

## **FINAL PROJECT AGREEMENT WORK PLAN**

### **Project XL--HADCO Corporation**

This Final Project Agreement ("the Agreement") is effective this \_\_\_day of\_\_\_\_\_ 1997, between HADCO Corporation ("HADCO"), the United States Environmental Protection Agency ("EPA") (the "Parties"), the New Hampshire Department of Environmental Services ("DES") and the New York Department of Conservation ("DEC") (the last two parties, collectively, "the State Parties"). This Agreement states the intention of the EPA, the State Parties and HADCO to carry out a pilot project as part of EPA's "Project XL" program, to test the extent to which regulatory flexibility, and other innovative environmental approaches, can be implemented to achieve both superior environmental performance and reduced economic and social burdens.

This Agreement is intended to be a joint statement of the parties' plans and intentions with regard to the HADCO project. It is intended to state the plans of the various participants and to represent the firm commitment of each participant to carry out the project. The Agreement is not, however, intended to create legal rights or obligations and is not a contract, or a regulatory action such as a permit or rule, although some provisions in this Agreement may be implemented through a separate rule that will be legally enforceable. This Agreement does not give any of the parties a right to sue other parties for any alleged failure to implement its terms, either to compel implementation or to recover damages.

Therefore, this Agreement simply provides a framework to implement HADCO's Project XL proposal and is premised upon the findings listed below:

HADCO has applied and been accepted as a participant in EPA's Project XL, part of President Clinton's National Performance Review regulatory reinvention initiative;

Project XL gives a limited number of regulated entities an opportunity to demonstrate excellence and leadership through allowing them the flexibility to develop alternative strategies that will replace or modify specific regulatory requirements on the condition that the strategies produce greater environmental benefits;

HADCO is proposing flexible implementation of regulations promulgated pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. § 6903 *et seq.* ("RCRA"), in order to enhance the direct recycling of both RCRA regulated and non RCRA regulated metal bearing streams from its printed wiring board ("PWB") manufacturing facilities and to achieve other environmental benefits;

HADCO's facilities generate wastewater treatment ("WWT") sludges that are currently classified and managed as an F006 waste under 40 C.F.R. § 261.30 and § 261.31(a). The sludge is accumulated in hazardous waste storage areas, labeled as hazardous waste, and shipped via hazardous waste haulers to facilities which specialize in "producing metals concentrates." These metals concentrates are marketed to smelters for the purpose of metals recovery.

The purpose of this XL Project will be to test the premise that HADCO's F006 waste stream along with similar F006 waste streams from the PWB industry can be safely recycled by primary metals smelters or other appropriate metal reclamation facilities without having to be put through the rigor of the RCRA C regulatory system for its WWT sludge. HADCO believes that this direct recycling may result in overall environmental benefits, and will pose no greater risk than the indirect recycling which is currently occurring. The financial benefit realized by HADCO will be directed towards recycling its drilling and edging dusts, which are non-RCRA waste streams.

In order to implement the project, the parties agree as follows:

## **I. Applicability and Scope**

### **A. Applicable Facilities**

1. This project seeks to enhance the direct recycling of metal bearing streams generated by HADCO's four PWB manufacturing operations located in New Hampshire and New York ("the facilities"). The facilities covered under the terms of this Agreement are:

- a. HADCO Corporation  
7 Manor Parkway  
Salem, New Hampshire 03079  
EPA RCRA I.D. Number: NHD980668156
- b. HADCO Corporation  
7 Manchester Road  
Derry, New Hampshire 03038  
EPA RCRA I.D. Number: NHD046312559
- c. HADCO Corporation  
21 Flagstone Drive  
Hudson, New Hampshire 03051  
EPA RCRA I.D. Number: NHD991302522
- d. HADCO Corporation  
1200 Taylor Road  
Owego, New York 13827  
EPA RCRA I.D. Number: NYD002241982

### **B. Signatories**

2. Signatories to this Agreement are representatives of: HADCO Corporation; the New Hampshire Department of Environmental Services and EPA Region I and New York State Department of Environmental Conservation and EPA Region II. Each undersigned representative certifies that he or she is fully authorized to sign this Agreement on behalf of those parties.

### **C. Significance of the Agreement**

3. In the memorandum included with this Agreement as Appendix A, HADCO's Project XL proposal is presented in light of the Project XL criteria it satisfies, as set forth at 60 Fed. Reg. 27282.

### **D. Definitions**

4. Except as otherwise set forth in this Agreement, the terms used in this Agreement that are defined in RCRA or the regulations promulgated thereunder set forth at 40 C.F.R. Part 260 *et seq.*, will have the meanings contained therein. The following terms used in this Agreement will be defined as follows:

- a. The term "day" or "days" as used in this Agreement will mean a calendar day or days. References to "working days" will mean days of the week other than Saturdays, Sundays and holidays. In computing any period of time under this Agreement,

where the last day would fall on a day other than a working day, the period will run until the end of the next working day.

b. "Conditional delisting" will mean the exclusion of a waste from the lists in subpart D of part 261 of title 40 of the Code of Federal Regulations by regulatory amendment granted pursuant to 40 C.F.R. §§ 260.20 and 260.22 and corresponding state regulations, where such exclusion is subject to explicit conditions pertaining to HADCO's management of the collection, storage, transportation and reclamation of its PWB WWT sludges.

c. "Section" will mean those portions of this Agreement consisting of a named heading, indexed with a Roman numeral, and the paragraph(s) included under the heading.

d. "Solid waste variance" will mean, with respect to a material, a variance from being solid waste, pursuant to 40 C.F.R. § 260.30(c) (or equivalent federally authorized State regulations), including any conditions attached to such variance.

e. "Subsection" will mean those portions of this Agreement consisting of a named heading, indexed with an uppercase letter (e.g., A.), and the paragraph(s) included under the heading.

f. "Paragraph" will mean those portions of this Agreement indexed with an Arabic numeral, and the text following the numeral.

g. "XL Implementation Date" will mean the latest date on which a State Party or EPA issues its final decision on HADCO's petitions requesting regulatory relief pursuant to Section III of this FPA, and publishes that decision in the Federal Register or state analogue.

## **E. Duration of Agreement**

5. The effective date of this Agreement will be the date HADCO receives a fully executed copy of this Agreement from EPA, via certified mail. The expiration of this FPA and any resulting solid waste variance or conditional delisting rules will be sixty (60) months after the XL Implementation Date, as defined above and in Paragraph 20.

6. Any party may terminate its participation in this project at any time. Before terminating, any party will abide by the notice provisions found at Section V of this Agreement. A party or State Party may terminate its participation in this project completely, or it may terminate its participation with respect to one or more but less than all of the HADCO facilities subject to this Agreement. If any of the State Parties terminate its participation with respect to a particular facility or facilities, this Agreement will terminate only with respect to those WWT sludges produced by the facility or facilities specified by the terminating State Party. If EPA or a State Party terminates its participation after the XL Implementation Date, the party will provide written notice to HADCO and to all other parties, and will publish the decision in the Federal Register or appropriate state analogue to the Federal Register. The continuation of this Agreement is conditioned upon HADCO's demonstration of the superior environmental performance achieved by this project, as evidenced by the information submitted pursuant to Section VI of this Agreement. Continuation of this Agreement is further conditioned upon HADCO's adherence to the terms set out in Section VII of this Agreement.

7. If HADCO obtains a conditional delisting or a solid waste variance for any facility's WWT sludge, Sections II, IV, V, VI, and VII of this Agreement, will be merged with the terms of the conditional delisting or solid waste variance (such as the necessary storage and handling requirements for the WWT sludge) and included in the notices published in the Federal Register as well as all appropriate state analogues on the XL Implementation Date.

## **F. Modification of the Agreement**

8. At any time, the parties may modify the FPA with the concurrence of all the signatories, or their representatives. Any modifications will be subject to notice and comment in the Federal Register. If the parties agree to modify the FPA, HADCO will notify the stakeholders directly and solicit their comments prior to the publication of the proposed modification in the Federal Register.

## **II. Requirements for HADCO's Conditional Delisting or Solid Waste Variance**

### **A. Sampling and Analyses**

9. HADCO agrees to collect samples and analyze the WWT sludge generated from each of the facilities. HADCO will conduct the sampling as specified below, and otherwise in accordance with 40 C.F.R. 260.22(h).

10. HADCO agrees to collect full sets of samples in accordance with the following schedule:

a. HADCO will collect its first set of samples that will consist only of those sludges generated from the first full week (day 1 - day 7) after this Agreement's effective date.

b. HADCO will collect its second set of samples that will consist only of those sludges generated from the second full week (day 8 - day 14) after this Agreement's effective date.

c. HADCO will collect its third set of samples that will consist only of those sludges generated from the third full week (day 15 - day 21) after this Agreement's effective date.

d. HADCO will collect its fourth set of samples that will consist only of those sludges generated from the fourth full week (day 22 - day 28) after this Agreement's effective date.

e. HADCO will collect one set of samples from storage containers generated at each facility on a quarterly basis (every three months), beginning with the quarter 4-6 months after the Agreement is signed, until the termination of this Agreement. However, if HADCO can demonstrate that the analytical results from the samples collected during the first year of testing (comprised of four weekly samples and three quarterly samples) fall within a limited range of variability, HADCO may conduct annual sampling in lieu of quarterly sampling upon approval by the EPA and State Parties, in the second and subsequent years of this Agreement at each facility where data support the reduced sampling frequency.

11. HADCO agrees to adhere to the following sample collection requirements:

- a. For each sample set, HADCO will collect at least four (4) representative samples of the sludge, in accordance with EPA approved methods;
- b. HADCO will combine each representative sample to create a composite sample, with equal volumes of each representative sample contained within the composite;
- c. For each composite sample collected, HADCO will collect a duplicate sample and retain such samples on-site at each facility for a period of twelve (12) months;
- d. In addition to the first sample set collected pursuant to Paragraph 10.a above, HADCO will also collect a grab sample of sludge for TOC and TCLP volatile organic analyses. This sample will be collected directly from the filter press to determine whether volatile and/or TCLP organics are present in this sludge "as generated."

12. HADCO will send each sample collected pursuant to this Section to laboratories, with necessary state certification for applicable parameters if required by state law, for analyses performed according to EPA protocols set forth in SW-846 (3rd Edition), where defined, or applicable ASTM procedures where not defined in SW-846.

13. HADCO will ensure that each composite sample is analyzed for the parameters listed below:

<u>Constituent</u>	<u>Analysis</u>
<u>Original listing constituents</u>	
Cadmium	Both total metal and TCLP leachable
Chromium	Both total metal and TCLP leachable; and Total and TCLP leachable hexavalent chrome
Cyanides	Both total and complexed/amenable
Nickel	Both total and TCLP leachable
<u>Additional Constituents Restricted from Land Disposal</u>	
Lead	Both total and TCLP leachable
Silver	Both total and TCLP leachable
<u>Other constituents of interest</u>	
Copper	Both total and TCLP leachable
Zinc	Both total and TCLP leachable
Arsenic	Both total and TCLP leachable
Barium	Both total and TCLP leachable
Mercury	Both total and TCLP leachable

Selenium	Both total and TCLP leachable
Sulfides	Total
Antimony	Total
Beryllium	Total
Thallium	Total
Chlorine	Total
Moisture Content	Total
Heating Value (measured in BTU/lb)	
Total Organic Carbon ("TOC")	

14. In the event that TOC in any set of composite samples collected pursuant to Paragraph 10 exceeds 500 ppm (by weight), then HADCO will ensure that such set of samples is also analyzed for the following additional parameters: TCLP organic constituents listed in Table 1 of 40 C.F.R. § 261.24, with the exception of (a) the insecticides endrin, lindane, methoxychlor and toxaphene and (b) the herbicides 2,4-D and 2,4,5-TP (Silvex). If TOC in any set of composite samples exceeds 500 ppm (by weight), HADCO will also demonstrate to EPA and the State Parties that the samples do not include greater than a 500 ppm total concentration of organic compounds listed in Part 261, Appendix VIII.

### **III. Implementation Mechanisms**

#### **A. Federal Implementation Mechanisms**

15. HADCO will submit analytical data for each sample collected pursuant to Section II.A. of this Agreement. The data will be submitted to the EPA and State Parties within ten (10) days of HADCO's receipt of the written laboratory report.

16. After conferring with the State Parties, EPA will complete an analysis of the data pertaining to the first four (4) weeks of sampling and determine whether the WWT sludge generated at each HADCO facility may be eligible for: 1) a conditional delisting pursuant to 40 C.F.R. §260.20 and §260.22; or 2) a solid waste variance pursuant to 40 C.F.R. §260.30. EPA intends to render its decision on eligibility within forty-five (45) days of its receipt of the data resulting from the fourth composite sample.

17. Upon making its eligibility decision, EPA will notify HADCO in writing within ten (10) days. If, however, the EPA and State Parties find that the data submitted is insufficient to support any such determination, EPA will notify HADCO; such notification will specify the additional analyses needed and the supplemental schedule for sampling, analyses, and report submittals.

18. Within forty-five (45) days of receipt of the eligibility decision, HADCO will submit petitions for review which specify the types of regulatory relief it requests for each facility (hereinafter, "the petitions"). In the case of a delisting, the petitions will substantively comply with

the requirements of 40 C.F.R. § 260.20 and § 260.22, and will be submitted to EPA. In the case of a solid waste variance, the petitions will be submitted to the appropriate state regulatory agencies and will substantively comply with the identified requirements of each jurisdiction's laws and regulations. In each petition, HADCO will also include the Initial Projected Benefits Report as defined in Paragraph 26 of this FPA.

19. After receiving a petition, the administering agency will notify HADCO with regard to each facility that: 1) the petition is complete and accepted for filing (hereinafter, "completeness notification"); (2) the petition is incomplete and that specific additional information is required; or, (3) the petition is incomplete and additional time is needed for review. The agencies intend to provide such notice within thirty (30) days of receipt. HADCO should submit all corrections to the petitions within thirty (30) days of receipt of notification by the administering agency.

20. If the information submitted by HADCO appears to support a delisting or solid waste variance, within 45 days or as soon thereafter as possible, EPA, in consultation with State Parties as specified in Paragraphs 22 and 23 of this FPA, will take the steps necessary to propose a delisting or variance in accordance with normally applicable procedures including public notice and opportunity for comment. If no adverse comments are received, EPA or the State Parties intend to finalize the proposal. If EPA or the State Parties make such a proposal but ultimately determine not to grant a delisting or variance, that decision will be published in the Federal Register or appropriate state analogue to the Federal Register. The latest date on which a State Party or EPA issues its final decision on HADCO's petitions through publication in the Federal Register or state analogue will be defined as the "XL Implementation Date." If EPA or a State Party wishes to revoke a delisting or variance that has been granted, standard procedures for such revocation will be followed.

21. This Agreement will not preclude EPA from holding an informal public hearing to consider oral comments pursuant to 40 C.F.R. § 260.20(d).

## **B. State Implementation Mechanisms**

### **22. New Hampshire**

a. HADCO's WWT sludge generated at its NH facilities is also listed as generic industrial process waste F006 under the New Hampshire Hazardous Waste Rules (NH Rules), Env-Wm 402.06. It can be delisted as a hazardous waste under the NH Rules by the Waste Management Division of DES upon the filing of a petition pursuant to PART Env-Wm 406 of the NH Rules and the granting of same by said Division. Further, a solid waste waiver may be granted pursuant to PART Env-Wm 212. Although DES generally follows the federal delisting procedure, DES has promulgated rules that are more detailed than the federal rules published in the C.F.R.. However, the NH Rules also provide that DES may grant waivers from any requirement that is more stringent than the federal rules published in 40 C.F.R. Parts 260 through 270. DES will utilize its regulatory discretion to streamline the current delisting process by considering the granting of waivers to HADCO of delisting requirements in the NH Rules that exceed the comparable federal requirements contained in 40 C.F.R. §§ 260.20 and 260.22, provided such waivers will not adversely impact protection of human health and the environment.

b. HADCO will file a petition for delisting under PART Env-Wm 406 of the NH Rules or a solid waste waiver under PART Env-Wm 212 of the New Hampshire Rules, a request for waivers from the NH Rules, and the information described in Section II of this Agreement, within forty-five (45) days of receipt of the EPA eligibility

notifications described in Paragraph 20 hereof. DES will attempt to notify HADCO within forty-five (45) days of the receipt of such petition either that (1) the petition is complete and therefore accepted for filing; (2) the petition is incomplete and that specific additional information is required; or (3) the petition is incomplete and additional time is needed to complete DES's review. HADCO will submit all corrections to the petition within thirty (30) days of receipt of notification by DES.

c. DES will attempt to issue its decision on HADCO's petition under PART Env-Wm 406 or 212 within forty-five (45) days of its acceptance of said petition, or within thirty (30) days of the issuance of EPA's final decision under 40 C.F.R. § 260.20(e) or § 260.33, whichever is later.

### 23. New York

a. HADCO's WWT sludge, generated at its Owego, New York facility, is also listed as industrial process waste F006 under New York State's hazardous waste regulations (NYCRR Part 371). It can be delisted as a hazardous waste by the New York State Department of Environmental Conservation (DEC) upon the filing of a petition pursuant to 6 NYCRR 370.3 (a) and (c). However, since DEC is not authorized to administer the hazardous waste delisting program of 40 CFR §§ 260.20 and 260.22, a delisting must first be granted by EPA before DEC will act upon a delisting petition. In considering a delisting petition pursuant to this project, DEC will evaluate the delisting criteria utilized by EPA, but will not attempt to repeat EPA's technical review process. DEC will attempt to issue its decision on HADCO's petition within forty-five (45) days of EPA's final notice in the Federal Register, granting the delisting petition. DEC's procedures for doing so are contained in 6 NYCRR 370.3 (a).

b. If HADCO chooses to do so, or if EPA or DEC determine that a delisting will not be granted, HADCO may apply to DEC for a solid waste variance under 6 NYCRR 370.3 (a), (d)(1)(iii) and (e)(3). Since DEC is authorized to issue such variances on behalf of EPA, HADCO would only need to apply to DEC for such a variance, with respect to the regulatory status of such a material in New York State. DEC will attempt to notify HADCO within forty-five (45) days of the receipt of such a variance petition, either that (1) the petition is complete; (2) the petition is incomplete and that specific additional information is required; or (3) the petition is incomplete and additional time is needed to complete DEC's review. HADCO will submit all additional information requested within thirty (30) days of receipt of notification by DEC. DEC will attempt to issue its decision on HADCO's petition within sixty (60) days of its acceptance of said petition. DEC's decision will be issued in accordance with the requirements of 6 NYCRR 370.3 (a).

## **IV. Approval of Reclamation Facilities**

24. HADCO will ship its WWT sludge to only those reclamation facilities agreed to by the relevant State parties and EPA in writing. Copies of letters of intent between HADCO and the receiving reclamation facilities will be transmitted to EPA and the relevant State Parties prior to the issuance of a conditional delisting or variance, and contracts or agreements with the reclamation facilities will be so provided prior to shipment of sludges. These letters of intent, contracts or agreements will detail the acceptance criteria for the sludge. The primary recipients of HADCO's sludges will be primary copper smelters, where the sludge will comprise a feedstock substitute for natural ore or other recycled product streams. Alternative reclamation processes will require prior approval by the EPA and relevant State Parties.

## **V. Notice**

25. All notices or other communications required by this Agreement will be submitted in writing and will be effective for all purposes if hand-delivered to the party designated below, or if sent by (i) certified or registered United States mail, postage prepaid; or (ii) expedited United States Postal Service prepaid delivery services, with proof of attempted delivery, addressed in either case as follows:

To HADCO:	HADCO Corporation 12A Manor Parkway Salem, NH 03079 Attention: Lee Wilmot
To EPA:	David Webster, Director Assistance and Pollution Prevention Unit Office of Environmental Stewardship U.S.E.P.A. Region I JFK Federal Building, SPN Boston, MA 02203-2211
	Conrad Simon, Director Division of Enforcement and Compliance Assistance U.S.E.P.A., Region II 290 Broadway, 21st Floor New York, NY 10007-1866
To DES:	Philip J. O'Brien, Ph.D., Director Waste Management Division NH DES P.O. Box 95, 6 Hazen Drive Concord, NH 03301
To DEC:	Norman H. Nosenchuck, Director Division of Solid & Hazardous Materials NYSDEC 50 Wolf Road Albany, N.Y. 12233-7250

or to such other addressees as will be designated from time to time by written notice to these parties in the manner set out above.

## **VI. Verification of Environmental Benefits**

### **A. Initial Projected Benefits Report and Annual Reports**

26. HADCO will prepare a report which summarizes the projected environmental benefits (hereinafter, "the Initial Projected Benefits Report"). At a minimum, the Initial Projected Benefits Report will include the following data developed from WWT sludge shipment records for 1995 and 1996 and available 1995 and 1996 records, analyses, and estimates:

- a. number of shipments to processing facility and cost;

- b. average tons/shipment;
- c. miles transported (both to processing facility and then to recycling facility);
- d. transportation method;
- e. estimate of truck or train fuel consumed;
- f. number and population of metropolitan areas on transport routes;
- g. tons of non-RCRA copper dust streams landfilled;
- h. estimate of potential cost savings if direct recycling is permitted;
- i. explanation of how cost savings referenced above in (h) will be reinvested in environmentally beneficial expenditures;
- j. estimate of the quantity of copper dust that could be or has been reclaimed, specify the methods of reclamation that HADCO considers implementing, estimated costs of reclamation, and the percentage of copper contained in dusts sent off-site for landfilling in 1996; and
- k. amount of copper dust that was actually reclaimed in 1996 and the methods of reclamation used.

HADCO will compile the data on a state by state (NH and NY) basis.

27. For each year this Agreement remains in effect, HADCO will submit an annual report to the EPA and State Parties no later than March 1 of each year which contains the relevant data for the prior calendar year (hereinafter, "annual reports"). In each annual report, HADCO will include the same type of data listed in Paragraph 26. For the data requirements specified in subparagraphs 26.h., i. and j. above, HADCO will include actual data in lieu of estimates. In addition, HADCO will include the information specified in Paragraphs 28 through 30 in its annual report.

## **B. Transferability**

28. HADCO will solicit relevant information from other PWB manufacturers located in the two states participating in this project, concerning the potential transferability of this project. HADCO will include this information in its first annual report to the EPA and State Parties. HADCO commits itself to an open exchange of information and data with other PWB manufacturers that may benefit from the successful implementation of this project.

## **C. Dust Reclamation**

29. HADCO will commence reclamation of its copper edging and drilling dusts generated at its facilities within eight (8) months of the XL Implementation Date. The Parties agree that the precise quantity of copper dusts reclaimed will be in proportion to the costs savings realized through direct reclamation of WWT sludge. Should HADCO conclude that cost savings do not justify the recycling of all its copper edging and drilling dusts, the precise amount to be recycled will be agreed upon by all FPA signatories. In each of its annual reports, HADCO will describe its progress in instituting the copper dust reclamation and include relevant data and documentation.

## **D. Sludge Driers**

30. HADCO will install sludge driers at its New Hampshire facilities if HADCO determines that such installation is technically and economically feasible, in order to reduce further the quantity of sludge transported. In each annual report, HADCO will describe the status of its sludge drier installation and include relevant data and documentation. In the event that sludge driers are not installed, HADCO must include an evaluation of the technical and economic feasibility supporting its decision in each annual report.

## **E. Final Report**

31. No later than fifty-four (54) months after the XL Implementation Date, HADCO will submit a final report evaluating the costs and benefits of the Project. This final report will include an evaluation of data developed pursuant to Paragraph 26 and evaluations regarding the environmental results derived from the implementation of Paragraphs 28 through 30. Upon submission of the final report, HADCO may petition EPA and the relevant State Parties to request the extension of any variances or conditional delistings granted pursuant to Section III of this FPA.

32. The EPA and State Parties will review the final report within three (3) months of receipt and prepare an evaluation of the project. If, based upon their review, the EPA and State Parties determine that this project was successful, the EPA and State Parties may extend the terms of any variances or delistings granted pursuant to Section III of this Agreement with limited terms, through publication of notice in the Federal Register and relevant state analogues.

## **VII. Continuing Communication With Stakeholders**

33. HADCO will continue to communicate with its stakeholders in this project using the following methods:

- a. Placement of the signed FPA and subsequent annual reports in local libraries, specifically: Derry, Hudson, and Salem, NH; and Owego, NY.
- b. Mailing of the signed FPA and executive summaries of the subsequent annual reports to stakeholders identified and invited to participate in the FPA development process.
- c. Posting of the signed FPA and executive summaries of the subsequent annual report on HADCO's world wide web page.
- d. Conducting annual on-site meetings with those stakeholders who request meetings to review project progress and discuss other aspects of the project after their receipt of the annual report summaries
- e. Filing press releases of pertinent project accomplishments such as completion of sludge drier installation in all NH facilities or commencement of copper dust reclamation in both area newspapers and trade journals.

34. When a federal register notice (or equivalent state analogue) is published regarding any relevant regulatory relief proposed to be granted to HADCO, EPA will provide notice to each of the stakeholders that were involved in FPA development.

## **VIII. Events Preventing Project Implementation**

35. The parties recognize that in certain circumstances it may be impossible for a party to fully implement a commitment it has made in this agreement, due to events beyond the control of, and not reasonably foreseeable by, that party, and which cannot be overcome by due diligence by that party. In such cases the parties will attempt to modify the agreement to reflect their revised expectations in accordance with Paragraph 8 of this FPA, and not to terminate it unless the parties conclude that the entire project is no longer worthwhile due to the intervening event. If a party becomes aware of such an event that may prevent it from carrying out a commitment in a timely way, it will promptly notify the other parties.

## **IX. Dispute Resolution**

36. To ensure orderly implementation of the project and minimize disruption if disagreements occur, the parties expect to use the following process for dispute resolution. Adherence to this procedure is non-binding but will be the anticipated means of addressing disputes. Any dispute which arises concerning the commitments of the parties, the interpretation or meaning of the FPA, or the implementation of specific terms, will, in the first instance, be the subject of informal negotiations. Any party may initiate informal negotiations by notifying all the other parties, in writing, setting forth the matter for dispute. If the dispute cannot be resolved by the parties within 30 days of receipt of such notice, one or more of the disputants may invoke non-binding mediation by setting forth the nature of the dispute, with a proposal for its resolution, in a letter submitted to the EPA Regional Administrator (and/or State Commissioner) with jurisdiction over the location where the dispute arose. Any party to the dispute may request an informal mediation meeting. The disputants may request an opinion from the Regional Administrator [or Commissioner] in lieu of or in addition to the mediation meeting. Any opinion, written or oral, by the Regional Administrator [or Commissioner] will be non-binding and non-enforceable and nothing in this section shall be construed as altering any signatory's right to request termination, or to give rise to any right of judicial review of the opinion. Any decisions rendered by EPA or a State Party based on its review, analyses, and interpretation of the data submitted pursuant to Section II of this FPA, must remain within those Agencies sole discretion and are not subject to the Dispute Resolution provisions of this Section.

## **X. Reservation of Rights**

37. Nothing in this agreement limits the authority of EPA or any state or other regulatory authority to: (1) undertake any criminal enforcement authority against any person including parties to the agreement; or (2) undertake actions in response to conditions which present an imminent and substantial endangerment to public health or welfare, or to the environment. Nothing in this agreement is intended to limit HADCO's right to administrative or judicial appeal or review of the legal mechanisms used to implement the project, or modification or termination of those mechanisms in accordance with the normal procedures for such review.

HADCO CORPORATION

By \_\_\_\_\_

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY

By \_\_\_\_\_  
Regional Administrator, Region 1

By \_\_\_\_\_  
Regional Administrator, Region 2

NEW HAMPSHIRE DEPARTMENT OF  
ENVIRONMENTAL SERVICES

By \_\_\_\_\_

NEW YORK STATE DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION

By \_\_\_\_\_

## **APPENDIX A TO FINAL PROJECT AGREEMENT WORK PLAN Project XL - HADCO Corporation**

### **Memorandum Outlining HADCO's XL Proposal**

#### **I. Applicability and Scope**

##### **A. HADCO Facility Summary**

HADCO is a leading manufacturer of printed wiring boards (PWB) and electronic interconnection products. HADCO sales were approximately \$350 million in 1996. HADCO operates four (4) facilities in New Hampshire and New York that produce PWB waste water treatment (WWT) sludge. The three (3) New Hampshire facilities are located in Derry, Hudson and Salem. The New York facility is located in Owego. HADCO presently employs approximately 3000 people.

##### **B. Overview of Project**

#### **1. Current Waste Management Scenario - Wastewater Treatment Sludge**

This project concerns the classification under RCRA Subtitle C of wastewater treatment (WWT) sludge generated from printed wiring board (PWB) manufacturing facilities (SIC 3672). This WWT sludge is presently classified as a listed hazardous waste, having the waste code F006, pursuant to 40 C.F.R. § 261.31(a). Because of this hazardous waste designation, HADCO, and others in the PWB industry, must ship this waste to a facility licensed to handle hazardous wastes. HADCO's four (4) facilities participating in this XL project collectively generate approximately 600 tons of PWB WWT sludge per year.

HADCO maintains that its WWT sludge should not be regulated as a hazardous waste because EPA based its listing criterion for PWB WWT sludge on chemistry which the company, and largely the industry, no longer utilizes.

The PWB industry has used a variety of chemical etchants to dissolve copper foil from copper-clad laminate material to produce circuit patterns. These etchants can be acidic or basic. In the 1970s, chromic sulfuric acid (a mixture of chromic and sulfuric acids) was sometimes used as an etchant. Therefore, the sludge at that time often contained cadmium, hexavalent chromium, cyanide (complexed) and nickel. See 40 C.F.R. §261.30(b), Appendix VII.

Because chromic sulfuric acid was toxic (both from a worker safety and environmental perspective), the PWB industry began replacing it with non-chrome etchants.

HADCO replaced chromic sulfuric acid etchant with the less toxic ammonium chloride in the late 1970s. Based upon HADCO's analysis of its WWT sludge using EPA's extraction procedure (EP) and toxicity characteristic leaching procedures (TCLP), HADCO maintains that the use of ammonium chloride etchants in its PWB process results in the generation of a non-hazardous WWT sludge.

The receiving facility that HADCO currently ships its WWT sludge to combines HADCO's sludge with others, to create a blended copper-containing product that is suitable for smelting and metal recovery. This blended sludge is shipped by the receiving facility to a Canadian smelter for copper recovery.

HADCO and its competitors in the industry could directly ship their copper containing WWT sludges to Canadian smelters as a hazardous waste, but this would require concurrence from both the U.S. and Canadian governments, and the completion of paperwork associated with hazardous waste exportation.

HADCO and its competitors in the industry would also face problems in directly shipping their copper-rich WWT sludges to domestic smelters as a RCRA hazardous waste. Pursuant to 40 C.F.R. Part 266, Subpart H, smelting furnaces that reclaim metals are exempted from hazardous waste facility permitting when they co-process hazardous wastes, but there are other regulatory impacts. Slags and slag tailings from primary copper processing are normally excluded from being hazardous wastes under the “Bevill” exclusion. See 40 C.F.R. §261.4(b)(7)(i) and (ix). However, any domestic primary copper smelter which co-processes a listed hazardous waste would be forced to carry out the demonstration requirements of 40 C.F.R. §266.112 in order to avoid losing the “Bevill” exclusion for the slags and slag tailings.

HADCO submitted its Project XL proposal in order to remove the PWB WWT sludge within its facilities from RCRA Subtitle C regulation.

HADCO has not asked for a traditional delisting to remove their WWT sludge from regulation, because this process has historically taken up to 4-6 years to implement.

## **2. Current Waste Management Scenario - Drilling and Edging Dusts**

In addition to WWT sludge, HADCO generates over 200 tons per year of drilling and edging dusts, which have a copper content of up to 33%. This is a non-RCRA waste in both NY and NH, and it is currently landfilled.

## **3. The Proposal**

This project seeks to demonstrate that: a) classifying HADCO'S WWT sludge as an F006 waste pursuant to Subtitle C is not necessary to protect human health and the environment; b) the WWT sludge can be safely reclaimed without all of the strict regulatory controls imposed by RCRA Subtitle C; and c) a conditional delisting or a solid waste variance will yield substantial economic and environmental benefits.

EPA believes that a conditional delisting (conditioned upon the receipt of the material at a smelter for reclamation of copper content) is more appropriate than a traditional delisting. A traditional delisting relies heavily on the projected effect of the hazardous waste on groundwater receptors, and we do not believe that this type of analysis is necessary or appropriate in the situation where the ultimate fate of the WWT is receipt by a reclamation facility.

In lieu of a conditional delisting, it is possible that HADCO's waste may qualify for a solid waste variance. The variance that EPA and the State Parties see as potentially applicable is that specified in 40 CFR § 260.30(c) where a waste has undergone partial reclamation. Drying of the WWT sludge using on-site driers may qualify as partial reclamation.

It is critical that EPA and State Parties have sufficient data from HADCO to determine which of these two regulatory relief mechanisms may be warranted, if any. Therefore, the Final Project Agreement sets forth extensive testing requirements so that the EPA and State Parties may receive adequate data to review.

If HADCO meets the requisite conditions for the conditional delisting, or in the alternative, solid waste variance, the cost savings enjoyed by HADCO may be directed towards the installation of sludge driers and will be directed towards the reclamation of the non-RCRA copper dust from the edging and drilling processes, to the maximum extent of savings realized.

HADCO's successful implementation of this project may yield a more simplified delisting process for other PWB manufacturers that generate sludges of similar composition.

## **II. Project XL Criteria**

### **A. Environmental Results**

This project supports the RCRA goals of waste minimization, pollution prevention, and reduced use of natural resources. More specifically, the project provides the following potential environmental benefits:

By eliminating cost and regulatory barriers to recycling, other PWB manufacturers that now send their WWT sludge and copper bearing dusts to landfills after treatment will have an incentive to recycle this resource instead of burying it.

The direct recycling of this metal-rich material will decrease the need to obtain the metals through the mining of virgin material or other means. Natural ore has a copper content of approximately 1%, while the PWB WWT sludge has a copper content of up to 25%; the recycled material is thus commodity-like.

The revenue stream caused by the direct recycling of WWT sludge may allow similarly situated PWB manufacturers to economically recycle other non-RCRA waste streams that are also copper rich (e.g., drilling and edging dust). HADCO produces over 200 tons per year of this dust, which has a copper content of up to 33%. These waste streams are currently landfilled by the New Hampshire and New York facilities and many of their competitors in the industry. Assuming that a conditional delisting or a solid waste variance is granted, resulting in overall cost savings, HADCO will apply these savings to recycle these drilling and edging dusts, thereby reducing the generation of landfill waste. EPA anticipates that the primary superior environmental benefit associated with this project will be HADCO's reinvestment of the cost savings realized from the direct shipment of WWT sludges as non-RCRA waste into the reclamation of non regulated copper containing dusts.

With regard to landfilling, this project would also produce derivative benefits for the smelters who accept these materials for processing. Because the wastes produced by the PWB industry are rich in copper, relative to virgin copper-bearing ores, to the extent that smelters process such secondary materials in place of virgin ores, the smelters would generate less slags and other wastes to be disposed of because of the reduced concentration of non-recoverable materials.

There may be substantial reductions in air pollutant emissions from transportation of this WWT sludge. Currently, some F006 from New England and other east coast generators is transported to a facility in Pennsylvania. This sludge is then shipped to Canadian smelters or other reclamation facilities, after blending. Under this Project, the sludge will be shipped directly to the smelters or other reclamation facilities.

Further, by converting this material from a waste to a commodity, the sludge can generate revenue (or at least be disposed of at a reduced cost). Thus, HADCO and other generators may be able to justify the installation of on-site sludge driers. Direct shipping may reduce transport miles

by up to 50%. Use of sludge driers may reduce this figure by another 25%, due to reduction of volume. Mobile source air emissions associated with the disposal/recycling of this material may then be reduced by 75%. HADCO approximates that this would produce an annual savings of about 3,000 gal/year of diesel fuel.

Additionally, the Pennsylvania facility currently dries a portion of the F006 waste it accepts. The sludge has to contain a specific range of moisture to be acceptable to the smelters. Part of HADCO's proposal included drying the sludge at the generation facility in order to reduce shipping costs and meet smelter specifications.

## **B. Cost Savings and Paperwork Reduction**

### **1. Cost Savings**

HADCO currently pays \$200-400 per ton for the recycling of its WWT sludge. HADCO's New York and New Hampshire facilities generate more than 600 tons per year of WWT sludge, and HADCO pays more than \$200,000 per year for its management. Direct shipment to copper smelters or other copper reclamation facilities will hopefully result in positive revenue (this may be a marginal revenue, or at a minimum, a significant reduction in the cost). The resulting savings can then be used to justify recycling of non-RCRA copper containing dusts and potentially sludge drying. HADCO has not yet determined the exact cost savings associated with conditional delisting.

After FPA approval, HADCO will determine the cost savings, and the resulting pollution prevention/recycling steps that can be implemented. Alternative drying approaches will be evaluated. The cost of this project should be relatively low, and HADCO Corporation has the financial capability to carry it out.

### **2. Paperwork**

If the conditional delisting or a solid waste variance is implemented, HADCO will not be required to file and submit hazardous waste shipment manifests, thereby reducing the amount of paperwork generated. Further, shipments to Canada will not require formal preapproval and notification required for the shipment of RCRA Subtitle C wastes, and filing of RCRA annual export reports.

In addition, HADCO intends this project to be a pilot for the PWB industry. HADCO believes that this pilot will confirm that non-chromic WWT sludge does not meet the hazardous waste characteristics under RCRA subtitle C. A conditional delisting could then apply to this type of waste throughout the PWB industry (subject to certain demonstrations by individual companies), and would avoid the cost and paperwork (and resources needed to review the paperwork) associated with numerous individual delisting applications. There are approximately 750 PWB manufacturers in the United States. Removal of PWB WWT sludge from RCRA jurisdiction may produce significant savings to the industry.

## **C. Stakeholder Support**

Stakeholder committees were formed in New Hampshire in March, 1996 and in New York in April, 1996. Meetings were conducted in New Hampshire on 3/18/96, 4/17/96, 6/19/96 and 7/18/96. Meetings were conducted in NY on 4/16/96, 6/19/96 and 7/18/96, with the last two meetings conducted via video conference with New Hampshire stakeholders. The purpose of the meetings was to inform all interested citizens concerning the development and implementation of HADCO's proposal under EPA's XL Program and to seek public comment and input on the proposal.

Stakeholders to the development of the FPA include the Merrimack River Watershed Council, Town of Hudson (NH) Health Office, Audubon Society of NH, Sierra Club (NH Chapter), Teradyne, M/A-COM, Inc, Lockheed Martin Loral Federal Systems, World Resources Corp. (the facility presently handling HADCO's WWT sludge), and the IPC (the PWB industry association).

Other interested stakeholders include Wastecap of NH, NY PIRG, Atlantic States Legal Foundation, and the Towns of Derry and Salem (NH).

#### **D. Innovation/Multi-Media Pollution Prevention**

This proposal achieves solid waste minimization and recycling; results in the reduced use of virgin resources; and reduces mobile air emissions (the largest source of volatile organic compounds (VOCs) and nitrogen oxides (NOX) in most states). Furthermore, the improved economics of recycling may permit the recycling of a solid (non-RCRA) waste which is presently landfilled and may also permit the drying of the sludge to reduce the volume of sludge transported.

Further, a conditional delisting promotes improved regulatory flexibility. The project may assist the Agencies in developing a more streamlined conditional delisting process for certain other waste streams.

#### **E. Transferability**

The United States PWB industry as a whole produces approximately 20,000 tons per year of WWT sludge. Less than 50% of this sludge is sent for reclamation of metals, according to EPA's Biennial Reports System.

As discussed previously in Subsections II. A and B of this Memorandum, the proposal may be transferable to other PWB manufacturers not using chrome-based etchants. If HADCO confirms the non-RCRA nature of its WWT sludge, then similar PWB manufacturers may be able to benefit from a conditional delisting procedure for F006 sludge.

#### **F. Feasibility**

HADCO can accomplish the necessary analysis and administration of a pilot project to demonstrate that its sludge should be conditionally delisted. A sludge drier has been installed in the Owego, NY facility.

The recycling of copper dusts still requires additional research and analyses; nevertheless, HADCO has committed itself to researching an innovative solution.

#### **G. Monitoring, Reporting and Evaluation**

The Agreement incorporates representative sampling and analysis, consistent with the requirements of SW-846, or ASTM test methods. It also includes the submission of an annual report to summarize the relative success of the project in terms of environmental benefits, cost savings, and other criteria.

#### **H. Shifting of Risk Burden**

This proposal is consistent with the goals of protecting worker safety and ensuring that human health and the environment are protected to an equal or greater extent than they were under the original regulatory scheme. No group shall be subject to unjust or disproportionate environmental impacts attributable to this Project.