Issue Date JUL 28 1993

Effective Date JUL 28 1993

BEFORE THE

OHIO ENVIRONMENTAL PROTECTION AGENCY

In the Matter of AEP Flexo, Inc. 200 Benham Street Dayton, Kentucky 41074 Respondent	:	DIRECTOR'S FINAL FINDINGS AND ORDERS ADMINISTRATIVE ORDER BY CONSENT

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PREAMBLE

It is hereby agreed by and among the Parties hereto as follows:

I. JURISDICTION

These Director's Final Findings and Orders ("Orders") are issued pursuant to the authority vested in the Director of the Ohio Environmental Protection Agency ("Ohio EPA") under Sections 3734.13, 3734.20, and 3745.01 of the Ohio Revised Code ("ORC").

II. PARTIES

These Orders shall apply to and be binding upon the Respondent, their assigns and successors.

III. FINDINGS OF FACT AND CONCLUSIONS OF LAW

The Ohio EPA has determined that all findings of fact necessary for the issuance of these Orders, pursuant to ORC Sections 3734.13 and 3734.20 have been made and are outlined below. The Ohio EPA has determined the following:

A. Mr. Billy L. Robinson is the current owner of the property located at 1300 Hook Drive, Middletown, Ohio (hereinafter referred to as

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the "Site").

B. Between 1984 and 1990, the Respondent manufactured flexographic printing plates at the Site. Tetrachloroethylene (PCE) and 1,1,1-trichloroethane (1,1,1-TCA) were used by the Respondent to dissolve unexposed photopolymer from printing plates. PCE was reclaimed through the use of a distillation apparatus in a shed located at the west end of the main building located at the Site.

C. On October 25, 1991, Ohio EPA surveyed the Site for ionizable gases in soils using a photoionization detector ("PID"), the PID was inserted two to three feet (2' to 3') in the soil in several locations at the Site. Readings from the PID registered peak values greater than 2000 meter units at locations near the distillation shed described in Article III, paragraph B, above.

D. On January 3, 1992, the Ohio EPA collected soil samples from an area approximately fifty feet (50') northwest of the northwest corner of the main building at the Site, hereinafter specified as location #1, from an area approximately twenty-five feet (25') northeast of the northwest corner of the main building at the Site, hereinafter specified as location #2, and from an area approximately ten feet (10') northwest of the distillation shed described in Article III, paragraph B, above, hereinafter specified as location #3. Results from the analysis of the samples collected are as follows: ("ug/kg" designates microgram per kilogram and "ND" indicates not detected)

Compound	Sample Location & Results (ug/kg)		
	1	2	3
PCE	10	8	76,000
1,1,1-TCA	ND	8	ND
TCE	ND	5	1,000

E. The City of Middletown operates a well field in the Great Miami

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River valley in proximity to the Site. Production wells are located south, east, and north of the Site. City wells draw water from unconsolidated deposits underlying the Great Miami River floodplain. Results from analysis of water samples collected by the City of Middletown from production well CW-1 reveal the presence of the following volatile organic compounds ("_" designates below detection limit) ("ug/1" designates microgram per liter):

Date Collected	PCE	TCE	cis-1,2-DCE*	1,1,1-TCA
2/27/85	4.6 ug/l	-	-	-
10/1/86	13 ug/l	-	-	-
9/4/87	662 ug/1	-	-	-
5/26/88	37.9 ug/l	0.62 ug/l	-	0.56 ug/l
9/26/88	30.3 ug/l	3.61 ug/l	3.08 ug/l	0.45 ug/l
12/22/88	41.7 ug/l	0.9 ug/l	1.3 ug/l	-
2/1/89	40.5 ug/l	1.2 ug/l	2.1 ug/l	-
5/3/89	9.86 ug/l	17.2 ug/l	23.0 ug/l	0.2 ug/l
8/29/89	-	9.97 ug/l	33.6 ug/l	-
11/4/89	59.3 ug/l	0.44 ug/l	-	0.28 ug/l
2/9/90	67.7 ug/l	-	-	-

* (cis-1,2-dichloroethylene)

Results from analysis of water samples collected by the City of Middletown from production well CW-2 reveal the presence of the following volatile organic compounds ("_" designates below detection limit):

Date Collected	PCE	TCE	cis-1,2-DCE	1,1,1-TCA
2/27/85	3.4 ug/l	-	-	-
11/26/85	103.0 ug/l	-	-	-
10/1/86	81.5 ug/l	-	-	-
9/4/87	102.0 ug/l	-	-	0.58 ug/l
5/26/88	81.4 ug/l	0.73 ug/l	-	0.56 ug/l
9/26/88	31.6 ug/l	0.17 ug/l	-	0.24 ug/l
12/22/88	96.0 ug/l	-	-	-

Water samples collected by the City of Middletown from production well CW-4/5 reveal the presence of the following volatile organic compounds ("_" designates below detection limit):

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Date Collected	PCE	TCE	1,1,1-TCA
2/27/85	30.4 ug/l	5.3 ug/l	1.0 ug/l
6/20/85	22.2 ug/l	-	-
11/26/85	314.0 ug/l	-	-
10/1/86	86.1 ug/l	-	-
9/4/87	192.0 ug/l	0.61 ug/l	0.56 ug/l
2/1/89	120.0 ug/l	0.7 ug/l	-
5/3/89	94.4 ug/l	-	-
11/4/89	89.5 ug/l	0.31 ug/l	0.25 ug/l
2/9/90	64.6 ug/l	-	-

F. The Ohio EPA has determined that PCE, TCE, cis-1,2-DCE and 1,1,1-TCA became "industrial wastes" and/or other wastes as defined in ORC 6111.01(C) and (D) and/or "hazardous wastes" as defined in ORC 3734.01(J) and/or hazardous substances when released into the environment. For purposes of these Orders, "hazardous substances" shall have the same meaning as it is defined in Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended, 42 USC 9601 et. seq.

G. The discharge, deposit, injection, dumping, leaking, spilling, emitting, or placing of PCE, TCE, cis-1,2-DCE and 1,1,1-TCA into or onto the soil, groundwater, and surface water at the Site constitutes "disposal" of hazardous waste and/or solid wastes as defined in ORC 3734.01(F).

H. The Site identified at 1300 Hook Drive, Middletown, Ohio is a "facility" as that term is defined in ORC Section 3734.01(N).

I. The migration and threatened migration of these industrial wastes, other wastes, and/or hazardous wastes and substances into the soil, ground water, and/or surface water at the Site, constitutes "a release or threat of a release" as that term is defined in Section 101(22) of CERCLA, and is causing or threatening to cause an unpermitted discharge of industrial waste, other wastes, and/or

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hazardous wastes and substances into "waters of the state", as that term is defined in ORC Section 6111.01(H).

J. The Respondent disposed of hazardous wastes at the Site, as the term "disposal" is defined in ORC 3734.01(F) and used in ORC 3734.20, and has placed or caused to be placed industrial wastes or other wastes in a location causing, or threatening to cause pollution to waters of this state, as the term "industrial wastes" is defined in ORC 6111.01(C) and as the term "other wastes" is defined in ORC 6111.01(D).

The Respondents release or disposal of industrial waste and/or hazardous waste at the Site constitutes a substantial threat to public health or safety or is causing or contributing to or threatening to cause or contribute to air, water pollution or soil contamination, pursuant to ORC 3734.20(B).

K. The Respondent operated a facility as the term "operated" is used within Section 107(a) of CERCLA, and as the term "facility" is defined in Section 101(9) of CERCLA.

L. The Respondent is a potentially "responsible person" as that term is used in Section 107 of CERCLA. The Respondent is a "person" as defined in Section 101(21) of CERCLA, and as defined in ORC Sections 3734.01(G) and 6111.01(I).

M. Based upon information available to the Director as set forth in these Findings of Fact, the Director has determined that the work required by these Orders, set forth below, is in the nature of interim measures only, designed to contain, abate, mitigate and control contamination.

N. The Director has given consideration to the evidence related to

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documented activities which have occurred at the Site. Based upon the facts as presented, the Director believes that issuance of these Orders is furthering the intent of the General Assembly, that the Ohio EPA will prevent, control, or abate pollution of the environment for the protection and preservation of the health, safety, welfare, and property of the people of the state.

O. The Director has determined the Findings of Fact and Conclusions of Law contained within these Orders. The Respondent does not admit to the Findings of Fact and Conclusions of Law made by the Director. However, the Respondent does otherwise agree to the Director's authority to issue these Orders and agrees to comply with the terms and conditions contained herein.

IV. WORK TO BE PERFORMED

A. All work to be performed by the Respondent pursuant to these Orders shall be under the direction and supervision of a qualified environmental engineer, geologist, or other appropriate professional person with expertise in hazardous waste site investigation and removal. Prior to the initiation of site work, the Respondent shall notify Ohio EPA in writing regarding the name, title, and qualifications of such engineer, geologist, or other appropriate professional person and of any contractors and/or subcontractors to be employed in carrying out the terms of these Orders.

B. Attachment A to these Orders contains the Statement of Work (SOW) for implementation of work at the Site. Within sixty (60) days of the effective date of these Orders, the Respondent shall submit to the Ohio EPA a draft Workplan for the implementation of the work at the Site. This Workplan and any required documents shall be developed in conformance with these Orders, the SOW, State law including ORC Chapters 3734. and 6111. and the regulations promulgated

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thereunder, and the National Contingency Plan ("NCP") 40 CFR Part 300. The phrase "required documents" includes, but is not limited to, any plans or reports that are necessary for performing the work required by these Orders. The SOW is not specific to the Site and is to be used as an outline in developing the site specific Workplan. In the Workplan, the Respondent shall present the justification for the proposed omission of any tasks of the SOW because of work that has already been performed or work that is not appropriate to the Site. Any omission proposed by the Respondent is subject to review and approval by the Ohio EPA.

Upon written approval of the Workplan by Ohio EPA, the Respondent shall implement the work detailed in the Workplan in accordance with the schedule(s) contained therein. Schedules contained in the Workplan may be amended by mutual agreement of the Parties.

C. The Respondent shall incorporate any written comments that may be made by the Ohio EPA into the draft Workplan or draft required document. The Respondent shall submit a revised draft Workplan or revised draft required document to Ohio EPA within thirty (30) days of receipt of Ohio EPA's comments demonstrating the incorporation of Ohio EPA's comments. Following receipt by Ohio EPA of the revised draft Workplan or the revised draft required document, the Ohio EPA will either approve or disapprove, in writing, the draft Workplan or draft required document. Article IX of these Orders shall apply should a dispute arise between the Ohio EPA and the Respondent under Article IV, paragraph C, of these Orders.

D. Attachment B to these Orders contains a list of guidance documents for the development of the Workplan. The Respondent shall develop the Workplan in conformance with the most current version of the guidance documents listed on that attachment. The Respondent may in the Workplan explain the nonuse of any listed or additional guidance document or portion thereof. The nonuse of any

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guidance document, or portion thereof, is subject to review and approval by the Ohio EPA. If Ohio EPA determines that any additional guidance documents affect the work to be performed under these Orders, the Ohio EPA will notify the Respondent in writing of the additional guidance and any affected documents and the Workplan shall be amended accordingly. Article IX of these Orders shall apply should a dispute arise between the Ohio EPA and the Respondent under Article IV, paragraph D, of these Orders.

E. The Respondent shall provide monthly progress reports to the Ohio EPA Site Coordinator covering the work or activities carried out by the Respondent during the previous calendar month. These monthly progress reports shall be submitted to the Ohio EPA Site Coordinator on or before the tenth (10th) day of each month. These monthly progress reports shall include, at minimum, the following information:

1. A description and estimate of the percentage of interim action tasks completed;
2. Summaries of all relevant findings, including, but not limited to, water level measurements, flow maps, sampling results, etc.;
3. Once implemented, an evaluation of the current effectiveness of all interim action systems in achieving these goals of the Orders;
4. Summaries of all changes made in the interim actions;
5. Summaries of all contacts with representatives of public interest groups, or city and state agencies and government;
6. Summaries of all problems or potential problems encountered;
7. All actions being taken to rectify problems occurring at the Site;
8. Summaries of the projected work to be performed in the next reporting period; and
9. Copies of daily reports, inspection reports, tabulated monitoring

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and laboratory data, effluent monitoring data, QA/QC reports, geologic logs, monitoring well construction diagrams, etc., generated during the reporting period.

V. DESIGNATED SITE COORDINATORS

The Respondent and Ohio EPA shall each designate a Site Coordinator, and the Respondent may designate an alternate, as appropriate, for the purpose of overseeing the implementation of these Orders. To the maximum extent possible, except as specifically provided in these Orders, communications between the Respondent and Ohio EPA concerning the terms and conditions of these Orders shall be made between the designated Site Coordinators. Each designated Site Coordinator shall be responsible for assuring that all communications received from another Party are appropriately disseminated and processed. The Site Coordinators shall attempt to resolve disputes informally through good faith discussion on the technical issues.

Without limitation of any authority conferred on Ohio EPA by statutes or regulations, the Ohio EPA Site Coordinator's authority includes, but is not limited to: (1) taking samples or, in accordance with the terms of any workplan, directing the type, quantity and location of samples to be taken by the Respondent; (2) observing, and taking photographs and making such other reports on the progress of the work as deemed appropriate; (3) directing that work stop, whenever the Ohio EPA Site Coordinator determines that activities at the Site may uncover or create a threat to public health or welfare or the environment; and (4) reviewing records, files and documents relevant to these Orders, except for such records, files or documents which by law are privileged or otherwise immune from disclosure.

The Respondent's designated Site Coordinator or alternate shall be present on-site during all hours of work at the Site and shall make himself/herself

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available for the pendency of these Orders. The absence of the Ohio EPA Site Coordinator from the Site shall not be cause for stoppage of work unless otherwise provided.

VI. OTHER CLAIMS

Nothing in these Orders shall constitute or be construed as a release from any claim of action or demand in law or equity against any person, firm, partnership, corporation or company not a signatory to these Orders for any liability arising out of or relating to the operation at the Site.

VII. OTHER APPLICABLE LAWS

All work required to be taken pursuant to these Orders shall comply with the requirements of applicable local, state, and federal laws and regulations and shall be consistent with the NCP 40 CFR Part 300, as amended. Nothing in these Orders shall be construed as waiving or compromising in any way the applicability and enforcement of any other statutes or regulations applicable to the Respondent's operation of facility. The Ohio EPA reserves all rights and privileges except as specified herein.

VIII. UNAVOIDABLE DELAYS

The Respondent shall cause all work to be performed within the agreed time schedules provided for in any approved Workplan, unless any such performance is prevented or delayed by an event which constitutes an unavoidable delay. For purposes of these Orders, an "unavoidable delay" shall mean any event(s) beyond the control of the Respondent which prevents or delays performance of any obligation required by these Orders and which could not be overcome by due diligence on the part of the Respondent. Increased costs of compliance shall not be considered circumstances beyond the control of the Respondent. Such an event under these Orders may include, but is not limited to, the Respondent being denied access to the Site.

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The Respondent shall notify the Ohio EPA in writing no later than ten (10) business days after their discovery of the occurrence of any event which the Respondent contends is an unavoidable delay. Such written notification shall describe the anticipated length of the delay, the cause or causes of the delay, the measures taken and to be taken by the Respondent to minimize the delay, and the timetable under which these measures will be implemented. The Respondent shall have the burden of demonstrating that the event(s) constitute(s) an unavoidable delay, and Ohio EPA shall make any determination with regard to such a claim. In the event that the Respondent fails to demonstrate that the delay(s) constitute(s) an "unavoidable delay," as determined by Ohio EPA and defined in these Orders, Ohio EPA reserves the right to enforce the terms and conditions of these Orders against the Respondent.

In the event that Ohio EPA agrees that an unavoidable delay has occurred, these Orders, including incorporated documents and any affected schedules thereunder, may be modified in the event the unavoidable delay affects such schedules. Article IX of these Orders shall apply should a dispute arise between the Ohio EPA and the Respondent under Article VIII of these Orders.

IX. DISPUTE RESOLUTION

A. Unless it is expressly noted that a particular Article or Section of these Orders is subject to the provisions of this Article, the dispute resolution process shall not apply.

B. The Site Coordinators shall, whenever possible, operate by consensus. In the event that there is a disagreement about the adequacy or disapproval of the Workplan or any report, or disagreement about the conduct of the work performed under these Orders or the Workplan, or modified or additional work or schedules required under these Orders, the Site Coordinators shall have seven (7) days to negotiate in good faith in an attempt to resolve the differences.

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C. In the event that the Site Coordinators are unable to reach consensus on the disapproval or disagreement in seven (7) days, then each Site Coordinator shall reduce his/her position to writing within seven (7) days of the end of the good faith negotiations referenced above. Those written positions shall be immediately exchanged by the Site Coordinators. Following the exchange of written positions, the parties shall have an additional seven (7) days to resolve their differences. If the Ohio EPA concurs with the position of the Respondent, Ohio EPA will amend the Workplan or modify these Orders to include necessary extensions of time or variances of required work.

D. If Ohio EPA does not concur with the position of the Respondent, the dispute shall be resolved by the Chief, Division of Emergency and Remedial Response or her/his designee, such designee not to be the Ohio EPA designated Site Coordinator for the Site, based upon and consistent with these Orders, the Workplan, and ORC Section 3734.20 and the regulations promulgated thereunder and any other appropriate State or federal law. The pendency of dispute resolution set forth in this Article shall not affect the time period for completion of work to be performed under these Orders or the Workplan, except that upon written mutual agreement of the parties, any time may be extended as appropriate under the circumstances. Such agreement will not be unreasonably withheld by Ohio EPA. Elements of work not affected by the dispute will be completed in accordance with the schedules contained in the Workplan.

X. REIMBURSEMENT OF COSTS

Ohio EPA has incurred and continues to incur oversight and response costs in connection with the Site. The Respondent shall remit payment by check to the Ohio EPA for those oversight and response costs which are not inconsistent with the NCP incurred up to the effective date of these Orders. Payment by the Respondent shall be made in three (3) equal installments with the first

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installment due thirty (30) calendar days from the effective date of these Orders, the second installment due sixty (60) calendar days from the effective date of these Orders and the third installment due ninety (90) calendar days from the effective date of these Orders. Within sixty (60) days of the end of each calendar year, the Ohio EPA shall submit to the Respondent an itemized statement of such oversight and response costs of the Ohio EPA for the previous year. Following receipt of the itemized statement, the Respondent shall pay, within thirty (30) calendar days, the oversight and response costs incurred by the Ohio EPA which are not inconsistent with the NCP. Payment to Ohio EPA shall be made to the Ohio Hazardous Waste Clean-up Special Account, created under O.R.C. Section 3734.28, by check payable to "Treasurer, State of Ohio" and shall be forwarded to: Fiscal Officer, Division of Emergency and Remedial Response of Environmental Protection, P. O. Box 1049, 1800 WaterMark Drive, Columbus, Ohio, 43266-0149. A copy of the transmittal letter shall be sent to Counsel for the Director at the second address listed in Article XI, below. Article IX of these Orders shall apply should a dispute arise between the parties under Article X, of these Orders, with regard to the nature of and amount of the oversight and response costs claimed in the itemized statements received by the Respondent.

XI. NOTICE

All documents required under these Orders are to be submitted to the Ohio EPA and shall be addressed to:

Ohio Environmental Protection Agency
40 South Main Street
Dayton, Ohio 45402
ATTN: Site Coordinator, DERR

and

Ohio Environmental Protection Agency
1800 WaterMark Drive

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P. O. Box 1049
Columbus, Ohio 43266-0149
Attn: Technical Support Unit, DERR

unless otherwise specified in these Orders or to such persons and addresses as may hereafter be otherwise specified in writing.

All submittals or notices to be made to the Respondent shall be addressed to:

AEP Flexo, Inc.
200 Benham Street
Dayton, Kentucky 41074
Attn: Charles E. Deye, Jr.

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XII. RESERVATION OF RIGHTS

A. Nothing contained herein shall be construed to prevent Ohio EPA from (1) seeking legal or equitable relief to enforce the terms of these Orders including penalties against the Respondent for noncompliance or claims for natural resources damages; or (2) completing any work described in these Orders. Ohio EPA reserves the right to take any enforcement action, recover costs, or seek damages for injury to natural resources pursuant to any available legal authority for past, present, or future violations of ORC Chapters 3734 or 6111, conditions at the Site, or releases of hazardous wastes.

B. Ohio EPA specifically reserves the right to perform or require the Respondent to perform additional investigation, removal, or remediation at the Site pursuant to ORC Chapters 3734 or 6111 or other applicable authority for these or any other conditions at the Site. Nothing herein shall restrict the right of the Respondent to raise any administrative, legal, or equitable defense with respect to such further actions which Ohio EPA may seek to require of the Respondent. Further, the Respondent reserves any rights it may have to raise any administrative, legal, or equitable defense in the event Ohio EPA claims that it is not in compliance with these Orders.

C. During the pendency of these Orders, and so long as the Respondent is in

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compliance with the Orders, the Ohio EPA agrees not to refer the Respondent to the Ohio Attorney General for only the work being undertaken pursuant to these Orders.

XIII. TERMINATION

The provisions of these Orders shall be terminated and satisfied upon the Respondent's demonstrating in writing, and certifying to the Ohio EPA's satisfaction, that all activities required under these Orders, including any additional tasks determined by the Ohio EPA to be necessary in accordance with these Orders and payment of all oversight costs, have been completed and that the Ohio EPA approves such certification in writing. Such certification approval by the Ohio EPA shall not terminate the terms, conditions, and the Respondent's obligation to comply with Article VII (other applicable laws) and Article XII (reservation of rights) of these Orders.

XIV. SIGNATORIES

Each undersigned representative of a signatory to these Orders certifies that he or she is fully authorized to enter into these Orders and to legally bind such signatory to this document.

IT IS SO ORDERED:

Donald R. Schregardus, Director
Ohio Environmental Protection Agency

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Date

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XIV. WAIVER AND AGREEMENT

In order to resolve disputed claims, without admission of fact, violation, or liability, Respondent agrees that these Orders are lawful and reasonable, and agrees to perform all actions required by these Orders.

The Respondent hereby waives the right to appeal the issuance, terms and service of these Orders and hereby waives any and all rights it may have to seek judicial review of such Orders either in law or equity.

Notwithstanding the preceding, the Ohio EPA and Respondent agree that in the event that these Orders are appealed by any other party to the Environmental Board of Review, or any court, Respondent retains the right to intervene and participate in such appeal. In such event, Respondent shall continue to comply with these Orders notwithstanding such appeal and intervention unless these Orders are stayed, vacated or modified.

IT IS SO AGREED:

By: _____ July 13, 1993
AEP Flexo, Inc. Date

CHAS E. DEYE JR
Typed or printed name

PRESIDENT
Title

Ohio Environmental Protection Agency

_____ JUL 28 1993
Donald R. Schregardus Date
Director
Ohio Environmental Protection Agency

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ATTACHMENT A

STATEMENT OF WORK (SOW) FOR CONDUCTING SOURCE CONTROL INTERIM ACTION(S) AT THE AEP FLEXO SITE

PURPOSE:

The purpose of conducting the work described herein is to control the source(s) of ground-water contamination which have resulted from the disposal of industrial wastes, pollutants, other wastes, and/or hazardous wastes, constituents, and substances (contaminants) at the AEP Flexo site (the Site). Respondent(s) shall conduct a Focused Site Characterization (FSC) to characterize the source(s) of contaminant release at the Site, determine Site physical characteristics, develop cleanup goals, and obtain all other data necessary to design and implement the source control interim action(s) (SCIA(s)). Concurrent with the FSC, Respondent(s) shall evaluate potential SCIA(s), propose appropriate SCIA(s) for the Site, and prepare a conceptual design of the proposed SCIA(s). Following Ohio EPA approval of the proposed SCIA(s), Respondent(s) shall design and implement the approved SCIA(s), and operate, maintain and monitor the constructed system(s). Successful completion of the required work will result in the elimination of identified sources of contaminant releases and control of identified pathways of contaminant migration. The FSC and conceptual design of the proposed SCIA(s) are interactive and are to be conducted concurrently so that the data collected during the FSC influences the evaluation of and the conceptual design of the proposed SCIA(s).

Respondent(s) shall conduct all required activities and provide all required deliverables in accordance with the Director's Final Findings and Orders (Orders) and this SOW. Respondent(s) shall furnish all necessary personnel, materials, and services needed, or incidental to, performing the activities described in this statement of work.

Respondent(s) shall obtain all site access agreements required to perform the work outlined in this SOW. Site access shall extend for the duration of the project and shall include allowances for all operation and maintenance considerations.

At the completion of the FSC, the Ohio EPA will approve or modify as appropriate Respondent(s)' proposed SCIA(s). To obtain Ohio EPA approval, proposed SCIA(s) must at a minimum protect human health and the environment, comply with the requirements of federal, state and local laws and regulations, minimize cross-media transfer of contaminants and utilize permanent solutions to the maximum extent practicable.

TASKS:

1. Develop Workplan;

2. Conduct field investigations to characterize contaminant source(s) and obtain all data necessary to evaluate, select and design SCIA(s); and

3. Design and implement SCIA(s).

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DELIVERABLES:

1. Workplan

2. Focused Site Characterization and Conceptual Design Report

3. Detailed Plans and Specifications for SCLA(s)

4. Operation, Maintenance and Monitoring Plans for SCLA(s)

5. Monthly progress reports

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1.0 DEVELOP WORK PLANS

Respondent(s) shall submit a FSC Workplan (Workplan), a sampling and analysis plan (SAP) consisting of a field sampling plan (FSP) and a quality assurance project plan (QAPP), and a Site health and safety plan (HSP). The Workplan and supporting documents must be approved by Ohio EPA prior to the initiation of field activities.

1.1 FSC Workplan

The Workplan shall be developed in conjunction with the SAP and the HSP although each plan may be submitted under separate cover. The Workplan and shall include the supporting rationale for performing each task in the manner described. The Workplan shall describe in detail all tasks necessary to perform the work required by this SOW, including materials and procedures required for each task, and work products to be submitted to the Ohio EPA. This includes deliverables as required by the Orders and this SOW, and meetings with Ohio EPA. The Workplan shall provide fixed date schedules for accomplishing the required work.

The Workplan shall clearly state the objectives of the FSC, identify actual or potential threats to human health and the environment posed by the Site, and identify preliminary cleanup goals for those contaminants previously identified at the Site. Based on review of existing information, Respondent(s) shall include in the Workplan a summary of the Site background including geographic location, and describe Site physiography, hydrology, geology, and history with regard to the use, storage and disposal of contaminants. The Workplan shall describe any previous response actions conducted by local, state, federal, or private parties; provide a summary of existing data in terms of physical and chemical characteristics of identified contaminants, describe their distribution among the environmental media; and demonstrate compliance with federal, state and local laws and regulations which apply to the work to be performed. The Workplan shall identify potential SCIA(s) which shall address each media of interest, identifying treatment, excavation, pumping, or other actions, either singly or in combination, to satisfy interim action objectives. Data collection activities necessary to evaluate potential SCIA(s) shall be identified. Following Ohio EPA approval of the Workplan and supporting documents, Respondent(s) shall implement the work in accordance with the schedules described therein.

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In performing the work required by this SOW, Respondent(s) may rely upon data and/or information gathered from other sources to the extent that Respondent(s) can demonstrate that QA/QC procedures acceptable to Ohio EPA were followed in the generation and presentation of the data and/or information. Respondent(s) shall include all supporting documentation in the Workplan for all data and/or information gathered from other sources and clearly identify the intended use(s) for such data and/or information. Ohio EPA will evaluate the adequacy of supporting QA/QC documentation and determine the acceptability of all data and/or information gathered from other sources during review of the draft Workplan.

If the need for additional work is identified at any time during the performance of the work required by this SOW, Respondent(s) shall submit a Workplan amendment with schedule documenting the need for the additional work and describing in detail the tasks to be performed. Respondent(s) shall be responsible for completing any additional work approved or required by the Ohio EPA in a manner consistent with the purpose and objectives of this Statement Of Work.

1.2 Sampling and Analysis Plan

Respondent(s) shall prepare a SAP consisting of the following:

A. *Field Sampling Plan*

The FSP shall specify and detail all activities necessary to obtain Site data. It shall explain what additional data are required to adequately characterize the Site and support the evaluation of potential SCIA(s). The FSP shall describe sampling objectives; equipment and procedures; sample types, locations, and frequencies; and parameters of interest; and shall be tied to the schedules contained in the Workplan.

B. *Quality Assurance Project Plan*

The QAPP shall address all investigations to be conducted at the Site and shall include the following:

1. A project description;

2. Analytical methods and laboratory procedures;

3. Quality assurance objectives for data such as the required precision and accuracy, completeness of data, representativeness of data, comparability of data, and the intended use of collected data;

4. Chain of custody procedures during sample collection and in the laboratory;

5. The type and frequency of calibration procedures during sample collection and in the laboratory;

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6. Preventative maintenance procedures and schedule and corrective action procedures for field and laboratory instruments;

7. Specific procedures to assess data precision, representativeness, comparability, accuracy, and completeness of specific measurement parameters; and

8. Data documentation and tracking procedures.

C. *Health and Safety Plan*

Respondent(s) shall submit an HSP which shall comply with the requirements of applicable federal, state, and local laws. The HSP shall be consistent with:

1. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

2. Section 111(c)(6) of CERCLA;

3. U.S. EPA Order 1440.3 -- Respiratory Protection;

4. U.S. EPA Occupational Health and Safety Manual;

5. U.S. EPA Interim Standard Operating Safety Procedures and other U.S. EPA guidance as developed;

6. OSHA regulations, particularly in 29 CFR 1910 and 1926;

7. State and local regulations; and

8. Site or facility conditions.

The HSP shall identify problems or hazards that may be encountered and their solution. Safety procedures to be followed to protect third parties, such as visitors or the surrounding community, including monitoring, shall also be provided.

2.0 SITE INVESTIGATION AND CONCEPTUAL DESIGN

Respondent(s) shall collect data on the physical characteristics of the Site to the extent necessary to define potential contaminant transport pathways and provide sufficient engineering data for screening and selecting proposed SCIA(s). Respondent(s) shall screen the potential SCIA(s) identified in the Workplan concurrent with the Site characterization tasks.

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2.1 Hydrogeology

Respondent(s) shall perform a Site-wide hydrogeologic study to evaluate the subsurface geology and water bearing formations, and to characterize ground-water contamination. The study shall determine the location of water bearing formations, confining layers, bedrock, and other subsurface geologic features, and shall support the determination of the vertical and horizontal distribution of source contaminants. Efforts shall begin with a survey of previous hydrogeologic studies and other existing data.

A detailed technical description of all methods to be used in gathering data for this task shall be included in the Workplan. This shall include a diagrammatic representation of proposed monitoring well and piezometer locations, monitoring well and piezometer design and construction, information on construction materials, drilling techniques, and well development methods.

The hydrogeologic investigation shall provide the following information for the Site:

A. A representative and accurate classification and description of the hydrogeologic units which may be part of contaminant migration pathways (i.e., the aquifers and any intervening saturated and unsaturated units), including but not limited to:

1. Hydraulic conductivity (vertical and horizontal) and porosity (total and effective);

2. Storativity and transmissivity;

3. Lithology, grain size, sorting, and degree of cementation;

4. A determination of hydraulic interconnections between saturated zones; and

5. The retardation capacity and mechanisms of the natural earth materials (e.g., organic carbon content, clay content, etc.).

B. Hydrogeologic cross-sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the contaminant migration pathways, identifying:

1. Sand, gravel, and other unconsolidated deposits;

2. Zones of higher or lower permeability that might direct and restrict the flow of contaminants;

3. Aquifers: geologic formations, groups of formations, or parts of formations capable of yielding usable amounts of ground water to wells or springs; and

4. Water-bearing zones that may serve as a pathway for contaminant migration including perched zones of saturation.

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C. A representative description of water level or fluid pressure monitoring including:

1. Potentiometric surface maps;

2. Hydrogeologic cross sections showing vertical gradients and interconnection between water bearing strata; and

3. Temporal changes in hydraulic gradients and flow directions.

D. A description of man-made influences that may affect the hydrogeology of the Site identifying:

1. Active and inactive local water supply and production wells with an approximate schedule of pumping; and

2. Man-made hydraulic structures (pipe-lines, french drains, ditches, unlined ponds, septic tanks, wastewater outfalls, retention areas, utility lines, etc.).

Respondent(s) shall document the procedures used in making the above determinations.

2.2 Soil and Sediments Investigations

Respondent(s) shall conduct a program to characterize the soil and unconsolidated deposits in the vicinity of the contaminant release(s). This process may overlap with certain aspects of the hydrogeologic study (e.g., characteristics of soil strata are relevant to both the transport of contaminants by ground water and to the locations of contaminants in the soil). A survey of existing data on soils and sediments may be useful. The characterization shall include as appropriate the following information:

A. Soil classification using the Unified Soil Classification System;

B. Surface soil distribution;

C. Soil profile, including ASTM classification of soils;

D. Transects of soil stratigraphy;

E. Hydraulic conductivity;

F. Relative permeability;

G. Bulk density;

H. Porosity;

I. Soil sorptive capacity;

J. Soil organic content;

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K. Particle size distribution;

L. Depth to water table;

M. Moisture content;

N. Effect of stratification on unsaturated flow;

O. Infiltration rate; and

P. Storage capacity.

Respondent(s) shall document the procedures used in making the above determinations.

2.3 Contamination Characterization

Respondent(s) shall identify and characterize contamination of Site ground water and soils. Data collected shall be sufficient to define the magnitude, origin, direction, and rate of contaminant migration.

A. Ground-water Contamination

Respondent(s) shall conduct an investigation to characterize ground-water contamination to the extent necessary to characterize contaminant sources and obtain design data. The investigation shall at a minimum provide the following information:

1. A characterization of any immiscible or dissolved contaminant plume(s) originating from the Site including non-aqueous phase liquids (free product);

2. An estimate of aquifer transverse and longitudinal dispersivity;

3. The velocity of contaminant movement;

4. The horizontal and vertical concentration profiles of contaminants in identified plumes;

5. An evaluation of factors influencing contaminant movement; and

6. Background contaminant concentrations in areas upgradient of and unaffected by Site-related contaminant source(s).

Respondent(s) shall follow the guidance identified in the Orders for well design, construction, development, purging, sampling, geophysics, modeling, etc. and shall document the procedures used in making the above determinations.

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B. Soil Contamination

Respondent(s) shall conduct an investigation to characterize surface and subsurface soil contamination at the Site. The investigation shall be designed to collect the following information:

1. The vertical and horizontal concentration profiles of contaminants in Site soils;

2. A description of soil chemical properties which might affect contaminant migration and transformation;

3. Identification of contaminants present;

4. Background soil contaminant concentrations in areas unaffected by Site-related contaminant source(s).

2.4 Refine and Develop Cleanup Goals and Design Criteria

Respondent(s) shall refine the cleanup goals previously identified in the Workplan. Cleanup goals shall be developed and refined in accordance with the guidance documents identified in the Orders. Volumes or areas of media to which potential SCIA(s) apply shall be identified, taking into account the chemical and physical characteristics of the Site and the requirements for protectiveness as identified in the refined cleanup goals.

Using the Freundlich Equation with Site specific data, Respondent(s) shall estimate the volume of water moving vertically and horizontally through contaminated media so as to determine unsaturated soil organic contaminant cleanup goals. The objective shall be to establish SCIA design criteria for soils which will be protective of ground water and not elevate ground-water organic contaminant levels above ground-water cleanup goals. Unsaturated soil organic contaminant cleanup goals shall be calculated for each individual organic contaminant of concern.

2.5 Site Characterization Report

Respondent(s) shall summarize all investigations and their results to ensure that the investigation data are sufficient in quality and quantity to describe the nature and extent of identified source(s) of contamination, define contaminant transport mechanisms, and support the selection and design of the proposed SCIA(s). Any data gaps shall be identified and their impact upon the work shall be fully described. The analysis and summary shall be presented in a written report which shall at a minimum include the following:

A. Data on Site physical characteristics (soils, geology, hydrogeology, etc.)

B. Data on source characteristics describing:

1. The source location;

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2. The type and integrity of any existing waste containment; and

3. A description of the vertical and horizontal extent of contamination in the source area (quantity of contaminated source media).

C. Data on the nature and extent of contamination within the source area.

D. Cleanup goals and supporting calculations for all contaminated media.

2.6 Conceptual Design of Respondent(s)' proposed SCIA(s)

Using data generated during the FSC, Respondent(s) shall evaluate the potential SCIA(s) identified in the FSC Workplan for applicability to Site problems and recommend a proposed SCIA(s) for implementation at the Site. Respondent(s) shall include a technical description of each component of the proposed SCIA(s) outlining the waste management strategy involved and identifying regulatory requirements and cleanup goals. The Conceptual Design shall include discussion of the evaluation of the potential SCIA(s) and shall be included as part of or submitted concurrently with the Site Characterization Report. The Conceptual Design shall include but not be limited to the following:

A. A narrative description of the proposed SCIA(s);

B. Schematic drawings of treatment processes;

C. A description of how treatment, storage, and disposal of contaminated media will comply with federal, state and local laws and regulations;

D. Supporting data and documentation defining the functional aspects of the SCIA(s);

E. Design calculations including removal and destruction efficiencies for all SCIA components (treatment works, extraction wells, vadose gases extraction networks, etc.);

F. A Site map showing the location of all SCIA components and significant Site features;

G. A schedule for submittal of detailed plans and specifications including any required permit applications, initiation and completion of construction, attainment of operational level; and initiation of operation, maintenance, and monitoring; and

H. Identification and assessment of all applicable regulatory requirements pertaining to the proposed SCIA(s) including:

1. Identification of permitting authorities.

2. Required construction/operation permits.

3. Time required by permitting authorities to process applications.

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4. Monitoring and/or compliance testing requirements, and

5. Reporting requirements.

I. Monitoring requirements to verify system effectiveness.

Factors considered by Ohio EPA in approval of proposed SCIA(s) include but are not limited to the following:

A. Time required for implementation;

B. Time required to achieve protection of human health and the environment;

C. Compliance with federal, state and local laws and regulations;

D. Performance efficiencies;

E. Use of treatment technologies which significantly reduce toxicity, mobility, and volume of contaminants;

F. Ability to minimize or eliminate cross-media transfer of contaminants;

G. Ability to verify SCIA(s) effectiveness;

H. Frequency of routine maintenance and component replacement;

I. Degree of permanence; and

J. Degree of contribution to the efficient performance of any anticipated long-term remedial action(s).

3.0 DESIGN/IMPLEMENTATION (D/I)

The purpose of D/I is to design and implement the approved SCIA(s) in order to protect the human health and the environment.

3.1 Detailed Plans and Specifications

Detailed plans and specifications for the approved SCIA(s) shall be submitted in accordance with the timetable contained in the Ohio EPA-approved Conceptual Design. The detailed plans and specifications shall include but not be limited to final construction drawings, specifications, plans, and design analyses with supporting calculations. Applications for any required permits shall be submitted simultaneously with the detailed plans and specifications. Following Ohio EPA approval of the detailed plans and specifications and receipt of any necessary construction permits, *Respondent* shall initiate construction of the approved SCIA(s) in accordance with the approved schedules contained in the Conceptual Design.

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By: Mary Cavin Date 7-28-93

3.2 Operation and Maintenance (O&M) Plan

An O&M plan shall be submitted to Ohio EPA prior to the completion of construction. Appropriate elements are listed in Exhibit 1. Plan elements listed in Exhibit 1 are for illustrative purposes and should not limit the content of the O&M plan.

3.3 Design Changes During Construction

During construction, unforeseen Site conditions, changes in estimated quantities, and other problems associated with the project may require either major or minor changes to the approved design. Design changes require prior approval of Ohio EPA and may require modification of permit(s) to install to ensure that the intent and scope of the approved SCIA(s) is maintained. Changes to the SCIA(s) design which require Ohio EPA approval prior to implementation include:

A. Those which involve the deletion or addition of a major component of the approved SCIA(s) (e.g. changing one treatment system for another, deleting any designed layer of a multilayer cap);

B. Those which result in a less effective treatment for wastes associated with the Site;

C. Any changes which may result in an increased exposure to Site contaminants and/or risk to human health or the environment;

D. Those which result in a significant delay in the completion of the SCIA(s); and

E. Any other changes which alter the scope or objectives of the approved SCIA(s).

3.4 Construction Completion

As the construction of the SCIA(s) nears completion, the following activities shall be completed by Respondent(s) to ensure proper construction completion and transition to the O&M phase.

A. *SCIA(s) Construction Report and Certification*

A SCIA(s) Construction Report (CR) shall be prepared and submitted by Respondent(s) within 30 days of completion of construction and in accordance with the schedule contained in the Conceptual Design. The CR report shall include the following:

1. A synopsis of the construction work defined in the detailed plans and specifications and certification that this work was performed;

2. An explanation of any modifications to the work defined in the detailed plans and specifications and why they were necessary for the project; and

3. Certification that the constructed SCIA(s) is operational and functional and constructed according to the approved plans and specifications.

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By: Mary Carino Date 7-93

EXHIBIT 1

Basic Elements of an Operation and Maintenance (O&M) Plan

A. Normal O&M

1. Description of tasks for operation
2. Description of tasks for maintenance
3. Description of prescribed treatment or operating conditions
4. Schedules showing the frequency of each O&M task

B. Potential Operating Problems

1. Description and analysis of potential operating problems
2. Sources of information regarding potential operating problems
3. Description of means of detecting problems in the operating systems
4. Common remedies for operating problems

C. Routine Monitoring and Laboratory Testing

1. Description of monitoring tasks
2. Description of required laboratory tests and interpretation of test results
3. Required QA/QC procedures
4. Monitoring schedule

D. Alternative O&M

1. Description of alternate procedures to prevent undue hazard, should systems fail
2. Vulnerability analysis and additional resources requirements should a failure occur

E. Safety Plan

1. Description of safety procedures, necessary equipment, etc. for site personnel
2. Description of safety tasks required in the event of systems failure

F. Equipment

1. Description of equipment necessary to the O&M Plan
2. Description of installation of monitoring components
3. Description of maintenance of site equipment
4. Replacement schedule for equipment and installed components

G. Records and Reporting Mechanisms Required

1. Daily operating logs
2. Laboratory records
3. Mechanism for reporting emergencies
4. Personnel and maintenance records
5. Monthly reports to Ohio EPA

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EXHIBIT 2

METHOD TO CALCULATE SOIL CLEANUP GOALS USING THE FREUNDLICH EQUATION

This document outlines a method using the Freundlich equation for establishing soil cleanup goals at hazardous waste sites where threats to ground water resources exist. The method is designed for use with organic compounds and will predict dry soil contaminant concentrations which will prevent ground-water contaminant levels from exceeding ground-water cleanup goals. A dry soil contaminant goal can be calculated for each contaminant of concern.

The method consists of two steps. In step 1, the maximum equilibrium soil water concentration for the contaminant of concern is calculated by setting the contaminant concentration in the top 10 feet of the aquifer beneath the contaminated portion of the site to the ground water cleanup goal, estimating the vertical and horizontal components of ground-water flow, and determining by mass balance calculations the maximum mass and concentration of contaminant which can be transported via vertical ground-water flow to ground water flowing horizontally beneath the site.

In step 2, a batch adsorption technique is used to assess the ability of on-site soils to remove contaminants from solution. An aqueous solution containing solutes of known composition and concentration is mixed with a given mass of adsorbent and allowed to equilibrate. The solution is separated from the adsorbent and analyzed to determine changes in chemical composition. The amount of solute adsorbed is assumed to be the difference between the initial concentration and the solute concentration after the mixing period. The results of the batch adsorption experiment are graphed and the Freundlich adsorption equation for the resulting line segment is derived. The Freundlich isotherm or curve is then used to determined how the solute will partition between soil and water.

The value for the maximum equilibrium soil water concentration for the contaminant of concern can be inserted into the Freundlich equation derived during step 2 to determine the maximum dry soil contaminant concentration.

Step 1. Calculate maximum equilibrium soil-water concentration for contaminant.

A simple ground-water flow model is constructed for the site. Assumptions of the model include:

a. Darcy's Law, $q = -K\, dh/dl$, is valid
   where q = specific discharge
   K = hydraulic conductivity
   dh/dl = hydraulic gradient

b. Hydraulic conductivity in top 10 feet of aquifer is homogeneous and isotropic

c. Uniform hydraulic gradient beneath site

The following steps are required to construct the model.

1. Measure the lateral source length perpendicular to the direction of ground-water flow.
2. Using Darcy's Law, calculate the lateral ground-water flow in the top ten feet of the aquifer beneath the contaminated portion of the site.

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3. Calculate the maximum mass of contaminant that can leave site (ground-water quality goal times yearly flux).
4. Measure the surface area of the contaminated portion of the site.
5. Calculate the infiltration rate through the contaminated portion of the site using the U.S.EPA Help Model.
6. Assuming the upgradient ground water contaminant concentration = 0, calculate the maximum concentration of the contaminant in the equilibrium soil water which can be transported via infiltration to ground water passing beneath the site such that the ground-water contaminant level will not exceed the ground-water cleanup goal.

Step 2. Assess ability of on-site soils to remove contaminants from solution.

1. Determine a suitable batch-type laboratory procedure for determining soil adsorption of contaminants. See EPA/530-SW-87-006-F: *Batch-Type Procedures for Estimating Soil Adsorption of Chemicals (USEPA, 1992).*

2. Construct adsorption isotherm by conducting batch experiments and determining amount of solute adsorbed per mass of adsorbent by

$$x/m = (C_o - C)(V)/m$$

where x/m = amount of solute adsorbed per unit mass of adsorbent,
m = mass of adsorbent added to reaction chamber
C_o = initial solute concentration before exposure to adsorbent
C = solute concentration after exposure to adsorbent, and
V = volume of solute solution added to reaction container.

The isotherm is constructed by plotting equilibrium concentration (C) or log C on the x axis and the corresponding x/m or log x/m on the y axis. The linear expression of the Freundlich equation is

$$\log (x/m) = \log K_f + 1/n \log C$$

where x/m = amount of solute adsorbed per unit mass of adsorbent,
K_f = a constant
$1/n$ = a constant, and
C = solute concentration after exposure to adsorbent.

A linear regression can be used to fit a curve through the adsorption isotherm where the intercept equals K_f and the slope equals $1/n$. The value for C calculated in Step 1 can be plotted on the isotherm in order to determine the corresponding value for x/m, the soil cleanup goal.

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ATTACHMENT B

GUIDANCE DOCUMENTS FOR THE DEVELOPMENT

OF THE WORKPLAN

a) *RCRA Ground Water Monitoring Technical Enforcement Guidance Document* (TEGD), OSWER Directive 9950.1, September, 1986.

b) *Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part B), Development of Risk-based Preliminary Remediation Goals.* OSWER Directive 9285.7-01B, December, 1991, Interim.

c) *Guidelines and Specifications for Preparing Quality Assurance Project Plans.* Ohio EPA, Division of Emergency and Remedial Response, Policy No. DERR-00-RR-008.

d) *Batch-Type Procedures for Estimating Soil Adsorption of Chemicals.* U.S.EPA, EPA/530/SW-87/006-F, April, 1992.

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BUTLER COUNTY

PUBLIC NOTICE

OHIO ENVIRONMENTAL PROTECTION AGENCY

Notice is hereby given that the Director of the Ohio Environmental Protection Agency ("OEPA") has issued as a final action an Administrative Order on Consent in the matter of AEP Flexo, Inc., as Respondent. OEPA is hereby giving Notice that Respondent consented to: develop and implement a workplan that characterizes the source of contamination and design and implement approved response actions at the Site, which includes the property located at 1300 Hook Drive, Middletown, Butler, Ohio, to prevent, minimize, or mitigate a substantial threat to public health or safety or the environment.

The effective date of this final action is July 28, 1993. The action of the Director is final and may be appealed to the Environmental Board of Review (EBR) pursuant to Section 3745.04 of the Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the EBR within thirty (30) days after notice of the Director's action. A copy of the appeal must be served upon the Director of the Ohio EPA within three (3) days of filing at the EBR. The EBR's address is:

Environmental Board of Review
236 East Town Street
Room 300
Columbus, Ohio 43215

A copy of this action may be obtained from the Hearing Clerk, Ohio EPA, P.O. Box 1049, 1800 WaterMark Drive, Columbus, Ohio 43266-0149 or the Division of Emergency and Remedial Response, Southwest District Office, 40 South Main Street, Dayton, Ohio 45402-2086.