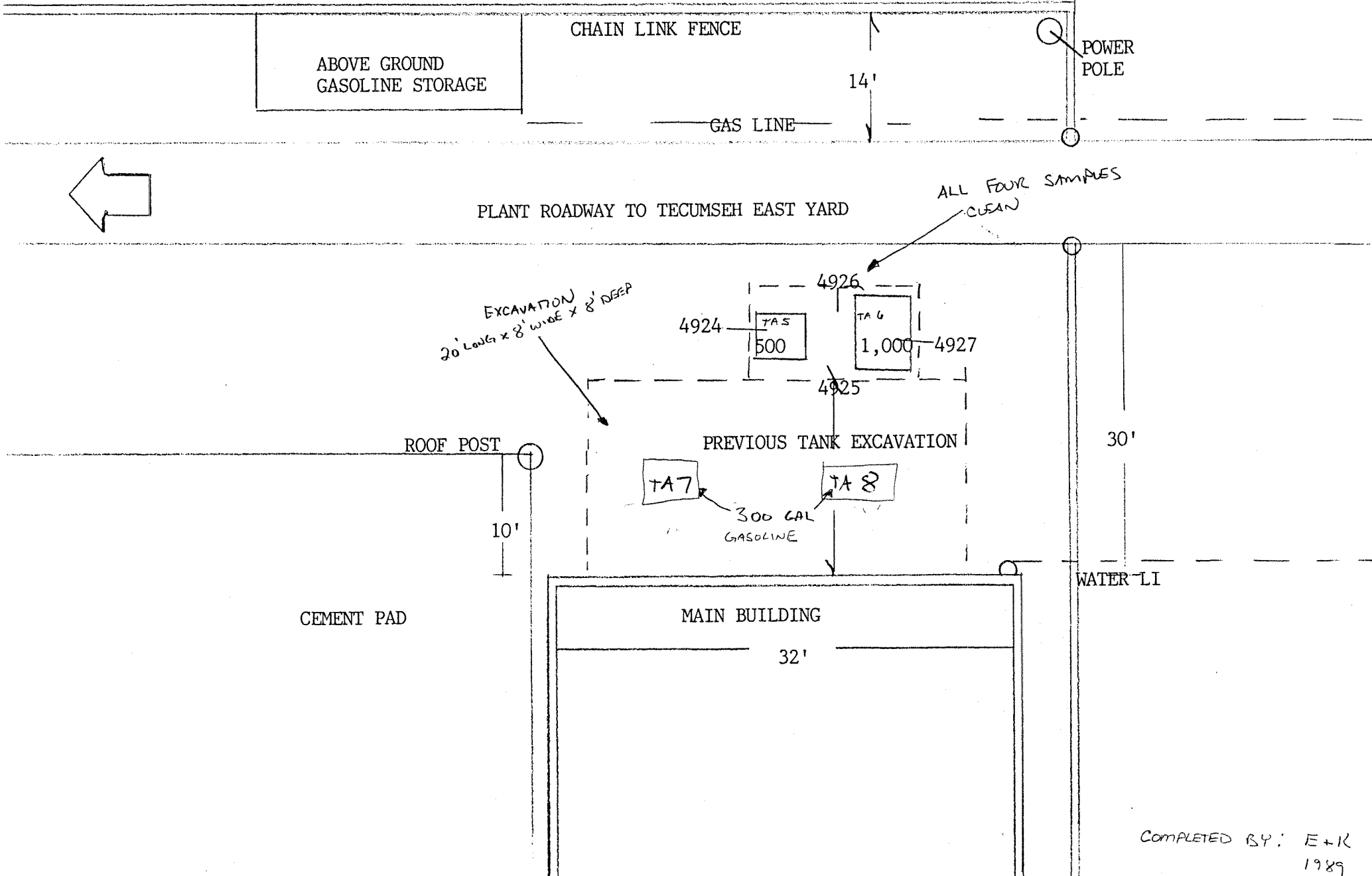
cc: Kerry DeKeyser, Tecumseh Products
Bruce McCuaig, Tecumseh Products



ATTACHMENT 1

LOCATIONS OF THE FOUR FORMER GASOLINE UNDERGROUND STORAGE TANKS

TECUMSEH PRODUCTS 900 NORTH STREET GRAFTON, WI 53024
500 GALLON LEADED GAS
1,000 GALLON UNLEADED GAS
EAST SIDE OF MAIN PLANT
M SAMPLE # 4924, 4925, 4926, 4927



COMPLETED BY: E+K
1989

ATTACHMENT 2

**DOCUMENTS RELATED TO THE PROFILING OF THE
MOTOR OIL-CONTAMINATED SOIL FOR DISPOSAL AT THE PARKVIEW LANDFILL**



August 17, 1993

Mr. Kerry De Keyser, CHMM
Tecumseh Products Company
Engine Manufacturing Division
1604 Michigan Avenue
New Holstein, WI 53061

Our Re: 92513L23

Re: Waste Profile Sheets
Stoddard Solvent, Kerosene & Motor Oil Tanks
Grafton, Wisconsin

Dear Kerry:

The enclosed paperwork has been prepared in order to receive approval for landfill disposal of the petroleum contaminated soils at the subject site. There are three separate profile packages for the three soil piles. Your signature or another representative of Tecumseh is necessary on the first two pages which have been highlighted. Please return the entire package to me as soon as possible.

Fox Environmental appreciates the opportunity to be of service to you. If you have any questions please contact me at (414) 332 - 5857.

Sincerely,

Fox Environmental Services, Inc.

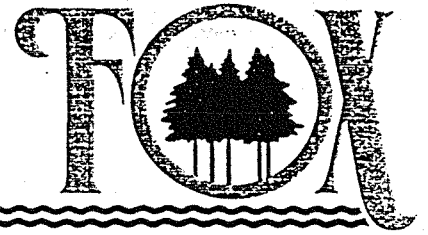


Foster Johnston, REP, CHCM
Vice President

enclosure

fox environmental services, inc.

5150 NORTH PORT WASHINGTON ROAD • MILWAUKEE, WI 53217
EXECUTIVE SUITE 101 • (414) 332-5857



August 24, 1993

Ms. Peggy Slind
Waste Management of Wisconsin, Inc.
Omega Hills/Parkview Landfill Management Center
N96 W13503 County Line Road
Menomonee Falls, WI 53051

Our Re: 92513L24

Re: Landfill Disposal Forms
Tecumseh Products Company
900 North Street
Grafton, Wisconsin

Dear Ms. Slind:


Enclosed you will find three sets of forms required by Waste Management of Wisconsin to gain approval for the disposal of three shipments of petroleum contaminated soil from 900 North Street in Grafton, Wisconsin. In addition, there are applications for soil disposal (Form 4400-120) to be filed with the WDNR.

Once disposal is complete, please fill out Part 3 of the 4400-120's and return to this office.

If you have any questions please contact me at (414) 332 - 5857.

Sincerely,

Fox Environmental Services, Inc.



Foster Johnston, REP, CHCM
Vice President

Enclosure

cc: K. De Keyser

fox environmental services, inc.

5150 NORTH PORT WASHINGTON ROAD • MILWAUKEE, WI 53217
EXECUTIVE SUITE 101 • (414) 332-5857



Waste Management of Wisconsin, Inc.

Parkview RDF / Metro RDF
N96 W13475 County Line Road
Menomonee Falls, WI 53051
414/253-8620 FAX: 414/253-1322

TERMS AND CONDITIONS OF DISPOSAL SERVICE AGREEMENT
NON-HAZARDOUS WASTE DISPOSAL

The above-named disposal facility and corporation are referred to herein as "Facility" and "Contractor," respectively.

CUSTOMER'S BILLING NAME
Tecumseh Products Company **BILL TO: Fox Environmental Services, Inc.**

CUSTOMER'S BILLING ADDRESS
900 North Street 5150 N Port Washington Road, Suite 101

CITY, STATE/PROVINCE, ZIP/POSTAL CODE
Grafton, WI 53024 Milwaukee, WI 53217

CUSTOMER CONTACT
Kerry DeKeyser Foster Johnston

PHONE NUMBER
(414) 377-2700 414/332-5857

BANK REFERENCE

BANK CONTACT **PHONE NUMBER**

Credit may be extended to Customer after appropriate credit information, in a form acceptable to Contractor, has been presented to and reviewed by Contractor. Contractor may, in its sole discretion, require a collateral deposit (in the form of cash, letter of credit or surety bond) acceptable to Contractor. It is the responsibility of the Customer to keep said collateral deposit current. Collateral deposits, where utilized, may be adjusted when there is an increase in disposal tonnage and/or rates. Collateral deficiencies must be corrected within 30 days of notice of required adjustment.

This is a legally binding contract, and Contractor agrees to provide and Customer agrees to accept the waste disposal services subject to the terms and conditions specified in this contract.

ESTIMATED MONTHLY AMOUNT OF WASTE FOR DISPOSAL:
Approximately 50 cubic yards of motor oil contaminated soil
(Include units e.g., cubic yards, pounds, kilograms)

SPECIAL INSTRUCTIONS:
Follow all conditions for disposal stated on the attached Special Waste Management Decision (Profile No. MW003537) Section II B, also see section I for the approved facility. All loads must be manifested.

INCIDENTAL SPECIAL WASTE TYPES AND AMOUNTS:

THE TERMS AND CONDITIONS ON REVERSE SIDE AND THE ATTACHED CONTRACTOR'S DEFINITION OF SPECIAL WASTE ARE PART OF THIS AGREEMENT.

CUSTOMER
Authorized Signature: *Kerry DeKeyser*
Title: *Env. Mgr.* 9/9/93

CONTRACTOR
Representative: *Paula Bush*
Title: *Division President*



MIDWEST REGION GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

Waste Profile Sheet Code

MW 003537

Proposed Management Facility Parkview RDF

This form is to be used to comply with the requirements of a waste agreement.

INSTRUCTIONS FOR COMPLETING THIS FORM ARE ATTACHED

Decision Expiration Date: 1 1

A. WASTE GENERATOR INFORMATION

1. Generator Name: Tecumseh Products Company 2. SIC Code: 3519
 3. Facility Address (site of waste generation): 900 North Street
 4. Generator City, State: Gratton Wisconsin 5. Zip/Postal Code: 53024
 3. State ID #: N/A
 7. Technical Contact: Foster JOHNSTON 8. Phone: (414) 332-5857

B. WASTE STREAM INFORMATION (See Instructions)

1. Name of Waste: Petroleum Contaminated Soil (Motor Oil)
 2. Process Generating Waste: Leaking Underground Storage Tank Piping
 3. Amount/Units: 50 cubic yards 4. Type A Type B
 5. Special Handling Instructions/Supplemental Information: N/A

6. Incidental Waste Types and Amounts: None

C. TRANSPORTATION INFORMATION

1. Method of Shipment: Bulk Liquid Bulk Sludge Bulk Solid Drum/Box Other
 2. Supplemental Shipping Information: None

D. PHYSICAL CHARACTERISTICS OF WASTE (See Instructions) (Omit for Type B)

1. Color <u>TAN</u>	2. Does the waste have a strong incidental odor? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes; if so, describe: _____	3. Physical State @ 70°F/21°C: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Powder <input type="checkbox"/> Other: _____	4. Layers <input type="checkbox"/> Multi-layered <input type="checkbox"/> Bi-layered <input checked="" type="checkbox"/> Single Phased	5. Specific Gravity Range <u>NT</u>	6. Free Liquids: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Volume: _____ %
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7. pH: ≤2 >2-4 4-7 7 7-10 10- <12.5 ≥12.5 Range NA

8. Flash Point: None <140°F/60°C 140 - 199°F/60 - 93°C ≥200°F/93°C Closed Cup Open Cup

E. CHEMICAL COMPOSITION (Omit for Type B)

1. <u>Soil</u> RANGE (MIN-MAX) <u>99-100</u> % <u>Wood</u> 0-1 % <u>Plastic</u> 0-1 % _____ - % _____ - % _____ - % _____ - % _____ - % _____ - % Total: <u>102</u> %	2. Does the waste contain any of the following? (provide concentration if known): <table style="width: 100%;"> <tr> <td></td> <td style="text-align: center;">NO</td> <td style="text-align: center;">or</td> <td style="text-align: center;">LESS THAN</td> <td style="text-align: center;">or</td> <td style="text-align: center;">ACTUAL</td> </tr> <tr> <td>PCBs</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td></td> <td style="text-align: center;"><input type="checkbox"/> < 50 ppm</td> <td></td> <td style="text-align: center;">_____ ppm</td> </tr> <tr> <td>Cyanides</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td></td> <td style="text-align: center;"><input type="checkbox"/> < 50 ppm</td> <td></td> <td style="text-align: center;">_____ ppm</td> </tr> <tr> <td>Sulfides</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td></td> <td style="text-align: center;"><input type="checkbox"/> < 50 ppm</td> <td></td> <td style="text-align: center;">_____ ppm</td> </tr> <tr> <td>Phenols</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td></td> <td style="text-align: center;"><input type="checkbox"/> < 50 ppm</td> <td></td> <td style="text-align: center;">_____ ppm</td> </tr> </table>		NO	or	LESS THAN	or	ACTUAL	PCBs	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm	Cyanides	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm	Sulfides	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm	Phenols	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm
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PCBs	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm																										
Cyanides	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm																										
Sulfides	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm																										
Phenols	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm																										

The total composition must be greater than or equal to 100%. (.0001% = 1 ppm or 1 mg/l)

APPLICATION TO TREAT OR DISPOSE OF PETROLEUM CONTAMINATED SOIL

Form 4400-120

This form is required by the Department of Natural Resources for leaking underground storage tank sites (Wis. Adm. Code NR 419). Failure to complete and submit this form 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, 144.469, 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.

ALL SITES MUST COMPLETE PART I

Part I. Source of Soil

Site/Facility Name

Tecumseh Products Company

Site ID. # (for DNR use only)

Site Address

900 North Street

Contact Name

Kerry DeKeyser

City, State, Zip Code

Grafton Wisconsin 53024

1/4, 1/4, Section, Township, and Range

SW 1/4, SE 1/4, S 13 10 N, 21 E

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

NOTE: Waste disposed of in landfills may incur future liability.

Signature

Kerry DeKeyser

Telephone Number (include area code)

414 898 5711

Consulting Firm

Contact

Telephone Number

Fox Environmental Services Inc.

Foster Johnston

(414) 332-5857

Estimated Volume Contaminated Soil

30

Tons (cubic yards) (circle one)

Soil Type (USCS)

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

Type of Petroleum Contamination (Circle):

Gasoline Diesel Fuel/#2 Fuel Oil

Other Motor Oil

Contaminant concentration:

One screened sample per 15 yds³ and one laboratory analysis per 300 yds³ of contaminated soil when the PID registers contamination OR one laboratory analysis per 100 yds³ when the PID does not register contamination on soil shown to be contaminated during the site investigation/excavation or stockpiling. PLEASE ATTACH A TABLE SHOWING THE RESULTS OF BOTH FIELD SCREENING AND ANALYSES, IN ADDITION TO PROVIDING THE FOLLOWING INFORMATION.

Total Benzene in soil to be remediated (attach calculations)

<0.00009 lbs

Total Petroleum Hydrocarbons in soil to be remediated (attach calculations)

11.4 lbs

Total TPH as

DRO

Distance to Nearest Residence/Business

ATTACH EMISSIONS CALCULATIONS

(a/1,000,000) x (2,800 lbs/yd³) x b = benzene emission in lbs., where

a = benzene concentration of soil sample in ppm or mg/kg dry weight basis

b = amount of contaminated soil in yds³

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.

Assume disposal of an estimated 30 cubic yards (yd³), then;

BENZENE CALCULATION

$$\frac{<0.0011 \text{ mg/kg} \times 2800 \text{ lbs/yd}^3 \times 30\text{yd}^3}{1,000,000} = <0.00009 \text{ lbs}$$

DRO CALCUALTION

$$\frac{136 \text{ mg/kg} \times 2800 \text{ lbs/yd}^3 \times 30\text{yd}^3}{1,000,000} = 11.4 \text{ lbs}$$