



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

164779

JUL 26 1991

REPLY TO ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Notice of Administrative Order for
the Waste Disposal Engineering Site.

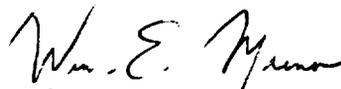
Dear Respondent:

The U.S. Environmental Protection Agency has issued an Administrative Order to you pursuant to Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601 et. seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 (CERCLA). A copy of the Order is enclosed.

The Order outlines certain activities required for conducting a Remedial Design/Remedial Action consistent with the remedy selected in the Record of Decision for the Waste Disposal Engineering Site located in the City of Andover, Anoka County, Minnesota. Appendix D of the Order is list of Respondents.

If you have any comments or questions concerning this Order, please contact Mr. Stuart Hersh, of the Office of Regional Counsel at (312) 886-6235.

Sincerely yours,

for 
David A. Ullrich, Director
Waste Management Division

Enclosure



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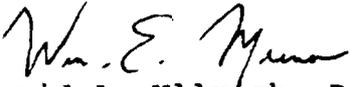
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of the issuance of this Order as required by Section 106(a) of CERCLA, 42 U.S.C. Section §9606(a).

2. This Order directs Respondents to undertake remedial design and remedial action activities for the WDE site located in Andover, Minnesota, in response to an imminent and substantial endangerment to public health or welfare arising from the release or threat of a release of hazardous substances from the WDE site (the "Facility", as specifically defined in Section III, paragraph 7.F. of this Order). This Order neither limits nor compromises the U.S. EPA's ability to issue subsequent Orders, or take other actions, to address any additional response action required at the WDE site. The actions required by this Order are to implement response actions, as defined under Sections 101(25) and 104 of CERCLA, 42 U.S.C. §9601(25) and §9604, identified in EPA's Record of Decision as defined in Section III below, and the approved Response Action Final Design (RAFD) Report as defined in Section III below.

II.

PARTIES BOUND

3. This Order shall apply to and be binding upon each Respondent identified in Appendix D, their successors, and assigns. Respondents are jointly and severally responsible for carrying out all activities required by this Order. Failure of one or more Respondents to comply with all or any part of this Order shall not in any way excuse or justify noncompliance by any other Respondent. No change in the ownership, corporate status, or other control of any Respondent shall alter any Respondent's responsibilities under this Order.

4. Respondents shall provide a copy of this Order to any prospective owners or successors of the Facility, as Facility is defined in paragraph 7.F. below, prior to the transfer of a controlling interest in Respondent's assets, property rights, or stock to the prospective owner or successor. Respondents shall provide a copy of this Order to each contractor, sub-contractor, laboratory, or consultant retained to perform any Work under this Order, on the date such services are retained. Respondents shall also ensure that a copy of this Order is provided to each person who represents, in any capacity, any Respondent with respect to the Site or the Work and shall ensure that all contracts and subcontracts entered into hereunder are conditioned upon performance of the Work in conformity with the terms of this Order. With regard to the activities undertaken pursuant to this Order, each contractor and subcontractor shall be deemed to be directly related by contract to each of the Respondents within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. Section 9607(b)(3). Notwithstanding the terms of any contract, Respondents are responsible for compliance with this Order and for ensuring that all contractors, subcontractors and agents comply with this Order, and perform all Work in accordance with this Order.

5. Within ten (10) days after the date of issuance of this Order, each Respondent that owns real property which comprises any part of the Site shall record a copy or copies of this Order in the appropriate governmental office where land ownership and transfer records are filed or recorded in such manner so as to ensure that

notice is provided to third parties of the issuance and terms of this Order with respect to all such parcels and properties. Within twenty (20) days after the effective date of this Order, said Respondents shall provide notice of such recording and indexing to U.S. EPA.

6. Not later than sixty (60) days prior to any transfer of any property interest in any real property included within the Site, Respondents shall submit a true and correct copy of all transfer document(s) to U.S. EPA, and shall identify the transferee by name, principal business address and effective date of the transfer.

III.

DEFINITIONS

7. Unless otherwise expressly provided herein, terms used in this Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in the statute or its implementing regulations. Whenever terms listed below are used in this Order or in the documents attached to this Order or incorporated by reference into this Order, the following definitions shall apply:

A. "Administrative Order" or "Order" shall mean this Order and all appendices and exhibits hereto.

B. "Architect" or "Engineer" shall mean the person, company or companies retained by the Respondents to prepare the construction plans and specifications and to implement the remedial action required pursuant to this Order, the Record of Decision (ROD), the Response Action Plan (RAP), and the approved Response Action Final

Design (RAFD) Report . The ROD, RAP, and RAFD Report are attached to this Administrative Order as Appendices A, B, and C, respectively, and incorporated herein. Each architect or engineer shall be qualified to do those portions of the work for which it is retained.

C. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499.

D. "Contractor" shall mean the company or companies retained by the Respondent to undertake and complete the work required by this Administrative Order. Each contractor and subcontractor shall be qualified to do those portions of the work for which it is retained.

E. "Day" shall mean a calendar day. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday or Federal holiday, the period shall run until the end of the next working day.

F. "Facility" shall mean the "facility" as that term is defined at Section 101(9) of CERCLA, 42 U.S.C. §9601(9) including, but not limited to the Site as defined below, where hazardous substances have been deposited, stored, disposed of, or otherwise placed, or otherwise came to be located.

G. "Hazardous substance" shall have the meaning provided in Section 101(14) of CERCLA, 42 U.S.C. §9601(14).

H. "MPCA" shall mean the Minnesota Pollution Control Agency.

I. "National Contingency Plan" or "NCP" shall mean the National Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. §9605, codified at 40 CFR Part 300, including any amendments thereto.

J. "Paragraph" shall mean a portion of this Order identified by an arabic numeral.

K. "Parties" shall mean the U.S. Environmental Protection Agency and the Respondents.

L. "Project Coordinator" or "PC" shall mean the person designated by the Respondents to coordinate, monitor, and direct the implementation of the remedial activities at the Facility.

M. "Response Action Final Design Report" or "RAFD Report" shall mean the report dated June 6, 1988, prepared by the Respondents under the 1984 Consent Order, as modified and approved by U.S. EPA and MPCA, including any supplements to the RAFD. The RAFD Report and supplements to the RAFD is an enforceable part of this Order and is attached hereto as Appendix C.

N. "Remedial Action Plan" or "RAP" shall mean the plan for implementation of the Remedial Design and Remedial Action at the Facility, and any subsequent amendments thereto. The RAP is an enforceable part of this Order and is attached hereto as Appendix B.

O. "Record of Decision" or "ROD" shall mean the EPA Record of Decision signed on December 1987, by the Regional Administrator, U.S. EPA Region V attached hereto and incorporated herein as Appendix A. The Record of Decision is the decision document

representing the selected remedial action for the Waste Disposal Engineering Facility.

P. "Remedial Action" or "RA" shall mean those activities to be undertaken by Respondents to implement the final plans and specifications submitted by Respondents pursuant to the (Amended) RD/RA Work Plan approved by U.S. EPA including any additional activities required under of this Order.

Q. "Remedial Design" or "RD" shall mean those U.S. EPA approved activities to plan the implementation of the Remedial Action.

R. "Respondents" shall mean the parties who are named in Appendix D to this Administrative Order.

S. "Response Costs" shall mean all costs, including direct costs, indirect costs, and accrued interest, incurred by the United States to perform or support response actions at the Facility.

T. "Section" shall mean a portion of this Order identified by a roman numeral and includes one or more paragraphs.

U. "Section 106 Administrative Record" shall mean the Administrative Record which includes documents considered or relied upon by U.S. EPA in preparation of this Order. The Section 106 Administrative Record Index is a listing of all documents included in the Section 106 Administrative Record, and is attached hereto as Appendix E.

V. "Site" shall mean that property located within the City limits of Andover, Anoka County, Minnesota that was operated as a landfill for municipal, commercial and industrial waste from 1963

through 1983 and known as the former Waste Disposal Engineering, Inc. Sanitary Landfill. The Site is located in Sections 27 and 34, Township 32 North, Range 24 West, of Anoka County, and includes the following described property, which is shown on the map attached as Appendix F to this Order:

- (1) the south half of the southeast quarter of Section 27, Township 32, Range 24;
- (2) all that part of the Northwest Quarter of the Southeast Quarter lying southerly of the center line of Coon Creek in Section 27, Township 32, Range 24;
- (3) all that part of the Northeast quarter of the Southwest quarter of Section 27, Township 32, Range 24, that is described as following: Commencing at the Northeast Corner of said Northeast quarter of the Southwest quarter; thence West along the North line thereof for 58.6 feet and to the center line of County State Highway No. 18; thence South 32 degrees , 55 minutes West of for 550.17 feet along said center line; thence South 44 degrees , 11 minutes West for 342.85 feet along said center line ; thence South 45 degrees, 26 minutes East for 872 feet and to the Southeast corner of said Northeast quarter of the Southwest quarter; thence North along the East line of said Northeast quarter of the Southwest quarter and to point of commencement;
- (4) the Northeast quarter of the Northeast quarter of Section 34, Township 32, Range 24;

- (5) the north 200 feet of the Northwest Quarter of the Northeast quarter of Section 34, Township 32, Range 24;
 - (6) the east 200 feet of the Southeast Quarter of the Southwest Quarter of Section 27, Township 32, Range 24;
and
 - (7) the west 200 feet of the Northeast Quarter of the Southeast quarter of Section 27, Township 32, Range 24.
- W. "State" shall mean the State of Minnesota.
- X. "United States" shall mean the United States of America.
- Y. "U.S. EPA" or "the Agency" shall mean the United States Environmental Protection Agency.
- Z. "Work" shall mean all activities Respondents are required to perform pursuant to this Order, appendices hereto, and all approved plans and schedules pursuant thereto, including but not limited to, the Remedial Design, Remedial Action, Operation and Maintenance, and any activities required to be undertaken pursuant to the Order, ROD, and RAP.

IV.

FINDINGS OF FACT

Based on information contained in the Administrative Record in this matter (an index of which is attached as Appendix E) U.S. EPA hereby finds:

8. The Facility is located within the City of Andover (formerly Grow Township), Anoka County, Minnesota (see Attachments 1 and 2 of the ROD), approximately 15 miles north of the City of

Minneapolis. It is situated south of Coon Creek, west of Hanson Boulevard, East of Crosstown Boulevard.

9. The WDE Site consists of a total of approximately 114 acres. The area of actual disposal in the landfill covers approximately 73 acres. The WDE Site is located in a rural surrounding on the edge of suburban development consisting of small farms and some residential development.

10. Prior to MPCA permitting as a solid waste disposal system in 1971, the WDE Site was operated as a solid waste dump ("dump") for at least nine years by previous owners of the property. The dump was established in about 1963 by Leonard E. Johnson and was licensed in the later years of the Johnson operation, by Grow Township.

11. The dump was purchased by Waste Disposal Engineering, Incorporated ("WDE, Inc.") in 1968. A permit to operate as a sanitary landfill was granted by the Grow Township Board effective mid-year, 1968.

12. In 1970 WDE, Inc. submitted a permit application to the MPCA to operate a solid waste disposal system. A proposal to dispose of hazardous substances in a specially constructed trench at the landfill (generally referred to herein as "WDE Pit") was included in the permit application. On March 30, 1971, the MPCA issued permit SW 28 to WDE, Inc. to operate the WDE Site as a solid waste disposal system including construction and operation of the WDE Pit. Approval for the solid waste disposal system was also given by Anoka County and the Metropolitan Council.

13. Construction of the WDE Pit began in 1971 and was completed in 1972. The MPCA approved the design of the WDE Pit. The WDE Pit was to include an 18 inch layer of clay overlain with a six inch thick bituminous liner followed by six inches of crushed limestone. Depth to ground water beneath the WDE Pit was to be at least ten feet. Materials to be disposed of in the WDE Pit included solvents, oils, paint sludges, caustics, and acids. A permanent record of the disposal activities at the WDE Pit was to be kept at the WDE Site by WDE, Inc. and the information reported monthly to the MPCA. It is believed that the WDE Pit was operated from November, 1972 to January, 1974. WDE, Inc. did not follow the plans approved by the MPCA for WDE Pit disposal operations. A truck loaded with barrels broke through the asphalt liner in November, 1972 and repairs were not completed until July, 1973. Indiscriminate barrel disposal, spillage of barrel contents, and water collecting in the WDE Pit were also problems noted in an MPCA inspection report in 1972.

14. The MPCA ordered the WDE Pit closed effective February 1, 1974 due to changes in regulations and because the MPCA determined that a high potential for ground water pollution existed at the WDE Site. That determination was based on the following facts: WDE, Inc. submitted inadequate hazardous waste disposal reports; WDE, Inc. did not submit required monitoring results; and previous MPCA investigations indicated cracks in the asphalt liner from heavy vehicles. Although the WDE Pit ceased operation, the landfill continued operation.

15. Approximately 6,600 containers (ranging from 1 gallon pails to 55 gallon drums) holding a wide variety of wastes (acids, caustics, waste paints, spent solvents, plating sludges, cyanides) have been disposed in the WDE Pit. An undetermined quantity of hazardous waste, much of it as bulk loads, was disposed throughout the landfill. Based on interviews and government files, approximately 3.2 million gallons of hazardous waste have been disposed before, during, and after operation of the WDE Pit at the WDE Site. Using these estimates, only 10 percent of the hazardous waste expected to be at the Site would have been disposed in the WDE pit.

16. The WDE Site grew from three acres in 1964, to 41 acres in 1970, to its present day permitted size of 114 acres. The area of actual disposal in the landfill covers 73 acres (see Attachment 3 of the ROD). The maximum thickness of waste is 40 feet. The landfill contains nearly 2.5 million cubic yards of waste. Much of the landfill is covered by lime sludge obtained from the Minneapolis Drinking Water Treatment Plant. The sludge thickness ranges from three to six feet (average of four feet).

17. The WDE Site ceased operations in February, 1984 and has remained abandoned and inactive. The property of the Site has gone through tax forfeiture so that it is currently property of the State of Minnesota with administration by Anoka County. WDE, Inc. failed to respond adequately to MPCA requests to address final sanitary landfill closure.

18. The Minnesota Department of Health in January, 1983

issued a drinking water well advisory in portions of the City of Andover due, in part, to hazardous substances disposal at the WDE Site.

19. Pursuant to Section 105 of CERCLA, the WDE Facility was placed on the National Priorities List of hazardous waste sites by publication in the Federal Register on September 8, 1983, 48 Fed. Reg. 40658-40682 (1983).

20. In March, 1984 the MPCA and U.S. EPA entered into a Consent Order with 9 companies. Three more companies joined the group and executed the Consent Order in April, 1984. The twelve companies (known as the "Respondents" in the Consent Order) are Economics Laboratory, Inc., Ford Motor Company, Honeywell, Midland Cooperatives, Inc., Minco Products, Onan Corporation, Sperry Corporation (Unisys), Thermo King Corporation, Warden Oil, Control Data Corporation, Cornelius Company, and FMC Corporation. In May 1987, the MPCA and U.S. EPA were notified by letter that three additional companies (Minnesota Mining and Manufacturing Company, Cargill Inc. and Union Brass and Metal Manufacturing Company) had voluntarily joined these companies as respondents to the Consent Order.

21. The Respondents to the 1984 Consent Order, commonly referred to as the SW-28 Group, agreed to accomplish the following tasks:

- A. Design, initiate and complete the landfill and pit Remedial Investigation/Feasibility Study (RI/FS);
- B. Establish a trust fund to pay for the RI/FS work;

- C. Establish a \$1 million trust fund in the event the Respondents do not implement the remedial actions as selected by the MPCA and U.S. EPA;
- D. Design the selected response action for the WDE site designated in the U.S. EPA Record of Decision; and
- E. Enter into good faith negotiations leading to an agreement to address remedial and removal actions at the WDE Site.

22. The SW-28 Group completed a Remedial Investigation ("RI") Report on December 18, 1986.

23. The RI data indicates the following:

A. The surficial deposits, or Upper Sand Unit, are fine to medium sand, have relatively high permeabilities, and are 40 to 73 feet thick in the landfill.

B. There is a thin, gray silt till unit (0 to 15 feet thick) within the Upper Sand Unit. The unit is present in most deeper borings at the Site at depths between 30 to 40 feet. It lacks continuity and it is not relied upon as an effective confining unit.

C. Below the Upper Sand Unit is a red-brown clay/silt till unit. The unit is relatively dense, has low permeabilities [10^{-5} to 10^{-6} centimeters per second (cm/sec)], and serves as an aquitard for the Lower Sand Unit underlying the till unit. The till thickness ranges from 10 to 40 feet thick, becoming progressively thinner from north to south across the Site. The surface of the till unit

is highest immediately below the WDE Pit area of the landfill, and slopes downward concentrically from the peak (see Attachment 4 of the ROD). The steepest slope is to the northwest and west.

D. Underlying the red-brown till is the Lower Sand Unit. It becomes finer and more silty with depth. The thickness of this unit is on the order of 80 feet thick.

E. Groundwater in the Upper Sand Unit or the Upper Sand Aquifer is under water table conditions (unconfined). Ground water flow in the Upper Sand at the Site is pronounced to the north across the Site and discharging into Coon Creek (see Attachment 5 of the ROD). Ground water flow rates in the Upper Sand Aquifer are on the order of 25 to 30 feet per year.

F. Groundwater in the Lower Sand Unit or the Lower Sand Aquifer is under confined conditions and in the vicinity of Coon Creek, artesian conditions exist (i.e., monitoring well 26D). Regional ground water flow in the Lower Sand Aquifer is to the southwest, ultimately discharging into the Mississippi River, approximately 4 miles downgradient of the WDE Site. At the WDE Site, Lower Sand Aquifer flow is apparently towards the west-northwest due in part to the readings from one particular monitoring location. Absent this one well, ground water flow patterns would be entirely consistent with the regional patterns.

G. The Lower Sand Aquifer is used extensively for domestic water supply, particularly southwest (and downgradient) of the Site. The Upper Sand aquifer is used by some residents having sand points, particularly north of Coon Creek.

H. Currently, there is a downward component of groundwater flow within the Upper Sand Aquifer at the WDE Site, except as one approaches Coon Creek where the gradient switches to produce an upward flow.

I. The vertical gradient of groundwater across the red-brown till unit is upward from the Lower Sand Aquifer to the Upper Sand Aquifer under the limits of refuse disposal and in the area between the refuse and Coon Creek. The vertical gradient of groundwater across the red-brown till unit between the Lower Sand and Upper Sand aquifers is downward immediately south of the limits of refuse disposal. The gradient is consistently downward at monitoring well nest 1 and is variable (downwards and upwards) at monitoring well nest 23 (see Attachment 6 and 7 of the ROD).

J. The lateral ground water gradient in the Upper Sand aquifer is approximately 0.005. With a hydraulic conductivity of 1.6×10^{-6} cm/sec to 1×10^{-3} cm/sec and an assumed porosity of 30 per cent, the average vertical ground water velocity downward across the red-brown till is approximately 0.4 to 2.0 feet/year.

K. Ground water contamination exists within the Upper Sand aquifer beneath and downgradient of the landfill and ultimately enters Coon Creek. The degradation is most severe in the upper portion of the Upper Sand aquifer. A total of 39 VOCs have been reported to be present in groundwater. An additional 14 semi-volatile organic compounds and 32 metals were also reported. Contaminants include typical landfill type contaminants [reduced pH, chlorides, and high Chemical Oxygen Demand (COD)] and a wide

variety of organic constituents, including aromatic and halogenated volatiles, and low levels of metals (see Attachments 8 to 12 of the ROD). The highest concentrations of some of the volatile organics found to be released in groundwater include methylene chloride (230,000 ppb), dichloroethylene (62,000 ppb), trichlorethane (36,000 ppb), tetrahydrofuran (2300 ppb), methyl ethyl ketone (280,000 ppb), benzene(750 ppb), and xylenes (56,000 ppb).

L. The areal distribution of contaminants show the most severe contamination at and downgradient of the WDE Pit (wells W6, W8, W11, and W22A). High concentrations or "hot spots" were detected at other scattered locations (i.e., W28A, and W31A) within the landfill, reflecting the scattered pattern of disposal practices throughout the history of the landfill operations. Currently the WDE Pit area shows the most serious ground water degradation and is the dominant source of contaminants, notably volatile organics, entering Coon Creek. Contamination in the Upper Sand is most severe near the water table and decreases with depth, producing a stratified plume (see Attachment 13 of the ROD). There is some localized contamination present north of Coon Creek but this appears to be due to underflow and reversal back to Coon Creek because of Coon Creek's stratigraphy. None of the private wells north of Coon Creek show contamination.

M. Contaminants in the Upper Sand Aquifer are well above the legally enforceable Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act. Vinyl chloride, reported at 10,000 ppb, is 5000 times its regulatory maximum of 2 ppb. 1,1,1

trichloroethane reported at 36,000 ppb is in excess of 180 times its MCL of 200 ppb. Trichloroethylene reported at 4,000 ppb is 800 times its MCL of 5 ppb.

N. Of the organic compounds released to groundwater, 11 are known or probable human carcinogens and 4 are possible human carcinogens. Maximum concentrations of benzene, a known human carcinogen, have been reported up to 750 ppb, corresponding to a lifetime excess cancer risk of 7.5×10^{-4} through ingestion of onsite ground water in the Upper Sand Aquifer. Values of vinyl chloride, also a known human carcinogen have been reported up to a maximum concentration of 10,000 ppb. This corresponds to a lifetime excess cancer risk of 6 out of 10 via ingestion of onsite groundwater within the Upper Sand Aquifer. Methylene chloride, another probable human carcinogen, is reported with maximum concentrations of up to 230,000 ppb. This corresponds to an excess lifetime cancer risk of 4.6×10^{-2} through ingestion of onsite groundwater within the Upper Sand Aquifer.

O. Of the organic compounds detected in groundwater, 31 are also either acutely or chronically toxic via ingestion. Groundwater in the Upper Sand Aquifer exceeds many of the drinking water health advisories compiled by U.S.EPA, Office of Drinking Water. While not legally enforceable, health advisory levels are set to be protective of sensitive populations and give general indications of drinking water quality. Cis, dichloroethylene is reported with concentrations up to 62,000 ppb which is 15.5 times the acute drinking water health advisory for a 10 kilogram child

and 900 times the life time chronic advisory for a 70 kilogram adult. Methylene chloride at 230,000 ppb is 23 times the one day acute drinking water advisory and 1500 times the lifetime chronic drinking water advisory for a 70 kilogram adult.

P. Coon Creek is the primary receptor of Site - contaminated ground water in the Upper Sand Aquifer. Coon Creek discharges into the Mississippi River 11 river miles downstream from the Site. The discharge into the Mississippi River is approximately 3 miles upstream of the intake for the St. Paul water supply and 7 miles upstream of the intake for the Minneapolis water supply. No contaminants, particularly volatile organics, are detectable upstream of the WDE Site in Coon Creek. Trace levels of some volatile organics are detectable along most of Coon Creek bordering the north side of the WDE Site. At the point the contaminant plume from the Site enters the creek, the levels of a variety of volatile organics, particularly chlorinated volatiles, are present, and persist several miles downstream of the Site. Non-halogenated volatiles are observed in high concentrations in ground water near the Creek and are thought to dissipate quickly upon entering the Creek. However, these compounds do persist when ice cover conditions exist. The levels of volatiles in Coon Creek where the site plume enters the Creek are in the range of 1 to 30 ug/l for several different halogenated volatiles. A total of 12 VOCs are consistently reported to be present in surface water samples taken from Coon Creek. All of these compounds were also reported to be in groundwater. Of the organic compounds detected in surface

water, three (3) are probable carcinogens. Some compounds in Coon Creek are above Water Quality Criteria established under the Clean Water Act for consumption of water and fish. Methylene chloride is reported to be as high as 5.8 ppb, which yields an excess lifetime cancer risk level of 3×10^{-5} . Cis, dichloroethylene is reported to be as high as 25 ppb, yielding an excess lifetime cancer risk of 7.6×10^{-4} based on consumption of groundwater and a risk of 1.4×10^{-5} based on consumption of fish.

Q. The Lower Sand aquifer has not shown any levels of contamination to date. However, the long-term integrity of the Lower Sand aquifer cannot be completely guaranteed. The gradient across the till is downward immediately south of the landfill and, if ground water conditions were to shift in the future, the downward gradient may expand northward under the landfill. Also, heavier-than-water, non-aqueous phase liquids (NAPL) may migrate along the surface of the till southward (down the slope of the till surface) to the zone of downward gradients and, in the long-term, potentially impact ground water quality. Thirdly, most of the residential wells southwest (and downgradient, in terms of the regional flow, within the Lower Sand of the WDE Site) are installed in the Lower Sand and may be impacted if contamination were to reach the Lower Sand aquifer. The presence of such a large number of wells southwest of the Site has the potential to aggravate the downward gradient condition along the southern portion of the Site.

R. The WDE Site has 11 gas probes, located primarily along the western and southern sides of the landfill to monitor areas of

current residential development (see Attachment 5 of the ROD). Coon Creek (along the north and northeast sides of the Landfill) apparently provides a hydraulic barrier to gas migration. Evergreen trees immediately along the west side of the landfill are showing signs of stress. Combustible gas measurements show the highest levels (15 to 30 percent by volume) in gas probe nest 6, with 5 and 8 percent levels also reported in probes 1 and 4 respectively. Volatile organic analyses in these probes also indicate the presence of a variety of compounds, principally halogenated compounds. As with combustible gas described above, probes GP-1, GP-4, and GP-6 show the highest concentrations. Those probes along the south do not currently indicate migration. The fact that off-site gas migration is limited at this time may be due to the current relatively high water table conditions and the high porosity and permeability of the surficial deposits in the area. While there are no MCL equivalent standards for air releases, levels of individual contaminants (1,1,2,2-tetrachloroethene, 1,3-dichloropropene) exceed established industrial standards, Threshold Limit Values (TLVs), for on-site workers in GP-4 and GP-6, immediately adjacent to the landfill. In addition, the levels of some contaminants (methylene chloride, benzene, trichloroethene) exceed the potency factors for carcinogens identified in the Public Health Risk Evaluation Data Base. Because the landfill is relatively young, methane and other gases will continue to be generated and pose a long term threat. Gas generation typically peaks 10-20 years after cessation of disposal activities.

S. The wetlands north of the Site are listed in the National Wetland Inventory as a Type 2 wetland (Class Palustrine, emergent, subject to intermittent flooding, drained). The U.S. Fish and Wildlife Service has identified the presence of sedges, reed canary grass, cattails, and willows.

T. Wetlands between the limit of refuse disposal and Coon Creek, particularly in the area of monitoring well nests 2 and 13, have been impacted by seeps and shallow leachate of the Site. Migrating waterfowl may utilize these wetlands.

U. Land resources in the area are used for agriculture, residential, and light industrial purposes. Some land is undeveloped (See Attachment 14 of the ROD). Historically, the area surrounding the WDE Site was comprised of small farms and small residential developments. Currently, more extensive residential development has been or is planned to be constructed around the Site.

V. Potentially impacted water resources consist of the groundwater in the Upper and Lower Sand Aquifers and surface waters in Coon Creek and the Mississippi River. The Upper Sand is used as a source of potable water in the immediate area. Irrigation and livestock watering are other uses of the ground and surface waters.

W. The WDE Site has a variety of exposure pathways, for the release of hazardous substances. The existing pathways include ingestion/dermal exposure from contamination of Coon Creek by Upper Sand ground water, and direct contact threat to people on site exposed to wastes and leachate. There is also the risk of physical

injury due to the existing hazards at the Site (i.e., exposed cables, rusty drums, etc.). Other potential pathways include drinking water contaminated from leakage into the Lower Sand (i.e., NAPL) or migration beneath and north of Coon Creek within the Upper Sand. Controls are necessary to protect public health, welfare, or the environment from the threatened and continuing releases of hazardous substances. The releases are described as follows:

1. Heavily-contaminated ground water within the Upper Sand Aquifer, particularly from the WDE Pit, is currently discharging into Coon Creek resulting in low but persistent levels of various chlorinated volatile organics in Coon Creek.
2. Leachate seeps are sporadically active near the base of the north face of the landfill along Coon Creek. When the leachate seeps are active, they pose a direct contact risk to people and wildlife on the WDE Site. The leachate seeps ultimately drain into Coon Creek via interflow or overland flow.
3. Potentially hazardous wastes and other landfill wastes, are gradually being exposed as the existing, unprotected lime sludge cap erodes. The lime sludge alone does not support any vegetative cover and is subject to wind erosion under dry conditions and runoff erosion during periods of even moderate rainfall. Extensive and deep (up to

10 feet deep) gullies have developed particularly in the northwest quarter of the landfill. As the lime sludge cap erodes, the potential for direct contact exposure to waste increases over time.

4. The highest levels of Upper Sand Aquifer groundwater contamination are at and downgradient of the WDE Pit and in isolated/random locations in the landfill (so called "hot spots"). While the ground water contamination being discharged to Coon Creek is largely limited to the immediate vicinity of the Site, there is also some evidence of one small pocket of contamination in the vicinity of well nest 21, raising concerns regarding the adequacy of Coon Creek as a complete hydraulic barrier. There are also long-term concerns regarding NAPL migration in the Upper Sand Aquifer, and contamination entering the Lower Sand aquifer due to NAPL migration or dissolved contaminants migrating downward south of the Site. To date, no contamination has been detected in private wells.

5. Gases, both methane gas from the landfill and individual volatile organics from wastes, are being

released from the Site in quantities that exceed Threshold Limit Values.

24. A Feasibility Study (FS) Report prepared by some of the

SW28 Group was approved with modifications on August 10, 1987. The FS examined various remedial alternatives regarding the release and threatened release of contaminants from the WDE Site. The FS Report included a proposed remedial action at the Facility.

25. Pursuant to Section 117 of CERCLA, 42 U.S.C. Section 9617, notice of the completion of the RI/FS and the proposed remedial action was published in a major local newspaper of general circulation. The notice announced the opportunity for public comments on the RI/FS and proposed remedial action to be submitted in writing to U.S. EPA by September 29, 1987, or orally at a public meeting which was held in the City of Andover, Minnesota, on September 14, 1987. U.S. EPA has kept a transcript of the public meeting and has made this transcript available to the public as part of the administrative record located at both the U.S. EPA, Region V, 230 South Dearborn Street, Chicago, Illinois and the MPCA offices located at 520 Lafayette Road, St. Paul, Minnesota.

26. Certain persons have provided comments on U.S. EPA's proposed remedial action, and to such commentors U.S. EPA provided a summary of responses, all of which have been included in the administrative record referred to above;

27. Considering the proposed remedial action and the public comments received, U.S. EPA reached a decision on a final remedial action, which is embodied in a document called a Record of Decision ("ROD") (attached hereto as Appendix A and incorporated by reference) signed by the Regional Administrator on December 31, 1987, to which the MPCA has given its concurrence. The ROD

includes a discussion of U.S. EPA's rationale for the adopted remedial action and for any significant changes from the proposed remedial action contained in the FS;

28. Pursuant to Section 117(b) of CERCLA, 42 U.S.C. Section 6917(b), U.S. EPA provided public notice of adoption of the final remedial action embodied in the ROD, including notice of the ROD's availability to the public for review in the same locations as the administrative record referred to above. The notice was published in a major local newspaper of general circulation, and the notice included an explanation of any significant changes and the reasons for such changes from the proposed remedial action contained in the FS;

29. On June 6, 1988, in accordance with the 1984 Consent Order, the SW28 Group submitted a Response Action Final Design (RAFD) Report to U.S. EPA and MPCA for approval. The RAFD Report is a conceptual design of the remedial action embodied in the ROD and included additional field studies. The approved RAFD Report concludes that the gray silt till unit is continuous below the WDE Pit and the lime sludge barrier layer of the cap described in the ROD will be replaced with clay. U.S. EPA approved the RAFD Report, with conditions, on December 16, 1988. U.S. EPA and MPCA granted final approval of the RAFD report on May 19, 1989. Appendix C to this Order is the RAFD Report.

30. Appendix B to this Administrative Order is a Remedial Action Plan ("RAP") for implementing the final remedial action embodied in the ROD and the approved RAFD Report. U.S. EPA has

determined that the RAP is consistent with the ROD and the approved RAFD Report.

31. In accordance with Section 121(f)(1)(F) of CERCLA, 42 U.S.C. Section 9621(f)(1)(F), U.S. EPA notified the State of Minnesota on July 12, 1989, that U.S. EPA intends to commence negotiations with PRPs regarding the scope of the remedial design and remedial action for the Facility, and U.S. EPA has provided the State with an opportunity to participate in such negotiations and be a party to any settlement;

32. By letter dated July 12, 1989, U.S. EPA pursuant to Section 122 of CERCLA, 42 U.S.C. Section §9622, notified certain parties listed in Appendix G, that the U.S. EPA determined them to be potentially responsible parties ("PRPs") regarding implementation of remedial action at the WDE site. At that time, U.S. EPA notified PRPs of the beginning of the 120 day negotiating moratorium required by Section 122(e)(2)(A) of CERCLA, 42 U.S.C. §9622(e)(2)(A).

33. U.S. EPA has complied with the moratorium required by Section 122(e) of CERCLA, 42 U.S.C. §9622(e), prohibiting U.S. EPA from commencing action under Section 104(a) or taking actions under Section 106 for 120 days after PRP receipt of the July 12, 1989, U.S. EPA notification.

34. Pursuant to Section 122(j) of CERCLA, 42 U.S.C. Section 9622(j), on July 12, 1989, U.S. EPA notified the Federal Natural Resource Trustee of negotiations with PRPs on the subject of addressing the release or threatened release of hazardous

substances at the Facility, and U.S. EPA has encouraged the participation of the Federal Natural Resource Trustee in such negotiation.

35. U.S. EPA received a proposal for partial implementation of the Remedial Action as selected in the ROD and modified by the approved RAFD Report from PRPs on or about September 18, 1989.

36. The actions required by this Order are necessary to protect the public health, welfare or the environment, and are consistent with the National Contingency Plan, 40 CFR Part 300, as amended.

V.

CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the foregoing Findings, U.S. EPA has determined that:

37. Waste Disposal Engineering Sanitary Landfill site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. 9601(9).

38. Each Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

39. Each Respondent "owned" and/or "operated" the WDE Site, and/or "generated" and/or transported hazardous substances which were disposed of at the WDE Site. From 1963 to 1968, Leonard E. Johnson, and from 1968 to 1983, Waste Disposal Engineering, Inc., was the "owner" and/or "operator" of the WDE Facility as defined in Section 101 (20) of CERCLA 42 U.S.C. Section 101 9601 (20), and "owned" and/or "operated" the WDE Facility within the meaning of

Section 107 (a) (2) of CERCLA, 42 U.S.C. Section 9607 (a)(2).

40. Each Respondent is a "liable party" as defined in Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and is subject to this Order under section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

41. From the mid 1960s to 1984 "hazardous substances" as defined in Section 101 (14) of CERCLA , 42 U.S.C. Section 9601 (14), were deposited, stored, disposed of, placed, or located at the WDE Facility.

42. The substances found to be released from the Site are "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

43. These hazardous substances have been and threaten to be released from the WDE Facility via the groundwater and surface water.

44. The disposal and the past, present and/or future migration of hazardous substances from the WDE Facility constitutes an actual or threatened "release" into the environment as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

45. The release or threat of release of one or more hazardous substances from the WDE Facility is or may be presenting an imminent and substantial endangerment to the public health or welfare or the environment.

VI.

NOTICE TO THE STATE

46. Prior to issuing this Order, U.S. EPA notified the State of Minnesota that U.S. EPA intended to issue this Order. U.S. EPA

will consult with the State and the State will have the opportunity to review and comment to U.S. EPA regarding all work to be performed, deliverables, and any other issues which arise while this Order remains in effect.

VII.

ORDER

47. Based upon the foregoing Findings, Conclusions of Law and Determinations, and pursuant to Section 106(a) of CERCLA, 42 U.S.C. §9606(a), each Respondent is hereby ordered to comply with all of the following provisions, including but not limited to all attachments, appendices and exhibits to this Order, all documents incorporated by reference into this Order, and all schedules and deadlines contained in this Order, attached to this Order, or incorporated by reference into this Order.

VIII.

NOTICE OF INTENT TO COMPLY

48. On or before the effective date of this Order, each Respondent must submit to U.S. EPA written notice stating its unequivocal intention to comply with the terms of this Order. In the event any Respondent fails to provide such written notice, that Respondent shall be deemed to have failed to comply with this Order. Each Respondent's written notice shall describe, using facts that exist on or prior to the effective date of this Order, any "sufficient cause" defenses asserted by Respondents under Sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C. Sections 9606 (b) and 9607(c)(3). The absence of a response by U.S. EPA to the

notice required by this paragraph shall not be deemed to be acceptance of that Respondent's assertions.

IX.

WORK TO BE PERFORMED

49. Within forty-five (45) calendar days after the effective date of this Administrative Order, the Respondents shall submit a work plan to the U.S. EPA and MPCA for the remedial design and remedial action at the Facility (RD/RA Work Plan). The RD/RA Work Plan shall be developed in conformance with the ROD, the approved RAFD report, the RAP, and all applicable guidance documents including, but not limited to, the U.S. EPA Superfund Remedial Design and Remedial Action Guidance.

50. The RD/RA Work Plan submittal shall be written in sufficient detail to fully address all necessary design parameters of the selected alternative in the ROD, the approved RAFD Report, and the RAP including , but not limited to: (1) a groundwater extraction well and treatment system (2) a multi-layer cap over the landfill and WDE Pit (3) a landfill gas venting and emission control system (4) a slurry wall, extraction well, and NAPL detection and removal system (5) a comprehensive groundwater, surface water, and air monitoring system, and (6) operation and maintenance. In addition , the RD/RA Work Plan shall contain, at a minimum, all submittals and other requirements contained in the RAP attached hereto, and shall include, but not be limited to, a schedule for submittal of the following project plans: (1) a sampling and analysis plan; (2) site safety and security plan; (3)

a plan for satisfaction of permitting requirements; (4) a quality assurance project plan; (5) a groundwater monitoring plan; and (6) an operations and maintenance plan. The RD/RA Work Plan and other documents submitted shall demonstrate that the Respondents can properly conduct the actions required by this Order. The RD/RA Work Plan shall also include a schedule for implementation of the RD/RA Work Plan tasks and submittal of RD/RA reports. The RD/RA Work Plan shall require the Respondents to perform and complete remedial design and construction within the schedule shown in the RAP, and shall attain and maintain all requirements including design criteria and performance goals identified in the ROD, the approved RA/D Report and the RAP.

51. The RD/RA Work Plan and other required documents and reports (hereinafter referred to as "documents") shall be subject to review, modification and approval by U.S. EPA in consultation with the MPCA.

52. If the RD/RA Work Plan or other document is acceptable, approval shall be granted, in writing, and the RD/RA Work Plan or other document shall become an integral and enforceable element of this Order. In the event of any disapproval, U.S. EPA shall specify, in writing, the reasons for disapproval.

53. Within thirty (30) calendar days of receipt of any U.S. EPA letter stating disapproval, the Respondents shall submit an amended document, including the word processing diskettes in appropriate format as determined by the U.S. EPA RPM, to U.S. EPA which incorporates all U.S. EPA requested changes and

modifications, and those changes and modifications only. The U.S. EPA shall review the amended document and shall either notify Respondents, in writing, of approval, disapproval or modification of the document or any part thereof, or shall modify the document itself. Failure to incorporate all changes and modifications requested by U.S. EPA, or to submit unsolicited changes and modifications, shall be deemed noncompliance with the terms of this Order.

54. If U.S. EPA modifies any document, that document is considered approved by U.S. EPA, Respondents shall implement the Work required by the approved or amended document within the schedule specified in the document or this Administrative Order.

55. Respondents shall proceed to implement the work detailed in the approved (amended) RD/RA Work Plan within five (5) calendar days of receipt of written approval by U.S. EPA. Unless otherwise directed by U.S. EPA and as mandated by Section 122(e)(6) of CERCLA, the Respondents shall not commence remedial action until they receive written approval of the RD/RA Work Plan by U.S. EPA. The fully approved or modified RD/RA Work Plan and all documents generated under its direction shall be deemed incorporated into and made an enforceable part of this Administrative Order. Respondents shall conduct and complete the tasks outlined in the RD/RA Work Plan in accordance with the National Contingency Plan, U.S. EPA guidance including, but not limited to, Superfund Remedial Design and Remedial Action Guidance, and the requirements of this Administrative Order, including the specifications and schedules

contained in this Administrative Order, the ROD, the RAP, and the RD/RA Work Plan. Failure of the Respondents to properly implement and complete all aspects of the RD/RA Work Plan shall be deemed to be noncompliance with the terms of this Order.

56. Respondents' Contractor and Provisions for Performance of the Work- All remedial design and remedial action work to be performed by the Respondents pursuant to this Administrative Order shall be under the direction and supervision of a qualified registered professional architect or engineer. Within fifteen (15) days of the effective date of this Order, the Respondents shall notify U.S. EPA and the MPCA, in writing, of the name, title, and qualifications of any engineer or architect proposed to be used in carrying out the remedial design and remedial action work to be performed pursuant to this Administrative Order. Selection of any such architect or engineer shall be subject to approval by U.S. EPA in consultation with MPCA. In the event that U.S. EPA disapproves of a selected architect or engineer, Respondents shall retain an approvable architect/engineer to perform the Work, and such selection shall be made within ten (10) days following receipt of U.S. EPA's disapproval.

57. The Work as defined in this Section VIII shall be completed in accordance with all requirements of this Administrative Order and its Appendices including, but not limited to, time periods set forth in this Administrative Order, the RAP and any plans prepared, submitted and approved or modified in accordance with the RAP. Appendix B to this Administrative Order

provides a Remedial Action Plan (RAP) for the Completion of the remedial design and remedial action at the WDE site.

58. All activities undertaken by the Respondents pursuant to this Administrative Order shall be undertaken in accordance with the requirements of all applicable local, state and federal laws, regulations and permits. The U.S. EPA has determined that the obligations and procedures authorized under this Administrative Order are consistent with the authority of the U.S. EPA under applicable law to establish appropriate remedial measure for the WDE Site. The United States has determined that no federal, state, or local permits or approvals are required for any of the work described in the RAP, which is conducted entirely on-site. The Respondents shall obtain all permits or approvals necessary, for work not conducted on-site, under federal, state or local laws and shall submit timely applications and requests for any such permits and approvals.

59. The Respondents shall include in all contracts or subcontracts entered into for work required under this Administrative Order provisions stating that such contractors or subcontractors, including their agents and employees, shall perform all activities required by such contracts or subcontracts in compliance with all applicable laws and regulations, and that the applicable provision of this Administrative Order is not, nor shall it act as, nor is it intended by the United States to be, a permit issued pursuant to any federal or state statute or regulation.

X.

QUALITY ASSURANCE

60. Respondents shall use quality assurance, quality control, and chain of custody procedures in accordance with U.S. EPA's "Interim Guidelines and Specifications For Preparing Quality Assurance Project Plans" (QAM -005/80) and subsequent amendments to such guidelines. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any sampling and analysis under this Administrative Order, and as part of the (Amended) Work Plan, Respondents shall submit a Quality Assurance Project Plan (QAPP) to U.S. EPA and MPCA that is consistent with the RAP, the (Amended) Work Plan and applicable guidelines.

61. Prior to development and submittal of any QAPP, Respondents shall, at U.S. EPA's request, attend a pre-QAPP meeting sponsored by U.S. EPA to identify all monitoring, inspection and any other data quality objectives. Respondents shall ensure that U.S. EPA personnel or authorized representatives are allowed access to any laboratory utilized by Respondents in implementing this Order. In addition, Respondents shall ensure that any such laboratory will analyze samples submitted by U.S. EPA or MPCA for quality assurance monitoring.

XI.

FACILITY ACCESS, SAMPLING, DOCUMENT AVAILABILITY

62. To the extent that the Facility or other areas where Work is to be performed hereunder is presently owned or possessed by

parties other than those bound by this Administrative Order, Respondents shall obtain all necessary access agreements from the present owner(s) or possessor(s) within thirty (30) calendar days of approval of the (Amended) Work Plan. Such agreement shall provide access for U.S. EPA, the MPCA, authorized representatives of U.S. EPA and the MPCA, and for the Respondents and the contractors of Respondents. In the event that after using their best efforts Respondents are unable to timely obtain such agreements, Respondents shall immediately notify U.S. EPA. U.S. EPA, at its discretion, may either assist Respondents in gaining access or proceed with implementation of the Work. Respondents failure to timely utilize best efforts to obtain access to areas necessary for the purposes of this Order shall be deemed noncompliance with this Order.

63. Respondents shall provide access to the Facility to U.S. EPA and MPCA employees, contractors, agents and consultants, at reasonable times, and shall permit such persons to be present and move freely in the area in order to conduct inspections, including taking photographs and videotapes of the Facility, to do cleanup/stabilization work, to take samples, to monitor the Work under this Order, and to conduct other activities which the U.S. EPA determines to be necessary.

64. Respondents shall make available to U.S. EPA and the State all sampling, test or other data, including interim and final results generated by Respondents with respect to the Facility, including data generated with respect to implementation of this

Administrative Order, and shall submit these results in monthly progress reports as described in Section XI of this Order.

65. At the request of U.S. EPA or the State, Respondents shall allow split or duplicate samples to be taken by U.S. EPA, the State and/or their authorized representatives, of any samples collected by Respondents pursuant or related to the implementation of this Administrative Order. Respondents shall notify U.S. EPA and MPCA not less than fourteen (14) calendar days in advance of any sample collection activity. In addition, U.S. EPA and the State shall have the right to take any additional samples that U.S. EPA or the State deem necessary.

XII.

REPORTING REQUIREMENTS

66. Respondents shall provide to U.S. EPA written monthly progress reports which: (1) describe the actions which have been taken toward achieving compliance with this Administrative Order during the previous month; (2) include all results of sampling and tests and all other data received by Respondent during the course of the work; (3) include all plans and procedures completed under the RD/RA Work Plan during the previous month; (4) describe all actions, data and plans which are scheduled for the next month and provide the information relating to the progress of construction as is customary in the industry; (5) include information regarding percentage of completion, problems and delays encountered or anticipated that may affect the future schedule for implementation of the RAP or RD/RA Work Plan and a description of efforts made to

mitigate those problems delays or anticipated problems/delays. In additions, this section shall detail deliverables submitted, upcoming events/activities planned, key personnel changes, and scheduling. These progress reports are to be submitted to U.S. EPA by the tenth day of every month following the effective date of this Administrative Order.

67. Upon the occurrence of any event during performance of the Work which causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public health or welfare or the environment, including events which, pursuant to Section 103 of CERCLA, requires reporting to the National Response Center, Respondents shall immediately take all appropriate action to prevent, abate, or minimize the threat and shall immediately orally notify the U.S. EPA Remedial Project Manager ("RPM") or On-Scene Coordinator ("OSC") or in the event of the unavailability of the U.S. EPA RPM/OSC, the Emergency Response Section, Region V, United States Environmental Protection Agency, in addition to the reporting required by Section 103. Within fourteen (14) days of the onset of such an event, Respondents shall furnish to U.S. EPA and MPCA a written report setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within thirty (30) days of the conclusion of such an event, Respondents shall submit a report to U.S. EPA and MPCA setting forth all actions taken to respond to the event.

68. Nothing in the preceding paragraph shall be deemed to limit the authority of the United States to take, direct, or order

all appropriate action to protect human health, welfare or the environment, or to prevent, abate, or minimize an actual or threatened release of hazardous substances at or from the WDE Site.

XIII.

REMEDIAL PROJECT MANAGER/PROJECT COORDINATORS

69. U.S. EPA will designate a Remedial Project Manager ("RPM") and/or an On Scene Coordinator ("OSC") for the Facility, and the U.S. EPA may designate other representatives, including U.S. EPA and MPCA employees, and federal and state contractors and consultants, to observe and monitor the progress of any activity undertaken pursuant to this Administrative Order. The RPM/OSC shall have all of the authority lawfully vested in an RPM by the National Contingency Plan, 40 C.F.R. Part 300 as amended, including the authority to halt, conduct or direct any Work required by this Administrative Order or to direct any other response action undertaken by U.S. EPA or the Respondents at the Facility. Respondents shall also designate a Project Coordinator who shall have primary responsibility for implementation of the Work at the Facility.

70. To the maximum extent possible, except as specifically provided in the Administrative Order, communications between Respondents and U.S. EPA concerning the terms and conditions of this Order, implementation of the Work under this Administrative Order, and all documents, reports, approvals, and all other correspondence concerning the activities relevant to this Order, shall be directed through the Project Coordinator and the RPM/OSC.

71. Within seven (7) calendar days after the effective date of this Administrative Order, Respondents shall notify U.S. EPA and MPCA, in writing, of the name, address and telephone number of the designated PRP Project Coordinator. Fred Bartman is the U.S. EPA RPM for this Administrative Order. His telephone number and address are presented in Section XVIII.

72. The U.S. EPA and the Respondents shall each have the right to change their respective designated RPM/OSC or Project Coordinator. Respondents shall notify U.S. EPA, as early as possible before such a change but in no event shall Respondents give notice to U.S. EPA less than 24 hours before such a change. Notification may initially be verbal, but shall promptly be reduced to writing.

XIV.

RECORDS

73. During the pendency of this Administrative Order and for a period of ten (10) years after its termination, Respondents shall make available to U.S. EPA and shall retain, all records and documents in their possession, custody, or control which relate to the performance of this Administrative Order, including, but not limited to, documents reflecting the results of any sampling, tests, or other data or information generated or acquired by any of them, or on their behalf with respect to the Facility. At the conclusion of the ten (10) year period of document retention, Respondents shall provide written notice to the U.S. EPA, RPM, U.S. EPA Office of Regional Counsel, and the MPCA at least ninety (90)

calendar days prior to the destruction of any such documents, and upon request of U.S. EPA, the Respondents shall relinquish custody of the documents to U.S. EPA.

74. Respondents may assert business confidentiality claims covering part or all of the information provided in connection with this Administrative Order in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. §9604(e)(7), and pursuant to 40 CFR §2.203(b).

75. Information determined to be confidential by U.S. EPA will be afforded the protection specified in 40 CFR Part 2, Subpart B. If no such claim accompanies the information when it is submitted to the U.S. EPA, the public may be given access to such information without further notice to Respondents.

76. Information acquired or generated by Respondents in performance of the Work that is subject to the provisions of Section 104(e)(7)(F) of CERCLA, 42 U.S.C. §9604(e)(7)(F), shall not be claimed as confidential by Respondents.

XV.

PENALTIES FOR NONCOMPLIANCE

77. Respondents are advised, pursuant to Section 106(b) of CERCLA, 42 U.S.C. §9606(b), that willful violation of, or failure or refusal to comply with this Order, or any portion thereof, may subject the Respondents to a civil penalty of not more than \$25,000 for each day in which such violation occurs or such failure to comply continues. Failure to comply with this Administrative Order, or any portion thereof, without sufficient cause may also subject Respondents to liability for punitive damages in an amount

equal to three times the amount of any costs incurred by the Hazardous Substance Superfund as a result of Respondents' failure to take proper action, pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. §9607(c)(3).

XVI.

OTHER CLAIMS

78. The United States, by issuance of this Order or by the RPM/OSC's exercise of his/her legal authorities pursuant to the NCP, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondents or the United States, their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order.

79. U.S. EPA is not to be construed a party to, and does not assume any liability for, any contract entered into by Respondents in carrying out the activities pursuant to this Administrative Order. The proper completion of the Work under this Administrative Order is solely the responsibility of the Respondents. This Order does not constitute any decision on preauthorization of funds under CERCLA.

XVII.

DELAY IN PERFORMANCE

80. Any delay in performance of this Order that, in U.S. EPA's judgement, is not properly justified by Respondents under the terms of this Section shall be considered a violation of this Order. Any delay in performance of this Order shall not affect

Respondent's obligations to fully perform all obligations under the terms and conditions of this Order.

81. Respondents shall notify U.S. EPA of any delay or anticipated delay in performing any requirement of this Order. Such notification shall be made by telephone to U.S. EPA's RPM or Alternate RPM within forty-eight (48) hours after Respondents first knew or should have known that a delay may occur. Respondents shall adopt all reasonable measures to avoid or minimize such a delay. Within five (5) business after notifying U.S. EPA by telephone, Respondents shall provide written notification fully describing the nature of the delay, any justification for the delay, any reason why the Respondents should not be held strictly accountable for failing to comply with any relevant requirements of the Order, the measures planned and taken to minimize the delay and a schedule for implementing the measures that will be taken to mitigate the effect of the delay. Increased costs, access problems or expenses associated with implementation of the activities called for in this Order is not a justification for any delay in performance.

XVIII.

NOTICES

82. Whenever, under the terms of this Administrative Order, notice is required to be given, or a report or other document is required to be forwarded by one party to another, such correspondence shall be directed to the following individuals at the addresses specified below:

As to the United States or U.S. EPA:

As to the State of
Minnesota:

A. Stuart Hersh
Assistant Regional
Counsel
Attn: Waste Disposal Engineering
(5CS-TUB-3)
U.S. Environmental Protection
Agency
230 South Dearborn Street
Chicago, Illinois 60604

Minnesota Pollution
Control Agency
Attn: Waste Disposal
Engineering
Site Project
Leader
520 Lafayette Road
St. Paul, MN 55155

B. Fred Bartman
Remedial Project Manager
Waste Disposal Engineering
Facility
Remedial and Enforcement
Response Branch 5HS-11
U.S. Environmental Protection
Agency
230 South Dearborn Street
Chicago, Illinois 60604

Minnesota Pollution
Control Agency
Attn: Supervisor
Site Response Section
520 Lafayette Road
St. Paul, MN 55155

XIX.

CONSISTENCY WITH
NATIONAL CONTINGENCY PLAN

83. The U.S. EPA has determined that the Work, if properly performed as set forth in Section V hereof, is consistent with the provisions of the National Contingency Plan pursuant to 42 U.S.C. §9605.

XX.

RESPONSE AUTHORITY

84. Nothing in this Administrative Order shall be deemed to limit the response authority of the United States under 42 U.S.C. §9604.

ENFORCEMENT AND RESERVATIONS

85. U.S. EPA reserves the right to bring an action against Respondents under section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to the WDE Facility. This reservation shall include but not be limited to past costs, direct costs, indirect costs, the costs of oversight, and the costs of compiling the cost documentation to support oversight cost demands, as well as accrued interest as provided in section 107(a) of CERCLA.

86. Notwithstanding any other provision of this Order, at any time during the response action, U.S. EPA may perform its own studies, complete the response action (or any portion of the response action) as provided in CERCLA and the NCP, and seek reimbursement from Respondents for its costs, or seek any other appropriate relief.

87. Neither the RAP nor the RD/RA Work Plan constitute a warranty or representation of any kind by the United States that the RAP or RD/RA Work Plan will achieve the performance objectives set forth in the ROD, the approved RA/D Report and this Order. U.S. EPA reserves all rights and defenses that it may have pursuant to any available legal authority. In addition, nothing in this Order shall preclude U.S. EPA from taking any additional enforcement actions, including additional activities under this Order, modification of this Order, or issuance of additional Orders, and/or additional remedial or removal actions as U.S. EPA

may deem necessary, or from requiring Respondent(s) in the future to perform additional activities pursuant to CERCLA, 42 U.S.C. § 9606(a) , or any other applicable law.

88. Notwithstanding any provision of this Order, the United States hereby retains all of its information gathering, inspection and enforcement authorities and rights under CERCLA, RCRA and any other applicable statutes or regulations.

89. Nothing herein is intended to release, discharge, or in any way affect any claims, causes of action or demands in law or equity which U.S. EPA may have against any person, firm, partnership or corporation for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, or disposal of any hazardous substance, hazardous wastes, contaminants, or pollutants at, to, or from the WDE site. U.S. EPA expressly reserves all rights, claims, demands, and causes of action it has against any and all persons and entities.

90. Nothing herein shall be construed to release the Respondents from any liability for failure of the Respondents to perform the work required hereunder in accordance with this Order and/or approved Work Plans. In addition, nothing in this Order shall be construed to prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this Order, or from taking the legal or equitable action it deems appropriate and necessary. This Order and the successful completion of the Work required hereunder do not represent satisfaction, waiver, release, or

covenant not to sue, of any claim of the United States against the Respondents relating to the WDE site (including claims to require Respondents to undertake further response actions and claims to seek reimbursement of responses costs pursuant to Section 107 of CERCLA).

91. If a court of appropriate jurisdiction issues an order that invalidates any provision of this Order or finds that a Respondent has sufficient cause not to comply with one or more provisions of this order, the Respondent shall remain bound to comply with all provisions of this Order not invalidated by the court's order.

XXII.

MODIFICATION AND MODIFICATIONS TO WORK

92. Except as provided for herein, there shall be no modification of this Administrative Order without written approval of U.S. EPA.

93. U.S. EPA may determine that modifications to the Work identified in this Order and attachments to this Order, may be necessary to achieve the response objectives in the ROD and pursuant thereto in the approved RAFD Report, the RAP, or this Order. If U.S. EPA determines that modifications to the Work are necessary, U.S. EPA may require Respondents to submit a work plan for additional response activities. U.S. EPA may also require Respondents to modify any plan, design, or other deliverable required by this Order, including any approved modifications to this Order.

94. Not later than thirty (30) days after receiving U.S. EPA's notice that additional response activities are required pursuant to this Section, Respondents shall submit a Supplemental Work Plan for the response activities to U.S. EPA for review and approval. The review and approval process shall be identical to the process set forth herein at Section VIII.

95. Upon approval by U.S. EPA, the (Amended) Supplemental Work Plan shall be implemented by Respondents according to the standards, specifications, and schedules therein. Respondents shall notify U.S. EPA of their unequivocal intent to perform such additional activities within seven (7) calendar days after receipt of U.S. EPA's request for additional response activities. If a conference is requested by one or more Respondents pursuant to Section XXVI, this Order shall be effective on the fourteenth (14) calendar day following the day of the conference, unless such effective date is modified by the U.S. EPA Region V, Waste Management Division Director. No extensions to the above time frames shall be granted without sufficient cause. All extensions must be requested, in writing, and shall not be deemed accepted unless approved, in writing, by U.S. EPA.

XXIII.

EFFECTIVE DATES

96. This Administrative Order shall be effective twenty-one days (21) calendar days following service of the Order as provided herein. If a conference is requested by one or more Respondents pursuant to Section XXVI, this Order shall be effective on the

fourteenth (14) calendar day of the conference, unless such effective date is modified by U.S. EPA, Region V, Waste Management Division Director. No extensions to the above time frames shall be granted without sufficient cause. All extensions must be requested in writing, and shall not be deemed accepted unless approved, in writing by U.S. EPA.

XXIV.

CERTIFICATION OF COMPLETION OF REMEDIAL CONSTRUCTION

97. When the Respondents determine that they have completed the construction activities of the Work, they shall submit to U.S. EPA and MPCA a Notification of Completion of Construction. Upon receipt of such Notification, U.S. EPA shall schedule final inspections and close out activities as described in the June 1986 U.S. EPA Superfund Remedial Design and Remedial Action (RD/RA) Guidance. Such activities shall include, at a minimum, the following:

- A) "Prefinal Construction Conference" by U.S. EPA and the Respondents;
- B) "Prefinal Inspection" by U.S. EPA;
- C) Preparation of a "Prefinal Inspection Report" by the Respondents;
- D) "Final Inspection" by U.S. EPA and the Respondents.

98. The final remedial construction report shall summarize the Work performed and any modification to the RD/RA Work Plan. The summary shall include or reference any supporting documentation.

99. Upon receipt of the final remedial construction report, U.S. EPA shall review the accompanying report and any other supporting documentation and conduct any appropriate site inspection. U.S. EPA, in consultation with MPCA shall issue a Certification of Completion of Remedial Construction upon its determination that the Respondents have satisfactorily completed the construction activities required by this Order. Following certification, Respondents shall continue to perform all work required by this Order, including but not limited to:

- A. Operation and Maintenance of the Remedial Action pursuant to the approved RD/RA Work Plan.
- B. Monitoring and reporting pursuant to the RD/RA Work Plan and this Order.
- C. Any additional Work requested by U.S. EPA pursuant to this Order.
- D. Retention of documents pursuant to this Order.

XXV.

ACCESS TO ADMINISTRATIVE RECORD

100. The Section 106 Administrative Record supporting the above Findings of Fact, Conclusions of Law and Determinations is available for review on weekdays between the hours 8:00 a.m. and 5:00 p.m., at the United States Environmental Protection Agency, Region V, 230 South Dearborn Street, Chicago, Illinois 60604. Please contact Mr. Fred Bartman, Remedial Project Manager, at (312) 353-6083, for review of the Administrative Record.

OPPORTUNITY TO CONFER

101. Within seven (7) calendar days after receipt of this Administrative Order, Respondents may request a conference with U.S. EPA to discuss this Administrative Order. If Respondents desire such a conference, please contact Mr. Stuart Hersh, Assistant Regional Counsel, (312) 886-6235.

102. Any such conference shall be held within seven (7) calendar days from the date of request or such other time approved by U.S. EPA. At any conference held pursuant to Respondents' request, Respondents may appear in person and/or by an attorney or other representative.

103. Any comments which Respondents may have regarding this Administrative Order, the correctness of any factual determinations upon which the Order is based, the appropriateness of any action which Respondents are ordered to undertake, or any other relevant and material issue must be reduced to writing and submitted to U.S. EPA within seven (7) calendar days following the conference or if no conference is held, within seven (7) calendar days following the service of this Order. Any such writing should be directed to Stuart Hersh, at the address cited above.

104. You are hereby placed on notice that U.S. EPA will take any action which may be necessary in the opinion of U.S. EPA for the protection of public health and welfare and the environment; and Respondents may be liable under Section 107(a) of CERCLA, 42 U.S.C. §9607(a), for the costs of those Government actions.

IT IS SO ORDERED:

BY: W. E. Myers (Acting)
David A. Ullrich
Director
Waste Management Division
U.S. EPA, Region V

Effective Date: _____ AUG 23 1991

APPENDIX D

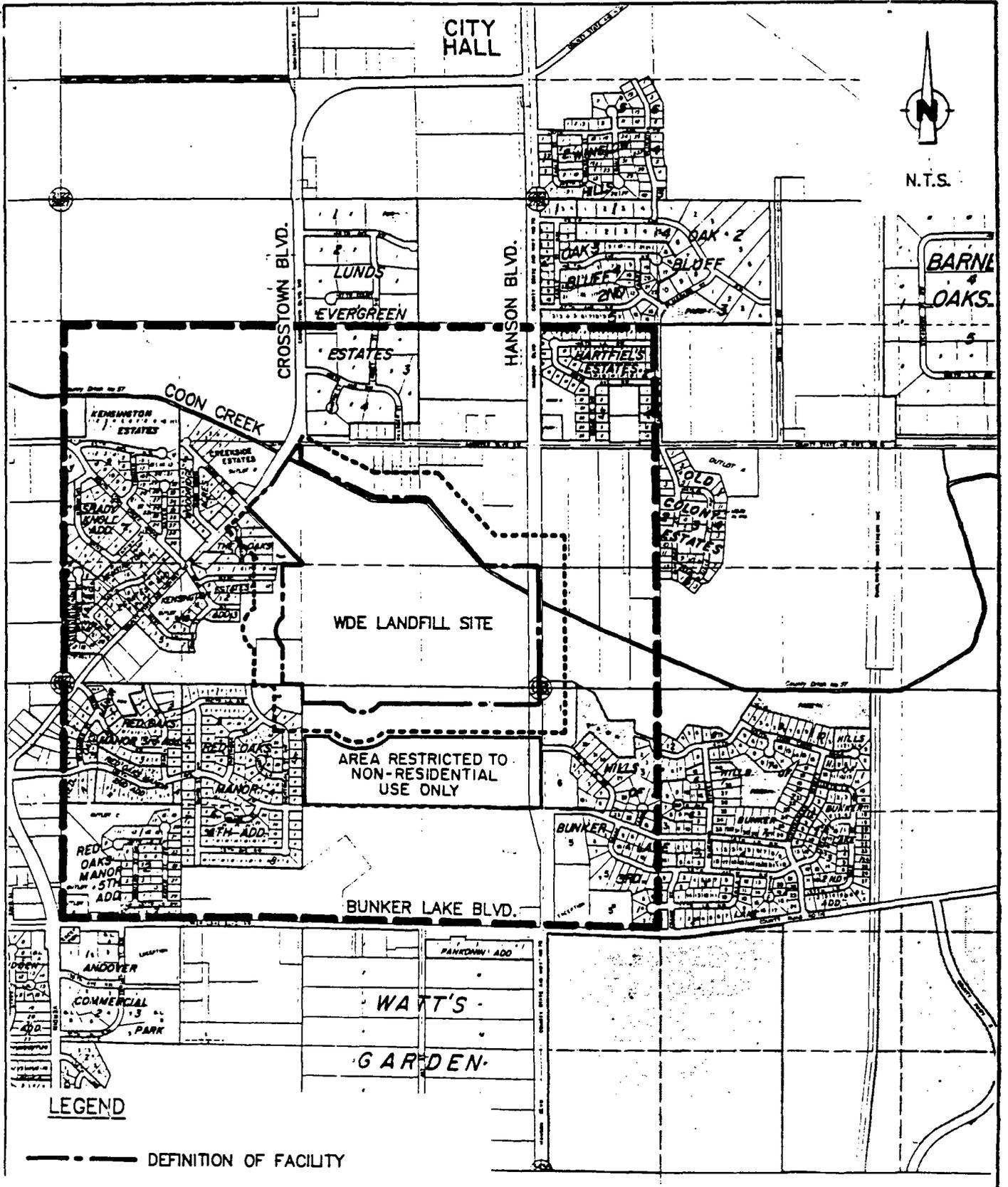
LIST OF RESPONDENTS

1. FORD MOTOR COMPANY
2. FMC CORPORATION
3. HONEYWELL, INC.
4. LAND O' LAKES, INC. (MIDLAND COOPERATIVES)
5. MINCO PRODUCTS, INC.
6. 3M COMPANY
7. ONAN CORPORATION
8. THE CORNELIUS COMPANY
9. THERMO KING CORPORATION
10. UNYSIS
11. AMERICAN NATIONAL CAN (AMERICAN CAN & NATIONAL CAN)
12. BEMIS COMPANY
13. FOLEY MANUFACTURING (FOLEY BELSAW)
14. FEDERAL HOFFMAN, INC. (FEDERAL CARTRIDGE CORP.)
15. G & K SERVICES, INC.
16. H.B. FULLER COMPANY
17. THE GILLETTE CO.
18. WHITTAKER CORP.
19. SOO LINE RAILROAD CO.
20. THE MOGUL CORP.
21. MELRON, INC., RONALD ROTH, WASTE CONTROL, INC., AND WASTE DISPOSAL ENGINEERING (ROTH ENTITIES)
22. PAKO CORPORATION
23. NORTHWEST AIRLINES, INC.
24. ALCO STANDARD CORP. (SAXON PAPER) (BROWN AND BIGELOW)
25. ECONOMIC LABORATORIES, INC.
26. CONTROL DATA CORPORATION
27. LEONARD JOHNSON

APPENDIX E

SECTION 106 ADMINISTRATIVE RECORD INDEX

- I. ADMINISTRATIVE RECORD TO THE RECORD OF DECISION (ATTACHED TO ROD, APPENDIX A TO THIS ORDER)
- II. RAFD REPORT (APPENDIX C TO THIS ORDER)
- III. LIABILITY INFORMATION (SEE APPENDIX H)
 - A. FORD MOTOR COMPANY
 - B. FMC CORPORATION
 - C. HONEYWELL, INC.
 - D. MIDLAND COOPERATIVES, INC.
 - E. MINCO PRODUCTS, INC.
 - F. 3 M
 - G. ONAN CORPORATION
 - H. THE CORNELIUS COMPANY
 - I. THERMO KING CORPORATION
 - J. UNYSIS
 - K. AMERICAN NATIONAL CAN
 - L. BEMIS COMPANY
 - M. FOLEY BELSAW
 - N. FEDERAL HOFFMAN, INC.
 - O. G&K SERVICES, INC.
 - P. H.B. FULLER COMPANY
 - Q. GILLETTE COMPANY
 - R. WHITTAKER CORPORATION
 - S. SOO LINE RAILROAD COMPANY
 - T. THE MOGUL CORPORATION
 - U. ROTH ENTITIES
 - V. PAKO
 - W. NORTHWEST AIRLINES, INC.
 - X. ALCO STANDARD CORPORATION
 - Y. ECONOMICS LABORATORIES, INC.
 - Z. CONTROL DATA CORPORATION
 - AA. LEONARD JOHNSON
- IV. SECTION 122 SPECIAL NOTICE



APPENDIX F

ALCO STANDARD CORP.
BROWN E. BIGELOW
THOMAS J. JENNINGS
P.O. BOX 834
VALLEY FORGE, PA 19682

CONTROL DATA CORPORATION
ROBERT KAISER
HQ507A
8100 24TH AVENUE SOUTH
MINNEAPOLIS MN 55660

ECONOMICS LABORATORY, INC.
JANICE MILED, SENIOR ATTORNEY
370 WABASHA
OSBORN BUILDING
ST. PAUL, MN 55102

FMC CORPORATION
MR. WILLIAM W. WARREN, COUNSEL
NORTHERN ORDINANCE DIVISION
4800 EAST RIVER ROAD
FRIDLEY, MN 55421

FORD MOTOR COMPANY
MEG COUGHLIN, SENIOR ATTORNEY
OFFICE OF GENERAL COUNSEL
407 PARKLANE TOWERS W.
DEARBORN, MI 48126

HONEYWELL
C/O CARL MEIER
HONEYWELL PLAZA
2701 4TH AVE., S.
MINNEAPOLIS, MN 55408

HONEYWELL
C/O WILLIAM KEPPEL, ESQ.
DORSEY & WHITNEY
2200 FIRST NATIONAL BANK PLACE E.
MINNEAPOLIS, MN 55402

MIDLAND COOP.
C/O BRENT G. WENNBERG
LAND O' LAKES, INC.
P.O. BOX 116
MINNEAPOLIS, MN 55440

MINCO PRODUCTS, INC.
MR. KARL SCHURR, PRES.
7300 COMMERCE LANE
MINNEAPOLIS, MN 55432

3M COMPANY
DR. RUSSELL H. SUSAG, DIR.
ENVIRONMENTAL REGULATORY AFFAIRS
P.O. BOX 3331
ST. PAUL, MN 55133

ONAN CORPORATION
MR. NORWOOD NELSON
1400 73RD AVENUE N.E.
MINNEAPOLIS, MN 55432

THE CORNELIUS COMPANY
MR. PHILLIP A. ERICKSON
COMPANY SECRETARY & GEN. COUNSEL
ONE CORNELIUS PLACE, HWY. 10 WEST
ANOKA, MN 55303

THERMO KING
C/O F.S. BEAL, DIR. ENV. AFFAIRS
ENVIRONMENTAL REMEDIATION
WESTINGHOUSE BLDG., GATEWAY CENTER
PITTSBURGH, PA 15222

UNYSIS (SPERRY UNIVAC)
MR. RICHARD MARCHEK
P.O. BOX 64525
M.S. UNINI 4
ST. PAUL, MN 55164

WARDEN OIL COMPANY, INC.
A.L. WARDEN, PRESIDENT
187 HUMBOLDT AVE. NORTH
MINNEAPOLIS, MN 55405

Appendix G

ART WILLMAN & SON, INC.
LEROY WILLMAN, PRESIDENT
62-26TH AVE., N.
MINNEAPOLIS, MN 55411

AMERICAN CAN PACKAGING, INC.
TIMOTHY G. ROGERS, ESQ.
ASSISTANT GENERAL COUNSEL
AMERICAN LANE P.O. BOX 2600
GREENWICH, CT 06836

BEMIS COMPANY
C/O DAVID McDONALD, ESQ.
BRIGGS & MORGAN
2200 FIRST NATIONAL BANK BLDG.
ST. PAUL, MN 55101

BUREAU OF ENGRAVING
MR. GERALD CARLSON
CEO
500 SOUTH FOURTH STREET
MINNEAPOLIS, MN 55415

COLOR AD PACKAGING
C/O GEORGE D. LUDCKE, ESQ
BEST & FLANAGAN
3500 IDS CENTER
MINNEAPOLIS, MN 55402

DWORSKY BARREL
MISCHA Z. DWORSKY, C.E.O.
CONSOLIDATED CONTAINER CORP.
735 NORTH THIRD STREET
MINNEAPOLIS, MN 55401

ELLARD BRIESMEISTER
FOLEY BELSHAW
3300 FIFTH ST., N.E.
BOX 1269
MINNEAPOLIS, MN 55440

FROST PAINT AND OIL
MR. LOWELL WOOD, VICE PRESIDENT
1209 N.E. TYLER STREET
MINNEAPOLIS MN 55413

FORMAN-FORD PAINTS
C/O RICHARD E. LANGER
AMERICAN HOIST & DERRICK CO.
1800 AMHOIST FOWER
ST. PAUL, MN 55102

FEDERAL CARTRIDGE CORP.
C/O DOUGLAS RAINBOW, ESQ.
HARSTAD & RAINBOW
1036 MIDLAND BANK BUILDING
MINNEAPOLIS, MN 55401

GRAINBELT BREWERY
THOMAS J. KIEFFER, ESQ.
G. HEILEMAN BREWING CO., INC.
100 HARBORVIEW PLAZA, P.O. BOX 459
LACROSSE, WI 54601

GALLAGHER'S SERVICE, INC.
RICHARD C. GALLAGHER
9151 CENTRAL AVE., N.E.
MINNEAPOLIS, MN 55434

MR. CLYDE A. RHODES, JR.
VICE PRESIDENT
G.A. MACARTHUR COMPANY
2400 WYCLIFF STREET
ST. PAUL, MN 55114

GRAINBELT BREWERY
MR. IRWIN JACOBS
1215 MARSHALL STREET N.E.
P.O. BOX 599
MINNEAPOLIS, MN 55440

GLIDDEN
ROBERT H. SUZUKI
MANAGER, ENVIRON. ENGINEERING
925 EUKALST AVENUE
CLEVELAND, OH 44115

G & K SERVICES
C/O DAVID HERR, ESQ.
MASLON, EDELMAN, BURMAN & BRANDT
1800 MIDWEST PLAZA WEST
MINNEAPOLIS, MN 55402

MR. DAVID L. HANSON, VICE PRES.
DONOVAN CONSTRUCTION COMPANY
1080 MONTREAL AVENUE
ST. PAUL, MN 55116

STANLEY SHORES, TREASURER
BRANDTGEN & KLUGE, INC.
539 BLANDING WOODS ROAD
ST. CROIX WI 54025

JAMES J. SEIFERT, ESQ.
AMERICAN HOIST AND DERRICK CO.
1800 AMHOIST TOWER
ST. PAUL, MN 55102

MR. DONALD RUTHAN
INDUSTRIAL STEEL CONTAINER
293 COMMERCIAL STREET
ST. PAUL, MN 55106

Appendix G

H.B. FULLER
C/O STUART WILLIAMS, ESQ.
HENSON & EFRON
1200 TITLE INSURANCE BUILDING
MINNEAPOLIS, MN 55401

THE GILLETTE CO.
C/O MARK GEHAN, JR., ESQ.
COLLINS, BUCKLEY, SAUNTRY & HAUGH
WEST 1100 FIRST NAT'L BANK BLDG.
ST. PAUL, MN 55101

MARK STOLER, ESQ.
W.R. GRACE & CO.
62 WHITTEMORE AVENUE
CAMBRIDGE, MA 02140

WHITTAKER CORPORATION
C/O TIMOTHY BUTLER
LINQUIST & VENNUM
4200 IDS CENTER
MINNEAPOLIS MN 55402

MR. ROBERT BELLA
EXECUTIVE VICE PRESIDENT
THERMO SERVICE INC.
2939 6TH AVE., N.
ANOKA, MN 55303

ST. JOHN'S HOSPITAL
C/O ROBERT A. FETT
HEALTHEAST, DIR. OF PLT. OPER.
559 CAPITOL BLVD.
ST. PAUL, MN 55103

SOO LINE RAILROAD CO.
MICHAEL MULLINS, ESQ.
P.O. BOX 530
MINNEAPOLIS, MN 55440

THE HOGUL CORPORATION, INC.
DENNIS BORES, ESQ.
P.O. BOX 200
CHAGRIN FALLS OH 44022

MIDWEST BARREL & DRUM
C/O HOWARD S. MARKER, ESQ.
HOWARD S. MARKER & ASSOC., P.A.
925 PK PL OFF. 5775 WAYZATA BLVD.
MINNEAPOLIS MN 55416

MELRON, INC., RONALD ROTH
WASTE CONTROL, INC., AND WASTE
DISPOSAL ENGINEERING, INC.
95 WEST IVY
ST. PAUL, MN 55117

LEONARD JOHNSON
RTE. 2, BOX 116A
PALISADE MN 56469

LEE NISTLER & SON
RTE. 1, BOX 33A
HAMEL, MN 55103

MR. R.W. PUTNAM, JR.
VICE PRESIDENT
MORUM CHEMICAL CO.
2130 ENERGY PARK DRIVE
ST. PAUL, MN 55108

WHIRLPOOL
C/O MIKE CUNNINGHAM
GRAY, PLANT, MOOTY, MOOTY & BENNETTE
33 S. SIXTH STREET, SUITE 3400
MINNEAPOLIS, MN 55402

UNION BRASS & METAL MFG.
C/O MARK A. THIMKE, ESQ.
FOLEY & LARDNER
777 EAST WISCONSIN AVENUE
MILWAUKEE, WI 53202

WILLIAM P. HOCKENSMITH, ESQ.
GENERAL COUNSEL
SPACE CENTER, INC.
444 LAFAYETTE ROAD
ST. PAUL, MN 55101

MS. ANITA RYAN
PERSONNEL SAFETY DIRECTOR
ST. PAUL BRASS FOUNDRY
954 WEST MINNSHAHA
ST. PAUL, MN 55104

MR. A. ARTES, DIR. ENVIRONMENTAL
SERVICES SOLID WASTE & SUPERFUND
SHERWIN-WILLIAMS
101 PROSPECT AVE., N.W.
ST. PAUL, MN 55114

PAKO
MR. THOMAS J. NICOSKI, PRESIDENT
600 SOUTH COUNTY ROAD 18
SCHELARD TOWER, SUITE 875
MINNEAPOLIS, MN 55426

NORTHWEST AIRLINES
PAUL L. DINGER
CORPORATE COUNSEL
MINN.-ST. PAUL INTERNATL. AIRPORT
ST. PAUL, MN 56111

Appendix G

MINNEAPOLIS ELEC. STEEL & CASTING
COMPANY

MR. VERN JOHNSON

3901 UNIVERSITY AVENUE N.E.

MINNEAPOLIS, MN 55421

LYON CHEMICAL

C/O KATHLEEN CALDWELL

CORPORATE COUNSEL FOR UNIVAR CORP

1600 NORTON BLDG.

SEATTLE, WA 98104

RAUSH MANUFACTURING

RANDALL P. RAUSCH

750 PELHAM BLVD.

ST. PAUL, MN 55114

THRU BLUE

750 PELHAM BLVD.

ST. PAUL, MN 55114