United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101

Alaska
Idaho
Oregon
Washington

BURGES

EPA

WAD 2917
146.
5/8/90

MAY 8 1990

Reply to
Attn of: HW-112

FILE COPY

Marlys S. Palumbo
General Counsel
Chemical Processors, Inc.
2203 Airport Way South, Suite 400
Seattle, WA 98134

Re: Chemical Processors Inc. Pier 91 Facility
Transmittal of RCRA 3008(h) Order

Dear Ms. Palumbo:

Please find enclosed for your records a signed copy of the RCRA 3008(h) Order for the Pier 91 facility.

Sincerely,

Charles Findley

Charles E. Findley, Director
Hazardous Waste Division

Enclosure

cc: John Hamill, ORC
Jack Boller, WOO
Tom Eaton, Washington Department of Ecology
Susan Donahue, Compliance Manager, Chempro
Manager, Environmental Management Section, Port of Seattle

USEPA RCRA
3012399

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EPA REGION 10, 1200 Sixth Avenue
Seattle, Washington 98101

IN THE MATTER OF:

Chemical Processors, Incorporated. Pier 91 Facility Seattle, Washington (WAD000812917) RESPONDENT Proceeding under Section 3008(h) of the Resource Conservation and Recovery Act, 42 U.S.C. 6928(h).	AGREED ORDER EPA Docket No. [1089-11-06-3008(h)]

I. JURISDICTION AND AGREEMENT

1. This administrative order ("Agreed Order" or "order") is entered pursuant to the authority given to the Administrator of the United States Environmental Protection Agency ("EPA") by Sections 3008(h) of the Solid Waste Disposal Act, also called the Resource Conservation and Recovery Act of 1976 ("RCRA"), 42 U.S.C. § 6928(h). The authority of the Administrator has been delegated to the Regional Administrators by EPA delegation Nos. 8-31 and 8-32 dated April 16, 1985. This authority has been further delegated to the Director, Hazardous Waste Division, EPA Region 10.

2. The following items are initial Attachments to this order and they are, by this reference, incorporated verbatim herein:

(A) Facility sketch and layout and its surroundings.
(B) Specification of Tasks I through IX for RFI and CMS.
(C) Schedule for Performance of Tasks in Attachment.
(D) Format for the RFI Report.

If and when a Part B permit is issued by EPA for this facility, then that permit will incorporate the provisions of the order including items incorporated into or to be incorporated into this order.

3. This agreed Order is issued to the Respondent "Chemical Processors, Incorporated" (facility operator), for the Chemical Processors Pier 91 facility located at 200 West Garfield Seattle, Washington 98119.

4. Agreement to the terms of this order (a) equitably and directly estop the Respondent and EPA from altering, challenging, or contesting its terms or EPA's jurisdiction and authority to issue it, except as may be otherwise provided elsewhere in this order, and (b) does not collaterally estop either EPA or the Respondent as to any claim by any person not a signatory to this order.

5. Respondent shall have the right and power to contest and controvert (as against EPA and every other opposing party) those findings of fact and conclusions of law set out in parts IV & V below (including findings relating to jurisdiction), except that it may not do so in a proceeding brought at EPA's request for the specific enforcement of the terms of this agreed order or for the imposition or collection of penalties provided for in paragraph 29 below. Respondent neither admits nor denies (for the purpose only of this proceeding) such findings of fact and conclusions of law, but that conduct and Respondent's consent and agreement to issuance of this order shall not constitute admissions by Respondent for any other purpose, or in any proceeding collateral to the instant proceeding, and any person who is not a signatory to this order may not cite or use the contents of this order as evidence against EPA or against the Respondent to this order.

6. (a) Respondent agrees that (1) this order may be issued in its present form containing the findings of fact, conclusions of law, and personal commands set forth below, and (2) that it will not contest that EPA has jurisdiction (A) to issue this order; (B) to compile (through later administrative/judicial enforcement proceedings) compliance with this order; and (C) to obtain hereafter (judicially and/or administratively) any applicable sanctions for violations of this order.

(b) Respondent waives all rights it may have pursuant to RCRA §3008(b), 41 U.S.C. §6928(b), or otherwise, as follows: (1) to pursue administrative remedies now to contest issuance of this order; (2) to have an opportunity for an administrative adjudicative (or public) hearing now

regarding the issuance of this order; (3) to receive or have EPA issue a notice of hearing or complaint now regarding the issuance of this order; (4) to assert now or at any later time any current or previous error under 40 CFR Parts 22 or 24 regarding the issuance of this order; (5) the compilation prior to the effective date of this order of any materials as the agency's informal administrative record supporting this order; and (6) to contest this order or its specific terms.

II. ENTITIES BOUND

7. The terms of this order shall not be disregarded or violated by Respondent through any person acting for or on behalf of the Respondent (including its officers, directors, employees, agents, successors and assigns, independent contractors, contractors, and consultants). neither this provision nor paragraph 9 below shall operate to legally obligate anyone (other than Respondent) to EPA as a party of record or a party respondent to this order.

8. No change in ownership of any interest in the facility, or any change in Respondent's corporate or partnership status, will in any way diminish Respondent's duties imposed by this order. Notwithstanding the foregoing, if Respondent's lease with the Port of Seattle (for the premises designated as the facility herein and for which Respondent has filed its application for a RCRA Part B permit), is terminated prior to the completion of any portion of this order on or before December 31, 1991, Respondent's obligations with respect to this order shall be consistent with the requirements for closure of interim status facilities pursuant to 40 CFR 265 et seq.

9. Respondent shall provide a copy of this order to all contractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this order. Such copies shall be provided not later than 7 calendar days after the later of the effective date of this order or the date an entity is retained. The terms of this order shall be a condition and also a specification in all arrangements by which such entities are so retained.

10. Respondent shall give notice of this order to any successor in interest at least 60 calendar days prior to transfer of ownership of an interest in, or transfer of the operation of the facility and shall notify EPA not later than 30 calendar days before any such transfer.

III. STATEMENT OF PURPOSE

11. The goals of EPA and Respondent by agreeing to this order are:

A. To provide for the performance of a RCRA Facility investigation ("RFI") by Respondent with respect to the Facility;

B. To provide for the performance of a Corrective Measures Study ("CMS") by Respondent dependent upon and in accordance with whatever findings may be determined by the RFI and such other data necessary to perform a proper CMS, available to EPA and the Respondent with respect to the facility; and

C. To provide an informational basis upon which corrective action within the meaning of RCRA §3008(h), may be taken at the facility to the extent, if at all, indicated by the CMS.

IV. FINDINGS OF FACT

12. The Chempro Pier 91 facility is located on the northern waterfront of Elliott Bay within 1/4 mile of Smith Cove and the Smith Cove Waterway. Respondent has leased the Pier 91 facility from the Port of Seattle since approximately June 1971. The leased premises includes piping between the tank system and berths B, C, F, K and M (only those which are active pipelines used for ship loading and unloading), and berths K and L. Records indicate the tank system was first constructed in approximately 1926 for use as a gasoline refinery by California Petroleum Company. Records further indicate that the Port of Seattle has owned this property on an intermittent basis dating from at least 1931. From approximately 1941 to the early 1970s the U.S. Navy took ownership of the tank systems for use as a fuel and lubricating oil transfer station. In approximately 1972, the Navy declared the terminal 91 facility property as surplus. The property was acquired by the Port of Seattle in approximately 1976.

13. Respondent is an organization doing business in the State of Washington and is a person as defined in section 1004(15) of RCRA, 42 U.S.C. 6903(15). Attachment A provides a depiction of

the facility in relation to its surroundings (Figure 1) and a plot plan of the facility (Figure 2). The Port is a municipal organization doing business in the State of Washington and is a person as defined in section 1004(15) of RCRA, 42 USC Section 6903(15). The Port is the owner of the facility and contiguous property surrounding the facility as shown in Figure 1 and Figure 2 of Attachment A hereto.

14. On or about August 18, 1980, Respondent submitted to EPA its notification of hazardous waste activity for the Pier 91 facility (EPA Form 8700-12) pursuant to Section 3010 of RCRA and EPA I.D. No. WAD000812917 was assigned to the facility. The notification identified Respondent as both a generator and operator of a treatment, storage or disposal facility. Respondent's Part A permit application for the facility dated November 14, 1980, was followed by subsequent submittals of the application on August 14, 1984; December 11, 1985; February 18, 1986; and July 21, 1986. 22 waste codes are currently listed on the Pier 91 facility Part A application including F001 - F003 solvents, K - Series Wastes (K048 - K052) characteristic wastes (D001 - D011) and the Washington waste codes W001 and WT02. The facility is identified as having a tank capacity of 9,036,094 gallons with a treatment capacity of 40,000 gallons per day.

15. The Respondent's facility currently handles oil and coolant emulsions, industrial wastewater, and industrial waste sludges. Reclaimed oil processed by Respondent is sold to Pacific Northern Oil Co. (PANOCO) for use as cutting stock in marine boiler fuel oils. The PANOCO facility is sub-leased from Respondent which includes approximately 60% of Respondent's total tank capacity (6.3 million gallons).

16. One or more releases of hazardous waste and/or constituents thereof have occurred at the facility, and evidence thereof consists in part of the following:

a. In March 1988 a RCRA Facility Assessment (RFA) was conducted at the facility. According to this report a number of spills of oily liquids have occurred over the years in the storage area at the facility. However, historical photographs and documents indicate that the tank farm area at the facility was contaminated with oily liquids at the time Respondent began its operations at the facility. Oily liquids have been reportedly spilled in this general vicinity since the

facility first began operation in the 1930's. Prior to 1986, the surface of the Marine Diesel Oil Yard, which represents a portion of the facility, was native soil and oily liquids were spilled on the unpaved surface. Some oil contaminated soil was sealed in boxes constructed between the buttresses on the containment wall. According to the RFA report, oily liquid was seeping from these boxes. In 1986 some of the oil-contaminated soil at the facility was excavated and placed in 55 gallon drums for disposal.

b. The oily liquids released during these spill events have the same characteristics of the other materials that Chempro handles at the Pier 91 facility. The oily wastewater contained in tanks at the facility is contaminated with heavy metals such as lead, chromium, and zinc.

c. In May 1988 a Phase I hydrogeological investigation was conducted for Chempro by Sweet-Edwards/EMCON, Inc. The purpose of the study was to define the potential presence of contamination in the soils and groundwater beneath the Chempro Pier 91 facility. During the soil boring activities a petroleum odor was noted in boring HA-1 and HA-2. Visible contamination was observed in both the saturated and unsaturated zone in HA-2. Analysis of the groundwater from HA-2 showed 19 ug/L Aroclor 1260. Petroleum contaminants were observed in the upper 2-feet of the boring sidewall of abandoned boring CP-107.

d. In June 1988 a RCRA §3013 order was issued to the facility based on the results of the May 1988 Phase I hydrogeological investigation. The 3013 investigation included groundwater and soil sampling, chemical analysis, and data evaluation. Sampling sites were selected to determine the nature and extent of soil and groundwater quality both upgradient and downgradient of the Pier 91 facility. Eight groundwater monitoring wells (CP-103A, CP-104A, CP-105A, CP-106, CP-107., CP-108, CP-109 and CP-110) were completed in the shallow aquifer beneath the facility. Additional groundwater monitoring wells (CP-103B, CP-104B, and CP-108B) were completed in the deep aquifer beneath the facility. Seven test borings (TB-1 through TB-7) were completed in the shallow aquifer and were sampled for groundwater. One well (CP-109B) was completed in the aquitard between the shallow and deep aquifers. Two rounds of

groundwater quality data were collected during the investigations. These data are summarized in Tables 1 (shallow aquifer) and 2 (deep aquifer) attached.

e. A total of 7 soil borings were completed at the facility and soil samples were taken from 4 monitoring well borings, pursuant to the RCRA §3013 order. Principle constituents identified in the soil borings included toluene (1,200 mg/kg), ethylbenzene (2,400 mg/kg), xylenes (5,600 mg/kg), methylene chloride (13 mg/kg), 1,1,1 trichloroethane (24 mg/kg), methylnaphthalene (27 mg/kg).

f. Based on the information provided in the above Findings, Benzene and Vinyl Chloride, which are hazardous constituents listed in Appendix VIII of 40 CFR Part 261, have been detected in the soils and/or groundwater at the facility in concentrations above EPA primary drinking water standards. In addition, toluene, total xylene, acetone, Chloroethane, 1,1, Dichloroethane and 1,1,1 Trichloroethane (also hazardous constituents listed in Appendix VIII to 40 CFR Part 261) have been detected in such soils and/or groundwater at the facility. Some of the constituents mentioned above have been detected in the deep aquifer underlying the facility.

g. The 1989 §3013 investigation indicated that the shallow water table aquifer is approximately 3-7 feet below the land surface and flows in a southerly direction to Elliott Bay, which is approximately 300 feet from the Pier 91 facility. Contaminated groundwater flowing beyond the Chempro facility could conceivably result in impacts downgradient to marine biota in Elliott Bay.

TABLE 1

SELECTED VOLATILE ORGANIC COMPOUNDS - SHALLOW AQUIFER

CHEMPRO PIER 91 FACILITY

CONSTITUENTS	CONCENTRATIONS IN GROUND WATER (ug/l) MONITORING WELL NOs															
	CP-103-A		CP-104-A		CP-105-A		CP-106		CP-107		CP-108A		CP-109		CP-110	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Methylene Chloride	-	21	6.8	4.5	4.1	-	-	1.7	-	0.7	-	4.0	-	1.5	-	-
1,1, Dichloroethane	0.9	-	41	46	-	-	5.4	7.4	3.6	3.8	3.1	-	3.4	3.7	2.7	-
1,2 Dichloroethene (Total)	-	-	9.9	-	-	-	3.3	6.9	2.4	3.5	-	-	1.2	-	2	2
Toluene	7.2	5.4	21	20	0.2	-	1.3	-	-	1.1	0.7	1.6	-	5.9	1.6	2
Benzene	4.9	-	6.3	5.9	-	-	-	1.0	1.1	7.9	18	5.0	-	34	15	15
Total Xylenes	2.9	-	24	20	0.6	-	-	-	6.0	4.9	2.1	1.6	27	8.3	1.6	1.5
Acetone	41	-	200	20	-	-	-	16	-	20	21	-	210	-	-	-
Chloroethane	5.4	-	21	24	-	-	-	-	110	128	7.7	-	76	150	43	71
Vinyl Chloride	-	-	25	27	-	-	-	2.9	4.3	4.7	-	-	-	-	1.5	1.9
1,1,1 Trichloroethane	-	-	4.2	3.8	-	-	-	-	-	-	-	-	-	-	-	-

1 = Round 1 Sample results
2 = Round 2 Sample results

Round 1 Samples Collected 2/10 - 2/13, 1989
Round 2 Samples Collected 3/8/89

TABLE 2

SELECTED VOLATILE ORGANIC COMPOUNDS - DEEP AQUIFER

CHEMPRO PIER 91 FACILITY

CONSTITUENTS	CONCENTRATIONS IN GROUNDWATER (ug/l) MONITORING WELL NOs							
	CP 103 B		CP 104 B		CP 105 B		CP 108 B	
	1	2	1	2	1	2	1	2
Methylene Chloride	-	1.2	-	1.5	-	0.5	-	3.6
1,1,Dichloroethane	2.3	-	0.9	-	-	-	-	-
1,2 Dichloroethene (Total)	-	-	-	-	-	-	-	-
Toluene	6.3	-	-	1.1	0.6	-	2.2	-
Benzene	12	-	-	-	-	-	1.4	-
Total Xylenes	4.3	-	1	-	0.5	-	-	1.1
Acetone	28	-	19	-	-	8.8	-	-
Chloroethane	15	-	-	-	-	-	-	-
Vinyl Chloride	-	-	-	-	-	-	-	-
1,1,1 Trichloroethane	-	-	-	-	-	-	-	-

1 = Round 1 sample data

2 = Round 2 sample data

Round 1 Samples Collected 2/10 - 1/13, 1989
Round 2 Samples Collected 3/8/89

V. CONCLUSIONS OF LAW AND DETERMINATIONS

17. Based on the Findings of Fact set out in Section IV above, EPA makes the following conclusions of law and determinations:

A. Respondent is "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. §6903(15).

B. Respondent is the operator of a facility that has operated and is operating subject to §3005(e) of RCRA, 42 U.S.C. §6925(e).

C. Certain wastes and constituents thereof found at the facility are hazardous wastes or hazardous constituents thereof as defined by §1004(5) of RCRA, 42 U.S.C. §6903(5). These are also hazardous wastes or hazardous constituents within the meaning of §3001 of RCRA, 42 U.S.C. §6921 and 40 C.F.R. Part 261.

D. Releases into the environment of hazardous wastes and/or hazardous constituents are occurring or have occurred at and/or from Respondent's facility. This order does not determine that only Respondent is responsible for the releases. It is recognized that there may be a dispute about whether some other entity or entities may be responsible additionally. This order does not determine that matter.

E. The activities described and referred to in paragraphs 19 through 28 of this order are necessary and appropriate to protect human health or the environment and the Respondent should be ordered to perform them.

VI. ORDER

18. Accordingly, it is hereby ORDERED, that the Respondent shall perform, comply with, and obey each of the provisions hereinafter set forth in this Order.

Performance of Work and Preparation of Plans

19. A. General.

(1) All work shall be performed in the manner and by the dates described in this order; its attachments, and in the completed plans, in order to adequately accomplish corrective actions at the facility.

(2) All work undertaken or performed pursuant to this order, and all plans developed to comply with this order, shall be done or made in a manner consistent with the following:

(a) The initial and any later items incorporated or to be incorporated into this order;

(b) Any EPA-approved RCRA Facility Investigation Workplan, Corrective Measures Implementation Plan, or other Workplan;

(c) RCRA and its implementing regulations; and

(d) Applicable EPA guidance documents listed in Attachment B Task II and future guidance documents which are operative and available prior to Respondent commencing activities to which the guidance relates.

Interim Measures.

B. (1) Respondents shall continually consider and evaluate the information regarding releases at the facility, and the nature and extent of contamination from hazardous constituents at or from the facility as learned in connection with the performance of the RCRA Facility Investigation ("RFI"). In the event Respondent identifies a current threat to human health or the environment based on such information, Respondent shall

immediately notify EPA orally, and shall notify EPA in writing within seven (7) days summarizing the immediacy and magnitude of such identified threat. Based upon the potential health and environmental impacts which can be predicted with reasonable scientific certainty from such RFI and related information, Respondent shall (if a definite need to protect health and/or the environment is determined by Respondent, or by EPA, to exist based upon Respondents' investigations) compose and formulate a set of interim measures which, if implemented, can mitigate the release at or from the facility of hazardous wastes and/or constituents, and/or which can effectively mitigate the impact on receptors affected by such releases and are consistent with the and can be integrated into any long term corrective measures at the facility.

(2) If either EPA or the Respondent determines that a definite need exists for interim measures based on Respondent's notification under subparagraph (1) or otherwise, Respondent shall prepare and submit within 15 days (or by such earlier or later date as EPA and Respondent agree upon), an interim measures (IM) workplan. Such workplan shall include:

(a) Interim Measures Objectives;

(b) A Health and Safety Plan;

(c) A Public Involvement (Community Relations Plan);

(d) A Data Collection Quality Assurance Plan (as needed);

(e) A Data Management Plan (as needed);

(f) Design Plans and Specifications;

(g) An Operation and Maintenance Plan;

(h) A Project Schedule;

(i) An interim Measure Construction Quality Assurance Plan

(j) Reporting Requirements.

(3) The IM workplan shall ensure that interim measures are designed to mitigate the identified threat to human health or the environment and are consistent with and are integrated into any long term solution at the facility and shall document the procedures to be used by the Respondent for the implementation of the proposed interim measures. Upon approval by EPA of such IM workplan (including such modifications as EPA may make therein) the Respondent shall perform and implement the interim measures identified and described in the approved IM workplan consistent with the schedules therein contained.

(4) If Respondent elects to perform interim measures where there is no definite need to protect health/or the environment, then Respondent may request EPA's review (either formal or informal) of its proposed action to evaluate whether said action would be consistent with future corrective actions.

RCRA Facility Investigation ("RFI")

C. (1) Respondent shall perform and complete at and for the Facility a RCRA facility investigation. In the course of such activity the Respondent shall accomplish Tasks I through VII as specified in Attachment B in accordance with the terms and specifications of workplans which are submitted by the Respondent after they are approved by EPA.

(2) The time schedule for such RFI is specified in Attachment C.

Corrective Measures Study (CMS)

D. (1) If a determination is made (based upon the risk assessment performed in connection with the RFI) by EPA or the Respondent that corrective actions are necessary, then in accordance with the schedule set forth in Attachment C., the Respondent shall perform and complete a corrective measure study ("CMS") at and for the Facility. In the

course of such activity the Respondent shall accomplish Tasks VII through X as specified in Attachment B in accordance with the terms and specifications of workplans which are submitted by the Respondent after they are approved by EPA.

(2) The time schedule for such CMS is specified in Attachment C.

Workplan and Report Reviews by EPA and the Public.

20. A. RFI and CMS Submissions to and Comments From EPA.

(1) EPA will review each workplan and report submitted pursuant to Attachment B and will thereafter inform Respondent in writing of EPA's approval, request for modifications, or disapproval of such workplans and reports or any part thereof. In cases of disapproval, EPA will specify the deficiencies, state the reasons for disapproval, and specify the modifications desired.

(2) EPA will afford Respondent an opportunity to meet with EPA representatives, not later than 30 calendar days from Respondent's receipt of EPA disapproval, to discuss EPA's/Respondent's problems with such workplans and/or reports, to propose alternative workplans and reports, and to propose suggestions for resolving such problems. EPA's and Respondent's representatives who meet and discuss such matters shall use their best efforts to resolve any such problems in accordance with generally accepted sound scientific and engineering principles and practices. If a resolution is agreed to, then EPA will approve the workplans and/or reports to the extent required to satisfy such agreement. If a resolution is not agreed to, then the Respondent may invoke the dispute resolution process provided in paragraph 30 below. An alleged failure by the Respondent to properly address EPA comments sent to it shall be resolved (unless Respondent capitulates) by Respondent invoking the said disputes resolution process.

(3) Each written deficiency notice received by the Respondent from EPA which is not submitted to the disputes resolution process shall be conceptually and physically integrated into and with each relevant workplan, report, and other appropriate document.

(4) As to deficiencies noted by EPA which are submitted to the disputes resolution process, the Respondent shall make note of (and reference to) the final decision from the disputes resolution process, in each affected workplan and/or report and/or other document in a manner which conforms with such decision.

(5) The actions required by (3) and (4) above shall be accomplished not later than 30 days after receipt by Respondent of EPA comments (or receipt by Respondent of the final decision in the disputes resolution process) or such later time as EPA may approve upon Respondents showing of need for more time.

Public Review and Comments

B. (1) Upon receipt from Respondent of a written report concerning corrective actions (interim or final measures) to be taken at the Facility, EPA will make available to the public for inspection and review and comment: the corrective measures evaluation report; the RFI report; any corrective measure recommendation; any EPA justification for supporting/approving a corrective measure. EPA will allow the public 30 calendar days at a minimum for submitting comments. EPA also has the right to afford a longer or additional periods for public review and comment if it determines that such further time is beneficial to the public interest.

(2) When the public comment periods have closed, EPA will notify the Respondent of the corrective action measure EPA has approved/selected, if any. If such measure is other than the measure EPA previously tentatively selected, then EPA will explain in writing to Respondents EPA's reason for such different selection.

(3) EPA will include in its notice of deficiencies and/or selection of measure decision when that is communicated to the Respondent, all appropriate public comments received on the proposed measure, and a requirement that the Respondent perform necessary additional corrective measure evaluations (if any) before Respondent implements the EPA selected measure. If additional investigative activity indicates a substantial modification may be warranted as to the measure EPA selected after public comment, then EPA may initiate a second public comment period and proceed as described in subparagraphs (1) and (2) above.

(4) If, after 120 calendar days elapse following the close of the most recent public comment period pursuant to (1) through (3) above, and EPA and Respondent have not successfully negotiated an agreed order for the design and implementation of the EPA-selected corrective measure, EPA reserves all rights it may have under any law to implement such measure as corrective action, as response action, or otherwise.

Quality Assurance.

21. A. Throughout all sample collections and analysis activities performed pursuant to this order or its Attachments, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures as identified in relevant EPA guidance documents.

B. In addition, Respondent shall:

(1) Follow the EPA guidance for sampling and analysis contained in the document entitled "Test Methods for Evaluating Solid Waste (SW-846), November 1986, edition.

(2) Consult with EPA in planning for, and prior to, field sampling and laboratory analysis.

(3) Inform the project coordinator in advance of what laboratories will be used by Respondent for identified samples.

(4) Ensure that laboratories used by Respondent for analyses of samples perform such analyses according to the EPA methods included in "Test Methods for Evaluating Solid Waste (SW-846)" November 1986, edition.

(5) 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, Respondent shall have such laboratories perform analyses of samples provided by EPA to demonstrate the quality of the analytical data typically produced by them.

(6) Use EPA guidance documents to evaluate all data to be used in connection with carrying out the terms of this order.

C. The Respondent shall comply with all EPA approved health and safety plans.

Access To Premises.

22. A. EPA and/or any EPA representative are authorized to (and have the right and power to) enter and freely move about all areas at the facility (or wherever work pursuant to this order is actually or putatively being done) after the effective date of this order (and before its complete satisfaction) for the purposes of inspecting and/or overseeing the performance of work related to carrying out the terms of this order. Such inspecting and overseeing includes activities such as 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 order; conducting such tests, sampling or monitoring as EPA or its Project Coordinator deem necessary; using a camera, sound recording, or other memorializing 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 order.

B. Respondent shall assure that EPA authorized representatives are promptly afforded ingress to the facility and opportunity to exercise the forgoing rights and powers.

C. When acting pursuant to the authority of subparagraph A., (1) EPA shall confine its entries onto facility premises to reasonable days of the week and reasonable times of day, (2) EPA shall inform Respondent's representatives immediately upon each entry of such fact and of the identity of the persons entering.

D. To the extent that work required by this order (including any item incorporated or to be incorporated into this order) must be done on premises not owned or controlled by Respondent, Respondent shall use its best efforts to obtain site entry agreements from the present owner(s) of such property within 30 calendar days of approval of any such item for which site access is required. Best efforts as used in this paragraph shall include, at a minimum, a certified letter from Respondent to the present owners of such property requesting such agreements to allow Respondent and EPA and its authorized representatives to enter such premises. Any such entry agreement when formed is thereby incorporated into this order. In the event that such entry agreements are not obtained when and as required by this order, Respondent shall notify EPA in writing within 15 calendar days thereafter regarding both the efforts undertaken, and its failure, to obtain such agreements.

E. Nothing in this order limits or adversely affects EPA's right to enter any premises and perform activities on such premises after entry pursuant to applicable law, including RCRA and CERCLA.

Sampling and Data/Records Availability.

23. A. The Respondent shall (1) submit to EPA with its progress reports all quality assured results of all sampling and/or tests or other data generating activities performed by, or on behalf of, the Respondent, by activity related to carrying out or disputing the terms of this order (including any item incorporated into this order) and (2) allow EPA representatives to inspect and

examine on request all raw data and records underlying or related to results so required to be submitted.

B. Respondent shall notify EPA at least 3 calendar days in advance before engaging in any field activities, such as soil sampling, well drilling, geophysical studies, installing equipment, or ground water or surface water sampling.

C. At the request of EPA, Respondent shall permit and allow EPA or its authorized representative to take split samples of any samples collected by Respondent.

D. EPA may make available to the public whatsoever analytical data records are submitted by Respondent to EPA as well as any record which has not been claimed (as of the release date) to be confidential business information under 40 CFR Part 2. As requested by Respondent, EPA agrees to send to Respondent, a copy of its responses to letters requesting records under the Freedom of Information Act concerning activities performed by Respondent under the terms of this order.

24. Respondent may assert a business confidentiality claim covering all or part of any information submitted to EPA pursuant to this order. Any assertion of confidentiality shall be adequately substantiated by Respondent when such contention is first made. Information determined to be confidential by EPA shall be disclosed only to the extent permitted by 40 CFR Part 2. If no such confidentiality claim accompanies information when it is submitted to EPA, it may be made available to the public by EPA without further notice to the Respondents. The Respondent waives all confidentiality claims with regard to any physical or analytical data it may submit to EPA pursuant to this order.

Records Preservation

25. A. Respondent shall preserve, until this order is completely satisfied, and for a minimum of at least 4 years thereafter, 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 order or to hazardous waste management and/or disposal at

the Facility. After 4 years, Respondent shall make such records available to EPA for inspection or shall provide copies of any such records to EPA. Respondent shall notify EPA 30 days prior to the destruction of any such records, and shall provide EPA with opportunity to take possession and ownership of any such records.

Project Coordinator

26. A. Within seven calendar days after the effective date of this order, EPA and Respondent shall each notify each other in writing of the name, title, address and phone number of their respective designated Project Coordinator.

B. Each Project Coordinator shall be made responsible for overseeing the implementation of this order. The EPA Project Coordinator will be EPA's designated representative at the Facility.

C. 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 order shall be directed to EPA through its Project Coordinators.

D. EPA and Respondent shall give at least 10 days written notice to one another before changing Project Coordinators.

E. The absence of the EPA Project Coordinator from the Facility shall not be any justification or excuse for the stoppage of work required or directed by this order and/or its Attachments.

Community Protection.

27. If EPA determines that activities in compliance or noncompliance with this order, have caused or may cause a release of hazardous waste, hazardous constituent, or a pollutant or contaminant, or a threat to the public health or to the environment, EPA may order Respondent to stop further implementation of this order for such period of time as may be needed to abate any

such release or threat and/or to undertake any action which EPA determines is necessary to abate such release or threat.

Notifications.

28. A. Unless otherwise specified, reports, correspondence, notices, comments, requests, or other submissions relating to or required by this order shall be in writing and shall be sent to:

For EPA: EPA Project Coordinator M/S HW-112
U.S.E.P.A. RCRA Compliance Section
1200 Sixth Avenue
Seattle, Washington 98101

For RESPONDENTS: Not later than the 15th day after the effective date of this order, Respondent shall provide EPA with the names and addresses to which EPA may send correspondence and notices as anticipated by this order.

B. A true copy of all matters sent to EPA pursuant to the terms of this order and/or its Attachments, shall be contemporaneously sent to the Washington Department of Ecology.

Delay in Performance/Stipulated Penalties

29. A. Unless there has been such a written extension by EPA of a date for compliance (or excusable delay as defined in paragraph 31), if Respondent fails to fulfill any requirement on time as set forth in this order or in any item incorporated into this order, or in any EPA approved item, then Respondent shall pay stipulated penalties for any such delays to the extent provided in this paragraph.

B. These stipulated penalties for delay days reflect the parties' expectations that while a delay in performing may occur, in most (if not all) instances it will probably be cured by not overly tardy performance. For that reason, when delay days exceed twenty-one consecutive calendar days, no further liability for any stipulated penalties for the particular delays involved shall be incurred under this paragraph. But EPA shall be free to pursue its statutory right to obtain civil penalties for all delay days in excess of 30 days involved in those particular delays.

C. When the total delay days in a particular incident do not exceed twenty-one consecutive calendar days, the Respondent shall pay the following stipulated penalties for such delays:

(1) For failure to commence work when required pursuant to this order: $500.00 per day for delay days 1 through 7, and $5,000.00 for each seven day delay thereafter (or portion thereof);

(2) For failure to submit a preliminary or final reports when required pursuant to this order: $500.00 per day for delay days 1 through 7, and $5,000.00 for each seven day delay thereafter (or portion thereof);

(3) For failure to submit progress reports when required pursuant to this order: $100.00 per day for delay days 1 through 7, and $1,000.00 per day for each seven day delay thereafter (or portion thereof);

(4) For failure to submit any other deliverable item when required pursuant to this order: $100.00 for delay days 1 through 7, and $1,000.00 for each seven day delay thereafter (or portion thereof);

(5) For failure to complete on time one or more tasks specified and given a deadline completion time in an EPA approved report, plan, specification, schedule, extension request, or in an Attachment hereto, $100.00 for delay days 1 through 7, and $1,000.00 for each seven day delay thereafter (or portion thereof).

D. In computing stipulated penalties: (1) the first calendar day after the deadline date shall be deemed delay day #1; (2) the calendar day on which a delay is cured shall be deemed the

final delay day and penalties shall attach for it; and (3) stipulated penalties may accumulate separately but concurrently for delays as to separate requirements for performance.

E. All penalties owed to EPA pursuant to this paragraph shall be paid not later than the 30th calendar day after 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 of penalties due at the end of such 30 days. Such penalties are payable pursuant to this order as if adjudged after a hearing thereon.

F. All penalties shall be made payable by certified or cashier's check to the Treasurer of the United States of America and shall be remitted to:

EPA Region 10 Regional Hearing Clerk

U.S. Environmental Protection Agency,

P.O. Box 360903M

Pittsburgh, Pa 45251

G. A carbon copy of each such transmittal shall be sent to the said Regional Hearing Clerk at:

1200 Sixth Avenue, Suite 1200 M/S SO - 125

Seattle, Washington 98101

H. Copies of the transmittal of payment shall be sent simultaneously to the EPA Project Coordinator.

I. All payments shall reference the name of the Facility, the Respondents names and addresses, and the EPA docket number of this action.

J. Respondent may dispute EPA's right to stipulated penalties by invoking the dispute resolution procedures set forth in paragraph 30, below. If Respondent does not prevail in such dispute resolution, EPA shall have the right to seek penalties for all delay days occurring before and during the period of dispute. If Respondent prevails in dispute resolution no penalties for the delay days before or during the dispute period shall be payable.

K. Neither the filing of a petition to resolve a dispute nor the payment of penalties shall alter in any way Respondent's obligation to complete the performance of the terms of this order.

Dispute Resolution Procedures.

30. A. If Respondent disagrees, in whole or in part, with any EPA written disapproval, modification, or other decision or directive made by EPA pursuant to the terms of this order, Respondent shall notify EPA in writing of their objections and the basis therefore no later than 15 calendar days after Respondent's receipt of EPA's disapproval, decision, directive, etc.

B. To be valid for consideration, such notice must set forth substantially: the specific points of the dispute; the position Respondent contends should be adopted as consistent with the requirements of this order; the basis for and reasoning supporting Respondent's position; and an identification of the precise matters which it considers necessary for EPA's determination.

C. Not later than 14 calendar days after EPA's receipt of such written notice, EPA shall provide to Respondent its initial decision on such dispute. Thereafter, Respondent shall have seven additional calendar days during which to display to EPA arguments not previously made, and to urge (on the basis thereof) that EPA should reconsider and vacate its initial dispute decision, or reconsider and modify such dispute decision in the respects urged.

D. Unless vacated, or modified as urged by the Respondent, the initial EPA dispute decision shall be complied with according to its terms by both EPA and the Respondent commencing the 22nd day after EPA's receipt of the initial written notice from Respondent pursuant to subparagraph A unless such EPA decision is reversed or modified upon judicial review which shall be available only as provided in 5 U.S.C. §703 in an enforcement proceeding.

E. The existence of a dispute pursuant to this paragraph, and/or the consideration of matters in dispute, shall not excuse, toll, or suspend any compliance deadline otherwise existing pursuant to this order, or any performance time incorporated or to be incorporated into this order.

F. In any dispute resolution or proceeding consequent thereon, whatever informal administrative record EPA may possess regarding occurrences antedating but leading to its

disputed action, shall be considered in the dispute resolution process as the primary basis for deciding the dispute.

G. Any EPA action challenged pursuant to this paragraph shall be ruled valid, enforceable, and effective excepting only to the extent that Respondent meets their burden of proof or persuasion set forth in the following sentence. Regardless of the forum (administrative/judicial) or the manner (claim/defense) in which the issue may be raised, it shall be and always remain the burden of the Respondent to prove by a preponderance of the evidence that an EPA action which it disputes pursuant to this paragraph 30 was/is arbitrary, capricious, and abuse of discretion, not in accordance with law, and/or not in accordance with the pre-existing terms of this order.

H. All of the foregoing shall not preclude the informal dialog and resolution of differences between Respondent and EPA.

Force Majeure and Excusable Delay

31. A. Respondent shall perform the requirements of this order not later than the time limits set forth in the order and its present and future Attachments 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 foreseeable and beyond the control of Respondent which could not be overcome by due diligence and which delays or prevents performance by a date required by this order. Such events do not include increased costs of performance, changed economic circumstances, normal precipitation events, or failure to diligently apply for and thereby obtain federal, state or local permits.

B. Respondent shall notify EPA in writing not later than seven calendar days after it becomes aware of events which Respondents knows or should know constitute 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 minimize the delay, and an estimated time table for implementation of these measures. Failure to comply with the notice provision of this section shall constitute a waiver of Respondents' right to assert a force majeure.

32. If EPA determines that the delay has been or will be caused by circumstances not foreseeable and beyond Respondent's control, which could not have been overcome by due diligence, the time for performance for that element of the relevant work plan or program plan may be extended, upon EPA approval, for a period equal to the delay resulting from such circumstances. This shall be accomplished in writing. Such an extension does not alter the schedule for performance or completion of other tasks required by any workplan unless these are also specifically altered by amendment of the order. 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 could not have been overcome by due diligence, or if there is no agreement on the length of the extension, the dispute shall be resolved in accordance with the provisions of paragraph 30 of this order.

Reservation of EPA Rights and Authorities.

33. A. EPA expressly reserves all rights and defenses that it may have, including the right to disapprove of or request modification of work performed by Respondent pursuant to this order.

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 terms of this order, including without limitation the imposition of penalties under §3008(h)(2) of RCRA, 42 U.S.C. 6928(h)(2). This order shall not be construed as a covenant not to sue, 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 enforcement authority of the United States.

C. Compliance by Respondent with the terms of this order shall not relieve Respondents of their obligations to comply with RCRA or any other applicable local, State or federal laws and regulations.

D. The issuance of this order and Respondent agreement and consent to comply shall not limit or otherwise preclude EPA from taking additional enforcement action pursuant to 3008(h) should it determine that such actions are warranted.

E. This order is not intended to be (nor shall it be construed as) a permit. This order does not relieve Respondent of any obligation to obtain and comply with any local, state or federal permits.

F. Nothing in this order shall operate to diminish or reduce the powers and rights which EPA may have (under some statute of the United States to perform one or more portions of the work described in this order, and/or to perform any additional site characterization and/or feasibility study, and/or to perform response/corrective actions at one or more sites/facilities covered by this order according to the terms of such statute) in absence of this order. EPA reserves the right to obtain reimbursement from the Respondent for costs and/or expenditures of the United States in any instance provided by statute, and Respondent's statutory liability in that regard is in no way diminished or inhibited by this order or any terms contained therein.

Other Claims.

34. Nothing in this order shall constitute or be construed as a release from any claim, cause of action or demand in law or 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.

Other Applicable Laws.

35. All actions required to be taken pursuant to this order shall be undertaken in accordance with the requirements of all applicable local, state and federal laws and regulations. Respondent

shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations.

Modification of This Order.

36. A. This order may be modified ONLY as provided herein or by mutual agreement of EPA and Respondent. Agreed modifications shall be in writing, shall be signed by Respondent and EPA, shall have as their effective date the date on which they are signed by EPA, and shall be incorporated into this order.

B. Any reports, plans, specifications, schedules, extension requests, and Attachments required by this order are, upon written approval by EPA, incorporated into this order verbatim by this reference.

Severability.

37. If any provision or authority of this order or the application of this order to any party or circumstances is held by any judicial or administrative authority to be invalid, the application of such provisions to other parties or circumstances and the remainder of the order shall remain operative.

Satisfaction of the Order.

38. A. Respondent shall fulfill, comply with, and satisfy all terms and provisions of this order, the Attachments hereto and any reports, plans, specifications, schedules, extension requests, or other writing which is submitted for, and which receives, EPA approval.

B. The provisions of this order shall be satisfied upon Respondent receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this order, including any additional tasks determined by EPA to be required pursuant to this order, or any continuing obligation or promises emanating from this order, have been satisfactorily completed.

Effective Date.

39. The effective date of this order shall be five calendar days after the date on which it is signed and issued by EPA.

DATED: 5-7-90 BY: Charles Findley

Charles E. Findley

Director, Hazardous Waste Division

EPA Region 10

STIPULATED, AGREED,

and APPROVED FOR ISSUANCE

WAIVING NOTICE:

Date: 5-1-90

Marley S. Columbo

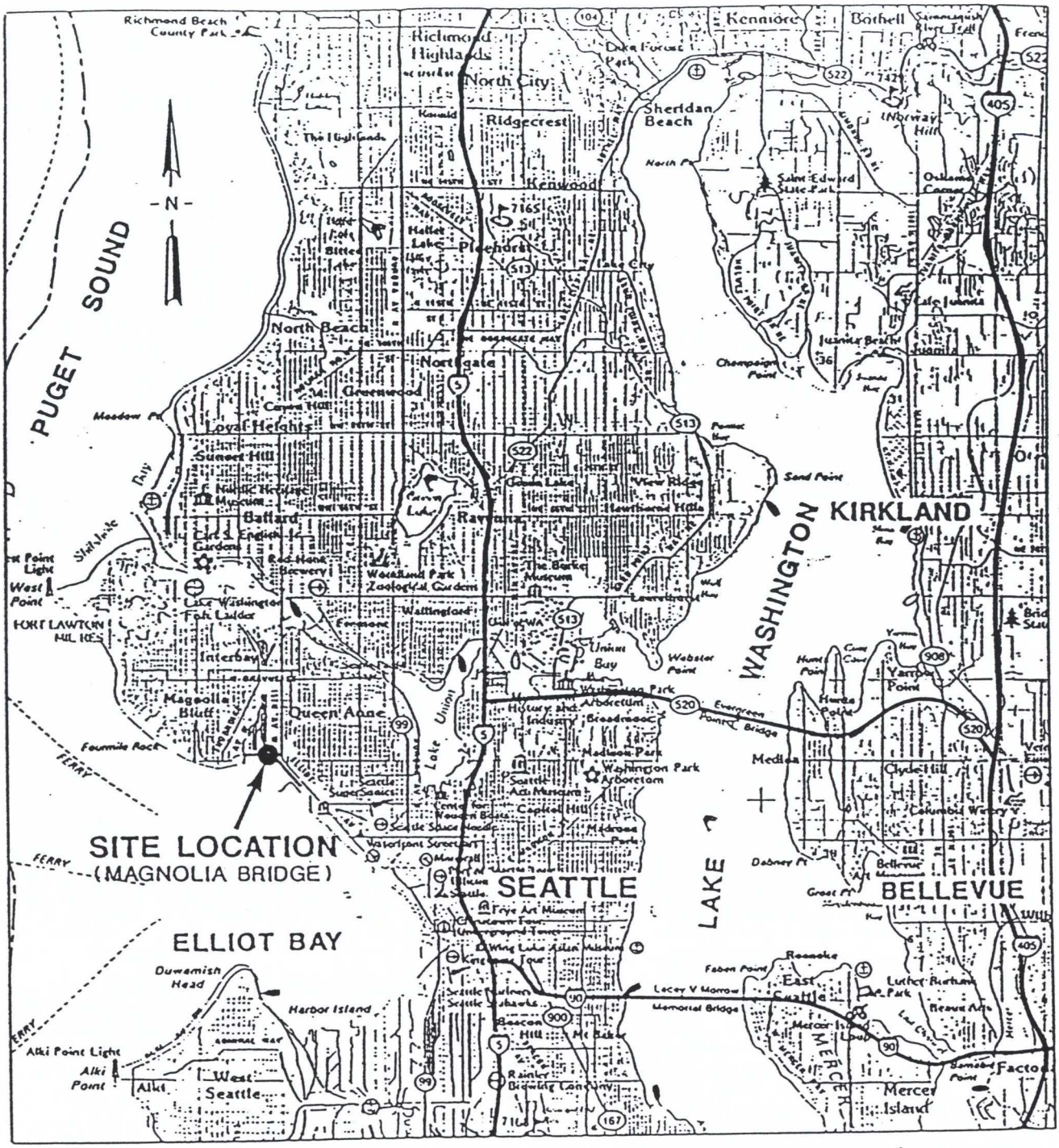
For Chemical Processors, Inc.

Date: _____

_____

For EPA

ATTACHMENT A Figure 1



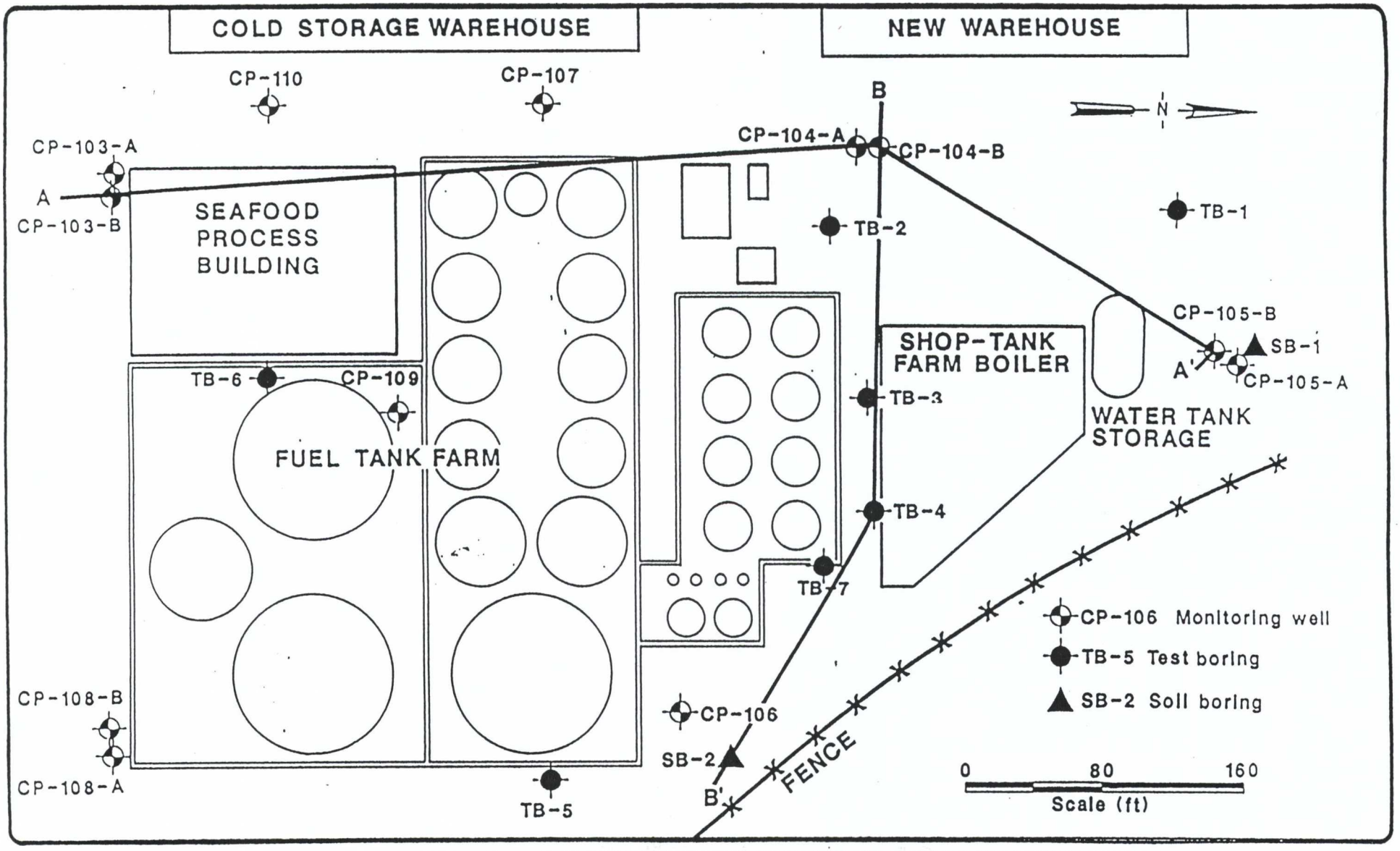
Sweet-Edwards
EMCON

Figure 1
CHEMICAL PROCESSORS INC.
PIER 91 FACILITY
SITE LOCATION MAP

DATE 4-89
DWN. TB
APPR.
REVIS.
PROJECT NO. S9407.03

KUKER-RANKEN INC./106857

ATTACHMENT A Figure 2



Sweet-Edwards EMCON

Figure 2
CHEMICAL PROCESSORS INC. PIER 91 FACILITY
SITE VICINITY MAP

DATE 4-89
DWN. TB
APPR. DA
REVIS.
PROJECT NO. S9407.03

KUKER-RANKEN INC / 106857

ATTACHMENT B

SCOPE OF WORK OUTLINE FOR CONDUCT OF RFI AND CMS

RCRA FACILITY INVESTIGATION

TASK I: Description of Current Conditions

The report(s) submitted by the Respondent entitled Hydrogeologic Investigation, Pier 91 Facility, Volume I, II and III, (109 pages plus Appendices A through H), is satisfactory to serve as a description of current conditions at the facility and the current level of knowledge concerning the nature and extent of contamination and is hereby incorporated by reference.

TASK II: Initial Assessment of Corrective Measure Technologies

Prior to starting the facility investigation and as part of the RFI work plan, the Respondent shall submit to EPA a report that identifies the potential corrective measure technologies that may be used on-site or off-site for the containment treatment, remediation, and/or disposal of contamination. This report shall also identify any field data that needs to be collected in the facility investigation to facilitate the evaluation and selection of the final corrective measure or measures (e.g., compatibility of waste and construction materials, information to evaluate effectiveness, treatability of wastes, etc.) This evaluation of technologies and site specific pathway analysis will be used to identify the requirements for the RFI.

TASK III: RFI Workplan Requirements

The RFI Workplan shall consist of a Project Management Plan; Data Collection Quality Assurance Plan, Data Management Plan, Health and Safety Plan, Community Relations Plan, and Facility Investigation Workplan. Each of these plans shall be prepared in consultation with EPA and submitted to EPA for review and modification or approval, in accordance with the terms of this Consent Order.

1. Project Management Plan

Shall include, but is not limited to, a description of the personnel, consultants and laboratories (including their qualifications) which will be employed in performing the work and the proposed schedule and overall management plan for completion of the RFI.

2. Data Collection Quality Assurance Plan

Shall be prepared in accordance with the procedures outlined in Chapter One of the third edition of "Test Methods for Evaluating Solid Waste" SW-846.

3. Data Management Plan

Shall describe the procedures for documenting and tracking all data collected from field activities; chain of custody procedures which will

be followed; and data display format to be used in present tables, figures, geological representations and conclusions.

4. Health and Safety Plan

Shall be consistent with the facility's contingency plan, OSHA regulation particularly in 29 C.F.R. Parts 1910 and 1926, state and local regulations, and NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985)

5. Community Relations Plan

The plan shall state the procedures which will be followed in disseminating information to the community concerning the progress of the RFI and identify the location of repositories which will be used to provide the public with an opportunity to review the results of the work as complete.

6. Facility Investigation Workplan

The plan shall describe the steps which will be followed to complete the Facility Investigation as outlined in Task IV, below and shall be implemented as approved by EPA.

TASK IV: Facility Investigation

1. Environmental Setting

Shall include, but is not limited to, a hydrogeological characterization in accordance with the guidance provided in Chapter One of EPA's "RCRA Ground-Water Monitoring Technical Enforcement Guidance Document", September 1986 (TEGD); a soils and earthen materials characterization including mineral and organic content, sorptive and cation exchange properties, depth to ground water, porosity, permeability, particle size distribution and other parameters pertinent to the conduct of the RFI; a surface water and sediment evaluation in light of drainage patterns in the vicinity of the facility, including water and sediment chemistry, water balance and other pertinent factors; an evaluation of the potential for air releases and the predicted effects based on topographic and manmade features and climatological data.

2. Source Characterization

Each source of release and potential release of hazardous waste or constituents shall be evaluated and the unit/disposal area characteristics, waste characteristics including physical and chemical properties, and migration and dispersal characteristics of the waste determined. This shall include quantification of the following specific characteristics, at each source area: Unit/Disposal Area characteristics (location of unit/disposal area, type of unit/disposal area, design features, past and present operating practices, period of operation, age of unit/disposal area, general physical conditions, and method used to close the unit/disposal area); Waste characteristics (types of waste placed in the unit including hazardous classification,

quantity and chemical composition, physical and chemical characteristics including physical form, physical description, temperature, pH, general chemical class, molecular weight, density, boiling point, viscosity, solubility in water, cohesiveness of the waste, vapor pressure and flash point: migration and dispersal characteristics of the waste including sorption, biodegradability, bioconcentration, biotransformation, photodegradation rates, hydrolysis rates, and chemical transformations. Documentation of the procedures used in making the above determinations shall be documented by the Respondent.

3. Contamination Characterization

Data shall be collected on groundwater, soils, surface water, sediment, subsurface gas, and ambient air contamination in the vicinity of the facility. The data collected shall be of sufficient quality to define the extent, origin, direction, and rate of movement of contaminant plumes. As applicable, previous data collection shall be factored into the design and location of monitoring locations. For ground water assessment, the plan for investigation shall be developed in accordance with Chapter Six of the above mentioned TEGD. In addition, the Respondent shall address the following types of contamination at the facility and document the procedures used in making the determinations below:

a. Ground Water Contamination - The Respondent shall conduct a ground water investigation to characterize any plumes of contamination at the facility. This investigation shall at a minimum include the following: a description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility, including the horizontal and vertical direction of contamination movement, the velocity of contaminant movement, and the horizontal and vertical concentration profiles of Appendix IX constituents detected in the plume(s); an evaluation of factors influencing the plume movement; and an extrapolation of future contaminant movement;

b. Soil Contamination - the Respondent shall conduct an investigation to characterize the contamination of the soil and rock units above the water table in the vicinity of potential contaminant releases. This investigation shall include the following: description of the vertical and horizontal extent of contamination; a description of contaminant and soil chemical properties within each contaminant source area and plume including contaminant solubility, specification, absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, migration and transformation; specific contaminant concentrations; the velocity and direction of contaminant movement; and an extrapolation of future contaminant movement;

c. Surface Water and Sediment Contamination - The Respondent shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from contaminant releases at the facility. The investigation shall include, at a minimum, a description of the horizontal and vertical extent of any

immiscible or dissolved plume(s) originating from the facility, and the extent of contamination in underlying sediment; the horizontal and vertical direction of contaminant movement; the contaminant velocity; an evaluation of the physical, biological and chemical factors influencing contaminant movement; an extrapolation of future contaminant movement; and a description of the chemistry of contaminated surface waters and sediments including determining the pH, total dissolved solids, specific contaminant concentrations, etc;

d. Air Contamination - The Respondent shall conduct an investigation to characterize the particulate and gaseous contaminants released into the atmosphere from solid waste management units at the facility. This investigation shall include the following: a description of the horizontal and vertical direction and velocity of contaminant movement; the rate and amount of release; and the chemical and physical composition of the contaminants released including horizontal and vertical concentration profiles; and

e. Subsurface Gas Contamination - The Respondent shall conduct an investigation to characterize subsurface gases emitted from hazardous waste and hazardous constituents in soils and ground water. This investigation shall include a description of the horizontal and vertical extent of subsurface gasses migration, including the chemical composition of the gasses being emitted, the rate, amount and density of the gasses being emitted, and horizontal and vertical concentration profiles of the subsurface gasses emitted.

4. Potential Receptor Identification

An evaluation of the local uses and possible future uses of ground water, surface water and adjacent lands which have the potential of being adversely impacted from releases from the facility shall be performed. As appropriate, sampling and analysis of biological samples to assess the effects on ecosystems shall be performed. The following characteristics shall be identified: local uses and possible future uses of ground water (type of use and location of ground water users including wells and discharge areas); local uses and possible future uses of ground water (type of use and location of ground water users including wells and discharge areas); local uses and possible future uses of surface waters draining the facility (domestic and municipal, recreational, agricultural, industrial and environmental (e.g., fish and wildlife propagation)); human use of or access to the facility and adjacent lands including recreational, hunting, residential, commercial, zoning and relationship between population locations and prevailing wind direction; a description of the biota in surface water bodies on, adjacent to, or affected by the facility; a description of the ecology overlying and adjacent to the facility; a demographic profile of the people who use or have access to the facility and adjacent land, including but not limited to, age, sex and sensitive subgroups; and a description of any endangered or threatened species near the facility.

TASK V: Investigation Analysis

Upon completion of the EPA-approved investigation outlined in Tasks III and IV above, the Respondent shall collect all available data on the facility and prepare a draft RFI report for EPA review and upon approval by EPA, a final report on the following evaluations:

1. Data Analysis

   Evaluation and summary of all data collected shall be performed and used to assess the type and extent of contamination, above background levels, at and from the facility, including migration pathways.

2. Risk Assessment Evaluation

   A risk assessment evaluation shall be performed on each hazardous constituent found in the soil or groundwater at the facility (which can be reasonably attributed to a release from the facility) with a potential to adversely impact health and/or the environment. In preparing this assessment, applicable EPA health and/or environmental protection guidelines shall be used.

3. Protection Standards

   A. Ground-water Protection Standards

      a. The Groundwater Protection Standards shall consist of:

         i) for any constituents listed in Table 1 of 40 CFR 264.94, the respective value given in that table (MCL) if the background level of the constituent is below the given in Table 1; or

         ii) the background level of that constituent in the ground water; or

         (iii) a U.S. EPA approved Alternate Concentration Limit (ACL).

      b. Information to support the Agency's subsequent selection of Alternate Concentration Limits (ACL's) shall be developed by the Respondent in accordance with U.S. EPA guidance. For any proposed ACL's the Respondent shall include a justification based upon the criteria set forth in 40 CFR 264.94(b).

      c. After receipt and review of any proposed ACL's. The U.S. EPA shall notify the Respondent in writing of approval, disapproval or modification, the U.S. EPA shall specify in writing the reason(s) for any disapproval or modification.

      d. Within 30 days of receipt of the U.S. EPA's notification or disapproval of any proposed ACL, the Respondent shall amend and submit revisions to the U.S. EPA.

   B. Other Relevant Protection Standards

The Respondent shall identify all relevant and applicable standards for the protection of human health and the environment (e.g. National ambient Air Quality Standards, Federally-approved state water quality standards, etc.).

TASK VI: Workplans and Reports During RFI Phase

1. Pursuant to Task III above, a workplan shall be submitted by the Respondent to EPA for the performance and completion of an RFI in accordance with the terms of this Consent Order for completion of Tasks IV through V, in accordance with the schedule given in Attachment C. After EPA approval, which may require workplan modification, a final workplan shall be submitted and implemented in accordance with its terms and schedules.

2. A draft report shall be prepared on Tasks IV and V in accordance with the schedule contained in Attachment C. After EPA approval, which may require report modification, a final report of the RCRA Facility Investigation shall be prepared and submitted to EPA.

3. Progress reports shall be submitted to EPA by the 10th calendar day of every other month beginning on the effective date of this Consent Order. Each progress report shall contain as a minimum: a description and estimate of the work complete; summaries of all findings; summaries of all changes made to the workplan during the reporting period; summaries of all contacts with representatives of the local community, public interest groups or state government during the reporting period; summaries of all problems encountered during the reporting period; actions taken to rectify problems; changes in personnel during the reporting period; projected work for the next reporting period; copies of all data collected during the reporting period.

CORRECTIVE MEASURES STUDY

TASK VII: Identification and Development of the Corrective measure Alternative or Alternatives

Based on the risk assessment analysis performed under the RFI and the evaluations under Task VI, Laboratory and Bench Scale Studies, the Respondent shall develop a draft workplan and upon EPA approval, which may require the Respondent to modify the draft workplan, the Respondent shall implement the EPA approved workplan in accordance with its terms and schedules. If the final RFI report as approved by EPA, concludes that no corrective action is required, based on the risk assessment, then the requirement to conduct a Corrective Measures Study shall be deemed satisfied. The workplan shall include the procedures by which the Respondent shall reassess the technologies specified in Task II above and identify additional technologies which are applicable at the facility. The Respondent shall screen the preliminary corrective measure technologies identified in Task II and any supplemental technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process

focuses on eliminating those technologies which have severe limitations for a given set of waste and site specific conditions. The screening step may also eliminate technologies based on inherent technology limitations. In preparing the workplan, the Respondent, in conjunction with EPA, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RCRA Facility Investigation, relevant and applicable EPA guidance, and the requirements of any applicable federal statutes. The workplan shall also identify the evaluations and studies to be conducted by the Respondent which may include performing additional investigations or pilot scale demonstrations, needed to complete the screening of corrective measures technologies and detailed evaluation of those technologies determined to be effective in mitigating the adverse effects of the release and potential release of hazardous waste and constituents from the facility. The Respondent shall submit a draft report of its findings to EPA for review in accordance with the schedule contained in Attachment C. After EPA approval, which may require report modification, a final report shall be contained in Attachment C.

TASK VIII: Evaluation of the Corrective Measure Alternative or Alternatives

Upon completion of the work required under Task VIII above, and in accordance with the schedule contained in Attachment II, the Respondent shall submit to EPA for review, a draft report on the technical, environmental, human health, institutional and costs of implementing each corrective measure alternative that passes through the screening evaluation of Task VII. The Respondent shall evaluate each corrective measure alternative in the following areas:

a. Technical - The Respondent shall evaluate each corrective measure based on performance, reliability, implementability and safety. Performance shall be based on the effectiveness and useful life of the corrective measure. Reliability shall be based on operation and maintenance requirements and the risk and effect of failure. Implementability shall be based on ease of installation (constructability) and the time required to achieve a given response;

b. Environmental - The environmental concerns evaluation shall be based on the Respondent performing an environmental assessment for each alternative which focuses on the facility conditions and pathways of contamination actually addressed by each alternative. The environmental assessment for each alternative shall include, at a minimum, an evaluation of the short- and long-term beneficial and adverse effects of the response alternative, any adverse effects on environmentally sensitive areas, and an analysis of measures to mitigate adverse effects;

c. Human Health - The human health concerns evaluation shall be based on the Respondent assessing each alternative in terms of the extent of which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment shall describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations; and

d. Institutional - Institutional concerns will be evaluated based on the effects of federal, state and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

In addition, the Respondent shall prepare a cost estimate of each corrective measure alternative. The cost estimate shall include both capital and operation and maintenance costs. The draft report shall be submitted to EPA for approval, in accordance with the schedule contained in Attachment C and the conditions of this Consent Order. After EPA approval, which may require report modification, a final report shall be submitted to EPA in accordance with the schedule contained in Attachment C.

TASK IX: Justification and Recommendation of the Corrective Measure or Measures

Based on a comparison of the viable corrective measures one measure or group of measures shall be selected as the recommended corrective measure and a detailed technical, environmental and human health assessment shall be performed, in accordance with the EPA approved workplan submitted by the Respondent in accordance with the schedule contained in Attachment C and the conditions of this Consent Order, to evaluate the consequences of implementing and completing the recommended corrective action. At a minimum the following criteria shall be used to justify the final corrective measure of measures: Technical - the performance, reliability, implementability and safety of the proposed corrective measure or measures shall be optimal in comparison to the other alternatives; the corrective measure or measures must comply with existing EPA criteria, standards, and/or guidelines for the protection of human health; and the corrective measure or measures posing the least adverse impact or providing the greatest improvement over the shortest period of time on the environment will be favored. The Respondent shall submit a draft report of its findings to EPA for review and approval. After EPA approval, which may require report modification, a final report shall be submitted to EPA in accordance with the schedule contained in Attachment C.

TASK X: Workplans and Reports During CMS Phase

1. Pursuant to Tasks VII and IX above, a workplan shall be submitted by the Respondent to EPA for the performance and completion of an evaluation of corrective measures in accordance with the terms of this Consent Order and in accordance with the schedule given in Attachment C. After EPA approval, which may require workplan modification, a final workplan shall be submitted and implemented in accordance with its terms and schedules.

2. A draft report shall be prepared on Task VII and VIII in accordance with the schedule contained Attachment C. After EPA approval, which may require report modification, a final report of the RCRA Facility Investigation shall be prepared and submitted to EPA.

3. The draft report on the completion of Task IX shall be submitted to EPA and after EPA approval, which will include EPA's holding a public comment period and incorporating comments received in its review, and which may require report modification, a final report of the work to be

performed under Task X shall be submitted to EPA, in accordance with the schedule contained in Attachment C.

4. Progress reports shall be submitted to EPA by the 10th calendar day of every other month beginning on the effective date of this Consent Order. Each progress report shall contain as a minimum: a description and estimate of the work completed; summaries of all findings; summaries of all changes made to the workplan during the reporting period; summaries of all contacts with representatives of the local community, public interest groups or state government during the reporting period; summaries of all problems encountered during the reporting period; actions taken to rectify problems; changes in personnel during the reporting period; projected work for the next reporting period; copies of all data collected during the reporting period.

ATTACHMENT C

SCHEDULE FOR COMPLETION OF RFI AND CMS
Pier 91 Facility

FACILITY SUBMISSION	DUE DATE
TASK II AND TASK III	
Initial Assessment of Corrective Action Technologies and RCRA Facility Investigation Draft Workplan	120 days after effective date.
Final Workplan	30 days after receipt of EPA comments on draft Task II and III workplan
TASK IV AND V	
Draft RFI Report	30 days after completion of work in Task III workplan
Final RFI Report	30 days after receipt of EPA's comments on draft RFI Report
TASK VII	
Corrective Measures Study (CMS) (including a Bench Scale) Draft Workplan	60 days after submittal of final RFI (Task IV and V) Report
Final CMS/Bench Scale Workplan	30 days after receipt of EPA's comments on draft workplan
TASK VIII AND IX	
Draft CMS Report	30 days after completion of work under Task VII workplan
Final CMS Report	30 days after receipt of EPA's comments on draft CMS Report