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July 26, 1993

Mr. George A. Volpentesta
Wisconsin Department of Natural Resources
Southeast District Office
2300 North Dr. Martin Luther King, Jr. Drive
P.O. Box 12436
Milwaukee, WI 53212

RE: Groundwater Remediation Project
Chrysler Corporation--Kenosha Main Plant
Triad Engineering Project No. W943046

Dear Mr. Volpentesta:

Per our June 31, 1993, telephone conversation, information pertaining to an application for air discharge related to an air stripping system to be installed as part of a groundwater remediation project at the Chrysler Corporation--Kenosha Main Plant is presented herein. The Wisconsin Department of Natural Resources (WDNR) project manager is Ms. Pam Mylotta, Environmental Response and Repair.

BACKGROUND AND PROPOSED TREATMENT METHOD

The Chrysler Corporation--Kenosha Main Plant is located in the City of Kenosha, Wisconsin. The plant property is generally bounded by 50th Street to the north, 60th Street to the south, 30th Avenue to the west, and 23rd Avenue to the east. The site location is depicted on Figure 1. The site is located approximately 100 feet from the nearest residence. The residents in that area are connected to the city water system.

Triad Engineering Incorporated (Triad) was retained by Chrysler Corporation to investigate several locations within the Kenosha Main Plant property. Based on site investigation results several areas exhibiting groundwater impacts occur on the property. The groundwater requiring treatment in these areas primarily contains gasoline range organics (GRO) and chlorinated hydrocarbons. Five groundwater recovery systems have been installed in order to effectively recover impacted groundwater. Three of the systems (Sumps 4, 5, and 6) require treatment prior to discharge to the City Sanitary Sewerage System (Figure 2). The concentrations of constituents measured in samples taken from these recovery systems are presented in Tables 1, 2, and 3.

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The proposed groundwater treatment remedy entails pumping the groundwater from Sumps 4, 5, and 6 to a centralized treatment facility to be located in an existing building near Sump 4. The proposed treatment system would entail a low profile tray-type air stripper which will be capable of producing a groundwater effluent containing less that 1 parts per million (ppm) of total chlorinated hydrocarbons and less than 5 ppm of GRO per City of Kenosha requirements. The groundwater will be discharged into a city sanitary sewer which will convey it to the Kenosha POTW. A temporary system may be installed at the Sump 6 location while the permanent system is designed.

The anticipated groundwater treatment flow rate for each sump and the associated daily and yearly maximum mass of each constituent that could be discharged into the air is identified on Tables 1, 2, and 3. The mass of each constituent released into the air is a worst case scenario based on two conservative assumptions: 1) The calculations assume that 100 percent of the volatile organic compounds (VOCs) in the groundwater will be stripped; 2) The initial groundwater VOC concentrations will remain constant over the treatment period.

Following the startup of the groundwater stripping treatment system, grab samples will be taken from each sump (influent) and centralized influent location on a monthly basis and the effluent from the system will be sampled weekly per City of Kenosha request. The sampling frequency may change based on recovery system performance. The samples will be analyzed for GRO (State of Wisconsin Modified GRO Method) and total chlorinated hydrocarbons (EPA Method 8021).

PROJECT SCHEDULE

The anticipated startup date for the groundwater air stripping system is November of 1993. The temporary system at Sump 6 may be installed during August of 1993. The permanent system is expected to stay in service for two to five years following startup.

I trust this information meets your needs. If you have any questions or comments, please do not hesitate to call.

Sincerely,

TRIAD ENGINEERING INC.

Richard J. Binder
Project Manager/Hydrogeologist

RJB:slr
Enclosure
W943046/943046-C.wpm

cc: Ms. Pam Mylotta, Wisconsin Department of Natural Resources
Mr. Gregory Rose, Chrysler Corporation--Environmental and Energy Affairs
Mr. Jack Bugno, Chrysler Corporation--Kenosha Main Plant
Ms. Jeanne Ramponi, Triad Engineering Incorporated

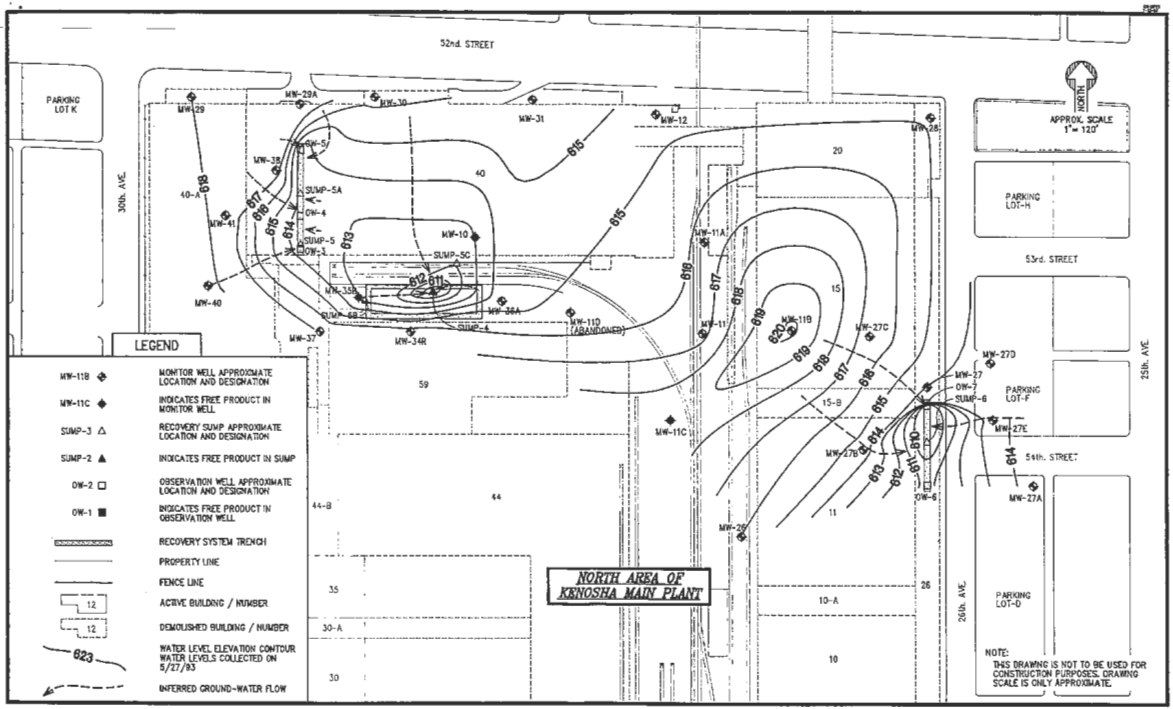

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FIGURE 2
CHRYSLER MOTORS CORPORATION
GROUND-WATER RECOVERY SYSTEM
LOCATIONS AND WATER TABLE MAP

TABLE 2

CHRYSLER GROUNDWATER CONTAMINATION CONCENTRATIONS

SUMP 5 AT 4 GPM FLOW RATE

CONSTITUENT	AVERAGE (1) Concentration (ug/l)	MAXIMUM lbs/day	MAXIMUM lbs/yr
Chloroethane	110	.5300	1.93
1,1,–Dichloroethane	21	.001	0.368
cis–1,2–Dichloroethene	330	.0159	5.79
Ethylbenzene	21	.0053	1.93
Methylene Chloride	140	.0067	2.45
Toluene	1200	.0576	21.04
1,1,1–Trichloroethane	29	.0014	0.51
Trichloroethene	1000	.048	17.53
Vinyl Chloride	190	.0091	3.33
O–Xylenes	55	.0026	0.96
m & p Xylenes	180	.0086	3.15

SUMP 6 AT 6 GPM FLOW RATE

CONSTITUENT	Concentration (ug/l)	MAXIMUM lbs/day	MAXIMUM lbs/yr
Chloroform	13	0.0009	0.3419
1,1,–Dichloroethane	27	0.0019	0.71
cis–1,2–Dichloroethane	650	0.0468	17.10
TRANS–1,2–Dichloroethena	250	0.0180	6.57
Methylene Chloride	140	0.010	3.68
Trichloroethene	4300	0.310	113.1
Vinyl Chloride	140	.0101	3.68
1,1–Dichloroethene	3.3	.0002	.087
1,1–Dichloropropene	0.9	.0001	.0237

TABLE 3

CHRYSLER GROUNDWATER CONTAMINATION CONCENTRATIONS
COMBINED GROUNDWATER FLOWS FROM SUMPS 4, 5, AND 6

CONSTITUENT	AVERAGE (1) Concentration (ug/l)	MASS LOADING OF CONSTITUENTS INTO THE AIR lbs/yr
Benzene	2100	184.1
n–Butylbenzene	32.5	2.85
Chloroethane	54.1	4.74
Chloroform	11.4	1.00
1,1,–Dichloroethane	29.7	2.60
cis–1,2–Dichloroethane	104.9	9.2
Ethylbenzene	392.1	34.37
Isopropylbenzene	17.4	1.53
p–Isopropyltoluene	365.0	32.00
Methylene Chloride	164.9	14.46
Naphthalene	65.0	5.7
n–Propylbenzene	37.5	3.29
Toluene	1490.1	130.63
1,1,1–Trichloroethane	23.3	2.04
Trichloroethene	1519.0	133.17
1,2,4,–Trimethylbenzene	375.1	32.88
1,3,5–Trimethylbenzene	85.0	7.45
Vinyl Chloride	157.7	14.02
O–Xylenes	206.0	18.06
m & p Xylenes	986.1	86.45
Cis 1,2–Dichloroethene	261.1	22.89
Trans–1,2–Dichloroethene	74.9	6.57
1,1–Dichloroethene	1.0	.087
1,1–Dichloropropene	0.3	0.24

(1) Average Concentration of Constituents Combination of Three Groundwater Collection Sumps

TABLE 1

CHRYSLER GROUNDWATER CONTAMINATION CONCENTRATIONS
SUMP 4 AT 10 GPM FLOW

CONSTITUENT	Conc ug/l	lbs/day	Sump 4 lbs/yr
Benzene	4200	.504	184.1
n--Butylbenzene	65	.0078	2.85
Chloroethane	64	.0077	2.81
Chloroform	15	.0018	0.66
1,1,–Dichloroethane	51	.0061	2.23
cis–1,2–Dichloroethane	210	.0252	9.2
Ethylbenzene	740	.0889	32.44
Isopropylbenzene	35	.0042	1.53
p–Isopropyltoluene	730	.0877	32.00
Methylene Chloride	190	.0228	8.33
Naphthalene	130	.0156	5.70
n–Propylbenzene	75	.0090	3.29
Toluene	2500	.3002	109.59
1,1,1–Trichloroethane	35	.0042	1.53
Trichloroethene	58	.007	2.54
1,2,4,–Trimethylbenzene	750	.0901	32.88
1,3,5–Trimethylbenzene	170	.0204	7.45
Vinyl Chloride	160	.0192	7.01
O–Xylenes	390	.0468	17.10
m & p Xylenes	71900	.2282	83.29
Total Xylenes	4500	.5404	197.25

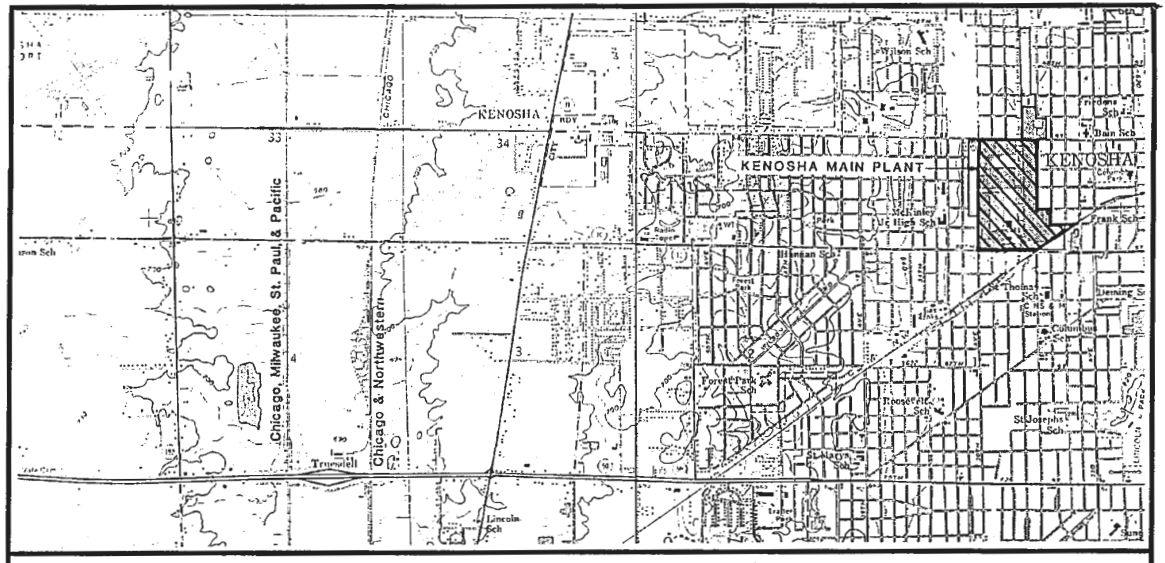

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FIGURE 1
CHRYSLER MOTORS CORP.
KENOSHA MAIN PLANT
SITE LOCATION AND LOCAL TOPOGAPHY