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UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

IN THE MATTER OF:	)	FINAL ADMINISTRATIVE ORDER ON CONSENT
AMP, Incorporated	)	
	)	U.S. EPA Docket No. RCRA-III-032-CA
Glen Rock Facility Susquehanna Trail Glen Rock, York County, Pennsylvania	)	
RESPONDENT	)	
EPA I.D. No. PAD ~~044211 223~~ 041 123 223	)	Proceeding under Section 3008(h) of the Resource Conservation and Recovery Act, as amended, 42 U.S.C. Section 6928(h).

ADMINISTRATIVE ORDER ON CONSENT

THE PARTIES to this Administrative Order on Consent ("Consent Order" or "Order"), the United States Environmental Protection Agency ("EPA") and AMP Incorporated ("Respondent"), having agreed to entry of this Consent Order, it is therefore Ordered and Agreed that:

I. JURISDICTION

This Consent Order is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency by Section 3008(h) of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (collectively referred to hereinafter as "RCRA"), 42 U.S.C. Section 6928(h). The authority vested in the Administrator has been delegated to the Regional Administrators by EPA Delegation Nos. 8-31 and 8-32 dated March 6, 1986.

On January 30, 1986, the EPA granted the Commonwealth of Pennsylvania (the "State") authorization to operate a hazardous waste program in lieu of EPA, pursuant to Section 3006(b) of RCRA, 42 U.S.C. Section 6926(b). The State, however, does not have authority to enforce Section 3008(h) of RCRA.

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This Consent Order is issued to Respondent, the owner/operator of a combined manufacturing, research and development facility located on the Susquehanna Trail in Glen Rock, York County, Pennsylvania (the "Facility"). Respondent consents to and agrees not to contest EPA's jurisdiction to issue this Consent Order and to enforce its terms. Further, Respondent will not contest EPA's jurisdiction to: compel compliance with this Consent Order in any subsequent enforcement proceedings, either administrative or judicial; require Respondent's full or interim compliance with the terms of this Consent Order; or impose sanctions for violations of this Consent Order.

II. PARTIES BOUND

A. This Consent Order shall apply to and be binding upon EPA, Respondent and their officers, directors, employees, successors and assigns.

B. No change in ownership or corporate or partnership status relating to the Facility will in any way alter Respondent's obligations under this Consent Order.

C. Respondent shall provide a copy of this Consent Order to all supervisory personnel, contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Consent Order within one (1) week of the effective date of this Consent Order or date of such retention, whichever is later, and shall condition all such contracts on compliance with the terms and conditions of this Order. All supervisory personnel, contractors, subcontractors, laboratories and consultants retained to conduct any work pursuant to this Consent Order shall perform such work in accordance with the requirements of this Order.

D. Respondent shall give notice of this Consent Order to any successor in interest prior to any transfer of ownership, interest or operation of the Facility and shall notify EPA at least thirty (30) days prior to such transfer.

III. STATEMENT OF PURPOSE

In entering into this Consent Order, the mutual objective of EPA and Respondent is protection of human health and the environment through implementation of the Corrective Measure Alternative ("CMA") selected by EPA in the RCRA Record of Decision ("RCRA ROD") for the Facility dated _____. The Corrective Measure Implementation ("CMI") program shall be designed to facilitate the design, construction, operation, maintenance and monitoring of the CMA at the Facility.

IV. FINDINGS OF FACT

1. Respondent is a corporation doing business in the Commonwealth of Pennsylvania and is a person as defined by Section 1004(15) of RCRA, 42 U.S.C. Section 6903(15) and 25 PA Code § 75.260(2).

2. Respondent is a generator of hazardous waste and an owner and operator of a hazardous waste management facility located on the Susquehanna Trail in Glen Rock, York County, Pennsylvania.

3. The Facility, which has been in operation since 1959, consists of a Materials Development Laboratory ("MDL") and a plastics manufacturing division. In the MDL, Respondent is involved in the research of contact adhesives and lubricants. The plastics manufacturing division is engaged in the manufacture of plastic electrical connector housings for use in the telephone, computer and automotive industries.

4. Respondent owned and operated its Facility as a hazardous waste management facility on and after November 19, 1980, the applicable date which renders facilities subject to interim status requirements or the requirement to have a permit under Sections 3004 and 3005 of RCRA, 42 U.S.C. §§ 6924 and 6925.

5. Pursuant to Section 3010 of RCRA, 42 U.S.C. § 6930, Respondent notified EPA of its hazardous waste activity. In its notification dated August 13, 1980, Respondent identified itself as a generator of hazardous waste and an owner/operator of a treatment, storage, or disposal facility for hazardous waste.

6. In its Part A permit application dated November 17, 1980, Respondent identified itself as storing in containers (S01) the following hazardous wastes at the Facility:

a) Commercial chemical products, manufacturing chemical intermediates, off-specification commercial chemical products, or manufacturing chemical intermediates identified at 40 C.F.R. § 261.33(f), specifically 2-ethoxyethanol (U227);

b) Hazardous waste exhibiting the characteristic of corrosivity identified at 40 C.F.R. § 261.22, (D002).

7. EPA acknowledged the Facility's interim status in a letter to Respondent dated July 16, 1981. The Facility is thus subject to interim status requirements under Sections 3004 and 3005 of RCRA, 42 U.S.C. §§ 6924 and 6925.

8. Respondent sent a letter to EPA dated April 2, 1982, requesting to modify its conditions of operations during interim status. The request included adding the following hazardous wastes to the list of waste handled:

a) Hazardous wastes from non-specific sources identified at 40 C.F.R. § 261.21, specifically F001;

b) Hazardous waste exhibiting the characteristic of ignitability identified at 40 C.F.R. § 261.21, specifically D001.

9. Hazardous wastes and hazardous constituents have been used, handled, generated and stored on site for disposal since operations began at the Facility.

10. The Pennsylvania Department of Environmental Resources (PADER) sent a letter to Respondent dated November 5, 1982, requesting a Part B permit application for the Facility.

11. Respondent submitted its Part B permit application dated June 1, 1983.

12. Respondent sent a letter to PADER dated July 2, 1984, withdrawing its Part B permit application. The letter explained that Respondent accumulated hazardous wastes on-site for less than 90 days, pursuant to 40 C.F.R. § 262.34(a).

13. In mid-1984, Respondent's employees complained of "funny tasting" water. In response to the complaint, Respondent's consultant, R.E. Wright Associates, began an investigation to determine whether groundwater contamination existed.

14. Analyses of soil, groundwater, and surface water samples obtained from 1984 to 1990 by R.E. Wright & Associates revealed the presence of 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2-trichloroethane (1,1,2-TCA) and trichloroethylene (TCE) in specific onsite and offsite locations at the Facility. The following table summarizes the analytical results of ground water samples from various sampling wells from 1984 through 1990:

TABLE 1

PARAMETER (in parts per billion ("ppb"))

Well I.D.	DATE	1,1,1 TCA	1,1,2 TCA	TCE
AMP-2	8/18/84	447	2120	83
	9/01/87	210	1196	61
AMP-2	3/08/90	38	670	17

PARAMETER

WELL I.D.	DATE	1,1,1 TCA	1,1,2 TCA	TCE
AMP-3	8/18/84	96	59	11
	9/01/87	25	11	4
	3/09/90	6	3	2
MW-10	3/27/87	24	113	17
	12/07/88	13	48	4
	12/07/89	6	14.5	3
MW-4	11/01/84	229	1217	67
	9/01/87	60	421	17
	3/08/90	18	350	6
Larkin Field	1/29/85	21	8	9
	3/02/88	29	16	10
	3/08/90	18	11	6
R-5	3/10/89	86	2960	26
	9/08/89	61	2610	21
	3/08/90	61	3500	22

15. 1,1,1-trichloroethane, 1,1,2-trichloroethane and trichloroethylene are hazardous wastes as defined by 40 C.F.R. Sections 260.10 and 261.3 and/or hazardous constituents as defined in 40 C.F.R. Part 261, Appendix VIII.

16. In August 1988, the Facility was proposed for inclusion on the National Priorities List ("NPL") pursuant to Section 105(a)(8)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9605(a)(8)(B).

17. In July 1988, Respondent conducted a regulatory compliance audit at its MDL facility in which it was found that hazardous wastes were being stored in drums at the Facility for longer than 90 days.

18. The information in paragraph 14 above shows a release of hazardous wastes and/or hazardous constituents into the environment from the Facility.

19. The hazardous wastes and/or hazardous constituents identified in paragraph 14 above, may pose a threat to human health and the environment. Human health impacts for some of these hazardous wastes and/or constituents are described below as taken from "Chemical, Physical, and Biological Properties of Compounds Present at Hazardous Waste Sites" (EPA, 1985). Specifically:

a. 1,1,1-Trichloroethane (1,1,1-TCA) is a solvent in which high concentrations inhaled depressed the central nervous system, affected cardiovascular function, and damaged the lungs, liver and kidneys in animals and humans. The maximum contaminant level ("MCL") permissible in public drinking water systems for 1,1,1-TCA is 200 ppb.

b. 1,1,2-Trichloroethane (1,1,2-TCA) induced heptacelluar carcinomas in male and female mice. Studies also have found that single doses of 1,1,2-TCA as low as 4000 ppb. caused liver and kidney damage in dogs. The 10^{-6} cancer risk based level for 1,1,2-TCA is 0.6 ppb.

c. Trichloroethylene (TCE) induced heptacelluar carcinomas in mice and was mutagenic when tested using several microbial assay systems. Chronic inhalation exposure to high concentrations caused liver, kidney, and neural damage and dermatological reactions in animals. The MCL for TCE is 5 ppb.

20. On January 4, 1989, EPA and Respondent entered into a corrective action Consent Order, Docket Number RCRA-III-018-CA, pursuant to RCRA Section 3008(h), requiring Respondent to prepare a Corrective Measures Study ("CMS") proposing alternatives for remediation at the Facility (the "CMS Order"). In Section VI, paragraph B of the CMS Order, EPA informed Respondent that a previously completed Remedial Investigation and Feasibility Study ("RI/FS") under the CERCLA (referred to collectively as the "RI/FS Studies") did not completely satisfy the requirements for a RCRA Facility Investigation ("RFI") and identified the deficiencies of the RI/FS Studies. Respondent addressed the deficiencies identified by EPA in the RI/FS Studies and on August 5, 1989 EPA accepted the RI/FS Studies and considered Respondent to have fulfilled all the Scopes of Work in a RCRA Facility Investigation ("RFI") Report.

21. On August 30, 1989, Respondent submitted to EPA a CMS Report. In this CMS Report Respondent identified and evaluated the efficacy of four (4) Corrective Measure Alternatives ("CMA"). A summary of each alternative is presented below:

(a) CMA-1 Soil Excavation and Disposal - the components of CMA-1 involve the excavation of contaminated soil at the AMP Facility and disposal of this soil at an approved off-site hazardous waste landfill.

(b) CMA-2 Vacuum Extraction - Vacuum extraction is a process by which organic vapors are removed from soil. The process entails injecting air into the soil essentially "flushing out" contaminants from the soil and then extracting the contaminated air with a suction pump.

(c) CMA-3 Bioreclamation - Bioreclamation is the process by which microbes change complex volatile polychlorinated hydrocarbons into compounds such as water and carbon-dioxide.

(d) Pumping and Treating Groundwater Using Air Stripping Towers - The pumping and treating of groundwater at the AMP Facility has been ongoing since November 1984 ("pump and treat system"). Currently, AMP is pumping and treating groundwater using six recovery wells. This method is effectively reducing the size of the contaminated groundwater areas at the Facility. In addition, this method is also preventing contamination from migrating off-site. Dual air stripping towers are used to treat the contaminated groundwater.

22. In the CMS Report described in paragraph 21, above, Respondent recommended CMA Number 4 as the preferred remedial alternative.

23. On December 1, 1990 EPA submitted to Respondent comments identifying the deficiencies in the CMS report.

24. On January 12, 1990 Respondent submitted to EPA a response to the December 1, 1990 comment letter referred to in paragraph 23, above.

25. On February 7, 1990 EPA met with Respondent to discuss the revised CMS Report. All outstanding issues concerning the report were discussed at the meeting so that the CMS Report could be finalized.

26. Respondent submitted to EPA two revisions to the CMS Report on March 12th and May 16th respectively, which incorporated all EPA comments and suggestions into the CMS Report. These revisions included an expansion of Respondent's existing pump and treat system to include a bedrock flushing infiltration trench.

27. On June 8, 1990, EPA approved the CMS Report and made a preliminary selection of CMA Number 4 as the preferred remedial alternative.

28. An EPA Statement of Basis, summarizing Respondent's CMS Report, was made available to the public for a thirty day comment period. On August 30, 1990, this thirty day comment period ended. No substantive public comments were received by EPA.

29. On _____ EPA approved CMA Number 4 as the CMA to be implemented by Respondent at the Facility.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set out above, and after consideration of the Administrative Record supporting the issuance of this Consent Order, EPA has made the following Conclusions of Law and Determinations:

A. Respondent is a "person" within the meaning of Section 1004(15) of RCRA, 42 U.S.C. Section 6903(15);

B. Respondent is an owner or operator of a facility authorized to operate pursuant to Section 3005(e) of RCRA, 42 U.S.C. Section 6925(e).

C. Certain wastes found at the Facility are hazardous wastes within the meaning of Section 3008(h) of RCRA, 42 U.S.C. Section 6928(h).

D. There is or has been a release of hazardous wastes into the environment from the Facility within the meaning of Section 3008(h) of RCRA, 42 U.S.C. Section 6928(h).

E. The actions required by this Consent Order are necessary to protect human health or the environment.

VI. WORK TO BE PERFORMED

Pursuant to Section 3008(h) of RCRA, 42 U.S.C. Section 6928(h), Respondent agrees to and is hereby ordered to perform the following acts in the manner and by the dates specified herein. All work undertaken pursuant to this Consent Order shall be developed and performed in accordance with, at a minimum: the Scope of Work for Corrective Measure Implementation ("CMI") set forth in Attachment A; RCRA and its implementing regulations; and relevant EPA guidance documents. All Attachments to this Order are incorporated herein by reference. Relevant EPA guidance documents may include, but are not limited to, the "RCRA Facility Investigation (RFI) Guidance" (EPA 530/SW-87001), "RCRA Ground Water Monitoring Technical Enforcement Guidance Document" (OSWER Directive 9950.1, September 1986), "Test Methods For Evaluating Solid Waste" (SW-846, November 1986) and "Construction Quality

Assurance for Hazardous Waste Land Disposal Facilities" (EPA 530/SW-85-031, July 1986).

A. Corrective Measure Implementation ("CMI") Program

1. AMP shall continue to implement its existing program of groundwater pumping, at the present flow rates, and treatment by granular activated carbon units, for removal of 1,1,1 - TCA, 1,1,2 - TCA, and TCE from groundwater to the cleanup standards set forth in the RCRA ROD.

2. Within 45 calendar days of the effective date of this Consent Order, Respondent shall submit to EPA a **Draft Corrective Measures Implementation ("CMI") Program Plan.** The **Draft CMI Program Plan** is subject to approval by EPA.

3. The **Draft CMI Program Plan** shall be designed to facilitate the design, construction, operation, maintenance and monitoring of all actions taken to implement the Corrective Measure Alternative, as defined in Section IV, paragraph 29, of this Consent Order. In accordance with Attachment A, Task I, the Draft CMI Program Plan shall include a Program Management Plan and a Community Relations Plan.

4. Within 30 calendar days of receipt of EPA's comments on the Draft CMI Program Plan submitted pursuant to Paragraph 3 above, Respondent shall submit to EPA for approval a **Final CMI Program Plan** which addresses and/or remedies any comments or deficiencies provided or identified by EPA.

5. Within 30 calendar days of receipt of EPA approval of the CMI Program Plan, Respondent shall submit to EPA for approval a **Draft Corrective Measure Design.** In accordance with Attachment A, Task II, the Draft Corrective Measure Design shall include: (1) Design Plans and Specifications; (2) an Operation and Maintenance Plan; (3) a Cost Estimate; (4) Project Schedule; (5) a Health and Safety Plan; (6) a Construction Quality Assurance Plan; (7) Preliminary and Final Design Documents.

6. Within 30 calendar days of receipt of EPA's comments on the Draft Corrective Measure Design submitted pursuant to paragraph 5, above, Respondent shall submit to EPA for approval a **Final Corrective Measure Design** which addresses and/or remedies any comments or deficiencies provided or identified by EPA.

7. Within 30 calendar days of receipt of EPA approval of the Final Corrective Measure Design, Respondent shall submit to EPA for approval a Construction Quality Assurance ("CQA") Program Plan, in accordance with Attachment A, Task III, Items A, B, C.1, D and E.

8. Within 15 calendar days of receipt of EPA's written approval of the CQA Program Plan, Respondent shall implement the EPA-approved CQA Program Plan, in accordance with the Final CMI Program Plan and the Final Corrective Measure Design.

9. Within fifteen (15) calendar days of completion of construction as specified in the EPA-approved CQA Program Plan, Respondent shall submit a **Draft Corrective Measure Implementation ("CMI") Report** to EPA. The Report shall indicate whether the constructed project is consistent with the design specifications and whether the Corrective Measure Alternative is progressing towards the clean-up goals set forth in the RCRA ROD. The Report shall include, but not be limited to the following elements:

a. synopsis of the corrective measure and certification of the design and construction;
b. explanation of any modifications to the EPA-approved construction and/or design plans and why these were necessary for the project;
c. listing of the criteria, established before the corrective measure was initiated, for judging whether the corrective measure is functioning properly, and also explaining any modification to these criteria;
d. results of Facility monitoring, indicating whether the Corrective Measure Alternative will meet or exceed the clean-up goals set forth in the RCRA ROD; and
e. explanation of the operation and maintenance (including monitoring) to be undertaken at the Facility.

10. Within thirty (30) calendar days of receipt of EPA's comments on the Draft CMI Report, Respondent shall submit to EPA for approval a **Revised Draft CMI Report** which responds to and/or remedies any deficiencies identified by EPA in the Draft CMI Report.

11. EPA shall determine, on the basis of the Revised Draft CMI Report and any other relevant information, whether the constructed project is consistent with the design specifications and whether the Corrective Measure Alternative is progressing towards the clean-up goals set forth in the RCRA ROD. If EPA determines that the constructed project is consistent with the design specifications and that the Corrective Measure Alternative is progressing towards the clean-up goals set forth in the RCRA ROD, EPA shall notify Respondent of such determination in writing, and the Revised Draft CMI shall be considered the **Final CMI Report.**

B. WASTE MINIMIZATION PLAN

1. Within one hundred and eighty (180) calendar days of the effective date of this Order, Respondent shall submit to EPA for comment and review a plan to minimize the generation of hazardous waste at the Facility (the "Waste Minimization Plan" or "Plan"). This plan shall be developed in accordance with the Scope of Work for a Waste Minimization Plan scope of work contained in Attachment B and shall describe procedures to minimize the volume, mobility and toxicity of hazardous waste generated at the Facility.

2. Within thirty (30) calendar days after receipt of EPA's comments on the Waste Minimization Plan, Respondent shall implement said Plan. Respondent shall comply with all requirements and schedules contained in the Plan and shall give due consideration to EPA's comments in the implementation of the Waste Minimization Plan.

3. Within sixty (60) days after implementation of the Waste Management Plan, Respondent shall submit to EPA a report detailing how EPA's comments have been incorporated into the implemented Waste Management Plan or, in the alternative, the rationale behind any decision not to incorporate specific EPA comments.

C. CORRECTIVE MEASURE TWO YEAR ASSESSMENT REPORT

1. Two (2) years from the effective date of this Consent Order, and every two (2) years thereafter until receipt of notice from EPA that the clean-up goals set forth in the RCRA ROD have been met, AMP shall submit a **Draft Corrective Measures Two Year Assessment Report.** Such Report shall contain an evaluation of the Corrective Measure Alternative in attaining the clean-up goals specified in the RCRA ROD.

2. Within thirty (30) calendar days of receipt of EPA's comments on each Draft Corrective Measures Two Year Assessment Report submitted pursuant to Section VI.B.1, above, Respondent shall submit to EPA for approval a **Final Corrective Measures Two Year Assessment Report** which responds to and/or remedies any deficiencies identified by EPA in the Draft Corrective Measures Three Year Assessment Report.

3. At any time after EPA's receipt of the first Final Corrective Measures Two Year Assessment Report, EPA may determine, on the basis of such Three Year Assessment Report, any subsequently submitted Two Year Assessment Report(s) and/or any other relevant information, whether Respondent has achieved the clean-up goals specified in the RCRA ROD and/or whether the continued implementation of the Corrective Measure Alternative is likely to achieve the clean-up goals specified in the RCRA ROD. EPA shall notify Respondent of its determination, and the basis therefor, in writing.

4. If EPA determines, pursuant to Section VI.A.11. or Section VI.B.3., above, that the clean-up standards specified in the RCRA ROD have not been met and that the continued implementation of the Corrective Measure Alternative is not likely to achieve those clean-up goals, EPA may select an alternative and/or a supplemental Corrective Measure(s) pursuant to applicable EPA regulations and/or guidance regarding selection of Corrective Measures under RCRA Section 3008(h). Respondent shall be allowed sixty (60) calendar days within which to reach an agreement with EPA regarding modification of this Consent Order, pursuant to Section XXI ("Subsequent Modification") of

this Consent Order, to require performance of the alternative and/or supplemental Corrective Measure(s) in lieu of, or in addition to, the Corrective Measure Alternative. If such an agreement is not reached within such sixty (60) calendar day period, EPA may issue an order or seek the filing of a civil action under Section 3008(h) of RCRA for a federal court order requiring Respondent to perform such alternative and/or supplemental Corrective Measure(s) in lieu of the Corrective Measure Alternative.

5. At any time, Respondent may determine whether all requirements of Section VI of this Consent Order have been met. These requirements include, but are not limited to, submission of progress reports, assessment reports, and quarterly reports, and achievement of the clean-up goals specified in the RCRA ROD. Within thirty (30) calendar days of such determination, Respondent shall notify EPA, in writing, of such determination. Such notification shall explain the basis for Respondent's determination and include all available documentation supporting such determination. EPA shall review such notification and shall notify Respondent, in writing, of its determination that Respondent has or has not fulfilled the above specified requirements, and the basis for such determination.

D. SUBMISSIONS/EPA APPROVAL/ADDITIONAL WORK

1. EPA will review documents submitted pursuant to the terms of this Consent Order (hereinafter collectively referred to as "submissions") and will notify Respondent in writing of EPA's approval or disapproval of the submissions or any part thereof. In the event of EPA's disapproval, EPA shall specify in writing any deficiencies in the submission(s). Such disapproval shall not be subject to the dispute resolution procedures of Section XIV, below.

2. Within thirty (30) calendar days of receipt of EPA's comments on a submission, Respondent shall submit to EPA for approval a revised submission, which responds to and/or remedies any deficiencies identified by EPA. In the event that EPA disapproves of the revised submission, Respondent may invoke the dispute resolution procedures of Section XIV, below. In such event, EPA reserves the right to prepare the submission in lieu of Respondent and seek to recover from Respondent the costs thereof.

3. Beginning with the second month following the effective date of this Consent Order and continuing throughout the period this Consent Order is effective, Respondent shall provide EPA with bimonthly (one every two months) progress reports which shall be submitted by the tenth day of the following month. The bimonthly progress reports shall contain the information required in the relevant scope(s) of work attached hereto.

4. Any notice, report, certification, data presentation or other document submitted by Respondent pursuant to this Consent Order which discusses, describes, demonstrates, supports any finding or makes any representation concerning Respondent's compliance with any requirement of this Consent Order shall be certified by a responsible corporate officer of Respondent. A responsible officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $35 million (in 1987 dollars when the Consumer Price Index was 345.3), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

The certification of the responsible corporate officer required by paragraph 4 above of this Consent Order shall be in the following form:

> "I certify that the information contained in or accompanying this [type of submission] is true, accurate and complete.

As to [the/those] portions of this [type of submission] for which I cannot personally verify [its/their] accuracy, I certify under the penalty of law that this [type of submission] and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

[signature]
Name [print]
[title]

5. All work performed pursuant to this Consent Order shall be under the direction and supervision of a person with experience in hazardous waste site investigation and/or clean-up ("the Supervisor"). No later than ten (10) calendar days after the effective date of this Consent Order, Respondent shall submit to EPA, in writing, the name, title, and qualifications of the Supervisor and of any contractors or subcontractors to be used in carrying out the terms of this Consent Order. Respondent shall advise EPA, in writing, of any proposed change respecting the Supervisor or any other contractor or subcontractor retained to perform work required by this Consent Order no later than ten (10) calendar days prior to such change. Notwithstanding Respondent's selection of a Supervisor, contractor, or subcontractors, nothing herein shall relieve Respondent of its obligation to comply with the terms and conditions of this Consent Order.

6. EPA may determine that certain tasks and deliverables including, but not limited to, investigatory work or engineering evaluation require additional work. These tasks and deliverables may or may not have been in the Scope of Work for a CMI Project Plan. When new findings indicate that such additional work is necessary, EPA shall request, in writing, that Respondent perform the additional work and shall specify the basis and reasons for EPA's determination that such additional work is necessary. Within fifteen (15) calendar days after the receipt of EPA's request, Respondent shall have the opportunity to meet, or confer, with EPA to discuss the additional work EPA has requested. In the event that Respondent agrees to perform the additional work, this Consent Order shall be modified in accordance with Section XXI, "SUBSEQUENT MODIFICATION", below, and such work shall be performed in accordance with this Consent Order. A decision by Respondent to decline EPA's request to perform such additional work shall not constitute a violation of this Consent Order and shall not subject Respondent to the

stipulated penalties set forth in Section XIII of this Consent Order. EPA, however, reserves the right to order Respondent to perform such additional work; to perform such additional work itself and to seek to recover from Respondent all costs of performing such additional work.

VII. QUALITY ASSURANCE

A. Throughout all sample collection and analysis activities, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures as specified in the approved Program Plans, Design Plans, and/or Construction Quality Assurance Program. In addition, Respondent shall:

1. Ensure that laboratories used for analyses by Respondent perform such analyses according to the EPA methods included in "Test Methods for Evaluating Solid Waste" (SW-846, November 1986) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall submit all protocols to be used for analyses to EPA for approval at least thirty (30) calendar days prior to the commencement of analyses.

2. Ensure that laboratories used by Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. As part of such a program, and upon request by EPA, such laboratories shall perform analyses of samples provided by EPA to demonstrate the quality of the analytical data.

3. Inform the EPA Project Coordinator, designated pursuant to Section XII of this Consent Order, at least (14) calendar days in advance of any laboratory analysis regarding which laboratory will be used by Respondent and ensure that EPA personnel and EPA authorized representatives have reasonable access to the laboratories and personnel used for analysis.

VIII. PUBLIC REVIEW OF ADMINISTRATIVE RECORD

The Administrative Record supporting the issuance of this Consent Order will be available for public review on Mondays through Fridays, from 9:00 a.m. to 5:00 p.m., by contacting:

Robert W. Stroud
U.S. Environmental Protection Agency
841 Chestnut Building
Philadelphia, Pennsylvania 19107
Telephone # (215) 597-8214

IX. ONSITE AND OFFSITE ACCESS

A. EPA and/or its authorized representatives shall have the authority to enter and freely move about all property at the Facility during the effective dates of this Consent Order for the purposes of, inter alia: interviewing Facility personnel and contractors; inspecting records, operating logs, and contracts related to the Facility; reviewing the progress of the Respondent in carrying out the terms of this Consent Order; conducting such tests, sampling or monitoring as EPA or its Project Coordinator deem necessary; using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted to EPA by the Respondent. The Respondent shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, that pertain to work undertaken pursuant to this Consent Order. While on Respondent's property, EPA, Respondent and their authorized representatives shall comply with all EPA-approved health and safety plans.

B. To the extent that work required by this Consent Order, or by any approved plan(s), document(s) or submission(s) prepared pursuant hereto, must be done on property not owned or controlled by Respondent, Respondent shall use its best efforts to obtain access agreements from the present owner(s) and/or lessee(s), as appropriate, of such property within fourteen (14) calendar days of receipt of EPA approval of any such plan(s), document(s) or submission(s) pursuant to this Consent Order. Best efforts as used in this paragraph, shall include at a minimum, but not be limited to, a certified letter from Respondent to the present owner(s) and/or lessee(s) of such property requesting agreements to permit Respondent, EPA and their authorized representatives access to such property. In the event that such agreements for access are not obtained within fourteen (14) calendar days as set forth in this paragraph, Respondent shall notify EPA, in writing, within seven (7) calendar days after failure to obtain such agreements regarding both the efforts undertaken to obtain access and the failure to obtain such agreements.

C. Nothing in this Consent Order limits or otherwise affects EPA's right of access and entry, or right to gather information, pursuant to applicable law, including, but not limited to, RCRA and CERCLA.

X. SAMPLING AND DATA/DOCUMENT AVAILABILITY

A. Respondent shall submit to EPA the results of all sampling and/or tests or other data generated by, or on behalf of, the Respondent pursuant to the requirements of this Consent Order and the Attachments appended hereto and incorporated herein.

B. Respondent shall notify EPA at least fourteen (14) calendar days before engaging in any field activities, including, but not limited to, well drilling, installation of equipment, or sampling. At the request of EPA, Respondent shall provide or allow EPA or its authorized representatives to take split and/or duplicate samples of all samples collected by Respondent pursuant to this Consent Order. Similarly, at the request of Respondent, EPA shall allow Respondent or its authorized representatives to take split or duplicate samples of all samples collected by EPA under this Consent Order.

C. Respondent may assert a business confidentiality claim in the manner described in 40 C.F.R. Section 2.203(b) covering all or part of any information submitted to EPA pursuant to this Consent Order. Any assertion of confidentiality shall be adequately substantiated by Respondent when the assertion is made in accordance with 40 C.F.R. Section 2.204(e)(4). Information subject to a confidentiality claim shall be disclosed only to the extent and by the means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such confidentiality claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to the Respondent. Respondent agrees not to assert any confidentiality claim with regard to any physical, sampling, monitoring or analytical data.

XI. RECORD PRESERVATION

Respondent agrees that it shall preserve, during the pendency of this Consent Order and for a minimum of at least 6 years after its termination, all data, records and documents in its possession or in the possession of its divisions, officers, directors, employees, agents, contractors, successors, and assigns which relate in any way to this Consent Order or to hazardous waste management and/or disposal at the Facility. Respondent shall notify EPA at least thirty (30) calendar days prior to the destruction of any such records, and shall provide EPA with the opportunity to inspect, copy and/or take possession of any such records.

XII. PROJECT COORDINATORS AND NOTIFICATIONS

A. EPA designates the following Project Coordinator:

Robert W. Stroud
U.S. EPA (3HW61)
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-8214

B. Respondent designates the following Project Coordinator:

Dale Kortze
AMP, Incorporated
P.O. Box 3608 M/S 81/01
Harrisburg, PA 17105
(717) 558-5819

C. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Order. The EPA Project Coordinator will be EPA's primary designated representative at the Facility. The absence of the EPA Project Coordinator from the Facility shall not be cause for the delay or stoppage of work.

D. The parties agree to provide at least seven (7) calendar days written notice prior to changing Project Coordinators.

E. To the maximum extent possible, all communications between Respondent and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, shall be directed through the Project Coordinators as follows:

1. Documents sent to the EPA, including workplan(s), program plan(s), draft and final reports, bimonthly progress reports, and other submissions, shall include four copies of the document and shall be hand-delivered or sent by Certified Mail, Return Receipt Requested, to the EPA Project Coordinator designated pursuant to paragraph A of this Section.

2. Documents sent to the Respondent shall be sent to the Respondent's Project Coordinator.

3. One copy of all documents sent to EPA shall also be sent to the following State contact:

Ms. Ruth Bishop
Pennsylvania Department of Environmental Resources (PADER)
One Ararat Boulevard
Harrisburg, PA 17110

XIII. DELAY IN PERFORMANCE/STIPULATED PENALTIES

A. Subject to the provisions of this Consent Order, including, but not limited to, Section XIV (Dispute Resolution), Section XV (Force Majeure), and Section XXI (Subsequent Modification), for each day or portion thereof Respondent fails to submit a report or document or otherwise fails to comply with

the requirements of this Consent Order at the time and in the manner set forth herein or in a scope of work, plan or other submission, Respondent shall pay to EPA, upon written demand, the stipulated penalties set forth below.

1. For failure to commence or complete work as prescribed in this Consent Order: $2000 per day for one to seven days of delay, or part thereof, and $5000 per day for each day of delay, or part thereof, thereafter;

2. For failure to submit any draft or revised submission as required pursuant to this Consent Order: $1000 per day for one to seven days of delay, or part thereof, and $4000 per day for each day of delay, or part thereof, thereafter;

3. For failure to submit a bimonthly progress report as required pursuant to this Consent Order: $750 per day for one to seven days of delay, or part thereof, and $2,000 per day for each day of delay, or part thereof, thereafter;

4. For any failure to comply with the provisions of this Consent Order not otherwise described in Paragraph 1, 2, or 3, above: $750 per day for the first one to seven days of delay or part thereof, and $2,000 per day for each day of delay, or part thereof, thereafter;

5. For any failure to comply with a requirement of this Consent Order after receipt of notice of noncompliance by EPA: $1,000 per day for one to seven days of noncompliance, or part thereof, after receipt of notice, and $2,000 per day for each day of noncompliance, or part thereof, after receipt of notice thereafter in addition to any stipulated penalties imposed under Paragraph 1, 2, 3, or 4, above, for the underlying noncompliance.

B. All penalties shall begin to accrue on the date that complete performance is due or a violation occurs, and shall continue to accrue through the final day of the noncompliance. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this Consent Order.

C. Except as provided in paragraph E, below, all penalties owed to EPA under this Section XIII shall be payable within thirty (30) calendar days of receipt of a notification of noncompliance. Such notification shall describe the noncompliance and shall indicate the amount of penalties due. Interest shall begin to accrue on the unpaid balance at the end of the thirty (30) calendar day period and shall accrue at the United States Treasury Tax and Loan Rate.

D. All penalty payments shall be made by certified or cashier's check payable to the "Treasurer of the United States of America" and shall be remitted to:

Regional Hearing Clerk
U. S. Environmental Protection Agency, Region III
P.O. Box 360515M
Pittsburgh, Pennsylvania 15251

All payments shall reference the name of the Facility, the Respondent's name and address, and the EPA Docket Number of this Order. Copies of the transmittal of payment shall be sent simultaneously to the EPA Project Coordinator and the Regional Hearing Clerk (3RC00), U.S. Environmental Protection Agency, Region III, 841 Chestnut Building, Philadelphia, Pennsylvania 19107.

E. Respondent may dispute EPA's right to the stated amount of penalties by invoking the dispute resolution procedures under Section XIV, "DISPUTE RESOLUTION," below. Stipulated penalties shall continue to accrue, but need not be paid, during the pendency of any Dispute Resolution proceedings relating to the alleged noncompliance which is the subject of such stipulated penalties. To the extent that Respondent does not prevail upon resolution of the dispute, Respondent shall remit to EPA, within seven (7) calendar days of receipt of such resolution, any outstanding stipulated penalty payment in the manner described in Paragraph D, above. This payment shall include any accrued interest, as calculated pursuant to Paragraph C, above. To the extent Respondent prevails upon resolution of the dispute, no stipulated penalties for the alleged noncompliance which was the subject of the dispute shall be payable.

F. Neither the filing of a petition to resolve a dispute, nor the payment of penalties, shall alter in any way Respondent's obligation to comply with requirements of this Consent Order.

G. The stipulated penalties set forth in this Section XIII do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the requirements of this Consent Order.

XIV. DISPUTE RESOLUTION

A. If Respondent disagrees, in whole or in part, with any EPA disapproval or other decision or directive made by EPA pursuant to this Consent Order, Respondent shall notify EPA in writing of its objections, and the basis therefor, within fourteen (14) calendar days of receipt of EPA's disapproval, decision or directive. Said notice shall set forth the specific points of the dispute, the position which Respondent asserts should be adopted as consistent with the requirements of this Consent Order, the basis for Respondent's position, and any matters which it considers necessary for EPA's determination. EPA and Respondent shall have an additional fourteen (14)

calendar days from the receipt by EPA of the notification of objection, during which time representatives of EPA and Respondent may confer in person or by telephone to resolve any disagreement. If an agreement is reached, the resolution shall be written and signed by representatives of each party. In the event that resolution is not reached within this fourteen (14) calendar day period, EPA shall provide Respondent its decision on the pending dispute. Thereafter, Respondent and EPA may pursue whatever remedies they may have under law.

B. Except as provided in Section XIII, paragraph E, the existence of a dispute, as defined in this Section XIV, and EPA's consideration of matters placed into dispute shall not excuse, toll or suspend any compliance obligation or deadline required pursuant to this Consent Order during the pendency of the dispute resolution process.

C. Notwithstanding any other provisions of this Consent Order, no action or decision by EPA, including, but without limitation to, decisions of the Regional Administrator, Region III, pursuant to this Consent Order, shall constitute final agency action giving rise to any rights to judicial review prior to EPA's initiation of judicial action to compel Respondent's compliance with this Consent Order.

XV. FORCE MAJEURE AND EXCUSABLE DELAY

A. Respondent shall perform the requirements of this Consent Order in the manner and within the time limits set forth herein, unless the performance is prevented or delayed by events which constitute a force majeure. Respondent shall have the burden of proving such a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of Respondent, which cannot be overcome by due diligence and which delays or prevents performance in the manner or by the date required by this Consent Order. Such events do not include increased costs of performance, changed economic circumstances, reasonably foreseeable weather conditions, or failure to obtain Federal, State, or local permits.

B. Respondent shall notify EPA, in writing, within seven (7) calendar days after it becomes aware of any event which causes or may cause a delay in complying with any requirement of this Consent Order and any event which Respondent claims constitutes a force majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken or to be taken to prevent or minimize the delay, and an estimated timetable for implementation of these measures. Failure to comply with the notice provision of this Section XV shall constitute a waiver of Respondent's right to assert a force majeure claim with respect to such event. Respondent shall undertake all reasonable actions to prevent or to minimize the delay.

C. If EPA determines that the delay has been or will be caused by circumstances not reasonably foreseeable and beyond the control of Respondent, which cannot be overcome by due diligence, this delay shall not make the Respondent liable for the stipulated penalties contained in Section XIII, "DELAY IN PERFORMANCE AND STIPULATED PENALTIES," above. Additionally, the time for performance for that requirement of this Consent Order may be extended, upon EPA approval, for a period equal to the delay resulting from such circumstances. This shall be accomplished through an amendment to this Consent Order pursuant to Section XX, "SUBSEQUENT MODIFICATION," below. Such an extension does not alter the schedule for performance or completion of any other tasks required by this Consent Order, unless these tasks are also specifically altered by amendment of the Consent Order.

D. In the event that EPA and Respondent cannot agree that any delay or failure has been or will be caused by circumstances not reasonably foreseeable and beyond the control of Respondent, which cannot be overcome by due diligence, or if there is no agreement on the length of the time extension for performance, the dispute shall be resolved in accordance with Section XIV, "DISPUTE RESOLUTION," above.

XVI. RESERVATION OF RIGHTS

A. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Consent Order and to request that Respondent perform tasks in addition to those stated in the Scope(s) of Work, plans, submissions, or this Consent Order. Except as expressly provided herein, Respondent expressly reserves all rights and defenses that it may have.

B. EPA hereby reserves all of its statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this Consent Order, specifically including, without limitation, the assessment of penalties under Section 3008(h)(2) of RCRA, 42 U.S.C. Section 6928(h)(2). This Consent Order shall not be construed as a covenant not to sue, or as a release, waiver or limitation of any rights, remedies, powers and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory or common law authority of the United States.

C. The signing of this Consent Order and Respondent's consent to comply shall not limit or otherwise preclude the EPA from taking additional enforcement action pursuant to Section 3008(h) of RCRA, 42 U.S.C. Section 6928(h), should the EPA determine that such actions are warranted.

D. This Consent Order is not intended to be, nor shall it be construed as, a permit. This Consent Order does not relieve Respondent of any obligation to obtain and comply with any local, State, or Federal permit.

E. EPA reserves the right to perform any portion of the work consented to herein or any additional site characterization, feasibility study, and response/corrective actions as it deems necessary to protect public health or the environment. EPA may exercise its authority under Section 7003 of RCRA, 42 U.S.C. Section 6973 and Sections 104 and 106 of CERCLA, 42 U.S.C. Sections 9604 and 9606, to undertake removal actions or remedial actions at any time. In any event, EPA reserves its right to seek reimbursement from Respondent for such additional costs incurred by the United States. Notwithstanding compliance with the terms of this Consent Order, Respondent is not released from liability, if any, for the costs of any response actions taken by EPA.

F. If EPA determines that Respondent's activities, whether or not in compliance with this Consent Order, have caused or may cause a release or threatened release of hazardous wastes, hazardous constituents, hazardous substances, pollutants, or contaminants, which threaten or may pose a threat to the public health or welfare or to the environment, EPA reserves the right to direct Respondent to stop further implementation of this Consent Order for such period of time as may be needed to abate any such release or threatened release and/or to undertake any action which EPA determines is necessary to abate such release or threatened release.

G. Because this Consent Order was entered with the consent of both parties, Respondent waives its right to request a public hearing pursuant to Section 3008(b) of RCRA, 42 U.S.C. Section 6928(b).

XVII. OTHER CLAIMS

Nothing in this Consent Order shall constitute or be construed as a release from any claim, cause of action or demand at law or in equity 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, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Facility.

XVIII. OTHER APPLICABLE LAWS

A. All actions required to be taken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, State, and Federal laws and regulations.

B. This Consent Order shall not relieve Respondent of its obligations to: 1) comply with RCRA or any other applicable local, State, or Federal laws and regulations; and 2) obtain and comply with any applicable local, State, or Federal permit.

XIX. INDEMNIFICATION/LIABILITY OF THE UNITED STATES GOVERNMENT

Respondent agrees to indemnify and save and hold harmless the United States Government, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of Respondent or its agents, independent contractors, receivers, trustees, and assigns in carrying out activities required by this Consent Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Respondent or the United States under their various contracts.

XX. FINANCIAL RESPONSIBILITY

A. Within thirty (30) calendar days of receipt of EPA's approval of the cost estimate required to be submitted as part of the Draft Corrective Measure Design by Section VI.A.3 of this Consent Order, Respondent shall provide financial assurances, in one or more of the forms described in 40 C.F.R. § 264.151, which EPA may access for the purpose of ensuring the completion of the requirements of this Consent Order, including the tasks set forth in the Scope of Work CMI (Attachment A).

B. Prior to drawing upon any such assurance measure, EPA shall notify Respondent in writing of its alleged failure to perform the requirements of this Consent Order and shall provide Respondent with a time period of not less than fifteen (15) calendar days within which to remedy the alleged nonperformance.

C. This Section XX shall not be construed to limit whatever obligation Respondent may have to establish and maintain financial assurances for closure and post-closure care under 25 PA Code § 267.11 (40 CFR Part 265, Subpart H).

XXI. SUBSEQUENT MODIFICATION

A. This Consent Order may only be amended by mutual agreement of EPA and Respondent. Any such amendment shall be in writing, shall be signed by both parties, shall have as its effective date the date on which it is signed by EPA, and shall be incorporated into this Consent Order.

B. Any reports, plans, specifications, schedules, other submissions and Attachments required by this Consent Order are, upon written approval by EPA, incorporated into this Consent Order. Any noncompliance with such EPA-approved reports, plans, specifications, schedules, other submissions and Attachments

shall be considered a violation of this Consent Order and shall subject Respondent to the stipulated penalty provisions included in Section XIII, "DELAY IN PERFORMANCE/ STIPULATED PENALTIES," above.

C. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondent will be construed as relieving Respondent of its obligation to obtain written approval, if and when required by this Consent Order.

XXII. SEVERABILITY

If any provision or authority of this Consent Order or the application of this Consent Order to any party or circumstance is held by any judicial or administrative authority to be invalid, the application of such provision to other parties or circumstances and the remainder of this Consent Order shall not be affected thereby and shall remain in full force.

XXIII. ATTORNEY'S FEES

The Respondent shall bear its own costs and attorney's fees.

XXIV. EFFECTIVE DATE AND TERMINATION

This Consent Order shall become effective on the date on which it is signed by EPA, and shall remain effective until it is terminated by EPA. The provisions of this Consent Order shall be deemed satisfied, and this Consent Order shall terminate, upon Respondent's receipt of a written termination notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Consent Order, including any additional tasks determined by EPA to be necessary pursuant to this Consent Order, have been satisfactorily completed. This termination notice shall not, however, terminate Respondent's obligation to comply with any continuing obligations hereunder including, but not limited to, Sections: XI ("RECORD PRESERVATION"), XVI ("RESERVATION OF RIGHTS") and XVIII ("OTHER APPLICABLE LAWS").

IT IS SO AGREED AND ORDERED:

DATE: 1/10/91 BY: _____
J. E. Marley
President

DATE: 1/22/91 BY: _____
Edwin B. Erickson
Regional Administrator
United States Environmental Protection Agency, Region III

ATTACHMENT A

SCOPE OF WORK FOR THE CORRECTIVE MEASURE IMPLEMENTATION
AT
AMP, INCORPORATED
GLEN ROCK, PENNSYLVANIA

PURPOSE

The purpose of this Corrective Measure Implementation (CMI) program is to design, construct, operate, maintain, and monitor the performance of the corrective measure or measures selected to protect human health and the environment. The Respondent will furnish all personnel, materials and services necessary for the implementation of the corrective measure or measures.

SCOPE

The Corrective Measure Implementation program consists of four tasks:

Task I: Corrective Measure Implementation Program Plan

- A. Program Management Plan
- B. Community Relations Plan

Task II: Corrective Measure Design

- A. Design Plans and Specifications
- B. Operation and Maintenance Plan
- C. Cost Estimate
- D. Construction Quality Assurance Objectives
- E. Health and Safety Plan
- F. Design Phases
  1. Preliminary Design
  2. Additional Studies
  3. Final Design

Task III: Corrective Measure Construction

- A. Responsibility and Authority
- B. Construction Quality Assurance Personnel Qualifications
- C. Inspection Activities
- D. Sampling Requirements
- E. Documentation

Task IV: Reports

- A. Progress
- B. Draft
- C. Final

TASK I: CORRECTIVE MEASURE IMPLEMENTATION PROGRAM PLAN

The Respondent shall prepare a Corrective Measure Implementation Program Plan. This program will include the development and implementation of several plans, which require concurrent preparation. It may be necessary to revise plans as the work is performed to focus efforts on a particular problem. The Program Plan includes the following:

A. Program Management Plan

The Respondent shall prepare a Program Management Plan which will document the overall management strategy for performing the design, construction, operation, maintenance, and monitoring of corrective measure(s). The plan shall document the responsibility and authority of all organizations and key personnel involved with the implementation. The Program Management Plan will also include a description of qualifications of key personnel directing the Corrective Measure Implementation Program, including contractor personnel.

B. Community Relations Plan

The Respondent shall revise the Community Relations Plan to include any changes in the level of concern or information needs of the community during design and construction activities.

1. Specific activities which must be conducted during the design stage are the following:

   a. Revise the facility Community Relations Plan to reflect knowledge of citizen concerns and involvement at this stage of the process; and

   b. Prepare and distribute a public notice and an updated fact sheet at the completion of engineering design.

2. Specific activities to be conducted during the construction stage could be the following: depending on citizen interest at a facility at this point in the corrective action process, community relations activities could range from group meetings to fact sheets on the technical status.

TASK II: CORRECTIVE MEASURE DESIGN

The Respondent shall prepare final construction plans and specifications to implement the corrective measure at the facility as defined in the Corrective Measure Study.

A. Design Plans and Specifications

The Respondent shall develop clear and comprehensive design plans and specifications which include but are not limited to the following:

1. Discussion of the design strategy and the design basis, including:

   a. Compliance with all applicable or relevant environmental and public health standards; and

   b. Minimization of environmental and public health impacts.

2. Discussion of the technical factors of importance including:

   a. Use of currently accepted environmental control measures and technology;

   b. The constructability of the design; and

   c. Use of currently acceptable construction practices and techniques.

3. Description of assumptions made and detailed justification of these assumptions;

4. Discussion of the possible sources of error and references to possible operation and maintenance problems;

5. Detailed drawings of the proposed design including;

   a. Qualitative flow sheets; and

   b. Quantitative flow sheets.

6. Tables listing equipment and specifications;

7. Tables giving material and energy balances;

8. Appendices including:

   a. Sample calculations (one example presented and explained clearly for significant or unique design calculations);

b. Derivation of equations essential to understanding the report; and

c. Results of laboratory or field tests.

B. Operation and Maintenance Plan

The Respondent shall prepare an Operation and Maintenance Plan to cover both implementation and long term maintenance of the corrective measure. The plan shall be composed of the following elements:

1. Description of normal operation and maintenance (O&M):

   a. Description of tasks for operation;

   b. Description of tasks for maintenance;

   c. Description of prescribed treatment or operation conditions; and

   d. Schedule showing frequency of each O&M task.

2. Description of potential operating problems:

   a. Description and analysis of potential operation problems;

   b. Sources of information regarding problems; and

   c. Common and/or anticipated remedies.

3. Description of routine monitoring and laboratory testing:

   a. Description of monitoring tasks;

   b. Description of required laboratory tests and their interpretation;

   c. Required QA/QC; and

   d. Schedule of monitoring frequency and date, if appropriate, when monitoring may cease.

4. Description of alternate O&M:

   a. Should systems fail, alternate procedures to prevent undue hazard; and

   b. Analysis of vulnerability and additional resource requirements should a failure occur.

5. Safety plan:

   a. Description of precautions, of necessary equipment, etc., for site personnel; and

   b. Safety tasks required in event of systems failure.

6. Description of equipment:

   a. Equipment identification;

   b. Installation of monitoring components;

   c. Maintenance of site equipment; and

   d. Replacement schedule for equipment and installed components.

7. Records and reporting mechanisms required:

   a. Daily operating logs;

   b. Laboratory records;

   c. Records for operating costs;

   d. Mechanism for reporting emergencies;

   e. Personnel and maintenance records; and

   f. Monthly/annual reports to State agencies.

An initial Draft Operation and Maintenance Plan shall be submitted simultaneously with the Preliminary Design Document submission, and the Final Operation and Maintenance Plan with the Final Design documents.

C. Cost Estimate

The Respondent shall develop cost estimates for the purpose of assuring that the facility has the financial resources necessary to construct and implement the corrective measure. The cost estimate developed in the Corrective Measure Study shall be refined to reflect the more detailed/accurate design plans and specifications being developed. The cost estimate shall include both capital and operation and maintenance costs.

D. Construction Quality Assurance Objectives

The Respondent shall identify and document the objectives and framework for the development of a construction quality assurance program including, but not limited to the following: responsibility and authority; personnel qualifications; inspection activities; sampling requirements; and documentation.

E. Health and Safety Plan

The Respondent shall modify the Health and Safety Plan developed for the RCRA Facility Investigation to address the activities to be performed at the facility to implement the corrective measure(s).

F. Design Phases

The design of the corrective measure should include the phases outlined below.

1. Preliminary design

a. The Respondent shall submit the Preliminary design when the design effort is approximately 50% complete. At this stage the Respondent shall have field verified the existing conditions of the facility. The preliminary design shall reflect a level of effort such that the technical requirements of the project have been addressed and outline so that they may be reviewed to determine if the final design will provide an operable and usable corrective measure. Supporting data and documentation shall be provided with the design documents defining the functional aspects of the program. The preliminary construction drawings by the Respondent shall reflect organization and clarity. The scope of the technical specifications shall be outlined in a manner reflecting the final specifications. The Respondent shall include with the preliminary submission design calculations reflecting the same percentage of completion as the designs they support.

b. Correlating plans and specifications. General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications, the Respondent shall:

i. Coordinate and cross-check the specifications and drawings; and

ii. Complete the proofing of the edited specifications and required cross-checking of all drawings and specifications.

These activities shall be completed prior to the 100% final submittal to the Agency.

c. Equipment start-up and operator training

The Respondent shall prepare, and include in the technical specifications governing treatment systems, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installation, adjustment, startup and operation of the treatment systems, and training covering appropriate operational procedures once the startup has been successfully accomplished.

2. Additional studies

Corrective Measure Implementation may require additional studies to supplement the available technical data. At the direction of the Agency for any such studies required, the Respondent shall furnish all services, including field work as required, materials, supplies, plant, labor, equipment, investigations, studies, and superintendence. Sufficient sampling, testing and analysis shall be performed to optimize the required treatment and/or disposal operations and systems. There shall be an initial meeting of all principal personnel involved in the development of the program. The purpose will be to discuss objectives, resources, communication channels, role of personnel involved, and orientation of the site, etc. The interim report shall present the results of the testing with the recommended treatment or disposal system (including options). A review conference shall be scheduled after the interim report has been reviewed by all interested parties. The final report of the testing shall include all data taken during the testing and a summary of the results of the studies.

3. Final Design

The Respondent shall execute the required revisions and submit the final documents 100% complete with reproducible drawings and specifications.

The Final Design submittal shall consist of the Final Design Plans and Specifications (100% complete), the Respondent's Final Construction Cost Estimate, the Final Draft Operation and Maintenance Plan, Final Quality Assurance Plan, Final Project Schedule, and Final Health and Safety Plan specifications. The quality of the design documents should be such that the Respondent would be able to include them in a bid package and invite contractors to submit bids for the construction project.

TASK III: CORRECTIVE MEASURE CONSTRUCTION

Following EPA approval of the Final Design described in Task II item F.3, above, the Respondent shall develop and implement a construction quality assurance (CQA) program to ensure, with a reasonable degree of certainty, that the completed corrective measure meets or exceeds all design criteria, plans, and specifications. The CQA plan is a facility specific document which must be submitted to the Agency for approval prior to the start of construction. At a minimum, the CQA plan should include the elements, which are summarized below. Upon EPA approval of the CQA plan the Respondent shall construct and implement the corrective measures in accordance with the approved design, schedule, and the CQA plan. The Respondent shall also implement the elements of the approved Operation and Maintenance plan.

A. Responsibility and Authority

The responsibility and authority of all organizations (i.e., technical consultants, construction firms, etc.) and key personnel involved in the construction of the corrective measure shall be described fully in the CQA plan. The Respondent must identify a CQA officer and the necessary supporting inspection staff.

B. Construction Quality Assurance Personnel Qualifications

The qualifications of the CQA officer and supporting inspection personnel shall be presented in the CQA plan to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities.

C. Inspection Activities

The observations and tests that will be used to monitor the construction and/or installation of the components of the corrective measure shall be summarized in the CQA plan. The plan shall include the scope and frequency of each type of inspection. Inspections shall verify compliance with all environmental requirements and include, but not be limited to air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. The inspection should also ensure compliance with all health and safety procedures. In addition to oversight inspections, the Respondent shall conduct the following activities:

1. Preconstruction inspection and meeting

The Respondent shall conduct a preconstruction inspection and meeting to:

a. Review methods for documenting and reporting in-

spection data;

b. Review methods for distributing and storing documents and reports;

c. Review work area security and safety protocol;

d. Discuss any appropriate modifications of the construction quality assurance plan to ensure that site-specific considerations are addressed; and

e. Conduct a site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person and minutes should be transmitted to all parties.

2. Prefinal inspection

Upon preliminary project completion Respondent shall notify EPA for the purposes of conducting on prefinal inspection. The prefinal inspection will consist of a walk-through inspection of the entire project site. The inspection is to determine whether the project is complete and consistent with the contract documents and the EPA approved corrective measure. Any outstanding construction items discovered during the inspection will be identified and noted. Additionally, treatment equipment will be operationally tested by the Respondent. The Respondent will certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. The prefinal inspection report should outline the outstanding construction items, actions required to resolve items, completion date for these items, and date for final inspection.

3. Final inspection

Upon completion of any outstanding construction items, the Respondent shall notify EPA for the purposes of conducting a final inspection. The final inspection will consist of a walk-through inspection of the project site. The prefinal inspection report will be used as a checklist with the final inspection focusing on the outstanding construction items identified in the prefinal inspection. Confirmation shall be made that outstanding items have been resolved.

D. Sampling Requirements

The sampling activities, sample size, sample locations, frequency of testing, acceptance and rejection criteria, and plans for correcting problems as addressed in the project specifications should be presented in the CQA plan.

E. Documentation

Reporting requirements for CQA activities shall be described in detail in the CQA plan. This should include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records should also be presented in the CQA plan.

TASK IV: REPORTS

The Respondent shall prepare plans, specifications, and reports as set forth in Tasks I through III to document the design, construction, operation, maintenance, and monitoring of the corrective measure. The documentation shall include, but not be limited to the following:

A. Progress

The Respondent shall at a minimum provide the EPA with signed, bimonthly progress reports containing:

1. A description and estimate of the percentage of the CMI completed;

2. Summaries of all findings;

3. Summaries of all changes made in the CMI during the reporting period;

4. Summaries of all contacts with representative of the local community, public interest groups, or State government during the reporting period;

5. Summaries of all problems or potential problems uncovered during the reporting period;

6. Actions being taken to rectify problems;

7. Changes in personnel during the reporting period;

8. Projected work for the next reporting period; and

9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. Draft

1. The Respondent shall submit a draft Corrective Measure Implementation Program Plan as outlined in Task I;

2. The Respondent shall submit draft Construction Plans and Specifications, Design Reports, and Study Reports as outlined in Task II;

3. The Respondent shall submit a draft Construction Quality Assurance Program Plan and Documentation as outlined in Task III, and

4. At the "completion" of the construction of the project, the Respondent shall submit a Corrective Measure Implementation Report to the Agency. The Report shall document that the project is consistent with the design specifications, and that the corrective measure is performing adequately. The Report shall include, but not be limited to the following elements:

   a. Synopsis of the corrective measure and certification of the design and construction;

   b. Explanation of any modifications to the plans and why these were necessary for the project;

   c. Listing of the criteria, established before the corrective measure was initiated, for judging the functioning of the corrective measure, and also explaining any modification to these criteria;

   d. Results of facility monitoring, indicating that the corrective measure will meet or exceed the performance criteria; and

   e. Explanation of the operation and maintenance (including monitoring) to be undertaken at the facility.

This report should include all of the daily inspection summary reports, inspection summary reports, inspection data sheets, problem identification and corrective measure reports, block evaluation reports, photographic reporting data sheets, design engineers' acceptance reports, deviations from design and material specifications (with justifying documentation), and as-built drawings.

C. Final

The Respondent shall finalize the Corrective Measure Implementation Program Plan, Construction Plans and Specifications, Design Reports, Study Reports, Construction Quality Assurance Program Plan/Documentation, and the Corrective Measure Implementation Report incorporating comments received on draft submissions.