CoLSF 8.6 U1

Contract Documents

Spokane County Project No. 93-068

Air Stripping Treatment Equipment
Colbert Landfill Remedial Action Project
Spokane, Washington

Spokane County
Spokane, Washington

August 3, 1993

ISSUED FOR CONSTRUCTION

LANDAU ASSOCIATES, INC.
Environmental and Geotechnical Services
P.O. Box 1029
Edmonds, WA 98020-9129
(206) 778-0907

USEPA SF
1414848

Contract Documents

Air Stripping Treatment Equipment
Colbert Landfill Remedial Action Project
Spokane, Washington

Spokane County Project No. 93-068

August 3, 1993

Prepared for

Spokane County
Spokane, WA

Prepared by

Landau Associates, Inc.
P.O. Box 1029
Edmonds, WA 98020-9129
(206) 778-0907

CONTRACT DOCUMENTS
AIR STRIPPING TREATMENT EQUIPMENT
COLBERT LANDFILL REMEDIAL ACTION PROJECT

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SECTION 00020

REQUEST FOR BID

REQUEST FOR BID - PROJECT NO. 93-068

DATE: June 14, 1993

PROJECT NAME: Air Stripping Treatment Equipment
Colbert Landfill Remedial Action Project

PROJECT NO.: 93-068

DEPT: Utilities

ATTENTION: Request for Bid

FROM: Donald L. LaBrecque, Director of Purchasing

SEALED BIDS are solicited by Spokane County.

NATURE OF THE PROJECT: This project consists of supply of air stripping treatment equipment and other miscellaneous related items for contaminated groundwater for the Colbert Landfill Remedial Action Project located near Spokane, Washington.

SEALED BIDS will be received by Spokane County until the below listed closing date and time for the following:

Air Stripping Treatment Equipment
Colbert Landfill Remedial Action Project
Spokane County Project No. 93-068

MAIL BIDS TO:	CLOSING DATE/TIME:
Spokane County Purchasing Department North 721 Jefferson, Suite 303 Spokane, WA 99260-0290	Date: ~~July 12, 1993~~ **July 13, 1993** Time: 11:00 a.m. local

BIDS WILL BE RECEIVED by the Purchasing Department at the above address until 10:50 a.m. of the appointed day. Thereafter, at 11:00 a.m., a public bid opening will be held in the Commissioners Assembly Room, Spokane County Public Works Building, lower level, West 1026 Broadway Avenue, Spokane, Washington 99260. Promptly at 11:00 a.m., a last call for bids will be made. Bids delivered after the last call for bids will not be accepted and will be returned to the Bidder unopened.

A PUBLIC BID OPENING will be held on ~~Monday, July 12, 1993~~ **Tuesday, July 13, 1993,** in the Commissioners Assembly Room, Spokane County Public Works Building, lower level, West 1026 Broadway Avenue, Spokane, WA 99260. After the last call for bids, bids will be opened and read aloud.

EACH BID SHALL BE PREPARED and submitted in full and in accordance with the provisions of the Bid Documents.

EACH BID SHALL BE SEALED in an opaque envelope which has been clearly marked in the upper left corner with the words "Bid By" followed by the name and address of the Bidder. In the lower left corner of the envelope the Bidder shall write out the bid number, bid opening date, and name of the bid.

NO BIDDER may withdraw their bid after the time set for the opening thereof, unless the award of contract is delayed for a period exceeding 60 calendar days from date of bid opening. However, the Board of County Commissioners may reject any or all bids for good cause.

EACH BID, to be considered, must be accompanied by a bid guarantee or bid bond equal to 5 percent of the bid, which shall be forfeit to the County if the Bidder to whom the contract is awarded fails to enter into contract and furnish the performance and payment bonds and other documents as required within 10 days after the Notice of Award.

COPIES of the Bid Documents may be obtained at Landau Associates, Inc., N. 908 Howard Street, Suite 206, Spokane, Washington 99201, or Landau Associates, Inc. 23107 100th Avenue West, Edmonds, Washington 98020-9129. A nonrefundable $100 deposit is required for the plans and specifications. Submittals must be made on the Bid Forms included with the Bid Documents.

A COPY of the bid is on file with the Clerk of the Board in the County Commissioners Office.

FOR administrative information contact David T. Raymond in the Spokane County Purchasing Department at (509) 456-3694 [fax (509) 458-6627], or for technical information contact Michael A. Stanaszek at Landau Associates, Inc. (206) 778-0907 [fax (206) 778-6409]. Reference Project Number 93-068.

END OF SECTION

SECTION 00100

INSTRUCTIONS TO BIDDERS

1.01 QUALIFICATION OF BIDDERS

Bidders will complete and submit the qualification questionnaire on the Bid Form. Upon County request, the apparent low bidder shall, after 10 days notification, provide, in a timely manner, any further evidence of sufficient facilities, equipment, experience, and financial ability to ensure completion of the work. Bidders must be qualified by experience, and financing to do the work called for in the plans and specifications. The Owner reserves the right to take whatever action it deems necessary and reasonable, to ascertain the ability of the bidder to perform the work satisfactorily.

1.02 EXAMINATION OF DOCUMENTS

Each Bidder shall thoroughly examine and be familiar with the Bid Documents. Submission of a bid shall constitute an acknowledgement upon which the Owner may rely that the Bidder has thoroughly examined and is familiar with each of the Bid Documents. The failure or neglect of a Bidder to receive or examine any Bid Document or any part thereof shall in no way relieve it from the obligations with respect to its proposal or to the Contract. No claim for additional compensation shall be allowed which is based upon a lack of knowledge of any Bid Document. In making copies of the Bid Documents available, Owner and Engineer do so only for the purpose of obtaining bids on the Work and do not confer a license or grant for any other use.

1.03 EXAMINATION OF THE SITE AND RELATED WORK

Each Bidder shall thoroughly examine, be familiar with, and comply with all applicable requirements of the Project Consent Decree C-89-033-RJM. Additionally each Bidder shall thoroughly examine and be familiar with the Project site, its improvements, the material sites, and related work of other contracts for the Project, including the work associated with Spokane County Project No. 93-069, entitled "Construction, Colbert Landfill Remedial Action Project". Submission of a bid shall constitute an acknowledgement upon which the Owner may relay that the Bidder has thoroughly examined and is familiar with all conditions and matters which can in any way affect the Work or cost thereof. The failure or neglect of a Bidder to fully familiarize and inform itself with the Project Consent Decree and Project sites shall in no way relieve it from any obligations with respect to its proposal or the Contract. No claim for additional compensation will be allowed which is based upon lack of knowledge of the Project Consent Decree, Project, related referenced documents, sites, and their improvements.

The Bidder shall determine what measures, if any, it will have to take to provide electricity and any other utilities for the Work which is required. Costs for such services shall be included in the bid. All connections for service shall be approved by authorized personnel and all connections, services, and removal of same shall be included in the bid. Before final acceptance, any temporary connections and piping

installed by the Contractor shall be removed in a manner satisfactory to Spokane County.

The availability of any such information from the Owner shall not relieve the Bidder or the Contractor of any duty to make his own examination and investigation as required in this section or of any other responsibility under the Contract.

No information derived from any inspection of records of investigation or compilation thereof made by the Owner or Engineer will in any way relieve the Bidder or Contractor from any risks or from properly performing his obligations under the Contract. The submission of a bid shall be incontrovertible evidence that the Bidder has complied with all the requirements of this Article.

1.04 SUBCONTRACTORS

The subcontractors/specialty contractors listed in the bid response will be used on the project unless an acceptable substitute is approved by the County. There will be no increase to the bid price as a result of a substitution.

1.05 BID GUARANTEE

Each bid shall be accompanied by a bid guarantee of cash, or a certified or cashier's check payable to the order of Spokane County for a sum not less than 5 percent of the amount of the bid, or accompanied by a Bid Bond, in an amount not less than 5 percent of the amount of the bid, of a corporate surety licensed to do business in the State of Washington. The bid guarantee or bond shall be submitted using the appropriate form included in the Bid Documents.

If the bidder whose proposal is accepted fails, neglects, or refuses to furnish an executed copy of the Contract, Performance and Payment Bonds, and Insurance Certification or Insurance Policies within 10 calendar days as herein provided, such bidder shall not be the lowest responsive bidder and its proposal shall be rejected. The Owner may then select the lowest responsive bidder and deliver a Notice of Award to such lowest responsive bidder. The bid deposit of all unsuccessful bidders shall be returned after the contract is awarded and the required contractor's bond, and proof of insurance given by the successful bidder is accepted by the County.

1.06 PERFORMANCE AND PAYMENT BONDS

The Contractor will be required to file Performance and Payment Bonds to the STATE OF WASHINGTON and SPOKANE COUNTY, each equal to one hundred percent (100%) of the contract price. The bonds are to ensure faithful and complete performance of the contract and payment of all taxes and obligations to laborers and materialmen arising from the project. The bonds shall be executed by a surety company acceptable to the Spokane County Board of County Commissioners. The Performance Bond shall remain in effect for one (1) year following the final acceptance of the work.

NOTE: If, as a result of an approved change order, the contract value is increased the performance and payment bond(s) dollar limit will be adjusted a corresponding amount. A revised copy of the bond will be provided to the Spokane County

Purchasing Department within 10 calendar days of the approval in the form outlined above.

1.07 ADDENDA TO THE REQUEST FOR BID

All official clarifications or interpretations of the Bid Documents will be by written addenda issued by the office of Purchasing, Spokane County, or by the Engineer. Clarifications given during the bidding process by Spokane County or Engineer to Bidder's questions will be considered informal and unofficial. The Owner or Engineer shall not be held responsible for any oral interpretations. Should any discrepancies or omissions be found in the bid specifications, or doubt as to its meaning, the Bidder shall at once notify the Spokane County Director of Purchasing in writing. All addenda issued shall be incorporated into the contract.

Each bid shall include specific acknowledgement of receipt of all addenda issued, if any, during the bidding period. Failure to acknowledge receipt may result in the proposal being rejected as not responsive. Space is provided on the Bid Form to make such acknowledgements.

1.08 PREPARATION OF BID

The Bidder shall submit its bid properly executed on the Bid Form furnished. Only amounts and information asked for on the documents will be considered as the bid. Each Bidder shall bid upon the work exactly as specified and as provided in the Bid Documents. The bid prices shall include all items of labor, material, equipment, tools, overhead and compensation, supplies, taxes, utilities, and other incidentals necessary to complete all of the Work.

The bid shall be typed or filled out in black ink. When required in the bid, the alternate bid and unit bid prices shall be in both words and figures. If such be the case, then the words shall govern in the event of discrepancies between words and figures and unit price shall govern in the event of discrepancies between unit price and extensions.

No erasures will be permitted on the Bid Forms. Mistakes shall be lined out and corrections typed or written in ink adjacent thereto, and must be initialled in ink by the person or persons signing the bid.

Bids shall be signed in full by the Bidder. If business is conducted under a firm name, such name shall be inserted in the appropriate blank on the proposal form. Where dealing under an assumed name, a certified copy of Certificate of Assumed Name, as filed with the County Clerk, shall accompany the proposal or be filed with Owner. If the Owner should so require, evidence of legal authority to sign shall accompany the proposal or be on file with the Owner.

The phraseology of the bid must not be changed, and no additions shall be made to the items mentioned therein. Conditions, limitations, or provisions attached to a bid will cause the Bidder's bid to be rejected.

Initial each of the documents and sign at the end of pages where indicated. The signature certifies that the information on that page is true and correct. Failure to do so can be cause for disqualification of the bid.

1.09 SUBMISSION OF BID

Submit only the Bid Form and Bid Security Form, plus one copy of each. Do not include any other parts or copies of the Bid Documents. Complete information shall be submitted detailing special equipment, appurtenances, accessories, components, and labor required for completion of this contract.

Any units not conforming to Bidders exact specifications may be rejected and it will be the responsibility of the manufacturer and/or Bidder to conform with the requirements specified in the Bid Documents, unless deviations have been specifically cited by the Bidder and acceptance made on the basis of the exception.

1.10 PRICES

All bid prices will be as per the Bid Documents and shall include but not be limited to factory standard equipment and those optional items as specified. Unit price shall govern in the event of discrepancies between unit price and extensions. When required in the proposal, the alternate bid and unit bid prices shall be in both words and figures. If such be the case, then the words shall govern in the event of discrepancies between words and figures.

Prices shall be inserted where noted, and the total(s) where noted.

1.11 TAXES

Spokane County is required to pay Washington State Sales Tax on all purchases and contracts. Sales tax should be added as a separate item in the bid price. All Bidders whether inside or outside the Washington State shall show the tax rate applicable to this bid. All taxes payable by the County as a result of this contract are considered part of the bid evaluation. Washington State tax is payable by the County direct to the Washington State on awards made to out-of-state Contractors who do not have a Washington State Sales Tax number. If you have any questions concerning the appropriate rate, call the Washington State Department of Revenue.

It shall be the Contractor's responsibility to furnish Federal Excise Tax Exemption Certificate, when applicable.

1.12 COMPLETENESS OF BID

Each bid shall include specific acknowledgement of receipt of all Addenda issued, if any, during the bidding period. Failure to acknowledge receipt may result in the bid being rejected as not responsive. Space is provided in the Bid Form to make such acknowledgements.

Each Bidder shall quote on all items in the Bid Form unless otherwise stated.

Alternative, additive, or deductive prices will not be considered unless specifically required in the proposal form.

Additional technical data furnished by a Bidder, but not required by the Contract Documents, may at the Owner's option be considered a part of the bid to the extent that it is supplementary to, is consistent with and not contrary to the Contract Documents.

1.13 ORAL PRESENTATIONS

Bidders selected for final evaluation may be required to make an oral presentation of their bid to Spokane County to provide an opportunity for thorough mutual understanding. The issuing office will schedule the time and location of these presentations.

1.14 CONTENTS OF BID FORMS

The Bid Form invites bids on definite plans and specifications. The plans, specifications and addenda relating to the Project referred to in the bid shall be considered to be part of the proposal.

Spaces are provided on the Bid Form for the total amount bid, alternate bids and/or unit prices as required, address and telephone number of the Bidder, signature of the Bidder, date of bid, acknowledgement of receipts of addenda, and such additional information as the Owner may require.

1.15 MODIFICATION OF BID

A modification of a bid already received will be considered only if the modification is received prior to the scheduled closing time for the receipt of bids. All modifications shall be made in writing, executed, and submitted in the same form and manner as the original bid.

1.16 WITHDRAWAL OF BID

Each bid shall constitute an offer to the Owner as outlined therein and shall be irrevocable after the time last announced for receipt of bids as stated in Section 00020, Request for Bid. Any Bidder may withdraw its bid by giving written notice to the Owner at the place such bids are to be received and at any time prior to the time last announced for receiving bids. After the time last announced for received bids, no Bidder may be permitted to withdraw its bid, unless such execution is delayed due to acts of the Owner, for a period exceeding 60 days after the time last announced for receipt of bids.

1.17 POSTPONEMENT OF OPENING

The Owner reserves the right to postpone the date and time last announced for receipt of bids and such postponement may be made at any time prior to the time last announced for receipt of bids. The Owner will give written, facsimile, or telegraphic notice of any such postponement to each party to whom Contract Documents have been issued, followed by issuance of an addendum confirming the changing of the announced date and time for receiving bids.

1.18 DELIVERY OF BID

Oral, telegraphic, or telephonic bids or oral modifications will not be considered (this includes telecommunications such as Facsimile machine).

The Bidder is solely responsible for ensuring that its bid is in the possession of the Spokane County Purchasing Department by the appointed date and time. The last call for bids is made at 11:00 a.m. local time by the Clerk of the Board. Spokane County shall assume no responsibility for any delay in U.S., County, or any other mail delivery service resulting in a bid being received late. Bids shall be forwarded or delivered to the Purchasing Department at the listed address or by the Purchasing Department at the time and place for the last call for bids. It is the sole responsibility of the Bidder to ensure that their bid is received on time and at the proper location.

1.19 PREPARATION OF ENVELOPE

Each bid shall be sealed in an opaque envelope which has been clearly marked in the upper left corner with the words "Bid By" followed by the name and address of the Bidder. In the lower left corner of the envelope the Bidder shall write out the bid number, bid opening date and name of the bid.

BID BY:	SPOKANE COUNTY PURCHASING DEPARTMENT
(Name of Bidder)	North 721 Jefferson, Suite 303
(Address)	Spokane, WA 99260

BID FOR:
Air Stripping Treatment Equipment
Colbert Landfill Remedial Action Project
Project No. 93-068
June 29, 1993

Bids shall be submitted on the Bid Proposal Form enclosed.

1.20 OPENING BIDS

At the time and place last announced for receiving bids, each bid that has been received, except those which have been properly withdrawn, will be opened.

1.21 EVALUATION OF BIDS

In evaluating the bids, special attention will be paid to the qualifications of the Bidders when considering awarding the contract. The Owner reserves the right to waive irregularities or informalities in any or all bids. In selecting the lowest responsive responsible Bidder, the Owner will consider the financial standing and the general competency of the Bidder for the performance of the Work covered by the Bid Documents. To receive favorable consideration, a Bidder must present evidence satisfactory to the Owner that the Bidder and its subcontractors are personally competent to manage the Work identified by the Bid Documents and to carry it forward to successful completion. Professional integrity and honesty shall be essential components.

A showing of financial resources is required but will not alone determine whether a Bidder is competent to undertake the proposed Work. Each Bidder must furnish a record of past performance and experience on the forms provided and show that its organization, capital, and equipment are adequate for the successful prosecution of the required Work and its completion within the specified time period. To this end, each proposal shall be supported by the Bidder's statement of experience and its financial qualifications on the forms provided. Incomplete or false statements submitted in connection with a bid may, at the option of the Owner, be sufficient cause for rejection of the bid. The Owner shall be the final authority with regard to whether a bid is responsive to the Request for Bids and to whether a Bidder is a responsible Bidder under the conditions.

1.22 REJECTION OF BIDS

The Owner reserves the right to reject any or all bids. Without limiting the generality of the foregoing, the Owner may reject any bid from a Bidder which is incomplete, not responsive, obscure or irregular, any bid that omits a bid on any one (1) or more items for which bids are required, any bid that omits unit prices if unit prices are required, any bid in which unit prices are unbalanced in the opinion of the owner and any bid from a Bidder that has previously failed to perform satisfactorily or to complete on time construction or delivery of any nature.

Bidders are herewith notified that all bids are likely to be rejected, if the lowest responsive, responsible bid received exceeds the Project's estimated cost by an unreasonable amount or the budget by any amount. If all bids are rejected for either of these reasons, the Project may be deferred for bidding at a time when more competitive conditions might exist.

Any item(s) not conforming to Owner's exact specifications may be rejected and it will be the responsibility of the Manufacturer and/or Bidder to conform with the requirements unless deviations have been specifically cited by the Bidder and acceptance made on the basis of the exception.

Bidder shall submit complete information detailing special equipment, appurtenances, accessories, components, and labor required for completion of this contract.

If a Bidder whose proposal is accepted fails, neglects, or refuses to furnish an executed copy of the Contract, Performance and Payment Bond, and Insurance Certificate or Insurance Policies within 10 days as herein provided, such bidder shall not be the lowest responsive, responsible bidder, and its proposal shall be rejected and declare the bidder's bond forfeited. The Owner may then select the lowest responsive, responsible Bidder and deliver a Notice of Award to such lowest responsive, responsible Bidder.

1.23 ACCEPTANCE OF BID

Within 60 days after the time last announced for receiving bids, the Owner may act either to accept a bid or to reject all bids. Failure of the owner to accept a bid within the said time, or such additional time as the apparent lowest responsive Bidder shall agree to extend its bid, shall constitute rejection of all bids.

The acceptance of a bid will be evidenced by a Notice of Award in writing signed by a duly authorized official of the Owner and delivered to the Bidder whose bid is accepted, in the manner provided for written notices. No other action or notice shall constitute acceptance of a bid. The Notice of Award shall not entitle the Bidder to any contractual or other remedies against the owner. No bid shall be binding upon the owner until a contract has been properly executed by the Contractor and Owner.

1.24 TIME OF COMPLETION AND LIQUIDATED DAMAGES

Time for completion is stipulated in Bid Form.

Bidder shall also agree to liquidated damages stipulations as set forth in the Bid Form.

END OF SECTION

RECEIVED
JUL 1 2 1993
ERSHIGS INC

SECTION 00300

BID FORM

BID PROPOSAL

PROJECT: Air Stripping Treatment Equipment
Colbert Landfill Remedial Action Project

PROJECT/BID NUMBER: 93-068

1.01 EACH BID shall constitute an offer to Spokane County as outlined herein and no Bidder may withdraw its bid after the hour set for the bid opening thereof except under the conditions explained in the Instructions to Bidders section of this document. Bidder shall complete all pages of this form and initial or sign each page as indicated.

1.02 RECEIPT OF ADDENDA: Bidder acknowledges receipt of the following addenda:

Addendum No. 001 Date 6-16-93 Addendum No._____ Date_____

Addendum No. 002 Date 7-9-93 Addendum No._____ Date_____

Addendum No. 003 Date 7-16-93 Addendum No._____ Date_____

Addendum No._____ Date_____ Addendum No._____ Date_____

1.03 REJECTION: The County reserves the right to reject any or all bids, portions or parts thereof and to waive all irregularities in bidding. Special attention will be directed to the qualifications of the Bidders when considering awarding a contract.

1.04 BID GUARANTEE: A bid guarantee or bid bond in the amount of 5 percent of the total amount of the bid is required with bid submission.

1.05 PERFORMANCE AND PAYMENT BONDS: Performance and Payment Bonds, each equal to 100 percent of the total bid amount are required for this contract, as specified in the Contract Documents.

7-19-93
(Bidder's Initials/Date)

1.06 TIME FOR COMPLETION: The Bidder agrees to complete work within the times in the Schedule of Completion presented below. The Bidder understands that time is of the essence in the performance of this contract.

SCHEDULE OF COMPLETION

Item	Work Completed	Days
1.	Submittal of Shop Drawings	30[1]
2.	Delivery to Site of Embedded Anchorage Ready for Installation	45[1]
3.	Fabrication and Delivery to Site of Air Stripping Treatment Equipment Ready for Installation	~~90[1]~~ 110(1)(A)
4.	Completion of Operational Demonstration and System Validation Testing	20[2]

A) Incorporated from Addendum No. 3 dated July 16, 1993 (Incorporated by Landau Associates, Inc.)

(1) Consecutive calendar days, beginning on the day of commencement stated in the Notice to Proceed.

(2) Consecutive calendar days beginning on the day of notification to commence operational demonstration and system validation testing.

1.07 LIQUIDATED DAMAGES: It is understood and agreed that the undersigned Bidder shall pay liquidated damages to the Owner if it shall fail to complete the work on time per the Schedule of Completion and the Bidder shall pay liquidated damages to the Owner in the amount of $500 for each calendar day of unauthorized delay in completion of any milestone, in accordance with the provisions of the Contract Documents.

1.08 SUBMITTAL: The Bid Form Section constitutes the Bid Proposal when completed. Submit an original and one copy of this section. Please do not submit the entire Bid Document.

1.09 PRICES: Each bid item shall be priced.

1.10 SUBCONTRACTOR LIST: Bidders shall have a complete list of all subcontractors available within 2 working days after the bid opening and shall submit such list to Engineer upon request. Those subcontractors named in the Bid Form shall remain unchanged for the Bid, unless notification in writing is submitted with the Bid. Owner reserves the right to review and approve or reject substitution of prequalified subcontractors.

1.11 RETAINAGE PERCENTAGE: Retainage shall be 5 percent of total project cost, excluding sales tax, in accordance with the Contract Documents.

1.12 FREIGHT: Bid price(s) shall include all freight costs to the job site.

1.13 ARBITRATION: There will be no arbitration arising out of or relating to the contract.

7-19-93

(Bidder's Initials/Date)

1.14 CONTRACTOR QUALIFICATIONS: The following statements of experience, personnel, equipment, and general qualifications of the Bidder are submitted and the Bidder represents and guarantees the truthfulness and accuracy thereof:

1. Our organization has been in business continuously from 1921 (year).

2. Our organization has had experience in the manufacture of air stripping treatment equipment comparable to that required under the proposed contract as a prime Contractor for 8 10 years, or as subcontractor for 8 10 years.

3. The following subcontractors and equipment suppliers, including, as appropriate, the tower fabricator, packing manufacturer, tower internals manufacturer, and fan manufacturer, are proposed to be employed to furnish portions of the Work (subcontractors and equipment suppliers supplying less than 10 percent of the total contract need not be listed):

Name	Address	Type of Work
ERSHIGS INC.		FRP TOWER DESIGN + FABRICATION
RAUSCHERT INDUST.	Rt. 5 INDUSTRIAL PARK HWY 411 S. MADISONVILLE, TN 37354	TOWER PACKING + INTERNALS MANUFACTURER
NEWYORK BLOWER	7660 QUINCY ST. WILLOWBROOK, IL 60521	FAN MANUFACTURER

4. A list of personnel currently employed by the Bidder who will be assigned to this project, including at a minimum the Project Manager, treatment process design engineer, structural design engineer, erection supervisor, performance test supervisor is as follows (please attach resumes):

Name	Title	Project Role	Years of Experience
JAMES JARVIS	ENGINEER	STRUCTURAL DESIGN	24
DEAN HERRIN	SENIOR Q.C. INSPECTOR	QA/QC SUPERVISION	29
RICHARD THOMPSON	CONTRACT ADMINISTRATOR	PROJECT MANAGER	16
KUEI-HSUING WANG	AAT TECH. DIRECTOR	PROCESS DESIGN	20

5. The names and residence addresses of the Principal Officer and Board of Directors of the Bidder corporation, or the names and residences of all persons and parties interested in this proposal as partners of a firm or as individuals, are as follows (use additional sheets if necessary):

Name	Residence Address	Relationship to Bidder
A. HERBERT ERSHIG.		CHAIRMAN OF THE BOARD + DIRECTOR

(SEE ATTACHED LIST OF DIRECTORS AND CBI ANNUAL REPORT)

7-19-93
(Bidder's Initials/Date)

6. The following is a list of all projects we have undertaken in the last 5 years which have resulted in arbitration or litigation between our company and the Owner (use additional sheets as necessary):

NONE

Name of Client and Project	Original Contract Amount	Total Claims Arbitrated or Litigated	Amount of Settlement of Claim
NONE			

7. Enclosed is a copy of our latest yearly financial statement or balance sheet showing assets, liabilities, and net worth. Reference is hereby made to the following bank or banks as to the financial responsibility of the Bidder.

Name of Bank Address

ERSHIGS, INC. IS A WHOLLY-OWNED SUBSIDIARY OF CBI INDUSTRIES, INC. (AS OF MAY 21, 1993). SEE CBI ANNUAL REPORT ATTACHED FOR BALANCE SHEET AND OTHER FINANCIAL INFORMATION.

8. List the followin air stripping treatment equipment designed and manufactured by the Bidder and in satisfactory commercial operation for a period of at least 2 years of the last 10 years having the approximate minimum dimensions, capacities, or performance indicated:

SEE "CASE HISTORY" ATTACHED.

A. Equipment Capacity:
   1. Hydraulic Capacity (minimum 500 gpm): _____ gpm
   2. Project Name, Owner, Contact Person, and Telephone Number: _____

B. Tower Dimensions
   1. Diameter (minimum 6 ft): _____ ft
   2. Height (minimum 50 ft): _____ ft
   3. Project Name, Owner, Contact Person, and Telephone Number: _____

_____
(Bidder's Initials/Date)

C. Contaminants Treated:

1. Constituents Removed from Water (must include chlorinated organic compounds): _____
2. Influent Concentration: _____ µg/L
3. Effluent Concentration: _____ µg/L
4. Project Name, Owner, Contact Person, and Telephone Number: _____

D. Project Responsibilities:

1. Treatment Process Design: _____
   Project Name, Owner, Contact Person, and Telephone Number: _____
2. Tower Structural Design: _____
   Project Name, Owner, Contact Person, and Telephone Number: _____
3. Erection Supervision: _____
   Project Name, Owner, Contact Person, and Telephone Number: _____
4. Performance Validation Testing: _____
   Project Name, Owner, Contact Person, and Telephone Number: _____
5. Provided Performance Guarantee: _____
   Project Name, Owner, Contact Person, and Telephone Number: _____

9. Complete the following project descriptions that are most similar to the subject project in scope, complexity, and specialty work. These references may be contacted by Owner during bid evaluation.

Project 1: SEE ATTACHED PROJECTS LIST

1. Project Name, Owner, Contact Person, and Telephone Number: _____

   _____

2. FRP Tower Dimensions:

   a. Diameter: _____ ft

   b. Height: _____ ft

3. Packing Type: _____

7-19-93

(Bidder's Initials/Date)

4. Equipment Performance:

   a. Water Flow Rate: _____ gpm

   b. Constituents Removed from Water: _____

   c. Influent and Achieved Effluent Concentrations (µg/L of constituent in and out for each constituent): _____

5. Year of Acceptance for Operation: _____

6. Bidder had responsibility for:

   a. Design: _____

   b. Manufacturing: _____

   c. Erection Supervision and Field Testing: _____

   d. Performance Guarantee: _____

Project 2:

1. Project Name, Owner, Contact Person, and Telephone Number: _____

   _____

2. FRP Tower Dimensions:

   a. Diameter: _____ ft

   b. Height: _____ ft

3. Packing Type: _____

4. Equipment Performance:

   a. Water Flow Rate: _____ gpm

   b. Constituents Removed from Water: _____

   c. Influent and Achieved Effluent Concentrations (µg/L of constituent in and out for each constituent): _____

7-19-93

(Bidder's Initials/Date)

5. Year of Acceptance for Operation: _____

6. Bidder had responsibility for:

   a. Design: _____

   b. Manufacturing: _____

   c. Erection Supervision and Field Testing: _____

   d. Performance Guarantee: _____

Project 3:

1. Project Name, Owner, Contact Person, and Telephone Number: _____

   _____

2. FRP Tower Dimensions:

   a. Diameter: _____ ft

   b. Height: _____ ft

3. Packing Type: _____

4. Equipment Performance:

   a. Water Flow Rate: _____ gpm

   b. Constituents Removed from Water: _____

   c. Influent and Achieved Effluent Concentrations (µg/L of constituent in and out for each constituent): _____

5. Year of Acceptance for Operation: _____

6. Bidder had responsibility for:

   a. Design: _____

   b. Manufacturing: _____

   c. Erection Supervision and Field Testing: _____

   d. Performance Guarantee: _____

7-19-93

(Bidder's Initials/Date)

1.15 PROJECT BASE BID: Bidder hereby proposes to furnish all materials, equipment, supplies, utilities, tools, and labor for the Work as indicated in the Contract Documents at the prices shown on the Schedule of Prices below:

SCHEDULE OF PRICES

Item	Description of Item	Lump Sum Cost	
1.	Shop Drawing and installation instructions preparation	Five Thousand Dollars and no cents (fixed)	$5,000 (fixed)
2.	Fabrication and delivery to site of air stripping treatment equipment ready for installation	three Hundred three six forty four (words)	$303,644 (numbers)
3.	Field erection supervision	thirteen thousand three hundred seventy (words)	$13,370 (numbers)
4.	Start up, operational demonstration, and system testing	Eighteen thousand Nine Hundred Seventy (words)	$18,970 (numbers)
5.	Operator training, operation and maintenance manuals preparation	Five thousand - 2 Seventeen (words)	$5917 (numbers)
6.	Permits, inspection fees, and other fees	zero (words)	Ø (numbers
7.	Performance and Payment Bonds	Seven thousand five Hundred (words)	~~$354,401~~ $7500 (numbers
	BASE BID	three Hundred Fifty four thousand Four Hundred and one (words)	$354,401 (numbers)
	SALES TAX (8 percent)	Twenty eight thousand three hundred fifty two (words)	$28,352 (numbers)
	TOTAL BID	three Hundred Eighty two thousand Seven Hundred fifty three (words)	$382,753 (numbers)

1.16 DISCOUNT TERMS: Net 30 DAYS NOTE: Cash discounts less than 2 percent or discount periods less than 20 working days after receipt of an invoice will not be considered as evaluation factors in the award of contract.

7-19-93
(Bidder's Initials/Date)

1.17 UNIT PRICES: Bidder hereby proposes that the following unit prices will govern additions and deductions required during the course of the Work; it being understood that the following unit prices reflect total costs for the item.

Item	Description of Item	Unit Cost	
1.	Charge per day for an 8-hour regular workday for the services of each supervising erector as set forth in the Contract Documents	FOUR HUNDRED EIGHTY-FIVE DOLLARS (words)	$485.00 (numbers)
2.	Charge per hour for hours worked in excess of regular 40-hour work week, or other premium wage time, for the services of each supervising erector	NINETY AND 94/100 DOLLARS (words)	$90.94 (numbers)
3.	Charge per day for an 8-hour regular workday for the services of each start up demonstration and test technician	FOUR HUNDRED TEN DOLLARS (words)	$410.00 (numbers)
4.	Charge per hour for hours worked in excess of regular 40-hour work week, or other premium wage time for the services of each start up, demonstration, and test technician	SEVENTY SIX AND 88/100 DOLLARS (words)	$76.88 (numbers)

7-21-93
(Bidder's Initials/Date)

1.18 DEVIATIONS FROM SPECIFICATIONS: List all proposed deviations from specified materials of construction, modes of operation or equipment appurtenances as specified in the Contract Documents, according to the categories identified below. Attach additional sheets if necessary.

Category A: Substitutions of equivalent quality and cost, representing manufacturer's standard practice.

SECTION / PAGE NO.	REVISION / EXCEPTION
00300 - 2	1.07 "... DOCUMENTS." TO A MAXIMUM AMOUNT OF $10,000
01300 - 3	1.04 I. DELETE (UNDEFINED RATE OF CHARGES).
01010 - 3	3.01 A. CHANGE "10 YEARS" TO 3 YEARS.
11580 - 2, -3	1.02 A..V REFERENCE DOCUMENTS SHALL APPLY TO THE EXTENT THAT IS COMMERICALLY AND TECHNICALLY PRACTICABLE AND AS IS COMMONLY IMPLEMENTED WITH REGARD TO PROJECTS AND EQUIPMENT OF THE TYPE QUOTED HEREIN.

Category B: Alternatives offered for the Owner's consideration, for which an adjustment in price is associated with a difference in function, quality, performance, or reliability:

Description	Reason for Proposing Substitution	Effect upon Base Bid

(If the Bidder fails to enter deviations, the bid will be considered to comply in all respects with the Bid Documents.)

7-19-93

(Bidder's Initials/Date)

1.19 DESCRIPTION OF EQUIPMENT: The Bidder shall supply the following requested information regarding the equipment it proposes to furnish. Statements so made by the Bidder are intended to be, and are express warranties unless otherwise indicated. The information shall be outlined in the spaces provided.

A. Drawings showing outline dimensions and general arrangement of air stripping tower and attachments, fan, and air ducting.

B. Air stripping tower dimensions and data.

1. Nominal size (total height and diameter) 70'H x 10'ID
2. Tower wall thickness .73" STEPPED TO .37" @ TOP
3. Clearwell depth 5'
4. Air inlet section depth 36"
5. Packing type (manufacturer, size, model number) RAUSCHERT 2" HIFLOW 50-0
6. Packing depth 50' (2 EA 25'H BEDS)
7. Packing support tray manufacturer and model number RAUSCHERT SLOTTED BEAM
8. Number of packing support trays 1
9. Mist eliminator manufacturer, model number, and rating RAUSCHERT 6" PP MESHPAD W/PP GRID
10. Type of liquid inlet distributor and manufacturer RAUSCHERT LIQ TROUGH W/ ENCLOSED FEED & RE-DISTR. TROUGH COLLECTOR & SUPPORT TRAY.

C. Fan and appurtenances dimensions and data

1. Fan manufacturer and model number NEW YORK BLOWER, SIZE 33 CL(IV)
2. Motor horsepower 100 HP
3. Power requirements (voltage and phase) 3/60/460V
4. Capacity (standard cubic feet per minute at pressure) 22,000 ACFM @ 19" S.P.
5. Size of inlet and outlet opening
6. Air intake silencer manufacturer, model number, and rating VIBROACOUSTICS WESTER (VAW)
7. Duct sizes (inlet and outlet) 36"
8. Architectural intake louver manufacturer, model number, and capacity VAW 36" x 36"
9. Inlet filter manufacturer, model number, size, and capacity VAW 36" x 36"

1.20 REPRESENTATION: In submitting its bid the Bidder represents that it has read and understands the Bid Documents, that it has visited the site and is familiar with the local conditions under which the Work is to be performed, that it accepts the obligations of a Bidder incurred by submitting this bid agrees to the rights reserved to the Owner, that by signature of this bid it is deemed to have acknowledged all requirements and signed all certificates contained herein.

1.21 Bidder understand that it may not withdraw bid after the hour set for the bid opening thereof, unless award is delayed for a period exceeding 60 days.

7-19-93
(Bidder's Initials/Date)

1.22 Bidder understands and agrees that Spokane County reserves the right to reject any or all bids, portion or parts thereof and to waive all irregularities in bidding. Bidder understands that prequalification is required for bidding.

Firm: ERSHIGS, INC. A CBI COMPANY

By: [signature]
Signature

Robert E Becker Vice President

(SEAL) Title: ESTIMATOR

Date: JULY 19, 1993

Address: P.O. BOX 1707 98227

742 MARINE DR 98225

BELLINGHAM, WA.

Telephone: (206) 733-2620

Fax: (206) 733-2628

NOTES: (1) If the Bidder is a copartnership, so state giving firm name under which business is transacted.

(2) If the Bidder is a corporation, this proposal must be executed by its duly authorized officials and stamped with corporate seal.

END OF SECTION

1.18 DEVIATIONS FROM SPECIFICATIONS - CONTINUED (00300-10)

SECTION / PAGE NO.	REVISION / EXCEPTION
11580 - 5	1.04 A. FOR A DURATION OF APPROXIMATELY FOUR (4) WEEKS ON-SITE. SEE ATTACHED RATE SHEET FOR ADDITIONAL LENGTH OF PROJECT.
11580 - 5	1.05 D. TOWER INTERNALS AND PACKING TO BE INSTALLED BY OWNER AT JOBSITE.
11580 - 8	2.02 H. INLET / OUTLET FLANGES AND TOWER SHELL FLANGES SHALL BE ERSHIGS' STANDARD DUCT DRILLING. GASKETS AND FASTENERS FOR ATTACHMENT OF ADJACENT PIPING ARE NOT INCLUDED.
11580 - 9	2.03 D. DELETE 10-MIL SURFACING VEIL ON EXTERIOR SURFACES.
11580 - 9	2.03 I. ONE SHELL JOINT NOT INCLUDING THOSE TO ATTACH SHELL FLANGES SHALL BE ALLOWED.
11580 - 12	2.07 I. DELETE (TOWER IS DESIGNED TO WITHSTAND MAXIMUM DELIVERY OF FAN).

ERSHIGS

PROPOSED TOWER PACKING AND INTERNALS CONFIGURATION.

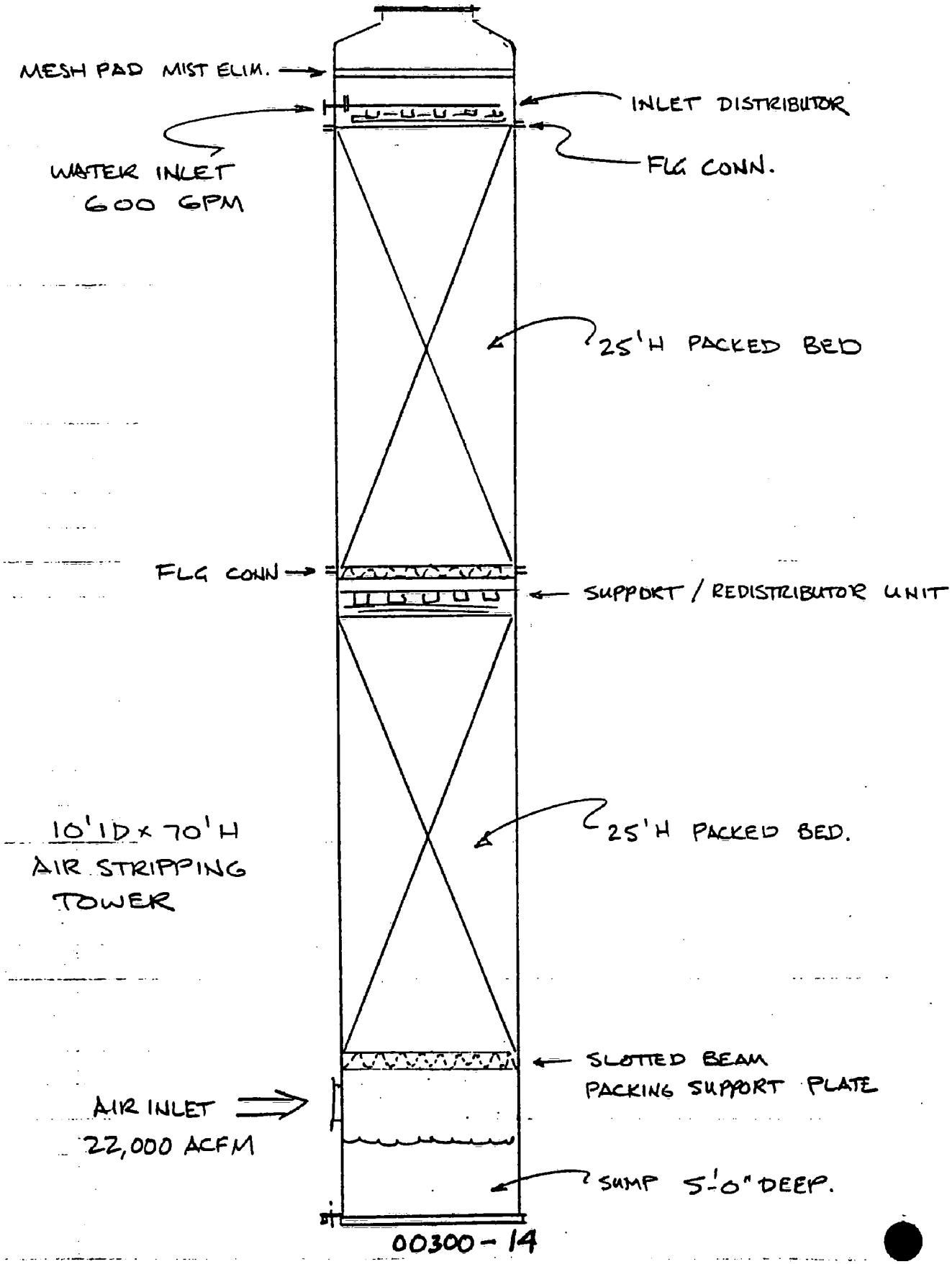
SK- 30532 - 1

Date 7-19-93

By FGM

Job No. 30532

Sht 1 / 1



00300-14

PROPOSAL

ERSHIGS
P.O. Box 1707
Bellingham, WA 98227-1707

July 28, 1993

Landau Associates, Inc.
P.O. Box 1029
Edmonds, WA 98020-9129

Attention: Michael Stanaszek

Subject: **Ershigs' Proposal No. 30432**
Air Stripping Treatment Equipment
Colbert Landfill Remedial Action Project
Spokane, Washington

This is to confirm verbal agreements made during our discussions of the details of our submitted bid form (Section. 00300) and attachments made thereto.

1. Ershigs, Inc. agrees to provide a five-year warranty on materials and workmanship of the FRP Tower proposed (01010-3, 3.01A).

2. Our sketch (SK-30532-1) showed one (1) support/redistributor allowing for two 25' high packed beds. We agree to add a second support/redistributor at no additional cost in order to provide a packing bed configuration that will accommodate future shortening of the height of the Air Stripping Tower by 13'-6" (11580-7, 2.02C and Drawing M-11 a.s.). See also revised proposal sketch SK-30532-1, Rev. A, attached.

3. Consultations with our process engineers and the internals manufacturer have indicated that a 100 HP motor is required on the fan system in order to provide the removal efficiencies specified.

We thank you again for your consideration of our bid offering and look forward to beginning work on this project without delay. Please contact me or Dewey Lonborg at (206) 733-2620 if any clarifications or other submittals are necessary.

Sincerely,

ERSHIGS, INC.

Frank Mitchell

Frank G. Mitchell
Estimator

FGM/ll
(7-170)
cc: R. Sumner
J. Larsen
D. Lonborg

ERSHIGS

P OPOSED TOWER PAC NG AND INTERNALS CONFIGURATION.

SK- 30532 -1

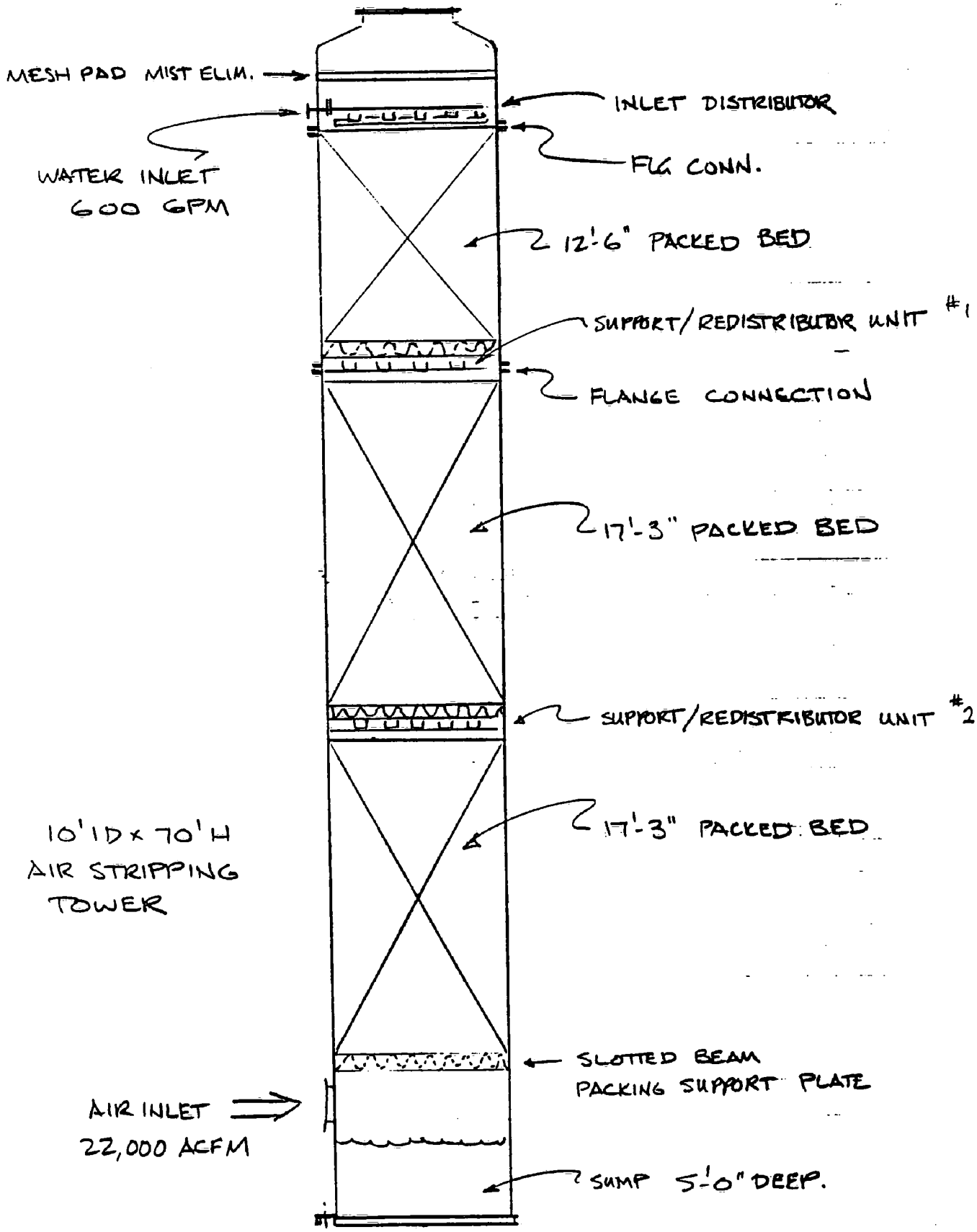
REVISION A 7-28-93

Date 7-19-93

By FGM

Job No. 30532

Sht 1 / 1



00300-16

ERSHIGS
P. O. Box 1707
Bellingham, WA 98227

August 30, 1993

Landau Associates, Inc.
23107 Hundredth Avenue
Edmonds, WA 98020

Attention: Mr. Mike Stanaszek

Subject: (a) Spokane County Project No. 93-068 for FRP Stripper Tower
Ershigs' Work Order No. 3576
(b) Ershigs' Proposal No. 30432
(c) Ershigs' Letter Dated August 23, 1993

Dear Mr. Stanaszek:

This letter supercedes and replaces our reference (c) letter. In reference to our Proposal No. 30432 and its addendums, we would like to clarify that our design will utilize ASME/ANSI RTP-1 specification as a reference along with the other specifications mentioned in your specification. Inspection will be in accordance with Ershigs' Standard ES-601. We will not include certification or compliance to RTP-1 procedures which a "stand alone" approach to RTP-1 would require.

Should RTP-1 be desired as the overriding document, we will need to receive from you the Users Basic Requirements Specification (UBRS) per Section 1-200 of RTP-1 in addition to a change to your contract specification document giving RTP-1 precedence over all other referenced and specific specifications. From there we will be able to provide the necessary cost and schedule adjustments. It remains our belief that strict adherence to RTP-1 will not produce a better quality fiberglass reinforced plastic stripper vessel than the one as provided by our proposal.

If we can be of any assistance in understanding the implications of RTP-1 as it relates to our proposed equipment, please feel free to contact us.

Sincerely,

ERSHIGS, INC.

Richard R. Thompson
Contract Administrator

RRT:gd

cc: M. Pulst
R. Sumner
Reading File

ERSHIGS
P. O. Box 1707
Bellingham, WA 98227

September 1, 1993

Landau Associates, Inc.
23107 Hundredth Avenue
Edmonds, WA 98020

Attention: Mr. Mike Stanaszek

Subject: Spokane County/Colbert Air Stripper Configuration Clarifications

Reference(s): (a) Spokane County Project No. 93-068
(Ershigs' Work Order No. 3576)
(b) Ershigs' Fax-letter Dated August 16, 1993
Subject-Packing Unit Size and Fan Motor Size

Dear Mr. Stanaszek:

In further clarification of our reference (b) fax-letter, and in response to your expressed wish to limit electrical power usage by the intake fan motor:

1. We plan to provide 3½" Hiflow, polypropylene, FDA approved media by Rauschert Industries, Inc. This media unit size will provide acceptable pressure drop through the packed bed to allow a 50 HP rated fan motor at the air inlet; accordingly,

2. We plan to provide one New York Blower Size 33 Acousta Foil Fan in Class III construction arrangement #1 configuration, 22,000 cfm discharge capacity, powered by a 50 HP high efficiency motor.

The above described should considerably reduce power usage, thusly creating long-term cumulative savings to Spokane County. This solution to your desired power requirements effectively arrives at your stated minimum horsepower on the fan motor. Data sheets for the high efficiency fan motor and other fan related accessories will be forwarded to you as they are prepared by the fan vendor.

We trust that this and other ancillary clarifications are acceptable to Spokane County. Please provide your written acceptance and/or incorporation of the above in your reference (a) contract documents.

Please call if we may be of further assistance.

Sincerely,

ERSHIGS, INC.

Richard R. Thompson
Contract Administrator

RRT:gd

cc: Frank Mitchell
Marv Pulst
Dick Sumner
Contract File
Reading File

PROJECT BID NUMBER 93-068
AIR STRIPPING TREATMENT EQUIPMENT
COLBERT LANDFILL REMEDIAL ACTION PROJECT

BID BOND

We, ERSHIGS, INC. as Principal, and FIREMAN'S FUND INSURANCE COMPANY as Surety, are held and firmly bound unto the COUNTY OF SPOKANE, a Washington State County, in the penal sum of FIVE PERCENT (5%) OF THE TOTAL AMOUNT BID, for payment of which we jointly and severally bind ourselves, and our legal representatives and successors.

THE CONDITIONS OF THE OBLIGATION are that if the County of Spokane shall make timely award to the Principal for AIR STRIPPING TREATMENT EQUIPMENT COLBERT LANDFILL REMEDIAL ACTION PROJECT - PROJECT NO. 93-068 according to the terms of the bid made by the Principal; and the Principal shall, within ten (10) days, enter into a contract with the County of Spokane in accordance with its Proposal and furnishes the Performance and Payment Bonds with surety satisfactory to the County each in an amount equal to one hundred percent (100%) of the contract price plus Washington State Sales Tax, and Insurance Certification within ten (10) working days from the date on which it is notified that it is the successful bidder, then this obligation shall be null and void; otherwise if the bidder fails to enter into the Contract and furnish the Performance and Payment Bond and Insurance Certificate within ten (10) working days from the date on which it is notified that it is the successful bidder, its check (or Bid Bond) and the amount thereof shall be forfeited to the County; but in no event will the surety's liability exceed this bond's face amount.

SIGNED AND SEALED on (date) 7-20-93

ERSHIGS, INC.
AS PRINCIPAL

By: Robert E Becker

Title: Vice President

A VALID POWER OF ATTORNEY must accompany this bond

FIREMAN'S FUND INSURANCE COMPANY
AS SURETY

By: Susan B Larson
Attorney in Fact SUSAN B. LARSON

END OF SECTION

GENERAL POWER OF ATTORNEY

FIREMAN'S FUND INSURANCE COMPANY

KNOW ALL MEN BY THESE PRESENTS: That FIREMAN'S FUND INSURANCE COMPANY, a Corporation duly organized and existing under the laws of the State of California, and having its principal office in the County of Marin, State of California, has made, constituted and appointed, and does by these presents make, constitute and appoint JOHN N. ZEFKELES, GUY H. BOCKUS, JR., VICTOR E. PARKER, LAWRENCE J. NEWTON, CYNTHIA L. JAY, PETER H. HAMMETT, CINDY E. PAULSEN, CARL NEWMAN, TIM CHURCH, SUSAN B. LARSON and MARSHA CLESSON, jointly or severally

SEATTLE, WA

its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, seal, acknowledge and deliver any and all bonds, undertaking, recognizances or other written obligations in the nature thereof ----------

and to bind the Corporation thereby as fully and to the same extent as if such bonds were signed by the President, sealed with the corporate seal of the Corporation and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises.

This power of attorney is granted pursuant to Article VII, Sections 45 and 46 of By-laws of FIREMAN'S FUND INSURANCE COMPANY now in full force and effect.

"Article VII. *Appointment and Authority of Resident Secretaries, Attorney-in-Fact and Agents to accept Legal Process and Make Appearances.*

Section 45. *Appointment.* The Chairman of the Board of Directors, the President, any Vice-President or any other person authorized by the Board of Directors, the Chairman of the Board of Directors, the President or any Vice-President may, from time to time, appoint Resident Assistant Secretaries and Attorneys-in-Fact to represent and act for and on behalf of the Corporation and Agents to accept legal process and make appearances for and on behalf of the Corporation.

Section 46. *Authority.* The authority of such Resident Assistant Secretaries, Attorneys-in-Fact and Agents shall be as prescribed in the instrument evidencing their appointment. Any such appointment and all authority granted thereby may be revoked at any time by the Board of Directors or by any person empowered to make such appointment."

This power of attorney is signed and sealed under and by the authority of the following Resolution adopted by the Board of Directors of FIREMAN'S FUND INSURANCE COMPANY at a meeting duly called and held on the 7th day of August, 1984, and said Resolution has not been amended or repealed:

"RESOLVED, that the signature of any Vice-President, Assistant Secretary, and Resident Assistant Secretary of this Corporation, and the seal of this Corporation may be affixed or printed on any power of attorney, on any revocation of any power of attorney, or on any certificate relating thereto, by facsimile, and any power of attorney, any revocation of any power of attorney, or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Corporation."

IN WITNESS WHEREOF, FIREMAN'S FUND INSURANCE COMPANY has caused these presents to be signed by its Vice-President, and its corporate seal to be hereunto affixed this 28th day of August, 19 92.

FIREMAN'S FUND INSURANCE COMPANY

By _____ Vice-President

STATE OF CALIFORNIA
COUNTY OF MARIN } ss.

On this 28th day of August, 19 92, before me personally came R. D. Farnsworth, to me known, who, being by me duly sworn, did depose and say: that he is Vice-President of FIREMAN'S FUND INSURANCE COMPANY, the Corporation described in and which executed the above instrument; that he knows the seal of said Corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation and that he signed his name thereto by like order.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year herein first above written.

OFFICIAL NOTARY SEAL
A. KRIEGER
Notary Public — California
MARIN COUNTY
My Comm. Exp. MAR 20, 1995

_____ Notary Public

CERTIFICATE

STATE OF CALIFORNIA
COUNTY OF MARIN } ss.

I, the undersigned, Resident Assistant Secretary of FIREMAN'S FUND INSURANCE COMPANY, a CALIFORNIA Corporation, DO HEREBY CERTIFY that the foregoing and attached POWER OF ATTORNEY remains in full force and has not been revoked; and furthermore that Article VII, Sections 45 and 46 of the By-laws of the Corporation, and the Resolution of the Board of Directors; set forth in the Power of Attorney, are now in force.

Signed and sealed at the County of Marin. Dated the 20TH day of JULY, 19 93.

_____ Resident Assistant Secretary

00410-2

360712—FF—11-87

Landau

SECTION 00500

AGREEMENT

THIS AGREEMENT made and entered into this 20th day of September, 1993 by and between SPOKANE COUNTY, a political subdivision of the State of Washington, having offices for the transaction of business at West 1116 Broadway Avenue, Spokane, Washington 99260, hereinafter referred to as the County, and Ershigs, Inc. having offices for the transaction of business at 742 Marine Drive, Bellingham, WA 98227 hereinafter referred to as the Contractor, jointly, hereinafter referred to along with the County as the Parties.

WITNESSETH:

WHEREAS, the Board of County Commissioners of Spokane County pursuant to the provisions of the Revised Code of Washington Section 36.32.120(6) has the care of County property and the management of County funds and business; and

WHEREAS, the Board of County Commissioners of Spokane County pursuant to the above cited statutory section and those provisions as set forth in the Revised Code of Washington Section 36.32.240, et seq. did let out for bid the Air Stripping Treatment Equipment, Colbert Landfill Remedial Action Project, Spokane, Washington; and

WHEREAS, the Board of County Commissioners of Spokane County did on July 20, 1993 open said bid and did on August 3, 1993 accept the bid of the Contractor herein as the lowest, responsive, responsible Bidder for Spokane County Project No. 93-068.

NOW, THEREFORE, for and in consideration of the mutual promises set forth herein, the parties hereto do mutually agree as follows:

ARTICLE 1. THE WORK AND SERVICES

The Contractor for the consideration specified in the Contract Documents as enumerated hereinbelow, shall in strict accordance with all of the provisions therein, perform all work and provide all materials called for by the Contract Documents entitled Air Stripping Treatment Equipment, Colbert Landfill Remedial Action Project. The County agrees to pay the Contractor for said work as specified in the Contract Documents.

ARTICLE 2. CONTRACT DOCUMENTS

The Contract Documents consist of the following documents pertaining to Spokane County Project No. 93-068, and are incorporated by reference:

1. This agreement form as executed by the parties
2. Addenda (pertaining to the Contract Documents)
3. Contractor's bid herein dated July 19, 1993 (including documentation accompanying the bid and any post bid documentation submitted prior to Notice of Award)
4. Notice of Award

5. Performance and Payment Bonds
6. Procurement General Conditions
7. Supplementary Conditions
8. Specifications
9. Appendices
10. Drawings
11. Notice
12. All written Amendments, Change Orders, Work Change Directives, and Engineer's written interpretations and clarifications issued on or after execution of this agreement.

The Contract Documents form a contract binding the parties.

ARTICLE 3. RELATIONSHIP OF THE PARTIES

The parties intend that an independent Contractor relationship will be created by this agreement. The County is interested only in the results to be achieved, and the conduct and control of all services or work will lie solely with the Contractor. No agent, employee, servant or otherwise of the Contractor shall be or shall be deemed to be an employee, agent, servant or otherwise of the County for any purpose, and the employees of the Contractor are not entitled to any of the benefits that the County provides for County employees. The Contractor will be solely and entirely responsible for its acts and for the acts of its agents, employees, servants, subcontractors, or otherwise during the performance of his contract. In the performance of the services herein contemplated, the Contractor is an independent Contractor with the authority to control and direct the performance and details of the work, the County being interested only in the results obtained; however, the work contemplated herein must meet the approval of the County pursuant to the provisions of the agreement under which the services and work were let to the Contractor.

ARTICLE 4. INDEMNIFICATION

Contractor shall indemnify, hold harmless, and defend Spokane County, Landau Associates, Inc. and their officers, agents, employees, and subconsultants as provided in the Contract Documents.

ARTICLE 5. VENUE STIPULATION

This agreement has and shall be construed as having been made and delivered within the State of Washington and the laws of the State of Washington shall be applicable to its construction and enforcement. Any action at law, suit in equity or judicial proceeding for the enforcement of this agreement or any provisions hereto shall be instituted only in the courts of competent jurisdiction within Spokane County, Washington.

ARTICLE 6. COMPLIANCE WITH LAWS

The Contractor in the performance of this agreement agrees to comply with all applicable federal, state and local laws, ordinances and regulations including, but not limited to, those pertaining to civil rights as if the same were fully set forth in this document. Each and every provision of law required to be inserted in this Contract by law shall be deemed to be inserted herein, and the Contract shall be read and enforced as though they were included herein. If, through mistake or otherwise, any such provisions are not inserted, or are not correct, then, upon the application of either party, the Contract shall be forthwith amended to make such insertion.

ARTICLE 7. INTEGRATION

This agreement contains all the terms and conditions agreed upon by the parties. No other understanding, oral or otherwise, regarding the subject matter of this agreement shall be deemed to exist or to bind any of the parties. All parties have read and understand the above contract and now state that no representations, promises, or agreements not expressed by this agreement have been made to induce the other to execute the same.

ARTICLE 8. CONTRACT PRICE

Spokane County agrees to pay Contractor for performance of the Work in accordance with the Contract Documents an amount in current funds as provided in the Notice of Award. The total amount shall be paid upon completion of the Contract and Final Acceptance, less 5 percent to be retained. Owner shall retain, manage, and disburse pursuant to RCW 60.28.010, the remainder of the Contract Price not earlier than 30 days after Final Acceptance of the Contract.

ARTICLE 9. CONTRACT TIME

It is agreed that the Contractor shall start work as provided in Spokane County's Notice to Proceed. The Work will be completed in accordance with the Schedule of Completion included in the Bid Documents.

ARTICLE 10. LIQUIDATED DAMAGES

In the event of failure on the part of Contractor to have the Work, or any part thereof, fully completed within the specified time, liquidated damages shall be assessed at $500 per day, in accordance with the provisions of the Contract Documents, which amount shall be deducted from the Contract Price set forth in Article 9 and not paid by the Owner. The liquidated damages are intended to compensate Spokane County solely for delay in performance and shall not limit, abridge, or restrict in any way the rights and remedies Spokane County would otherwise have had for damages resulting from breaches, other than delay.

ARTICLE 11. RECORDS OF SERVICES

Records of services provided and expenses incurred under this Agreement shall be maintained under generally recognized accounting methods and shall be available for audit or inspection by the County at mutually convenient times, and to any authorized representative of the state or federal government, for a period of at least 6 years after expiration or termination of this Purchase Order. At the end of the 6-year period, Spokane County shall be notified by Contractor of the intent of Contractor to destroy or discard such records, in order to allow the County the opportunity to take possession of such records before they are destroyed.

ARTICLE 12. ASSIGNMENT OF CONTRACT

The Contractor hereby agrees not to assign or transfer this Contract or Agreement, or any part hereof, without first obtaining the prior written consent of Spokane County.

ARTICLE 13. PRESERVATION OF RECORDS

Material resulting from Contractor's efforts in connection with this Agreement, including records, documents, reports, calculations, maps, photographs, computer programs, computer printouts, notes, soil samples, specimens, and any other pertinent data are the exclusive property of Spokane County. Such materials shall be retained by Contractor for a minimum of 10 years. At the end of the 10-year period, Spokane County shall be notified by Contractor of the intent of Contractor to destroy or discard such materials in order to allow the County the opportunity to take possession of such materials before they are destroyed. Reuse by Contractor of any materials received or prepared for the Project, is prohibited without written permission of Spokane County. Contractor agrees to indemnify and hold harmless from all claims, damages, and expenses, including attorney's fees, arising out of such unauthorized use of these materials by Contractor.

ARTICLE 14. ENGINEER

Spokane County hereby designates Landau Associates, Inc. as the Engineer for this Project. Landau Associates, Inc. is herein called Engineer and will assume all duties and responsibilities and will have the rights and authority assigned to Engineer in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

This Agreement is entered into as of the day and year last written below and is executed in 1 (one) original copy. The original shall be delivered to the Owner. One copy will be distributed to the Contractor, one to the Engineer for use in the administration of the Contract, and one to the Spokane County Purchasing Department.

IN WITNESS WHEREOF, the said Contractor has executed this instrument, and the said Board of County Commissioners, through its Chair, and pursuant to resolution duly adopted, has caused this instrument to be executed by said Board for Spokane County.

ATTEST:
William E. Donahue
Clerk of the Board

BY: X Sharon R. Bays
for Roseanne Montague
Deputy Clerk

SPOKANE COUNTY
Board of County Commissioners
of Spokane County, Washington

BY: X Patricia A. Mummey
Chairman of the Board

Date Executed 9-20-93, 1993

(SEAL)

ATTEST:

Signature

Typed Name

Title

CONTRACTOR:

Ershigs, Inc.
Typed Firm Name

Richard Thompson
Signature

Contract Administrator
Title

Date Executed _____, 1993

(SEAL)

Approved as to Form: 9-17, 1993

By: Michael C. Dungy
Deputy Prosecuting Attorney

END OF SECTION

SECTION 00610

PERFORMANCE AND PAYMENT BONDS

BOND NO. 11141443686

KNOW ALL MEN BY THESE PRESENTS:

That ERSHIGS, INC. (Contractor), as Principal, and FIREMAN'S FUND INSURANCE COMPANY, (Bonding Company), as surety, a Corporation of CALIFORNIA, whose principal office is located at COUNTY OF MARIN, CALIFORNIA, are firmly bound unto Spokane County (Owner), a political subdivision of the State of Washington, as Obligee, to fulfill the obligations of the Principal and the Surety under the Contract to which reference is hereafter made, in the amount of THREE HUNDRED EIGHTY-TWO THOUSAND SEVEN HUNDRED FIFTY THREE & NO/100 Dollars ($382,753.00***) (including Washington State sales tax) for payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these present.

WHEREAS, Principal has a written Bid dated JULY 20, 1993 offered to enter into a Contract with Obligee for Contract No. 93-068 at the price shown in the Agreement for Air Stripping Treatment Equipment, Colbert Landfill Remedial Action Project, dated _____ pursuant to the terms and conditions set forth in the Contract Documents dated _____.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall faithfully perform all the provisions of the Contract on its part, and pay all laborers, mechanics, subcontractors and material suppliers, and all persons who supply such person or persons or subcontractors with provisions and supplies for the carrying on of such work, and indemnity and hold harmless the Obligee from all loss, cost, or damage which it may suffer by reason of the failure to do any of the foregoing, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

All persons who have furnished labor, materials, or supplies for use in and about the work provided for in the Contract shall have a direct right of action under this bond, to the extent and in the manner set forth in RCW 39.08.

The said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract or to the Work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the Work or to the Specifications.

. No final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

Signed and sealed this _____ day of _____, 1993.

FIREMAN'S FUND INSURANCE COMPANY	ERSHIGS, INC.
(SURETY)	(PRINCIPAL)
By:	By:
Signature	Signature
LAWRENCE J. NEWTON	Robert E. Becker
Typed Name	Typed Name
ATTORNEY-IN-FACT	Vice President
Title	Title

(SEAL)

NOTE: The Contractor must complete and sign this Performance and Payment Bond form. If a different bonding company form is provided, this form must also be completed and signed.

END OF SECTION

GENERAL POWER OF ATTORNEY

FIREMAN'S FUND INSURANCE COMPANY

KNOW ALL MEN BY THESE PRESENTS: That FIREMAN'S FUND INSURANCE COMPANY, a Corporation duly organized and existing under the laws of the State of California, and having its principal office in the County of Marin, State of California, has made, constituted and appointed, and does by these presents make, constitute and appoint JOHN N. ZEFKELES, GUY H. BOCKUS, JR., VICTOR E. PARKER, LAWRENCE J. NEWTON, CYNTHIA L. JAY, PETER H. HAMMETT, CINDY E. PAULSEN, CARL NEWMAN, TIM CHURCH, SUSAN B. LARSON and MARSHA CLESSON, jointly or severally

SEATTLE, WA

its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, seal, acknowledge and deliver any and all bonds, undertaking, recognizances or other written obligations in the nature thereof ----------

and to bind the Corporation thereby as fully and to the same extent as if such bonds were signed by the President, sealed with the corporate seal of the Corporation and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises.

This power of attorney is granted pursuant to Article VII, Sections 45 and 46 of By-laws of FIREMAN'S FUND INSURANCE COMPANY now in full force and effect.

"Article VII. *Appointment and Authority of Resident Secretaries, Attorney-in-Fact and Agents to accept Legal Process and Make Appearances.*

Section 45. *Appointment.* The Chairman of the Board of Directors, the President, any Vice-President or any other person authorized by the Board of Directors, the Chairman of the Board of Directors, the President or any Vice-President may, from time to time, appoint Resident Assistant Secretaries and Attorneys-in-Fact to represent and act for and on behalf of the Corporation and Agents to accept legal process and make appearances for and on behalf of the Corporation.

Section 46. *Authority.* The authority of such Resident Assistant Secretaries, Attorneys-in-Fact and Agents shall be as prescribed in the instrument evidencing their appointment. Any such appointment and all authority granted thereby may be revoked at any time by the Board of Directors or by any person empowered to make such appointment."

This power of attorney is signed and sealed under and by the authority of the following Resolution adopted by the Board of Directors of FIREMAN'S FUND INSURANCE COMPANY at a meeting duly called and held on the 7th day of August, 1984, and said Resolution has not been amended or repealed:

"RESOLVED, that the signature of any Vice-President, Assistant Secretary, and Resident Assistant Secretary of this Corporation, and the seal of this Corporation may be affixed or printed on any power of attorney, on any revocation of any power of attorney, or on any certificate relating thereto, by facsimile, and any power of attorney, any revocation of any power of attorney, or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Corporation."

IN WITNESS WHEREOF, FIREMAN'S FUND INSURANCE COMPANY has caused these presents to be signed by its Vice-President, and its corporate seal to be hereunto affixed this 28th day of August, 19 92.

FIREMAN'S FUND INSURANCE COMPANY

By R. D. Farnsworth
Vice-President

STATE OF CALIFORNIA
COUNTY OF MARIN } ss.

On this 28th day of August, 19 92, before me personally came R. D. Farnsworth, to me known, who, being by me duly sworn, did depose and say: that he is Vice-President of FIREMAN'S FUND INSURANCE COMPANY, the Corporation described in and which executed the above instrument; that he knows the seal of said Corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation and that he signed his name thereto by like order.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year herein first above written.

OFFICIAL NOTARY SEAL
A. KRIEGER
Notary Public — California
MARIN COUNTY
My Comm. Exp. MAR 20, 1995

A. Krieger
Notary Public

CERTIFICATE

STATE OF CALIFORNIA
COUNTY OF MARIN } ss.

I, the undersigned, Resident Assistant Secretary of FIREMAN'S FUND INSURANCE COMPANY, a CALIFORNIA Corporation, DO HEREBY CERTIFY that the foregoing and attached POWER OF ATTORNEY remains in full force and has not been revoked; and furthermore that Article VII, Sections 45 and 46 of the By-laws of the Corporation, and the Resolution of the Board of Directors; set forth in the Power of Attorney, are now in force.

Signed and sealed at the County of Marin. Dated the _____ day of _____, 19 ____.

Resident Assistant Secretary

360712—FF—11-87

00610-3

CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY) 8/16/93

PRODUCER

PARKER, SMITH & FEEK, INC.
1700 1ST INTERSTATE CENTER
999 3RD AVE
SEATTLE, WA. 98104

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW

COMPANIES AFFORDING COVERAGE

COMPANY LETTER	A	USF&G INSURANCE
COMPANY LETTER	B	USF&G INSURANCE
COMPANY LETTER	C	USF&G INSURANCE
COMPANY LETTER	D	
COMPANY LETTER	E	

INSURED

Ershigs, Inc.
Attention: Mr. Robert Becker
P. O. Box 1707
Bellingham WA 98227

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFF. DATE (MM/DD/YY)	POLICY EXP. DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY X COMM. GENERAL LIABILITY CLAIMS MADE X OCC. X OWNER'S & CONTRACT'S PROT X WA STOP GAP	1MP300813579	3/31/93	3/31/94	GENERAL AGGREGATE	2000000
					PROD-COMP/OP AGG.	2000000
					PERS. & ADV. INJURY	1000000
					EACH OCCURRENCE	1000000
					FIRE DAMAGE(One Fire)	50000
					MED. EXP. (One Per)	5000
B	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS GARAGE LIABILITY	AB300542231	3/31/93	3/31/94	COMBINED SINGLE LIMIT	1000000
					BODILY INJURY (Per person)	
					BODILY INJURY (Per accident)	
					PROPERTY DAMAGE	
C	EXCESS LIABILITY X UMBRELLA FORM OTHER THAN UMBRELLA FORM	1MP300813579	3/31/93	3/31/94	EACH OCCURRENCE	1000000
					AGGREGATE	1000000
	WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY				STATUTORY LIMITS	
					EACH ACCIDENT	
					DISEASE-POLICY LIMIT	
					DISEASE-EACH EMP.	
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS
SPOKANE COUNTY, LANDAU ASSOC., INC., THEIR OFFICERS, AGENTS, EMPLOYEES SUBCONSULTANTS & ENTITIES ARE ADDED AS ADDITIONAL INSURED, BUT ONLY AS RESPECTS OPERATIONS PERFORMED BY NAMED INSURED ON THEIR BEHALF.

CERTIFICATE HOLDER

SPOKANE COUNTY PURCHASING DEPT
ATTN: PROJECT NO. 93-068
N. 721 JEFFERSON, SUITE 303
SPOKANE, WA 99260

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 45 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
Dennis W. Westover

3-28

ACORD 25-S (7/90)

00650

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

ADDITIONAL INSURED--OWNERS, LESSEES, OR CONTRACTORS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

SCHEDULE

Name of Person or Organization

SPOKANE COUNTY PURCHASING DEPARTMENT
RE: PROJECT NO. 93-068

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you.

NAMED INSURED: **Ershigs, Inc.**

Copyright Insurance Services Office, Inc. 1984

CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY) 8/16/93

PRODUCER

PARKER, SMITH & FEEK, INC.
1700 1ST INTERSTATE CENTER
999 3RD AVE
SEATTLE, WA. 98104

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COMPANIES AFFORDING COVERAGE

COMPANY LETTER	A	USF&G INSURANCE
COMPANY LETTER	B	USF&G INSURANCE
COMPANY LETTER	C	USF&G INSURANCE
COMPANY LETTER	D	
COMPANY LETTER	E	

INSURED

Ershigs, Inc.
Attention: Mr. Robert Becker
P. O. Box 1707
Bellingham WA 98227

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFF. DATE (MM/DD/YY)	POLICY EXP. DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	1MP300813579	3/31/93	3/31/94	GENERAL AGGREGATE	2000000
	X COMM. GENERAL LIABILITY				PROD-COMP/OP AGG.	2000000
	CLAIMS MADE X OCC.				PERS. & ADV. INJURY	1000000
	X OWNER'S & CONTRACT'S PROT				EACH OCCURRENCE	1000000
	X WA STOP GAP				FIRE DAMAGE(One Fire)	50000
					MED. EXP. (One Per)	5000
B	AUTOMOBILE LIABILITY	AB300542231	3/31/93	3/31/94	COMBINED SINGLE LIMIT	1000000
	X ANY AUTO				BODILY INJURY (Per person)	
	ALL OWNED AUTOS					
	SCHEDULED AUTOS				BODILY INJURY (Per accident)	
	X HIRED AUTOS					
	X NON-OWNED AUTOS				PROPERTY DAMAGE	
	GARAGE LIABILITY					
C	EXCESS LIABILITY	1MP300813579	3/31/93	3/31/94	EACH OCCURRENCE	1000000
	X UMBRELLA FORM				AGGREGATE	1000000
	OTHER THAN UMBRELLA FORM					
	WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY				STATUTORY LIMITS	
					EACH ACCIDENT	
					DISEASE-POLICY LIMIT	
					DISEASE-EACH EMP.	
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

SPOKANE COUNTY, LANDAU ASSOC., INC., THEIR OFFICERS, AGENTS, EMPLOYEES SUBCONSULTANTS & ENTITIES ARE ADDED AS ADDITIONAL INSURED, BUT ONLY AS RESPECTS OPERATIONS PERFORMED BY NAMED INSURED ON THEIR BEHALF.

CERTIFICATE HOLDER

SPOKANE COUNTY PURCHASING DEPT
ATTN: PROJECT NO. 93-068
N. 721 JEFFERSON, SUITE 303
SPOKANE, WA 99260

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 45 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

3-28

ACORD 25-S (7/90)

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

ADDITIONAL INSURED--OWNERS, LESSEES, OR CONTRACTORS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

SCHEDULE

Name of Person or Organization

SPOKANE COUNTY PURCHASING DEPARTMENT
RE: PROJECT NO. 93-068

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you.

NAMED INSURED: **Ershigs, Inc.**

Copyright Insurance Services Office, Inc. 1984

COMMERCIAL GENERAL LIABILITY COVERAGE PART - DECLARATIONS

USF&G® INSURANCE

Policy No. 1MP 300813579 00

LIMITS OF INSURANCE:

$	2,000,000	General Aggregate Limit (Other than Products-Completed Operations)
$	2,000,000	Products-Completed Operations Aggregate Limit
$	1,000,000	Personal and Advertising Injury Limit
$	1,000,000	Each Occurrence Limit
$	50,000	Fire Damage Limit (Any One Fire)
$	5,000	Medical Expense Limit (Any One Person)

FORM OF BUSINESS:

☐ Individual ☐ Partnership ☐ Joint Venture ☒ Corporation

☐ Other _____

LOCATION OF ALL PREMISES YOU OWN, RENT OR OCCUPY:

☐ Same as shown in Item 1 of the Common Policy Declarations.

☒ See below.

PREMIUM SCHEDULE: ☒ See Supplemental Schedule.

Classifications	Code No.	Premium Bases(1)	Rates Prem./Ops.(2)	Rates Prod./Comp.Ops.(3)	Advance Premiums Prem./Ops.(2)	Advance Premiums Prod./Comp.Ops.(3)

TOTAL ADVANCE PREMIUM FOR THIS COVERAGE PART: $ 20,304.00 $ 60,854.00

SEE ATTACHED CL/00 99 01 01 87 (G#2)

AUDIT PERIOD: ☒ Annually ☐ Semi-Annually ☐ Quarterly ☐ Monthly

FORMS AND ENDORSEMENTS APPLICABLE TO THIS COVERAGE PART:
SEE ATTACHED CL/00 99 01 01 87 (G#1)

RETROACTIVE DATE:

_____ (Coverages A. and B. provide claims-made coverage when form CG 00 02 applies. Coverage does not apply to "bodily injury" or "property damage" that occurred, or to a "personal injury" or "advertising injury" offenses committed, before this date.)

(1) See Description of Terms Used as Premium Bases.
(2) Prem./Ops. = Premises/Operations
(3) Prod./Comp. Ops. = Products/Completed Operations

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

It is agreed that the following forms and endorsement are applicable to this coverage part:

CL/CG 03 00 09 91
CL/IL 151 07 90
CG 00 01 11 88
CL/CG 21 02 07 89
CG 01 81 11 89
CG 01 08 11 85
CL/CG 26 25 08 92
CG 01 86 09 88
CL/CG 02 00 02 88
CG 01 98 08 90
CL/CG 01 68 12 91
CG 21 47 09 89
CL/IL 153 08 86

76 1.659 17

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

The applicable surcharges/taxes are as follows:

KY MUNICIPAL TAX INCL IN TOTAL PREMIUM	28.00
KY STATE TAX NOT INCLUDED IN PREMIUM	7.00

COMMERCIAL GENERAL LIABILITY COVERAGE PART - SUPPLEMENTAL SCHEDULE

USF&G® INSURANCE

Policy No. 1MP30081357900

Classifications	Code No.	Premium Bases[1]	Rates Prem./Ops.[2]	Rates Prod./Comp. Ops.[3]	Advance Premiums Prem./Ops.[2]	Advance Premiums Prod./Comp. Ops.[3]
BUILDING OR PREMISES - BANK OR OFFICE - MERCANTILE OR MANUFACTURING (LESSOR'S RISK ONLY) - OTHER THAN NOT FOR PROFIT TEXAS	61212	A) 200.	12.158	INCL.	3.	INCL.
PLASTIC OR RUBBER GOODS MFG. - OTHER THAN HOUSEHOLD TEXAS	58058	S) 2,500,000.	.719	3.211	1,798.	8,028.
MACHINERY OR EQUIPMENT - INDUSTRIAL - INSTALLATION SERVICING OR REPAIR TEXAS	97222	P) 5,000.	25.059	6.313	125.	32.

(1) See Description of Terms Used as Premium Bases.
(2) Prem./Ops. = Premises/Operations
(3) Prod./Comp. Ops. = Products/Completed Operations

COMMERCIAL GENERAL LIABILITY COVERAGE PART - SUPPLEMENTAL SCHEDULE

USF&G® INSURANCE

Policy No. 1MP 300813579 00

Classifications	Code No.	Premium Bases(1)	Rates Prem./Ops.(2)	Rates Prod./Comp.Ops.(3)	Advance Premiums Prem./Ops.(2)	Advance Premiums Prod./Comp.Ops.(3)
742 MARINE DR. BELLINGHAM, WA 98227						
METAL GOODS MANUFACTURING-NOC	56911	S/650,000	1.628	14.209	1,058.00	9,236.00
PLASTIC OR RUBBER GOODS MANUFACTURING-OTHER THAN HOUSEHOLD-NOC	58058	S/8,000,000	.930	3.399	7,440.00	27,192.00
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/50,000	33.670	9.689	1,684.00	484.00
300 LAYTON ST. WILSON, NC 27894						
PLASTIC OR RUBBER GOODS MANUFACTURING-OTHER THAN HOUSEHOLD-NOC	58058	S/4,500,000	.253	2.823	1,139.00	12,704.00
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/20,000	10.353	4.772	207.00	95.00
TBD, GA 30316						
PLASTIC OR RUBBER GOODS MANUFACTURING-OTHER THAN HOUSEHOLD-NOC	58058	S/1,000,000	.470	3.105	470.00	3,105.00
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/20,000	13.530	7.430	271.00	149.00
TBA, AL 35201						
PLASTIC OR RUBBER GOODS MANUFACTURING-OTHER THAN HOUSEHOLD-NOC	58058	S/300,000	1.268	3.225	380.00	968.00
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/100,000	32.869	6.296	3,287.00	630.00
TBA, MO 63117						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/10,000	19.355	8.682	194.00	87.00
TBA, OH 43214						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/50,000	14.576	3.839	729.00	192.00
TBA, UT 84016						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/5,000	26.197	7.719	131.00	39.00
TBA, SC 29203						
PLASTIC OR RUBBER GOODS MANUFACTURING-OTHER THAN HOUSEHOLD-NOC	58058	S/200,000	.157	3.971	31.00	794.00
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/10,000	10.024	7.653	100.00	77.00
TBA, KY 40509						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/20,000	15.680	8.752	314.00	175.00

(1) See Description of Terms Used as Premium Bases.
(2) Prem./Ops. = Premises/Operations
(3) Prod./Comp. Ops. = Products/Completed Operations

COMMERCIAL GENERAL LIABILITY COVERAGE PART - SUPPLEMENTAL SCHEDULE

USF&G® INSURANCE

Policy No. 1MP 300813579 00

Classifications	Code No.	Premium Bases(1)	Rates Prem./Ops.(2)	Rates Prod./Comp.Ops.(3)	Advance Premiums Prem./Ops.(2)	Advance Premiums Prod./Comp.Ops.(3)
TBA, AZ 85345						
BUILDING OR PREMISES-BANK OR OFFICE-MERCANTILE OR MANUFACTURING (LESSOR'S RISK ONLY)-OTHER THAN NOT-FOR-PROFIT	61212	A/5,100	56.902		290.00	
INCLUDING PRODUCTS AND/OR COMPLETED OPERATIONS						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/5,000	22.615	8.752	113.00	44.00
TBA, IL 60618						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/10,000	33.651	8.752	337.00	88.00
TBA, IN 46208						
PLASTIC OR RUBBER GOODS MANUFACTURING-OTHER THAN HOUSEHOLD-NOC	58058	S/750,000	.473	3.024	355.00	2,268.00
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/20,000	19.076	7.238	382.00	145.00
TBA, MI 48607						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/10,000	35.239	8.752	352.00	88.00
TBA, CA 90027						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/5,000	42.849	10.690	214.00	53.00
TBA, ID 83705						
MACHINERY OR EQUIPMENT-INDUSTRIAL-INSTALLATION, SERVICING OR REPAIR	97222	P/10,000	25.746	8.682	257.00	87.00
TBA, IA 52246						
PLASTIC OR RUBBER GOODS MANUFACTURING-OTHER THAN HOUSEHOLD-NOC	58058	S/500,000	.813	3.399	407.00	1,700.00
TBA, OR 97225						
PLASTIC OR RUBBER GOODS MANUFACTURING-OTHER THAN HOUSEHOLD-NOC	58058	S/150,000	.877	3.024	132.00	454.00
TBA, TN 38139						
BUILDING OR PREMISES-BANK OR OFFICE-MERCANTILE OR MANUFACTURING (LESSOR'S RISK ONLY)-OTHER THAN NOT-FOR-PROFIT	61212	A/100	17.539		2.00	
INCLUDING PRODUCTS AND/OR COMPLETED OPERATIONS						

(1) See Description of Terms Used as Premium Bases.
(2) Prem./Ops. = Premises/Operations
(3) Prod./Comp. Ops. = Products/Completed Operations

COMMERCIAL GENERAL LIABILITY COVERAGE FORM

Various provisions in this policy restrict coverage. Read the entire policy carefully to determine rights, duties and what is and is not covered.

Throughout this policy the words "you" and "your" refer to the Named Insured shown in the Declarations, and any other person or organization qualifying as a Named Insured under this policy. The words "we," "us" and "our" refer to the company providing this insurance.

The word "insured" means any person or organization qualifying as such under WHO IS AN INSURED (SECTION II).

Other words and phrases that appear in quotation marks have special meaning. Refer to DEFINITIONS (SECTION V).

SECTION I - COVERAGES

COVERAGE A. BODILY INJURY AND PROPERTY DAMAGE LIABILITY

1. **Insuring Agreement.**

   a. We will pay those sums that the insured becomes legally obligated to pay as damages because of "bodily injury" or "property damage" to which this insurance applies. We will have the right and duty to defend any "suit" seeking those damages. We may at our discretion investigate any "occurrence" and settle any claim or "suit" that may result. But:

      (1) The amount we will pay for damages is limited as described in LIMITS OF INSURANCE (SECTION III); and

      (2) Our right and duty to defend end when we have used up the applicable limit of insurance in the payment of judgments or settlements under Coverages A or B or medical expenses under Coverage C.

      No other obligation or liability to pay sums or perform acts or services is covered unless explicitly provided for under SUPPLEMENTARY PAYMENTS - COVERAGES A AND B.

   b. This insurance applies to "bodily injury" and "property damage" only if:

      (1) The "bodily injury" or "property damage" is caused by an "occurrence" that takes place in the "coverage territory"; and

      (2) The "bodily injury" or "property damage" occurs during the policy period.

   c. Damages because of "bodily injury" include damages claimed by any person or organization for care, loss of services or death resulting at any time from the "bodily injury."

2. **Exclusions.**

   This insurance does not apply to:

   a. "Bodily injury" or "property damage" expected or intended from the standpoint of the insured. This exclusion does not apply to "bodily injury" resulting from the use of reasonable force to protect persons or property.

   b. "Bodily injury" or "property damage" for which the insured is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages:

      (1) Assumed in a contract or agreement that is an "insured contract," provided the "bodily injury" or "property damage" occurs subsequent to the execution of the contract or agreement; or

      (2) That the insured would have in the absence of the contract or agreement.

   c. "Bodily injury" or "property damage" for which any insured may be held liable by reason of:

      (1) Causing or contributing to the intoxication of any person;

      (2) The furnishing of alcoholic beverages to a person under the legal drinking age or under the influence of alcohol; or

      (3) Any statute, ordinance or regulation relating to the sale, gift, distribution or use of alcoholic beverages.

      This exclusion applies only if you are in the business of manufacturing, distributing, selling, serving or furnishing alcoholic beverages.

   d. Any obligation of the insured under a workers' compensation, disability benefits or unemployment compensation law or any similar law.

   e. "Bodily injury" to:

      (1) An employee of the insured arising out of and in the course of employment by the insured; or

      (2) The spouse, child, parent, brother or sister of that employee as a consequence of (1) above.

      This exclusion applies:

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(1) Whether the insured may be liable as an employer or in any other capacity; and

(2) To any obligation to share damages with or repay someone else who must pay damages because of the injury.

This exclusion does not apply to liability assumed by the insured under an "insured contract."

f. (1) "Bodily injury" or "property damage" arising out of the actual, alleged or threatened discharge, dispersal, seepage, migration, release or escape of pollutants:

(a) At or from any premises, site or location which is or was at any time owned or occupied by, or rented or loaned to, any insured;

(b) At or from any premises, site or location which is or was at any time used by or for any insured or others for the handling, storage, disposal, processing or treatment of waste;

(c) Which are or were at any time transported, handled, stored, treated, disposed of, or processed as waste by or for any insured or any person or organization for whom you may be legally responsible; or

(d) At or from any premises, site or location on which any insured or any contractors or subcontractors working directly or indirectly on any insured's behalf are performing operations:

(i) if the pollutants are brought on or to the premises, site or location in connection with such operations by such insured, contractor or subcontractor; or

(ii) if the operations are to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize, or in any way respond to, or assess the effects of pollutants.

Subparagraphs (a) and (d)(i) do not apply to "bodily injury" or "property damage" arising out of heat, smoke or fumes from a hostile fire.

As used in this exclusion, a hostile fire means one which becomes uncontrollable or breaks out from where it was intended to be.

(2) Any loss, cost or expense arising out of any:

(a) Request, demand or order that any insured or others test for, monitor, clean up, remove, contain, treat, detoxify or neutralize, or in any way respond to, or assess the effects of pollutants; or

(b) Claim or suit by or on behalf of a governmental authority for damages because of testing for, monitoring, cleaning up, removing, containing, treating, detoxifying or neutralizing, or in any way responding to, or assessing the effects of pollutants.

Pollutants means any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals and waste. Waste includes materials to be recycled, reconditioned or reclaimed.

g. "Bodily injury" or "property damage" arising out of the ownership, maintenance, use or entrustment to others of any aircraft, "auto" or watercraft owned or operated by or rented or loaned to any insured. Use includes operation and "loading or unloading."

This exclusion does not apply to:

(1) A watercraft while ashore on premises you own or rent;

(2) A watercraft you do not own that is:

(a) Less than 26 feet long; and

(b) Not being used to carry persons or property for a charge;

(3) Parking an "auto" on, or on the ways next to, premises you own or rent, provided the "auto" is not owned by or rented or loaned to you or the insured;

(4) Liability assumed under any "insured contract" for the ownership, maintenance or use of aircraft or watercraft; or

(5) "Bodily injury" or "property damage" arising out of the operation of any of the equipment listed in paragraph f.(2) or f.(3) of the definition of "mobile equipment" (Section V.8.).

h. "Bodily injury" or "property damage" arising out of:

(1) The transportation of "mobile equipment" by an "auto" owned or operated by or rented or loaned to any insured; or

(2) The use of "mobile equipment" in, or while in practice or preparation for, a prearranged racing, speed or demolition contest or in any stunting activity.

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i. "Bodily injury" or "property damage" due to war, whether or not declared, or any act or condition incident to war. War includes civil war, insurrection, rebellion or revolution. This exclusion applies only to liability assumed under a contract or agreement.

j. "Property damage" to:

(1) Property you own, rent, or occupy;

(2) Premises you sell, give away or abandon, if the "property damage" arises out of any part of those premises;

(3) Property loaned to you;

(4) Personal property in the care, custody or control of the insured;

(5) That particular part of real property on which you or any contractors or subcontractors working directly or indirectly on your behalf are performing operations, if the "property damage" arises out of those operations; or

(6) That particular part of any property that must be restored, repaired or replaced because "your work" was incorrectly performed on it.

Paragraph (2) of this exclusion does not apply if the premises are "your work" and were never occupied, rented or held for rental by you.

Paragraph (3), (4), (5) and (6) of this exclusion does not apply to liability assumed under a sidetrack agreement.

Paragraph (6) of this exclusion does not apply to "property damage" included in the "products-completed operations hazard."

k. "Property damage" to "your product" arising out of it or any part of it.

l. "Property damage" to "your work" arising out of it or any part of it and included in the "products-completed operations hazard."

This exclusion does not apply if the damaged work or the work out of which the damage arises was performed on your behalf by a subcontractor.

m. "Property damage" to "impaired property" or property that has not been physically injured, arising out of:

(1) A defect, deficiency, inadequacy or dangerous condition in "your product" or "your work"; or

(2) A delay or failure by you or anyone acting on your behalf to perform a contract or agreement in accordance with its terms.

This exclusion does not apply to the loss of use of other property arising out of sudden and accidental physical injury to "your product" or "your work" after it has been put to its intended use.

n. Damages claimed for any loss, cost or expense incurred by you or others for the loss of use, withdrawal, recall, inspection, repair, replacement, adjustment, removal or disposal of:

(1) "Your product";

(2) "Your work"; or

(3) "Impaired property";

if such product, work, or property is withdrawn or recalled from the market or from use by any person or organization because of a known or suspected defect, deficiency, inadequacy or dangerous condition in it.

Exclusions c. through n. do not apply to damage by fire to premises rented to you. A separate limit of insurance applies to this coverage as described in LIMITS OF INSURANCE (SECTION III).

COVERAGE B. PERSONAL AND ADVERTISING INJURY LIABILITY

1. Insuring Agreement.

a. We will pay those sums that the insured becomes legally obligated to pay as damages because of "personal injury" or "advertising injury" to which this coverage part applies. We will have the right and duty to defend any "suit" seeking those damages. We may at our discretion investigate any "occurrence" or offense and settle any claim or "suit" that may result. But:

(1) The amount we will pay for damages is limited as described in LIMITS OF INSURANCE (SECTION III); and

(2) Our right and duty to defend end when we have used up the applicable limit of insurance in the payment of judgments or settlements under Coverage A or B or medical expenses under Coverage C.

No other obligation or liability to pay sums or perform acts or services is covered unless explicitly provided for under SUPPLEMENTARY PAYMENTS - COVERAGES A AND B.

b. This insurance applies to:

(1) "Personal injury" caused by an offense arising out of your business, excluding advertising, publishing, broadcasting or telecasting done by or for you;

(2) "Advertising injury" caused by an offense committed in the course of advertising your goods, products or services;

but only if the offense was committed in the "coverage territory" during the policy period.

2. Exclusions.

This insurance does not apply to:

a. "Personal injury" or "advertising injury":

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(1) Arising out of oral or written publication of material, if done by or at the direction of the insured with knowledge of its falsity;

(2) Arising out of oral or written publication of material whose first publication took place before the beginning of the policy period;

(3) Arising out of the willful violation of a penal statute or ordinance committed by or with the consent of the insured; or

(4) For which the insured has assumed liability in a contract or agreement. This exclusion does not apply to liability for damages that the insured would have in the absence of the contract or agreement.

b. "Advertising injury" arising out of:

(1) Breach of contract, other than misappropriation of advertising ideas under an implied contract;

(2) The failure of goods, products or services to conform with advertised quality or performance;

(3) The wrong description of the price of goods, products or services; or

(4) An offense committed by an insured whose business is advertising, broadcasting, publishing or telecasting.

COVERAGE C. MEDICAL PAYMENTS

1. **Insuring Agreement.**

a. We will pay medical expenses as described below for "bodily injury" caused by an accident:

(1) On premises you own or rent;

(2) On ways next to premises you own or rent; or

(3) Because of your operations;

provided that:

(1) The accident takes place in the "coverage territory" and during the policy period;

(2) The expenses are incurred and reported to us within one year of the date of the accident; and

(3) The injured person submits to examination, at our expense, by physicians of our choice as often as we reasonably require.

b. We will make these payments regardless of fault. These payments will not exceed the applicable limit of insurance. We will pay reasonable expenses for:

(1) First aid at the time of an accident;

(2) Necessary medical, surgical, x-ray and dental services, including prosthetic devices; and

(3) Necessary ambulance, hospital, professional nursing and funeral services.

2. **Exclusions.**

We will not pay expenses for "bodily injury":

a. To any insured.

b. To a person hired to do work for or on behalf of any insured or a tenant of any insured.

c. To a person injured on that part of premises you own or rent that the person normally occupies.

d. To a person, whether or not an employee of any insured, if benefits for the "bodily injury" are payable or must be provided under a workers' compensation or disability benefits law or a similar law.

e. To a person injured while taking part in athletics.

f. Included within the "products-completed operations hazard."

g. Excluded under Coverage A.

h. Due to war, whether or not declared, or any act or condition incident to war. War includes civil war, insurrection, rebellion or revolution.

SUPPLEMENTARY PAYMENTS - COVERAGES A AND B

We will pay, with respect to any claim or "suit" we defend:

1. All expenses we incur.

2. Up to $250 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which the Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.

3. The cost of bonds to release attachments, but only for bond amounts within the applicable limit of insurance. We do not have to furnish these bonds.

4. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit," including actual loss of earnings up to $100 a day because of time off from work.

5. All costs taxed against the insured in the "suit."

6. Prejudgment interest awarded against the insured on that part of the judgment we pay. If we make an offer to pay the applicable limit of insurance, we will not pay any prejudgment interest based on that period of time after the offer.

7. All interest on the full amount of any judgment that accrues after entry of the judgment and before we have paid, offered to pay, or deposited in court the part of the judgment that is within the applicable limit of insurance.

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These payments will not reduce the limits of insurance.

SECTION II - WHO IS AN INSURED

1. If you are designated in the Declarations as:

   a. An individual, you and your spouse are insureds, but only with respect to the conduct of a business of which you are the sole owner.

   b. A partnership or joint venture, you are an insured. Your members, your partners, and their spouses are also insureds, but only with respect to the conduct of your business.

   c. An organization other than a partnership or joint venture, you are an insured. Your executive officers and directors are insureds, but only with respect to their duties as your officers or directors. Your stockholders are also insureds, but only with respect to their liability as stockholders.

2. Each of the following is also an insured:

   a. Your employees, other than your executive officers, but only for acts within the scope of their employment by you. However, no employee is an insured for:

      (1) "Bodily injury" or "personal injury" to you or to a co-employee while in the course of his or her employment, or the spouse, child, parent, brother or sister of that co-employee as a consequence of such "bodily injury" or "personal injury," or for any obligation to share damages with or repay someone else who must pay damages because of the injury; or

      (2) "Bodily injury" or "personal injury" arising out of his or her providing or failing to provide professional health care services; or

      (3) "Property damage" to property owned or occupied by or rented or loaned to that employee, any of your other employees, or any of your partners or members (if you are a partnership or joint venture).

   b. Any person (other than your employee), or any organization while acting as your real estate manager.

   c. Any person or organization having proper temporary custody of your property if you die, but only:

      (1) With respect to liability arising out of the maintenance or use of that property: and

      (2) Until your legal representative has been appointed.

   d. Your legal representative if you die, but only with respect to duties as such. That representative will have all your rights and duties under this Coverage Part.

3. With respect to "mobile equipment" registered in your name under any motor vehicle registration law, any person is an insured while driving such equipment along a public highway with your permission. Any other person or organization responsible for the conduct of such person is also an insured, but only with respect to liability arising out of the operation of the equipment, and only if no other insurance of any kind is available to that person or organization for this liability. However, no person or organization is an insured with respect to:

   a. "Bodily injury" to a co-employee of the person driving the equipment; or

   b. "Property damage" to property owned by, rented to, in the charge of or occupied by you or the employer of any person who is an insured under this provision.

4. Any organization you newly acquire or form, other than a partnership or joint venture, and over which you maintain ownership or majority interest, will qualify as a Named Insured if there is no other similar insurance available to that organization. However:

   a. Coverage under this provision is afforded only until the 90th day after you acquire or form the organization or the end of the policy period, whichever is earlier;

   b. Coverage A does not apply to "bodily injury" or "property damage" that occurred before you acquired or formed the organization; and

   c. Coverage B does not apply to "personal injury" or "advertising injury" arising out of an offense committed before you acquired or formed the organization.

No person or organization is an insured with respect to the conduct of any current or past partnership or joint venture that is not shown as a Named Insured in the Declarations.

SECTION III - LIMITS OF INSURANCE

1. The limits of Insurance shown in the Declarations and the rules below fix the most we will pay regardless of the number of:

   a. Insureds;

   b. Claims made or "suits" brought; or

   c. Persons or organizations making claims or bringing "suits."

2. The General Aggregate Limit is the most we will pay for the sum of:

   a. Medical expenses under Coverage C;

   b. Damages under Coverage A, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard"; and

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c. Damages under Coverage B.

3. The Products-Completed Operations Aggregate Limit is the most we will pay under Coverage A for damages because of "bodily injury" and "property damage" included in the "products-completed operations hazard."

4. Subject to 2. above, the Personal and Advertising Injury Limit is the most we will pay under Coverage B for the sum of all damages because of all "personal injury" and all "advertising injury" sustained by any one person or organization.

5. Subject to 2. or 3. above, whichever applies, the Each Occurrence Limit is the most we will pay for the sum of:

   a. Damages under Coverage A; and

   b. Medical expenses under Coverage C

   because of all "bodily injury" and "property damage" arising out of any one "occurrence."

6. Subject to 5. above, the Fire Damage Limit is the most we will pay under Coverage A for damages because of "property damage" to premises rented to you arising out of any one fire.

7. Subject to 5. above, the Medical Expense Limit is the most we will pay under Coverage C for all medical expenses because of "bodily injury" sustained by any one person.

The limits of this Coverage Part apply separately to each consecutive annual period and to any remaining period of less than 12 months, starting with the beginning of the policy period shown in the Declarations, unless the policy period is extended after issuance for an additional period of less than 12 months. In that case, the additional period will be deemed part of the last preceding period for purposes of determining the Limits of Insurance.

SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS

1. **Bankruptcy.**

   Bankruptcy or insolvency of the insured or of the insured's estate will not relieve us of our obligations under this Coverage Part.

2. **Duties In The Event Of Occurrence, Claim Or Suit.**

   a. You must see to it that we are notified as soon as practicable of an "occurrence" or an offense which may result in a claim. To the extent possible, notice should include:

      (1) How, when and where the "occurrence" or offense took place;

      (2) The names and addresses of any injured persons and witnesses; and

      (3) The nature and location of any injury or damage arising out of the "occurrence" or offense.

   b. If a claim is made or "suit" is brought against any insured, you must:

      (1) Immediately record the specifics of the claim or "suit" and the date received; and

      (2) Notify us as soon as practicable.

      You must see to it that we receive written notice of the claim or "suit" as soon as practicable.

   c. You and any other involved insured must:

      (1) Immediately send us copies of any demands, notices, summonses or legal papers received in connection with the claim or "suit";

      (2) Authorize us to obtain records and other information;

      (3) Cooperate with us in the investigation, settlement or defense of the claim or "suit"; and

      (4) Assist us, upon our request, in the enforcement of any right against any person or organization which may be liable to the insured because of injury or damage to which this insurance may also apply.

   d. No insureds will, except at their own cost, voluntarily make a payment, assume any obligation, or incur any expense, other than for first aid, without our consent.

3. **Legal Action Against Us.**

   No person or organization has a right under this Coverage Part:

   a. To join us as a party or otherwise bring us into a "suit" asking for damages from an insured; or

   b. To sue us on this Coverage Part unless all of its terms have been fully complied with.

   A person or organization may sue us to recover on an agreed settlement or on a final judgment against an insured obtained after an actual trial; but we will not be liable for damages that are not payable under the terms of this Coverage Part or that are in excess of the applicable limit of insurance. An agreed settlement means a settlement and release of liability signed by us, the insured and the claimant or the claimant's legal representative.

4. **Other Insurance.**

   If other valid and collectible insurance is available to the insured for a loss we cover under Coverages A or B of this Coverage Part, our obligations are limited as follows:

   a. Primary Insurance

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This insurance is primary except when b. below applies. If this insurance is primary, our obligations are not affected unless any of the other insurance is also primary. Then, we will share with all that other insurance by the method described in c. below.

b. Excess Insurance

This insurance is excess over any of the other insurance, whether primary, excess, contingent or on any other basis:

(1) That is Fire, Extended Coverage, Builder's Risk, Installation Risk or similar coverage for "your work";

(2) That is Fire insurance for premises rented to you; or

(3) If the loss arises out of the maintenance or use of aircraft, "autos" or watercraft to the extent not subject to Exclusion g. of Coverage A (Section I).

When this insurance is excess, we will have no duty under Coverage A or B to defend any claim or "suit" that any other insurer has a duty to defend. If no other insurer defends, we will undertake to do so, but we will be entitled to the insured's rights against all those other insurers.

When this insurance is excess over other insurance, we will pay only our share of the amount of the loss, if any, that exceeds the sum of:

(1) The total amount that all such other insurance would pay for the loss in the absence of this insurance; and

(2) The total of all deductible and self-insured amounts under all that other insurance.

We will share the remaining loss, if any, with any other insurance that is not described in this Excess Insurance provision and was not bought specifically to apply in excess of the Limits of Insurance shown in the Declarations of this Coverage Part.

c. Method of Sharing

If all of the other insurance permits contribution by equal shares, we will follow this method also. Under this approach each insurer contributes equal amounts until it has paid its applicable limit of insurance or none of the loss remains, whichever comes first.

If any of the other insurance does not permit contribution by equal shares, we will contribute by limits. Under this method, each insurer's share is based on the ratio of its applicable limit of insurance to the total applicable limits of insurance of all insurers.

5. **Premium Audit.**

a. We will compute all premiums for this Coverage Part in accordance with our rules and rates.

b. Premium shown in this Coverage Part as advance premium is a deposit premium only. At the close of each audit period we will compute the earned premium for that period. Audit premiums are due and payable on notice to the first Named Insured. If the sum of the advance and audit premiums paid for the policy term is greater than the earned premium, we will return the excess to the first Named Insured.

c. The first Named Insured must keep records of the information we need for premium computation, and send us copies at such times as we may request.

6. **Representations.**

By accepting this policy, you agree:

a. The statements in the Declarations are accurate and complete;

b. Those statements are based upon representations you made to us; and

c. We have issued this policy in reliance upon your representations.

7. **Separation Of Insureds.**

Except with respect to the Limits of Insurance, and any rights or duties specifically assigned in this Coverage Part to the first Named Insured, this insurance applies:

a. As if each Named Insured were the only Named Insured; and

b. Separately to each insured against whom claim is made or "suit" is brought.

8. **Transfer Of Rights Of Recovery Against Others To Us.**

If the insured has rights to recover all or part of any payment we have made under this Coverage Part, those rights are transferred to us. The insured must do nothing after loss to impair them. At our request, the insured will bring "suit" or transfer those rights to us and help us enforce them.

9. **When We Do Not Renew.**

If we decide not to renew this Coverage Part, we will mail or deliver to the first Named Insured shown in the Declarations written notice of the nonrenewal not less than 30 days before the expiration date.

If notice is mailed, proof of mailing will be sufficient proof of notice.

SECTION V - DEFINITIONS

1. "Advertising injury" means injury arising out of one or more of the following offenses:

a. Oral or written publication of material that slanders or libels a person or organization or disparages a person's or organization's goods, products or services;

b. Oral or written publication of material that violates a person's right of privacy;

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c. Misappropriation of advertising ideas or style of doing business; or

d. Infringement of copyright, title or slogan.

2. "Auto" means a land motor vehicle, trailer or semitrailer designed for travel on public roads, including any attached machinery or equipment. But "auto" does not include "mobile equipment."

3. "Bodily injury" means bodily injury, sickness or disease sustained by a person, including death resulting from any of these at any time.

4. "Coverage territory" means:

a. The United States of America (including its territories and possessions), Puerto Rico and Canada;

b. International waters or airspace, provided the injury or damage does not occur in the course of travel or transportation to or from any place not included in a. above; or

c. All parts of the world if:

(1) The injury or damage arises out of:

(a) Goods or products made or sold by you in the territory described in a. above; or

(b) The activities of a person whose home is in the territory described in a. above, but is away for a short time on your business; and

(2) The insured's responsibility to pay damages is determined in a "suit" on the merits, in the territory described in a. above or in a settlement we agree to.

5. "Impaired property" means tangible property other than "your product" or "your work," that cannot be used or is less useful because:

a. It incorporates "your product" or "your work" that is known or thought to be defective, deficient, inadequate or dangerous; or

b. You have failed to fulfill the terms of a contract or agreement;

if such property can be restored to use by:

a. The repair, replacement, adjustment or removal of "your product" or "your work"; or

b. Your fulfilling the terms of the contract or agreement.

6. "Insured contract" means:

a. A lease of premises;

b. A sidetrack agreement;

c. Any easement or license agreement, except in connection with construction or demolition operations on or within 50 feet of a railroad;

d. An obligation, as required by ordinance, to indemnify a municipality, except in connection with work for a municipality;

e. An elevator maintenance agreement;

f. That part of any other contract or agreement pertaining to your business (including an indemnification of a municipality in connection with work performed for a municipality) under which you assume the tort liability of another party to pay for "bodily injury" or "property damage" to a third person or organization. Tort liability means a liability that would be imposed by law in the absence of any contract or agreement.

An "insured contract" does not include that part of any contract or agreement:

a. That indemnifies any person or organization for "bodily injury" or "property damage" arising out of construction or demolition operations, within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road-beds, tunnel, underpass or crossing;

b. That indemnifies an architect, engineer or surveyor for injury or damage arising out of:

(1) Preparing, approving or failure to prepare or approve maps, drawings, opinions, reports, surveys, change orders, designs or specifications; or

(2) Giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage;

c. Under which the insured, if an architect, engineer or surveyor, assumes liability for injury or damage arising out of the insured's rendering or failing to render professional services, including those listed in b. above and supervisory, inspection or engineering services; or

d. That indemnifies any person or organization for damage by fire to premises rented or loaned to you.

7. "Loading or unloading" means the handling of property:

a. After it is moved from the place where it is accepted for movement into or onto an aircraft, watercraft or "auto";

b. While it is in or on an aircraft, watercraft or "auto"; or

c. While it is being moved from an aircraft, watercraft or "auto" to the place where it is finally delivered;

but "loading or unloading" does not include the movement of property by means of a mechanical device, other than a hand truck, that is not attached to the aircraft, watercraft or "auto."

8. "Mobile equipment" means any of the following types of land vehicles, including any attached machinery or equipment:

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a. Bulldozers, farm machinery, forklifts and other vehicles designed for use principally off public roads;

b. Vehicles maintained for use solely on or next to premises you own or rent;

c. Vehicles that travel on crawler treads;

d. Vehicles, whether self-propelled or not, maintained primarily to provide mobility to permanently mounted:

(1) Power cranes, shovels, loaders, diggers or drills; or

(2) Road construction or resurfacing equipment such as graders, scrapers or rollers;

e. Vehicles not described in a., b., c. or d. above that are not self-propelled and are maintained primarily to provide mobility to permanently attached equipment of the following types:

(1) Air compressors, pumps and generators, including spraying, welding, building cleaning, geophysical exploration, lighting and well servicing equipment; or

(2) Cherry pickers and similar devices used to raise or lower workers;

f. Vehicles not described in a., b., c. or d. above maintained primarily for purposes other than the transportation of persons or cargo.

However, self-propelled vehicles with the following types of permanently attached equipment are not "mobile equipment" but will be considered "autos":

(1) Equipment designed primarily for:

(a) Snow removal;

(b) Road maintenance, but not construction or resurfacing;

(c) Street cleaning;

(2) Cherry pickers and similar devices mounted on automobile or truck chassis and used to raise or lower workers; and

(3) Air compressors, pumps and generators, including spraying, welding, building cleaning, geophysical exploration, lighting and well servicing equipment.

9. "Occurrence" means an accident, including continuous or repeated exposure to substantially the same general harmful conditions.

10. "Personal injury" means injury, other than "bodily injury," arising out of one or more of the following offenses:

a. False arrest, detention or imprisonment;

b. Malicious prosecution;

c. The wrongful eviction from, wrongful entry into, or invasion of the right of private occupancy of a room, dwelling or premises that a person occupies by or on behalf of its owner, landlord or lessor;

d. Oral or written publication of material that slanders or libels a person or organization or disparages a person's or organization's goods, products or services; or

e. Oral or written publication of material that violates a person's right of privacy.

11. a. "Products-completed operations hazard" includes all "bodily injury" and "property damage" occurring away from premises you own or rent and arising out of "your product" or "your work" except:

(1) Products that are still in your physical possession; or

(2) Work that has not yet been completed or abandoned.

b. "Your work" will be deemed completed at the earliest of the following times:

(1) When all of the work called for in your contract has been completed.

(2) When all of the work to be done at the site has been completed if your contract calls for work at more than one site.

(3) When that part of the work done at a job site has been put to its intended use by any person or organization other than another contractor or subcontractor working on the same project.

Work that may need service, maintenance, correction, repair or replacement, but which is otherwise complete, will be treated as completed.

c. This hazard does not include "bodily injury" or "property damage" arising out of:

(1) The transportation of property, unless the injury or damage arises out of a condition in or on a vehicle created by the "loading or unloading" of it;

(2) The existence of tools, uninstalled equipment or abandoned or unused materials;

(3) Products or operations for which the classification in this Coverage Part or in our manual of rules includes products or completed operations.

12. "Property damage" means:

a. Physical injury to tangible property, including all resulting loss of use of that property. All such loss of use shall be deemed to occur at the time of the physical injury that caused it; or

b. Loss of use of tangible property that is not physically injured. All such loss shall be deemed to occur at the time of the "occurrence" that caused it.

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13. "Suit" means a civil proceeding in which damage because of "bodily injury," "property damage," "personal injury" or "advertising injury" to which this insurance applies are alleged. "Suit" includes:

a. An arbitration proceeding in which such damages are claimed and to which you must submit or do submit with our consent; or

b. Any other alternative dispute resolution proceeding in which such damages are claimed and to which you submit with our consent.

14. "Your product" means:

a. Any goods or products, other than real property, manufactured, sold, handled, distributed or disposed of by:

(1) You;

(2) Others trading under your name; or

(3) A person or organization whose business or assets you have acquired; and

b. Containers (other than vehicles), materials, parts or equipment furnished in connection with such goods or products.

"Your product" includes:

a. Warranties or representations made at any time with respect to the fitness, quality, durability, performance or use of "your product;" and

b. The providing of or failure to provide warnings or instructions.

"Your product" does not include vending machines or other property rented to or located for the use of others but not sold.

15. "Your work" means:

a. Work or operations performed by you or on your behalf: and

b. Materials, parts or equipment furnished in connection with such work or operations.

"Your work" includes:

a. Warranties or representations made at any time with respect to the fitness, quality, durability, performance or use of "your work"; and

b. The providing of or failure to provide warnings or instructions.

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WASHINGTON CHANGES

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS COVERAGE PART.

1. Exclusion e. of COVERAGE A (Section I) applies only to "bodily injury" to any employee of the insured whose employment is not subject to the Industrial Insurance Act of Washington (Washington Revised Code Title 51).

   With respect to "bodily injury" to employees of the insured whose employment is subject to the Industrial Insurance Act of Washington, exclusion e. is replaced with the following:

   The insurance does not apply to:

   (1) "Bodily injury" to an employee of the insured arising out of and in the course of employment by the insured; or

   (2) Any obligation to share damages with or repay someone else who must pay damages because of the injury.

   This exclusion does not apply to liability assumed by the insured under an "insured contract."

2. Paragraph 2.a.(1) of WHO IS AN INSURED (Section II) applies only to employees of the insured whose employment is not subject to the Industrial Insurance Act of Washington (Washington Revised Code Title 51).

   With respect to employees of the insured whose employment is subject to the Industrial Insurance Act of Washington, paragraph 2.a.(1) of WHO IS AN INSURED (Section II) is replaced with the following:

   (1) "Bodily injury" or "personal injury" to you or to a co-employee while in the course of his or her employment, or for any obligation to share damages with or repay someone else who must pay damages because of the injury; or

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ALABAMA AND LOUISIANA CHANGES - WHO IS AN INSURED

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
RAILROAD PROTECTIVE LIABILITY COVERAGE PART.

In WHO IS AN INSURED (Section II) the term "executive officer" means only a person holding any of the officer positions created by your charter, constitution or by laws.

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UTAH CHANGES

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
RAILROAD PROTECTIVE LIABILITY COVERAGE PART.

The Legal Action Against Us Condition does not apply.

Any Condition titled:

Duties in the Event of Occurrence, Claim or Suit
Duties in the Event of Injury, Claim or Suit
Duties in the Event of A Pollution Incident, Claim or Suit
Insured's Duties in the Event of a Loss

requiring notice to us is amended to include:

"Notice to our authorized representative is notice to us."

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ILLINOIS CHANGES

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART (OCCURRENCE VERSION).

Condition 2. **DUTIES IN THE EVENT OF OCCURRENCE, CLAIM OR SUIT (SECTION IV)** is replaced by the following:

2. **Duties In The Event Of Occurrence, Offense, Claim or Suit.**

   a. You must see to it that we are notified as soon as practicable of an "occurrence" or an offense which may result in a claim. To the extent possible, notice should include:

      (1) How, when and where the "occurrence" or offense took place;

      (2) The names and addresses of any injured persons or witnesses; and

      (3) The nature and location of any injury or damage arising out of the "occurrence" or offense.

   b. If a claim is made or "suit" is brought against any insured, you must:

      (1) Immediately record the specifics of the claim or "suit" and the date received; and

      (2) Notify us as soon as practicable.

      You must see to it that we receive written notice of the claim or "suit" as soon as practicable.

   c. You and any other involved insured must:

      (1) Immediately send us copies of any demands, notices, summonses or legal papers received in connection with the claim or "suit";

      (2) Authorize us to obtain records and other information;

      (3) Cooperate with us in the investigation, settlement or defense of the claim or "suit"; and

      (4) Assist us, upon our request, in the enforcement of any right against any person or organization which may be liable to the insured because of injury or damage to which this insurance may also apply.

   d. No insured will, except at their own cost, voluntarily make a payment, assume any obligation, or incur any expense, other than for first aid, without our consent.

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MICHIGAN CHANGES

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
EMPLOYEE BENEFITS LIABILITY COVERAGE PART
FUNERAL DIRECTORS PROFESSIONAL LIABILITY COVERAGE PART
PASTORAL PROFESSIONAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
STOP PAYMENT OR DISHONOR LIABILITY COVERAGE PART.

A. The paragraph relating to prejudgment interest in SUPPLEMENTARY PAYMENTS is replaced by the following:

Prejudgment interest awarded against the insured on that part of the judgment we pay.

B. With respect to the DUTIES Condition, notice to our authorized agent shall be considered notice to us.

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ILLINOIS CHANGES - CANCELLATION AND NONRENEWAL

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
COMMERCIAL UMBRELLA LIABILITY COVERAGE PART
EMPLOYEE BENEFITS LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
STOP PAYMENT OR DISHONOR LIABILITY COVERAGE PART.

A. CANCELLATION (Common Policy Conditions) is replaced by the following:
CANCELLATION

1. The first Named Insured shown in the Declarations may cancel this policy by mailing to us advance written notice of cancellation.

2. a. We may cancel this policy by mailing to you written notice stating the reason for cancellation.

   b. If we cancel for nonpayment of premium, we will mail the notice at least 10 days prior to the effective date of cancellation.

   c. If we cancel for a reason other than nonpayment of premium, we will mail the notice at least:

      (1) 30 days prior to the effective date of cancellation if the policy has been in effect for 60 days or less.

      (2) 60 days prior to the effective date of cancellation if the policy has been in effect for more than 60 days.

3. If this policy has been in effect for more than 60 days, we may cancel only for one or more of the following reasons:

   a. Nonpayment of premium;

   b. The policy was obtained through a material misrepresentation;

   c. Any insured has violated any of the terms and conditions of the policy;

   d. The risk originally accepted has measurably increased;

   e. Certification to the Director of Insurance of the loss of reinsurance by the insurer that provided coverage to us for all or a substantial part of the underlying risk insured; or

   f. A determination by the Director of Insurance that the continuation of the policy could place us in violation of the insurance laws of this State.

4. Notice of cancellation will state the effective date of cancellation. The policy period will end on that date.

5. If this policy is cancelled we will send the first Named Insured any premium refund due. If we cancel, the refund will be pro rata. If the first Named Insured cancels, the refund will be less than pro rata. The cancellation will be effective even if we have not offered a refund.

B. The following is added and supersedes any provision to the contrary:
NONRENEWAL

1. If we decide not to renew this policy, we will mail written notice stating the reason for nonrenewal no less than 60 days before the expiration date to:

   a. You; and

   b. The broker, if known to us, or the agent of record.

2. Even if we do not comply with these terms, this policy will terminate:

   a. On the expiration date if:

      (1) You fail to perform any of your obligations in connection with the payment of the premium for the policy, or any installment payment, whether payable indirectly to us or our agents or indirectly under any premium finance plan or extension of credit; or

      (2) We have indicated our willingness to renew this policy to you or your representative; or

      (3) You have notified us or our agent that you do not want to renew this policy.

   b. On the effective date of any other insurance replacing this policy.

C. Mailing of Notices
We will mail cancellation and nonrenewal notices to you, and the agent or broker, at the last addresses known to us. Proof of mailing will be sufficient proof of notice.

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DEDUCTIBLE LIABILITY INSURANCE

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART.

SCHEDULE

Coverage	Amount and Basis of Deductible		
	Per Claim	Per Occurrence	
Bodily Injury Liability	$	$	
Property Damage Liability	$	$	250
Bodily Injury Liability and Property Damage Liability Combined	$	$	

APPLICATION OF ENDORSEMENT:

1. Our obligation under the Bodily Injury Liability and Property Damage Liability Coverages to pay damages on your behalf applies only to the amount of damages in excess of any deductible amounts stated in the Schedule above as applicable to such coverages.

2. The deductible applies to the coverage option and basis of deductible indicated by the location of the deductible amount in the Schedule above. The deductible amount stated in the Schedule applies as follows:

   a. **PER CLAIM BASIS**

   If the deductible amount indicated in the Schedule above is on a per claim basis, that deductible amount applies as follows:

   (1) Under Bodily Injury Liability Coverage, to all damages sustained by any one person because of "bodily injury";

   (2) Under Property Damage Liability Coverage, to all damages sustained by any one person because of "property damage"; or

   (3) Under Bodily Injury Liability and Property Damage Liability Coverage Combined, to all damages sustained by any one person because of:

   (a) "Bodily injury";

   (b) "Property damage"; or

   (c) "Bodily injury" and "property damage" combined;

   as the result of any one "occurrence."

   If damages are claimed for care, loss of services or death resulting at any time from "bodily injury," a separate deductible amount will be applied to each person making a claim for such damages.

   With respect to "property damage," person includes an organization.

   b. **PER OCCURRENCE BASIS**

   If the deductible amount indicated in the Schedule above is on a per "occurrence" basis, that deductible amount applies as follows:

   (1) Under Bodily Injury Liability Coverage, to all damages because of "bodily injury";

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EXCLUSION - ASBESTOS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
RAILROAD PROTECTIVE LIABILITY COVERAGE PART.

This insurance does not apply to:

1. "Bodily injury," "personal injury" or "property damage" arising out of the actual, alleged or threatened exposure to asbestos; or

2. Any loss, cost or expense arising out of any:

   a. Request, demand or order that any insured or others test for, monitor, clean up, remove or contain, or in any way respond to, or assess the effects of asbestos; or

   b. Claim or "suit" by or on behalf of any person, organization or governmental authority for damages because of testing for, monitoring, cleaning up or removing, containing, or in any way responding to, or assessing the effects of asbestos.

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EMPLOYMENT-RELATED PRACTICES EXCLUSION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

1. The following exclusion is added to COVERAGE A (Section I):

   o. "Bodily injury" arising out of any:

      (1) Refusal to employ;

      (2) Termination of employment;

      (3) Coercion, demotion, evaluation, reassignment, discipline, defamation, harassment, humiliation, discrimination or other employment-related practices, policies, acts or omissions; or

      (4) Consequential "bodily injury" as a result of (1) through (3) above.

   This exclusion applies whether the insured may be held liable as an employer or in any other capacity and to any obligation to share damages with or to repay someone else who must pay damages because of the injury.

2. The following exclusion is added to COVERAGE B (Section I):

   c. "Personal injury" arising out of any:

      (1) Refusal to employ;

      (2) Termination of employment;

      (3) Coercion, demotion, evaluation, reassignment, discipline, defamation, harassment, humiliation, discrimination or other employment-related practices, policies, acts or omissions; or

      (4) Consequential "personal injury" as a result of (1) through (3) above.

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MISSOURI CHANGES - GUARANTY ASSOCIATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
COMMERCIAL UMBRELLA LIABILITY COVERAGE PART
EMPLOYEE BENEFITS LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
FUNERAL DIRECTORS PROFESSIONAL LIABILITY COVERAGE PART
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART
PASTORAL PROFESSIONAL LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
RAILROAD PROTECTIVE LIABILITY COVERAGE PART
STOP PAYMENT OR DISHONOR LIABILITY COVERAGE PART.

Missouri Property and Casualty Insurance Guaranty Association Coverage Limitations

A. Subject to the provisions of the Missouri Property and Casualty Insurance Guaranty Association Act (to be referred to as the Act), if we are a member of the Missouri Property and Casualty Insurance Guaranty Association (to be referred to as the Association), the Association will pay claims covered under the Act if we become insolvent.

B. The Act contains various exclusions, conditions and limitations that govern a claimant's eligibility to collect payment from the Association and affect the amount of any payment. The following limitations apply subject to all other provisions of the Act:

1. Claims covered by the Association do not include a claim by or against an insured of an insolvent insurer, if the insured has a net worth of more than $25 million on the date the insurer becomes insolvent.

   If the insured prepares an annual report to shareholders, or an annual report to management reflecting net worth, then such report for the fiscal year immediately preceding the date of insolvency of the insurer will be used to determine net worth.

2. Payments made by the Association for covered claims will include only that amount of each claim which is:

   a. In excess of $100; and

   b. Less than $300,000.

   However, the Association will not:

   (1) Pay an amount in excess of the applicable limit of insurance of the policy from which a claim arises; or

   (2) Return to an insured any unearned premium in excess of $10,000.

These limitations have no effect on the coverage we will provide under this policy.

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USF&G® INSURANCE

EMPLOYEE BENEFITS LIABILITY COVERAGE PART — DECLARATIONS

Policy No. 1MP30081357900

LIMITS OF INSURANCE:

$ 3,000,000. Aggregate Limit

$ 1,000,000. Each Claim Limit (Subject to a $1000 deductible)

FORM OF BUSINESS:

☐ Individual ☐ Partnership ☐ Joint Venture ☒ Corporation

☐ Other _____

PREMIUM SCHEDULE:

Code No.	Premium Basis (Estimated Number of Employees)	Rate	Advance Premium
72000	250	Flat Charge $ 361. + Rate Per Employee $	$361.

TOTAL ADVANCE PREMIUM FOR THIS COVERAGE PART: $361.

AUDIT PERIOD: ☒ Annually ☐ Semi-annually ☐ Quarterly ☐ Monthly

FORMS AND ENDORSEMENTS APPLICABLE TO THIS COVERAGE PART:

CL/IL 262 08 86, CL/CG 00 03 07 90

RETROACTIVE DATE:

03-31-90 (Enter date or "None" if no Retroactive Date applies.)

This insurance does not apply to damages caused by an "Employee Benefits Incident" which occurred before the Retroactive Date, if any, shown above.

EMPLOYEE BENEFITS LIABILITY COVERAGE FORM

THIS INSURANCE PROVIDES CLAIMS—MADE COVERAGE. PLEASE READ THE ENTIRE FORM CAREFULLY.

Various provisions in this policy restrict coverage. Read the entire policy carefully to determine rights, duties and what is and is not covered.

Throughout this policy the words "you" and "your" refer to the Named Insured shown in the Declarations, and any other person or organization qualifying as a Named Insured under this policy. The words "we," "us" and "our" refer to the Company providing this insurance.

The word "insured" means any person or organization qualifying as such under WHO IS AN INSURED (SECTION II).

Other words and phrases that appear in quotation marks have special meaning. Refer to DEFINITIONS (SECTION VI).

SECTION I - COVERAGE

1. **Insuring Agreement.**
   a. We will pay those sums that the insured becomes legally obligated to pay as damages because of injury to any "employee," or to the dependents or beneficiaries of any "employee," caused by an "employee benefits incident" to which this insurance applies. We will have the right and duty to defend any "suit" seeking those damages. We may at our discretion investigate any "employee benefits incident" and settle any claim or "suit" that may result. But:
      (1) The amount we will pay for damages is limited as described in LIMITS OF INSURANCE (SECTION III); and
      (2) Our right and duty to defend end when we have used up the applicable limit of insurance in the payment of judgments or settlements under this Coverage Part.

      No other obligation or liability to pay sums or perform acts or services is covered unless explicitly provided for under SUPPLEMENTARY PAYMENTS.
   b. This insurance applies to an "employee benefits incident" only if:
      (1) The "employee benefits incident" takes place in the "coverage territory";
      (2) The "employee benefits incident" did not occur before the Retroactive Date, if any, shown in the Declarations or after the end of the policy period; and
      (3) A claim for damages because of the "employee benefits incident" is first made against any insured, in accordance with paragraph c. below, during the policy period or any Extended Reporting Period we provide under EXTENDED REPORTING PERIODS (SECTION V).
   c. A claim by any "employee" or the dependents or beneficiaries of any "employee" seeking damages will be deemed to have been made at the earlier of the following times:
      (1) When notice of such claim is received and recorded by any insured or by us, whichever comes first; or
      (2) When we make settlement in accordance with paragraph 1.a. above.

      All claims for damages because of injury to the same "employee," including damages claimed by any beneficiary or dependent, arising out of the same "employee benefits incident" will be deemed to have been made at the time the first of these claims is made against any insured.
2. **Exclusions.**

   This insurance does not apply to:
   a. Any dishonest, fraudulent, criminal or malicious act.
   b. Libel, slander, discrimination, or humiliation.
   c. Bodily injury, death, care and loss of services.
   d. Property damage, including the loss of use of property.
   e. Any claim for failure of performance of contract by any insurer.
   f. Any claim based on your failure to comply with any law concerning workers compensation, unemployment insurance, social security or disability benefits.
   g. Any claim based on failure of stock to perform as represented by any insured.
   h. Any claim based on advice given by any insured to participate or not to participate in stock subscription plans.
   i. Liability of a fiduciary imposed by the Employee Retirement Income Security Act of 1974 (ERISA) as now or hereafter amended.

SUPPLEMENTARY PAYMENTS

We will pay, with respect to any claim or "suit" we defend:

1. All expenses we incur.
2. The cost of bonds to release attachments, but only for bond amounts within the applicable limit of insurance. We do not have to furnish these bonds.

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3. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit," including actual loss of earnings up to $100 a day because of time off from work.
4. All costs taxed against the insured in the "suit."
5. Pre-judgment interest awarded against the insured on that part of the judgment we pay. If we make an offer to pay the applicable limit of insurance, we will not pay any pre-judgment interest based on that period of time after the offer.
6. All interest on the full amount of any judgment that accrues after entry of the judgment and before we have paid, offered to pay, or deposited in court the part of the judgment that is within the applicable limit of insurance.

These payments will not reduce the limits of insurance.

SECTION II - WHO IS AN INSURED

1. If you are designated in the Declarations as:
   a. An individual, you and your spouse are insureds, but only with respect to the conduct of a business of which you are the sole owner.
   b. A partnership or joint venture, you are an insured. Your members, your partners and their spouses are also insureds, but only with respect to the conduct of your business.
   c. An organization other than a partnership or joint venture, you are an insured. Your executive officers and directors are insureds, but only with respect to their duties as your officers or directors. Your stockholders are also insureds, but only with respect to their liability as stockholders.
2. Each of the following is also an insured:
   a. Your "employees," other than your executive officers, authorized to act in the administration of "employee benefits."
   b. Your legal representative if you die, but only with respect to duties as such. That representative will have all your rights and duties under this Coverage Part.
3. Any organization you newly acquire or form, other than a partnership or joint venture, and over which you maintain ownership or majority interest, will qualify as a Named Insured if there is no similar insurance available to that organization. However:
   a. Coverage under this provision is afforded only until the 90th day after you acquire or form the organization or the end of the policy period, whichever is earlier; and
   b. Coverage does not apply to an "employee benefits incident" that occurred before you acquired or formed the organization.

No person or organization is an insured with respect to the conduct of any current or past partnership or joint venture that is not shown as a Named Insured in the Declarations.

SECTION III - LIMITS OF INSURANCE

1. The Limits of Insurance shown in the Declarations and the rules below fix the most we will pay regardless of the number of:
   a. Insureds;
   b. Claims made or "suits" brought; or
   c. "Employees," or dependents or beneficiaries of "employees," making claims or bringing "suits."
2. The Aggregate Limit is the most we will pay for all damages because of all claims covered by this insurance.
3. The Each Claim Limit is the most we will pay for all damages because of any one claim.
4. Our obligation to pay damages applies only to the amount of those damages in excess of a $1000 each claim deductible, and the Each Claim Limit will be reduced by this amount. The Aggregate Limit will not be reduced by the application of the deductible amount.

   We may pay any part or all of the deductible amount to effect settlement of any claim or "suit" and, upon notification of the action taken, you shall promptly reimburse us for such part of the deductible amount as has been paid by us.

The limits of this Coverage Part apply separately to each consecutive annual period and to any remaining period of less than 12 months, starting with the beginning of the policy period shown in the Declarations, unless the policy period is extended after issuance for an additional period of less than 12 months. In that case, the additional period will be deemed part of the last preceding period for purposes of determining the Limits of Insurance.

SECTION IV - EMPLOYEE BENEFITS LIABILITY CONDITIONS

1. **Bankruptcy.**

   Bankruptcy or insolvency of the insured or of the insured's estate will not relieve us of our obligations under this Coverage Part.
2. **Duties In The Event Of An Employee Benefits Incident, Claim Or Suit.**
   a. Regardless of whether the loss exceeds the deductible amount in paragraph 4. of LIMITS OF INSURANCE (SECTION III), you must see to it that we are notified as soon as practicable of any "employee benefits incident" which may result in a claim. To the extent possible, notice should include:
      (1) How, when and where the "employee benefits incident" took place;
      (2) The names and addresses of any injured "employee," dependents or beneficiaries of any "employee," and witnesses; and

(3) The nature and location of any injury caused by the "employee benefits incident."

Notice of an "employee benefits incident" is not notice of a claim.

b. If a claim is received by any insured you must:

(1) Immediately record the specifics of the claim and the date received; and

(2) Notify us as soon as practicable.

You must see to it that we receive written notice of the claim as soon as practicable.

c. You and any other involved insured must:

(1) Immediately send us copies of any demands, notices, summonses or legal papers received in connection with the claim or a "suit";

(2) Authorize us to obtain records and other information;

(3) Cooperate with us in the investigation, settlement or defense of the claim or "suit"; and

(4) Assist us, upon our request, in the enforcement of any right against any person or organization which may be liable to the insured because of injury to which this insurance may also apply.

d. No insureds will, except at their own cost, voluntarily make a payment, assume any obligation, or incur any expense without our consent.

3. **Legal Action Against Us.**

No person or organization has a right under this Coverage Part:

a. To join us as a party or otherwise bring us into a "suit" asking for damages from an insured; or

b. To sue us on this Coverage Part unless all of its terms have been fully complied with.

A person or organization may sue us to recover on an agreed settlement or on a final judgment against an insured obtained after an actual trial; but we will not be liable for damages that are not payable under the terms of this Coverage Part or that are in excess of the applicable limit of insurance. An agreed settlement means a settlement and release of liability signed by us, the insured and the claimant or the claimant's legal representative.

4. **Other Insurance.**

If other valid and collectible insurance is available to the insured for a loss we cover under this Coverage Part, our obligations are limited as follows:

a. Primary Insurance.

This insurance is primary except when b. below applies. If this insurance is primary, our obligations are not affected unless any of the other insurance is also primary. Then, we will share with all that other insurance by the method described in c. below.

b. Excess Insurance.

This insurance is excess over any other insurance, whether primary, excess, contingent or on any other basis, that is effective prior to the beginning of the policy period shown in the Declarations of this insurance and applies to an "employee benefits incident" on other than a claims-made basis, if:

(1) No Retroactive Date is shown in the Declarations of this insurance; or

(2) The other insurance has a policy period which continues after the Retroactive Date shown in the Declarations of this insurance.

When this insurance is excess, we will have no duty to defend any claim or "suit" that any other insurer has a duty to defend. If no other insurer defends, we will undertake to do so, but we will be entitled to the insured's rights against all those other insurers.

When this insurance is excess over other insurance, we will pay only our share of the amount of the loss, if any, that exceeds the sum of:

(1) The total amount that all such other insurance would pay for the loss in the absence of this insurance; and

(2) The total of all deductible and self-insured amounts under all that other insurance.

We will share the remaining loss, if any, with any other insurance that is not described in this Excess Insurance provision and was not bought specifically to apply in excess of the Limits of Insurance shown in the Declarations of this Coverage Part.

c. Method of Sharing

If all of the other insurance permits contribution by equal shares, we will follow this method also. Under this approach each insurer contributes equal amounts until it has paid its applicable limit of insurance or none of the loss remains, whichever comes first.

If any of the other insurance does not permit contribution by equal shares, we will contribute by limits. Under this method, each insurer's share is based on the ratio of its applicable limit of insurance to the total applicable limits of insurance of all insurers.

5. **Premium Audit.**

a. We will compute all premiums for this Coverage Part in accordance with our rules and rates.

b. Premium shown in this Coverage Part as advance premium is a deposit premium only. At the close of each audit period we will compute the earned premium for that period.

Audit premiums are due and payable on notice to the first Named Insured. If the sum of the

advance and audit premiums paid for the policy term is greater than the earned premium, we will return the excess to the first Named Insured.

c. The first Named Insured must keep records of the number of "employees" employed during the policy period and send us this information annually, if this coverage is written for more than one year, or when requested for premium computation.

6. **Representations.**

By accepting this policy, you agree:

a. The statements in the Declarations are accurate and complete;

b. Those statements are based upon representations you made to us; and

c. We have issued this policy in reliance upon your representations.

7. **Separation Of Insureds.**

Except with respect to the Limits of Insurance, and any rights or duties specifically assigned in this Coverage Part to the first Named Insured, this insurance applies:

a. As if each Named Insured were the only Named Insured; and

b. Separately to each insured against whom claim is made or "suit" is brought.

8. **Transfer Of Rights Of Recovery Against Others To Us.**

If the insured has rights to recover all or part of any payment we have made under this Coverage Part, those rights are transferred to us. The insured must do nothing after loss to impair them. At our request, the insured will bring "suit" or transfer those rights to us and help us enforce them.

9. **When We Do Not Renew.**

If we decide not to renew this Coverage Part, we will mail or deliver to the first Named Insured shown in the Declarations written notice of the nonrenewal not less than 30 days before the expiration date.

If notice is mailed, proof of mailing will be sufficient proof of notice.

10. **Your Right To Claim And Employee Benefits Incident Information.**

We will provide the first Named Insured shown in the Declarations the following information relating to this and any preceding employee benefits liability claims-made Coverage Part we have issued to you during the previous three years:

a. A list or other record of each "employee benefits incident" not previously reported to any other insurer, of which we were notified in accordance with paragraph 2.a. of this Section. We will include the date and brief description of the "employee benefits incident" if that information was in the notice we recieved.

b. A summary by policy year, of payments made and amounts reserved, stated separately, under any applicable Aggregate Limit.

Amounts reserved are based on our judgment. They are subject to change and should not be regarded as ultimate settlement values.

You must not disclose this information to any claimant or any claimant's representative without our consent.

If we cancel or elect not to renew this Coverage Part, we will provide such information no later than 30 days before the date of policy termination. In other circumstances, will provide this information only if we receive a written request from the first Named Insured within 60 days after the end of the policy period. In this case, we will provide this information within 45 days of receipt of the request.

We compile claim and "employee benefits incident" information for our own business purposes and exercise reasonable care in doing so. In providing this information to the first Named Insured, we make no representations or warranties to insureds, insurers, or others to whom this information is furnished by or on behalf of any insured. Cancellation or nonrenewal will be effective even if we inadvertently provide inaccurate information.

SECTION V - EXTENDED REPORTING PERIODS

1. We will provide one or more Extended Reporting Periods, as described below, if:

a. This Coverage Part is cancelled or not renewed; or

b. We renew or replace this Coverage Part with insurance that has a Retroactive Date later than the date shown in the Declarations of this Coverage Part.

2. Extended Reporting Periods do not extend the policy period or change the scope of coverage provided. They apply only to claims for an "employee benefits incident" that occurs before the end of the policy period but not before the Retroactive Date, if any, shown in the Declarations.

Once in effect, Extended Reporting Periods may not be cancelled.

3. A Basic Extended Reporting Period is automatically provided without additional charge. This period starts with the end of the policy period and lasts for:

a. Five years for claims because of injury arising out of an "employee benefits incident" reported to us, not later than 60 days after the end of the policy period, in accordance with paragraph 2.a. of EMPLOYEE BENEFITS LIABILITY CONDITIONS (SECTION IV); or

b. Sixty days for all other claims.

The Basic Extended Reporting Period does not apply to claims that are covered under any subsequent

insurance you purchase, or that would be covered but for exhaustion of the amount of insurance applicable to such claims.

4. A Supplemental Extended Reporting Period of unlimited duration is available, but only by an endorsement and for an extra charge. This supplemental period starts when the Basic Extended Reporting Period, set forth in paragraph 3. above, ends.

   You must give us a written request for the endorsement within 60 days after the end of the policy period. The Supplemental Extended Reporting Period will not go into effect unless you pay the additional premium promptly when due.

   We will determine the additional premium in accordance with our rules and rates. In doing so, we may take into account the following:

   a. The exposures insured;
   b. Previous types and amounts of insurance;
   c. Limits of Insurance available under this Coverage Part for future payment of damages; and
   d. Other related factors.

   The additional premium will not exceed 200% of the annual premium for this Coverage Part.

   This endorsement shall set forth the terms, not inconsistent with this Section, applicable to the Supplemental Extended Reporting Period, including a provision to the effect that the insurance afforded for claims first received during such period is excess over any other valid and collectible insurance available under policies in force after the Supplemental Extended Reporting Period starts.

5. The Basic Extended Reporting Period does not reinstate or increase the Limits of Insurance.

6. If the Supplemental Extended Reporting Period is in effect, we will provide the separate aggregate limit of insurance described below, but only for claims first received and recorded during the Supplemental Extended Reporting Period.

   The separate aggregate limit of insurance will be equal to the dollar amount shown in the Declarations in effect at the end of the policy period.

   Paragraph 2. of LIMITS OF INSURANCE (SECTION III) will be amended accordingly. The Each Claim Limit shown in the Declarations will then continue to apply, as set forth in paragraph 3. of that Section.

SECTION VI - DEFINITIONS

1. "Coverage territory" means the United States of America (including its territories and possessions), Puerto Rico and Canada.

2. "Employee" means a prospective, present or former employee of the Named Insured.

3. "Employee benefits incident" means an act, error or omission in:

   a. Giving counsel to "employees" with respect to "employee benefits";
   b. Interpreting "employee benefits";
   c. Handling of records in connection with "employee benefits";
   d. Effecting enrollment, termination or cancellation of "employees" under "employee benefits";

   performed by a person authorized by the Named Insured to perform such services.

4. "Employee benefits" means:

   a. Group life insurance;
   b. Group accident and health insurance;
   c. Profit sharing plans;
   d. Pension plans;
   e. "Employee" stock subscriptions;
   f. Workers compensation;
   g. Unemployment insurance;
   h. Social security;
   i. Disability benefits insurance; and
   j. Travel, savings or vacation plans.

5. "Suit" means a civil proceeding in which damages because of an injury caused by an "employee benefits incident" to which this insurance applies is alleged. "Suit" includes:

   a. An arbitration proceeding in which such damages are claimed and to which you must submit or do submit with our consent; or
   b. Any other alternative dispute resolution proceeding in which such damages are claimed and to which you submit with our consent.

USF&G® INSURANCE

EMPLOYERS LIABILITY (STOP GAP) COVERAGE PART — DECLARATIONS

Policy No. 1MP30081357900

LIMITS OF INSURANCE:

Bodily Injury by Accident

$ 1,000,000. Each Accident

Bodily Injury by Disease

$ 1,000,000. Aggregate
$ 1,000,000. Each Employee

FORM OF BUSINESS:

☐ Individual ☐ Partnership ☐ Joint Venture ☒ Corporation
☐ Other _____

STATE(S) COVERED:

WASHINGTON
OHIO

PREMIUM SCHEDULE:

Classification	Code No.	Premium Basis	Rate	Advance Premium
		Remuneration	Per $100 of Remuneration	
PLASTIC OR RUBBER GOODS MFG. WASHINGTON	58058	3,500,000.	.065	2,275.

TOTAL ADVANCE PREMIUM FOR THIS COVERAGE PART: $ 2,275.

PREMIUM BASIS: The Premium Basis is remuneration which includes payroll and all other remuneration paid or payable during the policy period for the services of all your officers and employees reported under the workers compensation fund of any state listed above.

AUDIT PERIOD: ☒ Annually ☐ Semi-annually ☐ Quarterly ☐ Monthly

FORMS AND ENDORSEMENTS APPLICABLE TO THIS COVERAGE PART: CL/IL 281 01 86
CL/CG 00 02 05 86, CL/CG 22 15 05 88

EMPLOYERS LIABILITY (STOP GAP) COVERAGE FORM

Various provisions in this policy restrict coverage. Read the entire policy carefully to determine rights, duties and what is and is not covered.

Throughout this policy the words "you" and "your" refer to the Named Insured shown in the Declarations. The words "we," "us" and "our" refer to the Company providing this insurance.

The word "insured" means any person or organization qualifying as such under Section II - WHO IS AN INSURED.

Other words and phrases that appear in quotation marks have special meaning. Refer to Section V - DEFINITIONS.

SECTION I - COVERAGE

1. Insuring Agreement.

a. We will pay those sums that the insured becomes legally obligated to pay as damages because of "bodily injury" to an employee of the insured, provided the "bodily injury" is covered by this insurance. No other obligation or liability to pay sums or perform acts or services is covered unless explicitly provided for under SUPPLEMENTARY PAYMENTS. The "bodily injury" must arise out of and in the course of the injured employee's employment by the insured. The employment must be necessary or incidental to the insured's work in a state listed in the Declarations. The "bodily injury" must occur in the "coverage territory." We will have the right and duty to defend any "suit" seeking these damages. But:

(1) The amount we will pay for damages is limited as described in SECTION III - LIMITS OF INSURANCE;

(2) We may investigate and settle any claim or "suit" at our discretion; and

(3) Our right and duty to defend end when we have used up the applicable limit of insurance in the payment of judgments or settlements under this insurance.

b. Damages because of "bodily injury" include damages:

(1) Claimed by any person or organization for care, loss of services or death resulting at any time from the "bodily injury";

(2) For which the insured is liable to a third party by reason of a claim or "suit" against the insured by that third party to recover the damages claimed against such third party as a result of injury to the insured's employee;

(3) For consequential "bodily injury" to a spouse, child, parent, brother or sister of the injured employee;

Provided that these damages are the direct consequence of "bodily injury" that arises out of and in the course of the injured employee's employment by you; and

(4) Because of "bodily injury" to the insured's employee that arises out of and in the course of employment claimed against the insured in a capacity other than as employer.

2. Exclusions.

This insurance does not apply to:

a. "Bodily injury" to or caused by an employee while employed in violation of law with the insured's actual knowledge or the actual knowledge of any of the insured's executive officers or partners;

b. "Bodily injury" to an employee whose remuneration has not been included in the remuneration upon which premium for this insurance is computed;

c. "Bodily injury" to an employee who has not been reported to and declared under the workers compensation law of a state listed in the Declarations.

d. "Bodily injury" to:

(1) a master or member of the crew of any vessel;

(2) an employee while operating an aircraft or performing any duty in connection with aircraft while in flight; or

(3) an employee in employment subject to:

(a) the Longshoremen's and Harbor Workers' Compensation Act (33 USC Sections 901-950);

(b) the Defense Base Act (42 USC Sections 1651-1654);

(c) the Nonappropriated Fund Instrumentalities Act (5 USC Sections 8171-8173);

(d) the Outer Continental Shelf Lands Act (43 USC Section 1333.c);

(e) the Federal Employers Liability Act (45 USC Sections 51-60);

(f) the Federal Coal Mine Health and Safety Act of 1969 (30 USC Sections 931-942); or

any amendment to these Acts;

e. "Bodily injury" for which the insured is obligated to pay damages by reason of the assumption of liability in a contract;

f. "Bodily injury" intentionally caused or aggravated by or at the direction of the insured or any executive officer, director or partner of the insured;

g. Punitive or exemplary damages because of "bodily injury" to an employee employed in violation of law;

h. Damages arising out of the discharge of, coercion of, or discrimination against any employee in violation of law;

i. Any claim with respect to which the insured is deprived of any defense or defenses or is otherwise subject to penalty because of default in premium payment or any other failure to comply with the provisions of any workers compensation law;

j. Any premium, assessment, penalty, fine, benefits or other obligation imposed by a workers compensation, disability benefits or unemployment compensation law or any similar law.

Except with respect to benefits payable under any workers compensation law, Exclusions f. and j. do not apply to damages arising out of "bodily injury" to an employee intentionally caused or aggravated by a co-employee (other than an executive officer) in the course of the co-employee's employment.

SUPPLEMENTARY PAYMENTS

We will pay, with respect to any claim or "suit" we defend:

1. All expenses we incur.
2. The cost of bonds to release attachments but only for bond amounts within the applicable limit of insurance. We do not have to furnish these bonds.
3. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit" but not loss of earnings.
4. All costs taxed against the insured in the "suit."
5. Interest on a judgment as required by law until we offer the amount due under this insurance.

These payments will not reduce the limits of insurance.

SECTION II - WHO IS AN INSURED

You are an insured if you are designated in the Declarations. If the insured is a partnerhsip, each partner of that partnership is an insured, but only in his or her capacity as an employer of the partnership's employees.

SECTION III - LIMITS OF INSURANCE

1. The Limits of Insurance shown in the Declarations and the rules below fix the most we will pay regardless of the number of:
   a. Insureds; or
   b. Claims made or "suits" brought.
2. The Bodily Injury by Accident Limit is the most we will pay for all damages covered by this insurance because of "bodily injury" to one or more employees in any one accident.
3. The Bodily Injury by Disease-Aggregate Limit is the most we will pay for all damages covered by this insurance and arising out of bodily injury by disease regardless of the number of employees who sustain "bodily injury" by disease.
4. Subject to 3. above, the Bodily Injury by Disease-Each Employee Limit is the most we will pay for all damages because of bodily injury by disease to any one employee.

If the policy period is longer than one year and sixteen days, the limits of this Coverage Part will apply as though a new policy were issued on each annual anniversary that this policy is in force.

SECTION IV - EMPLOYERS LIABILITY (STOP GAP) CONDITIONS

1. **Bankruptcy.**

   Bankruptcy or insolvency of the insured or of the insured's estate will not relieve us of our obligations under this Coverage Part.

2. **Duties in the Event Injury Occurs.**
   a. You must see to it that we are notified at once if injury occurs that may be covered by this Coverage Part. Notice should include:
      (1) The names and addresses of the injured persons and witnesses.
      (2) How, when and where the injury took place.
   b. If a claim is made or "suit" is brought against any insured, you must see to it that we receive prompt written notice of the claim or suit.
   c. You and any other involved insured must:
      (1) Immediately send us copies of any demands, notices, summonses or legal papers received in connection with the claim or "suit";
      (2) Authorize us to obtain records and other information;
      (3) Cooperate with us in the investigation, settlement or defense of the claim or "suit"; and
      (4) Assist us, upon our request, in the enforcement of any right against any person or organization which may be liable to the insured because of injury to which this insurance may also apply.
   d. No insureds will, except at their own cost, voluntarily make a payment, assume any obligation, or incur any expense without our consent.

3. **Legal Action Against Us.**

   No person or organization has a right under this Coverage Part:
   a. To join us as a party or otherwise bring us into a "suit" asking damages from an insured; or
   b. To sue us on this Coverage Part unless all of its terms have been fully complied with.

   A person or organization may sue us to recover on an agreed settlement or on a final judgment against an insured obtained after an actual trial; but we will not be liable for damages that are not payable under the terms of this Coverage Part or that are in excess of the applicable limit of insurance. An agreed settlement means a settlement and release of liability signed by us, the insured and the claimant or the claimant's legal representative.

4. **Other Insurance.**

If other valid and collectible insurance is available to the insured for a loss we cover under this Coverage Part, our obligations are limited as follows:

a. If all the other insurance permits contributions by equal shares, we will follow this method also. Under this approach each insurer contributes equal amounts until it has paid its applicable limit of insurance or none of the loss remains, whichever comes first.

b. If any of the other insurance does not permit contribution by equal shares, we will contribute by limits. Under this method, each insurer's share is based on the ratio of its applicable limits of insurance to the total applicable limits of insurance of all insurers.

5. **Premium Audit.**

a. We will compute all premiums for this Coverage Part in accordance with our rules and rates.

b. Premium shown in this Coverage Part as advance premium is a deposit premium only. At the close of each audit period we will compute the earned premium for that period. Audit premiums are due and payable on notice to the first Named Insured. If the sum of the advance and audit premium paid for the policy term is greater than the earned premium, we will return the excess to the first Named Insured.

c. The first Named Insured must keep records of the information we need for premium computation, and send us copies at such times as we may request.

6. **Representations.**

By accepting this policy, you agree:

a. The statements in the Declarations are accurate and complete;

b. These statements are based upon representations you made to us; and

c. We have issued this policy in reliance upon your representations.

7. **Separation of Insureds.**

Except with respect to the Limits of Insurance, and any rights or duties specifically assigned in this Coverage Part to the first Named Insured, this insurance applies:

a. As if each Named Insured were the only Named Insured; and

b. Separately to each insured against whom claim is made or "suit" is brought.

8. **Transfer Of Rights Of Recovery Against Others to Us.**

If the insured has rights to recover all or part of any payment we have made under this Coverage Part, those rights are transferred to us. The insured must do nothing after loss to impair them. At our request, the insured will bring "suit" or transfer those rights to us and help us enforce them.

SECTION V - DEFINITIONS

1. "Bodily injury" means:

a. Bodily injury by accident. A disease is not bodily injury by accident unless it results directly from a bodily injury by accident. Bodily injury by accident must occur during the policy period; or

b. Bodily injury by disease. Bodily injury by disease must be caused or aggravated by the conditions of the insured's employment. Bodily injury by disease does not include disease that results directly from a bodily injury by accident. The employee's last day of last exposure to the conditions causing or aggravating bodily injury by disease must occur during the policy period.

Bodily injury includes resulting death.

2. "Coverage territory" means:

a. The United States of America (including its territories and possessions), Puerto Rico and Canada; or

b. All parts of the world if:

(1) The injured employee is a citizen or resident of the United States of America or Canada but is away from the territory described in a. above for a short time; and

(2) The insured's responsibility to pay damages is determined in a "suit" on the merits, in the territory described in a. above.

3. "Suit" means a court proceeding in which damages because of "bodily injury" to which this insurance applies are alleged. "Suit" includes an arbitration proceeding alleging such damages to which you must submit or submit with our consent.

COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY.
PLEASE READ IT CAREFULLY.

AMENDATORY ENDORSEMENT
EMPLOYMENT PRACTICES EXCLUSION

THIS ENDORSEMENT MODIFIES INSURANCE PROVIDED UNDER THE FOLLOWING:

EMPLOYERS LIABILITY (STOP GAP) COVERAGE PART.

EXCLUSION h. OF COVERAGE (SECTION 1) IS REPLACED BY THE FOLLOWING:

h. DAMAGES ARISING OUT OF COERCION, CRITICISM, DEMOTION, EVALUATION, REASSIGNMENT, DISCIPLINE, DEFAMATION, HARASSMENT, HUMILIATION, DISCRIMINATION AGAINST OR TERMINATION OF ANY EMPLOYEE, OR ANY PERSONNEL PRACTICES, POLICIES, ACTS OR OMISSIONS;

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COMMERCIAL INSURANCE POLICY - COMMON POLICY DECLARATIONS

USF&G® INSURANCE

Policy No. 1AB 300542231 01 Renewal of 1AB 300542231 00

1. **NAMED INSURED AND MAILING ADDRESS:**
(No., Street, City, State, Zip Code)

ERSHIGS, INC. AND PER ENDT
PO BOX 1707
BELLINGHAM, WA 98227-1707

[X] **United States Fidelity and Guaranty Company**

[ ] **Fidelity and Guaranty Insurance Underwriters, Inc.**

[ ] **Fidelity and Guaranty Insurance Company**

(Each a Stock Insurance Company)

The issuing company is designated above by the letter X.

Branch Office: SEATTLE
Agent:
PARKER, SMITH & FEEK, INC

Address:
1700 FIRST INTERSTATE CENTER
999 THIRD AVENUE
SEATTLE, WA 98104

Agent's Code: 3132
Countersigned By:

2. **POLICY PERIOD:**

From 03/31/93 to 03/31/94

12:01 A.M. standard time at your mailing address shown above.

3. **BUSINESS DESCRIPTION**
MFG/INSTALL CHIMNEY

4. In return for the payment of the premium, and subject to all the terms of this policy, we agree with you to provide the insurance as stated in this policy. This policy consists of the following Coverage Part(s) for which a premium is indicated. This premium may be subject to adjustment. The Policy Writing Minimum Premium is $100.00

Coverage Part(s)	Premium
BUSINESS AUTO	$ 18,161.00
	$
	$
	$
	$
	$
Total Policy Premium	$ 18,161.00
Premium is payable: At Inception	$ 18,161.00

Inv. #27550 3/31/93

5. **FORMS AND ENDORSEMENTS APPLICABLE TO ALL COVERAGE PARTS (See specific form or endorsement for applicability to each coverage part.):**

CL/IL 00 21 02 88
CL/IL 01 46 08 89
CL/IL 108 08 89M
IL 00 17 11 85
IL 01 46 11 88

AGENCY BILL

POLICY NUMBER:1AB 30054223 1

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

NAMED INSURED: ERSHIGS, INC.
ERSHIG FAMILY PARTNERSHIP - OWNER OF REAL PROPERTY
ERSHIGS, INC. EMPLOYEES PROFIT SHARING PLAN & TRUST,
FORMERLY ERSHIGS, INC.
EMPLOYEES PROFIT SHARING RETIREMENT FUND

76 1.658 47

BUSINESS AUTO COVERAGE PART - DECLARATIONS (PART 1)

USF&G INSURANCE

Policy No. 1AB 300542231 01

ITEM ONE. FORM OF BUSINESS:

☐ Individual ☐ Partnership ☐ Joint Venture ☒ Corporation

☐ Other

ITEM TWO. SCHEDULE OF COVERAGES AND COVERED AUTOS:

This Coverage Part provides only those coverages where a charge is shown in the premium column below. Each of these coverages will apply only to those "autos" shown as covered "autos." "Autos" are shown as covered "autos" for a particular coverage by the entry of one or more of the symbols from the COVERED AUTO Section of the Business Auto Coverage Form next to the name of the coverage.

COVERAGES	COVERED AUTOS	LIMIT THE MOST WE WILL PAY FOR ANY ONE ACCIDENT OR LOSS	PREMIUM
Liability	1	$ 1,000,000	$ 8,987.00
Personal Injury Protection (P.I.P.) (or equivalent No-Fault coverage)		Separately Stated In Each P.I.P. Endorsement Minus $ Deductible.	$
Added Personal Injury Protection (or equivalent Added No-Fault coverage)		Separately Stated In Each Added P.I.P. Endorsement.	$
Property Protection Insurance (Michigan Only)		Separately Stated In The P.P.I. Endorsement Minus $ Deductible for Each "Accident."	$
"Auto" Medical Payments	2	$ 5,000	$ 1,078.00
Uninsured Motorists	2	$ SEE SCHEDULE	$ 48.00
Underinsured Motorists (when not included in Uninsured Motorists coverage)	2	$ SEE SCHEDULE	$ 2,034.00
Physical Damage Comprehensive Coverage	7 8	Actual Cash Value Or Cost Of Repair, Whichever is Less Minus $SEE SCHEDULE Deductible For Each Covered "Auto," But No Deductible Applies To "Loss" Caused By Fire Or Lightning. See ITEM FOUR for hired or borrowed "autos."	$ 1,853.00
Physical Damage Specified Causes Of Loss Coverage		Actual Cash Value Or Cost Of Repair, Whichever Is Less Minus $25 Deductible For Each Covered "Auto" For "Loss" Caused By Mischief or Vandalism. See ITEM FOUR for hired or borrowed "autos."	$
Physical Damage Collision Coverage	7 8	Actual Cash Value Or Cost Of Repair, Whichever Is Less Minus $ SEE SCHEDULE Deductible For Each Covered "Auto." See ITEM FOUR for hired or borrowed "autos."	$ 4,112.00
Physical Damage Towing and Labor (not available in California)		$ For Each Disablement Of A Private Passenger "Auto."	$
Premium For Endorsements:			$ 49.00
TOTAL ESTIMATED PREMIUM FOR THIS COVERAGE PART:			$ 18,161.00

FORMS AND ENDORSEMENTS APPLICABLE TO THIS COVERAGE PART: SEE ATTACHED CL/00 99 01 01 87 (A#2)

ITEM THREE. SCHEDULE OF COVERED AUTOS YOU OWN: SEE VEHICLE SCHEDULE.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

It is agreed that Item Two of the Business Automobile Coverage Part 1 is amended as follows. The following forms and endorsements are applicable to this coverage part:

CA 00 01 06 92
CA 01 26 01 93
CA 01 35 10 92
CA 20 01 12 90
CA 21 16 09 92
CA 21 34 09 91
CA 21 71 01 88
CA 99 03 01 87
CA 99 03 06 92
CL/IL 704 09 89M
CL/IL 741 04 91M
CL/OO 99 01 01 87

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BUSINESS AUTO COVERAGE PART — DECLARATIONS (PART 2)

USF&G INSURANCE

Policy No. 1AB 300542231 01

ITEM FOUR. SCHEDULE OF HIRED OR BORROWED COVERED AUTO COVERAGES AND PREMIUMS:

LIABILITY COVERAGE-RATING BASIS, COST OF HIRE

STATE	ESTIMATED COST OF HIRE FOR EACH STATE	RATE PER EACH $100 COST OF HIRE	FACTOR (If Liability Coverage Is Primary)	PREMIUM
SEE ATTACHED CL/00 99 01 01 87 (A#1)				

TOTAL PREMIUM $ INCLUDED

Cost of hire means the total amount you incur for the hire of "autos" you don't own (not including "autos" you borrow or rent from your partners or employees or their family members). Cost of hire does not include charges for services performed by motor carriers of property or passengers.

PHYSICAL DAMAGE COVERAGE

COVERAGES	LIMIT OF INSURANCE THE MOST WE WILL PAY DEDUCTIBLE	ESTIMATED ANNUAL COST OF HIRE	RATE PER EACH $100 ANNUAL COST OF HIRE	PREMIUM
Comprehensive	Actual Cash Value, Cost Of Repairs Or $ Whichever Is Less, Minus $ Deductible For Each Covered "Auto" But No Deductible Applies to "Loss" Caused By Fire Or Lightning.			$
Specified Causes Of Loss	Actual Cash Value, Cost Of Repairs Or $ Whichever Is Less, Minus Minus $25 Deductible For Each Covered "Auto" For "Loss" Caused By Mischief Or Vandalism.			$
Collision	Actual Cash Value, Cost Of Repairs Or $ Whichever Is Less, Minus $ Deductible For Each Covered "Auto."			$

TOTAL PREMIUM $ INCLUDED

ITEM FIVE. SCHEDULE FOR NON-OWNERSHIP LIABILITY:

NAMED INSURED'S BUSINESS	RATING BASIS	NUMBER	PREMIUM
Other Than A Social Service Agency	Number of Employees	51	$ 62.00
	Number of Partners		$
Social Service Agency	Number of Employees		$
	Number of Volunteers		$

TOTAL PREMIUM $ 62.00

ITEM SIX. SCHEDULE FOR GROSS RECEIPTS OR MILEAGE BASIS-LIABILTY COVERAGE-PUBLIC AUTO OR LEASING RENTAL CONCERNS:

PREMIUM BASIS (See Reverse Side for Explanation) Estimated Yearly ☐ Gross Receipts ☐ Mileage	RATES ☐ Per $100 of Gross Receipts ☐ Per Mile		PREMIUMS	
COVERAGE	LIABILITY PAYMENTS	"AUTO" MEDICAL COVERAGE	LIABILITY PAYMENTS	"AUTO" MEDICAL
		TOTAL PREMIUMS	$	$
		Minimum Premiums	$	$

When used as a premium basis:

FOR PUBLIC AUTOS

Gross Receipts means the total amount to which you are entitled for transporting passengers, mail or merchandise during the policy period regardless of whether you or any other carrier originate the transportation. Gross Receipts does not include:

A. Amounts you pay to railroads, steamship lines, airlines and other motor carriers operating under their own ICC or PUC permits.

B. Advertising Revenue.

C. Taxes which you collect as a separate item and remit directly to a governmental division.

D. C.O.D. collections for cost of mail or merchandise including collection fees.

Mileage means the total live and dead mileage of all revenue producing units operated during the policy period.

FOR RENTAL OR LEASING CONCERNS

Gross Receipts means the total amount to which you are entitled for the leasing or rental of "autos" during the policy period and includes taxes except those taxes which you collect as a separate item and remit directly to a governmental division.

Mileage means the total of all live and dead mileage developed by all the "autos" you leased or rented to others during the policy period.

VEHICLE SCHEDULE

Policy No. 1AB 300542231 01

USF&G INSURANCE

Covered "Auto" No.	DESCRIPTION: Year Model: Trade Name: Body Type, Serial Number (S), Vehicle Identification Number (VIN)				PURCHASED: Original Cost New	PURCHASED: Actual Cost & New (N) Used (U)
1	81 MAZDA	1/2 TON	PICKUP	10154	8,000	
2	88 CHEV	1/2 TON	PICKUP	1893	10,862	
3	84 FORD	F150	VAN	47832	9,414	
4	84 CHEV	F/B	TRUCK	01238	12,250	
5	75 CHEV	C-60 2 TON	TRUCK	22073	7,000	
6	77 FORD	F600	TRUCK	F60DV021893		
7	88 CHEV	1T 12' F/B	TRUCK	5351	16,075	
8	88 CHEV	1T 12' F/B	TRUCK	3060	16,465	
9	88 FORD	SUPER CARG	VAN	2552	12,636	

Covered "Auto" No.	CLASSIFICATION: Radius of Operation	Business use s=service r=retail c=commercial	Size GVW, GCW or Vehicle Seating Capacity	Age Group	Primary Rating Factor: Liability	Primary Rating Factor: Physical Damage	Secondary Rating Factor: Liability	Secondary Rating Factor: Physical Damage	Code
1	50	S	8,500	6	1.00	1.00			01499
2	50	S	10,000	6	1.00	1.00			01499
3	50	S	10,000	6	1.00	1.00			01499
4	50	S	18,000	6	1.05	.85			21499
5	50	S	18,000	6	1.05	.85			21499
6	50	R	10,000	6	1.60	1.60			02499
7	50	S	10,000	6	1.00	1.00			01499
8	50	S	10,000	6	1.00	1.00			01499
9	50	S	10,000	6	1.00	1.00			01499

Covered "Auto" No.	TERRITORY: City & State where the covered "auto" will be principally garaged
1	BELLINGHAM, WA
2	BELLINGHAM, WA
3	BELLINGHAM, WA
4	BELLINGHAM, WA
5	BELLINGHAM, WA
6	WILSON, NC
7	WILSON, NC
8	BELLINGHAM, WA
9	BELLINGHAM, WA

LOSS PAYEE - Except for towing, all physical damage "loss" is payable to you and the loss payee named below as interests may appear at the time of "loss."

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	Liability		Personal Injury Protection		Added P.I.P.	Prop. Prot. (Mich. only)	
	Limit	Premium	Deductible	Premium	Premium	Deductible	Premium
1		430					
2		430					
3		430					
4		451					
5		451					
6		517					
7		323					
8		430					
9		430					
TOTAL PREMIUM							

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	"Auto" Medical Payments		Uninsured Motorists		Underinsured Motorists	
	Limit	Premium	Limit	Premium	Limit	Premium
1		54			1,000,000	113
2		54			1,000,000	113
3		54			1,000,000	113
4		54			1,000,000	113
5		54			1,000,000	113
6		46	1,000,000	16		
7		46	1,000,000	16		
8		54			1,000,000	113
9		54			1,000,000	113
TOTAL PREMIUM						

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	Comprehensive		Specified Causes of Loss	Collision		Towing & Labor	
	Deductible	Premium	Premium	Deductible	Premium	Limit Per Disablement	Premium
1	100	54		500	129		
2	100	99		500	221		
3	100	70		500	162		
4	100	84		500	188		
5	100	46		500	110		
6							
7	100	36		500	110		
8	100	141		500	305		
9	100	99		500	221		
TOTAL PREMIUM							

VEHICLE SCHEDULE

Policy No. 1AB 300542231 01

USF&G INSURANCE

Covered "Auto" No.	DESCRIPTION: Year Model; Trade Name; Body Type, Serial Number (S), Vehicle Identification Number (VIN)	PURCHASED: Original Cost New	PURCHASED: Actual Cost & New (N) Used (U)
10	88 FORD SUPER CARG VAN 2553	12,636	
11	88 FORD SUPER CARG VAN 2554	12,636	
12	88 CHEV 1 TON PICKUP 5876	12,000	
13	88 CHEV 3/4 TON PICKUP 3598	12,000	
14	88 CHEV 3/4 TON PICKUP 4886	12,000	
15	87 FORD ESCORT SEDAN 9718	13,500	
16	89 CHEV ASTRO VAN 2056	13,500	
17	90 FORD 3/4 TON PICKUP 1704	16,500	
18	89 FORD 3/4 TON PICKUP 5834	11,000	

Covered "Auto" No.	CLASSIFICATION: Radius of Operation	Business use s=service r=retail c=commercial	Size GVW, GCW or Vehicle Seating Capacity	Age Group	Primary Rating Factor: Liability	Primary Rating Factor: Physical Damage	Secondary Rating Factor: Liability	Secondary Rating Factor: Physical Damage	Code
10	50	S	10,000	6	1.00	1.00			01499
11	50	S	10,000	6	1.00	1.00			01499
12	50	S	10,000	6	1.00	1.00			01499
13	50	S	10,000	6	1.00	1.00			01499
14	50	S	10,000	6	1.00	1.00			01499
15				6					7398
16	50	S	10,000	5	1.00	1.00			01499
17	50	S	10,000	4	1.00	1.00			01499
18	50	S	10,000	5	1.00	1.00			01499

Covered "Auto" No.	TERRITORY: City & State where the covered "auto" will be principally garaged
10	BELLINGHAM, WA
11	BELLINGHAM, WA
12	BELLINGHAM, WA
13	BELLINGHAM, WA
14	BELLINGHAM, WA
15	WILSON, NC
16	BELLINGHAM, WA
17	BELLINGHAM, WA
18	BELLINGHAM, WA

LOSS PAYEE - Except for towing, all physical damage "loss" is payable to you and the loss payee named below as interests may appear at the time of "loss."

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	Liability		Personal Injury Protection		Added P.I.P.	Prop. Prot. (Mich. only)	
	Limit	Premium	Deductible	Premium	Premium	Deductible	Premium
10		430					
11		430					
12		430					
13		430					
14		430					
15		303					
16		430					
17		430					
18		430					
TOTAL PREMIUM							

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	"Auto" Medical Payments		Uninsured Motorists		Underinsured Motorists	
	Limit	Premium	Limit	Premium	Limit	Premium
10		54			1,000,000	113
11		54			1,000,000	113
12		54			1,000,000	113
13		54			1,000,000	113
14		54			1,000,000	113
15		14	1,000,000	16		
16		54			1,000,000	113
17		54			1,000,000	113
18		54			1,000,000	113
TOTAL PREMIUM						

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	Comprehensive		Specified Causes of Loss	Collision		Towing & Labor	
	Deductible	Premium	Premium	Deductible	Premium	Limit Per Disablement	Premium
10	100	99		500	221		
11	100	99		500	221		
12	100	99		500	221		
13	100	99		500	221		
14	100	99		500	221		
15	100	34		500	124		
16	100	116		500	256		
17	100	184		500	399		
18	100	116		500	256		
TOTAL PREMIUM							

VEHICLE SCHEDULE

Policy No. 1AB 300542231 01

USF&G INSURANCE

Covered "Auto" No.	DESCRIPTION: Year Model: Trade Name: Body Type, Serial Number (S), Vehicle Identification Number (VIN)	PURCHASED: Original Cost New	PURCHASED: Actual Cost & New (N) Used (U)
19	90 FORD 3/4 TON PICKUP 8324	14,500	
20	80 FORD 3/4 TON PICKUP 0397	4,300	
21	80 FORD F150 PICKUP 3713	4,000	

Covered "Auto" No.	CLASSIFICATION: Radius of Operation	Business use s=service r=retail c=commercial	Size GVW, GCW or Vehicle Seating Capacity	Age Group	Primary Rating Factor: Liability	Primary Rating Factor: Physical Damage	Secondary Rating Factor: Liability	Secondary Rating Factor: Physical Damage	Code
19	50	S	10,000	4	1.00	1.00			01499
20	50	S	10,000	6	1.00	1.00			01499
21	50	S	10,000	6	1.00	1.00			01499

Covered "Auto" No.	TERRITORY: City & State where the covered "auto" will be principally garaged
19	BELLINGHAM, WA
20	BELLINGHAM, WA
21	BELLINGHAM, WA

LOSS PAYEE - Except for towing, all physical damage "loss" is payable to you and the loss payee named below as interests may appear at the time of "loss."

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	Liability		Personal Injury Protection		Added P.I.P.	Prop. Prot. (Mich. only)	
	Limit	Premium	Deductible	Premium	Premium	Deductible	Premium
19		430					
20		430					
21		430					
TOTAL PREMIUM		8,925					

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	"Auto" Medical Payments		Uninsured Motorists		Underinsured Motorists	
	Limit	Premium	Limit	Premium	Limit	Premium
19		54			1,000,000	113
20		54			1,000,000	113
21		54			1,000,000	113
TOTAL PREMIUM		1,078		48		2,034

COVERAGES - PREMIUMS, LIMITS AND DEDUCTIBLES (Absence of a deductible or limit entry in any column below means that the limit or deductible entry in the corresponding ITEM TWO column applies instead).

Covered "Auto" No.	Comprehensive		Specified Causes of Loss	Collision		Towing & Labor	
	Deductible	Premium	Premium	Deductible	Premium	Limit Per Disablement	Premium
19	100	131		500	290		
20	100	26		500	70		
21	100	26		500	70		
TOTAL PREMIUM		1,757			4,016		

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by (Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) SEAFIRST AUTO LEASING
PO BOX 21075
SEATTLE, WA 98105

Designation or Description of Leased **Autos**

3-84 FORD F150 VAN 47832

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by (Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) SEAFIRST AUTO LEASING
PO BOX 21085
SEATTLE, WA 98105

Designation or Description of Leased **Autos**

4-84 CHEV F/B TRUCK 01238

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE# 100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

7-88 CHEV 1T 12' F/B TRUCK 5351

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

8-88 CHEV 1T 12' F/B TRUCK 3060

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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76 1,658 19

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

9-88 FORD SUPER CARG VAN 2552

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

10-88 FORD SUPER CARG VAN 2553

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, informa required to complete this endorsem will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

11-88 FORD SUPER CARG VAN 2554

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

'# 12-88 CHEV 1 TON PICKUP 5876

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

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ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

13-88 CHEV 3/4 TON PICKUP 3598

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

14-88 CHEV 3/4 TON PICKUP 4886

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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76 1,658 31

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NORTH CAROLINA UNINSURED MOTORISTS COVERAGE

For a covered "auto" licensed or garaged in, or "garage operations" conducted in, North Carolina, this endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by (Authorized Representative)

The definition of "uninsured motor vehicle" in this endorsement applies in its entirety unless an "X" is entered below.

☐ If an "X" is entered in this box, paragraph b. of the definition of "uninsured motor vehicle" does not apply.

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. COVERAGE

1. We will pay all sums the "insured" is legally entitled to recover as damages from the owner or driver of:

   a. an "uninsured motor vehicle" because of "bodily injury" sustained by the "insured" and caused by an "accident," and

   b. an "uninsured motor vehicle" as defined in paragraphs a., c. and d. of the definition of "uninsured motor vehicle," because of "property damage" caused by an "accident."

2. The owner's or driver's liability for these damages must result from the ownership, maintenance or use of the "uninsured motor vehicle." We will pay under this coverage only after the limits of insurance under any applicable liability bonds or policies have been exhausted by payments of judgments or settlements, unless we:

   a. Have been given written notice in advance of a settlement between the "insured" and the owner or operator of a vehicle described in paragraph b. of the definition of "uninsured motor vehicle"; and

   b. Consent to advance payment to the "insured" in an amount equal to the tentative settlement.

3. If this coverage provides a limit in excess of the amounts required by the North Carolina Motor Vehicle Safety and Responsibility Act, we will pay only after all liability bonds or policies have been exhausted by judgments or payments.

4. Any judgment for damages arising out of a "suit" brought without sending us a copy of the summons, complaint or other process against an uninsured motorist is not binding on us.

B. WHO IS AN INSURED

1. You.

2. If you are an individual, any "family member."

3. Anyone else "occupying" a covered "auto" or a temporary substitute for a covered "auto." The covered "auto" must be out of service because of its breakdown, repair, servicing, "loss" or destruction.

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4. Anyone for damages he or s is entitled to recover because of "bodily injury" sustained by another "insured."

C. **EXCLUSIONS**

This coverage does not apply to:

1. Any claim settled by the "insured" or any legal representative of the "insured" without our consent. However, this exclusion does not apply:

   a. If we have been provided with written notice in advance of a settlement between the "insured" and the owner or operator of a vehicle described in paragraph b. of the definition of "uninsured motor vehicle," and

   b. If we fail to advance a payment to the "insured" in an amount equal to the tentative settlement within 30 days following receipt of such written notice.

2. The direct or indirect benefit of any insurer or self-insurer under any workers' compensation, disability benefits or similar law.

3. The direct or indirect benefit of any insurer of property.

4. "Bodily injury" sustained by you or any "family member" while "occupying" or struck by any vehicle owned by you or any "family member" that is not a covered "auto."

5. An "auto" or property contained in the "auto" other than a covered "auto."

6. The first $100 of the amount of "property damage" to the property of each "insured" as the result of any one "accident."

7. Anyone using a vehicle without a reasonable belief that the person is entitled to do so.

D. **LIMIT OF INSURANCE**

1. Regardless of the number of covered "autos," "insureds," premium paid, claims made or vehicles involved in the "accident," the most we will pay for all damages resulting from any one "accident" is the limit of UNINSURED MOTORISTS COVERAGE shown in the declarations.

2. Any amount payable under this coverage shall be reduced by:

   a. All sums paid or payable under any workers' compensation, disability benefits or similar law exclusive of non-occupational disability benefits.

   b. All sums paid by or for anyone who is legally responsible, including all sums paid un . this Coverage form's LIABILITY COVERAGE, and

   c. All sums paid or payable under any policy or property insurance.

3. Any amount paid under this insurance will reduce any amount an "insured" may be paid under this Coverage form's LIABILITY COVERAGE.

E. **CHANGES IN CONDITIONS**

The CONDITIONS are changed for UNINSURED MOTORISTS COVERAGE as follows:

1. The reference in OTHER INSURANCE to "other collectible insurance" applies only to other collectible uninsured motorists coverage.

2. DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS is changed by adding the following:

   a. Promptly notify the police if a hit-and-run driver is involved, and

   b. Promptly send us copies of the legal papers if a "suit" is brought. A "suit" may not be brought against anyone legally responsible for the use of any "auto" involved in the "accident" until 60 days after an "insured" notifies us or our agent of his belief that the prospective defendant is an uninsured motorist; and

   c. Any person who intends to pursue recovery against the owner or operator of an "uninsured motor vehicle," as described in paragraph b. of the definition of "uninsured motor vehicle," for damages beyond those paid or payable under this policy shall give us:

      1. Notice of such intent; and

      2. The opportunity to participate, at our expense, in the prosecution of such claim.

3. TR- -FER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US is changed as follows:

   a. If we make any payment on your behalf, we are entitled to recover what we paid from other parties. You must transfer rights of recovery against others to us. You must do everything necessary to secure these rights and do nothing to jeopardize them.

      However, our rights under this paragraph do not apply with respect to vehicles described in paragraph F.4. a, c and d of the definition of "uninsured motor vehicle." For these vehicles, if we make

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any payment and you recover from another party, you must hold the proceeds in trust for us and pay us back the amounts we have paid.

b. With respect to vehicles described in F.4.b., underinsured motor vehicles, we will not exercise our TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US or exercise our right to approve any settlement with the owner, operator or maintainer of the underinsured vehicle if we have been given written notice in advance of a settlement and fail to advance payment in an amount equal to the tentative settlement within 30 days following receipt of such notice.

4. The following Condition is added.

ARBITRATION

a. If we and an "insured" disagree whether the "insured" is legally entitled to recover damages from the owner or driver of an "uninsured motor vehicle" or do not agree as to the amount of damages, the "insured" may make a written demand for arbitration. In this event, each party will select an arbitrator. The two arbitrators will select a third. If they cannot agree within 30 days, either may request that selection be made by a judge of a court having jurisdiction. Each party will pay the expenses it incurs and bear the expenses of the third arbitrator equally.

b. Unless both parties agree otherwise, arbitration will take place in the county in which the "insured" lives. Local rules of law as to arbitration procedure and evidence will apply. A decision agreed to by two of the arbitrators will be binding.

c. If the "insured" elects not to arbitrate, our liability will be determined only in an action against us. In any action against us, except an action to determine whether a vehicle is an "uninsured motor vehicle," we may require the "insured" to join the owner or driver of the vehicle as a party defendant.

F. **ADDITIONAL DEFINITIONS**

The following are added to the DEFINITIONS Section:

1. "Family member" means a person related to you by blood, marriage, or adoption who is a resident of your household, including a ward or foster child.

2. "Occupying" means in, upon, getting in, on, out or off.

3. "Property damage" means injury to or destruction of the property of an "insured."

4. "Uninsured motor vehicle" means a land motor vehicle or trailer:

a. For which neither a bond or policy nor cash or securities on file with the North Carolina Commissioner of Motor Vehicles provides at least the amounts required by the North Carolina Motor Vehicle Safety and Responsibility Act;

b. That is an underinsured motor vehicle. An underinsured motor vehicle is a motor vehicle or trailer for which the sum of all bodily injury liability bonds or policies at the time of an "accident" provides at least the amounts required by the North Carolina Motor Vehicle Safety and Responsibility Act but their limits are either:

(1) less than the limits of underinsured motorists coverage applicable to a covered "auto" that you own involved in the "accident," or

(2) less than the limits of this coverage, if a covered "auto" that you own is not involved in the "accident"; or

(3) For which the insuring or bonding company denies coverage or is or becomes insolvent; or

(4) That is a hit-and-run vehicle causing "bodily injury" to an "insured" and neither the driver nor owner can be identified. The vehicle must hit an "insured," a covered "auto" or a vehicle an "insured" is "occupying."

However, "uninsured motor vehicle" does not include any vehicle:

(1) Owned or operated by a self-insurer under any applicable motor vehicle law, except a self-insurer who is or becomes insolvent and can not provide the amounts required by that motor vehicle law;

(2) Owned by a govenmental unit or agency; or

(3) Designed for use mainly off public roads while not on public roads.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

WASHINGTON UNDERINSURED MOTORISTS COVERAGE

For a covered "auto" licensed or principally garaged in, or for "garage operations" conducted in, Washington, this endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by (Authorized Representative)

SCHEDULE

"Bodily Injury" and "Property Damage"	$ 1,000,000	Each "Accident"
	or	
"Bodily Injury"	$	Each "Accident"

This endorsement provides "bodily injury" and "property damage" "underinsured motorists coverage" unless an "X" is entered below:

☐ If an "X" is entered in this box, this endorsement provides "bodily injury" underinsured motorists coverage only for the following "autos":

Description of "autos":

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. COVERAGE

We will pay all sums the "insured" is legally entitle to recover as compensatory damages from the owner or driver of an "underinsured motor vehicle." The damages must result from "bodily injury" or "property damage" sustained by the "insured" caused by an "accident." The owner's or driver's liability for these damages must result from the ownership, maintenance or use of the "underinsured motor vehicle."

B. WHO IS AN INSURED

1. You.
2. If you are an individual, any "family member."
3. Anyone else "occupying" a covered "auto" or a temporary substitute for a covered "auto." The covered "auto" must be out of service because of its breakdown, repair, servicing, "loss" or destruction.
4. Anyone for damages he or she is entitled to recover because of "bodily injury" sustained by another "insured."

C. EXCLUSIONS

This insurance does not apply to:

1. The benefit of any insurer or self-insurer under any workers' compensation law or any similar disability benefits law.
2. The benefit of any insurer of property.
3. "Bodily injury" to you or any "family member" while "occupying" any vehicle owned by or available for regular use for you or any "family member" which is not a covered "auto" for LIABILITY COVERAGE under this Coverage Form.

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4. Property contained in or str by any vehicle owned by or available for the regular use of you or any "family member" which is not a covered "auto" for LIABILITY COVERAGE under this Coverage Form.

5. The first $300 of the amount of "property damage" to the property of each "insured" as the result of any one "accident" caused by a hit-and-run vehicle as described in paragraph 4.d. of the definition of "underinsured motor vehicle." In all other cases, this insurance does not apply to the first $100 of the amount of "property damage" to the property of each "insured" as the result of any one "accident."

6. Anyone using a vehicle without a reasonable belief that the person is entitled to do so.

7. "Bodily injury" or "property damage" to an "insured" while operating or "occupying" a motorcycle or motor driven cycle which is not a covered "auto" for LIABILITY COVERAGE under this Coverage Form.

8. Punitive or exemplary damages.

D. LIMIT OF INSURANCE

1. Regardless of the number of covered "autos," "insureds," premiums paid, claims made or vehicles involved in the "accident," the most we will pay for all damages resulting from any one "accident" is the limit shown in the Schedule or in the Declarations.

2. Any amount payable for damages which the "insured" is legally entitled to recover from the owner or operator of an "underinsured motor vehicle" because of "bodily injury" or "property damage" caused by an "accident" shall be reduced by all sums paid by or for anyone who is legally responsible, including all sums paid under this Coverage Forms LIABILITY COVERAGE.

3. Any payment under this coverage will reduce any amount an "insured" is entitled to recover for the same damages under this Coverage Form's LIABILITY COVERAGE.

4. In no event will an "insured" be entitled to receive duplicate payments for the same elements of loss.

E. CHANGES IN CONDITIONS

The CONDITIONS are changed for WASHINGTON UNDERINSURED MOTORISTS COVERAGE as follows:

1. The reference in OTHER INSURANCE to "other collectible insurance" applies to other collectible "underinsured motorists coverage."

   The Condition is also changed by adding the following:

   If this Coverage Form and any other Coverage Form or policy providing similar insurance apply to the same "accident," the maximum limit of insurance under all forms and policies shall be the highest applicable limit of insurance under any one Coverage Form or policy.

2. DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS is changed by adding the following:

   a. Promptly notify the policy if a hit-and-run driver is involved, and

   b. Promptly send us copies of the legal papers if a "suit" is brought.

   c. A person seeking Underinsured Motorists Coverage must also promptly notify us of a tentative settlement between the "insured" and the insurer of an "underinsured motor vehicle," and allow us a reasonable time to advance payment to that "insured" in an amount equal to the tentative settlement to preserve our rights against the insurer, owner or operator of such "underinsured motor vehicle."

3. TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US is changed by adding the following:

   If we make any payment and the "insured" recovers from another party, the "insured" shall hold the proceeds in trust for us and pay us back the amount we have paid. We shall be entitled to recovery only after the "insured" has been fully compensated for damages.

   Our rights do not apply under this provision if we:

   a. Have been given prompt notice of a tentative settlement between an "insured" and the insurer of an "underinsured motor vehicle," and

   b. Fail to advance payment to the "insured" in an amount equal to the tentative settlement within a reasonable time after receipt of notification.

   If we advance payment to the "insured" in an amount equal to the tentative settlement within a reasonable time after receipt of notification:

   (1) That payment will be separate from any amount the "insured" is entitled to recover under the provisions of Underinsured Motorists Coverage, and

   (2) We also have a right to recover the advanced payment.

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The following Condition is added:

ARBITRATION

a. If we and an "insured" disagree whether the "insured" is legally entitled to recover damages from the owner or driver of an "underinsured motor vehicle" or do not agree as to the amount of damages, either party may make a written demand for arbitration. In this event, each party will select an arbitrator. The two arbitrators will select a third. If they cannot agree within 30 days either may request that selection be made by a judge of a court having jurisdiction. We will pay all arbitration expenses. Arbitration expenses will not include the "insured's" attorney's fees or any expenses incurred in producing evidence or witnesses.

b. Unless both parties agree otherwise, arbitration will take place in the county in which the "insured" lives. Local rules of law as to arbitration procedure and evidence will apply. A decision agreed to by two of the arbitrators will be binding.

F. ADDITIONAL DEFINITIONS

1. The definition of "property damage" in the DEFINITIONS Section is replaced by the following:

   "Property damage" means injury to or destruction of the property of an "insured."

   The following are added to the DEFINITIONS Section:

2. "Family member" means a person related to you by blood, marriage or adoption who is a resident of your household, including a ward or foster child.

3. "Occupying" means in, upon, getting in, on, out or off.

4. "Underinsured motor vehicle" means a land motor vehicle or trailer:

   a. For which no liability bond or policy applies at the time of an "accident," or

   b. For which liability bonds or policies apply at the time of the "accident," but the amount paid under all of the bonds or policies to an "insured" is not enough to pay the full amount an "insured" is legally entitled to recover as damages caused by the "accident," or

   c. For which all insuring or bonding companies deny coverage or are or become insolvent, or

   d. That is a hit-and-run vehicle and neither the driver nor owner can be identified. The vehicle must either:

      (1) Hit an "insured," a covered "auto" or a vehicle an "insured" is "occupying"; or

      (2) Cause "bodily injury" or "property damage" with no physical contact with the "insured" or the vehicle the "insured" was "occupying" at the time of the "accident" provided:

         (a) The facts of the "accident" can be corroborated by competent evidence other than the testimony of any person having an underinsured motorists coverage claim as a result of such "accident," and

         (b) Someone reports the "accident" to the policy within 72 hours of the "accident."

   However, "underinsured motor vehicle" does not include any vehicle:

   a. Owned or operated by a self-insurer under any applicable motor vehicle law to the extent that damages are payable under a certificate of self-insurance.

   b. Which is a covered "auto" for LIABILITY COVERAGE. However, if you are an individual and you or any "family member" sustain damages while "occupying," or when struck by, an "auto" which is a covered "auto" for LIABILITY COVERAGE under this Coverage Form, this exception to the definition of an "underinsured motor vehicle" does not apply to you or any such "family member."

5. Whenever the terms "uninsured motorists coverage" or "uninsured motor vehicle" appear in the Coverage Form or any endorsements attached to the Coverage Form, they are replaced by the terms "underinsured motorists coverge" and "underinsured motor vehicle" for covered "autos" licensed in or "garage operations" conducted in Washington.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

ITEM FOUR. SCHEDULE OF HIRED OR BORROWED COVERED AUTO COVERAGES AND PREMIUMS:

LIABILITY COVERAGE-RATING BASIS, COST OF HIRE

STATE	ESTIMATED COST OF HIRE FOR EACH STATE	RATE PER EACH $100 COST OF HIRE	FACTOR (If Liability Coverage Is Primary)	PREMIUM
WA	IF ANY	.7700	6.0000	INCLUDED

TOTAL PREMIUM $_____

Cost of hire means the total amount you incur for the hire of "autos" you don't own (not including "autos" you borrow or rent from your partners or employees or their family members). Cost of hire does not include charges for services performed by motor carriers of property or passengers.

PHYSICAL DAMAGE COVERAGE

COVERAGES	LIMIT OF INSURANCE THE MOST WE WILL PAY DEDUCTIBLE	ESTIMATED ANNUAL COST OF HIRE	RATE PER EACH $100 ANNUAL COST OF HIRE	PREMIUM
Comprehensive	Actual Cash Value, Cost Of Repairs Or $ 30,000 Whichever Is Less, Minus $ 100 Deductible For Each Covered "Auto" But No Deductible Applies to "Loss" Caused By Fire Or Lightning.	IF ANY	.5600	$ 48
Specified Causes Of Loss	Actual Cash Value, Cost Of Repairs Or $ Whichever Is Less, Minus Minus $25 Deductible For Each Covered "Auto" For "Loss" Caused By Mischief Or Vandalism.			$
Collision	Actual Cash Value, Cost Of Repairs Or $ 30,000 Whichever Is Less, Minus $ 500 Deductible For Each Covered "Auto."	IF ANY	.5600	$ 48

TOTAL PREMIUM $

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

ITEM FOUR. SCHEDULE OF HIRED OR BORROWED COVERED AUTO COVERAGES AND PREMIUMS:

LIABILITY COVERAGE-RATING BASIS, COST OF HIRE

STATE	ESTIMATED COST OF HIRE FOR EACH STATE	RATE PER EACH $100 COST OF HIRE	FACTOR (If Liability Coverage Is Primary)	PREMIUM
NC	IF ANY	.5800	6.0000	INCLUDED

TOTAL PREMIUM $ MP

Cost of hire means the total amount you incur for the hire of "autos" you don't own (not including "autos" you borrow or rent from your partners or employees or their family members). Cost of hire does not include charges for services performed by motor carriers of property or passengers.

PHYSICAL DAMAGE COVERAGE

COVERAGES	LIMIT OF INSURANCE THE MOST WE WILL PAY DEDUCTIBLE	ESTIMATED ANNUAL COST OF HIRE	RATE PER EACH $100 ANNUAL COST OF HIRE	PREMIUM
Comprehensive	Actual Cash Value, Cost Of Repairs Or $ 30,000 Whichever Is Less, Minus $ 100 Deductible For Each Covered "Auto" But No Deductible Applies to "Loss" Caused By Fire Or Lightning.	IF ANY	.5600	$ 48
Specified Causes Of Loss	Actual Cash Value, Cost Of Repairs Or $ Whichever Is Less, Minus Minus $25 Deductible For Each Covered "Auto" For "Loss" Caused By Mischief Or Vandalism.			$
Collision	Actual Cash Value, Cost Of Repairs Or $ 30,000 Whichever Is Less, Minus $ 500 Deductible For Each Covered "Auto."	IF ANY	.5600	$ 48

TOTAL PREMIUM $ 192.00

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by (Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) SEAFIRST AUTO LEASING
PO BOX 21075
SEATTLE, WA 98105

Designation or Description of Leased **Autos**

3-84 FORD F150 VAN 47832

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) SEAFIRST AUTO LEASING
PO BOX 21085
SEATTLE, WA 98105

Designation or Description of Leased **Autos**

4-84 CHEV F/B TRUCK 01238

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE# 100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

7-88 CHEV 1T 12' F/B TRUCK 5351

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by (Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

8-88 CHEV 1T 12' F/B TRUCK 3060

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS: MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

9-88 FORD SUPER CARG VAN 2552

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

 Copyright, Insurance Services Office, Inc., 1990

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

"Leased auto" means an "auto" leased or rented to you, including any substitute, replacement or extra "auto" needed to meet seasonal or other needs, under a leasing or rental agreement that requires you to provide direct primary insurance for the lessor.

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76 1,658 22

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

10-88 FORD SUPER CARG VAN 2553

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

 Copyright, Insurance Services Office, Inc., 1990

76 1,658 23

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

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3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

11-88 FORD SUPER CARG VAN 2554

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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76 1,656 25

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. 1. Any "leased auto" designated or described in the Schedule will be considered a covered "auto" you own and not a covered "auto" you hire or borrow. For a covered "auto" that is a "leased auto" WHO IS AN INSURED is changed to include as an "insured" the lessor named in the Schedule.

2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

B. **LOSS PAYABLE CLAUSE**

1. We will pay you and the lessor named in this endorsement for "loss" to a "leased auto," as interest may appear.

2. The insurance covers the interest of the lessor unless the "loss" results from fraudulent acts or omissions on your part.

3. If we make any payment to the lessor, we will obtain his or her rights against any other party.

C. **CANCELLATION**

1. If we cancel the policy, we will mail notice to the lessor in accordance with the CANCELLATION Common Policy Condition.

2. If you cancel the policy, we will mail notice to the lessor.

3. Cancellation ends this agreement.

D. The lessor is not liable for payment of your premiums.

E. **ADDITIONAL DEFINITION**

The following is added to the DEFINITIONS Section:

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ADDITIONAL INSURED - LESSOR

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

12-88 CHEV 1 TON PICKUP 5876

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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2. The coverages provided under this endorsement apply to any "leased auto" described in the Schedule until the expiration date shown in the Schedule, or when the lessor or his or her agent takes possession of the "leased auto," whichever occurs first.

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GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE PART.

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Endorsement effective	
Named Insured ERSHIGS, INC.	Countersigned by

(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

13-88 CHEV 3/4 TON PICKUP 3598

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
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(Authorized Representative)

SCHEDULE

Insurance Company UNITED STATES FIDELITY AND GUARANTY COMPANY (U.S.F.& G.)

Policy Number 1AB 300542231 01

Effective Date 03/31/93

Named Insured ERSHIGS, INC. AND PER ENDT Expiration Date 03/31/94

Address PO BOX 1707
BELLINGHAM, WA 98227-1707

Additional Insured (Lessor) BANCORP LEASING
111 SW 5 AVE #100
PORTLAND, OR 97204

Designation or Description of Leased **Autos**

14-88 CHEV 3/4 TON PICKUP 4886

Coverages	Limit of Insurance
Liability	$ 1,000,000 Each "Accident"
Personal Injury Protection (or equivalent no-fault coverage)	$
Comprehensive	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 100 For Each Covered "Auto"
Collision	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ 500 For Each Covered "Auto"
Specified Causes of Loss.	ACTUAL CASH VALUE OR COST OF REPAIR WHICHEVER IS LESS; MINUS: $ For Each Covered "Auto"

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This document has important legal consequences; consultation with an attorney is encouraged.

Procurement General Conditions

Prepared by

Engineers' Joint Contract Documents Committee

and

Issued and Published Jointly By

Professional Engineers in Private Practice
A practice division of the
National Society of Professional Engineers

and by

American Consulting Engineers Council

and by

American Society of Civil Engineers

and by

Construction Specifications Institute

These Procurement General Conditions have been prepared for use with the Standard Form of Instructions to Bidders for Procurement Contracts (EJCDC Document 1910-26-D, 1981 edition) and with the Standard Form of Procurement Agreement Between Owner and Contractor (EJCDC Document 1910-26-A, 1981 edition). Their provisions are interrelated and a change in one may necessitate a change in the others.

No. 1910-26-B (1981 Edition)

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National Society of Professional Engineers
2029 K Street, N.W., Washington, D.C. 20006

American Consulting Engineers Council
1015 15th Street, N.W., Washington, D.C. 20005

American Society of Civil Engineers
345 East 47th Street, New York, N.Y. 10017

Construction Specifications Institute
1150 17th Street, N.W., Washington, D.C. 20036

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ARTICLE 1
Definitions

Wherever used in these Procurement General Conditions or in the other Procurement Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

Addenda—Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents or the Procurement Documents.

Application for Payment—The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Procurement Documents.

Bid—The offer or proposal of the Bidder submitted on the prescribed form setting forth the price(s) for furnishing the Goods and Special Services.

Bonds—Bid and performance bonds and other instruments of security.

Change Order—A written order to CONTRACTOR signed by OWNER authorizing an addition, deletion or revision in the Goods or Special Services, or an adjustment in the Contract Price or the Contract Time issued after the effective date of the Procurement Agreement.

Contract Price—The moneys payable by OWNER to CONTRACTOR under the Procurement Documents as stated in the Agreement.

Contract Time—The total number of days or the dates stated in the Procurement Agreement for furnishing the Goods and Special Services.

CONTRACTOR—The person, firm or corporation with whom OWNER has entered into the Procurement Agreement.

day—A calendar day of twenty-four hours measured from midnight to the next midnight.

defective—An adjective which when modifying the words Goods or Special Services refers to Goods or Special Services which are unsatisfactory, faulty or deficient, or do not conform to the Procurement Documents or do not meet the requirements of any inspection, reference standard, test or approval referred to in the Procurement Documents.

Drawings—The drawings which show the character and scope of the Goods to be furnished and which have been prepared or approved by ENGINEER and are referred to in the Procurement Documents.

effective date of the Procurement Agreement—The date indicated in the Procurement Agreement on which it becomes effective, or if no such date is indicated, the date on which the Procurement Agreement is signed and delivered by the last of the two parties to sign and deliver.

ENGINEER—The person, firm or corporation named as such in the Procurement Agreement.

ENGINEER's Order—A written order issued by ENGINEER which clarifies or interprets the Procurement Documents or orders minor changes or alterations in the Goods or Special Services to be furnished but which does not involve a change in the Contract Price or the Contract Time.

Goods—All tangible personal property required to be furnished under the Procurement Documents.

Modification—(a) A written amendment of the Procurement Documents signed by both parties, (b) a Change Order, or (c) an ENGINEER's Order. A modification may only be issued after the effective date of the Procurement Agreement.

Notice of Award—The written notice by OWNER to the apparent successful Bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Procurement Agreement.

OWNER—The public body or authority, corporation, association, partnership or individual with whom CONTRACTOR has entered into the Procurement Agreement.

point of delivery—The place designated in the Procurement Agreement where the Goods are to be delivered.

Procurement Agreement—The written agreement between OWNER and CONTRACTOR covering the furnishing of the Goods, Special Services and other services in connection therewith. Other Procurement Documents are attached to the Agreement and made a part thereof as provided therein.

Procurement Documents—The Procurement Agreement, Addenda (which pertain to the Procurement Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award)

when attached as an exhibit to the Procurement Agreement, the Bonds, these Procurement General Conditions, the Procurement Supplementary Conditions, the Specifications, the Drawings as the same are more specifically identified in the Procurement Agreement, together with all Modifications issued after execution of the Agreement.

Shop Drawings—All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of Goods.

Special Services—Services to be furnished by CONTRACTOR at the construction site as required by the Procurement Documents.

Specifications—Those portions of the Procurement Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Goods and Special Services, and certain administrative details applicable thereto.

ARTICLE 2
Preliminary Matters

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Procurement Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 4.1.

Commencement of Contract Time:

2.2. The Contract Time will commence to run on the effective date of the Procurement Agreement.

Schedules:

2.3. CONTRACTOR shall, within ten days after the effective date of the Procurement Agreement, submit to ENGINEER preliminary schedules of progress, shop drawing submissions, tests, and deliveries as required by the Procurement Documents. No schedule which is required to be and has been accepted by ENGINEER will be changed by CONTRACTOR without notice to ENGINEER.

ARTICLE 3
Intent of Procurement Documents

3.1. The Procurement Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the furnishing of the Goods and Special Services. The Procurement Documents may [illegible]ltered only by a Modification.

3.2. The Procurement Documents are complementary; what is called for by one is as binding as if called for by all. If, during performance of the contract, CONTRACTOR finds a conflict, error or discrepancy in the Procurement Documents, CONTRACTOR shall so report to ENGINEER in writing at once and shall obtain a written interpretation or clarification from ENGINEER before proceeding further; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Procurement Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

3.3. All materials, equipment and services that may reasonably be inferred from the Procurement Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe materials, equipment or services, such words will be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual or code in effect at the time of opening of Bids (or, on the effective date of the Procurement Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provisions of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Procurement Documents) shall change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their agents, consultants or employees from those set forth in the Procurement Documents. Clarifications and interpretations of the Procurement Documents shall be issued by ENGINEER as provided in paragraph 9.2

ARTICLE 4
Bonds and Insurance

Performance and Other Bonds:

4.1. CONTRACTOR shall furnish a performance bond in an amount at least equal to the Contract Price (unless otherwise provided) as security for the faithful performance of all CONTRACTOR's obligations under the Procurement Documents. This Bond shall remain in effect at least until one year after the date of final payment, except as otherwise provided by law. CONTRACTOR shall also furnish such other Bonds as are required by the Procurement Supplementary Condi-

[illegible]s. All Bonds shall be in the forms prescribed by the bidding documents or Procurement Supplementary Conditions and be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

4.2. If the surety on any Bond furnished by CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in the state of the point of delivery or the surety ceases to meet the requirements of paragraph 4.1 CONTRACTOR shall within five days thereafter substitute another Bond and surety, both of which must be acceptable to OWNER.

Property Insurance:

4.3. Unless otherwise provided in the Procurement Supplementary Conditions, CONTRACTOR shall assume all risk of loss or damage to the Goods prior to acceptance of delivery by OWNER at the point of delivery; and shall purchase and maintain insurance on the Goods during the process of fabrication and while in transit to insure against the perils of fire and extended coverage including "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse, water damage and such other perils as may be provided in the Procurement Supplementary Conditions and as CONTRACTOR deems appropriate.

ARTICLE 5
Shipment and Delivery of the Goods

Shipment and delivery of the Goods shall be in accordance with this Article except as otherwise provided or specified.

5.1. All Goods will be delivered f.o.b. point of delivery. CONTRACTOR shall select the means and methods of transportation. All transportation charges, including but not limited to switching, trucking, lighterage and special handling will be paid by CONTRACTOR.

5.2. CONTRACTOR shall give OWNER and ENGINEER at least fifteen days' prior written notice of the date when the Goods will be ready for shipment and the manner of shipment. Such notice will include instructions concerning any special equipment or services required at the point of delivery to unload and care for the Goods. CONTRACTOR also shall require the carrier to give OWNER not less than 24 hours notice by telephone of the anticipated hour of delivery.

5.3. OWNER shall provide facilities for receipt and unloading of the Goods. If the point of delivery is a construction site, OWNER shall provide the carrier reasonable access within the site to the point of delivery.

5.4. CONTRACTOR shall deliver the Goods to the point of delivery within a period of fifteen days (the "delivery period") prior to expiration of the Contract Time for delivery specified in the Procurement Agreement.

5.4.1. OWNER will not be obligated to accept any delivery of goods not made within the delivery period. Additional costs arising from delivery prior to or after the delivery period will be the responsibility of CONTRACTOR.

5.4.2 OWNER may by Change Order direct CONTRACTOR to ship to another point of delivery or to accelerate or postpone the delivery period. OWNER shall be responsible for all additional expenses incurred by CONTRACTOR as a result of any such direction, including but not limited to charges for storage, reconditioning, handling, overtime and insurance. If CONTRACTOR believes that any such direction justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

5.5. OWNER, accompanied by ENGINEER, shall inspect the Goods upon delivery for the sole purpose of identifying the Goods and general verification of quantities in order to provide a basis for a progress payment. Such inspection will not be construed as final or as acceptance of any Goods not in conformance with the Procurement Documents. If, when delivered, there are apparent defects in the Goods (through damage or otherwise), ENGINEER will give prompt written notice thereof to CONTRACTOR. CONTRACTOR shall without cost to OWNER correct the defect or replace the Goods with non-defective Goods. If CONTRACTOR does not do so promptly and to the satisfaction of OWNER and ENGINEER, OWNER may, upon ENGINEER's recommendation, accept delivery of the defective Goods and remedy the defect as appropriate with an appropriate reduction in the Contract Price as provided in paragraph 13.8 instead of requiring removal or replacement. OWNER may refuse to accept delivery of any Goods that are apparently defective. If there are no apparent defects, OWNER shall accept delivery.

5.6. Notice of OWNER's acceptance of delivery will

be provided to CONTRACTOR by a receipted copy of the shipping documents or as otherwise provided.

ARTICLE 6
Applications for Payment

Applications for Progress Payments:

6.1. CONTRACTOR shall submit to ENGINEER for review Applications for Payment filled out and signed by CONTRACTOR and accompanied by such supporting documentation as is required by the Procurement Documents and also as ENGINEER may reasonably require. The first Application for Payment will be submitted after review and approval by ENGINEER of all Shop Drawings and of all samples required by the Procurement Documents. The second Application for Payment will be submitted after delivery of the Goods has been accepted by OWNER in accordance with paragraph 5.5 and will be accompanied by a bill of sale and other documentation satisfactory to OWNER warranting that OWNER has received the Goods free and clear of all liens, charges, security interests and encumbrances. Such documentation shall include releases and waivers from all parties who, during CONTRACTOR's performance under the Procurement Documents, might have obtained or filed any such lien, charge, security or encumbrance. In the case of multiple deliveries of Goods, additional Applications for Payment will be submitted as OWNER accepts delivery of additional items of the Goods.

Review of Applications for Progress Payments:

6.2. ENGINEER will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

6.2.1. ENGINEER's recommendation of payment requested in the first Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's review of the Application for Payment and the accompanying data, that the Shop Drawings and samples have been reviewed and approved as required by the Procurement Documents and CONTRACTOR is entitled to payment of the amount recommended; but will not constitute a representation to OWNER that ENGINEER has made any observation or inspection of the quality or quantity of the Goods.

6.2.2. ENGINEER's recommendation of payment requested in the Application for Payment submitted upon OWNER's acceptance of delivery of the Goods will constitute a representation by ENGINEER to OWNER, based on ENGINEER's review of the Application for Payment and the accompanying data and ENGINEER's inspection of the Goods in accordance with paragraph 5.5, that to the best of ENGINEER's knowledge, information and belief ENGINEER has identified the Goods listed in the Application for Payment and generally verified the quantities as being in accordance with the Procurement Documents, that on the basis of such limited inspection there are no apparent defects in the Goods, and that the Goods appear to be suitable for installation. Such recommendation will not constitute a representation that ENGINEER had made a final inspection of the Goods, that the Goods are free from defects, acceptable or in conformance with the Procurement Documents or that ENGINEER has made any investigation as to OWNER's title to the Goods.

6.2.3. ENGINEER may refuse to recommend that all or any part of a progress payment be made if, in ENGINEER's opinion, such recommendation would be incorrect or if on the basis of subsequently discovered evidence or subsequent inspections or tests ENGINEER considers such refusal necessary to protect OWNER from loss because the Contract Price has been reduced due to Modifications, Goods are found defective, or CONTRACTOR has failed to furnish acceptable Special Services.

Amount and Timing of Progress Payments:

6.3. The amounts of the progress payments will be as provided in the Procurement Agreement. OWNER shall within ten days after receipt of each Application for Payment with ENGINEER's recommendation pay CONTRACTOR the amount recommended; but, in the case of the Application for Payment upon OWNER's acceptance of delivery of the Goods, said ten-day period may be extended for so long as is necessary (but in no event more than twenty days) for OWNER to examine the bill of sale and other documentation submitted therewith. OWNER shall notify CONTRACTOR promptly of any deficiency in the documentation and shall not unreasonably withhold payment.

Final Inspection:

6.4. After all of the Goods have been incorporated into OWNER's project, tested in accordance with such field tests as are specified, and apparently functioning as intended, ENGINEER will make final inspection and advise OWNER and CONTRACTOR whether or not the Goods appear to be acceptable in accordance

the Procurement Documents. If not so acceptable, ENGINEER will identify the apparent defects in writing. CONTRACTOR shall immediately take such measures as are necessary to remedy all defects.

Final Application for Payment:

6.5. After CONTRACTOR has remedied all apparent defects to the satisfaction of ENGINEER, furnished all Special Services and delivered all maintenance and operating instructions, schedules, guarantees, certificates of inspection, and other documents (all as required by the Procurement Documents) ENGINEER will issue to OWNER and CONTRACTOR a notice of acceptability. CONTRACTOR may then make application for final payment following the procedure for progress payments. The final Application for Payment will be accompanied by all documentation called for in the Procurement Documents and such other data and schedules as ENGINEER may reasonably require.

Final Payment:

6.6. If, on the basis of the final inspection and review of the final Application for Payment and accompanying documentation, ENGINEER is satisfied that the Goods are in accordance with the Procurement Documents, that Special Services have been furnished as required and that CONTRACTOR's other obligations under the Procurement Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, recommend in writing final payment subject to the provisions of paragraph 6.8 and present the Application to OWNER. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. If the Application and accompanying documentation are appropriate as to form and substance, OWNER shall, within thirty days after receipt thereof, pay CONTRACTOR the amount recommended by ENGINEER.

6.7. If, through no fault of CONTRACTOR, final incorporation of the Goods (or any component thereof) into OWNER's project, the testing the performance thereof as part of a functioning whole or the furnishing of Special Services is delayed by more than ninety days (unless otherwise specified) after acceptance of delivery by OWNER and if ENGINEER so confirms, OWNER shall, upon receipt of an Application for Payment from CONTRACTOR and recommendation of ENGINEER, and without terminating the Agreement, make payment for the Goods (or components) so accepted and Special Services furnished. If the remaining balance to be held by OWNER for Goods and Special Services not yet furnished or accepted is less than the retainage stipulated in the Procurement Agreement, and if Bonds have been furnished as required in paragraph 4.1, CONTRACTOR shall submit with such Application for Payment written consent of the surety to payment of the amount requested. Such payment will be made under the terms and conditions governing final payment, but will not constitute any waiver of claims.

Waiver of Claims:

6.8. The making and acceptance of final payment will constitute:

6.8.1. a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled liens and claims, from defective Goods appearing after final inspection pursuant to paragraph 6.4, from defects in Special Services appearing after final payment or from failure to comply with the Procurement Documents or the terms of any special guarantees specified therein; however, final payment will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Procurement Documents; and

6.8.2. a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 7
Contractor's Responsibilities

Supervision and Coordination:

7.1. CONTRACTOR shall competently and efficiently supervise and direct production of the Goods and furnishing of Special Services and coordinate all operations required to deliver the Goods and furnish Special Services. CONTRACTOR shall designate in writing to OWNER and ENGINEER a person with authority to act on behalf of CONTRACTOR with respect to CONTRACTOR's obligations under the Procurement Documents, and all communications given to or received from that person will be binding on CONTRACTOR. Except as specifically provided in the Procurement Documents with respect to Special Services or otherwise, CONTRACTOR shall not be required to perform services at the site.

Material, Equipment and Workmanship:

7.2. Unless otherwise specified, the materials and equipment incorporated in the Goods will be new and of good quality. All workmanship will be of good quality and free from defects. CONTRACTOR shall, if

required by ENGINEER, furnish satisfactory evidence as to the source, kind and quality of the materials and equipment incorporated in the Goods. Special Services will be performed by competent and qualified personnel.

Equivalent Goods:

7.3. Whenever materials or equipment are specified or described in the Procurement Documents by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier or distributor, the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other manufacturers, fabricators, suppliers or distributors may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent to that named. The procedure for review by ENGINEER will be as set forth in paragraphs 7.3.1 and 7.3.2 as supplemented in the General Requirements.

7.3.1. Requests for review of substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to ENGINEER for acceptance thereof certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same function as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice the timely delivery of the Goods, whether or not acceptance of the substitute will require a change in any of the Procurement Documents to adapt the design to the substitute and whether or not incorporation or use of the substitute in connection with the production of the Goods is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR's expense additional data about the proposed substitute. ENGINEER will be allowed a reasonable time within which to evaluate the proposed substitute and will be the sole judge of acceptability, and no substitute will be ordered or installed without ENGINEER's prior written acceptance. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

7.3.2. ENGINEER will record time requi[illegible]by ENGINEER and ENGINEER's consultants in evaluating substitutes proposed by CONTRACTOR and in making changes in the Procurement Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's consultants for evaluating proposed substitutes.

Patent Fees and Royalties:

7.4. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in production of the Goods or the incorporation in the Goods of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Procurement Documents for use in producing the Goods and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Procurement Documents. CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incident to the use in production of the Goods or incorporation therein of any invention, design, process, product or device not specified in the Procurement Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

Taxes:

7.5. CONTRACTOR shall pay all sales, consumer, use and other similar taxes, required by law to be paid in respect of the production and delivery of the Goods and the furnishing of Special Services.

Shop Drawings and Samples:

7.6. CONTRACTOR shall submit to ENGINEER in accordance with the accepted schedule of Shop Drawings submissions five copies (unless otherwise specified) of all Shop Drawings which will have been checked by and bear a specific notation or indication of approval of CONTRACTOR and be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and like in-

for[illegible]on to enable ENGINEER to review the information as required.

7.7. CONTRACTOR shall also submit to ENGINEER with such promptness as to cause no delay in the timely production of the Goods, all samples required by the Procurement Documents. All samples will have been checked by and accompanied by a specific indication of approval of CONTRACTOR, and will be identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.

7.8. At the time of each submission, CONTRACTOR shall in writing call ENGINEER's attention to any deviations that the Shop Drawings or samples may have from the requirements of the Procurement Documents.

7.9. ENGINEER will review and approve with reasonable promptness Shop Drawings and samples, but ENGINEER's review and approval will be only for conformance with the design concept of the Goods and for compliance with the information given in the Procurement Documents. Such review and approval will not extend to design data reflected in Shop Drawings which is peculiarly within the special expertise of CONTRACTOR or any party dealing directly with CONTRACTOR. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and, if necessary, shall submit new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals. CONTRACTOR's submission of any Shop Drawing or sample bearing CONTRACTOR's approval shall constitute a representation to OWNER and ENGINEER that CONTRACTOR assumes full responsibility for having determined and verified the design criteria, quantities, dimensions, installation requirements, materials, catalog numbers, and similar data and that CONTRACTOR has reviewed or coordinated each Shop Drawing or sample with the requirements of the Procurement Documents; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Goods are in accordance with the requirements of applicable laws, ordinances, rules or regulations.

7.10. When a Shop Drawing or sample is required by the Specifications, CONTRACTOR shall not commence production of any part of the Goods affected thereby until such Shop Drawing or sample has been reviewed and approved by ENGINEER.

7.11. ENGINEER's review and approval of Shop Drawings or samples will not relieve CONTRACTOR from responsibility for any deviations from the Procurement Documents unless CONTRACTOR has in writing called ENGINEER's attention to such deviation at the time of submission and ENGINEER has given written concurrence and approval to the specific deviation, nor will any concurrence or approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings.

Continuing Performance:

7.12. CONTRACTOR shall continue performance of the contract during all disputes or disagreements with OWNER. No production of Goods will be delayed or the timely delivery of Goods or furnishing of Special Services be prejudiced, delayed or postponed pending resolution of any disputes or disagreements, except as CONTRACTOR and OWNER may otherwise agree in writing.

Access to Goods in Production:

7.13. CONTRACTOR shall provide ENGINEER, ENGINEER's representatives and other representatives of OWNER, testing agencies, and governmental agencies with jurisdictional interests proper and safe access to Goods in the process of production at reasonable times as is necessary for the performance of their functions in connection with the Procurement Documents.

ARTICLE 8
Owner's Responsibilities

8.1. OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. OWNER shall furnish the data required of OWNER under the Procurement Documents promptly and shall make payments to CONTRACTOR when due.

8.3. In connection with OWNER's rights to order changes in accordance with Article 10, OWNER is obligated to execute Change Orders.

8.4. OWNER's responsibility in respect of accepting delivery of the Goods is set forth in paragraph 5.5.

8.5. OWNER shall provide CONTRACTOR, CONTRACTOR's representatives, testing agencies and other governmental agencies with jurisdictional interests, proper and safe access to the site at reasonable times as is necessary for performance of their functions in connection with the procurement contract.

ARTICLE 9
Engineer's Status

OWNER's Representative:

9.1. ENGINEER will be OWNER's representative. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative are set forth in the Procurement Documents and will not be extended without written consent of OWNER and ENGINEER and written notice to CONTRACTOR.

Clarifications and Interpretations:

9.2. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Procurement Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Procurement Documents. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

Rejecting Defective Goods:

9.3. ENGINEER will have authority to disapprove or reject Goods or Special Services which are defective.

Decisions on Disputes:

9.4. ENGINEER will be the initial interpreter of the requirements of the Procurement Documents and judge of the acceptability of the Goods and Special Services. Claims, disputes and other matters relating to such acceptability or the interpretation of the requirements of the Procurement Documents pertaining to CONTRACTOR's performance and claims under Articles 11 and 12 in respect of Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute or other matter shall be delivered by the claimant to ENGINEER and the other party to the Agreement within fifteen days after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within forty-five days after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. In his capacity as interpreter and judge ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.5. The rendering of a decision by ENGINEER pursuant to paragraph 9.4 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 6.8) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Procurement Documents or at law in respect of any such claim, dispute or other matter.

Visits to CONTRACTOR's Facilities:

9.6. ENGINEER will not make visits to CONTRACTOR's facilities where the Goods are being produced to observe production, inspection or testing of the Goods except as otherwise specified in the Procurement Documents.

Limitations on ENGINEER's Responsibilities:

9.7. Neither ENGINEER's authority to act under these Procurement General Conditions or elsewhere in the Procurement Documents nor any decision made by ENGINEER in good faith either to exercise or not to exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR or any of CONTRACTOR's agents or employees or any other person furnishing materials or equipment for incorporation in the Goods or furnishing services incidental thereto.

9.8. Whenever in the Procurement Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe requirement, direction, review or judgement of ENGINEER, it is intended that such requirement, direction, review or judgement will be solely to evaluate the Goods and Special Services for compliance with the Procurement Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective never indicates that ENGINEER shall have authority to supervise or direct any of CONTRACTOR's operations or activities.

9.9. ENGINEER will not be responsible for CONTRACTOR's failure to produce and deliver the Goods and furnish Special Services in accordance with the Procurement Documents, nor will ENGINEER be responsible for any acts or omissions of CONTRACTOR

or of any other persons furnishing or delivering any Goods, furnishing Special Services or performing other services in connection therewith.

ARTICLE 10
Changes in the Goods or Special Services

10.1. Without invalidating the Agreement, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Goods or furnishing of Special Services; these changes will be authorized by Change Orders. Upon receipt of a Change Order, CONTRACTOR shall proceed on the basis of the change involved. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12 on the basis of a claim made by either party.

10.2. ENGINEER may authorize minor changes in the Goods or Special Services not involving an adjustment in the Contract Price or the Contract Time, which are consistent with the overall intent of the Contract Documents. These minor changes may be accomplished by an ENGINEER's Order and will be binding on OWNER, and also on CONTRACTOR who shall perform the change promptly. If CONTRACTOR believes that an ENGINEER's Order justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

10.3. Changes made in the Goods or Special Services without authorization of a Change Order will not entitle CONTRACTOR to an increase in the Contract Price or an extension of the Contract Time, except as provided in paragraph 10.2.

10.4. OWNER shall execute appropriate Change Orders prepared by ENGINEER covering changes which are required by OWNER, or because of any other claim of CONTRACTOR for a change in the Contract Time or the Contract Price which is recommended by ENGINEER.

10.5. If notice to the surety of any change in the contract is required by the provisions of any Bond, the giving of such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11
Change of Contract Price

11.1. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for furnishing the Goods, Special Services and performing other services in connection therewith. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order or written amendment. Any claim for an increase in the Contract Price shall be based on written notice delivered to OWNER and ENGINEER within fifteen days of occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered within forty-five days after such occurrence unless ENGINEER allows an additional period of time to ascertain accurate cost data. All claims for adjustment in the Contract Price shall be determined by ENGINEER if OWNER and CONTRACTOR cannot otherwise agree on the amount involved. Any change in the Contract Price resulting from any such claim shall be incorporated in a Change Order.

ARTICLE 12
Change of Contract Time

12.1. The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to OWNER and ENGINEER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by ENGINEER if OWNER and CONTRACTOR cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

12.2. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefor as provided in paragraph 12.1. Such delays shall include, but not be limited to, acts of neglect by OWNER, or to fires, flood, labor disputes, epidemics, abnormal weather conditions, governmental procedures, or acts of God.

12.3. All time limits stated in the Procurement Documents are of the essence of the Procurement Agreement. The provisions of this Article 12 shall not exclude recovery for damages (including compensation for additional professional services) for delay by either party.

ARTICLE 13
Warranty and Guarantee; Tests and Inspections, Correction, Removal or Acceptance

CONTRACTOR's Continuing Obligation; Warranties, Guarantees:

13.1. CONTRACTOR's obligation to furnish the Goods and Special Services and to perform other services in connection therewith in accordance with the Procurement Documents is absolute, and CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all Goods, Special Services and other services will be in accordance with the Procurement Documents and free from defects. Prompt notice of all observed defects will be given to CONTRACTOR.

13.2. Neither recommendation of any progress or final payment by ENGINEER, nor any payment by OWNER to CONTRACTOR under the Procurement Documents, nor any use of the Goods by OWNER, nor any act of acceptance by OWNER, nor any failure to do so, nor the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 6.5, nor any correction of defective Goods or Special Services by OWNER will constitute an acceptance of Goods, Special Services or other services not in accordance with the Procurement Documents or a release of CONTRACTOR's obligation to furnish the Goods, Special Services and other services in accordance with the Procurement Documents, except as otherwise provided in paragraph 6.8.1.

Tests and Inspections:

13.3. CONTRACTOR shall give ENGINEER timely notice of readiness of the Goods for all those inspections, tests or approvals which the Procurement Documents specify are to be observed by ENGINEER or another party prior to OWNER's acceptance of delivery. OWNER will give CONTRACTOR timely notice of all tests, inspections and approvals of the Goods called for by the Procurement Documents which are to be conducted at the site after such acceptance and prior to final payment.

Remedying Defective Goods:

13.4. If at any time after OWNER's acceptance of delivery under paragraph 5.5, and before expiration of the correction period under paragraph 13.6, OWNER or ENGINEER determines that the Goods are defective, CONTRACTOR shall, upon written notice from and as required by ENGINEER, either correct the defects or remove the Goods and replace them with non-defective Goods. If CONTRACTOR does not do so promptly and to the satisfaction of OWNER and ENGINEER, OWNER may, upon ENGINEER's recommendation, accept the defective Goods instead of requiring correction or removal and replacement.

13.5. If CONTRACTOR fails to take action as required by ENGINEER in accordance with paragraph 13.4, OWNER may, after ten days' written notice to CONTRACTOR, remedy any such deficiency instead of requiring removal or replacement. In an emergency where delay would cause serious risk of loss or damage, OWNER may take such action without notice to or waiting for action by CONTRACTOR.

Correction Period:

13.6. CONTRACTOR's responsibility for remedying all defects in the Goods will extend for a period of one year after the earlier of the date on which OWNER has placed the Goods in continuous service or the date of final payment, or for such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Procurement Documents or by any specific provisions of the Procurement Documents.

Remedying Defective Special Services:

13.7. If, at any time ENGINEER notifies CONTRACTOR in writing that any of the Special Services are defective, CONTRACTOR shall promptly provide acceptable services. If CONTRACTOR fails to do so, OWNER may obtain the Special Services elsewhere.

Costs of Remedying Defects:

13.8. All direct, indirect and consequential costs of correcting, removing and replacing defective Goods or of obtaining Special Services elsewhere and of exercising OWNER's rights and remedies under paragraphs 5.5 and 13.4 through 13.7 inclusive, will be charged against CONTRACTOR in an amount verified by ENGINEER; and, if incurred prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Procurement Documents and a reduction in the Contract Price, or if incurred after final payment, an appropriate amount will be paid by CONTRACTOR to OWNER. Such direct, indirect and consequential costs will include, in particular but without limitation, compensation for additional professional services required and all costs of repair and replacement of Goods, or property of OWNER or others destroyed or damaged by correction, removal or replacement of defective Goods. CONTRACTOR will not be allowed an extension of the Contract Time because of

any delay in performance attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph.

ARTICLE 14
Suspension, Cancellation and Termination

OWNER May Suspend:

14.1. OWNER may, at any time and without cause, suspend production of the Goods or any portion thereof or the furnishing of Special Services or other services for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER. Upon fifteen days' written notice from OWNER, CONTRACTOR shall resume performance. CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefore as provided in Articles 11 or 12.

OWNER May Cancel:

14.2. OWNER may, at any time without cause, upon ten days' written notice to CONTRACTOR, cancel all or any part of the undelivered Goods or unfurnished Special Services and shall pay CONTRACTOR reasonable cancellation charges.

OWNER May Terminate:

14.3. Upon the occurrence of any one or more of the following events:

14.3.1. if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, U.S. Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to bankruptcy or insolvency;

14.3.2. if a petition is filed against CONTRACTOR under any chapter of said Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

14.3.3. if CONTRACTOR makes a general assignment for the benefit of creditors:

14.3.4. if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law, or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;

14.3.5. if CONTRACTOR admits in writing an inability to pay its debts generally as they become due; or

14.3.6. a breach by CONTRACTOR in any substantial way of any provision of the Procurement Documents and such breach continues for a period of fifteen days after written notice to correct the breach from OWNER to CONTRACTOR;

OWNER may, after giving CONTRACTOR and the surety ten days' written notice and to the extent permitted by law, terminate the services of CONTRACTOR. In such case, CONTRACTOR shall not be entitled to receive any further payment until all Goods are provided and Special Services and other services furnished in accordance with the Procurement Documents. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs to OWNER of such termination (including compensation for additional professional services), such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph, OWNER shall not be required to obtain the lowest price.

14.4. Where CONTRACTOR's services have been so terminated by OWNER, the transaction will not affect any rights and remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

CONTRACTOR May Suspend or Terminate:

14.5. If, through no act or fault of CONTRACTOR, production of the Goods or furnishing of Special Services is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon ten days' written notice to OWNER and ENGINEER, terminate the Procurement Agreement and recover from OWNER payment for all Goods completed and Special Services and other services furnished and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Procurement Agreement, if OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon ten days' written notice to

OWNER and ENGINEER suspend production of the Goods and furnishing of Special Services or other services until payment of all amounts then due. The provisions of this paragraph will not relieve CONTRACTOR of obligations under paragraph 7.12 to continue performance of the contract without delay during disputes and disagreements with OWNER.

ARTICLE 15
Arbitration

15.1. All claims, disputes and other matters in question between OWNER and CONTRACTOR arising out of, or relating to the Procurement Documents or the breach thereof except for claims which have been waived by the making or acceptance of final payment as provided by paragraph 6.8, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining subject to the limitations of this Article 15. This agreement so to arbitrate and any other agreement or consent to arbitrate entered into in accordance herewith as provided in this Article 15 will be specifically enforceable under the prevailing arbitration law of any court having jurisdiction.

15.2. No demand for arbitration of any claim, dispute or other matter that is required to be referred to ENGINEER initially for decision in accordance with paragraph 9.4 shall be made until the earlier of (a) the date on which ENGINEER has rendered a decision or (b) the tenth day after the parties have presented their evidence to ENGINEER if a written decision has not been rendered by ENGINEER before that date. No demand for arbitration of any such claim, dispute or other matter shall be made later than thirty days after the date on which ENGINEER has rendered a written decision in respect thereof in accordance with paragraph 9.4; and the failure to demand arbitration within said thirty days' period shall result in ENGINEER's decision being final and binding upon OWNER and CONTRACTOR. If ENGINEER renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but shall not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned.

15.3. Notice of the demand for arbitration shall be filed in writing with the other party to the Procurement Agreement and with the American Arbitration Association, and a copy shall be sent to ENGINEER for information. The demand for arbitration shall be made within the thirty-day period specified in paragraph 15.2 where applicable, and in all other cases within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

15.4. No arbitration arising out of or relating to the Procurement Documents shall include by consolidation, joinder or in any other manner any other person or entity (including ENGINEER and ENGINEER's agents, employees or consultants) who is not a party to this Agreement unless:

15.4.1. the inclusion of such other person or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration,

15.4.2. such other person or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings, and

15.4.3. the written consent of the other person or entity sought to be included and of OWNER and CONTRACTOR has been obtained for such inclusion, which consent shall make specific reference to this paragraph; but no such consent shall constitute consent to arbitration of any dispute not specifically described in such consent or to arbitration with any party not specifically identified in such consent.

15.5. The award rendered by the arbitrators will be final, judgement may be entered upon it in any court having jurisdiction thereof, and will not be subject to modification or appeal except to the extent permitted by Sections 10 and 11 of the Federal Arbitration Act (9 U.S.C. §§10, 11).

ARTICLE 16
Miscellaneous

Giving Notice:

16.1. Whenever any provision of the Procurement Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Time:

16.2. When any period of time is referred to in the Procurement Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by

the law of the applicable jurisdiction, such day will be omitted from the computation.

General:

16.3. The duties and obligations imposed by these Procurement General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 13.1 and 13.6 and all of the rights and remedies available to OWNER and ENGINEER thereunder, will be in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by law or contract, by special warranty or guarantee or by other provisions of the Procurement Documents, and the provisions of this paragraph shall be as effective as if repeated specifically in the Procurement Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Procurement Documents will survive final payment and termination or completion of this Agreement.

SECTION 00800

SUPPLEMENTARY CONDITIONS

DESCRIPTION:

These Supplementary Conditions amend or supplement the Procurement General Conditions No. 1910-26B (1981 ed.) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

ARTICLE 1 - DEFINITIONS

Add the following additional definitions:

Contract Documents - The term Contract Documents is identical to the term Procurement Documents as defined in the General Conditions.

Agreement - The Agreement and other documents described as the Contract Documents in the Agreement.

Final Completion - The Contractor has fulfilled all obligations under the Contract and the Owner has authorized final payment. The Date of Final Completion shall be the date on which the Owner, by formal resolution, accepts the Work.

Delete the definition of "Owner" in its entirety and substitute the following definition:

Owner - Spokane County, a political subdivision of the State of Washington, acting through its authorized representatives.

ARTICLE 4 - BONDS AND INSURANCE

Add the following new paragraphs 4.4 and 4.5.

4.4 INSURANCE: The Contractor shall provide, maintain, and pay for general commercial liability and property damage insurance from an insurance company or companies approved by Spokane County and licensed in the State of Washington at all times during the term of this Agreement. All subcontractors shall obtain like insurance coverage to that specified herein. Said insurance shall protect against claims for personal injuries, including accidental death, as well as claims for property damage which may arise from any act or omission of the Contractor or Subcontractor(s), or by anyone directly or indirectly employed by either of them. The policy (policies) of insurance shall specifically name Spokane County, Landau Associates, Inc. (the Engineer) and their officers, agents, employees, and subconsultants; and any other entity specifically required by the provisions of the Agreement, as an additional insured for all coverages provided.

A. REQUIRED COVERAGES: The insurance shall provide the minimum coverages set forth below, all coverages combined single limit, $1 million per occurrence, no deductible with $3 million aggregate or greater when required by statutory limits of the law:

1. Worker's Compensation
2. Extended Bodily Injury
3. Employees as Additional Insured
4. Premises/Operations Liability (M&C)
5. Owners and Contractors Protective Liability
6. Products and Completed Operations Liability (through guarantee period)
7. Blanket Contractual Liability
8. Broad Form Property Damage Liability
9. Personal Injury, including coverages A, B, C, with no employee exclusion
10. Stop Gap or Employers Contingent Liability
11. Automobile Liability, including coverage for owned, non-owned, leased or hired vehicles or "any auto".
12. If the contract requires the use of blasting, then Explosion, Collapse, Underground Damage (referred to as "X.C.U.") as applicable will be required. When the use of explosives is necessary for performances of the Agreement, this insurance submitted or an amendment thereto shall contain a special clause permitting blasting.
13. If the contract requires working over water, the following additional coverages are required:
    a. Watercraft, owned and non-owned
    b. U.S. Harborworkers/Longshoreman and Jones Act
14. Other additional coverages that may be required will be listed in the provision of the Agreement.

Providing coverages in the above amounts shall not be construed to relieve the Contractor from liability in excess of such limits.

B. BUILDER'S RISK INSURANCE: Each Contractor shall be responsible for the safety of their work and materials until completed work is accepted by County authorized personnel or the Director of Purchasing. Adequate builder's all risk insurance, including but not limited to fire insurance coverage must be carried by the Contractor, for the full insurable value of the Work. This insurance shall cover portions of the Work stored on and off the site or in transit. The County reserves the right to review and approve all insurance carriers and companies providing insurance.

C. PROOF OF INSURANCE: The Contractor shall not commence Work, nor shall the Contractor allow any subcontractor to commence Work on any subcontract until a copy of Insurance Policy of Comprehensive General Liability Insurance, meeting the requirements set forth above, has been approved by the Purchasing Department and filed with the Board of County Commissioners. Said proof of insurance should be mailed to the Spokane County Purchasing Department ATTN: Project No. 93-068 along with delivery of the Agreement executed by the Contractor. Upon request, the Contractor shall forward to the Purchasing Department the original policy, or endorsement obtained, to the Contractor's policy currently in force. The policy or

policies of insurance shall not be canceled, materially altered, or renewed without thirty (30) days prior notice submitted to the Purchasing Department.

D. FAILURE OF COVERAGE: Failure of the Contractor to return a copy of the insurance policy as required shall result in forfeiture of the Contractor's bid bond on deposit, and the County may award the Agreement to the next lowest responsible bidder. Failure of the Contractor to fully comply with the above insurance requirements during the term of the Agreement shall be considered a material breach of contract and cause for immediate termination of the Agreement at the County's discretion. Alternatively, the County may procure and maintain, at the Contractor's sole expense, insurance to the extent deemed proper up to the amount of the required coverage(s). The County may offset the cost of such insurance against payment due to the Contractor under this Agreement.

E. ENDORSEMENTS: Spokane County and Landau Associates, Inc., and their officers, agents, employees, and subconsultants will be a named ADDITIONAL INSURED for all coverages provided by this policy of insurance and shall be fully and completely protected by this policy from all claims. Wording such as the following should be used "Spokane County and Landau Associates, Inc., and their officers, agents, employees, and subconsultants as additional insured as respects to Project No. 93-068, Air Stripping Treatment Equipment, Colbert Landfill Remedial Action Project.

F. SPECIAL "X.C.U." PROVISIONS: When demolition or blasting is involved in the work the Contractor shall provide excess coverage in the minimal amount of $1 million combined single limit, per occurrence, for Explosion, Collapse and Underground Damage (X.C.U.) for the project site. Said insurance coverage shall be subject to the same requirements as specified for the primary insurance coverage under this Agreement.

4.5 PAYMENT BOND: In addition to the Performance Bond required in paragraph 4.1., the Bidder shall be required to file a Payment Bond to the State of Washington and Spokane County each equal to 100 percent of the contract price, including Washington State Sales Tax, which bond shall be furnished by a Surety Company acceptable to the Board of County Commissioners. Mail to the Spokane County Purchasing Department, N. 721 Jefferson, Suite 303, Spokane, WA 99260, ATTN: 93-068.

ARTICLE 6 - APPLICATION FOR PAYMENT

6.1 Add the following new paragraph 6.1.1.

The Contractor may apply for progress payments for each completed item of the Work identified in the Schedule of Prices of the Bid Form, less any deductions provided in the Contract Documents.

6.3 Change all references to 10 days to read 14 days.

6.8 Delete paragraph 6.8.1 in its entirety.

Add the following new paragraph 6.9.

6.9 RETAINAGE: Retainage will not be paid sooner than 30 days after final acceptance of the Project. Final Acceptance shall take into account the recommendation of the Engineer. The acceptance will be in the form of a written notice from the Department and Director of Purchasing, the date of which begins the 30-day retainage period.

Prior to the release of retainage, the following documentation must be in the possession of the Spokane County Purchasing Department:

1. Engineer/Department approval and certification of the request for final application for payment.

2. Updated subcontractor list.

3. A notarized copy of the Affidavit of Bills Paid. (Blank form provided by the County.)

4. The Offshore Certification has been received from the Contractor.

5. No claims, as provided by law, have been filed against the project or Contractor as evidenced by a filing with the County Auditor-Recording, the County Clerk, and the County Department responsible for the project.

Note: Items 1 through 4 are documents to be prepared by and/or due from the Contractor.

ARTICLE 7 - CONTRACTOR'S RESPONSIBILITIES

Delete subparagraph 7.3.2 in its entirety. Add the following paragraphs 7.14, 7.15, 7.16, 7.17, 7.18, and 7.19.

7.14 INDEMNIFICATION: To the fullest extent permitted by law and RCW 4.24.115, Contractor shall defend, indemnify, and hold harmless Owner, Engineer, and each and any of Owner's and Engineer's agents or employees from and against any and all claims, demands, losses, and liabilities to or by third parties arising from, resulting from, or connected with services performed or to be performed under this Agreement, by Contractor or Contractor's agents or employees, subject to the limitations provided below.

Contractor's duty to indemnify as described above shall not apply to liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the negligence of Owner, Engineer, or Owner's or Engineer's agents or employees.

Contractor's duty to indemnify for liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the concurrent negligence of (a) Owner, Engineer, or their agents or employees, and (b) Contractor or Contractor's agents or employees, shall apply only to the extent of negligence of Contractor or Contractor's agents or employees.

Contractor's promise of indemnity pursuant to this Agreement shall include personal injury or death of Contractor's own employees. To the extent necessary to indemnify Owner, Engineer, or their agents or employees from Contractor's share of negligence, Contractor's obligation shall not be limited by the provisions of any Workers Compensation Act or similar statute. However, Contractor does not waive its immunity under such act or statute with respect to actions brought against Contractor by its employees.

Contractor's duty to defend, indemnify and hold harmless shall include, as to all claims, demands, losses, and liability to which it applies, Owner's and Engineer's, and their agents' and employees' personnel-related costs, reasonable attorneys' fees, court costs, and all other claim-related expenses.

7.15 In any and all claims against Owner or Engineer or any of their agents or employees by an employee Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 7.14 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Contractor or any subcontractor under worker's or workmen's compensation acts, disability benefit acts, or other employee benefit acts.

7.16 Trench excavations that exceed a depth of 4 feet require adequate safety systems for the trench excavation that meet the requirements of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW.

7.17 Comply with all applicable laws, ordinances, rules and regulations of any public authority for the safety of persons and property, including requirements of the Washington Industrial Safety and Health Administration per the Washington Administrative Code (WAC) 296-24.

7.18 The Contractor shall furnish all permits, inspection fees, and fees required in the performance of this contract, including those charged under RCW 39.12.070 by the Department of Labor and Industries works for the approval of statements of intent to pay prevailing wages and the certification of affidavits of wages paid, etc. The department may also charge fees to persons or organizations requesting the arbitration of disputes under RCW 39.12.060. The Contractor is responsible for all fees resulting from these RCWs.

7.19 This section is intended to cover all work within these specifications. Where protection measures of a general nature are called for, they shall apply to all phases of this work.

A. Protection of pedestrians, occupants of building and other parts of the County facilities. Contractors shall rope off and furnish canopy protection for sidewalks and other passageways necessary to pedestrians during all work in accordance

with all safety requirements. Adequate care shall be taken to protect windows and exterior trim from damage.

B. Protection of roof drains. Where the roof is used for the working area, care must be exercised to prevent roof damage and clogging of roof area drains, gutters and downspouts. Excess material is to be removed from the site daily. At the end of the working operations, all roof areas which are damaged shall be cleaned, patched and coated to conform with the existing roof.

C. All equipment, unused material and debris shall be removed by the Contractor when the work is completed, all necessary precautions shall be taken to protect shrubbery, flowers, etc., in the areas where work is being performed. Sand or other fine particles resulting from the operation shall be daily swept from the walks, steps, etc. and completely removed from the premises upon completion of the project.

ARTICLE 9 - ENGINEER'S STATUS

9.4 Delete paragraph in its entirety and replace with:

Contractor shall give Engineer and Owner written notice of each claim, dispute, and other matters relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Procurement Documents pertaining to the Contractor's performance and claims under Articles 11 and 12 in respect of Contract Price or Contract Time promptly (but in no event later than fifteen days after occurrence of the event giving rise thereto, and written supporting data shall be submitted by Contractor promptly (but in no event later than forty-five days) after such occurrence or event, unless Engineer allows an additional period of time to ascertain more accurate data. Contractor's written notice shall include a request for a formal decision from Owner on the claim, dispute, and other matters. Engineer will promptly render to Owner a written recommendation on Contractor's request. After consultation with Engineer, Owner within a reasonable time shall advise Engineer of its decision in writing, which Engineer shall promptly forward to Contractor. Owner's decision will be final and binding upon Contractor unless Contractor within thirty days after the date of such decision delivers in writing a notice of intention to appeal from such decision to Owner and Engineer.

9.5 Delete paragraph in its entirety and replace with:

Contractor's failure to timely provide notice of a claim, dispute, or other matter, or failure to timely deliver a notice of intention to appeal Owner's decision, as provided under paragraph 9.4 above, shall constitute a waiver of such claim, dispute, or other matter by Contractor. Any claims, disputes, causes of action, or other matters regarding which Contractor has timely filed a notice of intention to appeal, must be brought by Contractor within 180 days from the date of Final Completion in a court of competent jurisdiction of Spokane County, or be deemed waived.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.2 Delete paragraph in its entirety and replace with:

The Contract Price may only be changed by a Change Order or written Amendment. Any claim for an adjustment in the Contract Price sought by Contractor shall be subject to the procedure provided in paragraphs 9.4 and 9.5, if Owner and Contractor cannot otherwise agree on the amount involved.

ARTICLE 12 - CHANGE OF CONTRACT TIME

12.1 Delete paragraph in its entirety and replace with:

The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time by Contractor shall be subject to the procedure provided in paragraphs 9.4 and 9.5, if owner and Contractor cannot otherwise agree thereon.

ARTICLE 13 - WARRANTY AND GUARANTEE: TESTS AND INSPECTIONS, CORRECTION, REMOVAL, OR ACCEPTANCE

13.2 Delete the words "except as otherwise provided in paragraph 6.8.1" at the end of the paragraph.

ARTICLE 14 - SUSPENSION, CANCELLATION, AND TERMINATION

14.2 At the end of the sentence delete the words "reasonable cancellation charges" and replace with "for goods completed and special services and other services furnished."

14.3 In paragraph following paragraph 14.3.6 delete the last sentence.

14.5 Delete the words "...reasonable termination expenses" at end of the first sentence.

Add the following new paragraph 14.6

14.6 TERMINATION: Contract(s) resulting from this bid may be terminated in whole or in part for breach by the Bidder of any of the obligations or requirements set forth in the Contract Documents which would, at the option of the County require the Bidder to assume liability for any and all damages, including the excess of re-procuring similar products or services, or by the County for nonappropriation of funds.

ARTICLE 15 - ARBITRATION

Delete Article 15 of the Procurement General Conditions in its entirety.

ARTICLE 16 - MISCELLANEOUS

Add the following new paragraph 16.4

16.4 PROJECT NUMBER: The project number will become the contract number when an agreement is entered into subsequent to award. This number shall be referenced in all written material associated with the project and contract.

ARTICLE 17 - REQUIREMENTS OF WASHINGTON STATE LAW

Add the following new Article 17 and paragraphs 17.1, 17.2 and 17.3.

17.1 PROVISIONS: ALL LAWS OF THE STATE OF WASHINGTON relating to contracts for public works shall be a part of this contract with the same effect as if each were fully set forth herein. Specific reference, without limitation, is made to:

17.2 NONDISCRIMINATION: During the performance of this contract, the Contractor and its subcontractors shall not discriminate on the basis of race, color, sex, religion, national origin, creed, marital status, age, or the presence of any sensory, mental, or physical handicaps in employment or application for employment or in the administration or delivery of services or any other benefits under the contract. except to the extent permitted by bona fide occupation qualifications.

END OF SECTION

June 16, 1993

TO: Prospective Bidders

RE: SPOKANE COUNTY PROJECT NO. 93-068
AIR STRIPPING TREATMENT EQUIPMENT
COLBERT LANDFILL REMEDIAL ACTION PROJECT

ADDENDUM NO. 1

This Addendum forms part of the Bid Documents and modifies the original Bid Documents dated June 7, 1993. As this Addendum is included in the Bid Documents, receipt of this Addendum has been pre-acknowledged for the bidder on page 1 of the Bid Forms.

Section/Page No.	Revision
00020-1	Under the heading "Closing Date/Time" delete the words "July 12, 1993" and replace with "July 13, 1993".
00020-1	In the last paragraph, delete the words "Monday, July 12, 1993" and replace with "Tuesday, July 13, 1993".

END OF ADDENDUM 1

July 9, 1993

TO: Prospective Bidders

RE: SPOKANE COUNTY PROJECT NO. 93-068
AIR STRIPPING TREATMENT EQUIPMENT
COLBERT LANDFILL REMEDIAL ACTION PROJECT

ADDENDUM NO. 2

This Addendum forms part of the Bid Documents and modifies the original Bid Documents dated June 7, 1993. Acknowledge receipt of this Addendum on page 1 of the Bid Forms.

Section/Page No.	Revision
00020-1	Under the heading "Closing Date/Time", delete the words "July 13, 1993" and replace with "July 20, 1993".
00020-1	In the last paragraph, delete the words "Tuesday, July 13, 1993" and replace with "Tuesday, July 20, 1993".

END OF ADDENDUM 2

July 16, 1993

TO: Prospective Bidders

RE: SPOKANE COUNTY PROJECT NO. 93-068
AIR STRIPPING TREATMENT EQUIPMENT
COLBERT LANDFILL REMEDIAL ACTION PROJECT

ADDENDUM NO. 3

This Addendum forms part of the Bid Documents and modifies the original Bid Documents dated June 7, 1993. Acknowledge receipt of this Addendum on page 1 of the Bid Forms.

Section/Page No.	Revision
00300-2	Article 1.06, Item 3, change "90(1)", to "110(1)".
00800-1	Article 4, paragraph 4.4, first sentence, delete the words "and pollution". For Bidder clarification, this means that the requirement for pollution liability insurance is deleted.
00800-2	Article 4, paragraph 4.4.A.12, delete in its entirety.
01010-3	Article 3.01, paragraph A, delete sentence in its entirety and replace with: "Provide written warranty that the Air Stripping Treatment Equipment will, given proper operation and maintenance of equipment by Owner, achieve the performance standards at the service conditions defined herein, and will perform as specified for a minimum of 3 years following final acceptance. Provide written warranty that the air stripping tower shell and lining will not fail due to design, materials of construction, workmanship, corrosion, erosion, changes in hardness, chemical attack, thermal attack, or ultraviolet radiation, for a period of at least 10 years from final acceptance. Provide written warranty that supplied equipment other than the air stripping tower shell and lining, including fan, ductwork, tower internals, and other equipment shall be free from defects in material and workmanship for at least 1 year from final acceptance."
01650-4	Article 3.03, paragraph C.1, delete the words "1,1,1-trichloroethane, trichloroethylene, 1,1-dichloroethane, 1,1-dichloroethane, and tetrachloroethene", and replace with "only".

Section/Page No.	Revision
01700-3	Article 1.07, paragraph B.1, delete the words "10 years following the Contractor completed operational and validation test", and replace with "3 years following final acceptance".
	Article 1.07, paragraph B.2, delete the words "20 years", and replace with "10 years following final acceptance".
01700-4	Article 1.07, paragraph B, add new paragraph B.5 as follows:
	"5. The supplied components including fan, ductwork, tower internals, and all equipment other than the air stripping tower shell and lining, shall be free from defects in material and workmanship for at least 1 year from final acceptance."
11580-2	Article 1.02, paragraph F, delete "ANSI RTP-1"
11580-3	Article 1.02, add new paragraph V as follows:
	"V. American Society of Mechanical Engineers (ASME) ASME RTP-1 (1992 edition), Reinforced Thermoset Plastic Corrosion Resistant Equipment"
11580-5	Article 1.05, paragraph A, first sentence, delete "ANSI" and replace with "ASME".
11580-6	Article 1.06, paragraph A.1, delete "ANSI" and replace with "ASME".
11580-7	Article 2.02, paragraph B, delete "ANSI" and replace with "ASME".
	Article 2.02, paragraph C, delete "ANSI" and replace with "ASME".
11580-9	Article 2.03, paragraph B, first sentence, delete "ANSI" and replace with "ASME".
	Article 2.03, paragraph B, delete sixth sentence and replace with "Visual defects shall not exceed Level 2, as specified in ASME RTP-1, on both the inside and outside of the tower. Gaseous bubbles or blisters in all layers shall occur at a frequency no greater than 2 per square inch."
	Article 2.03, paragraph K, delete in its entirety.
11580-10	Article 2.05, paragraph B, end of last sentence, add the words ", or polypropylene."

Section/Page No.	Revision
11580-11	Article 2.05, paragraph C, at end of last sentence, add the words ", or polypropylene."
	Article 2.05, add new paragraph H as follows:
	"H. Tower shall be equipped with at least one liquid redistribution tray. Redistribution tray construction shall be vinyl ester resin FRP as specified for the Air Stripping Tower, or polypropylene."
11580-13	Article 3.01, paragraph A, first sentence, delete "ANSI" and replace with "ASME".
	Article 3.01, paragraph C, first sentence, delete "ANSI" and replace with "ASME".
11580-14	Article 3.01, paragraph D.4, first sentence, delete the words "Level 1 per ANSI RTP-1" and replace with "Level 2 per ASME RTP-1". In last sentence, delete "ANSI" and replace with "ASME".
	Article 3.01, paragraph D.5, end of paragraph, add the sentence "At Contractor's option, pressure test may be performed in the factory or after erection in the field. If performed in field, and if necessary to correct deficiencies, Contractor shall bear full expense for removal of tower, transport to factory, correction of deficiency, transport back to field, and reinstallation, including costs associated with the erecting contractor's costs for equipment and tower dismantling and re-erection."

END OF ADDENDUM 3

DIVISION 1

General Requirements

SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 DESCRIPTION OF PROJECT

A. Spokane County is implementing a remedial action project involving extraction, treatment, and discharge of contaminated groundwater at the Colbert Landfill Superfund Site. This project is being conducted in accordance with the U.S. District Court, Eastern District of Washington, Consent Decree No. C-89-033-RJM which defines site remediation requirements. The site is being remediated under the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, the Superfund Amendments and Reauthorization Act (SARA) of 1986, and the National Oil and Hazardous Substances Contingency Plan (NCP) (40 CFR Part 300), as well as other applicable or relevant and appropriate requirements (ARARs).

B. The Colbert Landfill is an inactive 40-acre municipal solid waste landfill, approximately 15 miles north of Spokane, Washington. Groundwater near the landfill is contaminated with chlorinated organic solvents over an area of approximately 2.5 square miles.

C. This remedial action project will extract contaminated groundwater using 10 extraction wells, convey the water through a network of pipelines to a groundwater treatment facility which will utilize Air Stripping Treatment Equipment to treat the groundwater, and discharge the treated groundwater to the Little Spokane River.

D. The Work for this Contract includes the design, fabrication, delivery, supervision of installation, and testing of Air Stripping Treatment Equipment designed to meet specified performance standards at specified service conditions for use in treating the contaminated groundwater from the Colbert Landfill Remedial Action Project. The Work also includes operator training and preparation of operation and maintenance manuals.

1.02 RELATED DOCUMENTS

A. Work shall be performed in accordance with provisions of the Contract Documents entitled *Contract Documents, Air Stripping Treatment Equipment, Colbert Landfill Remedial Action Project.*

B. Work shall be conducted in accordance with the referenced Consent Decree document, which is included in Appendix A and made a part of the Specification. The Work shall comply with governing local, state, and federal laws, regulations, and permits.

C. The Air Stripping Treatment Equipment will be installed by Owner in accordance with the requirements of the *Contract Documents, Construction, Colbert Landfill Remedial Action Project.*

1.03 INDEX OF DRAWINGS

A. General:

1.	G-1a.s.	Cover Sheet

B. Mechanical:

1.	M-1a.s.	Air Stripping Treatment Equipment and Treatment Facility Mechanical Plan
2.	M-4a.s.	Treatment Facility Air Stripping Treatment Equipment Mechanical Sections
3.	M-11a.s.	Air Stripping Tower Mechanical Plan and Elevation

C. Electrical:

1.	E-1	Electrical Abbreviations and Legend (provided for reference only)
2.	E-2	Treatment Facility One-Line Diagrams and MCC Accessory Schedule (provided for reference only)
3.	E-4.1	Treatment Facility Grounding Plans (provided for reference only)
4.	E-4.2	Treatment Facility Grounding Details (provided for reference only)

D. Structural:

1.	S-1	Structural General Notes (provided for reference only)
2.	S-2	Foundation/Slab Plan (provided for reference only)
3.	S-3	Foundation/Slab Details (provided for reference only)

E. Instrumentation:

1.	K-3	Piping and Instrumentation Diagram No. 2 of 3 (provided for reference only)

PART 2 PRODUCTS

2.01 SCOPE OF WORK

A. In accordance with the Contract Documents, the Contractor shall design, manufacture, furnish, deliver, supervise erection and installation, perform operational demonstration and system validation tests, and warranty fully functional Air Stripping Treatment Equipment to achieve specified performance standards at specified service conditions for treatment of groundwater for the Colbert Landfill Remedial Action Project. The quantities and items described in this section are approximate, and are intended to provide guidance to the Contractor for breakdown of the Work. The Work is divided into the general areas listed below.

1. Air Stripping Tower: Countercurrent packed-bed air stripping tower, with shell fabricated of fiberglass-reinforced plastic, with minimum dimensions of 10 feet diameter by approximately 70 feet total height. Tower to include following components: packing with minimum depth of 50 feet; tower internals including structural members, liquid distributor, mist eliminator, packing support, and liquid redistribution trays; ladder and platform; duct, piping, instrumentation and electrical supports, nozzles, and connections; and other required accessories.
2. Air Fan and Motor: Centrifugal fan and speed-adjustable electric motor, mounted on unitary base, with minimum 50 horsepower installed motor power, and other required accessories.

3. Air Ductwork: Ductwork between fan and tower, and fan inlet ductwork, including flexible connections, duct expansion section, air intake silencer, air filter assembly, architectural inlet louver, duct supports, instrument nozzles, and other required accessories.
4. Anchorage, embedments, and supports for equipment.
5. Engineering design, by registered professional engineer, for treatment process design and structural design of the equipment.
6. Erection supervision for Owner-furnished erection of the equipment.
7. Start-up, operational demonstration, and system validation tests for the equipment.
8. Warranty system performance.
9. Operation and maintenance manuals for the equipment supplied under this Contract.
10. Operator training services for the equipment supplied under this Contract.

2.02 OWNER-FURNISHED PRODUCTS AND WORK

A. The Owner will furnish the products and Work listed below.
1. Unloading, erection, and installation of Air Stripping Treatment Equipment.
2. Concrete foundations for equipment.
3. Building to house fan.
4. Piping connected to the Air Stripping Treatment Equipment.
5. Electrical.
6. Instrumentation, control, and monitoring equipment, including influent water and air flow metering instruments, adjustable frequency drive for fan, and programmable logic controller and other instrumentation equipment.
7. Operational support for start-up, operational demonstration, and system validation tests to be conducted by Contractor.
8. Scale control chemical feed and chemical batch cleaning equipment for control and cleaning of calcium carbonate scale formation in the Air Stripping Treatment Equipment.

PART 3 EXECUTION

3.01 WARRANTY

A. Provide written warranty that the Air Stripping Treatment Equipment will, given proper operation and maintenance of equipment by Owner, achieve the performance standards at the service conditions defined herein, and will perform as specified for a minimum of 3 years following final acceptance. Provide written warranty that the air stripping tower shell and lining will not fail due to design, materials of construction, workmanship, corrosion, erosion, changes in hardness, chemical attack, thermal attack, or ultraviolet radiation, for a period of at least 5 years from final acceptance. Provide written warranty that supplied equipment other than the air stripping tower shell and lining, including fan, ductwork, tower internals, and other equipment shall be free from defects in material and workmanship for at least 1 year from final acceptance.

3.02 COMPLIANCE WITH CONSENT DECREE

A. Conduct Work in accordance with Consent Decree No. C-89-033-RJM, which defines site remediation requirements. Contractor shall review the Consent Decree and be knowledgeable of its contents and requirements. A copy of the Consent Decree is included in Appendix A and by reference herein made part of the Contract Documents. Submit, in writing, certification that Contractor has satisfactorily received and reviewed the Consent Decree, and shall perform Work in conformance with this document.

3.03 COMPLIANCE WITH REGULATIONS

A. Contractor is responsible for determining requirements and complying with local, state, and federal laws, regulations, and permits which govern the Work, including, at a minimum, those listed below:
   1. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), regulations published at 40 CFR 300 *et seq.*
   2. Resource Conservation and Recovery Act (RCRA), regulations published at 40 CFR 260 *et seq.*
   3. Department of Transportation Hazardous Materials Regulations (49 CFR, Subchapter C).
   4. Washington State Dangerous Waste Regulations (WAC 173-303).
   5. Occupational Health and Safety Administration (29 CFR Subpart 1910.120) and Washington Industrial Safety and Health Act (RCW Chapter 49.17) Regulations.
   6. Federal Water Pollution Control Act (33 USC 1251 *et seq*).
   7. EPA National Pollutant Discharge Elimination System Regulations (40 CFR 122 *et seq*).
   8. Washington State National Pollutant Discharge Elimination System permit program (Chapter 173-220 WAC).

B. Comply with city, county, and other local laws, ordinances, statutes, rules, or regulations applicable to execution of Work.

3.04 REFERENCE REPORTS

A. Review reference reports listed below to determine Project conditions and to aid in Project understanding. Reference reports will be available for review at the office of the Engineer.
   1. Landau Associates, Inc. 1991. *Final Phase I Engineering Report. Colbert Landfill Remedial Design/Remedial Action.* Spokane County, Washington. 30 December 1991.
   2. Landau Associates, Inc. 1992a. *Final Extraction Well Plan, Phase II Remedial Design/Remedial Action, Colbert Landfill, Spokane, Washington.* 7 August 1992.
   3. Landau Associates, Inc. 1992b. *Quality Assurance Project Plan, Phase II Remedial Design/ Remedial Action, Colbert Landfill, Spokane, Washington.* 28 February 1992.
   4. Landau Associates, Inc. 1992c, *Phase II Health and Safety Plan, Colbert Landfill Remedial Design/Remedial Action, Colbert Landfill, Spokane, Washington.* 28 February 1992.
   5. Landau Associates, Inc. 1993. *Final Treatment and Discharge Plan, Phase II Remedial Design/Remedial Action, Colbert Landfill, Spokane, Washington.* 26 February 1993.

6. U.S. Environmental Protection Agency. 1986. *Superfund Remedial Design and Remedial Action Guidance.* OSWER Directive 9355.0-4A.
7. U.S. District Court, Eastern District of Washington. 1988. Consent Decree N. C-89-033-RJM. The Washington State Department of Ecology and The United States of America on behalf of the U.S. Environmental Protection Agency (plaintiffs) v. County of Spokane and Key Tronic Corporation (defendants). 28 February 1988.

3.05 COORDINATION

A. Coordinate with the Engineer the scheduling, submittals, and Work included in Specification to ensure efficient and orderly sequence of manufacture, delivery, and testing of Air Stripping Treatment Equipment and related equipment. Time is of the essence in this Contract, as other Work for the Project is dependent upon the timely delivery of the Air Stripping Treatment Equipment.

3.06 DESIGNATION OF PROJECT MANAGER

A. Designate in writing, before starting Work, an authorized Project Manager who shall have complete authority to represent and to act for Contractor. The Project Manager shall be the contact person for all communication with the Owner and Engineer, shall approve and sign all submittals, and shall be present during all start-up and testing activities.

3.07 PROJECT SCHEDULE

A. Within 10 days after issue of Notice to Proceed, Contractor shall submit a detailed fabrication, supply, and delivery schedule for review and approval by Engineer. The schedule shall conform to the Schedule of Completion presented in the Contract Documents. Construction schedule shall clearly show each unit of Work to be performed under this Contract and all items involved in overall sequencing of Work. Contractor shall revise schedule every month and resubmit to Engineer for review.

3.08 HEALTH AND SAFETY

A. Because of the potential health hazards to Contractor's employees associated with, but not limited to, contact with contaminated groundwater and test chemicals during equipment start-up and testing, Work shall be performed in compliance with applicable provisions of the Washington Industrial Safety and Health Act (WAC 296-62 Part P Hazardous Waste Operations and Emergency Response), as well as other applicable federal, state, and local codes and regulations regarding hazardous materials and hazardous waste. The Contractor is fully responsible for planning and executing all work under this Contract in a manner that meets requirements for protection of personnel health and safety defined in WAC 296-62 Part P as well as other specified regulatory requirements.

B. Prepare and submit a Health and Safety Plan or notification of adoption of Owner-prepared Project Health and Safety Plan to the Owner, meeting applicable regulatory requirements of this section, for review and approval by Engineer within 21 days after Notice to Proceed and before conducting Work associated with equipment start-up and testing. The Project Health and Safety Plan is included in Appendix B and by reference herein made part of the Contract Documents.

C. Submit proof of 40-hour and current 8-hour Annual Refresher OSHA 1910.120 training for personnel who engage in work associated with hazardous materials.

3.09 PROJECT MEETINGS

A. Within 15 days after issuance of Notice to Proceed, a Prefabrication Conference shall be held at the Engineer's office in Spokane, Washington. Meeting shall be attended by Contractor's project manager and professional design engineers. Matters to be discussed or resolved, and instruction and information to be furnished to or given by Contractor at Preconstruction Conference include, but are not limited to:
   1. Project schedule submitted by Contractor.
   2. Communication procedures between parties.
   3. Contractor's design methodologies.
   4. Contractor's quality control program.
   5. Forms and procedures for Contractor's submittals.
   6. Testing laboratory or agency, and testing procedures.
   7. Fabrication methods proposed by Contractor.
   8. Operational demonstration and system validation test plan.

B. Progress meetings shall be held on a periodic basis at maximum monthly interval. Dates, times, and locations of progress meetings shall be agreed upon and recorded at Preconstruction Conference. Meetings may be in-person or by telephone. Required attendance at progress meetings includes Contractor's project manager and a representative from each of the Contractor's major subcontractors, and Engineer. Matters bearing on progress and performance of Work since the preceding progress meeting shall be discussed and resolved, including any previously unresolved matters, deficiencies in Work, and problems, difficulties, or delays that may be encountered.

C. A predemonstration test meeting shall be held prior to mobilization for testing. Plans for equipment, utilities, test methodologies, schedule, and other related topics shall be agreed upon at this meeting.

D. Special meetings may be called by Engineer or Contractor upon notice to other party.

END OF SECTION

SECTION 01011

OWNER-FURNISHED PRODUCTS AND WORK

PART 1 GENERAL

1.01 DESCRIPTION

A. This section describes material, equipment, and Work associated with the Air Stripping Treatment Equipment that will be furnished by Owner, and the Contractor's requirements for care, handling, and responsibilities for Owner-furnished products.

1.02 RELATED SECTIONS

A. Section 01300: Submittals

B. Specification Appendix C: System Operating Description from Bid Documents, Construction, Colbert Landfill Remedial Action Project (provided for information only).

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Contractor shall provide written certification to Engineer of receipt and review of designs associated with Owner-furnished equipment and materials, and conformance and compatibility of Air Stripping Treatment Equipment with Owner-furnished material, equipment, designs, system operation, and Work of other Contracts, prior to shipment of Air Stripping Treatment Equipment to the site. The system operating description for the Owner-furnished instrumentation, control, and monitoring system is included as Appendix C to this Specification, and selected design drawings for the Owner-furnished electrical, structural, and instrumentation equipment and material are included as part of the Drawings associated with this Specification. A complete set of the Contract Documents, Construction, Colbert Landfill Remedial Action Project will be provided to Contractor upon Notice to Proceed or upon request. Contractor shall review the Construction Contract Documents and provide written certification as specified in this paragraph.

C. Contractor shall provide written instructions to Engineer for unloading, handling, storage, installation, erection, start-up, and testing, and operation and maintenance of the Air Stripping Treatment Equipment prior to shipment of equipment.

1.04 DELIVERY, STORAGE, AND HANDLING FURNISHED BY OWNER

A. Contractor shall coordinate with Engineer the time and place of delivery and specify all equipment needed for unloading, handling, and storage of the equipment to be supplied by the Contractor.

B. Before shipping equipment, Contractor shall make required submittals and receive favorable approval of submittals from Engineer. At Engineer's discretion, it will inspect equipment prior to shipment. Before unloading, Engineer will inspect the delivery for contents and condition.

PART 2 PRODUCTS

2.01 OWNER-FURNISHED PRODUCTS AND WORK

A. Owner will furnish the products and work listed below related to the Air Stripping Treatment Equipment.

1. Unloading, storage, and protection of equipment delivered to the site.
2. Installation, erection, attachment, and connection of equipment per Contractor's installation and field erection instructions.
3. Concrete foundations for equipment, including installation of Contractor-supplied embedments and anchorages.
4. Pre-engineered metal building as shown on the Drawings to house the fan, air intake silencer, air filter assembly, and portions of the air ducting. The Contractor-supplied architectural inlet louver shall be installed onto the wall of this building.
5. Mounting and connection of piping to Contractor-supplied pipe supports and nozzles installed on the Air Stripping Tower.
6. Electrical connections to the equipment, including power to the fan, grounding, lightning protection, lighting on tower platform, and power to Owner-furnished instrumentation mounted on the tower. Fan motor power will be controlled by an adjustable frequency drive unit.
7. Instrumentation, control, and monitoring equipment, including flow measurement instruments for both the influent water and air flow. A programmable logic controller will be furnished to maintain a preset operator adjustable air-to-water ratio, with air flow adjusted using the variable frequency drive unit to vary fan speed.
8. Operational support for start-up, operational demonstration, and system validation tests. This support will include operation and adjustment of the control system operating setpoints as prescribed by the Contractor for the testing program, and support for system maintenance and repair if necessary during testing.
9. Scale control chemical feed and chemical batch cleaning equipment for control of calcium carbonate scale formation in the Air Stripping Treatment Equipment. The scale control chemical feed system will include flow proportional, continuously metered injection of polyacrylate-based scale control chemical into the influent groundwater at an approximate dosage of 10 mg/L. The batch cleaning equipment will consist of a pump system to circulate 10 percent by weight hydrochloric acid solution for dissolution of scale formed in the tower, and circulation of up to 2 percent by weight hydrogen peroxide solution for cleaning of biological fouling formed inside the tower.

PART 3 EXECUTION

3.01 SITE WORK

A. While working at the site, avoid damaging or causing damage to Owner-furnished products and make no connections or modifications to Owner-furnished products unless approved by the Engineer.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 DESCRIPTION

A. In accordance with the requirements of this section and other Specification sections, submit in writing for review and approval by Engineer the following:
   1. Treatment process design calculations by professional engineer.
   2. Equipment structural design calculations and drawings by professional engineer.
   3. Quality control program.
   4. Equipment Shop Drawings.
   5. Materials list.
   6. Warranty.
   7. Certification of compliance with Consent Decree.
   8. Designation of project manager.
   9. Project schedule.
   10. Health and safety plan.
   11. Certification of conformance and compatibility of Air Stripping Treatment Equipment with Owner-furnished products and Work.
   12. Instructions for Equipment unloading, handling, storage, installation, and erection.
   13. Operational demonstration and system validation test plan, including test equipment design.
   14. Operational demonstration and system validation test reports.
   15. Operator training program to be conducted by Contractor.
   16. Equipment factory test reports.
   17. Operational and maintenance manual.
   18. Project record documents.

1.02 SUBMITTAL SCHEDULE

A. Simultaneously with the submittal of the specified Project schedule, the Contractor shall prepare and submit for approval a detailed schedule of all the submittals which it proposes to make to meet the requirements stated herein and those cited in other sections of the Specifications. The list shall include the proposed date of each submittal, Shop Drawings, Project Record Documents, and all other items for which a submittal is required. The list shall include identifying references for each item to relate it to the specific section of the Specifications.

B. With each revision or certification of the Project schedule, the Contractor shall either revise this schedule of submittals and resubmit it for approval or certify that the previously furnished schedule is still in effect.

C. After the submittal schedule is reviewed and approved by the Engineer, it shall become the basis for the submittal of all items by the Contractor. All submittals shall be made in accordance with the approved schedule.

1.03 SUBMITTAL REQUIREMENTS

A. General. Furnish for review submittals as outlined in this section and in the Specifications. Formal submittals furnished shall include an approval stamp or a certification. The stamp or certification shall be signed by an authorized representative of the Contractor. The Contractor's stamp or certification on any submittals shall constitute a representation to the Owner and the Engineer that the Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers and similar data, or that it assumes full responsibility for doing so, and that it has reviewed or coordinated each submittal with the requirements of the Contract Documents.

B. Each submittal shall be accompanied by a transmittal letter describing the items submitted. The transmittal letter shall be clearly labeled Air Stripping Treatment Equipment, Colbert Landfill Remedial Action Project and shall have a serial number. The first submittal shall have serial number 001, and subsequent submittals shall be consecutively numbered. The initial version of the submittal shall be identified as "Revision 0," and subsequent submittals shall be numbered consecutively starting with "Revision 1."

C. All submittals shall be addressed to the Engineer at the following address:
   Landau Associates, Inc.
   23107 100th Avenue West
   P.O. Box 1029
   Edmonds, WA 98020-9129
   Attention: Mr. Michael A. Stanaszek, Project Engineer

1.04 SUBMITTAL REVIEW

A. The primary objective of reviewing submittals, including but not limited to shop drawings, design data, catalog cuts, illustrations, printed specifications, draft reports, is to complete the Project in full conformance with the Contract Documents. The secondary objective is to assist Contractor in procurement of equipment that will meet all requirements of Contract Plans and Specifications, fit structures detailed on Plans, be complete, and have proper functional characteristics.

B. Engineer shall check and review schedules, drawings, etc., submitted by Contractor only for general design conformance with concept of Project and compliance with information given in Contract Documents. Acceptance of submittals does not constituent a change order of Contract requirements. Acceptance will not relieve the Contractor of responsibility for conformity to the Contract Documents and correct detail and fit of parts when installed. Favorable review of submittals shall apply in general design only and shall not relieve Contractor of responsibility for errors or omissions. Favorable review shall not relieve Contractor of its obligation to meet safety requirements.

C. Within 2 weeks of receipt of submittals, the Engineer will return one copy of each drawing or data sheet marked to indicate the result of the Engineer's review.

D. One copy of each submittal will be returned to Contractor marked as follows:
   1. No Exceptions Taken. Accepted subject to its compatibility with future submittals and additional partial submittals for portions of Work not covered in this submittal. Does not constitute approval or deletion of specified or required items not shown in the partial submittal.
   2. Make Corrections Noted (No Resubmittal Required). Same as Item 1, except that minor corrections as noted shall be made by Contractor.
   3. Amend and Resubmit. Rejected because of major inconsistencies or errors. Resolve or correct before next submittal.
   4. Rejected—Resubmit. Submitted material does not conform to the Contract Document in a major respect (i.e., wrong size, model, capacity, or material).

E. Items 1 and 2 above (no resubmittal required) are considered "favorable review," Items 3 and 4 above (correction and resubmittal required) are considered "unfavorable review."

F. Copies marked "No Exceptions Taken" or "Make Corrections Noted" authorize the Contractor to proceed with work covered by those submittals with corrections, if any, incorporated.

G. No revision in any way shall be made after a submittal has been marked "No Exceptions Taken" without resubmitting the submittal for review.

H. When submittals have been marked "Amend and Resubmit" or "Rejected-Resubmit," the Contractor shall make the necessary corrections and submit required copies. Every revision shall be shown by number, date, and subject in a revision block, and each revised submittal shall have its latest revision numbers and items clearly indicated by clouding around the revised areas on the submittals. Submittals without these indications will be considered nonconforming.

I. Submittals shall be submitted as instruments of Contractor, who shall be responsible for their accuracy and completeness. These submittals may be prepared by Contractor, subcontractors, or suppliers, but Contractor shall ascertain that submittals meet requirements of Contract Documents. Contractor shall check submittals from subcontractors before transmittal to Owner.

1.05 SUBMITTAL QUANTITIES

A. Unless otherwise specified, submit 6 copies of each submittal.

1.06 CONTRACTOR DATA

A. Include name, address, contact person, and telephone number of each supplier on each Shop Drawing and material submitted.

1.07 MATERIALS LIST

A. Contractor shall submit a list of materials to Engineer for favorable review in accordance with the Schedule Completion set forth in the Contract Documents. The list shall include items of equipment and material and the names of manufacturers with whom purchase orders have been placed. Arrange items on the list in the same order as in these Specifications, and include sufficient data to precisely identify material and equipment Contractor proposes to furnish. The list shall include Specification or Drawing references. After submittal is favorably reviewed and returned to Contractor by Engineer, it shall become the basis for submittal of detailed manufacturer's drawings, catalog cuts, curves, diagrams, schematics, data, and information on each separate item for review by Engineer as set forth in this section.

1.08 SHOP DRAWINGS AND DETAILS

A. Submit Shop Drawings to Engineer for favorable review before such items are manufactured or used in Work. Contractor shall also submit mylar reproducibles of final construction drawing and final as-built drawings. Submissions shall be completed in accordance with the Schedule of Completion set forth in the Contract Documents. Do not allow Shop Drawing copies to be used or distributed for field use without Engineer's stamp thereon complete with appropriate "final markings/action taken" noted thereon. Shop Drawings shall not be used for construction or installation unless submitted to and favorably reviewed by Engineer.

B. Shop Drawing submittal and coordination are the responsibility of the Contractor; this responsibility shall not be delegated in whole or in part to subcontractors. Designation of Work "by others," if shown in Shop Drawings, shall mean that Work will be performed by Contractor rather than by the subcontractor who has prepared the Shop Drawings.

C. Favorable review does not constitute acceptance of any responsibility for accuracy, coordination, and completeness of Shop Drawings or items of equipment represented on Drawings. Accuracy, coordination, and completeness of Shop Drawings shall be sole responsibility of Contractor, including responsibility to check comments, corrections, and modifications before fabrication.

D. Acceptance by Engineer of Drawings, method of Work, or information regarding material and equipment Contractor proposes to furnish shall not relieve Contractor of its responsibility for errors therein and shall not be regarded as assumption of risk or liability by Owner or its officers or employees. Contractor shall have no claim under the Contract on account of failure or partial failure, or inefficiency or insufficiency of any plan or method of Work, or material and equipment so accepted. Such acceptance shall be considered to mean that Owner has no objection to Contractor using, upon its own full responsibility, the plan or method of Work proposed, or furnishing the material and equipment proposed.

1.09 MANUALS, INSTRUCTIONS, AND CERTIFICATES

A. Submit manufacturer's manuals, instructions, and certificates to Engineer covering mechanical equipment and other material and equipment as noted in the Specifications. Requirements for manuals and instructions are covered in the sections of these Specifications describing the equipment to be installed and in Section 01700.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 01620

GENERAL DESIGN STANDARDS FOR MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. These general requirements apply to all systems and equipment and are a part of each and all of the separate sections of this Specification. Contractor shall direct the attention of all subcontractors and suppliers for the Work to the provisions of the Contract Documents and this section.

1.02 RELATED SECTIONS

A. Specification sections related to design and supply of material and equipment.

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Where specified, submit Shop Drawings, product data, and manufacturer's installation requirements demonstrating conformance to this section.

C. Where specified, submit with Shop Drawings, complete calculations on test results, details of construction, and method of installation for manufactured products showing compliance with design requirements specified in this section. Structural calculations and details shall be signed and stamped by a Registered Professional Engineer who has demonstrated proficiency in structural engineering.

D. Installation Certified Reports. Submit a notarized written report with respect to final installation of all equipment certifying:
   1. The equipment has been properly installed and lubricated under Contractor's supervision.
   2. The equipment is in accurate alignment.
   3. Contractor was present when the equipment was placed in operation.
   4. Contractor has checked, inspected, and adjusted the equipment as necessary.
   5. The equipment is free from any undue stress imposed by connecting piping or anchor bolts.
   6. The equipment has been satisfactorily operated, and system validation tests have been conducted as specified.

PART 2 PRODUCTS

2.01 MATERIALS AND WORKMANSHIP

A. Equipment furnished shall be new and guaranteed free from defects in material, design, and workmanship. It shall be the manufacturer's responsibility to ascertain

the conditions and service under which the equipment will operate and to warrant that operation under those conditions shall be successful. The equipment shall be amply proportioned for all stresses that may occur during fabrication, erection, and intermittent or continuous operation.

B. Equipment shall be designed, fabricated, and assembled in accordance with the best modern engineering and shop practice. Individual parts shall be manufactured to standard sizes and gauges so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall not have been in service before delivery, except as required by tests.

C. Iron castings shall be tough, close-grained gray iron free from blowholes, flaws, or excessive shrinkage.

D. Structural and miscellaneous fabricated steel used in items of equipment shall conform to the standards of the American Institute of Steel Construction. Structural members shall be considered as subject to shock or vibratory loads. Steel that will be submerged, all or in part, during normal operation of the equipment shall have a minimum nominal thickness of 1/4 inch.

E. Provide equipment and material suitable for the service conditions and meeting standard specifications including, but not limited to, ANSI, ASME, AWWA, ASTM, NEMB, UBC, and UL.

F. The location of the fabricator and a shop schedule shall be furnished to the Engineer prior to the beginning of fabrication so that the Engineer can schedule shop inspection.

2.02 DESIGN CRITERIA

A. General:
   1. Comply with requirements of Uniform Building Code.
   2. Comply with Occupational Safety and Health Administration requirements (including Occupational Safety and Health Act).
   3. Comply with requirements of individual specification sections.

B. Roof Loads:
   1. Design equipment for roof loads as set forth in the Uniform Building Code.
      a. Roof live load and snow load: 30 psf plus drift per UBC Appendix Chapter 23.

C. Wind loads:
   1. Design equipment for wind loading as set forth in the Uniform Building Code.
      a. Basic wind speed: 90 miles per hour.
      b. Site exposure: class C.

D. Seismic (earthquake) loads:
   1. Design equipment for seismic loading as set forth in the Uniform Building Code.
      a. Seismic Zone 2B (UBC 1991).
      b. Importance Factor - 1.5.

E. Auxiliary loads:
   1. Other superimposed loads shall be considered as part of the design requirements and combined with the normal design (dead, live, seismic, and wind) loads.
   2. Coordinate and verify magnitude and location of auxiliary loads as shown on Drawings and as specified, before fabrication.

F. Combination of Loads.
   1. The combining of dead, live, wind, seismic, and auxiliary loads for design purposes shall be set in the Uniform Building Code.

2.03 LUBRICATION

A. Lubricants. Provide lubricants of the types recommended by equipment manufacturers, quantities sufficient for consumption before completion, testing, and final acceptance.

B. Lubrication System. Lubrication of equipment shall ensure constant presence of lubricant on wearing surfaces. Lubricant fill and drain openings shall be readily accessible. Provide easy means for checking the lubricant level. Before testing or operation, lubricate the equipment with the prescribed amount and type of lubricant as required by the equipment manufacturer. Equipment lubrication systems shall be systems that require attention no more often than weekly during continuous operation, shall not require attention during start-up or shut down, and shall not waste lubricants.

2.04 STRUCTURAL STEEL FABRICATIONS

A. Conform to "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings" of the AISC, unless otherwise indicated or specified. Design fabrications for dynamic and vibratory loadings. Use structural steel shapes conforming to ASTM A 36, A 440, A 500, A 570, A 618, or equal, as applicable. Conform welding to AWS D1.1 Structural Welding Code. Galvanize specified items in accordance with ASTM A 123, A 153, or A 386, as applicable; use galvanized bolts and fasteners with galvanized assemblies.

2.05 EQUIPMENT BASES AND BEDPLATES

A. Mount equipment assemblies on a single heavy cast iron or welded steel bedplate unless otherwise shown or specified. Provide bases and bedplates with machined support pads, tapered dowels for alignment or mating of adjacent items, adequate openings to facilitate grouting, and openings for electrical conduits. Continuously weld seams and contact edges between steel plates and shapes, and grind welds smooth.

1. Factory Painting. On mechanical equipment, drives, starters, control panels, and other similar self-contained or enclosed components, apply a factory primer and high-quality, oil-resistant baked industrial enamel finish. Paint or otherwise protect surfaces that are inaccessible after assembly by a method which provides protection for the life of the equipment.
2. Shop Priming. Apply one or more shop coats of metal primer on surfaces to be finish painted at the site, coating thickness to protect surfaces until finished.
3. Rust Preventive. Coat machined, polished, and other ferrous surfaces, which are not to be painted, with rust preventive compound, Rust-Oleum 4-9, or approved equal.

PART 3 EXECUTION

3.01 SEISMIC DESIGN OF EQUIPMENT AND OTHER APPURTENANT FACILITIES

A. Equipment and supports shall be designed with anchors to resist seismic forces as specified in this section. This requirement applies, but is not limited to, such items as tanks, piping, pipe supports and hangers, motors, fans, and air ducts. Certify that equipment has been designed and constructed to safely transfer seismic induced loads through equipment and to anchorage systems without failure of equipment components.

B. Anchorage shall be made to structural elements only and shall be designed and installed so that resisting capabilities of such elements are not exceeded.

C. If, in opinion of Contractor, conditions of anchorage are so special or limiting that available structural elements are incapable of resisting seismic anchorage forces, Engineer shall be notified. Engineer shall then provide Contractor with instructions for procedures to be followed.

D. Design of entire anchoring system, and furnishing of parts of anchoring system that must be integral with equipment or facilities, shall be responsibility of supplier. Contractor shall be responsible for furnishing any anchors or restraints that are independent of equipment or facilities. Examples include, but are not limited to, are anchor bolts and similar items.

E. The Air Stripping Tower shall not use guy wires.

3.02 INSPECTION

A. Inspect each item of equipment for damage, defects, completeness, and correct operation before transporting to site.

3.03 CONTRACTOR'S SUPERVISION AND INSTALLATION CHECK

A. Contractor shall furnish an authorized representative specifically trained and experienced in the installation of its equipment to:
   1. Supervise the equipment installation in accordance with the Contractor's installation instructions and Instruction Manuals.
   2. Be present when the equipment is first put into operation.
   3. Inspect, check, adjust as necessary, and approve installation.
   4. Repeat the inspection, checking, and adjusting until trouble or defects are corrected and the equipment installation and operation are acceptable.
   5. Witness and supervise operational demonstrations and system validation tests to the extent specified.
   6. Prepare and submit the specified Installation Certified Report.

END OF SECTION

SECTION 01650

FACILITY START-UP AND COMMISSIONING

PART 1 GENERAL

1.01 DESCRIPTION

A. Perform operational demonstration and system validation testing for the Air Stripping Treatment Equipment as specified herein.

B. The operational demonstration and system validation tests shall include operation of the Air Stripping Treatment Equipment in a recirculation (non-discharge) mode, using a temporary pump and piping system connected to the Owner-furnished influent and effluent lines to the Air Stripping Tower. The operational demonstration test shall include recirculation of potable city water through the Air Stripping Treatment Equipment at the range of flows specified for the equipment. The system validation test shall include injection of the chlorinated organic constituents of concern into the influent pipeline during recirculation, to simulate specified influent concentrations and flow rates and demonstrate achievement of specified effluent performance standards.

C. The Air Stripping Treatment Equipment shall be tested for conformance to specified performance standards at the three specified design conditions, which are: 1) influent peak flow/average concentration; 2) influent peak concentration/average flow; and 3) influent minimum.

D. Operational demonstration and system validation testing will be successfully completed when the specified performance standards have been demonstrated to the Engineer's satisfaction at the three design conditions specified in paragraph C above. Achievement of performance standards under system test conditions in no way relieves the Contractor from the requirements of the warranty for ongoing system performance.

E. Engineer will be responsible for collection, analysis, and data reporting for determining chlorinated organic constituent concentrations in the water during the testing program. Samples will be collected, analyzed, and validated in accordance with the referenced Project Quality Assurance Project Plan. Contractor shall be allowed to take split samples. Engineer's samples will provide the basis for determining conformance with specified performance standards during the system validation tests.

F. If testing demonstrates that the Air Stripping Treatment Equipment does not achieve specified performance standards, Contractor shall within 2 weeks have a written proposal for modification or replacement of equipment in order to achieve the performance standards. After acceptance of the proposal by the Owner, the Work for modification or replacement of the equipment shall be expedited to the maximum extent feasible. The Contractor shall then completely repeat the operational demonstration and system validation testing.

1.02 RELATED SECTIONS

A. Section 01300: Submittals

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Submittals for Operational Demonstration and System Validation Tests:
   1. Submit a detailed and comprehensive procedure plan to be implemented under Contractor's direction, for performance of each operational demonstration required.
   2. Procedure Plan Information. The Procedure Plan shall include the following information as applicable:
      a. Description of temporary procedure facilities, including Drawings and sketches as required to fully illustrate the facilities.
      b. List of test material and estimated quantities.
      c. List of instruments, measuring and recording devices, and other test equipment, whether a part of the plant or furnished separately for temporary use.
      d. Names of supervising and inspecting manufacturers.
      e. Personnel required.
      f. Complete list of functional parameters to be observed and recorded.
      g. Recording intervals.
      h. Estimated date and duration of each procedure.
   5. Records Material. Submit sample forms, charts, and other material to be used in recording demonstration and validation test results.
   6. Results. Within 10 days after completing each test, submit 3 copies of recordings and results of operating demonstrations and system validation tests.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide tools, equipment, materials, and labor as necessary to accomplish start-up and testing, and to make any modifications to equipment supplied to achieve the equipment performance required.

PART 3 EXECUTION

3.01 GENERAL

A. Costs for performing operational demonstrations and system validation tests shall be included in the Contract Price, and no extra payment will be made to the Contractor on account of overtime, weekend, or holiday labor costs required to perform and complete the demonstrations and validation tests. Requirements specified in this section are in addition to the demonstration and test requirements specified under other sections of these Specifications.

1. Operational demonstration and systems validation testing shall be performed by the Contractor in accordance with the approved procedure plans to demonstrate to the Engineer's satisfaction that:
   a. Components of the process systems defined herein, and the complete systems are fully completed and operable.
   b. Units, components, systems, and the entire plant systems operate with the efficiency, repeatability, and accuracy indicated and specified.
   c. Components, systems, and the entire plant conform to the Contract Documents, the specified performance standards and service conditions and the reviewed Shop Drawings, samples, construction manuals, material lists, and other reviewed submittals.
2. Scope of Demonstration and Validation Testing. Operational demonstrations and system validation tests are required for Work, equipment, and systems specified in these Specifications, including all associated and related electrical systems and control devices.
3. Prerequisite Conditions. Operational demonstrations and validation testing shall not begin for any equipment item or system until all related structures, piping, electrical, instrumentation, control, and like Work has been installed, tested, and connected in compliance with the pertaining requirements specified elsewhere in the Specifications.
4. Demonstration and Testing Materials. Furnish and install temporary piping, portable recirculation pump system, chemical injection pumps, connections to Owner's piping, other required materials, and electrical power for operational demonstrations and validation tests. For operational demonstration use fresh potable water to fill systems that contain water or groundwater in normal operation. For system validation testing, contractor shall use groundwater to fill the systems. Provide reagent-grade chlorinated organic solvents for use as synthetic contaminants for simulation of the constituents of concern. Furnish temporary facilities as required such as bypass or recirculation piping, diversions, storage, and similar facilities. Use procedures that conserve testing materials and avoid wastage, especially with respect to large quantities of potable water and electrical power. At no time shall any contaminated water or groundwater be discharged from the system without written approval from Engineer.
5. Inspection and Supervision by Manufacturers. Perform operational demonstrations and system validation testing under continuous presence of Engineer. Technical representative of the various equipment manufacturers shall be present at the start of the operational demonstrations, shall examine their equipment at least twice near the beginning and end of the validation tests, shall supervise the start up and adjustment procedures, and shall perform all other services necessary for the manufacturer's certified reports required herein.

6. Correction of Defects. Immediately correct defects and malfunctions disclosed by demonstrations and validation tests using approved methods and new materials for repairs as required. Interruption time necessary for corrective work shall be included in the specified total demonstration and validation test periods.
7. Acceptance. Satisfactory completion and approval of required operational demonstrations and system validation testing is one of the conditions precedent to the Owner's acceptance of the Work but does not constitute final acceptance. Refer to the General Conditions.

3.02 OPERATIONAL DEMONSTRATIONS

A. Demonstrate that the performance of installed equipment complies with all requirements indicated and specified. Operate each equipment item through entire no-load and full-load range in accordance with the approved procedure plan for not less than 24 consecutive hours.

3.03 SYSTEM VALIDATION TESTS

A. The system validation tests shall include operation of the equipment at the three specified design conditions using injection of a dilute solution of a synthetic mixtures of the constituents of concern to achieve the specified influent design concentrations. Contractor shall furnish and install a temporary chemical metering pump to inject the synthetic solution of chlorinated organic solvents to simulate the three design conditions.

B. Testing shall be conducted for each design conditions continuously for a period of not less than 48 hours, with no interruption. Testing shall be conducted under constant inspection of trained Contractor personnel and the Engineer.

C. Performance verification testing shall be conducted at the three specified design conditions as specified in Section 11580, Table 1, for the following parameters.
1. Influent and effluent contaminant concentrations (methylene chloride only).
2. Contaminant removal rates from groundwater.
3. Air flow rate through tower.
4. Air Stripping Treatment Equipment pressure drop.
5. Liquid and air flow distribution over tower cross-section.
6. Liquid hold up rate.

Each test shall consist of three repetitions of the applicable test method within each 8-hour test period.

D. Each test repetition for influent and effluent contaminant performed by Engineer will consist of generating hourly average concentration values by compositing 200 mL samples collected from sampling lines at 5-minute intervals over a period of 1 hour. Prior to collecting each sample, Engineer will draw through the sampling line a volume of water equal to two times the volume of the sampling line. Care will be used in sample collection, storage, and compositing to prevent loss of volatile organic contaminants.

E. Each sample collected by Engineer will be analyzed for the six specified volatile organic contaminants in accordance with EPA Method 8240 at a laboratory designated by the Engineer. At a frequency of one sample per 10 samples analyzed, blank samples and duplicate samples will be prepared in the field and submitted to the laboratory for analysis. Contractor may request split samples. In all cases, Engineer's samples shall be the basis for determining achievement of performance standards.

F. Air Stripping Treatment Equipment pressure drop shall be measured at the air inlet below the lowest layer of packing and in the exhaust stack above the demister using identical oil or water filled manometers capable of being read to the nearest 0.01 inch of water, or equivalent units.

G. Contractor may rely on Owner's instrumentation, as described in Section 17700, as shown on Drawings, and as confirmed prior to preparation of each procedure plan (with respect to specific manufacturers, model numbers, and locations), for documenting system operating conditions during facility start-up, operational demonstration testing, and system validation testing. If Contractor accepts Owner's instrumentation, Contractor shall document its acceptance in writing in each applicable procedure plan prior to commencement of testing. Such acceptance shall document that Contractor agrees that results and data obtained from Owner's instrumentation will form the full and complete basis for determining system performance.

3.04 RECORDING OF DATA

A. Neat and comprehensive records of each operational demonstration and system validation test shall be maintained by the Contractor. Each portion of the demonstration or validation procedure shall be described with all components itemized. Records shall be prepared on forms in a step-by-step fashion paralleling the approved plans. Forms shall list for each condition:
   1. Step taken.
   2. Result anticipated.
   3. Result obtained.
   4. If incorrect, corrective action taken.
   5. Retest result.
   6. Steps 4 and 5 shall be repeated until systems operate as required.

B. Recording Devices. Instruments, gauges, and other sensor display devices forming a part of the various systems shall be employed for data acquisition to the extent applicable. The Contractor shall furnish all other instruments, gauges, recorders, and test devices as required, types conforming to the approved procedure plans.

C. Information and Intervals. All applicable data such as, but not limited to, water and other liquid levels, flows, pressures, head differentials, duration of runs, instrument readings, chemical feed rates, voltage settings, drive speeds, motor running currents, torque, voltage, gpm, pressures, clarity, residual chlorine and related information, as applicable, and in accordance with the approved procedure plans, shall be recorded at the start and finish of each operational demonstration and at maximum 8-hour intervals during system validation tests, unless shorter intervals are specified elsewhere.

D. Repetitions. When a repeat of the same demonstration or validation test is required to verify the results, the repeat procedure shall be indicated on the recorded data by numerical indication, date, and time.

3.05 CONSOLIDATION OF DEMONSTRATION, TESTING, AND INSTRUCTION REQUIREMENTS

A. Demonstration testing and instruction of the Owner's personnel may be performed simultaneously, subject to prior approval of the extent of consolidation in each case.

3.06 SOUND LEVEL TESTING AND WORKER PROTECTION

A. Measure the sound level developed by mechanical and electrical equipment provided. Perform testing in rooms and spaces containing such equipment during the final operation test program with all equipment operating. Use an OSHA-approved instrument and record the highest sound level developed when measured according to OSHA standards in each room and space. Deliver a copy of records to the Engineer.

3.07 FAN

A. This article covers general requirements applicable to the plant fan. Applicable parts of this section shall also apply.
   1. Shop Testing. Shop testing shall be performed by equipment supplier before shipment.
   2. Field Testing. After completing the installation and satisfactory start-up of the equipment, the Contractor shall provide the services of the fan manufacturer's representative to operate each fan unit over the entire specified range. The operation, over the entire specified range, shall be free of excessive vibration or noise.
      a. Vibration shall be checked and recorded. The full speed vibration of fans shall be equal to or less than the amplitude limits recommended in the Hydraulic Institute Standards.
      b. Fan performance shall be documented by obtaining concurrent readings showing motor voltage and amperage, fan suction pressure, and fan discharge pressure. Readings shall be documented for at least 3 operating conditions to ascertain the actual performance curve. Each power lead to the motor shall be checked for proper current balance.
      c. Bearing temperatures shall be determined by a contact type thermometer. A running time of at least 2 hours shall be maintained at the maximum specified operating rate and pressure.
      d. If fan equipment fails to meet the above test requirements, it shall be modified and retested in accordance with the requirements of these Specifications.
      e. The variable speed-driven fan motor shall demonstrate accurate response to speed controlling devices and controls within the required operation ranges. Actual output shaft speeds shall be validated by measurement of shaft speeds versus speeds shown by equipment.

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 DESCRIPTION

A. This section describes the contract closeout procedures, including final cleaning, adjusting, project record documents, operation and maintenance data, warranties, and spare parts and maintenance materials.

1.02 RELATED SECTIONS

A. Section 01300: Submittals

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Provide submittals to Owner that are required by other sections.

C. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents.

D. Submit specified Project record documents.

E. Submit specified operation and maintenance manuals.

F. Submit specified warranty.

1.04 PROJECT RECORD DOCUMENTS

A. Maintain onsite, one set of the following record documents; record actual revisions to the Work:
   1. Contract Documents.
   2. Addenda.
   3. Change Orders.
   4. Reviewed shop drawings, product data, and samples.

B. Store Record Documents separate from documents used for construction.

C. Record information concurrent with project progress.

D. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and Change Orders.

E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured thickness of air stripper tower walls, base, etc.
   2. Measured height of tower intervals, including packing supports, packing liquid redistributors, mist eliminator, etc.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract Drawings.

F. Submit documents to Engineer with final Application for Payment.

1.06 OPERATION AND MAINTENANCE MANUALS

A. Provide 6 sets of operation and maintenance manuals prior to final inspection, bound in 8-1/2 inch by 11 inch text pages or larger folded to 8-1/2 inch by 11 inch size and enclosed in transparent, top entry protective plastic folders. Assemble in three-D side ring capacity expansion binders with hard, durable covers.

B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE MANUAL," title of project, and subject matter of binder when multiple binders are required. Place same information on back edge so as to be legible when standing upright on a bookshelf.

C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below, with tab titling clearly printed under reinforced laminated plastic tabs.

D. Prepare a Table of Contents for each volume, with each product or system description identified.

E. Part 1: Directory. List names, addresses, and telephone numbers of Contractors, subcontractors, and major equipment suppliers and manufacturer's representatives nearest to the job site for each product in the manual.

F. Part 2: Operation and Maintenance Instructions. Arrange by piece of equipment in same order as in Specification. For each piece of equipment, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Include the following items:
   1. Description of equipment.
   2. Significant design criteria.
   3. List of components.
   4. Parts list for each component.
   5. Operating instructions.
   6. Maintenance instructions for equipment and systems.
   7. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
   8. A complete list of products used.
   9. Pre-operation check or inspection list.
   10. Procedures for starting, operating, and stopping equipment.
   11. Post-operation check or shut-down list.

12. Special and emergency operating instructions.
13. Accepted test data.
14. Routine maintenance procedures and schedules.
15. One copy of each schematic diagram.
16. One copy of each wiring diagram.
17. One copy of each working drawing.
18. List of spare parts and manufacturers' recommended quantities.
19. Name and address of nearest parts vendor.
20. Copy of warranties issued to and executed in the name of Owner, in accordance with the General Conditions and this section.

G. Part 3: Project Documents and Certificates. Include the following items:
   1. Approved shop drawings and product data - 1 complete set, organized by specification section numbers and delivered in labelled cartons.
   2. Certificates.
   3. Photocopies of warranties completely executed.

H. Submit 1 copy of completed volumes in final form 60 days before final inspection. This copy will be returned, with Engineer comments. Revise content of documents as required before final submittal.

I. Submit final volumes to Engineer, revised, within 10 days after final inspection.

J. Preparation of data shall be done by personnel trained and experienced in maintenance and operation of the described products, completely familiar with requirements of this section, and skilled as a technical writer to the extent required to communicate essential data.

1.07 WARRANTIES

A. Provide 2 original notarized copies of warranties from manufacturers of equipment or components.
   1. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.
   2. Provide Table of Contents and assemble in 3-ring binder with durable cover.
   3. Submit before final Application for Payment.

B. The Contractor shall warrant that:
   1. The as-built Air Stripping Treatment Equipment will meet the specified performance standards and service conditions for a period of 3 years following final acceptance.
   2. Linings and shells in the Air Stripping Treatment Equipment, including linings and shells for duct work and Air Stripping Treatment Equipment, will not fail due to design, materials of construction, workmanship, corrosion, erosion, changes in hardness, chemical attack, thermal attack, or ultraviolet radiation, for a period of 10 years following final acceptance.
   3. Material and equipment provided are new and the best and most suitable for the service required, that the equipment and parts shall operate at capacities up to the maximum, successfully and without undue noise, undue wear, undue heating, undue straining, and undue vibration.

4. The equipment supplied hereunder is of the kind and quality described in the contract, and is free from defects in workmanship or material.
5. The supplied components including fan, ductwork, tower internals, and all equipment other than the air stripping tower shell and lining, shall be free from defects in material and workmanship for at least 1 year from final acceptance.

C. Corrective Actions:
1. In the event the Owner determines that the Air Stripping Treatment Equipment does not meet the conditions of the warranties provided by the Contractor, the Owner shall notify the Contractor in writing of the alleged deficiency. The Contractor, at its own expense, shall have 2 weeks from the date of receipt of the Owner's notice to examine the Air Stripping Treatment Equipment to confirm the alleged deficiency. Upon confirmation of the deficiency, the Contractor, at its own expense, shall take action to correct the deficiencies within a reasonable time, not to exceed 2 weeks unless an alternative time is approved by the Owner.
2. The expense borne by the Contractor when undertaking corrective action shall be that expense required to return the system to original condition, except that the expense of replacing any linings and shells which fail during the period of warranty shall be divided between the Contractor and Owner in proportion to the time remaining under the original warranty. Any components replaced by the Contractor during the period of guarantee, including linings and shells, shall be of a type and quality which is equal to or better than the original items.

D. Owner-Caused Deficiencies
1. The Contractor shall not be responsible for correcting deficiencies caused solely by the following actions by the Owner:
   a. Improper maintenance of the Air Stripping Treatment Equipment in neglect of detailed maintenance instructions provided in the Contractor-prepared operation and maintenance manual.
   b. Frequent operation of the system with groundwater or cleaning solutions of a type or quality substantially different than specified in Section 11580.

1.08 INSTRUCTIONAL PERIOD

A. Before final acceptance of the project, the Contractor and major subcontractors shall provide factory trained and field experienced personnel to fully instruct Owner personnel and maintenance crews in proper operation and maintenance of equipment and systems supplied under these Contract Documents.

B. Contractor shall schedule this period in advance with the Owner's staff and appropriate subcontractor or vendor's representatives. This instructional period shall be scheduled after submitting the final Operation and Maintenance Manuals so that information is available at the time of this instructional period. The Operation and Maintenance Manual shall constitute the basis of instruction. The Contractor's representative shall review the contents of the manual with the Owner's personnel in full detail to explain the theory of operation, operating principles and adjustments, routine maintenance and repair of system components, and "hands-on operation." This training shall be for a time period of not less than 3 days and shall be performed during the operational demonstration test period.

1.09 SPARE PARTS AND MAINTENANCE MATERIAL

A. Provide products, spare parts, recommended spare parts list, maintenance and extra materials in quantities specified in individual specification sections.

B. Deliver parts and material to Owner; obtain receipt signed by Engineer prior to final payment.

C. The spare parts furnished shall be interchangeable with and shall be made with the same material and workmanship as the corresponding equipment part. Each spare part shall be plainly and permanently marked to facilitate checking at the delivery point and proper identification later when required to be installed.

D. Maintenance material includes those special wrenches, tools, templates, and handling devices required for convenient and expeditious assembly and disassembly of each equipment item supplied under this contract, as well as consumables such as lubricants, hydraulic fluid, and similar items.

E. Spare parts and maintenance material shall be packaged in containers, sealed, and labeled. Labels shall show manufacturer's and supplier's name and address, and complete identification of contents.

F. Spare parts and maintenance material shall be delivered to the site and stored by the Contractor until such time as the Owner's permanent storage facility is available. Transfer of products to the permanent storage facility shall be done by the Contractor. The Owner will inspect products upon transfer of same to their control. Damaged products will be returned to the Contractor who shall replace them with undamaged products at no expense to the Owner.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

DIVISION 11

Equipment

SECTION 11580

AIR STRIPPING TREATMENT EQUIPMENT

PART 1 GENERAL

1.01 SUMMARY

A. Design, manufacture, furnish, deliver, and supervise erection for fully functional Air Stripping Treatment Equipment which achieves specified performance standards at specified service conditions, and provide performance warranty as specified herein. The equipment shall include required accessories necessary for fully functional Air Stripping Treatment Equipment. Provide nozzles, connections, supports, and other features as shown on the Drawings.

B. The Air Stripping Treatment Equipment shall effectively treat the contaminated groundwater extracted as part of the Colbert Landfill Remedial Action Project. The equipment shall achieve specified performance standards shown in Table 1 at the three design conditions shown in Table 1.

TABLE 1

DESIGN CONDITIONS, PERFORMANCE STANDARDS, AND SERVICE CONDITIONS
AIR STRIPPING TREATMENT EQUIPMENT
COLBERT LANDFILL ACTION PROJECT

Parameter	Influent Peak Flow/Average Concentration Design Condition	Influent Peak Concentration/ Average Flow Design Conditions	Influent Minimum Design Conditions	Effluent Performance Standards (All Influent Conditions
Constituent of Concern[a]				
Methylene chloride	625	1,300	625	2.5
1,1,1-Trichloroethane	1,100	2,500	1,100	200
1,1-Dichloroethene	300	300	300	7.0
1,1-Dichloroethane	180	180	180	4,050
Trichloroethene	580	580	580	5.0
Tetrachloroethene	3	3	3	0.7
Conventional Parameters[b]				
Total suspended solids	10	10	10	NA[c]
Chemical oxygen demand	10	10	10	NA
Biological oxygen demand	10	10	10	NA
Phosphorus (as P)	5	5	5	NA
pH (pH units)	5-8	5-8	5-8	NA
Temperature (°F)	50	50	50	NA
System Flow Rate (gpm)	1,600	1,000	600	NA

(a) µg/L (ppb).
(b) mg/L, unless indicated otherwise.
(c) NA = not applicable.

C. Contractor is responsible for final process design, including selection of tower dimensions, packing type and depth, air flow rate, and other design criteria, and shall provide written warranty that specified performance standards at service conditions. Supplied equipment shall meet the following minimum criteria:
   1. Minimum Tower Diameter: 10 feet.
   2. Minimum Depth of Packing: 50 feet.
   3. Minimum Fan Capacity: 22,000 cfm at system pressure.
   4. Minimum Fan Motor Power: 50 horsepower.
   5. Minimum Clearwell Depth: 5 feet.

   These parameters are provided to describe the minimum criteria acceptable to Owner. However, use of these criteria shall not negate the Contractor's design responsibility. Contractor is fully and solely responsible for achieving specified performance standards, providing performance warranty, and meeting all other requirements of the Contract Documents.

D. The fully functional Air Stripping Treatment Equipment shall be the end product of one Contractor, who will be responsible for warranting performance.

E. As shown on the Drawings, the supplied Air Stripping Treatment Equipment must conform to and be compatible with the Owner-furnished designs, equipment,and facilities, including placement of Contractor-supplied equipment on Owner-furnished foundations and within buildings, and operation of the Contractor-furnished equipment with Owner-furnished instrumentation, control, monitoring, and electrical systems.

1.02 REFERENCES

Reference documents shall apply to the extent that it is commercially and technically practicable and as is commonly implemented with regard to projects and equipment of the type quoted herein.

A. Air-Conditioning and Refrigeration Institute (ARI)

B. Air Movement and Control Association (AMCA)

C. American Gear Manufacturers' Association (AGMA)

D. American Institute of Steel Construction (AISC)

E. American Iron and Steel Institute (AISI)

F. American National Standards Institute (ANSI)
   ANSI B16.5
   ANSI B78.1

G. American Public Works Association (APWA)

H. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)

I. American Society for Nondestructive Testing (ASNT)

J. American Society for Testing and Materials (ASTM)
ASTM C 582, Specification for Contact Molded Reinforced Thermosetting Plastic (RTP) Laminates for Corrosion Resistant Equipment

ASTM C 638, Test Method for Tensile Properties of Plastics

ASTM D 2563, Specification for Classifying Visual Defects in Glass-Reinforced Plastic Laminate Parts

ASTM D 2583, Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.

ASTM D 2584, Test Method for Ignition Loss of Cured Reinforced Resins

ASTM D 3299, Specification for Filament-Wound Glass Fiber Reinforced Thermoset Resin Chemical-Resistant Tanks

ASTM D 4097, Specification for Contact Molded Reinforced Fiberglass Thermosetting Plastic (RTP) Laminates for Corrosion Resistant Vessels

K. Associated General Contractors of America (AGC)

L. Expansion Joint Manufacturers' Association (EJMA)

M. Factory Mutual System (FM)

N. Federal Specifications (FS)

O. International Conference of Building Officials (ICBO)
Uniform Building Code; the edition which is enforced by the building officials having jurisdiction at the site of the work

P. National Association of Corrosion Engineers (NACE)

Q. National Electrical Manufacturers' Association (NEMA)

R. National Fire Protection Association (NFPA)
NFPA 70-1981, National Electric Code (NEC)

S. National Institute for Occupational Safety and Health (NIOSH)

T. Occupational Safety and Health Administration (OSHA) Safety and Health Standards Digest
Construction Industry (OSHA-2022)

U. Washington State Industrial Hygiene and Safety Act (WISHA).

V. American Society of Mechanical Engineers (ASME) ASME RTP-1 (1992 edition), Reinforced Thermoset Plastic Corrosion Resistant Equipment.

1.03 SUBMITTALS

A. Submit in accordance with Section 01300.

B. Treatment Design Process: Submit complete design calculations, prepared and stamped by a licensed engineer, with minimum of 5 years of experience in the design of similar air stripping treatment equipment documenting achievement of specified performance standards at design and service conditions. Calculations shall include evaluation of data collected during the air stripping pilot testing conducted previously, which is presented in the Documents *Final Phase I Engineering Report, Colbert Landfill Remedial Design/Remedial Action* (Landau Associates, Inc. 1992); and *Final Treatment and Discharge Plan, Phase II Remedial Design/Remedial Action, Colbert Landfill* (Landau Associates 1993).

   Calculations shall also include an analysis of design criteria based on actual operating data from at least two existing installations, taken and reported by independent third parties to substantiate Contractor performance claims, specifically: mass transfer rate (height of transfer unit or overall mass transfer coefficient) for methylene chloride and other constituents of concern; pressure drop; liquid holdup; and flooding points. Any performance claim that is unsubstantiated by data from previous installations will result in submittal rejection.

C. Structural Design: Design calculations, with each page stamped and signed by Registered Professional Structural Engineer with minimum of 5 years of experience in the design of similar fiberglass-reinforced plastic vessels and ducting. Calculations shall include, but not be limited to:
   1. Dead loads.
   2. Live loads.
   3. Environmental loads (wind and seismic loadings).
   4. Anchor lug attachment to shell.
   5. Anchorage and embedment design.
   6. Tower packing support design.
   7. Access ladder and platform and shell connection design.
   8. Internal positive and negative pressures.

D. Safety Code Conformance Design: Design evaluation prepared by registered structural engineer that demonstrates that the access ladder and platforms conform to the latest versions of the Washington State Industrial Safety and Hygiene Act and Occupational Health and Safety Act Administration standards.

E. Detailed shop drawings showing weights, dimensions, and other design parameters of tower, tower internal components, tower internal supports, influent feed pipe design for liquid distributor, fan, ducting, equipment, nozzles and manways, wall thicknesses, laminate make-up, support ledge details for internals, anchor details, wall openings, fabrication and installation details, construction materials, and wiring schematics and diagrams. Final drawings used for fabrication shall be stamped and signed by a Registered Professional Engineer.

F. Detailed description of laminate and type of reinforcing to be used. This shall be accompanied by letter from resin manufacturer stating:
   1. That laminate and reinforcing material used will provide chemical resistance at least equal to published chemical resistance for resin for intended application.
   2. That resin will meet performance requirements stated and is suitable for service conditions specified herein and fabrication technique proposed.

G. Description of proposed quality control program that will be used during the manufacturing of tower. Include resume of quality control manager.

H. Written instructions for recommended methods for unloading, storing, and installing fiberglass tower and recommended lifting and handling procedures.

I. Complete installation procedures for tower, internals, media and access platform, including instructions for placement and removal of packing support in and out of tower.

J. Color chart describing available colors for vessel. Exterior resin pigment color will be selected by Owner.

K. Certification by the Quality Control Manager indicating quality control, testing, and inspection have been completed and standards specified herein and have met prior to shipment to job site.

1.04 SITE WORK

A. Provide full-time erection supervision during Owner-furnished equipment erection and installation Work. Contractor's erection supervisor shall be present at the job site for a duration of four (4) weeks. Additional time onsite will be paid at the Contractor's bid unit price.

B. Provide operator training as required to develop proficient capabilities for equipment operation and maintenance personnel.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Fiberglass vessels and other fiberglass equipment and materials shall be prepared and protected for shipment and shipped as specified in ASME RTP-1 and ASTM D 3299. Vessels shall be shipped with manways and blind flanges installed.

B. All equipment shall be prepared for shipment and shipped in accordance with the equipment manufacturer's recommendations and in a manner which prevents damage to the equipment.

C. No equipment shall be shipped until all applicable submittals have been received and approved by the Engineer.

D. Tower components shall be pre-assembled to the maximum extent feasible at the point of fabrication. Tower intervals and packing will be installed by Owner at the job site.

1.06 QUALITY CONTROL

A. The Air Stripping Treatment Equipment specified in this section shall be manufactured under following minimum quality control program:
   1. Quality control, testing, and reporting requirements as specified in ASME RTP-1.
   2. Employment of quality control manager with at least 5 years experience in the FRP industry. If this position is currently staffed with a person of less experience, or if position is nonexistent, then outside person or service shall be retained at Contractor's expense for duration of manufacturing of tower to fulfill this position.
   3. Log of tower fabrication shall be kept that includes at a minimum:
      a. Start of fabrication and other production milestones.
      b. Production personnel who worked on the tower.
      c. Quantity and type of materials used for the tower construction.
      d. Settings used for the production equipment during fabrication.
      e. Visual inspection results for tower components before and after final assembly.
      f. Test results for completed tower as specified in Articles 2.11 and 3.01 of this section.
   6. Quality control manager shall have current production schedule available for inspection that identifies tower fabrications or storage location, current status, and expected completion date.
   7. All areas of facility, where the tower, or parts thereof, are being manufactured or stored under this specification, shall be available for inspection during normal working hours.
   8. The tower shall be accompanied by signed letter from quality control manager that vessel was manufactured in accordance with these specifications. This letter shall be accompanied with test data and with manufacturer log. The tower will not be accepted at site without prior receipt and approval of this documentation by the Owner.

PART 2 PRODUCTS

2.01 SERVICE CONDITIONS

A. Locations: Outside; Spokane, Washington.

B. Ambient Air Temperature Range: 10 to 105 degrees F.

C. Entering Air Temperature Range: 10 to 105 degrees F.

D. Relative Humidity of Entering Air: Up to 100 percent.

E. Influent Groundwater Characteristics: See Table 1.

F. Influent Water Design Pressure: 150 psig.

G. Design Pressure Range in Tower and Ductwork: +14 to -5 inches of water column.

H. Design Maximum Scale (Calcium Carbonate) Loading: 0.02 inches.

I. Scale Control Chemical: Continuous dosage of up to 20 mg/L of polyacrylate scale control chemical, pH 4.5; or phosphate-based scale control chemical, pH 12.

J. Cleaning Solutions: Up to 8 hours per month there may be contact with each of the following separate cleaning solutions:
   1. Up to 1 percent sodium hydroxide.
   2. Up to 30 percent hydrochloric acid.
   3. Up to 2 percent hydrogen peroxide.

2.02 DESIGN REQUIREMENTS

A. The Air Stripping Treatment Equipment shall be designed in accordance with the requirements of this section and Section 01620.

B. The Air Stripping Treatment Equipment structural design shall be performed by a Registered Professional Engineer. The air stripper tower shall be designed using the Stress Analysis Method as provided in ASME RTP-1. The Air Stripping Treatment Equipment shall effectively handle, without damage of any kind, all stresses and strains resulting from the dead, live, and environmental loads specified in this Section and in Section 1620. Contractor shall review tower foundation design supplied by Owner, evaluate it for suitability, and design tower anchoring system to integrate with foundation components. Building walls or roof shall not be used to provide structural support for any system components and no guy wires shall be installed. All material properties used in the calculations shall be derived from actual destructive testing of similar laminates manufactured using resin and glass identical to those proposed for the tower manufacture. Upon request, provide test reports from actual destructive testing, including longitudinal tensile strength, hoop tensile strength and hoop modulus strength for values use in design. Test reports shall indicate source of laminate manufacture, laminate thickness, laminate layup sequence for each thickness tested, resin type, and glass types.

C. The Air Stripping Treatment Equipment shall be designed to comply with all reference standards specified herein, including the requirements as specified in ASME RTP-1 (including requirements for critical service).

D. The Air Stripping Treatment Equipment shall be designed so that liquid will drain freely by gravity. Drain valves shall be provided at locations where water from normal operation or maintenance activities may collect.

E. The Air Stripping Treatment Equipment shall be designed so that key components are accessible by maintenance personnel, for equipment repair, replacement, and cleaning. The air stripper shell shall have a manway located in each major tower section, including, but not limited to the clearwell, each section of packing, the water influent nozzle section, and the mist eliminator.

F. The Air Stripping Treatment Equipment shall be designed so that tower internal components, including but not limited to packing supports, liquid redistributors, and mist eliminator, are capable of being disassembled and removed through air stripper shell manways.

G. All equipment and components shall be of weatherproof design and construction, and shall be suitable for the climate of the work site.

H. The Air Stripping Tower shell and ductwork shall have flanged openings, complete with bolts, nuts, and washers, for all openings as shown on the Drawings. Flanges shall be Contractor's standard duct drilling. Furnish blind flanges and associated gaskets as shown on the Drawings. Gaskets and fasteners for piping and instrumentation shall be supplied by Owner.

I. The Air Stripping Tower shall have access ladders with personnel cages, intermediate platform, and top platform as shown on the Drawings.

J. The Air Stripping Tower shell and ductwork shall have connections for the equipment and components indicated on the Drawings, whether or not the components are supplied by the Contractor (as noted on the Drawings, some of equipment and components will be supplied by the Owner). Examples of Contractor-supplied equipment and components include the access ladders and personnel work platforms. Examples for Owner supplied equipment and components include influent and related piping external to the Air Stripping Treatment Equipment, lighting rod and grounding wire, and radio telemetry antenna.

K. The Air Stripping Tower shall be designed in three separate sections consisting of a base section, intermediate section, and top section (with stack). Intermediate section shall correspond to the upper-most layer of packing and shall be removable as an independent unit. Tower sections shall be flanged and bolted together.

L. The Air Stripping Treatment Equipment shall be designed with a mist eliminator above the water influent section.

M. The Air Stripping Tower shall be designed with an above-grade clearwell at its base as shown on the Drawings. The minimum design clearwell depth shall be 5 feet.

N. Tower shall be designed so that maximum depths of unsupported packing media do not crush or deform packing media when subject to the maximum liquid loading rates and scale formation thickness specified herein.

O. Contractor shall design and supply ductwork support structures as necessary to comply with the requirements of this Section and Section 01620.

P. Air Stripping Treatment Equipment shall be compatible with treatment plant operating system described in Section 17700, included for reference only in Appendix C.

Q. Air shall be evenly distributed over cross-sectional area of packed tower. Face velocity of air through packing support shall not deviate more than 10 percent from mean face velocity over entire cross-section of tower at any point.

R. Liquid shall be evenly distributed over entire cross-section of packing, with no visual evidence of low flow areas or dead branches in inlet distributor.

2.03 AIR STRIPPING TOWER

A. Air stripping tower, except as herein modified and/or amplified, shall be vertical, flat-bottom, fiberglass-reinforced plastic vessel. Tower shall include all supports required for tower internals, including packing support plate, inlet distributor, and mist eliminator. Supports for tower internals shall be furnished and installed by

tower manufacturer. Unit shall be complete with flanges, nozzles, manways, lifting lugs, anchor lugs, access platform and other appurtenances. System shall be pre-assembled to maximum extent possible that allows shipment and also maximizes ease of installation at site.

B. Air stripping tower shall be helically filament wound in accordance with the requirements of ASME RTP-1 and ASTM D 3299. Laminate shall consist of resin rich layer followed by layers of random chopped strand glass, fully wetted out with resin. This interior surface shall yield a minimum 100-mil thick corrosion barrier. Filament wind over this to the required thickness. Minimum properties of filament wound laminate shall be as specified in ASTM D 3299. Visual defects shall not exceed Level 2, as specified in ASME RTP-1, on both the inside and outside of the tower. Gaseous bubbles or blisters in all layers shall occur at a frequency no greater than 2 per square inch. Contact molded components and accessories, including tower internal supports, shall be fabricated in accordance with ASTM C 582, ASTM D 4097, and NBS PS 15-69.

C. Resin exposed to liquid shall be FDA approved for potable water service. Resin for all other components shall be vinyl ester type.

D. Exterior top coat shall be paraffinated top coat containing ultraviolet screener such as UV-9.

E. Tower shell sections shall each be provided with required lifting lugs.

F. Viewing port for media shall be provided consisting of clear acrylic installed in flanged connection of size and location shown on the Drawings. Glass and connection shall be designed for a minimum hydrostatic pressure of 20 psi.

G. Anchorage: Type 316 stainless steel concrete anchors and holddown lugs, complete with Type 316 stainless steel plates, bolts, nuts, and washers. Number, design, and location shall be determined by Contractor.

H. During the construction and curing period, FRP work shall be protected from atmospheric or otherwise induced conditions of adverse temperatures, moisture, wind, or blowing dust and sand and other contaminants that would adversely affect laminate or joint construction.

I. Other than those associated nozzles, couplings, manways, and top and bottom heads, tower sections shall be filament wound in one piece, without joints, except that one shell joint not including those to attach shell flanges shall be allowed.

J. No thixotropic agents or other additives shall be used without written approval from owner.

K. All flanged openings, including the joints between tower sections, shall have 1/8-inch thick full face Viton gaskets.

L. Openings, connections, and manways shall be as shown on the Drawings with respect to overall size, location, and orientation. Final design, including dimensions of structural elements, and anchoring methods, shall be performed by supplier.

M. Tower shall have connections for air terminals and grounding cables as shown on the Drawings. Connection brackets shall be FRP of the same resin and exterior coating as the air stripping tower and shall be integrally attached to tower.

N. Supply full diameter closed cell neoprene pad for tower base, as recommended by tower fabricator.

O. The manway blind flange at the lowest section of packing media shall be clear plexiglass.

P. Tower air inlet nozzle shall be designed with a downward slope to allow for draining of water into the tower, as shown on the Drawings.

2.04 ACCESS LADDERS AND PLATFORMS

A. Access ladders and platforms shall be as shown on the Drawings with respect to overall size, configuration, location, orientation, and minimum design components. Final design, including dimensions of structural elements anchoring methods, and details, and OSHA and WISHA code compliance shall be completed by Contractor.

B. Access ladder and platforms shall be constructed of fiberglass reinforced plastic using vinyl ester resin. All exposed surfaces shall have paraffinated top coat containing ultraviolet screener.

C. Access ladders shall have restraint cages as shown on the Drawings.

D. Platforms shall have railings and safety chain access openings.

E. Platform decking shall be open lattice type to prevent ponding of water, and shall have non-skid finish on upper surfaces.

F. Access ladders and platforms shall be provided fully factory fabricated with respect to FRP related work and shall be factory assembled into four major units consisting of two ladder units and two platforms. Cages shall be factory installed on ladders. Railings may be supplied for field installation. Field assembly and installation, to be performed by others, shall be limited to installation of mechanical fasteners.

G. Contractor shall supply all required fasteners and hardware for installation of access ladders and platforms and related components. Bolt and nut-type fasteners shall be used. All hardware shall be Type 316 stainless steel. Each bolt supplied shall be supplied complete with appropriately sized washers (two), a lock washer, and a nut. All openings and hardware shall be tagged with corresponding unique codes or identifiers to designate the proper location for each piece of hardware and fastener.

H. Platform and ladder connections to the tower shall be at a minimum provided with belted straps that extend completely around the tower circumference.

2.05 MEDIA AND INTERNALS

A. Packing media material shall be solid polypropylene, and shall be FDA approved for use in potable water systems and shall have characteristics suitable for the specified service conditions.

B. Packing support plates shall be slotted beam, gas injection type. Free area shall be minimum of 95 percent of cross-sectional area of the tower. Opening size shall not allow passage of packing media in any random orientation. Construction shall be vinyl ester resins FRP as specified for the Air Stripping Tower, or polypropylene.

C. The influent water distributor shall be designed to distribute the water uniformly over the cross-sectional area over the specified water flow rate design conditions. Influent water distributor shall be orifice plate or trough and weir type, with no spray nozzles allowed. Influent distributor shall allow for field leveling to achieve even flow distribution. Distributor shall provide several distribution points per square foot of tower cross section. Influent distributor components shall be vinyl ester resin FRP as specified for the Air Stripping Tower, or polypropylene.

D. Tower shall be equipped with bed limiter to prevent migration of packing into liquid distributer. Bed limiter shall be constructed of polypropylene or PVC.

E. Tower shall be equipped with a mist eliminator constructed of polypropylene, PVC, thermoplastic, or FRP, and shall be provided with FRP or Type 316 stainless steel support grid. Mist eliminator shall have maximum depth of 12 inches. Mist eliminator shall be capable of removing 90 percent of all entrained water droplets greater than 10 microns in diameter and 99 percent of all droplets greater than 40 microns in diameter.

F. Equipment over 100 pounds in weight shall be provided with lifting lugs of FRP or Type 316 stainless steel.

G. Tower shall be designed to allow removal and replacement of internals through the manways provided.

H. Tower shall be equipped with at least one liquid redistribution tray. Redistribution tray construction shall be vinyl ester resin FRP as specified for the Air Stripping Tower, or polypropylene.

2.06 FAN AND FAN DRIVE MOTOR

A. Fan and fan drive motor shall have the general size, configuration, and orientation shown on the Drawings. Final design, including dimensions of fan, fan housing, unitary base, base anchoring details, and other items shall be performed by Contractor.

B. Fan shall be centrifugal type mounted with motor on a unitary base in the arrangement shown on the Drawings. Housing shall be constructed of heavy gauge steel with continuous welds, access door, and 1 inch pipe coupling for drain at lowest point on housing. Wheel shall be mild steel, continuously welded, with cast iron hub. Internal components shall be carbon steel or 416 stainless steel. Bearings shall be roller-type with extended lubrication fittings. Fan shall have inlet and outlet flanges. Fan shall comply with requirements of Air Moving and Control Association.

C. Fan shall be belt driven by high efficiency electric motor. Motor shall be 450 VAC, 3-phase, 60 Hz TEFC, NEMA B design with 1.15 service factor. Motor shall be sized so that the maximum BHP requirements of the fan over the full operational range of the drive system does not exceed 90 percent of the full load nameplate horsepower. Motor and belt driver wheel position shall be adjustable for proper belt tension.

D. Belts shall be V-belt type of premium grade materials and construction, oil and heat resistant, static dissipating, and capable of operating at linear speeds up to 10,000 feet per minute. Timing belts are not acceptable. Fan shall be equipped with factory-mounted, OSHA-compliant belt, shaft, and bearing guard.

E. Fan shall be dynamically balanced over entire expected speed range.

F. Fan and fan drive motor shall be equipment with OSHA-approved belt and shaft guards.

G. Fan shall be equipped with easily accessible grease fittings.

H. Fan, housing, motor, and base shall be coated with corrosion resistant epoxy primer and topcoating, minimum of 8 mils total thickness.

I. The fan shall bear the Air Movement and Control Association (AMCA) seal, and comply with all the requirements of the AMCA certified ratings program, including dynamic balancing.

J. The fan and fan drive shall be capable of operation over a range of speeds from full rated capacity to 10 percent of full rated capacity. Adjustable frequency drive will be Owner-furnished.

2.07 DUCTWORK

A. Supply ductwork and accessories, including but not limited to, ducting, louvered intake, inlet filter, silencer, flexible couplings, transition sections, and ductwork supports. Ductwork and accessories shall have the general size, configuration, and orientation shown on the Drawings. Final design, including dimensions ductwork and structural elements, ductwork supports, and support anchoring details shall be performed by Contractor.

B. Ductwork shall be fiberglass reinforced plastic conforming to the specifications described for the Air Stripping Tower.

C. Ductwork openings, nozzles, and component connections shall be flanged, faced, and drilled 125-pound ANSI B16.1 standard, with full-face EPDM gaskets. Contractor shall furnish all required fasteners and hardware for installation of ductwork components. Bolt and nut-type fasteners shall be used. All hardware shall be 316 stainless steel. Each bolt supplied shall be supplied complete with appropriately sized washers (two), a lock washer, and a nut. All openings and hardware shall be tagged with corresponding unique codes or identifiers to designate the proper location for each piece of hardware and fastener.

D. The resin and surface veil shall be as described for the tower, with color to match the tower which shall be approved in advance by the Owner.

E. Louvered Intake: Architectural type with flange type mounting for installation in pre-fabricated steel building with sheet steel siding. Louvers shall be outward swinging, 4 to 6 inches in width, and commonly operated by single control lever. Control lever shall be capable of being locked in place at least 10 different equally spaced positions throughout the range of louver positions from fully opened to fully closed. Immediately behind louvers shall be an insect and debris screen constructed

of heavy gauge galvanized steel or aluminum woven wire, adequately supported to prevent excessive deflection when 25 percent obstructed. Screen openings shall be approximately 1/4 inch square. Louvers shall be designed to allow easy access to inlet filters for removal and maintenance. Paint shall match exterior of Owner-furnished building using corrosion resistent epoxy primer and topcoat.

F. Silencer: Appropriately sized for fan and fan inlet opening. Maximum pressure drop shall be 1.5 inches of water column at Air Stripping Treatment Equipment peak design flow rate. Silencer shall have a rated performance of at least 30 dB sound reduction for an Octave Band Center Frequency of 1 KHz, and at least 20 dB sound reduction for Octave Band Center Frequencies between 0.5 and 8 KHz. Silencer shall be painted with corrosion resistent epoxy primer and topcoat.

G. Inlet Filter: Filter shall have a removable, washable, reusable filter elements of synthetic material. When clean, at the Air Stripping Treatment Equipment peak design flow rate, the filter shall have a maximum pressure drop of 0.25 inches of water column and a particle removal efficiency of at least 90 percent for 10 micron particles.

H. Flexible Couplings: Flexible couplings shall be flexible fabric type with rigid interior shields to protect fabric and reduce turbulence. Coupling shall be capable of accommodating axial movement over a range of at least 1/2 inch, and accommodating movement perpendicular to the axial direction of at least 1/4 inch. Fabric shall be 1/4 inch thick EPDM or equal. Metal components shall be carbon steel or galvanized steel. Connection to ductwork shall be flanged.

PART 3 EXECUTION

3.01 FACTORY TESTING

A. The Air Stripping Tower and access ladder and platforms shall be inspected and tested in accordance with ASME RTP-1 and this section.

B. Certification of results of these tests, signed by quality control manager, shall be submitted to Engineer. All cutouts shall be saved, marked, and stored for 1 year, minimum, following plant start-up. Cutouts shall not be destroyed until either written permission from the Engineer is obtained or no response has been made to a registered notification letter after 30 calendar days.

C. Air stripper tower cutouts shall be proof-tested in accordance with ASME RTP-1.

D. Air stripper tower shall at a minimum be subject to the following tests:
   1. Resin Cure (ASTM D 2583) at a rate of five tests per tower section following application of each major layer which is cured prior to additional fabrication.
   2. Dimension and laminate thickness at a rate of four average measurements (each consisting of at least 6 individual measurements over a preselected area) per tower section following application of each major layer which is cured prior to additional fabrication. Measurements shall be made using ball foot micrometer or, if this is not practicable, a digital magnetic intensity instrument (ASTM D 4166) or ultrasonic thickness gauge. If instruments are used, they shall be checked for accuracy against a micrometer when measuring cutouts.

3. Physical property and laminate reinforcing content (ASTM D 630, ASTM D 2584) at a rate of four (2 in hoop direction and 2 in axial direction) per tower section. Tests shall be conducted so that the interior corrosion barrier is excluded from tests. Machining to remove corrosion barrier shall not be allowed.
4. Laminate imperfection - Visual Inspection (Level 2 per ASME RTP-1) shall be completed for each tower section at appropriate stages during fabrication. The final inspection shall occur prior to application of exterior pigmented layer. Inspections shall cover entire interior and exterior surfaces and interior and structural layers. All ASME RTP-1 criteria shall apply.
5. A Pressure Test shall be performed on the assembled tower with openings sealed with blind flanges. Stack opening and other non-flanged openings shall be sealed as recommended by supplier and approved by Owner. During test, tower shall be oriented, loaded and supported similar to conditions of actual service. The tests shall be performed using air pressurized to 100 percent of design pressure. The test duration shall be 2 hours. Acceptable leak rate will be in accordance with accepted industry standards for test procedures of this type. At Contractor's option, pressure test may be performed in the factory or after erection in the field. If performed in field, and if necessary to correct deficiencies, Contractor shall bear full expense for removal of tower, transport to factory, correction of deficiency, transport back to field, and reinstallation, including costs associated with the erecting contractor's costs for equipment and tower dismantling and re-erection.

3.02 FIELD ERECTION SUPERVISION

A. Provide continuous field erection supervision during Owner-furnished erection and installation of Air Stripping Treatment Equipment. The Contractor's erection and installation supervisor shall have at least 3 years experience in installation of Contractor's Air Stripping Treatment Equipment. Erection and installation supervisor shall estimate the draft and equipment requirements, and provide this estimate in writing to Engineer as part of the equipment installation instructions. Erection and installation supervisor shall hold a pre-installation conference with Owner-furnished installation Contractor and Engineer to fully describe the requirements of the equipment and Work. Upon completion of installation, Contractor shall provide Engineer written certification that the equipment installation conforms to Contractor's instructions and designs.

END OF SECTION

APPENDIX A

Project Consent Decree

MAR 15 1989

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WASHINGTON

THE STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY AND THE UNITED STATES OF AMERICA ON BEHALF OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY, Plaintiffs, v. COUNTY OF SPOKANE AND KEY TRONIC CORPORATION, Defendants.	C-89-033-RJM NO. CONSENT DECREE

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I. AGREEMENT OF PARTIES

The parties agree that:

A. The State of Washington and the United States of America are filing the complaint in this action simultaneously with the Consent Decree. The Plaintiffs in the complaint seek (1) an injunction requiring the Defendants to abate the release or threat of release of hazardous substances from the Site ("Site"), as hereafter defined, and to remedy hazardous conditions presented to the public health, welfare and the environment by the Site, and (2) reimbursement of response costs incurred or to be incurred by the United States or the state in connection with the Site as reduced by the the mixed funding to be provided by the Government as provided in Section XVII;

B. The relief sought against the Defendants would require remedial actions as provided for in the Record of Decision ("ROD") signed on September 29, 1987 by the Regional Administration, Region 10, the United States Environmental Protection Agency;

C. The Defendants deny any legal or equitable liability under any statute, regulation, ordinance or common law for damages caused by the generation, handling, storage, treatment, transportation, or disposal of hazardous substances at the Site;

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D. This Consent Decree, the entry hereof, and compliance herewith shall not be admissible in any judicial or administrative proceeding and shall not be an admission of any fact dealt with herein or an admission of liability for any purpose; the Consenting Parties retain the right to controvert in any subsequent proceeding, other than in proceedings to enforce this Consent Decree, the validity of or the responsibility for any of the factual or legal determinations made herein;

E. To accomplish the objectives set forth in this Consent Decree the parties have agreed that it is in the public interest and in the interest of the parties for this case to be resolved without litigation, before the taking of any testimony and without the admission of any issue of fact or law;

F. The obligations of Key Tronic Corporation under this Consent Decree and with respect to remedial action at the Colbert Landfill Site are limited to tender of the payments specified under Paragraph A of Section VIII consistent with Sections XIX, XXV, and XXX. The obligations of the United States Air Force are dealt with pursuant to a separate consent agreement with the Government Plaintiffs.

G. As provided in Section 113(f) of CERCLA, 42 U.S.C. § 9613(f) and RCW 70.105B.070(6), Key Tronic and the County shall

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not be liable for claims for contribution regarding matters addressed in this Consent Decree;

H. By entering into this Consent Decree, the parties do not intend to discharge nonsettling persons from any liability they may have with respect to matters alleged in the complaint; and

I. Plaintiffs and Defendants, by their representatives, have agreed to this Consent Decree;

NOW, THEREFORE, it is ORDERED as follows:

II. JURISDICTION AND VENUE

A. This Court has subject matter jurisdiction over this matter pursuant to 28 U.S.C. §§ 1331 and 1345, 42 U.S.C. §§ 6901 et seq., 42 U.S.C. §§ 9601 et seq., ch. 70.105 RCW, ch. 90.48 RCW, and ch. 70.105B RCW and personal jurisdiction over the signatories consenting hereto. Each signatory submits itself to the jurisdiction of the Court for all matters relating to this Consent Decree.

B. The parties stipulate that venue in this court is proper pursuant to 42 U.S.C. § 9613(b) and request that a single judge be assigned to decide all issues arising out of this Consent Decree.

C. The parties further stipulate that, by agreeing to the exercise of pendent jurisdiction over issues arising under state law, no rights or claims which may be available to the

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County and Key Tronic under the Hazardous Waste Cleanup Act are waived and such rights may be adjudicated by this Court or, if this Court declines jurisdiction, the appropriate state court.

III. STATEMENT OF FACTS

The Colbert Landfill is a Spokane County-owned sanitary landfill that was operated from 1968 through 1986. The Colbert area is in northeastern Washington, in Spokane County, approximately 15 miles north-northeast of Spokane, Washington. The landfill covers 40 acres and is located about 2.5 miles north of the Town of Colbert and a half mile east of U.S. Highway 2 (Newport Highway) in the northwestern quadrant of the intersection of Elk-Chattaroy, Yale, and Big Meadows Roads. It is situated in the southeast corner of Section 3, Township 27 North, Range 43 East, W.M., see Appendix A. The landfill received both municipal and commercial wastes up to 1986. It is now filled to capacity, and is no longer receiving waste.

The remedial action site, the area of potential impact surrounding and including the landfill, extends north of the landfill about a half mile, west about a mile to the Little Spokane River, east a similar distance, and south approximately five miles to Peone (or Deadman) Creek. The total area is approximately 6,800 acres which includes parts of Sections 2, 3, 10, 11, 14, 15, 16, 21, 22, 23, 26, 27, 28, 33, 34, and 35 of the same township and range. The site is entirely within

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the drainage basin of the Little Spokane River, mainly on a plateau bounded by bluffs down to the river on the west and knobby granite and basalt hills to the east.

Colbert Landfill had been operated as a sanitary landfill by the Spokane County Utilities Department since it was opened in September 1968 to its cessation of operations in October 1986. During the five years from 1975 to 1980, a local electronics manufacturing company, Key Tronic Corporation, used the Colbert landfill to dispose of spent organic solvents, mainly methylene chloride (MC) and 1,1,1-trichloroethane (TCA). Hazardous substances detected in ground water at the Site were also disposed of by a variety of other persons, including Alumax Irrigation Products, A&M Manufacturing and United Paint, Inc. During the same period a nearby military facility, Fairchild Air Force Base, also disposed of various solvent wastes at the site. A variety of other chemicals (such as pesticides and refinery tar residues) from other sources were also disposed at the site but have not, to date, been detected in the groundwater at the site.

In 1980 nearby residents complained to the Eastern Regional Office of the Washington Department of Ecology (Ecology) about these disposal practices. State and county officials, under the lead of the Spokane County Utilities Department, initiated an investigation into complaints of

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groundwater contamination in the area by sampling nearby private wells of which some were found to be contaminated with solvents. Subsequently, the County and Key Tronic instituted and continued a well sampling plan to protect the interests of local residents.

In the following years, a number of studies have been directed toward the contamination problem at the Colbert Landfill. The original investigation, which was initiated in response to citizen complaints, was conducted by George Maddox and Associates.

The United States Environmental Protection Agency ("EPA"), pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), 42 U.S.C. § 9605, placed the Colbert Landfill Site in August, 1983 (the "Site" as specifically defined in Section IV of this Consent Decree) on the National Priorities List, which is set forth at 40 C.F.R. Part 300, Appendix by publication in the Federal Register on August 8, 1983, 47 Fed. Reg. 58470-58484 (1983).

In response to a release or a substantial threat of a release of a hazardous substance at or from the Site, the Ecology and EPA in August, 1984, commenced a Remedial Investigation and Feasibility Study ("RI/FS") pursuant to 40 C.F.R. 300.68 for the Site.

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The Remedial Investigation ("RI") Report was completed in May, 1987, and the Feasibility Study ("FS") Report was also completed in May, 1987. The FS Report contains a proposed plan for remedial action at the Site.

Six volatile organic chemicals, all chlorinated aliphatic hydrocarbons, were the main contaminants detected in the groundwater at the Colbert Landfill Site during the Remedial Investigation (Golder 1987). These contaminants, identified in this Decree as "constituents of concern" are: 1,1,1-Trichloroethane (TCA); 1,1-Dichloroethylene (DCE); 1,1-Dichloroethane (DCA); Trichloroethylene (TCE); Tetrachlroethylene (PCE); and Methylene Chloride (MC). Constituents of concern were detected at levels requiring remedial action in both upper and lower aquifers.

On January 8, 1988, EPA, pursuant to Section 122 of CERCLA, 42 U.S.C. § 9622, notified the County and Key Tronic that the EPA determined each party to be a potentially responsible party ("PRP") regarding the proposed remedial action at the Site. Subsequently, Ecology has determined each party to be a potentially liable person (PLP) as defined by RCW 70.105B.020(9).

EPA's decision on the final remedial action plan is embodied in a document called a Record of Decision ("ROD"), issued September 29, 1987.

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Pursuant to Section 121(d)(1), EPA, the state, Spokane County and Key Tronic ("the parties") have determined that the remedial action plan embodied in this Consent Decree will attain a degree of cleanup of hazardous substances, pollutants and contaminants released into the environment and of control of further release which at a minimum assures protection of human health and the environment at the Site.

The parties have determined that the remedial action plan embodied by this Consent Decree will provide standards of control for such hazardous substances, pollutants, or contaminants which at least attains legally applicable or relevant and appropriate standards, requirements, criteria, or limitations under Federal environmental law or state environmental or facility siting law in accordance with Section 121(d)(2) of CERCLA, 42 U.S.C. § 9621(d)(2); and will attain a degree of cleanup as provided in RCW 70.105B.060; and the remedial action plan is in accordance with Section 121 of CERCLA, 42 U.S.C. § 6921, and with the National Contingency Plan ("NCP"), 40 C.F.R. Part 300.

The County agrees to implement the final remedial action plan as set forth in Appendix B to this Consent Decree, and the Government Plaintiffs have determined that the work required under the Consent Decree will be done properly by the County,

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and that the County is qualified to implement the remedial action.

The parties recognize, and intend to further hereby, the public interest in the expedition of the cleanup of the Facility and avoiding prolonged and complicated litigation between the parties.

NOW, THEREFORE, it is hereby Ordered, Adjudged and Decreed:

IV. DEFINITIONS

The following definitions shall apply to this Consent Decree, including the scope of work set forth in Appendix B:

A. ARAR means a federal or state standard, requirement, criterion, or limitation that is legally applicable or relevant and appropriate to cleanup of the Site as of the date of entry of this Consent Decree within the meaning of 42 U.S.C. § 9621(d) and RCW 70.105B.060.

B. CERCLA means the Comprehensive Environmental Response Compensation and Liability Act, 42 U.S.C. § 9601 et seq., as amended, also known as "Superfund."

C. Colbert Landfill Site ("Site") means the Site located in Spokane County, and described in the September 29, 1987 ROD. See also, Appendix A. The Site includes (1) the approximately 40-acre landfill operated from 1968 to 1986; and (2) any

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portions of other properties that contain hazardous substances as a result of landfill operations at the landfill.

D. Constituents of Concern means such hazardous substances as are identified as major contaminants in the ROD; specifically, 1,1,1-Trichloroethane (TCA); 1,1-Dichloroethylene (DCE); 1,1-Dichloroethane (DCA); Trichlorethylene (TCE); Tetrachloroethylene (PCE); and Methylene Chloride (MC).

E. County or Spokane County means the County of Spokane, Washington.

F. Department of Ecology ("Ecology" or "state") means the State of Washington, Department of Ecology.

G. EPA means the United States Environmental Protection Agency.

H. Government Plaintiffs means the State of Washington on behalf of the Department of Ecology and the United States of America on behalf of EPA, acting alone or together.

I. Hazardous Substance means any hazardous substance as defined by CERCLA and dangerous waste, extremely hazardous waste and hazardous substances as defined by state law.

J. Hazardous Waste Cleanup Act means Washington Laws of 1987, Chapter 2, 3rd Ex. Session (S.B. 6085), as codified in ch. 70.105B RCW and elsewhere.

K. Key Tronic means Key Tronic Corporation.

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L. National Contingency Plan ("NCP") means the plan promulgated pursuant to CERCLA and codified at 40 CFR Part 300 et seq., as amended.

M. Parties means all parties who are signatories to the Consent Decree.

N. Remedial Action means all activities and work within the meaning of 42 U.S.C. § 9601(24) and specifically identified in this Consent Decree, including Appendix B, and all attachments thereto and plans and schedules thereunder, and all amendments to any of the above made in accordance with this Consent Decree. The Remedial Action includes, without limitation the following items described more fully in Appendix B: the pilot studies, further site characterization, and initiation of cleanup activities to be conducted in Phase I; the evaluation of Phase I results; the design of a final remedial action program to meet the Performance Standards as defined in Appendix B and implementation of such remedial action program to be conducted in Phase II; any modification to the Remedial Action as a result of the five-year review provided by Section XXV(B) or information developed in Phase I, including data relating to the extent of contamination, site hydrogeology, initial field pilot testing, technical feasibility, or implementability of the remedial options originally chosen, as provided on page I-3 of Appendix B; if

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identified to be necessary as provided in Appendix B, air stripping tower emissions abatement; closure of Colbert Landfill; domestic well monitoring; provision of alternative water supply; implementation of institutional controls; and, if the preferred remedy identified in the ROD is in whole or in part no longer feasible or cost-effective, design and implementation of any new alternative proposed by Spokane County as provided in Appendix B.

O. RCRA means the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 et seq.

All terms not specifically defined herein shall have the meaning as provided by CERCLA, 42 U.S.C. § 9601 et seq. and/or ch. 70.105B RCW.

V. PARTIES BOUND

This Consent Decree shall apply to and be binding upon the signatories, their successors and assigns. The undersigned representative of each party certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind such party to this document. The County shall provide a copy of this Consent Decree to each contractor or subcontractor retained to perform work contemplated by this Consent Decree and shall condition any contract for such work on compliance with this Consent Decree.

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VI. GENERAL PRINCIPLES

A. The Appendices to this Consent Decree and their Attachments are a part of this Decree, and the plans and schedules prepared as required in Appendix B and attachments thereto shall, upon their approval by the Government Plaintiffs, be incorporated in the Decree.

B. Except as provided in Section XXVII (Dispute Resolution) and Section XXX (Covenant Not to Sue) nothing in this Consent Decree shall be deemed to limit the response authority of the Government Plaintiffs under Section 104 of CERCLA, 42 U.S.C. § 9604, under Section 106 of CERCLA, 42 U.S.C. § 9606, or under the Hazardous Waste Cleanup Act.

VII. THE REMEDIAL ACTION

A. The County and Key Tronic shall finance and the County shall perform the Remedial Action in accordance with this Consent Decree. It is the intent of the parties that all work to be performed be embodied in Appendix B. The Remedial Action must meet the performance standards set forth in Appendix B.

B. The Scope of Work to be performed by the County at and about the Site is attached to this Consent Decree as Appendix B and is herein incorporated by reference in its entirety. The Scope of Work requires that the County submit plans for approval by the Government Plaintiffs and implement

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such plans after receiving Governmental approval. All such approved plans shall become a part of this Decree, and this Decree shall be so amended upon and by the filing of approved plans with the Court. The Scope of Work to be performed at the Site includes further site characterization, installation of pilot extraction wells and initial remediation as well as full and final remediation measures.

As specified more completely in Appendix B, the Remedial Action includes, inter alia,

1. Provision of an alternate drinking water supply to each residence whose domestic water supply is affected by Constituents of Concern or by the Remedial Action;

2. Additional monitor wells installed and sampled to define plume(s) boundaries;

3. Preliminary selection of types of treatment system to be constructed;

4. Treatability studies for the contaminated water based on the selected treatment method, if necessary;

5. Preliminary design;

6. Final design (plans and specifications);

7. Construction of the extraction wells, treatment system, and discharge structure(s);

8. Operation and maintenance manual, (draft and final);

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9. Operation and maintenance of the system;

10. System Performance monitoring program;

11. Monitoring program for domestic supply wells;

12. Pump tests for extraction wells;

13. Development and implementation of institutional controls to the degree authorized by law.

C. The Government Plaintiffs shall have such rights of review and approval of the Remedial Action as are provided herein. The Remedial Action shall be designed, implemented and completed in accordance with the National Contingency Plan (NCP) in effect on the effective date of this Consent Decree and with the standards, specifications, and schedule of completion set forth in Appendix B and Attachments and the plans and schedules developed in accordance therewith. The level of cleanup or treatment required by the Remedial Action with respect to constituents of concern shall not be in excess of the Performance Standards set forth in Appendix B, unless those standards are modified under the five-year review authorized under CERCLA § 121(c), and discussed in Section XXV, B.

D. The Government Plaintiffs, Key Tronic and Spokane County agree that the Remedial Action, as set forth in Appendix B; or as modified in accordance with Section XXIV (Force Majeure) or the Court, is consistent with the NCP and the

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Hazardous Waste Cleanup Act and that the amounts paid by Key Tronic and Spokane County to perform the work are necessary costs of response.

VIII. OBLIGATIONS OF CONSENTING PARTIES

A. Obligation of Key Tronic

The obligation of Key Tronic shall be limited solely to payment into the Trust Fund established under this Consent Decree of only the following amounts according to the following schedule:

Date	Amount
Within 15 days of entry of this Decree	650,000
September 30, 1989	650,000
September 30, 1990	950,000
September 30, 1991	950,000
September 30, 1992	1,000,000

Nothing herein shall preclude Key Tronic from paying prior to the date contained in this schedule. The obligation of Key Tronic under this paragraph shall not be affected in the event of a default by Spokane County.

B. Obligation of Spokane County

Spokane County shall comply with the relevant terms and conditions of this Consent Decree and implement the Remedial Action as specified in Appendix B. It is the intent of the parties, that, with the exceptions provided in Sections XIX and XXX, and consistent with Section XXV, any changes or mod-

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ifications to the Scope of Work embodied in Appendix B are not the responsibility of Key Tronic.

In the event of default by Key Tronic, Spokane County shall not be responsible for the unpaid share of costs attributable to Key Tronic pursuant to this Decree, or for any penalties resulting from delays caused by such a default. Nothing herein shall require the Government Plaintiffs to be responsible for such costs in the event of default by Key Tronic. The Government Plaintiffs reserve the right to take action against any or all parties in the event of such a default.

IX. INDEMNIFICATION

Spokane County agrees to indemnify and save and hold the Government Plaintiffs, their agents and employees harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property arising from or on account of acts or omissions of the County, its officers, employees, agents, or contractors in entering into and implementing this Decree; provided, however, that the County shall not indemnify the Government Plaintiffs nor save nor hold its employees and agents harmless from any claims or causes of action arising out of the negligent or intentional acts or omissions of the Government Plaintiffs, or the employees and agents of the Governments in implementing the activities pursuant to this Decree. Nothing contained herein shall

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prevent the County from naming or joining EPA or Ecology for their own acts of negligence or intentionally tortious conduct, as provided by law. The Government Plaintiffs retain all rights and defenses with respect to such claims.

X. DATA REPORTING/AVAILABILITY, SAMPLING

The Government Plaintiffs and the County shall make the results of all sampling, laboratory reports, and/or test results generated by or on behalf of such party with respect to the implementation of this Consent Decree available to the other. The County shall submit these results in progress reports submitted in accordance with Section XI (Progress Reports) herein. The Government Plaintiffs shall submit their results in writing to the County within 30 days of receipt of a written request.

At the request of the Government Plaintiffs, the County shall allow split or duplicate samples to be taken by the Government Plaintiffs and/or its authorized representatives of any samples collected by Spokane County pursuant to the implementation of this Consent Decree. Spokane County shall use best efforts to notify the Government Plaintiffs at least five (5) working days in advance of any sample collection activity. The Government Plaintiffs shall allow split or duplicate samples to be taken by the County or its authorized representatives of any samples collected by the Governments

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pursuant to the implementation of this Consent Decree. The Government Plaintiffs shall use best efforts to notify the County at least five (5) working days prior to any sample collection activity.

Both the County and the Government Plaintiffs shall conduct all sampling and analysis in a manner consistent with the Quality Assurance/Quality Control Plan established for the Site.

XI. PROGRESS REPORTS

A. Spokane County shall provide or cause their contractors or agents to provide written reports to the Government Plaintiffs on a monthly basis during periods of construction as provided by Appendix B and quarterly thereafter until all the requirements of this Consent Decree have been implemented, or on such other basis as may be mutually agreed to by the County and the Government Plaintiffs without formal amendment of this Consent Decree. These progress reports shall describe the actions that have been taken toward achieving compliance with this Consent Decree, including 1) a general description of Remedial Action activities commenced or completed during the reporting period, 2) Remedial Action activities projected to be commenced or completed during the next reporting period, 3) and any problems that have been encountered or are anticipated by the County in commencing or completing

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the activities. The monthly progress reports are to be submitted to the Government Plaintiffs by the 10th of each month for work done the preceding month and planned for the current month. Quarterly progress reports are to be submitted to the Government Plaintiffs by the 10th of each month following the end of the preceding quarter.

B. If a progress report is incomplete or otherwise deficient, the Government Plaintiffs shall notify the County within twelve (12) work days of receipt of such progress report by the Government Plaintiffs. In the event that a longer review period is required, the Government Plaintiffs shall notify the County within seven (7) days of receipt of such document. The notice shall include a description of the deficiencies. Notwithstanding this schedule, unless the County invokes the procedures of Section XXVII (Dispute Resolution), the County or its contractors or agents shall make the necessary changes and resubmit the progress report or submit a response to the notice of disapproval with the next progress report to the Government Plaintiffs. Nothing in this paragraph shall be construed to negate these Government Plaintiffs' rights of review and approval.

C. If the Government Plaintiffs determine that a resubmittal progress report is deficient or disagree with the

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County's response to a notice of disapproval, the County may invoke the Dispute Resolution procedures of Section XXVII.

XII. OTHER REPORTS, PLANS AND OTHER ITEMS

A. Spokane County shall provide ten copies to EPA and five copies to Ecology of any item described as "deliverables" in the work plans and Scope of Work according to the schedule set forth therein.

B. If the Government Plaintiffs disapprove any plans, reports (other than monthly progress reports covered by Section XI, above) or other items required to be submitted to the Government Plaintiffs for approval pursuant to this Consent Decree, then the County shall have thirty (30) days from the receipt of such disapproval to correct any deficiencies and resubmit the plan, report or item for Governmental approval.

C. Any disapproval by the Government Plaintiffs shall be in writing and include an explanation of why the plan, report or item is being disapproved. In the event that a longer review period than specified in Appendix B is required, the Government Plaintiffs shall notify the County of that fact within 20 days of receipt of such document. Nothing in this paragraph shall be construed to negate these Government Plaintiffs' rights of review and approval.

D. The County must address each of the Government Plaintiffs' comments and resubmit to the Government Plaintiffs

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the previously disapproved plan, report or item with the required changes within the deadline set in Paragraph B, above.

E. If any plan, report, or item cannot be approved by the Government Plaintiffs after one resubmission, the County may invoke the Dispute Resolution procedures of Section XXVII.

XIII. RETENTION OF RECORDS

Spokane County shall preserve, during the pendency of this Consent Decree and for ten (10) years from the date of termination of this Consent Decree, all records, reports, documents, and underlying data in their possession, or in the possession of their employees, agents, relevant to the implementation of this Consent Decree, unless otherwise ordered by the Court. The County shall also require all such records in the possession of contractors to be provided to them and shall retain copies of all such records which are nonduplicative. Any party to this Consent Decree may have access to such documents. Notwithstanding any other provision of this Consent Decree, the Government Plaintiffs and the County retain any rights they may otherwise have including but not limited to privilege within the meaning of Rule 26(b) of the Federal Rules of Civil Procedure or Washington Civil Rule 26(b), governing the production of such records and documents.

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XIV. DESIGNATED PROJECT MANAGERS

A. Ecology's initial project manager is Mike Blum. EPA's initial project manager is Neil Thompson. Spokane County shall designate an initial project manager within thirty days of entry of the Decree. Each project manager shall be responsible for overseeing the implementation of this Consent Decree. The Government Plaintiffs' project managers will be the Government Plaintiffs' designated representatives at the Site. To the maximum extent possible, communications between the County and the Government Plaintiffs, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Decree, shall be directed through the project managers.

Any party may change its respective project manager by notifying the other party, in writing, at least ten (10) calendar days prior to the change.

B. The Government Plaintiffs' project managers will observe and monitor the progress of the Remedial Action being performed pursuant to this Consent Decree. The project managers shall have the authority vested by 40 CFR § 300 *et seq.*, and other applicable federal laws and regulations. The project managers do not have the authority to modify in any way the terms of this Consent Decree.

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XV. IMPLEMENTATION OF REMEDIAL ACTION

In the event that the Government Plaintiffs determine that the County has failed to implement the Remedial Action, the Government Plaintiffs may, after notice to the County and consistent with the Dispute Resolution procedures of Section XXVII, perform any or all portions of the Remedial Action that remain incomplete. If the Government Plaintiffs perform all or portions of the Remedial Action because of the County's failure without good cause to comply with their obligations under this Consent Decree, the County shall reimburse the Government Plaintiffs for the costs of doing such work within thirty (30) days of receipt of demand for payment of such costs, provided that the County is not obligated under this section to reimburse the Government Plaintiffs for costs incurred for work inconsistent with or beyond the scope of the Remedial Action unless it is work carried out under the five-year review provided for by CERCLA § 121(c), which is referenced in Section XXV. B. The Government Plaintiffs reserve the right to seek reimbursement for any other necessary costs of remedial action. The County does not waive any defenses to such actions. In any proceeding for costs under this section, the County shall have the burden of proving that costs claimed by the Government Plaintiffs were for work inconsistent with or beyond the scope

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of the Remedial Action, work that is inconsistent with the NCP, or work that was unnecessarily duplicative.

XVI. FINANCIAL ASSURANCES

The Government Plaintiffs have reviewed the financial capabilities of Key Tronic and Spokane County and have concluded that the availability of financial resources is not an impediment to implementation of the Remedial Action.

XVII. PAYMENT OF COSTS

A. State Costs

Spokane County agrees to reimburse the appropriate account of the Treasury of the State of Washington, as identified by Ecology, for Ecology's reasonable and appropriate costs as shown by an itemized statement of such costs compiled and presented in conformance with state Office of Financial Management standards and procedures associated with Ecology's oversight of the Remedial Action that are consistent with the NCP or ch. 70.105B RCW and not unnecessarily duplicative which have been conducted during the implementation of this Consent Decree. Within ninety (90) days of the end of each fiscal quarter, Ecology will submit to the County an itemized statement of Ecology's expenses for the previous quarter. Within ninety (90) days of receipt of the itemized statement, the County shall pay into the appropriate account of the Treasury

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of the State of Washington, as identified by Ecology, the required sum.

B. Federal Costs

1. Past costs. Spokane County agrees to reimburse the appropriate account as identified by EPA for EPA's reasonable and appropriate costs, including direct, indirect and oversight costs along with interest, expended prior to September 30, 1988. Said past costs shall be shown by an itemized statement of such costs compiled and presented by EPA to Spokane County. Spokane County shall pay such past costs within four years of the entry of this Decree.

2. Future costs. Spokane County agrees to reimburse the appropriate account as identified by EPA for EPA's reasonable and appropriate costs, including direct, indirect and oversight costs. EPA shall present the County with an itemized statement of such costs on an annual basis consistent with its fiscal year. Following receipt of the itemized statement, the County shall pay, within ninety (90) days, into the appropriate account as identified by EPA, the said sum.

C. Mixed Funding

1. State of Washington

Pursuant to RCW 70.105B.070(7) the Director has determined that funding from the state toxics control account is

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appropriate to help defray the costs of conducting the Remedial Action required under this Consent Decree. Such funding will promote prompt settlement and implementation without burdensome litigation and enhance cleanup operations, mitigate unfair economic hardship and will achieve greater fairness with respect to the payment of remedial action costs by providing for the shares of potentially liable persons (PLPs) who have not entered into a settlement agreement with Ecology.

As provided for by RCW 70.105B.070(7) Ecology may seek to recover funds provided under this Decree from non-settling potentially liable persons. Ecology further reserves the right to seek reimbursement for such funds from any party which has not fulfilled its obligations set forth in this Consent Decree.

To achieve the goals and purposes of RCW 70.105B.070(7), the Director has determined that funds shall be made available in the following specified amounts:

a. Past Costs. The parties agree that Key Tronic and Spokane County and other PLPs are liable as of June 23, 1988, for $386,541 including interest, for remedial action costs incurred by Ecology to date. As part of its share of mixed funding, Ecology agrees to waive collection of these costs from the County and Key Tronic.

b. Future Costs. The parties agree that Key Tronic and Spokane County and other PLPs are liable for Ecology's

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reasonable and appropriate oversight costs as provided above. As part of its share of mixed funding, Ecology agrees to waive collection of $100,000 of such future oversight costs from Key Tronic and Spokane County. Spokane County agrees to pay such oversight costs in excess of said amount.

c. Ecology agrees to preauthorize claims against the state toxics control account for up to $75,000 to be used in providing an alternate water supply as required by Appendix B.

d. Ecology agrees to preauthorize claims against the state toxics control account for up to $100,000 to be used for installation of an outfall pipe from the south extraction system to the Little Spokane River as required by Appendix B.

e. Ecology agrees to preauthorize claims against the state toxics control account for up to $100,000 to be used for construction of barrier wells in the south and west treatment systems as required by Appendix B.

All claims against the state toxics control account shall be contingent upon and subject to legislative appropriation.

2. <u>United States. Claims Against the Fund.</u>

a. In accordance with the preauthorization decision document (Appendix D to the Consent Decree), Spokane County may submit a claim for reimbursement to the Hazardous Substance Superfund (the "Superfund") for up to 1.4 million dollars

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($1,400,000.00), of the costs incurred in completing the remedial action. In no event shall the claims against the Fund exceed the sum of $1.4 million, unless the amount preauthorized is modified pursuant to subparagraph b. The claims against the Fund shall cover only Spokane County's costs of the remedial action. The claims shall not include any of the United States' oversight costs, or investigatory costs or past Response Costs that were incurred prior to the lodging of this Decree, which costs Spokane County is to pay to the Fund a portion thereof, pursuant to this section. Reimbursement from the Fund of the amount claimed by Spokane County shall be subject to the applicable claims and audit procedures specified in Appendix D, and shall be made in accordance with the procedures outlined in Appendix D. Spokane County may not submit Contractor Claims for reimbursement from the Fund. If the agency denies a claim in whole or in part, it shall notify the claimant of the reason for such denial. If the claimant is dissatisfied with EPA's decision, or if EPA fails to act on a claim within 90 days of its submission, the claimant may demand an administrative hearing before an administrative law judge as provided in Section 112 of CERCLA, 42 U.S.C. § 9612.

b. If it is subsequently determined that it is necessary to modify the actions that EPA preauthorized, or if it becomes apparent that the project's costs will exceed the

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approved costs as set out in Appendix D, Spokane County may submit to EPA a revised application for preauthorization. Further, Spokane County may submit a revised application for preauthorization upon EPA's determination of the requirements for final closure of the Site. EPA will consider requests for preauthorization from Spokane County in a timely manner and will revise the preauthorization to cover eleven and one-half percent (11.5%) of reasonable and necessary costs to implement the approved remedy.

c. Payment of any claim shall be subject to the County's subrogating to the United States their rights as claimant to the extent to which their response costs are compensated from the Fund. Further, Spokane County and its contractors shall assist in any cost recovery action which may be initiated by the United States. Spokane County and its contractors shall furnish the personnel, services, documents, and materials needed to assist EPA in the collection of evidence to document work performed and costs expended by the County or its contractors at the Site in order to aid in cost recovery efforts. Assistance shall also include providing all requested assistance in the interpretation of evidence and costs, and providing requested testimony. All of the County's contracts for implementing the preauthorization decision document shall

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include a specific requirement that the contractors agree to provide this cost recovery assistance.

D. Grant Funding

Upon entry of this Consent Decree, Spokane County shall be eligible to apply for grant funds from Ecology as provided by RCW 70.105B.220(4) and WAC 173-309-050.

XVIII. TRUST FUND

Key Tronic shall, subsequent to the effective date of this Consent Decree, deposit into the trust established by the trust agreement, which is attached hereto as Appendix C and is hereby incorporated by reference, the amount of four million two hundred thousand dollars and no cents ($4,200,000.00). Key Tronic shall pay funds into the trust fund under the schedule contained in Paragraph A of Section VIII of this Consent Decree. Said sum and any other funds derived from a settling PLP or PRP shall be held in trust pursuant to the terms of Appendix C. Ecology shall be designated as having the power of appointment under the trust (hereinafter "Trust Fund"). The Trust Fund shall be for the exclusive purposes of financing the Remedial Action required and set forth under the terms of this Consent Decree and implemented by the County.

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XIX. RESERVATION OF RIGHTS

A. Key Tronic

Notwithstanding compliance with its obligation under this Consent Decree to make the payments required under Paragraph A of Section VIII, and consistent with Sections XXV and XXX, Key Tronic is not released from liability, if any, resulting from its use of Colbert Landfill for costs of any removal or remedial action outside the terms of this Consent Decree taken by the Government Plaintiffs with respect to: (1) conditions at the Site, previously unknown to the Government Plaintiffs, which are discovered after the entry of this Consent Decree and which indicate that the Remedial Action is not protective of human health and the environment; (2) new information which is received after entry of this Consent Decree and which reveals a significant quantity of a hazardous substance originating from the Site not identified in the ROD or this Consent Decree or a condition not previously identified in the ROD or this Consent Decree as being present at the Site, in an area of the Site other than as described in the ROD or this Consent Decree, or in quantities significantly greater than as described in the ROD or this Consent Decree; or (3) contamination originating other than from the Site. The Government Plaintiffs reserve the right to take any such action outside the terms of this Consent Decree pursuant to CERCLA or the Hazardous Waste

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Cleanup Act. In addition, the Government Plaintiffs reserve the right to seek damages in exoneration/reimbursement from Key Tronic for such costs incurred by the Government Plaintiffs.

B. Spokane County

Notwithstanding compliance with the terms of this Consent Decree, including completion of the Remedial Action, the County is not released from liability, if any, for costs of any removal or remedial actions outside the terms of this Consent Decree taken by the Government Plaintiffs with respect to: (1) conditions of the Site, previously unknown to the Government Plaintiffs, which are discovered after the entry of this Consent Decree, when these previously unknown conditions indicate that the Remedial Action is not protective of human health and the environment; (2) new information which is received after entry of this Consent Decree and which reveals a significant quantity of a hazardous substance originating from the Site not identified in the ROD or this Consent Decree or a condition not previously identified in the ROD or this Consent Decree as being present at the Site, in an area of the Site other than as described in the ROD or this Consent Decree, or in quantities significantly greater than as described in the ROD or this Consent Decree; or (3) contamination originating other than from the Site. The Government Plaintiffs reserve the right to take any such action outside the terms of this

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Consent Decree pursuant to CERCLA or the Hazardous Waste Cleanup Act. In the event that the County fails or refuses to perform any tasks in accordance with the standards, specifications, and schedules specified in the work plans or Scope of Work, the Government Plaintiffs may undertake such tasks. In addition, the Government Plaintiffs reserve the right to seek damages in exoneration/reimbursement from the County for such costs incurred by the Government Plaintiffs.

XX. OTHER CLAIMS

Except as otherwise provided in this Consent Decree, nothing in this Consent Decree 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, corporation, or state or local governmental entity not a signatory to this Consent Decree 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 substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Site. Except as provided in paragraph C and D of Section XVII, regarding mixed or grant funding to be provided by the Government Plaintiffs, this Consent Decree does not preauthorize or constitute any decision or preauthorization of funds under 42 U.S.C. § 9611(a)(2) or the Hazardous Waste Cleanup Act. Key Tronic and Spokane County

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waive any claims they may otherwise have against the Superfund or state or local toxics control accounts, with respect to liability for which they have been relieved under this Consent Decree.

XXI. COMPLIANCE WITH LAWS

A. Subject to the limitations of paragraph B of this section, all actions carried out by the County pursuant to the Consent Decree shall be done in accordance with all applicable federal, state statutes, rules, regulations and ordinances.

B. As provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), no federal, state, or local permit shall be required for the portions of the Remedial Action to be conducted entirely on the Site, although the County must comply with the substantive requirements of all applicable federal laws. As provided in Section 25 of the Hazardous Waste Cleanup Act, RCW 70.105B.250, the Remedial Action is exempt from the procedural and substantive requirements of state and local laws that would otherwise apply to the Remedial Action.

C. To the extent that, notwithstanding paragraph B of this Section, the County must obtain any permits in connection with the Remedial Action, the Government Plaintiffs may assist the County in obtaining any such permits after diligent efforts by the County. Any denial of assistance shall be subject to dispute resolution as provided in Section XXVII.

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XXII. SITE ACCESS

The Government Plaintiffs or any authorized representative of the Government Plaintiffs shall have the authority to enter and freely move about all property at the Site at all reasonable times for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the Site; reviewing the progress in carrying out the terms of this Consent Decree; conducting such tests or collecting samples as the Government Plaintiffs or the project managers may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Consent Decree; and verifying the data submitted to the Government Plaintiffs by the County. The Government Plaintiffs shall split any samples taken during an inspection unless the County fails to make available a representative for the purpose of splitting samples. The County shall allow such persons to inspect and copy all records, files, photographs, documents, and other writings including all sampling and monitoring data, in any way pertaining to work undertaken pursuant to this Consent Decree that is not otherwise privileged within the meaning of Rule 26(b) of the Federal Rules of Civil Procedure or Washington Civil Rule 26(b). All parties with access to the Site pursuant to this section shall comply with approved health and safety plans. To the extent practicable, the Government

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Plaintiffs shall endeavor to notify the County prior to entering and moving about the Site.

If, after diligent efforts, the County is unable to achieve access, the Government Plaintiffs may assist in securing access pursuant to existing law, including RCW 70.105B.030 and 70.105B.110. Any denial of assistance shall be subject to dispute resolution as provided by Section XXVII.

XXIII. ENDANGERMENT

In the event the Government Plaintiffs determine or concur in a determination by another local, state, or federal agency that activities implementing or in noncompliance with this Consent Decree, or any other circumstances or activities, are creating or have the potential to create an imminent and substantial endangerment to the public health or welfare or the environment, the Government Plaintiffs may order the County to stop further implementation of this Consent Decree for such period of time as needed to abate the danger. During any stoppage of work under this section, the County's obligations with respect to the work ordered to be stopped shall be suspended and the time periods for performance of that work, as well as the time period for any other work dependent upon the work which stopped, shall be extended, pursuant to Section XXIV (Force Majeure) of this Consent Decree, for such period of time as the Government Plaintiffs determine is reasonable under the

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circumstances, in no event less than the time of the stoppage. If the Government Plaintiffs unreasonably stopped work and thereby increased costs to the County to perform the Remedial Action, the County reserves its rights to seek reimbursement from the Government Plaintiffs. The County shall bear the burden of proof regarding the reasonableness of stoppages by the Government Plaintiffs.

B. In the event the County determines that activities undertaken in furtherance of this Consent Decree or any other circumstances or activities are creating or have the potential to create an imminent and substantial endangerment to the people on the Site or in the surrounding area or to the environment, the County may stop implementation of this Consent Decree for such periods of time necessary for the Government Plaintiffs to evaluate the situation and determine whether the County should proceed with implementation of the Consent Decree or whether the work stoppage should be continued until the danger is abated. The County shall notify the Government Plaintiffs' project managers as soon as is possible, but no later than twenty-four (24) hours if the stoppage occurs on a weekday, and forty-eight (48) hours if the stoppage occurs on a weekend or holiday, after such stoppage of work, and provide the Government Plaintiffs with documentation of its analysis in reaching this determination. If the Government Plaintiffs

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disagree with the County's determination, it may order the County to resume implementation of this Consent Decree. During any stoppage of work under this paragraph, the County's obligations shall be suspended and the time periods for performance of that work, as well as the time period for any other work dependent upon the work which was stopped, shall be extended, pursuant to Section XXIV (Force Majeure) of this Consent Decree, for such period of time as the Government Plaintiffs determine is reasonable under the circumstances in no event less than the time of the stoppage.

C. Any disagreements pursuant to this clause shall be resolved through the dispute resolution procedures.

XXIV. FORCE MAJEURE

A. "Force Majeure" for purposes of this Consent Decree is defined as any event arising from causes beyond the control of Spokane County which delays or prevents the performance of any obligation under this Consent Decree. An extension of schedules shall be granted only when a request for an extension is submitted within 30 days from knowledge of an event and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify the reason(s) the extension is needed. An extension shall only be granted for such period of time as the Government Plaintiffs determine is reasonable under the circumstances. The

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Government Plaintiffs shall act upon all written requests in a timely fashion. It shall not be necessary to formally amend this decree pursuant to Section XXV when a schedule extension is granted; however, following any schedule extension, the County shall prepare a revised schedule which they shall provide to the Government Plaintiffs and file with the Court.

B. The burden shall be on the County to demonstrate that the request for the extension has been submitted in a timely fashion and that good cause exists for granting the extension and due diligence has been exercised. Good cause may include, but not be limited to, the following:

(1) Circumstances beyond the reasonable control and despite the due diligence of the County (including delays caused by unrelated third parties);

(2) Delays not caused by Spokane County in the issuance of a necessary permit which was timely applied for;

(3) Other circumstances deemed exceptional or extraordinary;

(4) Changes in work plans; and

(5) Unanticipated access, drilling, or logistics problems;

Good cause shall include the following:

(1) Government Plaintiffs' review periods in excess of prescribed times.

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(2) Acts of God, fire, flood, blizzard, extreme temperatures that interfere with work performance, or other unavoidable casualty;

(3) Judicial Stay; and

(4) Work Stoppage due to endangerment as provided in Section XXIII.

Neither increased costs of performance of the terms of this Decree nor changed economic circumstances may be considered "force majeure" or circumstances beyond the reasonable control of the County.

XXV. AMENDMENT OF CONSENT DECREE

A. This Consent Decree may only be amended by written stipulation between the Government Plaintiffs and the affected party (parties). All affected parties shall be given prompt written notice of such amendments. Such amendment shall become effective upon entry by the Court. Agreement to amend shall not be unreasonably withheld by any party to the Consent Decree.

The County shall submit any request for modifications to the remedial program or project schedule to the Government Plaintiffs for approval. The Government Plaintiffs shall indicate their approval or disapproval of these in a timely manner after the request for modification is received. Reasons for the disapproval shall be stated in writing. If the

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Government Plaintiffs do not agree to any proposed modification, the disagreement may be addressed through the dispute resolution procedures described in Section XXVII of this Consent Decree.

In the event of any default, it is the intent of the parties that the provisions of this Consent Decree may be amended in order to prevent prejudice against the non-defaulting party and ensure timely implementation of the Remedial Action. Any decision of the Government Plaintiffs relating to financing the Remedial Action, in the event of a default, shall not be subject to dispute resolution.

B. In accordance with CERCLA, the design and operation of the Remedial Action will be reviewed and, if appropriate, adjusted at intervals not to exceed five years.

C. No guidance, suggestions, or comments by the Government Plaintiffs will be construed as relieving the County of its obligation to obtain formal approval as may be required by this Consent Decree. No verbal communication by the Government Plaintiffs shall relieve the County of the obligations specified herein.

The Government Plaintiffs shall notify the County in writing of any Government Plaintiff proposal for modifications of the remedial program or project schedule and the basis for such proposal. The County shall thereafter comply with such

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modifications, or if it does not agree with those modifications, the disagreement shall be addressed through the dispute resolution procedures described in Section XXVII of this Consent Decree.

XXVI. STIPULATED PENALTIES

A. Spokane County shall pay stipulated penalties of $100 per day for the submission of a deficient resubmittal progress report as called for in Section XI.

B. Except for the stipulated penalties specified in paragraph A, the County or Key Tronic shall pay the following stipulated penalties for each failure to comply with their respective requirements of this Decree, including but not limited to all financial commitments, implementation schedules and performance and submission dates:

Period of Failure to Comply	Penalty Per Violation Per Day
1st through 14th day	$500
15th through 44th day	$750
45th day and beyond	$1,000

Whether or not a violation has occurred shall be a matter for resolution under Section XXVII (Dispute Resolution).

C. Penalties shall accrue from the date performance is due or a violation occurs and continue until the final day of

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correction of the noncompliance. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this Consent Decree. One-half of penalties due under this Section shall be payable to U.S. EPA and one-half shall be payable to Ecology, into accounts designated by the respective Government Plaintiffs.

D. Penalties shall accrue but need not be paid during the dispute resolution period. If the District Court becomes involved in the resolution of the dispute the period of dispute shall end upon the rendering of a decision by the District Court regardless of whether any party appeals such decision. If the County or Key Tronic does not prevail upon resolution, the Government Plaintiffs have the right to collect all penalties which accrue prior to and during the period of dispute. If the County or Key Tronic prevails upon resolution, no penalties shall be payable.

E. If the County or Key Tronic fails to pay stipulated penalties, the Government Plaintiffs may institute proceedings to collect the penalties. In the event that stipulated penalties, as approved in this Section, are not paid, U.S. EPA may elect to assess civil penalties and/or bring an action in U.S. District Court pursuant to Section 109 of CERCLA to enforce the provisions of this Consent Decree provided that County's or Key Tronic's total penalty

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exposure to EPA for violations shall be limited to $25,000 per day per violation of this Consent Decree. Payment of stipulated penalties shall not preclude U.S. EPA or the state from electing to pursue any other remedy or sanction to enforce this Consent Decree, and nothing shall preclude U.S. EPA or the state from seeking statutory penalties against the County or Key Tronic for violations of statutory or regulatory requirements.

XXVII. DISPUTE RESOLUTION

A. Except as otherwise specifically provided for in this Consent Decree, these dispute resolution procedures shall apply to all disputes between the County and the Government Plaintiffs with respect to the interpretation, application, denial or decisions of the Government Plaintiffs implementing this Consent Decree. Except as otherwise specifically provided for in this Consent Decree, any dispute which arises with respect to the interpretation, application, denial or a decision of the Government Plaintiffs implementing this Consent Decree shall in the first instance be the subject of informal negotiations between the County and the Government Plaintiffs. The period for informal negotiations shall be thirty (30) days from the date of receipt of a written statement of the issue in dispute, unless otherwise extended or shortened by mutual written agreement of the parties to the dispute. If the

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dispute is not resolved during the informal negotiation period, either party may petition the Court with notice to all parties, setting forth the matter in dispute, within fourteen (14) calendar days after the end of the informal negotiation period. In an emergency, any party to the dispute may file a petition prior to the expiration of the informal negotiations period. Unless otherwise ordered by the Court, the filing of a petition shall not operate to stay the Work which is the subject of dispute, nor extend or postpone the County's obligations under this Consent Decree with respect to the disputed issue.

The standard of judicial review shall be the arbitrary and capricious standard for all disputes involving the selection of the remedy. Otherwise, the standard of review for dispute resolution shall be determined by the Court, in accordance with CERCLA. With respect to disputes involving the selection of the remedy, the County shall bear the burden of proof for demonstrating that an action of the Government Plaintiffs is arbitrary and capricious. In all other disputes, the moving party shall bear the burden of proof on all disputes, whatever the applicable standard.

B. The Court's determination shall bind the County and the Government Plaintiffs. Each party shall bear its own attorney's fees, expert witness fees or legal costs resulting

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from utilization of the judicial review provisions of these dispute resolution procedures.

C. In no event will the performance standards contained in the Scope of Work (Appendix B) be subject to dispute resolution.

D. Delay caused by formal dispute resolution requested by the County in which the Government Plaintiffs prevail shall not constitute an excuse from payment of stipulated penalties, unless otherwise ordered by the Court.

E. Key Tronic may dispute the timeliness of payments made pursuant to Section VIII in the event that Stipulated Penalties are assessed pursuant to Section XXVI.

F. This section shall not apply to disputes regarding claims made by the County pursuant to Section XVII(C)(2) (Claims Against the Fund), and Appendix D, which shall be resolved as required by Section 112 of CERCLA, 42 U.S.C. § 9612.

XXVII. TRANSFER OF INTEREST IN PROPERTY

No conveyance of title, easement, or other interest in any portion of the Site owned by the County shall be consummated without provision for continued operation and maintenance of any containment system, treatment system, and monitoring system installed or implementation of that pursuant to this Consent Decree.

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Prior to transfer of any legal or equitable interest in all or any portion of property owned by the County, the County shall serve a copy of this Consent Decree upon any prospective purchaser, lessee, transferee, assignee, or other successor in interest of the property and, at least thirty (30) days prior to any transfer, shall notify the Government of said contemplated transfer.

Within thirty (30) days after entry of the Consent Decree the County shall cause to be recorded in the appropriate registry of deeds a notice and a copy of this Consent Decree with the deeds for its property at the Site, and shall verify to the Government Plaintiffs that such recording has been completed.

XXIX. COMMUNITY RELATIONS

The Government Plaintiffs shall be the lead for community relations, and the County shall be responsible for helping to coordinate and implement community relations for the Site. The Government Plaintiffs shall consult with the County in the preparation and finalization of fact sheets, press releases, and public notices.

The Government Plaintiffs shall accommodate where possible the County's concerns prior to release of such information. The County shall assist in:

1. Distribution of the fact sheets referred to above;

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2. Coordination of public meetings;

3. In supplying appropriate documents and information for the information repositories.

In the event of the disagreement over the contents of any document prepared for purposes of community relations, or any other decision related to community relations, or any other decision related to community relations, the Government Plaintiffs determination shall be final.

Nothing provided in this section shall prevent the County from developing or conducting its own Community Relations Program, consistent with this Decree.

XXX. COVENANTS NOT TO SUE

A. State of Washington. Except as specifically provided in Paragraph A.2 of this Section, the State of Washington covenants not to sue Key Tronic and the County for Covered Matters. Covered Matters shall include any and all civil liability to the state for causes of action arising under the Hazardous Waste Cleanup Act, ch. 70.105 RCW, or ch. 90.48 regarding contamination from hazardous substances originating from the Site, identified herein as constituents of concern. This Consent Decree is entered into to provide for Remedial Action at the Colbert Landfill site. The Director finds that issuance of a covenant not to sue is appropriate and within the public interest as defined by RCW 70.105B.080(2). The Remedial

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Action to be implemented will achieve cleanup levels that prevent actual or potential harm to human health and the environment as required by RCW 70.105B.060.

1. Except as specifically provided otherwise in Paragraph A.2, this covenant not to sue shall take effect as to Key Tronic upon tender of all payments required under Paragraph A of Section VIII and as to the County upon certification by the State of Washington of the completion of the Remedial Action. Upon receipt of all payments from Key Tronic as provided in Paragraph A of Section VIII, the Government Plaintiffs shall issue a Certification of Completion to Key Tronic. Key Tronic may apply for such a certification upon tender of its final payment. The Government Plaintiffs shall issue the Certification of Completion according to the terms of RCW 70.105B.090. The County will request the State of Washington to make a final inspection upon completion of the work as described in Appendix B. The State of Washington shall promptly provide public notice as required by RCW 70.105B.090(1), and inspect the work to determine if such work has been completed in accordance with the plans. The inspection shall occur within thirty (30) days of the request unless the parties agree to a later date. The State of Washington shall notify the County in writing within thirty (30) days of the initial inspection that the work has been

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satisfactorily completed or shall specify any corrective work it believes to be needed. The County shall notify the State of Washington of the completion of any necessary corrective work. The State of Washington shall reinspect if it deems necessary within ten (10) days of the notification from the County. This procedure shall be utilized in combination with the Dispute Resolution procedures of Section XXVIII if necessary, until it has been determined that the work has been satisfactorily completed. Within ten (10) days of determining the work has been satisfactorily completed, the State of Washington shall issue a certificate of completion to the County, according to the terms of RCW 70.105B.090.

2. Notwithstanding any other provision in this Consent Decree, the State of Washington reserves the right to institute proceedings in this action or in a new action (a) seeking to compel the County or Key Tronic to perform or finance further response actions at the Site in addition to or other than the Remedial Action or (b) seeking reimbursement of the Government Plaintiffs' response costs, if:

(i) for proceedings before certification of completion, (A) new information reveals conditions at the Site, previously unknown to the Government Plaintiffs, are discovered after the entry of this Consent Decree and which indicates that the Remedial Action is not protective of human health and the

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environment; or (B) new information is received after entry of this Consent Decree and the new information reveals a significant quantity of a hazardous substance originating from the Site or condition not identified in the ROD or this Consent Decree as being present at the Site, in an area of the Site other than as described in the ROD or this Consent Decree, or in quantities significantly greater than in this ROD or this Consent Decree;

(ii) for proceedings after certification of completion, (A) conditions at the Site, previously unknown to the State of Washington are discovered after certification of completion or information is received, in whole or in part, after certification of completion, and these previously unknown conditions or this information indicate that the Remedial Action is not protective of human health and the environment, or (B) after certification of completion, the State of Washington discovers the release or threatened release from the Site of hazardous substances not identified in the ROD as originating from the Site.

3. The State of Washington's right to institute proceedings in this action or in a new action seeking to compel Key Tronic or the County to perform response actions in addition to or other than the Remedial Action regarding contamination originating from the Site, or seeking

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reimbursement from Key Tronic or the County for the costs of such response actions, may only be exercised where the conditions in Paragraph A.2 are met.

4. Notwithstanding any other provision of this Consent Decree, the covenants not to sue under this Section shall not relieve Key Tronic and the County of their obligation to meet and maintain compliance with the requirements set forth in this Consent Decree, including the requirement of Key Tronic to make the payments as provided herein and the requirement of the County to implement the Remedial Action.

B. United States.

1. Except as specifically provided hereafter in Section XXX(B)(2) and (3) upon compliance by Spokane County and Key Tronic with Sections VII and VIII hereof, EPA, Spokane County and Key Tronic hereby covenant not to sue each other as to all matters alleged or all matters which could have been alleged in the Complaint with regard to the Site, except claims against the EPA-Hazardous Substance Superfund as provided herein in Section XVII. With respect to future liability, this covenant shall take effect upon certification by the United States that the Remedial Action has been successfully completed. This paragraph shall not be construed as a covenant not to sue the County or Key Tronic respectively, if that party does not make all payments required of it by this

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Consent Decree, or any other person or entity not a party to this Consent Decree. This covenant not to sue applies only to Spokane County and Key Tronic, including its respective divisions, officials, officers, directors, principals, agents, servants, employees, successors, and assigns, and not to any parent corporation, subsidiaries and affiliates of the County and Key Tronic.

2. This Covenant Not to Sue shall not apply to the following:

a. criminal liability;

b. with respect to the County, failure to perform the Work in accordance with law or failure to meet the requirements of this Consent Decree or the Plan; or

c. with respect to the County, liability arising from the transportation of Hazardous Substances recovered from the Site and redisposal thereof of Waste Materials taken from the Colbert Landfill Site; or

d. with respect to the County and consistent with Sections XIX, XXV and XXX, any costs incurred by the United States as a result of a response action undertaken under Section 104 of CERCLA, 42 U.S.C. § 9604, or any costs incurred by the state as a result of the exercise of its response authority under ch. 70.105 or 70.105B RCW, due to a release or threat of a release at or from the Colbert Landfill Site as a

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result of the failure of Spokane County to perform the Remedial Action or meet the requirements of Section VII or the Scope of Work (Appendix B), whenever Spokane County has failed to so respond after reasonable notice. In the event Spokane County fails to implement the provisions of Section VII in a timely manner, either of the Government Plaintiffs may perform such portions of the Remedial Action as may be necessary, at the cost of Spokane County, subject to Section XV hereof;

e. any costs incurred by either Government Plaintiffs as a result of any release or threat of release of hazardous substances at or from the Colbert Landfill Site which results from failure(s) of the County to perform the Remedial Action or meet the requirements of this Consent Decree or the Scope of Work (Appendix B); or from failure(s) of Key Tronic to meet the requirements of this Consent Decree; or

f. liability for damage to natural resources, as defined in Section 101(16) of CERCLA, 42 U.S.C. § 9601(16).

3. Notwithstanding any other provisions of this Consent Decree, the United States reserves the right to institute proceedings in this action or in a new action seeking to compel Spokane County or Key Tronic to perform additional response work at Colbert Landfill Site or to reimburse the United States for Response Costs, other than Response Costs incurred prior to the effective date of this Consent Decree, if:

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a. for proceedings prior to certification of completion of the respective obligations of the parties per Section VIII by the United States,

(i) conditions at the Colbert Landfill previously unknown to or undetected by the United States are discovered after the lodging of this Consent Decree and these conditions indicate that a hazardous substance has been, or is being, released or that there is a substantial threat of such a release into the environment; or

(ii) the United States determines, based on information received, in whole or in part, after the lodging of this Consent Decree, that the Remedial Action taken at the Colbert Landfill Site, is not protective of human health and the environment.

b. For proceedings subsequent to certification of completion of the respective obligations of the parties per Section VIII by the United States,

(i) conditions at the Colbert Landfill Site previously unknown to or undetected by the United States are discovered after the

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certification of completion and these conditions indicate that a hazardous substance has been, or is being, released or that there is a substantial threat of such a release into the environment; or

(ii) the United States determines, based on information received, in whole or in part, after the certification of completion, that the Remedial Action taken at the Colbert Landfill, is not protective of human health and the environment.

4. Notwithstanding any other provision in this Consent Decree, the covenant not to sue in Section XXX(B)(1) shall be subject to the satisfactory performance by Spokane County and Key Tronic of its obligations under this Consent Decree and the covenant not to sue shall not relieve Spokane County or Key Tronic of its obligation to meet and maintain compliance with the requirements set forth in this Consent Decree.

5. Spokane County or Key Tronic's claims against any other party in this or any other proceeding for contribution or indemnification of all or a portion of the cost of its settlement herein, shall be secondary to the United States' claim against such other party for the response actions or

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other costs incurred by the Government Plaintiffs for actions taken at the Site.

XXXI. EFFECTIVE AND TERMINATION DATES

A. This Consent Decree shall be effective upon the date of its entry by the Court.

B. Termination of this Consent Decree may only be effected upon completion of all Remedial Action activities including operation and maintenance activities, reimbursement of Government Plaintiffs costs and resolution of any outstanding disputes pursuant to this Decree. Termination of this Consent Decree shall not affect the Covenant Not to Sue, Section XXX, which shall remain in effect as an agreement between the parties.

C. This Consent Decree shall remain in effect and the Remedial Action described herein shall be maintained and continued until both Key Tronic and the County receive written Certification of Completion from the Government Plaintiffs. The Certifications of Completion shall be issued according to the terms of RCW 70.105B.090.

XXXII. RETENTION OF JURISDICTION

This Court shall retain jurisdiction over this matter for the purposes of interpreting, implementing, modifying,

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enforcing or terminating the terms of this Consent Decree, and of adjudicating disputes between the parties under this Consent Decree.

XXXIII. NOTICES

Whenever, under the terms of this Consent Decree, written notice is required to be given or a report or other document is required to be given or a report or other document is required to be forwarded by one party to another it shall be directed to the individuals specified below unless those individuals or their successors give notice in writing to the other parties.

As to the Governments:

Colbert Site Manager
Department of Ecology
Hazardous Waste Investigations and Cleanup Program
Mail Stop PV-11
Olympia, WA 98504-8711

Colbert Site Manager
EPA Region 10
Superfund Group - HW-113
1200 Sixth Avenue
Seattle, WA 98101

As to the Defendants:

David Powers
Key Tronic Corporation
P. O. Box 14687
Spokane, WA 99214

Bill Dobratz
Director of Public Utilities
N. 811 Jefferson
Spokane, WA 99260

XXXIV. LODGING OF DECREE WITH THE COURT AND PUBLIC COMMENT

This Consent Decree shall be lodged with the Court for a period of 30 days for public comment pursuant to the provisions of 28 CFR § 50.7, § 122 of CERCLA, 42 U.S.C. § 9622, RCW 70.105B.070(5), and WAC 173-340-040(7) and it shall not be

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submitted to the Court for execution until the expiration of that period. The parties reserve the right to withdraw or withhold its consent to a judgment based on this Consent Decree if the comments, views and allegations concerning the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper or inadequate.

Comments on the Consent Decree shall be submitted to the United States Department of Justice and shall be promptly forwarded to all parties.

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The State of Washington, the United States, Key Tronic and the County by their duly authorized representatives agree to this Consent Decree subject to the public notice requirements found at 28 CFR § 50.2, RCW 70.105B.070(5) and WAC 173-340-040(7).

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

By: Christine O. Gregoire

Its: Director

Date: 11/2/88

UNITED STATES OF AMERICA
on behalf of the
ENVIRONMENTAL PROTECTION AGENCY

By: [signature]

Its: Regional Administrator

Date: November 7, 1988

SPOKANE COUNTY

By: Patricia A. Murphy

Its: Bd of County Commrs

Date: OCT 24 1988

KEY TRONIC CORPORATION

By: Lewis G. Zirbel

Its: Chairman of the Board, CEO & President

Date: October 24, 1988

DATED this 7th day of Sept, 1988.

JUDGE

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(206) 753-6200

UNITED STATES OF AMERICA

By: _____
ROGER J. MARZULLA

Its: Assistant Attorney General

Date: _____

By: _____

_____

Its: Attorney, Land & Natural Resources Division

Date: 12/19/88

UNITED STATES ATTORNEY

By: _____

_____

Its: Assistant United States Attorney

Date: 1/5/89

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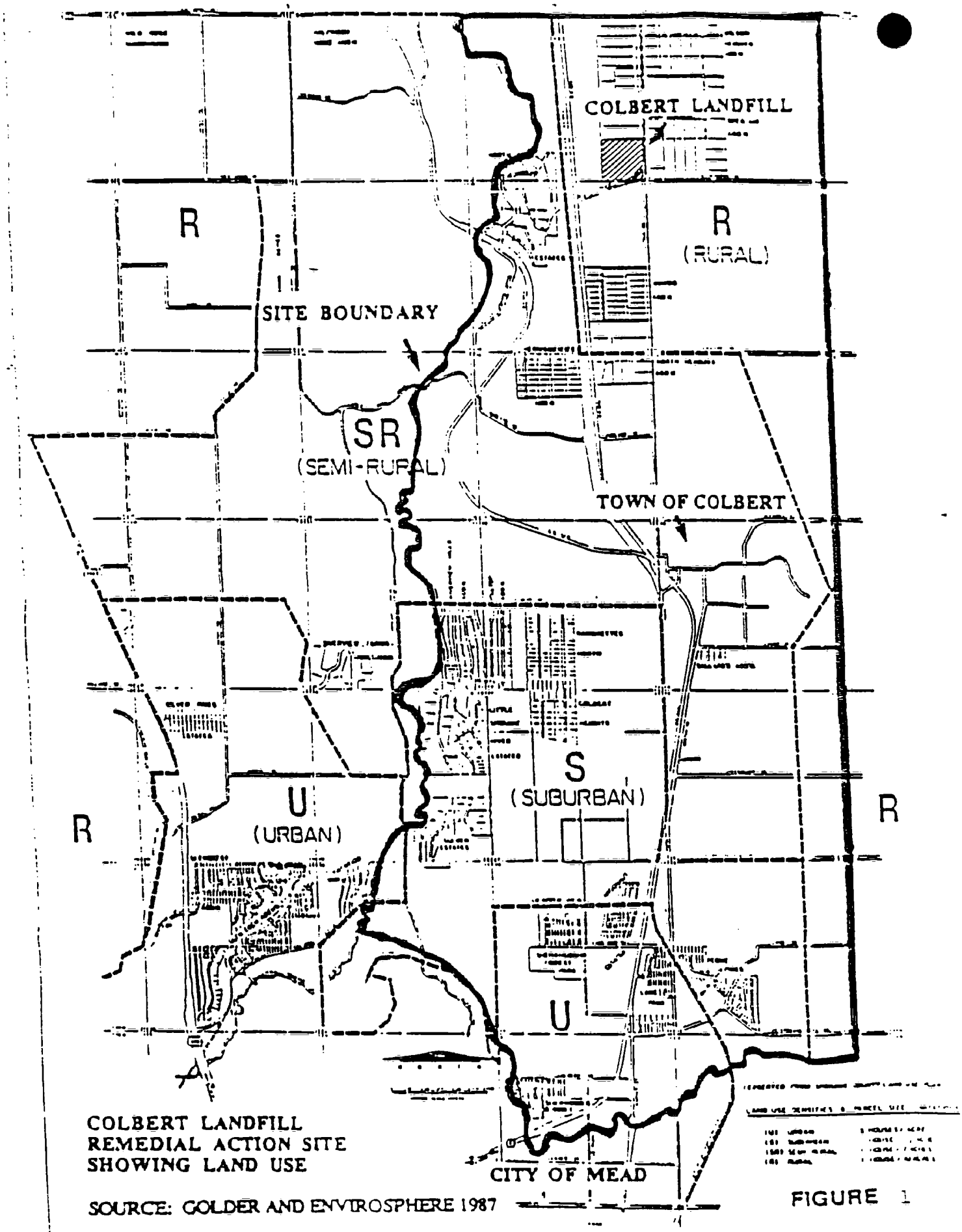
APPENDIX A

I. SITE LOCATION AND DESCRIPTION

The Colbert Landfill is a Spokane County-owned sanitary landfill that was operated from 1968 through 1986. The Colbert area is in northeastern Washington, in Spokane County, approximately 15 miles north-northeast of Spokane, Washington. The landfill covers 40-acres and is located about 2.5 miles north of the Town of Colbert and a half mile east of U.S. Highway 2 (Newport Highway) in the northwestern quadrant of the intersection of Elk-Chattaroy, Yale, and Big Meadows Roads. It is situated in the southeast corner of Section 3, Township 27 North, Range 43 East, W.M. (Figure 1). The landfill received both municipal and commercial wastes up to 1986, is now filled to capacity, and is no longer receiving waste.

The remedial action site, the area of potential impact surrounding the landfill, extends north of the landfill about a half mile, west about a mile to the Little Spokane River, east a similar distance, and south approximately five miles to Peone (or Deadman) Creek. The total area is approximately 6800 acres which includes parts of Sections 2, 3, 10, 11, 14, 15, 16, 21, 22, 23, 26, 27, 28, 33, 34, and 35 of the same township and range. The site is entirely within the drainage basin of the Little Spokane River, mainly on a plateau bounded by bluffs down to the river on the west and knobby granite and basalt hills to the east. (See Figure 1)



COLBERT LANDFILL
REMEDIAL ACTION SITE
SHOWING LAND USE

SOURCE: GOLDER AND ENVIROSPHERE 1987

FIGURE 1

EXHIBIT 3

CERCLA PENALTY FOR PRESENTING FRAUDULENT CLAIM

Any person who knowingly gives or causes to be given false information as a part of a claim against the Hazardous Substance Superfund may, upon conviction, be fined in accordance with the applicable provisions of title 18 of the United States Code or imprisoned for not more than 3 years (or not more than 5 years in the case of a second or subsequent conviction), or both. (42 USC 9612 (b)(1).)

CIVIL PENALTY FOR PRESENTING FRAUDULENT CLAIM

The claimant is liable to the United States for a civil penalty of $2,000, and an amount equal to two times the amount of damages sustained by the Government because of the acts of that person, and costs of the civil action. (31 USC 3729 and 3730.)

CRIMINAL PENALTY FOR PRESENTING FRAUDULENT CLAIM OR MAKING FALSE STATEMENTS

The claimant will be charged a maximum fine of not more than $10,000 or be imprisoned for a maximum of 5 years, or both. (See 62 Stat. 698, 749; 18 USC 287, 1001.)

APPENDIX "B"

SCOPE OF WORK

FOR

REMEDIAL ACTION TO ADDRESS GROUND WATER CONTAMINATION

EMANATING FROM COLBERT LANDFILL

SPOKANE COUNTY, WASHINGTON

27 September 1988

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I

INTRODUCTION

This Scope of Work sets forth the technical activities associated with remediation of "contamination" emanating from the Colbert Solid Waste Landfill in Spokane County near the town of Colbert, Washington. It shall be the responsibility of the County to prepare, submit for approval, and fully implement work plans incorporating each element of this Scope of Work, and to verify that Performance Standards and criteria set forth in this Scope of Work are met.

For the purposes of the Consent Decree, including this Scope of Work, the terms "contaminants" and "contamination" shall be understood to mean the six compounds or Constituents of Concern identified in Table 1 of the Colbert Landfill Record of Decision (ROD) and Table I-1 of this Scope of Work. These tables also specify the Performance Standards (Health Protection Levels), which are not to be exceeded during operational life of remedial action, in effluents from ground water treatment systems. Permanent reduction of contaminant concentrations below these levels throughout the site will indicate completion of the Remedial Action.

The ROD for Remedial Action at the Colbert Landfill identifies three separate systems, each designed to pump and treat contaminated ground water. These systems have been designated as the south, west, and east systems. Both the south and west systems are intended to intercept contaminated ground water to minimize degradation of downgradient resources. The south system will be designed to pump and treat ground water from the upper sand and gravel aquifer, while the west system will pump and treat water from the lower sand and gravel aquifer. In contrast to the south and west systems, the east system is intended for source control. This system will be designed to remove contamination close to the source, to reduce its potential for migration from the source area. The east system will be designed to pump water from the lower sand and gravel aquifer, and potentially the weathered basalt/Latah and Latah aquifers, which are beneath the lower sand and gravel.

The ROD provides for a performance-based design. The performance-based nature of the ROD allows considerable latitude in the design of the Remedial Action. However, the relatively sparse data available to characterize the hydrogeology and extent of contamination make it impractical to design a system at this time. To supplement the data base, a phased project approach will be implemented. Phase I will combine the pilot studies with further site characterization and the initiation of cleanup activities. Phase II will provide for evaluation of the Phase I results and design of the final Remedial Action program.

TABLE I-1*

PERFORMANCE STANDARDS
MAXIMUM ALLOWABLE CONTAMINANT CONCENTRATIONS

Health Protection Levels[a]		
Compound	Maximum Concentration (PPB)	Basis[b]
1,1,1-Trichloroethane	200	MCL[c]
1,1-Dichloroethylene	7	MCL[c]
1,1-Dichloroethane	4,050	MAC[d]
Trichloroethylene	5	MCL[c]
Tetrachloroethylene	0.7	MAC[e]
Methylene Chloride	2.5	MAC[e]

(a) Health Protection Levels are not to be exceeded, during operational life of remedial action, in effluents from ground water treatment systems. Permanent reduction of contaminant concentrations below these levels throughout the site will indicate completion of the remedial action.
(b) Based on MCL and MAC values in effect as of the date of entry of this Consent Decree.
(c) Federal Drinking Water Maximum Contaminant Levels (MCL).
(d) Maximum Acceptable Concentration presented in ROD, Table 5, pg. 31.
(e) Maximum Acceptable Concentration based on EPA Cancer Assessment Group evaluation (10^{-6} Cancer Risk).

* Source: Table 1, Record of Decision, Colbert Landfill Site, USEPA, September 1987.

In order to comply with the ROD, the work defined in this document must first be completed. It is recognized that information developed during implementation of Phase I of this Scope of Work (Section IV) may alter previous conclusions and indicate that amendment to the Scope of Work, or other portions of the Consent Decree, as it relates to Phase II, is appropriate. Such information may include data relating to the extent of contamination, site hydrogeology, initial field pilot testing, technical feasibility or implementability of the remedial options originally chosen, or refinement of the relative costs of available options. Remedial Actions designed to meet the objectives of Section II of this Scope of Work will be accomplished during Phase II (Section V).

II

OBJECTIVES

The objectives of the Remedial Action at the Colbert Landfill Site are to:

A. Prevent ingestion of contaminated ground water;

B. Provide alternative drinking water supplies to those residents whose domestic water supply well(s), in use prior to the date of entry of this Consent Decree, are now contaminated or become contaminated at levels exceeding those described in Section VIII of this Scope of Work, or where the productivity of their existing supply well(s) is adversely impacted by remedial activities;

C. Prevent the further spread of contaminated ground water and remove contamination related to the site from the ground water aquifers;

D. Protect surface waters from ground water discharges potentially harmful to aquatic organisms;

E. Establish institutional controls as authorized by law to promote and support remedial actions; and

F. Prevent transfer of Constituents of Concern from water to air at levels above health protection criteria.

These objectives are met by the actions to be taken in accordance with this Scope of Work.

III

GENERAL REQUIREMENTS

The general requirements of this Scope of Work are as follows:

A. All actions performed at and around the site pursuant to this Scope of Work shall be accomplished in accordance with work plans, which shall be prepared by the County and submitted for review and approval by the Government Plaintiffs. Work plans for each element of the Remedial Action program shall include relevant designs; construction sequences and schedules; and maintenance, operating and monitoring requirements. In addition to these basic requirements, the ground water extraction and treatment plans shall include all design assumptions and other engineering support materials as appropriate.

B. All work shall be performed under an appropriate health and safety plan for the protection of workers and the surrounding community. The County shall submit this plan to the Government Plaintiffs for review and approval.

C. The County shall require their contractors to be responsible for observing safe practices with respect to all active local utilities within the site.

D. The County shall submit to the Government Plaintiffs, for review and approval, a sampling and analysis protocol for all ground water monitoring before any such activity is undertaken. This sampling and analysis protocol shall include a description of field sampling procedures and specify procedures for Quality Assurance/Quality Control. All procedures shall conform with appropriate EPA guidance documents. Detection limits attainable using standard procedures specified for the EPA Contract Laboratory Program as of the date of entry of the Consent Decree shall be used. The County shall provide the Government Plaintiffs with quality-assured data as they become available.

E. Each ground water extraction and treatment system shall remain operable until the performance criteria identified in this Scope of Work (Section X) are met. Discharges of air and water from these systems shall be in compliance with applicable regulations.

F. Definitions set forth in Section IV of the main body of the Consent Decree shall apply throughout this Scope of Work.

IV

PHASE I

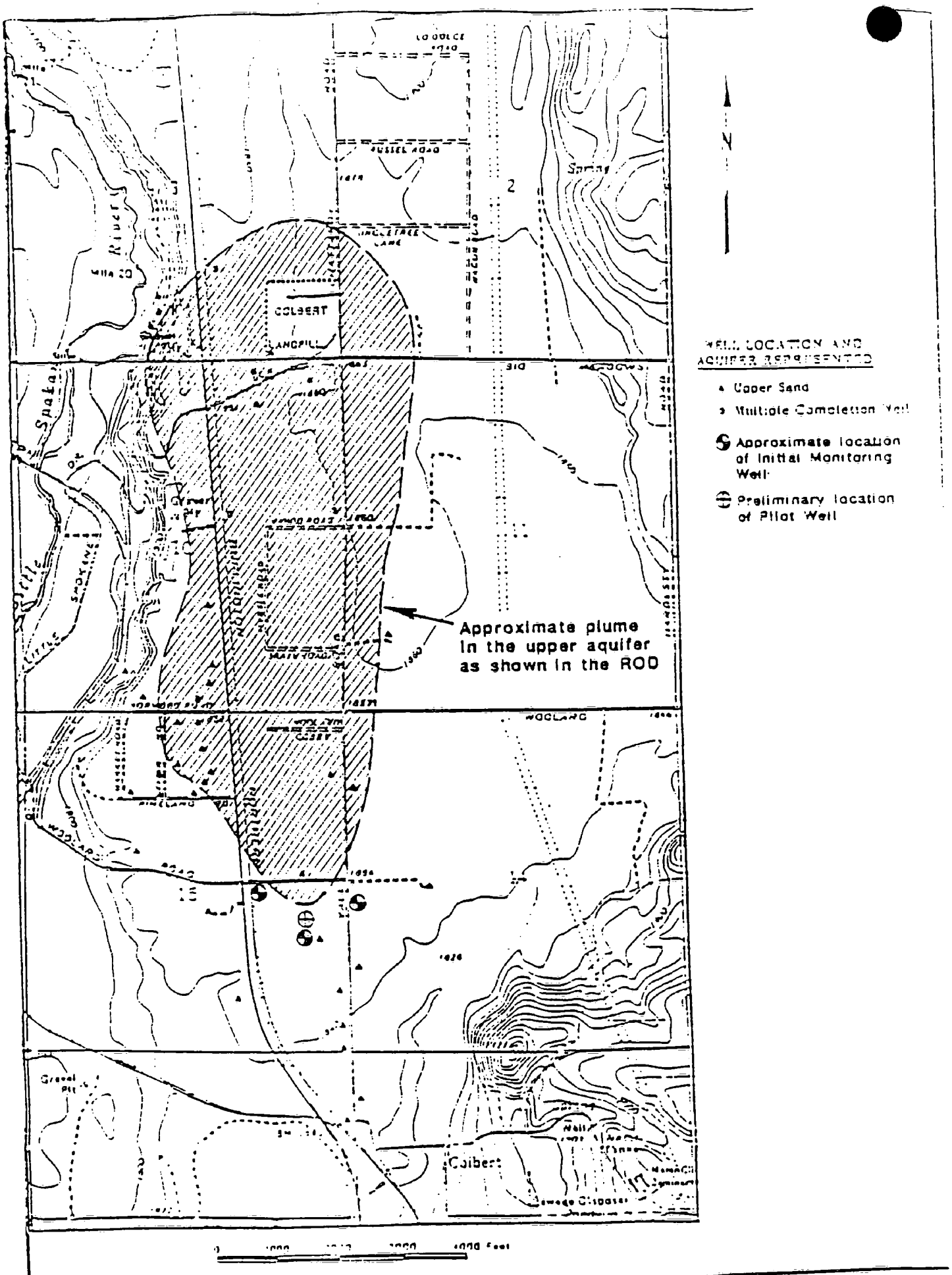
A. South System

1. Introduction -- Previous studies of contamination emanating from the Colbert Landfill have identified a contaminant plume moving to the south in the upper aquifer. The location of the plume is based on limited data obtained in late 1985. These data are insufficient to adequately define the extent of the contaminant plume and project the rate or direction of future contaminant migration. The purpose of Phase I for the upper aquifer south of the landfill is to develop specific design requirements for a Phase II - South ground water interception and treatment system, and to initiate cleanup in this area. Activities described in this section relate to the upper aquifer south of the landfill and include: installation of a pilot ground water extraction and treatment system, installation of a ground water monitoring system to identify the location of the contaminant plume and assess the performance of the pilot system, assessment of treated water discharge management options, and definition of the Phase II - South ground water interception and treatment system.

2. Site Investigations --

a. Installation of Monitoring Wells -- A series of three to five monitoring wells will be installed to provide data needed to assess the contaminant distribution in, and hydrogeologic properties of, the upper aquifer near the probable location for a system of ground water extraction wells. These monitoring wells will be installed in phases, first to identify the preferred location of the pilot extraction well and later to assess pilot interception system performance.

Initially, three monitoring wells will be installed at the approximate locations shown on Figure IV-1. The actual locations of these monitoring wells will depend on plume contaminant levels and site access, and may vary from the locations shown. These wells will provide data related to contaminant concentration levels, saturated thickness of the aquifer, and hydraulic gradient, from which the location and design characteristics of the pilot extraction well will be determined. If the County determines that the location of the pilot extraction well will not be close to one of the initial monitoring well locations, up to two additional monitoring wells will be installed near the selected pilot extraction well site. These wells will be used to confirm the final site selection for, and to assess the performance of, the pilot extraction well after it is installed. Monitoring wells will be constructed of 2-inch Schedule 80 PVC and screened within the upper aquifer up to a maximum 20 foot length.



Source: Golder Associates, Inc., May 1987.

Phase I - South System

Figure II

b. Monitoring Well Sampling and Analysis -- Chemical analysis of water samples from the monitoring wells will be used to evaluate contaminant characteristics and other critical water quality parameters. Water level measurements will be used to evaluate the horizontal hydraulic gradient and the saturated thickness of the aquifer. This information will be used for design, placement, and performance evaluation of the pilot extraction well and in the design of the Phase II - South treatment and discharge system.

Chemical analyses will focus on the six compounds identified in Table I-1 and will be performed by EPA Method 8010 (SW-846, USEPA, 1986) or equivalent. These compounds are:

1,1,1-trichloroethane (1,1,1-TCA)
1,1-dichloroethylene (1,1-DCE)
1,1-dichloroethane (1,1-DCA)
trichloroethylene (TCE)
tetrachloroethylene (PCE)
methylene chloride (MC)

Other parameters, including temperature, pH, conductivity, hardness, iron, and manganese will be determined for use during treatment system design activities.

Due to difficulties anticipated in accurately quantifying methylene chloride and tetrachloroethylene at their Performance Standard concentrations, alternative evaluation criteria have been developed for these constituents. These criteria are presented in Table IV-1, along with the Performance Standards for the other constituents of concern. Table IV-1 evaluation criteria will be applied to the interception, treatment, and discharge of ground water containing constituents of concern. If the levels to which these compounds can be accurately quantified (using EPA Method 8010) change during the course of this project, Table IV-1 will be adjusted accordingly. However, evaluation criteria will not be adjusted to concentrations lower than the Table I-1 Performance Standards.

The three initial monitoring wells will be sampled after development. Analysis of samples from this effort may be sufficient to identify the final location of the pilot extraction well. In the event of anomalies in data from this initial sampling, the County may, at its discretion, conduct follow-up sampling at bi-weekly intervals for verification purposes.

Monitoring wells at up to two additional locations will be installed in the vicinity of the proposed pilot well site and sampled after development. Data obtained from these wells will be used to assess performance of the pilot well. As above, in the event of anomalies in these data, the County may, at its discretion, conduct follow-up bi-weekly sampling and analysis for verification purposes.

TABLE IV-1

EVALUATION CRITERIA

Compound	Evaluation Criteria (ppb)
1,1,1-Trichloroethane	200
1,1-Dichloroethylene	7
1-1,Dichloroethane	4,050
Trichloroethylene	5
Tetrachloroethylene	7
Methylene Chloride	25

* * * * * * * *

During the first month after pumping of the pilot extraction well begins, samples for chemical analysis will be obtained at least weekly from the pilot extraction well and at least the two closest monitoring wells. After this initial 4-week period, the pilot extraction well and the monitoring wells will be sampled and analyzed at least quarterly during operation of the pilot system.

c. Water Level Monitoring -- Water level monitoring will be conducted in at least the two monitoring wells closest to the pilot extraction well. Data from this effort will be used to assess pilot extraction well performance and further define the hydrogeology of the site. Monitoring will begin before startup of the pilot pumping system and will continue until water level conditions stabilize or until it is demonstrated that continuous pumping is not possible. Private supply wells may, at the County's discretion, be included in this study.

3. **Pilot Extraction Well** -- Information obtained from the pilot extraction well is intended to aid in the design of the Phase II - South interception, treatment, and discharge system.

a. Location of the Pilot Extraction Well -- Ideally, the pilot extraction well would be installed at a location where contaminant concentrations are approximately equal to the Performance Standards. The preliminary location, based on available data, is shown on Figure IV-1.

b. Construction of the Pilot Extraction Well -- Construction details for the pilot extraction well will be influenced by information obtained from the initial monitoring wells. It is anticipated that the pilot well will be constructed using 6- or 8-inch diameter steel casing and a stainless steel screen. The screen length will be approximately one-half to two-thirds of the saturated thickness of the aquifer. The bottom of the screen will be placed at the base of the aquifer near the contact with the lacustrine deposit.

c. Pumping of the Pilot Extraction Well -- The pilot extraction well will be equipped with a submersible pump. A well at this location should be capable of providing at least 20 to 50 gallons per minute (gpm). The pumping rate may, at the County's discretion, be increased to 100 gpm if the aquifer is capable of sustained production at that rate.

d. Duration of Pilot Testing -- It is intended that the pilot extraction well operate for at least a 30-day period, and possibly until implementation of the complete Phase II - South system. If appropriate, it will be incorporated into the Phase II - South system.

e. Chemical Analysis of Pilot Well Samples -- Analysis of samples from the pilot extraction well will be as described above in Section IV.A.2b.

4. **Treatment System** -- The treatment system ultimately constructed as part of the Phase II - South system must utilize cost-effective and reliable technology. Cost effectiveness is to be based on long-term operating and maintenance costs as well as the initial installation cost.

A pilot air stripping system will be included as part of the Phase I activities. This system will be capable of handling variable flow rates of up to 100 gpm and discharging water at concentrations that comply with the Table IV-1 evaluation criteria. Samples will be collected at least weekly from the discharge pipe to verify compliance with the evaluation criteria. Final design of this system will be dependent on input water quality characterized by the initial monitoring wells. This temporary system will not include off-gas treatment or air monitoring.

5. **Treatment System Water Discharge** -- Discharge will be to Deep Creek or the Little Spokane River or subsurface infiltration. If discharge is to the Little Spokane River, sizing of the discharge line may reflect Phase II - South system discharge rates if these can be adequately defined prior to operation and evaluation of the pilot system.

6. **Study Analysis and Feasibility Evaluation** -- In the event that the preferred remedy identified in the ROD is no longer feasible or cost effective, the County will propose a new alternative.

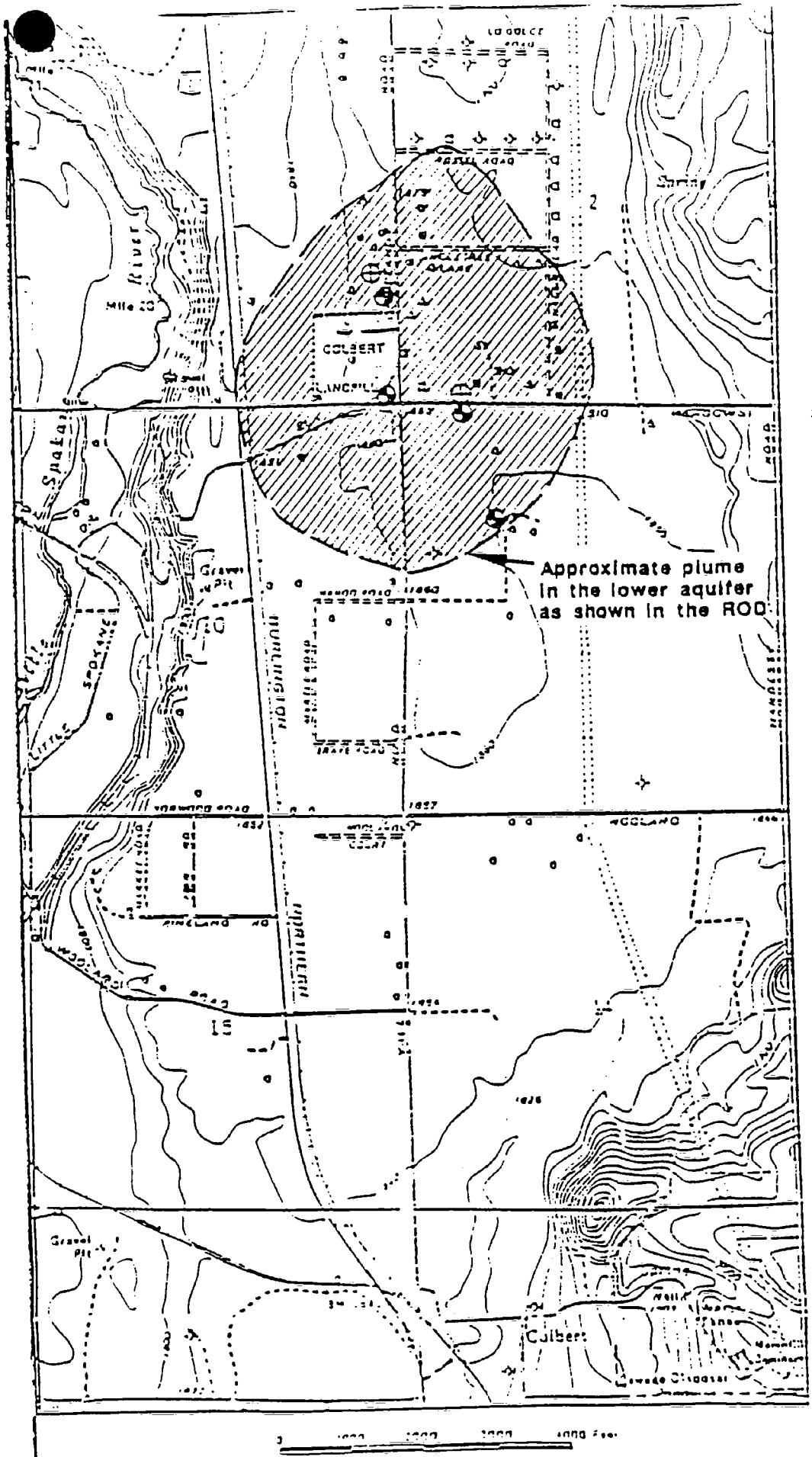
B. East System

1. Introduction -- Previous studies have identified elevated concentrations of contaminants in the vicinity of the Colbert Landfill within the lower aquifer(s). ("Lower aquifer(s)" include the lower sand and gravel, weathered basalt/Latah, and Latah aquifers). However, data from these studies are insufficient to adequately characterize the nature and define the extent of the contaminant plume. The purpose of Phase I for the lower aquifer(s) north and east of the landfill is to focus on specific design requirements for a Phase II - East ground water extraction and treatment system, and to initiate cleanup in this area. Activities described in this section relate to the lower aquifer(s) immediately to the north and east of the landfill and include: installation of two pilot ground water extraction wells and a common treatment system, installation of a ground water monitoring system to improve definition of the location of the contaminant plume and assess the performance of the pilot systems, assessment of treated water discharge management options, and definition of the Phase II - East ground water extraction and treatment system.

2. Site Investigations --

a. Installation of Monitoring Wells -- A series of nested monitoring wells at four to eight locations will be installed to provide data needed to assess the contaminant distribution in, and hydrogeologic properties of, the lower aquifer(s) for the source control (east) extraction system. These monitoring wells will be installed in phases, first to identify the preferred location of the two pilot extraction wells and later to assess performance of the pilot extraction systems.

Initially, nested monitoring wells will be installed at four locations. The approximate locations are shown on Figure IV-2. The actual locations of the monitoring wells will depend on site access and may vary from the locations shown. Up to three wells will be installed at each monitoring location. These wells will be screened within the following aquifers, if present: the upper sand and gravel aquifer, the lower sand and gravel aquifer, and the weathered basalt/Latah aquifer or the Latah aquifer. These wells will provide data related to contaminant concentration levels, saturated thickness of the aquifer(s), and horizontal and vertical hydraulic gradients, from which the locations and design characteristics of the pilot extraction wells will be determined. If the locations of the pilot extraction wells are found not to be close to one of the initial monitoring wells, a total of up to two additional nests of monitoring wells will be installed near each of the selected pilot extraction well locations. These wells will be used to confirm the final site selections for, and to assess the performance of, the pilot extraction wells after they are installed. Monitoring wells will be constructed of 2-inch Schedule 80 PVC and screened up to a maximum 20 foot length.



Source: Golder Associates, Inc., May 1987.

Phase I - East System

Figure II

b. Monitoring Well Sampling and Analysis -- Chemical analysis of water samples from the monitoring wells will be used to evaluate contaminant characteristics and other important water quality parameters. Water level measurements will be used to evaluate saturated thickness and vertical and horizontal hydraulic gradients. This information will be used for design, placement, and performance evaluation of the pilot extraction wells and in the design of the Phase II - East treatment and discharge system.

Chemical analyses will focus on the six compounds identified in Table I-1 and will be performed by EPA Method 8010 (SW-846, USEPA, 1986) or equivalent. These compounds are:

1,1,1-trichloroethane (1,1,1-TCA)
1,1-dichloroethylene (1,1-DCE)
1,1-dichloroethane (1,1-DCA)
trichloroethylene (TCE)
tetrachloroethylene (PCE)
methylene chloride (MC)

Other parameters, including, but not limited to, temperature, pH, conductivity, hardness, iron, and manganese may be determined for use during treatment system design activities.

The initial monitoring wells will be sampled after development. Analysis of samples from this effort may be sufficient to identify the final locations of the pilot extraction wells. In the event of anomalies in data from this initial sampling, the County may, at its discretion, conduct follow-up sampling at bi-weekly intervals for verification purposes.

If additional wells are required in the vicinity of the proposed pilot well locations, they will also be sampled after development. Data obtained from these wells will be used to assess performance of the pilot wells. As above, in the event of anomalies in these data, the County may, at its discretion, conduct follow-up bi-weekly sampling and analysis for verification purposes.

During the first month after pumping of the pilot extraction wells begins, samples for chemical analysis will be obtained at least weekly from the pilot extraction wells and at least the two closest monitoring wells. After this initial 4-week period, the pilot extraction wells and the monitoring wells will be sampled and analyzed at least quarterly during operation of the pilot systems.

c. Water Level Monitoring -- Water level monitoring will be conducted in at least the two monitoring wells closest to each of the pilot extraction wells. Data from this effort will be used to assess performance of the pilot extraction wells and further define the hydrogeology of the site. Monitoring will begin before startup of the pilot pumping systems and will

continue until water level conditions stabilize or until it is demonstrated that continuous pumping is not possible. At the County's discretion, private supply wells may be included in this study.

3. **Pilot Extraction Wells** -- Information obtained from the pilot extraction wells is intended for use in the design of a Phase II - East extraction, treatment, and discharge system.

a. Location of the Pilot Extraction Wells -- Pilot extraction wells will be installed to the north and to the east of the landfill. The ground water data from the initial monitoring wells will be used to select the final locations of the pilot wells. The preliminary locations, based on available data, are shown on Figure IV-2.

b. Construction of the Pilot Extraction Wells -- Construction details for the pilot extraction wells will be influenced by information from the initial monitoring wells. It is anticipated that these wells will be constructed using 6- or 8-inch diameter steel casing and stainless steel screen.

c. Pumping of the Pilot Extraction Wells -- The pilot extraction wells will be equipped with a submersible pump. It is anticipated that the well located to the north of the landfill will be capable of providing at least 50 gpm. At the County's discretion, the pumping rate may be increased to 150 gpm if the aquifer is capable of sustained production at that rate. The well located to the east of the landfill may be capable of providing 10 to 50 gpm. The design will be based on a maximum flow of 50 gpm.

d. Duration of Pilot Testing -- It is intended that the pilot extraction wells will operate for at least a 30-day period, and possibly until implementation of the complete Phase II - East system. If appropriate, they will be incorporated into the Phase II - East system.

e. Chemical Analysis of Pilot Well Samples -- Analysis of samples from the pilot extraction wells will be as described in Section IV.B.2b.

4. **Treatment System** -- The treatment system ultimately constructed as part of the Phase II - East system must utilize cost-effective and reliable technology. Cost effectiveness is to be based on long-term operating and maintenance costs as well as the initial installation cost.

A pilot air stripping system will be included as part of the Phase I activities. This system will be capable of handling variable flow rates of up to 200 gpm and discharging water at concentrations that comply with the Table IV-1 evaluation criteria. Samples will be collected at least weekly from the discharge pipe to verify compliance with the Table IV-1 evaluation criteria. This temporary system will not include off-gas

treatment, but will include air monitoring. Final design of this system will be dependent on input water quality characterized by the initial monitoring wells.

5. **Treatment System Water Discharge** -- Discharge will be piped to the Little Spokane River or recharged to the ground water system at the landfill site. Subject to the approval of the Government Plaintiffs, recharge of treated water may be utilized as a mechanism for accelerating cleanup of source areas. Such a system would initially consist of one to three recharge wells located near the east property boundary and screened below the base of the landfill. If appropriate, the system could be expanded during Phase II to other portions of the landfill site.

6. **Study Analysis and Feasibility Evaluation** -- In the event that the preferred remedy identified in the ROD is no longer feasible or cost effective, the County will propose a new alternative.

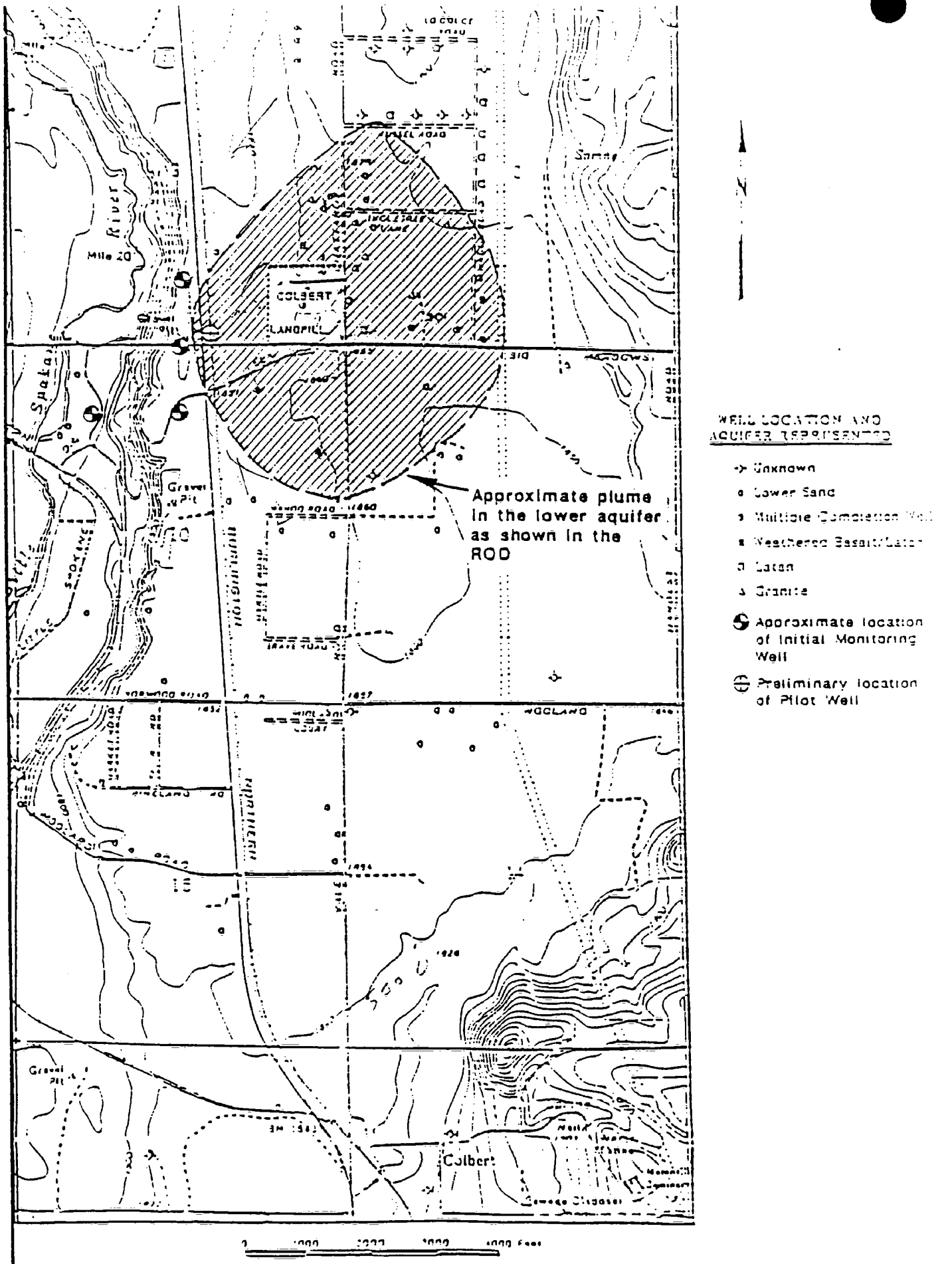
C. West System

1. Introduction -- Previous studies of contamination emanating from the Colbert Landfill have identified a contaminant plume moving to the west in the lower aquifer. The location of the plume is based on limited data obtained in late 1985. These data are insufficient to adequately define the extent of the contaminant plume and project the rate or direction of future contaminant migration. The purpose of Phase I for the lower sand and gravel aquifer west of the landfill is to develop specific design requirements for a Phase II - West ground water interception and treatment system, and initiate cleanup in this area. Activities described in this section relate to the lower aquifer west of the landfill and include: installation of a pilot ground water extraction and treatment system; installation of a ground water monitoring system to identify vertical and horizontal hydraulic gradients, determine the current location and distribution of the contaminant plume, and assess the performance of the pilot extraction system; assessment of treated water discharge management options; and definition of a Phase II - West ground water interception and treatment system.

2. Site Investigations --

a. Installation of Monitoring Wells -- A series of nested monitoring wells will be installed at four to six locations to provide data needed to assess the contaminant distribution and hydrogeologic properties of the lower aquifer west of the landfill for a system of ground water extraction wells. One to three monitoring wells will be installed at each location. These wells will be installed in phases, first to identify the preferred location of the pilot extraction well and later to assess pilot extraction system performance.

Initially, nested monitoring wells will be installed at approximately the four locations shown on Figure IV-3. The actual locations of the monitoring wells will depend on site access and may vary from the locations shown. All monitoring wells will be completed in the lower sand and gravel aquifer and will provide data related to contaminant concentration levels, vertical contaminant distribution, saturated thickness of the aquifer, and hydraulic gradients, from which the location and design characteristics of the pilot extraction well will be determined. If it is determined that the location of the pilot extraction well is not close to one of the initial monitoring well locations, up to two additional nests of monitoring wells will be installed near the selected pilot extraction well site. These wells will be used to confirm the final site selection for, and to assess the performance of, the pilot extraction well after it is installed. Monitoring wells at each location will be constructed of 2-inch Schedule 80 PVC and screened at incremental depths within the lower sand and gravel aquifer. Each monitoring well will be screened up to a maximum 20 percent of the aquifer thickness.



Source: Golder Associated, Inc., May 1987

Phase I - West System

Figure

b. Monitoring Well Sampling and Analysis -- Chemical analysis of water samples from the monitoring wells will be used to evaluate contaminant characteristics and other important water quality parameters. Water level measurements will be used to evaluate aquifer thickness, vertical and horizontal hydraulic gradients, and the influence of the Little Spokane River on ground water flow. This information will be used for design, placement, and performance evaluation of the pilot extraction well and in the design of the Phase II - West treatment and discharge system.

Chemical analyses will focus on the six compounds identified in Table I-1 and will be performed by EPA Method 8010 (SW-846, USEPA, 1986) or equivalent. These compounds are:

1,1,1-trichloroethane (1,1,1-TCA)
1,1-dichloroethylene (1,1-DCE)
1,1-dichloroethane (1,1-DCA)
trichloroethylene (TCE)
tetrachloroethylene (PCE)
methylene chloride (MC)

Other parameters, including, but not limited to, temperature, pH, conductivity, hardness, iron, and manganese, may be included for use during treatment system design activities.

The monitoring wells at the four initial locations will be sampled after development. Analysis of samples from this effort will be used to identify the final location of the pilot extraction well. In the event of anomalies in data from this initial sampling, the County may, at its discretion, conduct follow-up sampling at bi-weekly intervals for verification purposes.

If necessary, monitoring wells will be installed at up to two additional locations in the vicinity of the proposed pilot extraction well location. These wells will be sampled after development. Data obtained from these wells will be necessary to later assess performance of the pilot extraction well. As above, in the event of anomalies in this data, the County may, at its discretion, conduct follow-up bi-weekly sampling and analysis for verification purposes.

During the first month after pumping of the pilot extraction well begins, samples for chemical analysis will be obtained at least weekly from the pilot extraction well and the two closest monitoring wells. After this initial 4-week period, the pilot extraction well and the monitoring wells will be sampled and analyzed at least quarterly during operation of the pilot system.

c. Water Level Monitoring -- Water level monitoring will be conducted in at least the two monitoring wells closest to the pilot extraction well. Data from this effort will be used to assess the performance of the pilot extraction well and further characterize the hydrogeology of the site. Monitoring will begin before the startup of the pilot pumping system and will continue

until water level conditions stabilize or until it is demonstrated that continuous pumping is not possible. At the County's discretion, private supply wells may be included in this study.

3. **Pilot Extraction Well** -- Information obtained from the pilot extraction well is intended to aid in the design of a Phase II - West interception, treatment, and discharge system.

a. Location of the Pilot Extraction Well -- The pilot extraction well will be installed east of Highway 2 close to the abandoned railroad alignment. The preliminary location, based on available data, is shown on Figure IV-3. In selection of this preliminary site, consideration has been given to the location of the Phase II - West interception system.

b. Construction of the Pilot Extraction Well -- Construction details for the pilot extraction well will be influenced by information from the initial monitoring wells. It is anticipated that this well will be constructed using 6- or 8-inch diameter steel casing and a stainless steel screen. The screen length will be at least 10 feet and will be placed based on vertical contaminant distribution data from nearby monitoring wells.

c. Pumping of the Pilot Extraction Well -- The pilot extraction well will be equipped with a submersible pump. A well at this location should be capable of providing at least 100 gpm. At the County's discretion, the pumping rate may be increased to 200 gpm if the aquifer is capable of sustained production at that rate.

d. Duration of Pilot Testing -- It is intended that the pilot extraction well will operate for at least a 30-day period, and possibly until implementation of the complete Phase II - West system. If appropriate, it will be incorporated into the Phase II - West system.

e. Chemical Analysis of Pilot Well Samples -- Analysis of samples from the pilot-extraction well will be as described in Section IV.C.2b.

4. **Treatment/Discharge System** -- The treatment system ultimately constructed as part of the Phase II - West system must utilize cost-effective and reliable technology. Cost effectiveness is to be based on long-term operating and maintenance costs as well as the initial installation cost.

A pilot gravity air stripping system, utilizing the drop in elevation between the bluff and the Little Spokane River, will be constructed as part of the Phase I activities. This system will operate by discharging pumped water to a ditch and allowing natural and induced aeration to volatilize contaminants. The ditch will be lined with a low permeability geomembrane fabric until the point where concentrations decrease to levels below the

Table IV-1 evaluation criteria. Samples will be collected at least weekly from the discharge to verify compliance with the Performance Standards. The ditch will include energy dissipaters to accelerate volatilization and minimize erosion.

Initially, the gravity air stripping system will be designed to accommodate flow rates of up to 200 gpm, but the ditch may, at the County's discretion, be sized to handle anticipated Phase II - West discharge rates. Final design of this system will depend on input water quality as characterized by the monitoring wells. Field testing during startup may be required to determine the length of geomembrane-lined ditch required to attain the Table IV-1 evaluation criteria. This pilot gravity air stripping system will not include off-gas treatment or air monitoring.

5. **Study Analysis and Feasibility Evaluation** -- In the event that the preferred remedy identified in the ROD is no longer feasible or cost effective, the County will propose a new alternative.

Phase II

A. Extraction, Water Treatment, and Discharge - South System

1. Bases for Design --

a. The goal of the south ground water interception system is to prevent the spread of contaminated ground water downgradient* of the interception system. Both the Government Plaintiffs and the County recognizes that the interception system, during operation, may not capture 100 percent of the plume which contains constituents of concern, but consider it reasonable to design an interception system which approaches this goal.

b. Location of the Interception System -- The ground water interception system will be located based on information developed during Phase I pilot studies. Important considerations in placement of the interception system will include: concentrations and areal distributions of contaminants in the ground water; and hydrogeologic conditions identified during Phase I, such as saturated thickness of the aquifer, hydraulic conductivity, hydraulic gradients, and aquifer boundary conditions.

c. Treatment System -- The treatment system will be designed to meet the Performance Standards at the point of discharge from the treatment system. This design will be based on the maximum anticipated contaminant mass influent rate and treatment efficiency levels demonstrated during Phase I pilot testing. Compliance with applicable air emission standards will be addressed during treatment system design in accordance with the provisions of Section V.D.

d. Cost Effectiveness -- Design of the Phase II interception/treatment/discharge system will also consider cost effectiveness. The minimum level of effort required for the south interception system is prevention of the spread of the constituents of concern at concentrations which exceed the evaluation criteria identified in Table IV-1. The treatment and discharge system must meet the evaluation criteria. The County, at its discretion, may either select proven technology or new technologies which attain these criteria more economically. The system plans will be submitted to the Government Plaintiffs for review and approval.

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* For the purpose of this Scope of Work, the terms upgradient and downgradient refer to the ground water gradient under non-pumping, steady state conditions, unless specifically indicated otherwise.

2. Design Components and Bases for Decision--

a. Monitoring -- The County may, at its discretion, decide, following completion of Phase I, to install up to three additional monitoring wells to better characterize the hydrogeology and contaminant distribution in the shallow aquifer. If so decided, the County will provide plans to the Government Plaintiffs for review, identifying the number and location of additional monitoring wells. Information from these wells would be used to confirm or refine data from Phase I prior to construction of the Phase II system.

As the plan for the Phase II ground water interception system is finalized, a ground water monitoring program will be instituted to evaluate interception system performance. The interception system monitoring wells will consist of at least three, and not to exceed eight, monitoring wells located downgradient of the ground water interception system, and two monitoring wells placed at the outer limit of the interception system. The wells at the outer limits will also serve as extraction wells, if adjustment control criteria (as described in Section V.A.2b) are exceeded in these wells during monitoring. The County will determine if the interception system monitoring wells will include wells installed as part of the Phase I program. Phase I wells not included as interception system monitoring wells will be monitored at the County's discretion. A more extensive monitoring system may be proposed by the County if they determine that additional monitoring is appropriate. Plans for additional monitoring would be provided to the Government Plaintiffs for review and approval.

Chemical analysis for the interception system monitoring wells will be accomplished for the four indicator compounds identified in Table V-1, using EPA Method 8010 (SW-846, USEPA, 1986), on the frequency described in the following paragraph. Methylene chloride and tetrachloroethylene have been excluded from Table V-1 due to the high probability of laboratory contamination for methylene chloride, and the limited distribution in the ground water of both methylene chloride and tetrachloroethylene. Although methylene chloride and tetrachloroethylene do not form the basis for interception system design and operation criteria, they will be included in chemical analysis annually for at least the first five years of system operation. If methylene chloride and/or tetrachloroethylene are detected at concentrations above the Table IV-1 evaluation criteria during Phase I or during annual sampling described in this paragraph, the compounds will be monitored at the frequency of the other compounds listed in Table V-1. After this five-year period, the need for continued analysis for methylene chloride and tetrachloroethylene will be re-evaluated.

TABLE V-1

OPERATIONAL AND ADJUSTMENT CONTROL CRITERIA[a]

Compound	Maximum[b] Operational Control Criteria (ppb)	Maximum[c] Adjustment Control Criteria (ppb)
1,1,1-Trichloroethane	60	130
1,1-Dichloroethylene	N/A[d]	5
1,1-Dichloroethane	1,200	2,600
Trichloroethylene	N/A[d]	4

(a) Maximum criteria are presented in this table. Criteria may be lower than these values, as described in Sections V.A.2b. and V.C.2b. of this Scope of Work.

(b) Operational control criteria as represented by 30 percent of the Table IV-1 evaluation criteria.

(c) Adjustment control criteria as represented by 65 percent of the Table IV-1 evaluation criteria.

(d) Resulting concentration is too low to be accurately quantified using standard laboratory procedures. This constituent will not be included as part of the operational control criteria.

Quarterly sampling and analysis will be conducted for each of the interception system monitoring wells, except that the performance monitoring wells will initially be sampled more frequently as subsequently described in Section V.A.2b. Quarterly sampling of each well will be continued until no exceedance of the operational control criteria (as described in Section V.A.2b) is identified for twelve consecutive quarters. In the event that, for a particular well, no exceedances occur during the twelve quarters, sampling frequency will be reduced to an annual basis for the next two years. If no exceedances have been identified during this five-year period, the County will, with Government Plaintiff's approval, determine whether continued monitoring is appropriate based on the need to assure long-term protection of purveyor wells at the site. If, in a particular monitoring well (or converted extraction well, as described below in Section V.A.2b.), no exceedances occur, but an increasing trend in concentrations is identified that is likely to result in exceedance of the operational control criteria, the County will implement a longer-term sampling and analysis program that assures the protection of human health.

In the event that a single exceedance of an applicable criteria (Table IV-1 or Table V-1) occurs, a follow-up sample will be obtained. An exceedance will be confirmed if concentrations exceeding an applicable criteria are identified in three consecutive samples collected at two-week intervals. If an exceedance is confirmed, the County will submit, for the Government Plaintiffs' review and approval, a program including additional monitoring wells or additional monitoring of existing wells to address the exceedance.

The criteria presented in this section (V.A.2a) applies only to monitoring during system operation. While the interception system is shut off and on standby status, this system operation criteria is superseded by the monitoring criteria described in Section X of this Scope of Work.

b. Interception System -- In order to meet the goals identified in Section V.A.1a, the County will accomplish the following:

- Conduct the Phase I pilot studies to obtain the needed aquifer characteristics for designing an interception system.

- Complete a preliminary design engineering report detailing the most probable aquifer characteristics, design parameters and project costs. The system will be designed utilizing capture zone analysis to achieve overlapping cones of depression, and such that the total pumping capability of the interception well system is sufficient to intercept the plume to the extent described within this section (V.A.2b). Selection of pumping test methodologies and capture zone analysis will be

subject to the review and approval of the government plaintiffs.

The extraction wells will be installed near the leading edge of the plume. Extraction wells will be installed in succession from the center to the outermost limits of the plume. The spacing of the wells will be determined by the County based on hydrogeologic and chemical data. Additional wells will be installed until the ground water at the outermost limits is below the adjustment control criteria. The outermost wells will be included as interception system monitoring wells, and will be constructed such that conversion to extraction wells is possible if exceedances of adjustment control criteria are subsequently identified. If an outboard monitoring well is converted to an extraction well, an additional monitoring well (constructed for possible conversion to an extraction well) will be installed to the outside of the converted monitoring/extraction well.

The design criteria will serve as a guide to the use of the aquifer capture analysis referred to earlier in this section. The basis for the south interception system design will be that the average concentrations of the contaminants of concern in the upper aquifer downgradient of the interception system are predicted to be no greater than 15 percent of the Table I-1 Performance Standards based on capture zone analysis.

Commencing at a mutually agreed upon time following startup of the interception system, the downgradient interception system monitoring wells will be sampled monthly (for Table V-1 constituents) for two years, or some other mutually agreed-upon length of time. The Government Plaintiffs will select at least three, and not to exceed eight, of these downgradient wells for use as performance monitoring wells. These wells will be selected to provide a representative sampling of constituent concentrations across the full width of the interception system. Based on statistical analysis of the chemical data from these performance monitoring wells, a baseline concentration* will be identified for each Table V-1 constituent. This baseline concentration will be equal to the average of the time-averaged concentrations in the three (or more) performance monitoring wells after the data associated with the expected gradual changes following startup are eliminated.

Operational control criteria for the south interception system will be developed for the appropriate indicator compounds (1,1,1-TCA and 1,1-DCA) from Table V-1 and will be equal to the lesser of: 1) the baseline concentration plus 15 percent of the Table IV-1 evaluation criteria or 2) 30 percent of the Table IV-1

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* If the resulting concentration is below the Practical Quantitation Limit (PQL) for a Table I-1 constituent, the PQL reported for EPA Method 8010 (USEPA, "Test Methods for Evaluating Solid Waste," SW-846, 3rd Ed. 1986) will be used as the baseline concentration for that constituent.

evaluation criteria. If, after confirmation (as defined in Section V.A.2a) the average concentration in the three performance monitoring wells exceeds the operational control criteria, the County will re-evaluate the operation of the interception system. Should this re-evaluation indicate adjustments to the system are appropriate, the County will submit a proposal for interception system adjustment to the Government Plaintiffs for review and approval. Adjustments may include increasing pumping rates (for one or more wells), or other adjustments to the existing system considered appropriate for improving interception system efficiency.

Adjustment control criteria for the south interception system will be developed for the indicator compounds from Table V-1 and will be equal to the lesser of: 1) the baseline concentration plus 50 percent of the Table IV-1 evaluation criteria or 2) 65 percent of the Table IV-1 evaluation criteria.

If after confirmation (as defined in Section V.A.2a), the average concentration in the three designated downgradient monitoring wells exceeds the adjustment control criteria for two consecutive quarters (or some other mutually agreed-upon timeframe that will better allow reflection of system adjustments in downgradient monitoring wells) following system adjustment (as described previously for operational control criteria exceedances), the interception system will be modified. Additionally, the interception system will be modified if any individual downgradient performance monitoring well exceeds the Table IV-1 evaluation criteria for two consecutive quarters (or other time period, as described above). Modifications may include increasing pumping rates (for one or more wells), adding extraction wells to the system, or other methods of correcting interception system deficiencies. The County will submit a proposal for interception system modifications to the Government Plaintiffs for review and approval.

In addition to the operation and adjustment control criteria described above, should any downgradient performance monitoring well, following the development of baseline concentrations, exhibit anomalous concentrations or trends in concentrations that are inconsistent with effective interception system performance (such as an increasing trend in concentration projected to lead to a long-term exceedance of the Table V-1 adjustment control criteria), the County will evaluate the operation of the interception system. This evaluation will address the potential cause(s) of the anomaly and possible system adjustments or modifications (if appropriate), and will be presented to the Government Plaintiffs in a written report for their review within 60 days of evaluation.

Prior to establishing baseline concentrations, the operational and adjustment control criteria for the interception system will be the Table IV-1 evaluation criteria. These criteria will be applied on an individual basis to each downgradient interception system monitoring well.

If it is determined by the County that an exceedance of the above criteria is the result of supply well interference with the interception system, adjustment to, or modification to, the system will include elimination of the interference. Elimination of the interference may require either partial or complete cessation of supply well use. The County will attempt to negotiate a settlement with the well owner. If an equitable agreement cannot be reached between the County and the well owner, the Government Plaintiffs may use their statutory authority to seek termination of usage for the interfering well.

Based on cost effectiveness or a determination by the County that acceleration of the cleanup is appropriate, the County may, at its discretion, propose additional upgradient extraction wells. Any such proposal will be submitted to the Government Plaintiffs for review and approval.

If ground water withdrawn by an extraction well meets the operational control criteria for two consecutive quarterly samplings, water from this well will not require treatment prior to discharge. If a subsequently confirmed exceedance of the operational control criteria is identified, treatment of water from the extraction well will be resumed.

Operation of an extraction well may be discontinued if ground water from that well meets the adjustment control criteria. If shutdown of the well thereby occurs, the well will be sampled as described above in Section V.A.2a for monitoring wells. If a subsequently confirmed exceedance of the adjustment control criteria or an identified trend of increasing chemical concentrations occurs that is projected to lead to an exceedance of the adjustment control criteria, the extraction well will be reactivated.

If contaminant concentrations in ground water entering an extraction well decrease (confirmed as described in Section V.A.2a for exceedances) to levels below the Table IV-1 evaluation criteria, pulse pumping may be initiated at the discretion of the County. Procedures for pulse pumping, which are protective of human health and the environment, will be provided to the Government Plaintiffs for review and approval.

c. Treatment System -- A water treatment system utilizing air stripping, designed to treat water to comply with the Performance Standards, will be installed. The treatment system design will use data developed during the Phase I pilot program. A facilities plan will be developed by the County and provided to the Government Plaintiffs for review and approval. The County may, at its discretion, select treatment system performance goals which provide a higher discharge water quality than that identified by the Performance Standards. Compliance with applicable air emissions standards is addressed in Section V.D.

In the event that water discharged from the treatment system exceeds the Table IV-1 evaluation criteria, necessary improvements or operational adjustments will be accomplished by the County after review and approval by the Government Plaintiffs. In the event that the treatment system cannot meet the Table IV-1 evaluation criteria for methylene chloride, the Government Plaintiffs may apply less stringent evaluation criteria for this constituent. Indicated exceedances will be confirmed using the same methodology described for monitoring wells in Section V.A.2a.

d. Discharge -- Disposal of treated water will be in a manner that meets the Table IV-1 evaluation criteria. Options include discharge to the Little Spokane River, discharge to Deep Creek, or recharge to the shallow aquifer (either upgradient or downgradient of the interception system). Discharge to Deep Creek and recharge to the shallow aquifer will require the specific approval of the Government Plaintiffs. Plans for the discharge system will be submitted to the Government Plaintiffs for review and approval.

B. Extraction, Water Treatment, and Discharge - East System

1. Bases for Design --

a. Performance Standards for Ground Water -- The east ground water extraction system is intended for source control near the landfill site and not as an interception system.

b. Location of the East Source Control System -- The source control extraction system will be located based on information developed during Phase I pilot studies. Important considerations in placement of the extraction system will include concentrations and areal distributions of contaminants in the ground water; and hydrogeologic conditions such as saturated thickness of the aquifer(s), hydraulic conductivity, horizontal and vertical hydraulic gradients, and aquifer boundary conditions.

c. Treatment System -- The treatment system will be designed to meet the Performance Standards at the point of discharge from the treatment system. This design will be based on the maximum anticipated contaminant mass influent rate and treatment efficiency levels demonstrated during Phase I pilot testing. Compliance with applicable air emission standards is addressed in Section V.D.

d. Cost Effectiveness -- Design of the Phase II - East extraction/treatment/discharge system will also consider cost effectiveness. The extraction/treatment/discharge system must meet the Table IV-1 evaluation criteria with respect to treatment and discharge. The County may, at its discretion, either select proven technology or new technologies which more economically attain these criteria. The system plans will be submitted to the Government Plaintiffs for review and approval.

2. Design Components and Bases for Decision--

a. Monitoring -- The east extraction system is intended for source control and not plume interception. Consequently, no performance monitoring is required beyond that which is considered necessary by the County to evaluate treatment efficiency and to demonstrate the cost effectiveness of continued operation of the east system as a Remedial Action component for the lower aquifer(s). Phase I - East monitoring wells will be monitored at the discretion of the County.

In the event that monitoring wells upgradient of the extraction system, and outside its capture zone, show a consistent rise in contaminant concentrations that is likely to result in exceedance of the Table IV-1 evaluation criteria, additional upgradient (as previously defined) monitoring will be accomplished. The County will select the number and location of additional monitoring wells, subject to review and approval by the Government Plaintiffs. The County will determine if existing wells will be used or new monitoring wells will be installed.

The criteria presented in this section (V.B.2a) applies only to monitoring during system operation. This criteria is superseded, once the system is shut off, by the monitoring criteria described in Section X of this Scope of Work.

b. Source Control System -- The County will propose a source control system that includes six or more extraction wells. These wells will be installed to the north and to the east of the landfill site at locations exhibiting elevated contaminant concentrations and adequate hydrogeologic properties for sustained extraction at or near the flow rates set forth in the ROD. As presently envisioned by the County, the system will include at least three extraction wells to the north and three to the east of the landfill. The locations and flow rates of these wells will be determined by the County from Phase I study data and additional monitoring well data. The design for this system will be provided to the Government Plaintiffs for review and approval.

Based on the following criteria, the County may, at its discretion, expand the source control system beyond six extraction wells: aquifer yield; potential contaminant spreading induced by the addition of extraction wells; impact of increased contaminant mass loading to the treatment facility on meeting the Table IV-1 evaluation criteria; and system redundancy with respect to the west interception system and the objectives of the lower aquifer(s) Remedial Action.

Operation of an extraction well may be discontinued, upon approval of the Government Plaintiffs, if the well is not yielding, on a continuous basis, at least 50 percent (20 gpm) of the average discharge rate described in the ROD. If pumping is terminated for an extraction well, that well may, at the County's discretion, be included in the lower aquifer(s) monitoring program.

If deemed appropriate by the County, extraction wells may be subjected to pulse pumping rather than continuous pumping. Plans for pulse pumping will be submitted to the Government Plaintiffs for review and approval.

If ground water withdrawn by an extraction well meets the Table V-1 operational control criteria for two consecutive quarterly samplings, water from this well will not require treatment prior to discharge. If a subsequently confirmed exceedance of the operational control criteria is identified, treatment of water from the extraction well will be resumed.

Pumping may be discontinued from extraction wells if it is determined by the County, with review and approval by the Government Plaintiffs, that continued operation of the well(s) is no longer cost effective. Cost effectiveness will be evaluated based on the extent to which the extraction well(s) are achieving

the system goal of source control, and whether it is cost effective to extract contamination near the source rather than at the west interception system.

c. Treatment System -- A water treatment system utilizing air stripping, designed to treat water to comply with the Performance Standards, will be installed. The treatment system design will use data developed during the Phase I pilot program. A facilities plan will be developed by the Count and provided to the Government Plaintiffs for review and approval. The County, at its discretion, may select treatment system performance goals which provide a higher discharge water quality than that identified by the Performance Standards. Compliance with applicable air emissions standards is addressed in Section V.D.

In the event that water discharged from the treatment system exceeds the Table IV-1 evaluation criteria, necessary improvements or operational adjustments will be accomplished by the County after review and approval by the Government Plaintiffs. Indicated exceedances will be confirmed by follow-up sampling and analysis using the same methodology described for monitoring wells in Section V.A.2.a.

In the event that the treatment system cannot meet the Table IV-1 evaluation criteria for methylene chloride, the Government Plaintiffs may apply less stringent evaluation criteria for this constituent. Indicated exceedances will be confirmed using the same methodology described for monitoring wells in Section V.A.2a.

d. Discharge -- Disposal of treated water will be in a manner that meets the Table IV-1 evaluation criteria. The County will choose the specific means of disposal; options include discharge to the Little Spokane River and recharge at or near the landfill site. The viability of treated water recharge at or near the landfill site will be evaluated by the County and may include consideration of cleanup acceleration resulting from contaminant flushing within the unsaturated zone, and the potential impact of increased contaminant loading on treatment system performance. If this evaluation confirms the viability of recharge, the County will submit a plan to the Government Plaintiffs for their review and approval.

C. Extraction, Water Treatment, and Discharge - West System

1. **Bases for Design --**

a. The goal of the west ground water interception system is to prevent the spread of contaminated ground water downgradient of the interception system. Both the Government Plaintiffs and County recognize that a higher level of protection is appropriate for that portion of the lower aquifer (downgradient of the interception system) within the zone of capture of existing supply wells, than for that portion of the aquifer downgradient of the interception system where contaminants can migrate directly to the Little Spokane River without impacting existing supply wells.

b. Location of the Interception System -- The ground water interception system will be located east of Highway 2 in proximity to the north-south alignment shown in the ROD.

c. Treatment System -- The treatment system will be designed to meet the Performance Standards at the point of discharge from the treatment system. This design will be based on the maximum anticipated contaminant mass influent rate and treatment efficiency levels demonstrated during Phase I pilot testing. Compliance with applicable air emission standards will be addressed during treatment system design in accordance with the provisions of Section V.D.

d. Cost Effectiveness -- Design of the Phase II interception/treatment/discharge system will also consider cost effectiveness. The minimum level of effort required for the west interception system is prevention of the spread of the constituents of concern at concentrations which exceed the evaluation criteria identified in Table IV-1. The treatment and discharge system must meet these evaluation criteria. The County, at its discretion, may either select proven technology or new technologies which more economically attain these criteria. The system plans will be submitted to the Government Plaintiffs for review and approval.

2. **Design Components and Bases for Decision--**

a. Monitoring -- A monitoring program will be instituted to evaluate the Phase II interception system performance. Two sets of monitoring wells will be included in the west interception system performance monitoring program. The first set (set A) of monitoring wells will be utilized for evaluation of interception system performance for those portions of the lower aquifer within the capture zone of existing supply wells located downgradient of the interception system, and will consist of three monitoring wells located directly upgradient of the existing supply wells. The second set (set B) of monitoring wells will be utilized for evaluation of interception system performance for those portions of the lower aquifer not directly impacting the water quality of the existing supply wells, and

will include three monitoring wells located downgradient of the interception system. Two additional monitoring wells placed at the outboard limit of the interception system will also be included in the interception system monitoring program. These outboard wells may also serve as extraction wells, if adjustment control criteria (as described in Section V.C.2b) are exceeded during monitoring.

The monitoring system may, at the discretion of the County, include new wells or, if appropriate, wells installed as part of the Phase I program. Phase I wells not included in the interception system performance monitoring program will be monitored at the County's discretion. A more extensive monitoring system may be proposed by the County if they determine that additional ground water monitoring is appropriate. Plans for additional monitoring would be provided to the Government Plaintiffs for review and approval.

Quarterly sampling and analysis will be conducted for each of the interception system monitoring wells, for the four indicator compounds shown in Table V-1 and discussed in Section V.A.2a, except the performance monitoring wells (sets A and B) will initially be sampled more frequently as subsequently described in Section V.C.2b. Quarterly sampling for each well will be continued until no exceedance of the Table V-1 adjustment control criteria is identified for twelve consecutive quarters. In the event that, for a particular well, no exceedances occur during the twelve quarters, sampling will be reduced to an annual frequency for the next two years. If no exceedances have been identified during this five-year period, the County will determine whether continued monitoring is appropriate based on the need to assure longer-term protection of purveyor wells near the site. If no exceedances occur in a particular monitoring well (or converted extraction well, as described in Section V.C.2b), but an increasing trend in concentrations is identified that would likely result in exceedance of the adjustment control criteria, the County will implement a longer-term sampling and analysis program that assures the protection of human health and the environment.

In the event that a single exceedance of the adjustment control criteria occurs, a follow-up sampling will be accomplished. An exceedance will be confirmed if concentrations exceeding the adjustment control criteria specified in Table V-1 are identified in three consecutive samples collected at two-week intervals. If an exceedance is confirmed, the Government Plaintiffs may require installation of additional monitoring wells or implementation of more extensive monitoring of existing wells. Further, the County will submit, for the Government Plaintiffs' review and approval, a program to address the exceedance. This program will include measures to protect human health and the environment.

The criteria presented in this section (V.C.2a) applies only to monitoring during system operation. While the interception

system is shut off and on standby status, this system operation criteria is superseded by the monitoring criteria described in Section X of this Scope of Work.

b. Interception System -- In order to meet the goals identified in Section V.A.1a, the County will accomplish the following:

- o Conduct the Phase I pilot studies to obtain the needed aquifer characteristics for designing an interception system.

- o Complete a preliminary design engineering report detailing the most probable aquifer characteristics, design parameters and project costs. The system will be designed utilizing capture zone analysis to achieve overlapping cones of depression, and such that the total pumping capability of the interception well system is sufficient to intercept the plume to the extent described in this section. Selection of pumping test methodologies and capture zone analysis will be subject to the review and approval of the Government Plaintiffs.

These extraction wells will be installed east of Highway 2 in proximity to the north-south alignment shown in the ROD. Extraction wells will be installed in succession from the center to the outermost limits of the plume. The spacing of the wells will be determined by the County based on hydrogeologic and chemical data. Extraction wells will be installed until the ground water at the outermost limits of the system is below the adjustment control criteria. The outermost wells will be used for interception system monitoring and will be constructed such that conversion to extraction wells is possible if exceedances of adjustment control criteria are subsequently identified. If an outboard monitoring well is converted to an extraction well, an additional monitoring well (constructed for possible conversion to an extraction well) will be constructed to the outside of the converted monitoring/extraction well.

Interception system design criteria will be based on the Table I-1 Performance Standards. Operational and adjustment criteria will be developed based on Table IV-1 evaluation criteria and observed interception system efficiency during the early stages of Phase II.

The design criteria will serve as a guide for the use of the capture analysis referred to in this section. The basis for design of that portion of the west system that intercepts ground water migrating into the capture zone(s) of existing downgradient supply wells will be that the average concentrations of the constituents of concern in the existing supply wells downgradient of the interception system are predicted to be no greater than 15 percent of the Table I-1 Performance Standards based on capture

zone analysis. The remainder of the system will be designed such that the average concentrations of constituents of concern in the lower aquifer downgradient of the interception system will be no greater than 50 percent of the Table I-1 Performance Standards.

Commencing at a mutually agreed-upon time following startup of the interception system, the two sets (A and B) of downgradient performance monitoring wells will be sampled monthly (for Table V-1 constituents) for two years, or some other mutually agreed-upon length of time. Based on statistical analysis of the chemical data from these wells, separate baseline concentrations* will be identified for each set (A and B) of downgradient performance monitoring wells for each Table V-1 constituent. The baseline concentrations for each set (A and B) of monitoring wells will be equal to the average of the time-averaged concentrations in the three performance monitoring wells associated with that set and, if appropriate, may include vertical averaging for nested wells or well clusters, after the data associated with the expected gradual changes following startup are eliminated.

Operational control criteria for the west interception system will be developed for the appropriate Table V-1 indicator compounds (1,1-TCA and 1,1-DCA) and will only apply to that portion of the system intercepting ground water migrating towards existing downgradient supply well capture zones and will be equal to the lesser of: 1) the baseline concentration based on the "A" set of monitoring wells plus 15 percent of the Table IV-1 evaluation criteria or 2) 30 percent of the Table IV-1 evaluation criteria. If, after confirmation (as defined in Section V.A.2a) the average concentration in the "A" set of performance monitoring wells exceeds the operational control criteria, the County will re-evaluate the operation of the interception system. Should this re-evaluation indicate adjustments to the system are appropriate, the County will submit a proposal for interception system adjustment to the Government Plaintiffs for review and approval. Adjustments may include increasing pumping rates (for one or more wells), or other adjustments to the existing system considered appropriate for improving contaminant interception efficiency.

Adjustment control criteria for the west interception system will be developed for the Table V-1 indicator compounds and will be equal to the lesser of: 1) the baseline concentration (for set "A" or "B monitoring wells", as appropriate) plus 50 percent of the Table IV-1 evaluation criteria or 2) 65 percent of the Table IV-1 evaluation criteria.

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* If the resulting concentration is below the Practical Quantitation Limit (PQL) for a Table I-1 constituent, the PQL reported for EPA Method 8010 (USEPA, "Test Methods for Evaluating Solid Waste," SW-846, 3rd Ed. 1986) will be used as the baseline concentration for that constituent.

If after confirmation (as defined in Section V.A.2a), the average concentration in either the "A" or "B" sets of downgradient monitoring wells exceeds the adjustment control criteria for two consecutive quarters (or some other mutually agreed upon timeframe that will better allow reflection of system adjustments in downgradient monitoring wells) following system adjustment (as described previously for operational control criteria exceedances), the interception system will be modified if applicable. Additionally, the interception system will be modified if any Set "A" individual downgradient performance monitoring well exceeds the Table IV-1 evaluation criteria for two consecutive quarters (or other time period, as described above). Modifications may include increasing pumping rates (for one or more wells), adding extraction wells to the system, or other methods of correcting interception system deficiencies. The County will submit a proposal for interception system modification to the Government Plaintiffs for review and approval.

In addition to the operation and adjustment control criteria described above, should any set "A" downgradient performance monitoring well, following the development of baseline concentrations, exhibit anomalous concentrations or trends in concentrations inconsistent with effective interception system performance (such as an increasing trend in concentration projected to lead to a long-term exceedance of the Table V-1 adjustment control criteria), the County will evaluate the operation of the interception system. This evaluation will address the potential cause(s) of the anomaly and possible system adjustments or modifications (if appropriate), and will be presented to the Government Plaintiffs in a written report for their review within 60 days of the evaluation.

If it is determined by the County that an exceedance of the above criteria is the result of supply well interference with the interception system, adjustment to, or modification to, the system may include elimination of the interference. Elimination of the interference may require either partial or complete cessation of supply well use. The County will attempt to negotiate a settlement with the well owner. If an equitable agreement cannot be reached between the County and the well owner, the Government Plaintiffs will use their statutory authority to seek termination of usage for the interfering well.

Based on cost effectiveness or a determination by the County that acceleration of the cleanup is appropriate, the County may, at its discretion, propose additional upgradient extraction wells. Any such proposal will be submitted to the Government Plaintiffs for review and approval.

If ground water withdrawn by an extraction well meets the operational control criteria for two consecutive quarterly samplings, water from this well will not require treatment prior to discharge. If a subsequently confirmed exceedance of the operational control criteria is identified, treatment of water from the extraction well will be resumed.

Operation of an extraction well may be discontinued if ground water at that well meets the adjustment control criteria. If shutdown of the well thereby occurs, the well will be sampled as described above in Section V.C.2a for monitoring wells. If a subsequently confirmed exceedance, or an identified trend of increasing chemical concentrations occurs that can be projected to lead to an exceedance, of the adjustment control criteria at downgradient supply wells, reactivation of the extraction well may be necessary.

If concentrations in ground water entering an extraction well decrease (confirmed as described in Section V.B.2a for exceedances) to levels below the Table IV-1 evaluation criteria, pulse pumping may be initiated at the discretion of the County. Procedures for pulse pumping, which are protective of human health and the environment, will be provided to the Government Plaintiffs for review and approval.

c. Treatment System -- A water treatment system utilizing air stripping, designed to treat water to comply with the Performance Standards, will be installed. The treatment system design will use data developed during the Phase I pilot program.

If water discharged from the treatment system exceeds the Table IV-1 evaluation criteria, necessary improvements or operational adjustments will be accomplished by the County after review and approval by the Government Plaintiffs. In the event that the treatment system cannot meet the Table IV-1 evaluation criteria for methylene chloride, the Government Plaintiffs may apply less stringent evaluation criteria for this constituent. Indicated exceedances will be confirmed using the same methodology described for monitoring wells in Section V.C.2a.

A gravity air stripping system, which takes advantage of the elevation drop between the bluff near Highway 2 and the Little Spokane River may be installed, if Phase I pilot system test results indicate this method will meet Table IV-1 evaluation criteria. If, based on the criteria identified in Section V.D., off-gas treatment is required, a conventional air stripping system will be installed.

d. Discharge -- Disposal of treated water will be to the Little Spokane River. Discharge water will meet the Table IV-1 evaluation criteria. Plans for the discharge system will be submitted to the Government Plaintiffs for review and approval.

D. Air Emissions Abatement

The necessity for air stripping tower off-gas abatement during Phase II will be evaluated based on the assessment of lifetime cancer risk for carcinogenic compounds, and on hazard indices for non-carcinogenic compounds, in accordance with methods described in the Superfund Public Health Evaluation Manual (EPA 54011-86/060, 1986). Phase I data, and the criteria described below, will be used in these evaluations during Phase I. Additional data developed during the early stages of Phase II will be used to reassess the Phase I evaluation. If the County can demonstrate to the Government Plaintiffs that the lifetime cancer risks and the hazard indices are below 10^{-6} and 1, respectively, off-gas treatment will not be required.

A preliminary analysis of air emissions for the Table I-1 compounds has been accomplished using a standard Gaussian plume model and 100 percent transfer efficiency (water to air media). The analysis considered receptor distances of 500 and 1000 feet, a stack height of 40 feet, and assumed that all water treatment would be accomplished at one location. The analysis used National Weather Service Wind Data for the Spokane International Airport and an initial mass flux to the stripping towers equal to that arrived at from the projected influent concentrations and pumping rates identified in the RI/FS. It was further assumed that the total mass of each constituent removed during the clean-up could be equal to as much as 5 times the mass of each constituent identified as being present in the ground water, based on the data contained in the RI/FS.

Based on these assumptions, the model predicts that for the carcinogenic and potential carcinogenic compounds (TCE, DCE, PCE, and MC) the summation of the incremental increases in cancer risk for the individual compounds is below 10^{-6} (1 in 1 million), and the hazard index summation for all Table I-1 non-carcinogenic compounds is below 1. Because the analysis utilized some assumptions which have not been fully confirmed at the site, the following verification steps will be taken:

1. Air monitoring and modeling will be conducted during Phase I to confirm the wind speed, wind direction, and applicability of the Gaussian model. If the County determines that air emissions can be better analyzed using a different model, the proposed model, and rationale for its use, will be submitted to the Government Plaintiffs for review and approval.

2. Phase I and Phase II data will be evaluated to estimate the total mass of the six indicator constituents present in the ground water.

3. Measurements will be made during Phase I and the early stages of Phase II to identify the mass flux of the six

indicator constituents to the stripping tower(s). These data will be compared with the flux rates identified in the RI/FS.

If the new information supports the initial analysis, air stripping tower off-gas abatement will not be required.

If the Phase I data does not support the initial analysis, the County will re-examine the need for Phase II off-gas treatment. This re-examination will be accomplished prior to Phase II and presented to the Government Plaintiffs for their review and approval. Should this re-examination identify that off-gas treatment is necessary on either a temporary or permanent basis, based on the criteria described above, the County will make the appropriate adjustments to incorporate carbon absorption, or some other agreed-upon method of air emissions abatement, in the stripping tower design for Phase II.

Air emissions abatement will be re-evaluated during the early stages of Phase II (within a year of Phase II startup). If the Phase II data do not support the Phase I analysis, the County will re-examine the need for off-gas treatment within 60 days of re-evaluation and submit such re-examination to the Government Plaintiffs for review and approval. Should this re-examination identify that off-gas treatment is necessary on either a temporary or permanent basis, based on the criteria described above, the County will retrofit the stripping tower(s) with carbon absorption, or some other agreed-upon method of air emissions abatement. Alternately, should this re-examination identify that off-gas treatment is no longer necessary (if required following Phase I analysis), off-gas treatment may be terminated.

VI

LANDFILL CLOSURE

The Colbert Landfill will be closed by Spokane County to meet the goals and objectives of the State Minimum Functional Standards (WAC 173-304) for landfill closure, including regrading, ground water and gas monitoring, capping, and post-closure maintenance. The primary purposes of the cap are to: reduce the potential for infiltration and, thus, reduce the rate of leachate generation; address vector control; and restrict human access. The Minimum Functional Standards normally require at least 2 feet of 1×10^{-6} cm/sec or lower permeability soil or equivalent to be used for the cap. An artificial impermeable membrane, at least 50 mils thick, may be substituted for the soil cover.

Although a low permeability cap is generally beneficial for closure of municipal landfills, such a cap may reduce the migration of contaminants to the interception system(s), and thereby impede the performance of the Remedial Action. Section 173-304-700 of the Minimum Functional Standards provides for the jurisdictional health department to grant variances from landfill closure requirements for those situations where compliance with the regulation would be detrimental without equal or greater benefit to the public. Spokane County will have the option to appeal to the Spokane County Health District to defer or eliminate the need for the low-permeability cap. The County will, at a minimum, maintain a sufficient soil cover to address vector control and restrict human access to the solid waste.

The County shall develop a covenant to be filed on record restricting the use of Colbert Landfill so as not to impair the functioning of any cover that may be placed on the landfill. The covenant shall be reviewed and approved by the Government Plaintiffs.

VII

DOMESTIC WELL MONITORING

Monitoring of domestic wells in the vicinity of the Colbert Landfill will be conducted to evaluate the progress of the Remedial Action and to identify wells that exceed Performance Standards, so that alternative drinking water supplies may be provided (see Section VIII - Alternative Water Supply). The domestic well monitoring program described in this section is a continuation of the domestic well sampling program currently being accomplished by the County. This program is being conducted under the review of the Colbert Landfill Ground Water Sampling Committee.

SAMPLING AND ANALYSIS PROCEDURES

The ground water sampling and analysis procedures for domestic well monitoring will be those in use by the Colbert Landfill Ground Water Sampling Committee at the date of entry of this Consent Decree. Changes to these sampling and analysis procedures will not be made without the approval of this committee and the County. Any changes will be submitted to the Government Plaintiffs for their concurrence.

SAMPLING FREQUENCY

Ground water samples, at a minimum, will be collected annually from all wells included in the domestic well monitoring program. More frequent samples may be collected from selected wells at the discretion of Colbert Landfill Ground Water Sampling Committee and the County. If concentrations in any well exceed Performance Standards, that residence will be evaluated for an alternative water supply in accordance with Section VIII (Alternative Water Supply) of this Scope of Work. Sampling of a water supply well may be discontinued or reduced by the County if:

1. An alternative water supply has been provided for that residence;

2. The Colbert Landfill Ground Water Sampling Committee determines that the supply well is not threatened by contamination from the Colbert Landfill site;

3. Remedial Actions have been demonstrated to be complete.

VIII

ALTERNATIVE WATER SUPPLY

If any compound originating from the site is identified in any domestic water supply well in use prior to the date of entry of this Consent Decree at a concentration exceeding the Performance Standards, a new sample shall be taken by the County within one week of receipt of the analysis of the first sample. The new sample shall be analyzed on an expedited schedule. If the second sample confirms that the concentrations exceed Performance Standards, the County will promptly provide an alternative drinking water supply source to the residence. At the County's discretion, the new water supply may include, but is not limited to, either bottled water (on an interim basis) or connection of the affected residence to the Whitworth Water Supply System or an approved Class IV system. The County shall be responsible only to provide a drinking water supply to those impacted residences in an amount equal to the drinking water supply standards for residences established by the Department of Social and Health Services in effect at the time of entry of this Consent Decree, or the annual average production of the well, whichever is less.

If any compound originating from the site is identified in any domestic water supply well in use prior to the date of entry of this Consent Decree at a concentration exceeding 65 percent of the Table IV-1 evaluation criteria, a new sample shall be taken by the County within one month of receipt of analysis of the first sample. The new sample shall be analyzed within one month. If the second sample confirms that the concentration exceeds the 65 percent level, that supply well shall be placed on a sampling frequency of once every month for a period of one year. The confirming sample and subsequent monthly samples (if required) will be analyzed in accordance with the procedures set forth in the applicable (Phase I or Phase II) ground water monitoring work plan.

If the average concentration over that 12 month period exceeds 65 percent of any of the Table IV-1 evaluation criteria, the County will provide an alternate water supply to that residence. If the average concentration is below the 65 percent level, that well may be returned to the regular monitoring schedule. Without admitting any legal obligation to do so, the County will provide an alternate water supply to the following residences, if desired: (b) (6)

(b) (6)

In the event that operation of the Remedial Action adversely impacts the yield of supply wells in use prior to the date of entry of this Consent Decree, the County will mitigate the impact. For this purpose, adverse impact is defined as a reduction in water supply to levels below the lesser of:

1. The discharge rate and total allowable annual volume defined by a valid water right, filed with the State of Washington prior to entering of this Consent Decree.

   If water is being used without a valid water right, the user will only be entitled to mitigation with respect to the quantity defined by the laws of the State of Washington as being exempt from the filing requirements.

2. The capacity of the supply well in gallons per day.

In order to require the County to mitigate such adverse impacts, the following conditions must be met:

1. Access to the impacted well must be granted by the property owner to the County prior to and during the implementation of the Remedial Action. The County may, at its discretion: a) monitor water level elevations within the well; b) measure the well depth; c) accomplish a well capacity test; and/or d) accomplish any other tasks, procedures or tests deemed appropriate by the County or required by the Government Plaintiffs to evaluate the possible future impact of the Remedial Action.

2. In the event that the County chooses not to monitor a well and a claim is subsequently made by the property owner alleging adverse impact by the Remedial Action, the owner may be requested to sign an affidavit detailing the extent of the impact.

If it is determined that a supply well has been adversely impacted by the Remedial Action, the County may, at their discretion, elect to take any of the following actions:

1. Provide an alternative water supply;

2. Modify the operation of the extraction wells;

3. Modify the supply well system. Modifications may include repositioning of the pump or the addition of a pressurized storage tank;

4. Construct a new well to supplement the existing well; or

5. Exercise any other reasonable action acceptable to the well owner and the County.

Nothing in this Consent Decree shall be construed to mean that the County is responsible to the Whitworth Water District or any other water system owner, either public or private, for costs

in excess of those required to provide the above connections. Excess costs include fire flow; storage requirements; and oversizing the system to provide service to non-effected properties.

Nothing in this Consent Decree will prohibit the County from negotiating a written release with the property owner regarding any claims of inverse condemnation and/or diminished property value due to adverse impact on yield or as a result of the existence of contamination at levels exceeding the Table I-1 Performance Standards.

IX

INSTITUTIONAL CONTROLS

The County shall, to the degree authorized by law, implement institutional controls to prevent human access to the Colbert Landfill until such time as the local jurisdictional health department considers such access to be acceptable. The state may implement institutional controls to prevent installation of purveyor wells in areas and at depths known to be contaminated, where such newly installed wells are likely to cause the spread of contamination, or where such wells are likely to impede Remedial Activities.

X

PERFORMANCE CRITERIA

In accordance with the ROD, ground water extraction will continue until all wells in contaminated zones show that the ground water consistently meets health protection levels. Health protection levels will be those Performance Standards identified in Table I-1 of this Scope of Work. The County will notify the Government Plaintiffs that they have met the Performance Standards prior to ceasing ground water extraction, pumping, and treatment from the interception systems. The County's notification to discontinue pumping and treatment shall include a demonstration, based on the monitoring results described below, that the Performance Standards in Table I-1 shall be met on a permanent basis. Because the east system is intended for source control, the continued operation of this system will be at the County's discretion.

Monitoring wells installed during Phase I that are not part of an interception system monitoring program may be included in this demonstration. If included, Phase I - West and East monitoring wells will be assigned to the west interception system, and Phase I - South monitoring wells will be assigned to the south interception system. At some time in the future, additional monitoring wells may be installed upgradient of the interception system(s) to help assess completion of Remedial Action. If additional upgradient wells are required, the number, location and design of these wells will be mutually determined at the appropriate time by the Government Plaintiffs and County.

Operation and maintenance of each extraction/treatment and discharge system will continue until the ground water at each monitoring well assigned to that system (as defined in Section V and supplemented in the previous paragraph) meets the Performance Standards for four consecutive quarterly samplings. If four consecutive quarterly samplings of these monitoring wells all show the ground water to meet the Performance Standards at each assigned monitoring well, the County may, at its discretion, place that interception system on standby status. Standby extraction wells will become monitoring wells. Quarterly sampling and analysis of these monitoring wells will continue for a period of three years. If, during these three years of monitoring, the ground water at each monitoring well continues to meet the Performance Standards, the County may, at its discretion, deactivate the associated extraction and treatment system. In the event that an exceedance of the Performance Standards occurs, a follow-up sample will be collected. An exceedance will be confirmed if chemical constituent levels exceeding the Performance Standards are identified in three consecutive samples collected at two-week intervals. If a confirmed exceedance occurs, the appropriate portion of the associated interception and treatment system will be placed in operation until such time as the standby status criteria is achieved again.

After termination of standby status for each interception system, the County will continue to monitor all accessible supply wells, which have previously exhibited confirmed contamination at levels exceeding the Performance Standards, once per year for an additional five years. All monitoring, and all other obligations of the County under this Consent Decree, will cease when the ground water in all monitoring wells consistently meets the Performance Standards for this final five-year period.

If trends in ground water monitoring data indicate that the length of time required to meet the Performance Standards will be significantly longer than that reported in the RI/FS, the County may petition the Government Plaintiffs for less stringent Performance Standards.

XI

SCHEDULE

A schedule for submission of detailed work plans and additional documentation shall be submitted by the County no later than two (2) months from entry of the Consent Decree. Upon the Government Plaintiffs' approval, the schedule shall be submitted to the Court and become a part of the Consent Decree. The schedule shall identify specifically when work plans for Phase I, the Health and Safety Plan, the Quality Assurance Project Plan, the Phase I Engineering Report, and Phase I progress reports shall be delivered. It shall also describe the basis for establishing a schedule for the Phase II work plans, Landfill Closure Plan, Alternative Water Supply Plan, Plan for Institutional Controls, Phase II Plans and Specifications, Phase II Construction Documentation Report, and Phase II progress reports.

Specifically, the schedule shall address the following work plans:

- Health and Safety Plan;
- Quality Assurance Project Plan;
- Phase I Pilot Well Plan;
- Phase I Ground Water Monitoring Plan;
- Phase I Treatment and Discharge Plan;
- Phase II Extraction Well Plan;
- Phase II Ground Water Monitoring Plan;
- Phase II Treatment and Discharge Plan;
- Landfill Closure Plan;
- Alternative Water Supply Plan; and
- Plan for Institutional Controls;

and the following additional documentation:

- Phase I Engineering Report;
- Phase II Plans and Specifications;
- Phase I and Phase II Progress Reports; and
- Phase II Construction Documentation Report.

APPENDIX "C"

COLBERT LANDFILL TRUST FUND

THIS DECLARATION OF TRUST, dated this _____ day of _____, 1988, is made and entered into by and among SPOKANE COUNTY ("Settlor"), and WASHINGTON TRUST BANK ("Trustee"), pursuant to the Agreements on Consent to Implement Focused Corrective Action Measures pursuant to State of Washington, Department of Ecology, and United States Environmental Protection Agency v. Key Tronic, Inc., and Spokane County, No. _____ and State of Washington, Department of Ecology v. United States Air Force, No. _____ (the "Consent Agreements").

WITNESSETH:

WHEREAS, UNITED STATES AIR FORCE has agreed to transfer, assign, and convey unto the Trustee the sum of One Million Four Hundred Fifty Thousand Dollars ($1,450,000.00) in trust, pursuant to the terms of this Agreement; and

WHEREAS, KEY TRONIC, INC., a Washington corporation, has agreed to transfer, assign, and convey unto the Trustee the sum of Four Million Two Hundred Thousand Dollars ($4,200,000.00) in trust, pursuant to the terms of the Consent Agreements; and

WHEREAS, funds transferred by UNITED STATES AIR FORCE and KEY TRONIC, INC., a Washington corporation, shall constitute the initial corpus of the trust hereby created and shall be held, invested, and distributed pursuant to the terms of this Agreement, it is therefore agreed as follows:

I. Trust Estate. The Trust Estate, as that term is used in this trust, shall consist of the following:

1. The assets transferred to the Trustee by UNITED STATES FORCE and KEY TRONIC, INC., a Washington corporation, as hereinabove provided; and

2. Any funds transferred to the Trustee by any other person or entity, and

3. The proceeds, investments, and reinvestments of the assets so transferred to the Trustee.

II. Trust Purpose. The Trustee shall hold, invest, reinvest, and distribute the Trust Estate, as Trustee, in accordance with the terms and conditions set forth herein. This trust is organized and shall be operated to provide a source of funds for the purpose of paying for the remedial action referenced in the Consent Agreements. In furtherance of this purpose, the Director of the Department of Ecology, hereinafter referred to as the "Director" has sole power to direct the Trustee and the distribution of the Trust Estate in the manner hereinafter provided for.

III. Distributions. The Trust Estate shall be distributed by the Trustee from time to time as directed by the Director pursuant to the Consent Agreements. The Trustee may rely with acquittance upon any direction of payment made pursuant to the Consent Agreements.

IV. Duration. This trust shall continue until the earlier of the issuance of a Certificate of Completion to SPOKANE COUNTY pursuant to the provisions of Section XXX of the Consent Agreements, or until the Trust Estate has been distributed for the activities and purposes set forth herein. If the Trust Estate has not been wholly distributed prior to the earliest date referred to in the first sentence of this paragraph, and there has not been a direction to distribute funds pursuant to Consent Agreements which will exhaust the funds, then all such remaining unappointed funds shall be delivered forthwith one-half (1/2) to the State of Washington, Department of Ecology, and one-half (1/2) to the United States Environmental Protection Agency.

V. Irrevocable Nature of Trust. The trust created by this Agreement shall be deemed irrevocable and the Settlor shall have no right whatsoever to alter, amend, revoke, or terminate this Trust Agreement in whole or in part. Further, it is the intention of KEY TRONIC, INC., a Washington corporation, and UNITED STATES AIR FORCE to transfer all of their interest in the Trust Estate transferred to the Trustee herein. Therefore, UNITED STATES AIR FORCE and KEY TRONIC, INC., a Washington corporation, and any other person or entity transferring assets to the Trustee hereunder, do hereby assign to the Trustee all right, title, and interest in and to the

Trust Estate and relinquish all administrative power over the Trust Estate or any power to control the beneficial enjoyment of the trust assets.

VI. Trustee. It is hereby directed to invest and reinvest the trust assets and such property as it from time to time deems prudent. Provided, however, that the Trustee's power to invest the trust assets shall be limited in the same manner as the ability of persons investing funds on behalf of municipalities within the State of Washington is limited pursuant to RCW 36.29.020 et seq.

VII. Powers and Duties of Trustee. Except as specifically restricted hereunder, the Trustee shall have all duties, powers, and rights imposed and granted by the laws of the State of Washington.

In addition to the duties, powers, and rights imposed and granted by law, the Trustee shall have (unless specifically restricted herein) the power and the exercise of discretion in the application thereof to:

1. Determine the allocation of receipts and expenses between income and principal in accordance with the Washington Principal and Income Act;

2. Rely with acquittance upon the advice of counsel on questions of law;

3. Merge or combine any trusts hereunder with the trust or trusts otherwise established for the same purpose and substantially the same provisions, and thereafter administer and distribute such combined estate as one;

4. Appoint an ancillary trustee or agent to facilitate the management of assets located in another state, if any;

5. At any time to resign as Trustee of the trust created by this instrument without court proceeding, by delivering written notice of resignation as hereinafter provided;

6. To commence or defend at the expense of the trust such litigation with respect to the trust or any property of the trust as the Trustee may deem advisable;

7. Compromise, submit to arbitration, release with or without consideration, and otherwise adjust any claims in favor of or against the trust.

VIII. Resignation. The Trustee shall have the right to resign at any time by delivering its resignation in writing to the Settlor, such resignation to take effect upon the acceptance of appointment in writing by successor Trustee. Upon any such resignation, the Settlor shall deliver to the Director a copy of the Letter of Resignation, together with a letter proposing to appoint a successor Trustee. Provided, however, any successor Trustee shall be a corporation authorized to conduct trust business within the State of Washington and at the time of its appointment have assets of not less than One Hundred Million Dollars ($100,000,000.00) of trust funds.

Upon the approval of successor Trustee by the Director, the Settlor shall in writing appoint a successor Trustee. Acceptance of appointment of successor Trustee shall be in writing and shall become effective upon receipt by the Settlor of the notice of such acceptance.

Any successor Trustee appointed under this article shall, upon appointment, immediately succeed to all powers, rights, discretions, obligations, and immunities of the Trustee under this Agreement with the same effect as though successor Trustee were originally named as Trustee in this Agreement.

IX. Compensation. The Trustee shall be entitled to be paid reasonable compensation as agreed upon by the Settlor and the Trustee.

X. Governing Law. This Trust Agreement shall be administered, construed, and enforced according to the laws of the State of Washington. Should any provision of this Agreement be or become invalid or unenforceable, the remaining provisions of this Agreement shall be and continue to be fully effective.

XI. Notices. Any notices or other communication required or permitted by this Agreement to be delivered to or served on the Trustee shall be deemed properly delivered to, or serve on, and received by the Trustee when personally delivered to a trust

officer of the Trustee, or in lieu of such personal service, when deposited in the United States mail, certified mail with postage prepaid, addressed to the trustee at West 717 Sprague Avenue, Spokane, Washington 99204 (Attention Trust Department).

Any notices or other communications required or permitted by this Agreement to be delivered to or served on the Department of Ecology shall be deemed properly delivered to, or served on, and received by the Department of Ecology when deposited in the United States mail, certified mail with postage prepaid, addressed to the Director, Department of Ecology, Mailstop PV-11, Olympia, Washington 98504, or its designate.

Executed on the ____ day of _____, 1988, at Spokane, County, Washington.

SPOKANE COUNTY

By _____
Its Chairman

"Settlor"

WASHINGTON TRUST BANK

By _____
Its _____

"Trustee"

A825708A.PJC - 3R10/5/88

APPENDIX "D"

REQUEST FOR FUNDING PREAUTHORIZATION FOR THE HAZARDOUS SUBSTANCE RESPONSE TRUST FUND BY SPOKANE COUNTY FOR THE COLBERT LANDFILL REMEDIAL ACTION

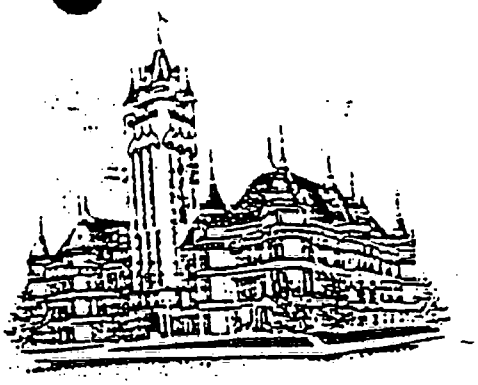
Prepared for

Environmental Protection Agency

Prepared by

Spokane County

September 12, 1988



SPOKANE COUNTY COURT HOUSE

SPOKANE COUNTY

OFFICE OF

PUBLIC WORKS DEPARTMENT

DENNIS M. SCOTT, P.E.
DIRECTOR OF PUBLIC WORKS

(509) 456-3600
NORTH 811 JEFFERSON STREET
SPOKANE, WASHINGTON 99260-0180

September 9, 1988

Office of Emergency and Remedial Response
MIS: WH-548
U.S. Environmental Protection Agency
401 "M" Street S.W.
Washington, D.C. 20460

Attention: Mr. Henry L. Longest, II, Director

RE: Colbert Landfill
Request for Preauthorization

Gentlemen:

Spokane County is filing this request for preauthorization for cost recovery related to the Colbert Landfill remedial action in Spokane County, Washington. The County would like to thank Mr. Bill Ross of your Washington, D.C., office for his guidance during preparation of this request.

Spokane County's request for preauthorization (for mixed funding) is for $1,400,000, or approximately 10 percent of the estimated cost of remediation for the Colbert Landfill Superfund site. To date, a Consent Decree (Appendix B) has been agreed to in principle. This draft Consent Decree includes a Scope of Work (Appendix C), which provides a detailed framework for implementation of the remedial action based on the EPA-selected remedy (as described in the Record of Decision [Appendix A]). The Consent Decree will be lodged following approval of Spokane County's request for preauthorization.

Spokane County intends to implement the Colbert Landfill remedial action using a design consultant and a contractor for project design and construction, respectively. As documented herein, the consultant and contractor selection process will be free and open, and will be structured such that the selected firms will have the capability, knowledge and understanding to successfully complete the remedial action. Spokane County has managed a number of large construction

projects, including some larger than the Colbert Landfill remediation, and intends on utilizing this management expertise during implementation of the remedial action.

We trust that you will find this request for preauthorization complete. However, please advise us if you have any additional information requirements.

Very truly yours,

Dennis M. Scott, P.E.
Director of Public Works

DMS:sla/0203o
Attachments

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REQUEST FOR FUNDING PREAUTHORIZATION FOR THE
HAZARDOUS SUBSTANCE RESPONSE TRUST FUND BY
SPOKANE COUNTY FOR THE
COLBERT LANDFILL REMEDIAL ACTION

Section 111(a)(2) and 122(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), authorizes the Hazardous Substance Response Trust Fund (Fund) to reimburse potentially responsible parties (PRPs) for costs incurred as a result of carrying out the National Contingency Plan (NCP). In order to qualify for reimbursement, the requesting party must seek and obtain prior approval (preauthorization) from the Environmental Protection Agency (EPA) administrator for the proposed remedial action. Spokane County is a PRP eligible under Section 111(a)(2) of the CERCLA, 42 U.S.C. 9611(a)(2), for reimbursement of "necessary response costs incurred...as a result of carrying out the National Contingency Plan." To fulfill the requirements for reimbursement, Spokane County is filing this request for preauthorization for cost recovery from the Fund related to the Colbert Landfill remediation. This request is for $1,400,000, which represents approximately 10 percent of estimated design, construction, and startup costs for this action. This amount has been mutually agreed upon between EPA and Spokane County, and is intended to cover the remediation costs of the non-settling PRPs.

INTRODUCTION AND SITE DESCRIPTION

The Colbert Landfill is an inactive sanitary landfill located in northeastern Washington approximately 15 miles north-northeast of the City of Spokane. Situated in the southeast corner of

Section 3, Township 27 North, Range 43 East, W.M., the landfill covers 40 acres. It is about two and one-half miles north of the Town of Colbert and one-half mile east of U.S. Highway 2 (Newport Highway) in the northwestern quadrant of the intersection of Elk-Chattaroy, Yale, and Big Meadows Roads. Owned and operated by Spokane County (The County), the Colbert Landfill opened in 1968 and received both municipal and commercial wastes until 1986. The landfill is now filled to capacity and is no longer receiving wastes.

The remedial action site, the area of potential impact surrounding and including the landfill, extends north of the landfill about one-half mile, west about one mile to the Little Spokane River, east a similar distance, and south approximately five miles to Peone Creek (also known as Deadman Creek). The total remedial action area is approximately 6800 acres and includes parts of Sections 2, 3, 10, 11, 14, 15, 16, 21, 22, 23, 26, 27, 28, 33, 34,and 35 in T 27 N, R 43 E. The site is located on a plateau bounded by steep bluffs on the west and low granite and basalt hills to the east. Surface drainage is west to the Little Spokane River. The climate is characteristic of eastern Washington, with temperatures ranging from typical average summer highs of about 83° F to average winter lows of around 23° F. The relatively low annual precipitation of approximately 17 inches falls mainly during the winter months of November through February (NOAA 1985).

The geology of the site consists of a series of glacially-derived materials deposited on an eroded landscape of clays, basaltic lava flows, and granitic bedrock. The stratigraphic

units (layers) as described in the Remedial Investigation (RI) (Golder Associates, Inc., 1987), from youngest to oldest (i.e., from the top down), are:

Unit A. Glacial outwash/Missoula flood sands/gravels;

Unit B. Glacial Lake Columbia lacustrine silts/clays;

Unit C. Older glaciofluvial and/or alluvial sands/gravels;

Unit D. Weathered basalts and Latah (landslide deposits);

Unit E. Unweathered Latah silts/clays;

Unit F. Granite bedrock.

This specific geologic system can be hydrogeologically defined as containing three aquifers and three aquitards. There is an aquifer associated with Unit A, the glacial outwash/ Missoula flood deposits, which is designated as the upper sand/ gravel aquifer. Unit B, the lacustrine silts/clays stratum, is a relatively impermeable layer which acts as an aquitard. The second aquifer, located in Unit C, the older glaciofluvial and/or alluvial deposits, is called the lower sand/gravel aquifer. The weathered zone of the basalts and Latah, Unit D, may be considered an extension of the lower aquifer. The unweathered Latah silts/clays, Unit E, serves as the second aquitard. The upper fractured zone of the granite, Unit F, is capable of water transmission and, although a poor producer in most areas, it could be considered as an aquifer while the deeper, less fractured portions of the bedrock serve as the confining lower boundary or aquitard to the entire regional flow system.

The upper aquifer is unconfined with a water table at an approximate elevation of 1,770 feet (MSL), 90 feet below ground

surface in the area of the landfill. The thickness of the upper aquifer varies from about 8 to 15 feet along its north-south trending centerline, decreasing as it extends toward the western bluffs and eastern hills. Ground water flows predominately toward the south with velocities ranging from 4 to 13 feet per day (ft/day). The lower aquifer is generally a confined system, with its potentiometric surface at an approximate elevation of 1,680 feet (MSL), 180 feet below ground surface in the area of the landfill. The thickness of the lower aquifer varies considerably from only a few feet thick east of the landfill, to over 150 feet thick as it approaches the Little Spokane River valley where the aquifer is hydraulically connected with the river. Ground water in this lower sand/gravel aquifer flows predominantly toward the west at velocities ranging from 2 to 12 ft/day. Northeast of the landfill, the upper aquitard is not present and the lower aquifer is closer to the surface, interconnecting with the upper aquifer.

The Colbert Landfill was operated as a sanitary landfill by the Spokane County Utilities Department. It was opened in September 1968 and operations ceased in October 1986. During the five years from 1975 to 1980, a local electronics manufacturing company, Key Tronic Corporation (Key Tronic), used the Colbert Landfill to dispose of spent organic solvents, mainly methylene chloride (MC) and 1,1,1-trichloroethane (TCA), at an average rate of several hundred gallons a month (See Appendix A: ROD, Table 1, for approximate disposal volumes). These wastes were typically brought to the landfill in drums which were

emptied into open trenches to mix with the soil or municipal refuse already in the trench. A nearby military facility, Fairchild Air Force Base, also disposed of various solvent wastes at the site. Hazardous substances detected in the ground water at the site were also disposed of by a number of other parties, including Alumax Irrigation Products, A&M Manufacturing, and United Paint, Inc. A variety of other chemicals (such as pesticides and refinery tar residues) from other sources were also disposed at the site but have not, to date, been detected in the ground water at the site.

In 1980, nearby residents complained to the Eastern Regional Office of the Washington Department of Ecology (Ecology) about disposal practices at the landfill. State and county officials, under the lead of the Spokane County Utilities Department, initiated an investigation into complaints of ground water contamination in the area by sampling nearby private wells. The results of this initial investigation indicated that some of these wells were contaminated with TCA.

Since 1980, additional studies have been directed toward the contamination problem at the Colbert Landfill. The first study (Maddox 1981), initiated in response to citizen complaints, included a review of existing information on the site and some field study, and recommended a ground water monitoring program. Further studies, conducted in 1982 (Maddox 1982), involved monitoring well installation, injection tests, and two rounds of ground water quality sampling and analysis. This study included sampling of selected private and purveyor wells.

In August 1983, the EPA placed the Colbert Landfill site on its National Priorities List (NPL). CH2M Hill was then contracted by EPA to develop a Remedial Action Master Plan (CH2M Hill 1983). This plan presented a scope of work for the eventual Remedial Investigation/Feasibility Study (RI/FS). During this period, the County and Key Tronic continued sampling and analysis of well waters around the landfill (Spokane County and Key Tronic 1986).

Beginning in 1984, bottled water supplies were distributed by the County and Key Tronic to those households with high contamination levels in their wells. Ecology entered into a cooperative agreement with the EPA for conducting a RI/FS at the Colbert Landfill site in August 1984. A "Focused Feasibility Study for Initial Remedial Measures at the Colbert Landfill" (Ecology 1984a) was conducted and a "Community Relations Plan for Remedial Measures at the Colbert Landfill" (Ecology 1984b) was initiated in June 1984. The chosen Initial Remedial Measure (IRM) was to supply water to the affected area by constructing a pressurized water system through the Colbert Extension (System 9) of the Whitworth Water District No. 2. Hook-up of affected residents to this system was subsidized by two of the PRPs (the County and Key Tronic), contingent on three conditions:

- Well water contamination of more than 200 micrograms per liter TCA;
- Proximity (less than 500 feet) to water supply mains; and
- Execution of a hold-harmless agreement.

other residents not meeting these conditions have also elected to receive this water at their own expense.

Ecology contracted Golder Associates, Inc. (Golder) to conduct a data review of the Colbert Landfill site. A recommendation report was submitted in December 1984 (Golder Associates, Inc.1984), and a work plan for the Remedial Investigation (RI) was submitted in January 1985. Authorization to conduct the RI was received in March 1985. A draft RI report was released for public review in May 1986 and the final RI report was completed in May 1987 (Golder Associates, Inc. 1987).

The primary contaminants detected in the ground water at the Colbert Landfill site during the RI were six volatile organic chemicals, all chlorinated aliphatic hydrocarbons (Golder Associates, Inc. 1987). These contaminants are listed in Table 1. Several other contaminants were also detected in the RI samples, but occurred at lower concentrations or were less widely distributed (see Table 1). Because they behaved similarly to the primary contaminants, they were not considered separately for remediation. Although the contaminants placed into the landfill traversed a considerable thickness of unsaturated soil to reach the ground water, only trace concentrations of these chemicals were found in soil samples obtained from the landfill during the RI drilling program.

In April 1986, Ecology authorized Golder to prepare a feasibility study (FS) based upon the RI. The FS was performed by Golder and a subcontractor, Envirosphere Company, with input from Hall and Associates. The FS Final Report was submitted for public comment in May 1987 (Golder and Envirosphere 1987).

TABLE 1

ORGANIC CONTAMINANTS FOUND IN COLBERT LANDFILL SITE GROUND WATER DURING REMEDIAL INVESTIGATION

Contaminant	Number of Wells	Maximum Concentration (ug/l)*
Major Contaminants		
1,1,1-Trichloroethane (TCA)	20	5,600
1,1-Dichloroethylene (DCE)	19	190
1,1-Dichloroethane (DCA)	19	600
Trichloroethylene (TCE)	11	230
Tetrachloroethylene (PCE)	9	23
Methylene Chloride (MC) (also called Dichloromethane)	11	2,500
Lesser Contaminants		
Acetone (also called Propanone)	3	445
Chloroform (also called Trichloromethane)	11	6
Methyl Ethyl Ketone (also called 2-Butanone)	2	14
1,2-Dichloroethane (also called Ethylene Dichloride)	2	5
1,2-trans-Dichloroethylene	5	12
Toluene (also called Methyl Benzene)	2	<1

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* In this report, all organic contaminant concentrations will be presented in units of micrograms (ug) of chemical per liter (l) of water. This conventional unit of measurement is essentially equivalent to parts per billion (ppb).

Prior to design and construction of the final remedial action, additional site characterization will be required (termed Phase I in the Draft Consent Decree Scope of Work [Landau Associates, Inc. 1988]). Consequently, it will not be possible to describe in detail some aspects of the remedial action requested in the preauthorization guidance document (EPA 1988). However, the Draft Consent Decree Scope of Work (Scope of Work) provides a detailed framework for the remedial action and documents the review and approval authority of the EPA for aspects of remedial action not addressed within the RI/FS or the ROD. The ROD and the Scope of Work are included as Appendices A and C, respectively. Due to its size, a copy of the RI/FS is not included.

The County intends to implement the remedial action utilizing a design consultant and a contractor for design and construction, respectively; but will provide project management services internally. As will be described in greater detail in subsequent sections of this text, the design consultant and the contractor will be chosen using (separate) selection processes that provide maximum open and free competition; and that insure the selected party has the capability, knowledge, and understanding to fulfill their respective roles in completing the remedial action.

One of the primary functions of the County is to provide services, such as roadways and sewers. As such, the County has demonstrated the ability on numerous occasions to manage large construction projects, including some projects costing more than that estimated for the Colbert Landfill remediation. However, since these projects have not been related to contamination

remediation, the selected design consultant will be required to have a demonstrated knowledge and understanding of CERCLA, and will be expected to facilitate remedial activities in accordance with CERCLA requirements.

CONSENT DECREE AND NATURE OF SETTLEMENT

An EPA PRP study resulted in notice letters being sent to 12 parties. Four of these parties were ultimately identified as PRPs. These include: the County, Key Tronic, the United States Department of Defense (the Air Force), and Alumax. A consent decree has been agreed to in principle between the Governments (EPA and Ecology), the County, and Key Tronic in July 1988. The Air Force has also settled with the Governments, the terms of which are embodied within a separate Consent Decree. Alumax has not agreed to execute the Consent Decree.

Key Tronic and the County have proposed a settlement in which the County will perform the remedy selected by EPA, as specified in the Scope of Work, and Key Tronic will pay the amount of $4,200,000 into a trust fund for remediation of the Colbert Landfill site (Trust Fund). Key Tronic's payments will be made under the schedule contained in Section VIII of the Consent Decree. The Air Force has agreed to pay $1,450,000 toward the remedial action. The County will contribute the remainder of the monies required to accomplish the remedial action (including EPA mixed funding, and State mixed funding and grants specified within the scope of work).

EPA has indicated an intent to cost-recover against non-settling PRPs if they (the PRPs) do not ultimately execute the Draft Colbert Landfill Consent Decree (Consent Decree).

Ecology has agreed to assist the County by contributing $660,000, which includes previously incurred Ecology expenses and claims against the Washington State Toxics Control Account under Chapter 70.105B (Washington Administrative Code). The County will also be eligible to apply for and may receive an unspecified amount of future State grant monies and State mixed funding.

The Consent Decree specifies that the remedy will be implemented by the County.

In accordance with the Consent Decree, the County seeks reimbursement for $1,400,000 from the Fund. The various funding sources for remediation of the Colbert Landfill site are presented in Table 2.

TABLE 2

FUNDING SOURCES FOR REMEDIATION OF THE COLBERT LANDFILL SITE

Source	Amount
Key Tronic	$4,200,000
U.S. Air Force	1,450,000
State of Washington	660,000
E.P.A.	1,400,000
Spokane County	6,290,000*

* Based on an estimated total remediation cost of $14,000,000

The consent decree (attached hereto as Appendix B) will be lodged with the United States District Court, District of Eastern

Washington. After the Consent Decree has been approved and entered by the Court, the County will be obligated to carry out its terms and to implement the remedy selected by EPA in its Record of Decision (ROD; EPA 1987) and specified in the Scope of Work. Moreover, the County fully intends to undertake and complete the clean-up of this site in a timely manner.

REMEDY

Background

Spokane County proposes to implement a performance-based pump, treat, and discharge approach for remediation of contaminated ground water emanating from the Colbert Landfill site. This is the remedy selected by the EPA in the ROD and specified in the Scope of Work. As discussed in the ROD, a number of treatment options are acceptable, provided the selected option meets an EPA approved performance criteria, as specified in the Scope of Work. Spokane County is proposing to implement the EPA-selected option, using air stripping for treatment. The pump and treat remedy is designed to:

- prevent further spread of contaminated ground water (in the south and west) in two aquifers by installing and operating interception wells;
- remove contaminated materials (in the east) which have entered the aquifers and are contributing to the contamination plume, by installing and operating extraction wells in the area where the plumes originate;

- reduce the toxicity, mobility, and volume of the contaminants by treating all extracted ground water from both interception and extraction wells; and
- provide an alternate water supply system to any residents deprived of their domestic supply due to demonstrated contamination from the landfill or due to the action of the extraction or interception systems.

The selected remedy is based on the RI/FS, which examined several remedial options including:

- no action;
- alternate water supply;
- point of entry treatment; and
- ground water extraction, treatment, and discharge (using various technologies for each), plus an expanded water system.

Each of these alternatives was considered separately in three geographic portions of the site:

- the south area, where a contaminant plume is advancing to the south in the upper aquifer;
- the west area, where a contaminant plume in the lower aquifer is the major concern; and
- the east area, where the plumes appear to originate.

About 90 different technologies were screened and evaluated during the feasibility study. As a result of this analysis, 26 remedial alternatives were carried through a detailed evaluation using the EPA's 1985 RI/FS factors (EPA 1985): 12 for the south area, and 7 each for the west and east areas.

Selected Remedy

The remedy selected by the EPA in the ROD, as specified in the Scope of Work, includes the following components:

- in the south area, a series of extraction wells will be installed at the southern (downgradient) edge of the contaminant plume to intercept the contaminant plume in the upper aquifer;
- in the west area, a series of extraction wells will be installed to minimize future westward migration of contamination in the lower aquifer; and
- in the east area, where the plume originates, extraction wells will be installed for contaminant source control in the lower aquifer.

Contaminated ground water will be extracted using deep wells. All three systems will be designed to treat extracted water to the Scope of Work specified performance standards employing air stripping as the method of treatment. Options for disposal of treated water include discharge to the Little Spokane River (all systems), subsurface recharge (south and east systems), and discharge to Deep Creek (south system). Each of the extraction systems will include a comprehensive ground water monitoring program designed to evaluate system effectiveness. The extraction, treatment, discharge, and monitoring programs are described in detail in the Scope of Work. Additional related remedial action components, also specified in the Scope of Work, include:

- closure of the Colbert Landfill;
- comprehensive ground water supply well monitoring program and alternate water supply plan; and
- institutional controls on the future use of ground water in the area.

The remedial action will be implemented in phases. Phase I is designed to better characterize contaminant distribution and site geohydrology. Following completion of the Phase I investigation, design of the (Phase II) remedial action will be accomplished. The ROD provides for a performance-based design, allowing flexibility in the remedial approach. Specific performance criteria were presented in the ROD (Table 1 Performance Standards) and have been further refined in the Scope of Work (Tables IV-1 and V-1). The Scope of Work specifies the bases for design, the design criteria, and criteria for adjustment and modification of the remedial action if the design criteria are exceeded during operation. Thus, the Scope of Work specifies the bases for remedial action design.

Applicable and Relevant Standards

The EPA has evaluated the pump, treat, and discharge remedial approach and determined that it adequately protects human health and the environment and complies with applicable or relevant and appropriate public health or environmental requirements (ARARs). As specified in the ROD, the laws and regulations of concern include:

- Resource Conservation and Recovery Act (RCRA, 42 USC 6901); RCRA regulations (40 CFR 261 to 280); Washington State

Dangerous Waste Regulations (WAC 173-303); Minimum Functional Standards for Solid Waste Handling (WAC 173-304).

The selected remedy prevents further spread of ground water contamination and constitutes a Corrective Action program as specified in 40 CFR 264.100 and WAC 173-303-645(11). Closure of Colbert Landfill to State Minimum Functional Standards will be evaluated to ensure consistency with RCRA landfill closure standards.

- Safe Drinking Water Act (SDWA, 42 USC 300); Primary Drinking Water Standards (40 CFR 141).

The selected remedy prevents exposing the public to drinking water which exceeds the Maximum Concentrations Levels.

- Clean Water Act (CWA, 33 USC 1251); National Pollution Discharge Elimination System (NPDES, 40 CFR 122); NPDES Permit Program (WAC 173-220).

The selected remedy treats the extracted water before discharge to surface water. Other, mainly procedural, aspects of the NPDES Permit system will be met during the design phase. Although not actually required, it is the intent of Ecology to issue a permit.

- Rules and Regulations of the State Board of Health Regarding Public Water Systems (WAC 248-54).

Enhancements to the alternate water supply system, in order to supply all residences that may require these supplies, as

specified in the Scope of Work will be in conformance with these regulations.

Since the remedial action will implement a ROD selected remedy and a public comment period was required as part of the ROD process, the requirement for adequate notice and opportunity for public comment on the proposed remedy has been fulfilled.

DEVELOPMENT OF THE DESIGN PACKAGE

Consultant Selection

A consultant will be responsible for developing the remedial action pilot study and design for the project. Selection of the consultant will be based on the demonstrated competence and qualifications of prospective consultants to perform the required services at a fair and reasonable price. The process of consultant selection was initiated on February 8, 1988, when Spokane County advertised a Request for Professional Qualifications (RFQ). In response, nine firms submitted a Statement of Professional Qualifications (SOQ). The SOQ's were evaluated and a short-list of the five best qualified firms was identified based on the following criteria:

- History of firm
- Project considerations
- Past experience on similar projects
- Expertise of project team
- Project management approach and philosophy
- Community relations experience

The next step in the selection process will be to issue a Request for Proposal (RFP) to the short-listed firms, which will be accomplished following lodging of the Consent Decree. The criteria for final selection of the design consultant are still under development. However, appropriate criteria will be selected to ensure that the retained firm has the capability, knowledge, and understanding of the project required to successfully fulfill their obligations as design consultant.

A copy of the ROD, Draft Consent Decree, and Scope of Work will be provided to each short-listed firm for use during proposal preparation. Proposals will be evaluated and the most qualified firms will be ranked in order of qualification. This process typically requires 60 to 90 days. As a "Local Agency", the County must meet Washington State Regulations for Contracts for Architectural and Engineering Services, as set forth in the Revised Code of Washington (RCW 39.80). A copy of these regulations is included in Appendix D. The consultant selection criteria will also meet federal procurement guidelines (40 CFR Part 33), in particular Section 33.525 (optional selection procedure for negotiation and award of subagreements for architectural and engineering services). Upon selection of the most highly qualified firm, the County will attempt to negotiate a design contract with that firm. If the County is unable to negotiate a fair and reasonable price with the most highly qualified firm, it will begin negotiations with the next qualified firm. Once a contract is negotiated and executed, implementation of the Scope of Work will begin.

Design Elements

Phase I, which is intended to better characterize contaminant distribution and site geohydrology for the Phase II interception system design, will be developed on the RI/FS and the ROD, as specified in the Scope of Work. Components of the Phase I design, as specified in the Scope of Work, for each project area include:

- South System: Installation of a pilot ground water extraction and treatment system; installation of a ground water monitoring system to identify the location of the contaminant plume and assess the performance of the pilot system; assessment of treated water discharge management options; and definition of the Phase II - South ground water interception and treatment system;
- West System: Installation of a pilot ground water extraction and treatment system; installation of a ground water monitoring system to identify vertical and horizontal hydraulic gradients, determine the current location and distribution of the contaminant plume, and assess the performance of the pilot extraction system; assessment of treated water discharge management options; and definition of a Phase II - West ground water interception and treatment system; and
- East System: Installation of two pilot ground water extraction wells and a common treatment system; installation of a ground water monitoring system to improve definition of the location of the contaminant plume and assess the performance

of the pilot systems; assessment of treated water discharge management options; and definition of the Phase II - East ground water extraction and treatment system.

As specified in the Scope of Work, all work accomplished during Phase I will be performed in accordance with work plans subject to the review and approval of the EPA. The following Phase I work plans will be provided:

- Health and Safety Plan;
- Quality Assurance Project Plan;
- Phase I Pilot Well Plan;
- Phase I Ground Water Monitoring Plan; and
- Phase I Treatment and Discharge Plan.

Phase I progress reports will be submitted for EPA review, either monthly or at the completion of major project milestones. The activities accomplished during Phase I, conclusions resulting from these Phase I activities, and an assessment of the impact of these conclusions on the selected remedial action will be presented for EPA review in the Phase I Engineering Report.

Following completion of the Phase I investigation, design of the remedial action (Phase II) will be accomplished. In the Phase II design, the consultant will develop the final design for the extraction, treatment, discharge, and monitoring systems for the south, west, and east project areas.

Preliminary remedial action design will be accomplished as part of the Phase II work plan preparation for the various remedial action components. Phase II Work Plans will include:

- Phase II Extraction Well Plan;
- Phase II Ground Water Monitoring Plan; and
- Phase II Treatment and Discharge Plan.

Peripherally related work plans that may be submitted at the same time as the Phase II work plans include:

- Landfill Closure Plan;
- Alternative Water Supply Plan; and
- Plan for Institutional Controls.

The County understands that some work plan components may require more EPA review than others if significant design modifications are to be avoided. Consequently, some key components will be submitted for EPA review early on in the design process. Following Government review of the work plans, Phase II Plans and Specifications will be prepared and submitted for Government review at the 30, 60, and 90 percent completion stages to complete the remedial action design package.

Schedule

Spokane County intends to accomplish the design and construction of the remedial action in a timely manner. As specified in Section XI of the Scope of Work, a schedule for submission of detailed work plans and additional documents will be submitted within two months from entry of the Consent Decree. The schedule will identify specifically when the Phase I work plans, Health and Safety Plan, Quality Assurance Project Plan, Phase I Engineering Report, and Phase I progress reports will be delivered. It will also describe the bases for establishing a

schedule for the Landfill Closure Plan, Alternative Water Supply Plan, Plan for Institutional Controls, and Phase II Progress Reports. The EPA will be kept informed of project activities through the submittal of progress reports and, if necessary, through project meetings with appropriate County representatives.

A final schedule cannot be developed until certain legal aspects (such as entry of the Consent Decree) are completed and additional (Phase I) data are collected and analyzed. However, a preliminary (non-binding) schedule of major milestone events has been prepared for this document and is presented in the Cost Data section of this document in Table 3.

Sufficient data are not available to accurately estimate the length of time to complete the remedial action. Best estimates to date indicate that it could take thirty years or longer to meet the presently established performance criteria.

CONSTRUCTION OF THE REMEDY

The construction of the remedy (Phase II) will consist of three interrelated, and possibly overlapping, ground water extraction, treatment, and discharge systems (south, west, and east). The ground water extraction systems will each consist of several deep wells, serviced by submersible or turbine pumps and connected to the treatment system(s) by a tight-line header assembly. The treatment system(s) will consist of one or more air stripping units set on a concrete slab foundation, with appropriate utility connections for electricity and (possibly) natural gas. The need for stripping tower air abatement will be

assessed as specified in Section V.D of the Scope of Work. Treatment system effluent will be conveyed to the discharge point(s) by pipeline, with appropriate outfall structure(s) constructed to minimize erosion and promote dispersion. To the extent practicable, system components (wells, header assemblies, discharge lines, etc.) will be located below ground to minimize damage from freezing and vandalism, and to mitigate the impact of the remedial action on the local landscape.

These components will be constructed based on the Phase II Plans and Specifications (see Section XI of the Scope of Work), which will be developed from the data generated during the Phase I investigation and pilot studies. Although some of the remedial components (such as the treatment system(s)) could be designed based on available information, the use of Phase I site characterization data and observations of pilot system performance should provide a more efficient, cost-effective design.

A construction quality assurance/quality control (QA/QC) plan will be developed by the design consultant and submitted before construction begins. Methods to assure material quality and proper construction techniques will be developed and incorporated into the construction QA/QC plan. The design consultant will provide construction management, construction inspection, design support, and shop drawing review services during construction. This will ensure adherence to the QA/QC plan. Appropriate performance bonds, as specified in the final bid documents, will be required.

The County intends to use contracting practices that will provide maximum open and free competition and that will not unduly restrict or eliminate competition. Contractor selection for construction of the (Phase II) remedial action will be accomplished in accordance with statutory procedures in awarding contracts (RCW 36.32.250), using standard Spokane County procurement procedures (these statutory requirements are presented in Appendix D). Contractor selection will also be conducted in accordance with federal procurement guidelines (40 CFR, part 33). The invitation for bids will include the selection criteria and will be advertised in the legally-designated newspaper for Spokane County, a locally-circulated newspaper, and a regionally-circulated newspaper. Contractor scope of work and recommended alternatives will be reviewed by the County's design consultant. Contractor bids will be reviewed and verified, and the construction awarded to the lowest responsive responsible bidder. Following completion of all the required legal documents and public notice, a contract will be signed between the County and the Contractor, and construction of the remedial action (Phase II) can be initiated. It is presently anticipated that the contract will be based on a fixed price rather than cost reimbursement.

Construction of the remedial action will be accomplished based on Phase II Work Plans and Phase II Plans and Specifications. A Phase II construction schedule will be developed in conjunction with the schedule for submittal of Phase II deliverables discussed in Section XI of the Scope of Work.

Phase II progress reports will be submitted to EPA for review. These progress reports will be submitted either periodically or at the completion of major Phase II construction milestones.

Following completion of construction, a Phase II Construction Documentation Report will be submitted to the EPA. This report will document Phase II construction activities, including any significant variations from, or modifications to, the Phase II Plans and Specifications or Work Plans.

Phase II construction oversight will be accomplished by the County's design consultant and/or other County representatives. To provide verification of compliance with Phase II Plans and Specifications, oversight will include field monitoring of construction and review of contractor-selected materials and construction methods. A construction manager will be designated by the County to be a focus for oversight activities and to ensure that the intent of the Phase II Plans and Specifications are being followed and the construction schedule is being achieved.

MANAGEMENT AND OPERATION OF THE PROJECT

During remediation, numerous activities involving various different kinds of skilled personnel will be undertaken at the same time. As a result of the complexity of this project, complete and effective project management is essential for proper execution. Thus, a well-defined management structure, as described below, will be established at the beginning of the project.

Project management for the Colbert Landfill remediation will be administered by the County, although many of the technically related management tasks will be accomplished by the design consultant. The County has managed a number of large projects, including a $120,000,000 waste to energy incinerator (presently under design) and $40,000,000 of sewer line construction projects. Thus, the County has a demonstrated knowledge and capability to manage projects of this size.

Spokane County will designate a County employee as Project Coordinator. The Project Coordinator will have overall responsibility for project supervision throughout remediation. The Project Coordinator will be a professional engineer with qualifications necessary for satisfactory performance of the job, including experience in managing large construction projects.

The Project Coordinator's responsibilities will include assessment of overall project progress and coordination; interaction with the EPA project manager, other federal and state regulatory agencies, other interested parties, and local citizen groups on behalf of the County; and the undertaking of any community relation activities that the County agrees to perform at the request of the United States and the State of Washington. The Project Coordinator will be responsible for budget review and direct coordination with the design consultant.

The Project Coordinator will also oversee the activity of several entities responsible for the individual segments of the remedial program, although it is anticipated that a single design consultant firm will be retained to provide management and engineering expertise for the following tasks:

- Phase I Investigation and Pilot Studies;
- Preparation of Work Plans and other Deliverables (see Scope of Work, Section XI); and
- Consulting/Design Services
  - design of extraction, treatment, and discharge systems,
  - monitoring evaluation,
  - construction oversight,
  - facilities start-up,
  - facilities operations and maintenance plans.

A single point of contact will be established within the design consultant firm to facilitate communications with the Project Coordinator. Individual Task Managers will be assigned to handle internal communications and provide technical oversight and quality control.

Contractors will be retained to implement Phase II of the Remedial Action. It may also be necessary to retain contractors for construction of some of the Phase I components and to provide occasional O&M services for the extraction, treatment, and discharge system. However, the County plans on using their own personnel to operate the facilities based on the facilities operations and maintenance plans to be developed by the design consultant.

Because this project is anticipated to generate a large volume of data, a computerized data management system will be established to effectively store and retrieve the necessary information. Data will be provided from all onsite task func-

tions to this system, and the system will be available for all tasks.

The management system will provide cost-effective project direction by minimizing the number of decision makers and streamlining communications. It will assure that the Project Coordinator is able to provide adequate project oversight and serve as a focus for remedial activities, while allowing the design consultant to implement the remedial action in a timely and cost-effective manner.

EPA oversight is to be provided by the designated EPA project manager. The EPA project manager will be kept informed of relevant site activities by the County, or their designated representative. The EPA project manager can use this information to determine the appropriate level of EPA oversight required for various site activities.

COST DATA

Because it is ultimately responsible for between 30 to 50 percent of the total estimated costs, Spokane County has a strong incentive to conduct the remedy at this site in a cost-effective and efficient manner. Thus, the County intends to monitor closely the progress of remediation and the costs incurred.

A total project cost of about $9.4 million (present worth) was estimated in the FS. However, the County and the EPA consider a cost for remedial action of about $14 million more reasonable than the $9.4 million estimate contained in the FS. This upward adjustment in cost from $9.4 million to about $14 million is based on the following:

o	FS estimate	$9.4 million
o	Past costs	$1.7 million
o	Phase I	$2.0 million
o	10% Contingency	$1.1 million
	Total	$14.2 million

Table 3 presents the proposed construction sequence and summary cost estimates for the remedial action. Initiation of remedial activities (first year) is assumed to start once the Consent Decree has been entered with the court. The timing of remedial activities presented in this table should be considered preliminary and is intended solely for the purposes of this request for preauthorization. As specified in Section XI of the Scope of Work, a schedule for work plans and other deliverables (which will be based upon a schedule for completion of project tasks) will be submitted within two months of entry of the Consent Decree by the County. However, since this schedule is subject to EPA approval, the EPA has sufficient assurance that the project will be accomplished in a timely manner.

The County's proposed procurement practices were described in the Construction of the Remedy section of this document. These practices will ensure cost-effective choice of general contractors. Proper oversight and management of the project will also ensure efficient remediation.

ASSURANCE OF STATE COOPERATION AND O/M ARRANGEMENTS

The State of Washington will be a party to the Consent Decree in this matter (which includes the Scope of Work). Addi-

TABLE 3

PROPOSED WORK SEQUENCE, INCLUDING COST ESTIMATES:

Description of Work	Cost
1st Year	$2,000,000
Data review/design Phase I Construction of pilot systems (Phase I) Additional monitoring wells Air monitoring Alternate water supply	
2nd Year	$1,600,000
Air monitoring Phase I evaluation and report Start Phase II design	
3rd Year	$5,600,000
Design Phase II Start Phase II construction Begin start-up Additional monitoring wells	
4th Year	$3,000,000*
Complete Phase II construction Continue start-up and verification Additional monitoring wells Begin operation and maintenance	
5th Year	$ 200,000
Complete start-up and verification Operation and maintenance Periodic evaluation and reports	
ALL FOLLOWING YEARS (total cost, present worth)	$2,000,000

* Includes payment for RI/FS.

tionally, the State will assist the County in funding the remedial action through grant monies and State mixed funding. The State of Washington maintains that such participation constitutes agreement as to the appropriateness of the remedy and assurance of State cooperation.

The County plans on providing for long-term operation and maintenance of the site. A remedial action fund is to be established to provide operating capital for the design, construction, operation, and maintenance of the remedial action. Contributions to the fund are to be made by the PRPs on a schedule of annual payments designed to ensure sufficient monies are available when needed. The proposed schedule for payment is provided for in Section VIII, the Obligations of Consenting Parties, within the Consent Decree (Appendix B).

SCHEDULE FOR AND DOCUMENTATION OF CLAIMS AGAINST THE FUND

As a part of developing cost estimates for the remedy at this site, the County and its consultant have analyzed how the costs would be incurred over time. The goal of this analysis was to ensure that the remedial action trust will, at all times, have sufficient funds for the work to proceed without interruption. Accordingly, the PRPs (the County and Key Tronic) have proposed a schedule of payments in accordance with the Consent Decree. In addition, the County proposes that reimbursement from the Fund be scheduled. The schedule for reimbursement calls for payments from the Fund at those points during the work at which several Tasks will have been completed and at completion of

system start-up. The schedule is set out in more detail in Table 4.

Although the present cost estimate of $14 million represents the best estimate based on available data, EPA and the County recognize that costs may increase due to the uncertainties regarding subsurface conditions. Because of these uncertainties, the parties have agreed that if it becomes necessary to modify the scope of the actions that EPA authorizes pursuant to this request, the County may submit a revised application for preauthorization to reflect these modifications. Any such modifications will be structured to reflect an EPA mixed funding contribution totaling 10 percent of the design, construction, and startup costs.

WORKER TRAINING, HEALTH AND SAFETY

As specified in Section XI of the Scope of Work, a Health and Safety Project Work Plan will be developed for this site. This health and safety plan will be developed by the design consultant to protect individuals from the hazards that might be encountered during remedial action activities at the site. It will be developed based on the toxicological properties of the contaminants present at the site, as well as consideration of relevant government regulations and guidances, including "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities" (U.S. Department of Health and Human Services 1985), and EPA's "Standard Operating Safety Guides" (Nov. 1984 FOAG). The Health and Safety Plan, as with the other work plans discussed in Section XI of the Scope of Work, requires the

TABLE 4

SCHEDULE OF EPA PAYMENTS FOR THE
COLBERT LANDFILL REMEDIATION

Payment No.	Amount	Schedule*
1	$250,000	Completion of Phase I, including submittal of the Phase I Engineering Report (within about 2 years of entry of the Consent Decree)
2	$670,000	Completion of construction of one or more of the (south, east, or west) Phase II systems (within about 3 years of entry of the Consent Decree)
3	$480,000	Completion of Startup for the three Phase II systems (within about 4 years of entry of the Consent Decree)

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* Specific tasks are more thoroughly described in Table 2 of this document. Payments are to be made following completion of tasks, with documentation by appropriate major milestone reports.

approval of the EPA prior to implementation. Work will not be initiated at the site (Phase I or Phase II) until an EPA-approved health and safety plan has been implemented.

COMMUNITY RELATIONS

The County recognizes that the community should be kept informed during remediation and that community concerns should be considered to the extent practicable. Although the County intends to maintain an active role, Section XXIX of the Consent Decree specifies that the Government Plaintiffs (EPA and Ecology) will be the lead for community relations, while the County will be responsible for helping to coordinate and implement community relations for the site.

The County will (at a minimum) assist in:

- distribution of fact sheets;
- coordination of public meetings;
- provide appropriate County representatives for public meetings and presentations; and
- supply of appropriate documents and information for information repositories.

The County is ready and willing to implement any part of the Community Relations Plan which EPA and Ecology deem "appropriate." The County will cooperate with and support the Governments' community relations effort, and will provide any information needed. Additionally, the County will undertake other community relations activities on request from the EPA and Ecology.

MONITORING AND DOCUMENTATION

Spokane County recognizes that, pursuant to Section 300.69 of the NCP, documentation must be maintained for all phases of response action at this site. The remedial action has not progressed to the point where a detailed documentation plan has been developed. However, appropriate documentation of remedial activity will be accomplished through the submittal of work plans and other deliverables, as specified in Section XI of the Scope of Work. Specifically, documentation will include:

- Health and Safety Plan,
- Quality Assurance Project Plan,
- Phase I Pilot Well Plan,
- Phase I Ground Water Monitoring Plan,
- Phase I Treatment and Discharge Plan,
- Phase II Extraction Well Plan,
- Phase II Ground Water Monitoring Plan,
- Phase II Treatment and Discharge Plan,
- Landfill Closure Plan,
- Alternative Water Supply Plan,
- Plan for Institutional Controls,
- Phase I Engineering Report,
- Phase II Plans and Specifications,
- Phase II Construction Documentation Report; and
- Phase I and Phase II Progress Reports.

The Quality Assurance Project Plan and the various work plans will provide documentation of procedures and practices, construction methodology, and material requirements to be

followed during accomplishment of all aspects of the remedial action. Phase II Plans and Specifications will document the final remedial design; while the Phase II Construction Documentation Report will document the as-built status of the remedial action following completion of construction.

Progress reports will be issued by the County or their design consultant periodically throughout the remedial action. As specified in the Consent Decree, progress reports will be submitted monthly during periods of construction and quarterly thereafter.

The County will maintain all records -- including sampling and QA/QC reports -- generated as a part of the remedial efforts for a minimum of ten years following termination of the Consent Decree.

CONCLUSIONS

The information presented in this Request for Preauthorization has been prepared to meet the prior notification and prior approval requirements of Section 300.25(d) of the NCP for EPA mixed funding. Due to the present status of the remedial action, some of the informational requests outlined within the EPA Preauthorization Guidance Document (EPA 1988) could not be addressed in detail. However, the attached Scope of Work documents the EPA's review and approval authority for specific aspects of the remedial action for which detailed information is not presently available.

EPA mixed funding is an integral part of the Consent Decree negotiated between the EPA and Spokane County. Final agreement and lodging of the Consent Decree cannot be accomplished until this Request for Preauthorization has been reviewed and approved.

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Re: Colbert Landfill
Ref: CERCLA 88-004

DECISION DOCUMENT

PREAUTHORIZATION OF A CERCLA §111(a) CLAIM

Colbert Landfill Site - Spokane County, Washington

STATEMENT OF AUTHORITY

Section 111 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) authorizes the reimbursement of response costs incurred in carrying out the National Contingency Plan (NCP). Section 112 of CERCLA directs the President to establish the forms and procedures for filing claims against the Hazardous Substances Superfund (the Superfund or the Fund). Executive Order 12580 delegates to the Environmental Protection Agency (EPA) the responsibility for such claims. Executive Order 12580 delegates to EPA the authority to reach settlements pursuant to section 122(b) of CERCLA. The Director of the Office of Emergency and Remedial Response (OERR) is delegated authority to evaluate and make determinations regarding claims (EPA Delegation 14-9, September 13, 1987 and EPA Redelegation 14-9 "Claims Asserted Against the Fund," May 25, 1988).

BACKGROUND ON THE SITE

On September 29, 1987, Robie G. Russell, EPA Regional Administrator for Region X, signed the Record of Decision (ROD) for the Colbert Landfill site (hereinafter referred to as the "Site") (Attachment 1). The ROD selected an interim final remedial action for the site that addresses management of migration of contamination using a groundwater interception system and attempts source control through extraction in areas of highest contaminant concentrations. The remedy is considered to be interim final because the extraction and interception well system will be in operation for decades before remediation is complete and changes in the selected remedial action may be required during that period. In summary, the remedy provides for an alternative drinking water supply, installation of additional monitoring wells to define the plume(s), preliminary selection of the types of treatment systems for each geographic portion of the site, treatability studies for each treatment method, preliminary and final designs, installation of the wells and construction of the treatment system and discharge structure, operation of the systems, monitoring and testing, and development and implementation of institutional controls.

In May 1987, EPA provided members of the public, including the group of potentially responsible parties ("PRPs"), with an opportunity to comment on the remedial investigation and feasibility study (RI/FS) of the site and in the selection of the preferred

alternative for cleanup. On January 8, 1988, EPA, pursuant to section 122 of CERCLA, issued special notice letters to three PRPs and notice letters to nine others. In May 1988, EPA and representatives for Spokane County, Key Tronics, Inc., and the U.S. Air Force reached agreement in principle. The agreement provided that two of the PRPs would pay a portion of the cost into a trust fund and that Spokane County would carry out the remedy selected by EPA, and that EPA would reimburse Spokane County for a portion of the costs of implementing the remedy.

On September 12, 1988, Spokane County submitted a formal request for preauthorization as required by section 300.25(d) of the National Contingency Plan (NCP) (40 CFR Part 300).

A consent decree between EPA and Spokane County and Key Tronics is being executed simultaneously with this Decision Document. The Scope of Work, which is appended to the Consent Decree, will be used to implement the remedy selected in the ROD and summarized above.

FINDINGS

Preauthorization (i.e., EPA's prior approval to submit a claim against the Superfund for reasonable and necessary response costs incurred as a result of carrying out the NCP) represents the Agency's commitment that if the response action is conducted in accordance with the preauthorization and costs are reasonable and necessary, reimbursement, subject to any maximum amount of money set forth in the preauthorization decision document, will be had from the Superfund. Preauthorization is a discretionary action by the Agency taken on the basis of certain determinations.

EPA has determined based on its evaluation of relevant documents and Spokane County's request for preauthorization, pursuant to section 300.25(d) of the NCP, that:

(1) A release or potential release of hazardous substances warranting a response under section 300.68 of the NCP exists at the Colbert Landfill site

(2) Spokane County has agreed to implement the cost-effective remedy selected by EPA to address the threat posed by the release at the Site;

(3) Spokane County has demonstrated engineering expertise and a knowledge of the NCP and attendant guidance;

(4) The activities proposed by Spokane County, when supplemented by the terms and conditions contained herein, are consistent with the NCP; and

(5) Spokane County has demonstrated evidence of State cooperation.

In summary, while EPA does not accept as fact all of the statements contained in Spokane County's preauthorization request, the preauthorization request demonstrates a knowledge of relevant NCP provisions and EPA guidance for the conduct of a remedial action. The Consent Decree, the terms and conditions of this preauthorization and, in technical matters, the Scope of Work shall govern the conduct of response activities. In the event of any ambiguity or inconsistency between the Request for Preauthorization and this Preauthorization Decision Document with regard to claims against the Fund, the Preauthorization Decision Document and the Consent Decree shall govern. As stated above, in technical matters, the Scope of Work and the Work Plan, when developed by Spokane County and approved by EPA, shall govern the conduct of response activities.

DECISION AND TERMS AND CONDITIONS

I preauthorize Spokane County to submit a claim(s) against the Superfund for an amount not to exceed the lesser of one million four hundred thousand dollars ($1,400,000), or eleven and one half percent (11.5%) of reasonable and necessary eligible costs, unless such amount is adjusted by EPA pursuant to paragraph 13 below, incurred for remedial design and remedial construction in connection with the remedy set forth in EPA's Record of Decision for the Colbert Landfill site (Exhibit 1 hereto) as specified in the Scope of Work (which is an attachment to the Consent Decree) and the Work Plan when approved by EPA, subject to the terms and conditions set forth below. In the event of any ambiguity or inconsistency between the terms and conditions and the discussion, the terms and conditions shall govern.

1) Spokane County, as provide in the Scope of Work attached to the Consent Decree, shall develop and implement a worker health and safety plan which complies with OSHA Safety and Health Standards: Hazardous Waste Operations and Emergency Response (29 CFR Part 1910.120; 51 Federal Register 45654 et seq., December 19, 1986.

   Discussion:

   Spokane County's request for preauthorization fully addresses plans for worker health and safety. As a term and condition of preauthorization, Spokane County shall develop a worker health and safety plan which will be reviewed by EPA. The health and safety plan when approved by EPA shall satisfy the requirements of OSHA Safety and Health Standards: Hazardous Waste Operations and Emergency Response (29 CFR Part 1910.120, 51 Federal Register 45654 et seq. December 19, 1986). Spokane County will implement the plan as approved or subsequently revised.

2) Pursuant to Section VII of the Consent Decree, the Scope of Work requires that Spokane County submit plans (i.e., Work Plan) for approval. The Work Plan shall including a plan

for air monitoring during air stripping.

3) Spokane County shall develop a remedial design in accordance with the Scope of Work and EPA's Remedial Design and Remedial Action Guidance. The remedial design to be developed by Spokane County as specified in the Scope of Work shall insure that all actions undertaken by Spokane County shall be under taken in accordance with the the requirements of all applicable State and Federal laws and regulations and all "applicable" or "relevant and appropriate" Federal and State environmental requirements as identified pursuant to the ROD and pursuant to § 121 of CERCLA. In accordance with Section XXI of the Consent Decree, all activities undertaken by Spokane County off-site shall in addition comply with all required permits, unless an exemption from the requirements of such permits is granted according to law.

4) Modification of remedial design elements or performance requirements contained in the remedial design report shall require approval by the Regional Administrator or his/her designee.

5) Spokane County shall provide for long-term site management (i.e., operation and maintenance) of the Site sufficient to ensure continuing protection of human health and the environment. The costs of operation and maintenance are not eligible for reimbursement. The Work Plan when developed and approved will differentiate between operation and maintenance activities and pump and treatment activities.

6) Spokane County shall develop and implement for remedial design and remedial action:

   a) Procedures which provide adequate public notice of solicitations for offers or bids on contracts. Solicitations must include the evaluation methods and the criteria for contractor selection. EPA shall have the right to disapprove the selection of the architect or engineer and the construction firm(s) selected by the County.

   b) Procedures for procurement transactions which provide maximum open and free competition; do not unduly restrict or eliminate competition; and provide for the award of contracts to the lowest, responsive, responsible bidder, where the selection can be made principally on the basis of price. Spokane County and its contractors shall use free and open competition for supplies, services and construction.

   c) Contracts for construction which include a Differing Site Conditions clause equivalent to that found at 40 CFR §33.1030(4).

d) Procedures to settle and satisfactorily resolve, in accordance with sound business judgment and good administrative practice, all contractual and administrative issues arising out of preauthorized actions. Spokane County shall issue invitations for bids or requests for proposals; select contractors; approve subcontractors; manage contracts in a manner to minimize change orders and contractor claims; resolve protests, claims, and other procurement related disputes; and handle subcontracts to assure that work is performed in accordance with terms, conditions and specifications of contracts.

e) A change order management policy and procedure in accordance with EPA's guidance on State Procurement Under Remedial Cooperative Agreements (OSWER Directive 9375.1-11, June 1988).

f) Detailed quality assurance/quality control plans for remedial design activities (e.g., sampling, monitoring, etc.) and construction activities (e.g., sampling, operations, etc.).

g) A financial management system that consistently applies generally accepted accounting principles and practices and includes an accurate, current and complete accounting of all financial transactions for the project, complete with supporting documents, and a systematic method to resolve audit findings and recommendations.

7) EPA shall have the right to disapprove the project manager selected by Spokane County. Spokane County shall submit to EPA a justification to perform project management in-house or contract it out. The justification shall take into account cost, time, and reliability of in-house versus contracted project management.

Discussion:

Spokane County's request for preauthorization did not contain a justification for its proposal to utilize an in-house project manager as requested in EPA's Preauthorization Guidance (Reasonable Cost, page 7).

8) Spokane County shall advise EPA prior to the issuance of a solicitation for construction of the remedy using other than a fixed price contract.

Discussion:

Spokane County's request for preauthorization stated that it anticipates that the contract for construction of Phase II will be based on a fixed price rather than cost reimbursement. EPA's Preauthorization Guidance

(Reasonable Cost, page 7) requests an explanation if the applicant proposes to use other than the formal advertising/sealed bidding procurement method which results in a fixed price contract awarded to the lowest responsive, responsible bidder for construction. Therefore, as a term and condition of preauthorization, Spokane County shall notify EPA prior to issuing a solicitation for construction of Phase II using a negotiated procurement.

9) Spokane County shall provide EPA and its agents with site access as set forth in Section XXII of the Consent Decree and shall immediately notify the Agency if they are unable to initiate or complete the preauthorized response action.

10) In submitting claims to the Superfund, Spokane County shall:

a) Document that response activities were preauthorized by EPA;

b) Substantiate all claimed costs through a financial management system as described in paragraph 6(g); and

c) Document that all claimed costs were eligible for reimbursement pursuant to this preauthorization and are reasonable and necessary in accordance with the appropriate Federal cost principles.

Discussion:

See paragraph 15 for additional references to the Federal cost principles.

11) Spokane County shall maintain all cost documentation and any records relating to its claim for a period of not less than six years from the date on which the final claim has been submitted to the Superfund, and shall provide EPA with access to their records. At the end of the six-year period, Spokane County shall notify EPA of the location of all records. Spokane County shall allow EPA the opportunity to take possession of the records before they are destroyed; this requirement is in addition to the record retention requirement located at Section XIII of the Consent Decree.

12) Claims may be submitted against the Superfund only while the Spokane County is in compliance with the terms of the Consent Decree and no more frequently than intervals of:

(a) completion of Phase II Design (approximately 3 years);

(b) completion of Construction (approximately 4 years); and

(c) completion of Startup and Verification (approximately 5 years);

13) If the Spokane County finds it necessary to seek to modify the actions that EPA preauthorized, Spokane County may ~~may~~ submit to EPA a revised application for preauthorization. In addition, Spokane County may submit a revised application for preauthorization upon EPA's determination of the requirements for final closure of the Site. EPA will consider such an application for preauthorization in a timely manner and will subject to the availability of appropriated funds amend the maximum dollar amount for which Spokane County may submit claims to the Fund. The maximum amount for which Spokane County may submit claims will be determined according to the criteria used in approving the County's application for preauthorization and shall equal 11.5% of reasonable and necessary eligible costs to implement the the approved remedy.

14) Claims shall be submitted to the Director, Office of Emergency and Remedial Response, EPA, Washington, D.C. EPA shall provide the appropriate form(s) for such claims.

15) EPA may adjust claims using the facilities and services of private insurance and claims adjusting organizations or Federal personnel. In making a determination whether costs are allowable, the claims adjuster will rely upon the appropriate Federal cost principles (non-profit organizations - OMB Circular A-122; profit making organizations - 48 CFR Subparts 31.1 and 31.2). Where additional costs are incurred due to acts or omissions by the County, payment of the claim will be adjusted accordingly. EPA may require Spokane County to submit any additional information needed to determine whether the actions taken were reasonable and necessary.

16) At least 60 days before filing a claim against the Fund for the remedial action, Spokane County shall present in writing all claims to any person known to Spokane County who may be liable under section 107 of CERCLA for response costs incurred in carrying out the Consent Decree. If the first claim was denied by the responsible party or not responded to, and EPA agrees that there is no reason to believe that subsequent claims would be honored by such responsible party, the denial of the first claim, or lack of response, shall be considered denial of every subsequent claim.

17) Payment of any claim shall be subject to Spokane County subrogating to the United States its rights as claimant to the extent to which its response costs are compensated from the Superfund. Further, Spokane County shall cooperate with any cost recovery action which may be initiated by the United States. The Spokane County and Spokane County's contractors shall furnish the personnel, services, documents, and materials needed to assist EPA in the collection of evidence to document work performed and costs expended by Spokane County or the

County's contractors at the Site in order to aid in cost recovery efforts. Assistance shall also include providing all requested assistance in the interpretation of evidence and costs and providing requested testimony. All of Spokane County's contracts for implementing the remedy shall include a specific requirement that the contractors agree to provide this cost recovery assistance.

18) Eligible costs are those costs incurred, consistent with the NCP, in carrying out the remedial action, subject to the following limitations:

a) Costs may be reimbursed only if incurred after the date of this preauthorization;

b) Costs may be reimbursed only for design and construction of the remedy at the Site as provided herein. Such costs shall not include any of the oversight costs incurred by EPA or the Department of Ecology for the State of Washington, investigatory costs, or past response costs that were incurred by EPA or the State of Washington prior to the effective date of the Consent Decree.

c) Costs incurred for long-term operation and maintenance, as described in paragraph 5, are not eligible for reimbursement from the Superfund.

d) Costs incurred for the payment of a person who is listed in the List of Parties Excluded From Federal Procurement or Non-Procurement, established pursuant to Executive Order 12549, May 26, 1988, at the time the contract is awarded shall not be eligible for reimbursement unless Spokane County obtains approval from EPA pursuant to 40 CFR Part 32 prior to incurring the obligation.

e) Costs incurred for the payment of contractor claims either through settlement of such claims or an award by a third party may be reimbursed from the Fund to the extent EPA determines that:

(i) the contractor claim arose from work within the scope of the contract at issue and the contract was for activities which were preauthorized;

(ii) the contractor claim is meritorious;

(iii) the contractor claim was not caused by the mismanagement of Spokane County;

(iv) the contractor claim was not caused by Spokane County's vicarious liability for the improper actions of others;

(v) the claimed amount is reasonable and necessary;

(vi) the claim for such costs is filed by Spokane County within 5 years of completion of the preauthorized activities; and

(vii) payment of such a claim will not result in total payments from the Fund in excess of the amount preauthorized.

Discussion:

"Contractor claim" means the disputed portion of a written demand or written assertion by any contractor who has contracted with Spokane County pursuant to the Consent Decree to perform the remedial action, seeking as a matter of right, the payment of money, adjustment, or interpretation of contract terms, or other relief, arising under or related to a contract, which has been finally rejected or not acted upon by Spokane County and which is subsequently settled by Spokane County or an award by a Third Party through the Disputes Clause of the contract document.

f) An award by a third party on a contractor claim should include:

(i) findings of fact;

(ii) conclusions of law;

(iii) allocation of responsibility for each issue;

(iv) basis for the amount of award; and

(v) the rationale for the decision.

g) Interest accrues on amounts due Spokane County pursuant to this agreement where EPA fails to pay the amount within sixty (60) days of EPA's receipt of a completed claim from Spokane County. A completed claim is a demand for a sum certain which includes all documentation required to substantiate the appropriateness of the amounts claimed. Where Spokane County submits a claim which is technically complete but for which EPA requires additional information in order to evaluate the amount claimed, interest will not accrue on the claim until sixty (60) days after EPA's receipt of the requested additional information. The rate of interest paid on a claim is the rate of interest on investments of the Superfund established by subchapter A of chapter 98 of the Internal Revenue Code of 1954.

h) For a period not to exceed 5 years from completion of startup and verification, costs incurred for restoration of ground water shall be eligible for recovery until EPA determines that the ground water contaminant levels have been reduced to the levels as prescribed in the ROD.

19) If any material statement or representation made in the application for preauthorization is false, misleading, misrepresented, or misstated and EPA relied upon such statement in making its decision, the preauthorization by EPA may be withdrawn following written notice to Spokane County. Disputes arising out of EPA's determination to withdraw its preauthorization shall be governed by Section XXVII of the Consent Decree. Criminal and other penalties may apply (see Exhibit 3).

20) The Superfund is not hereby obligated to reimburse Spokane County for subsequent remedial actions not covered by this preauthorization caused by failure of the original remedy if those actions are necessary as a result of the failure of Spokane County, their employees or agents, or any third party having a contractual relationship with Spokane County to properly perform activities under the Work Plan and any modification thereto approved by EPA and in conformance with the terms and conditions of this pre-authorization decision document. The foregoing shall not apply if the remedy fails for any other reason. EPA may require Spokane County to submit any additional information needed to determine whether the actions taken were in conformance with the Work Plan and were reasonable and necessary.

21) This preauthorization shall be effective as of the date of entry of the Consent Decree by the Court.

Henry L. Longest II 9/30/88

Henry L. Longest II — Date
Director, Office of
Emergency and Remedial Response

EXHIBITS

1. EPA Record of Decision for the Colbert Landfill Site
2. Consent Decree
3. Civil and Criminal Penalties

SUPPLEMENTAL MEMORANDUM IN SUPPORT
OF MOTION FOR ENTRY OF CONSENT DECREE

EXHIBIT F

VIII

ALTERNATIVE WATER SUPPLY

If any compound originating from the site is identified in any domestic water supply well in use prior to the date of entry of this Consent Decree, or installed in uncontaminated areas after entry of this Consent Decree, at a concentration exceeding the Performance Standards, a new sample shall be taken by the County within one week of receipt of the analysis of the first sample. The new sample shall be analyzed on an expedited schedule. If the second sample confirms that the concentrations exceed Performance Standards, the County will promptly provide an alternative drinking water supply source to the residence. At the County's discretion, the new water supply may include, but is not limited to, extension of existing wells to uncontaminated areas of the aquifer, supply of bottled water (on an interim basis), or connection of the affected residence to the Whitworth Water Supply System or an approved Class IV system. The County shall be responsible only to provide a drinking water supply to those impacted residences in an amount equal to the drinking water supply standards for residences established by the Department of Social and Health Services in effect at the time of entry of this Consent Decree, or the annual average production of the well, whichever is less.

If any compound originating from the site is identified in any domestic water supply well in use prior to the date of entry of this Consent Decree, or installed in uncontaminated areas after entry of this Consent Decree, at a concentration exceeding 65 percent of the Table IV-1 evaluation criteria, a new sample shall be taken by the County within one month of receipt of analysis of the first sample. The new sample shall be analyzed within one month. If the second sample confirms that the concentration exceeds the 65 percent level, that supply well shall be placed on a sampling frequency of once every month for a period of one year. The confirming sample and subsequent monthly samples (if required) will be analyzed in accordance with the procedures set forth in the applicable (Phase I or Phase II) groundwater monitoring work plan.

If the average concentration over that 12-month period exceeds 65 percent of any of the Table IV-1 evaluation criteria, the County will provide an alternate water supply to that residence. If the average concentration is below the 65 percent level, that well may be returned to the regular monitoring schedule. Without admitting any legal obligation to do so, the County will provide an alternate water supply to the following residences, if desired: (b) (6) [redacted] (b) (6) [redacted] (b) (6) [redacted]

In the event that operation of the Remedial Action adversely mpacts the yield of supply wells in use prior to the date of ntry of this Consent Decree, or installed in uncontaminated reas after entry of this Consent Decree, the County will itigate the impact. For this purpose, adverse impact is defined s a reduction in water supply to levels below the lesser of:

1. The discharge rate and total allowable annual volume defined by a valid water right, filed with the State of Washington with a priority date prior to entering of this Consent Decree.

   If water is being used without a valid water right, the user will only be entitled to mitigation with respect to the quantity defined by the laws of the State of Washington as being exempt from the filing requirements.

2. The capacity of the supply well in gallons per day.

In order to require the County to mitigate such adverse pacts, the following conditions must be met:

1. Access to the impacted well must be granted by the property owner to the County prior to and during the implementation of the Remedial Action. The County may, at its discretion: a) monitor water level elevations within the well; b) measure the well depth;
   c) accomplish a well capacity test; and/or
   d) accomplish any other tasks, procedures or tests deemed appropriate by the County or required by the Government Plaintiffs to evaluate the possible future impact of the Remedial Action.

2. In the event that the County chooses not to monitor a well and a claim is subsequently made by the property owner alleging adverse impact by the Remedial Action, the owner may be requested to sign an affidavit detailing the extent of the impact.

If it is determined that a supply well has been adversely impacted by the Remedial Action, the County may, at its discretion, elect to take any of the following actions:

1. Provide an alternative water supply;

2. Modify the operation of the extraction wells;

3. Modify the supply well system. Modifications may include repositioning of the pump or the addition of a pressurized storage tank;

APPENDIX B

Project Health and Safety Plan

Final Health and Safety Plan

Phase II Remedial Design/Remedial Action
Colbert Landfill
Spokane, Washington

August 17, 1992

Prepared for

Spokane County, Washington

Prepared by

Landau Associates, Inc.
P.O. Box 1029
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ADDENDUM 1[a]

TO HEALTH AND SAFETY PLAN
COLBERT LANDFILL
PHASE II RD/RA ACTIVITIES

NOVEMBER 20, 1992

1.0 INTRODUCTION

The purpose of this addendum to the existing Colbert Landfill RD/RA Health and Safety Plan (Landau Associates 1992) is to provide clarification of specific health and safety requirements for the field tasks associated with landfill closure design. These field tasks include excavation of areas of the landfill through the existing cover material to investigate cover thickness and the nature of underlying solid waste material. The requirements of the existing Colbert Landfill Health and Safety Plan apply to these tasks.

All individuals must read this addendum prior to participating in tasks related to this work. If any information presented in this addendum is unclear, the reader must contact the Site Safety Officer, the Landau Associates Field Coordinator, or the Landau Associates Project Manager for clarification prior to participating in any intrusive field activity. Once this addendum has been read and understood, the individual must sign on the last page of this addendum, and this signed form will be placed in the job file. A training session will be conducted prior to the initiation of this work to discuss this addendum.

2.0 DESCRIPTION OF SITE WORK

The depth of the existing cover at the Colbert Landfill is not accurately known and may vary substantially across the site. This variation may affect final grading and cap design. Therefore, up to sixty shallow test pits will be excavated for the purpose of characterizing this variation. In addition to characterizing the soil cover, the physio-chemical characteristics of the underlying refuse will be noted, as well as the gas emission potential of the material and existing soil gas characteristics. Test pits will be excavated to a maximum of 20 ft, although most are expected to be less than 6 ft in depth. Monitoring for volatile organic vapors and combustible gas will be conducted from the top of the test pit using extended gas sensors. It is

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(a) The original of this Health and Safety Plan addendum will be filed in the project file. A copy of this addendum is to be placed with the Health and Safety Plan maintained in the support zone trailer and in each field vehicle.

assumed that excavated refuse will be removed and replaced in the test pit excavation without special handling or decontamination procedures.

3.0 WORK AREAS

For the purpose of this work, an exclusion zone will be established by traffic cones or caution tape that encompasses the area where excavation activities are in progress. This area will be designated only for the purpose of controlling access in the area of intrusive activity. Decontamination of workers and heavy equipment is not required prior to movement of the exclusion zone to the next area of excavation.

4.0 AIR MONITORING AND ACTION LEVELS FOR RESPIRATORY PROTECTION

Air monitoring will be conducted for volatile organic compounds and methane, using a photoionization detector (PID) and combustible gas indicator (CGI), respectively, consistent with the requirements of the Project Health and Safety Plan. The CGI is contained within the MSA 361 instrument, which monitors for combustible gas, oxygen, and hydrogen sulfide. In addition to periodic breathing space monitoring of equipment operators and other personnel in the exclusion zone, monitoring of test pit gas will be conducted from the top of the test pit using equipment extensions.

Action levels for donning respiratory protection are the same as those identified in the Health and Safety Plan, with the exception that a full face respirator must be worn during test pit entry, regardless of monitoring results, as described in the following section.

It should be noted that the sensitivity of the 10.2 eV lamp in the PID to the volatile organic constituents of concern (TCA, DCA, TCE, PCE, and methylene chloride) is limited. Action levels for donning respiratory protection for these constituents have been adjusted downward based on the permissible exposure limit of these constituents and this limited sensitivity. The PID is not sensitive to methane.

An additional cause for concern when methane gas is venting from a landfill is that it may "purge" other more actively toxic gases, such as hydrogen sulfide (H_2S) along with it. H_2S concentrations may be monitored on the MSA 361 directly in ppm, concurrently with combustible gas measurements.

The 8-hour time weighted average permissible exposure limit (PEL) for H_2S is 10 ppm and the 15-minute short-term exposure limit (STEL) is 15 ppm. The "Immediately Dangerous to Life and Health" (IDLH) level is 300 ppm.

Air purifying respirators equipped with organic vapor/acid gas cartridges are quite effective in removing H_2S but are not approved for such use due to the potential for the sudden build up of IDLH concentrations. The nose experiences "olfactory fatigue" after a short exposure to H_2S, and the warning property of the gas (odor) is no longer effective. Therefore, the use of cartridge-type air purifying respirators in atmospheres containing H_2S at concentrations in excess of the PEL or STEL is permitted only for escape. Entry into any atmosphere containing greater than 10 ppm H^2S (15 ppm STEL) requires use of a pressure demand supplied air respirator.

At concentrations of a few ppm in the breathing zone, the odor nuisance would be such that site personnel would voluntarily don their respirators. Such use of air purifying respirators is acceptable but once air purifying respirators are donned, H_2S concentrations must be monitored continuously. The H_2S action level for donning respirators is 5 ppm, at which time the MSA 361 will be set up to run continuously. If concentrations in the breathing zone exceed 10 ppm for more than an hour, 15 ppm for more than 15 minutes, or at any time exceed 25 ppm, work shall be temporarily halted and the area evacuated until H_2S levels subside.

5.0 TEST PIT ENTRY

In the event that entry into the test pit is required by site personnel, entry will be conducted only if the requirements of WAC 296-155, Part N (Requirements for Excavation, Trenching and Shoring), are met. This portion of the state construction health and safety requirements has been attached to this addendum for reference. Specifically, these regulations require that any excavation 4 ft or more in depth to be shored, sheeted, braced, sloped, or otherwise supported by means of sufficient strength to protect employees. Sloping requirements vary depending on the type of soil encountered. Specific requirements for determining the appropriate excavation protection system by soil type are provided in WAC 296-155, Part N (see attached).

Anyone entering a test pit greater than 4 ft deep is required to wear a full face respirator, even if air monitoring results indicate that action levels are below those required for respiratory protection in the Health and Safety Plan. Entry into the test pit is prohibited if the PEL reading exceeds 100 ppm or if the CGI reading exceeds 20 percent LEL. Air monitoring will be conducted continuously while personnel are in the test pit, and personnel will immediately evacuate if the PID reading exceeds 100 ppm above background or the CGI reading exceeds 20 percent LEL, which is consistent with the requirements of the Project Health and Safety Plan.

6.1 PERSONAL EQUIPMENT

The level of protection selected for this work phase is modified Level D, as specified in Section 6.2 of the Project Health and Safety Plan. A full face respirator with organic vapor/acid gas/high efficiency particulate cartridges will be available to all personnel at all times in the event that air monitoring results (specified in Sections 4.0 and 5.0 of this addendum and Table 5-1 of Project Health and Safety Plan) indicate that upgrade to Level C is necessary.

7.0 PERSONNEL AND EQUIPMENT DECONTAMINATION

Personnel and equipment decontamination will not be required as the exclusion zone is successively moved to conduct excavations. Personnel and equipment decontamination will be conducted consistent with the requirements of the Health and Safety Plan when exiting from the landfill site.

REFERENCES

Landau Associates, Inc. 1992. Final Health and Safety Plan, Phase II Remedial Design/Remedial Action, Colbert Landfill, Spokane, Washington. August 17, 1992.

ADDENDUM 1 ACKNOWLEDGEMENT

I have read this addendum to the Colbert Landfill RD/RA Health and Safety Plan. I have discussed any questions I have regarding this addendum with my supervisor and/or the Site Safety Office, and I understand the requirements.

Signature of Site Personnel Briefed:

Name: _____ Date: _____

Supervisor: _____ Date: _____

Part N
Excavation, Trenching, and Shoring

WAC

296-155-650	Definitions applicable to this part.
296-155-655	General protection requirements.
296-155-657	Sloping Systems.
296-155-66103	Timber Shoring for Trenches.
296-155-66105	Aluminum Hydraulic Shoring for Trenches.
296-155-66109	Approval or Design by a Registered Professional Engineer.
296-155-664	Appendix A--Soil Classification.

WAC 296-155-650, Definitions applicable to this part.

(1) "Accepted engineering requirements or practices." Those requirements or practices that are compatible with standards required by a registered professional engineer.

(2) "Actual slope." The slope of which an excavation site is excavated.

(3) "Aluminum hydraulic shoring." A preengineered shoring system comprised of aluminum hydraulic cylinders (crossbraces) used with vertical rails (uprights) or horizontal rails (walers). Such system is designed, specifically to support the sidewalls of an excavation and prevent cave-ins.

(4) "Cave-in." The separation of a mass of soil or rock material from the side of an excavation, or loss of soil from under a trench shield or support system, and movement into the excavation in quantity that it could entrap, bury, injure, or immobilize a person.

(5) "Competent person." One who can identify existing or predictable hazards in the surroundings that are unsanitary, hazardous, or dangerous to employees. Also has authorization or authority by the nature of their position to take prompt corrective measures to eliminate them. The person shall be knowledgeable in the requirements of this part.

(6) "Cross braces." The horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends bear against either uprights or wales.

(7) "Distress." Soil in a condition where a cave-in is imminent or likely to occur. Distress indications may be fissures, slumping, spalling, ravelling, or small amounts of materials separating from the face. The bottom may bulge or heave and the edge may sink or lower.

(8) "Equipment." Ladders, scaffolds, ramps, runways, railings, barricades, sheet piling, shoring, bracing and any such safeguards. Protective construction and devices used in affording protection to the workers engaged in excavation work.

(9) "Embankment." An artificial or man-made bank of earthen material.

(10) "Excavation." Any man-made cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation. If installed forms or similar structures reduce the depth-to-width relationship, and excavation may become a trench.

WAC 296-155-650 (Continued)

(11) "Faces or sides." The vertical or inclined earth surfaces formed because of excavation work.

(12) "Failure." The breakage, displacement, or permanent deformation of a structural member or connection to reduce its structural integrity and its supportive capabilities.

(13) "Kickouts." Accidental release or failure of a shore or brace.

(14) "Maximum allowable slope." The steepest incline of an excavation face that is acceptable for the most favorable site conditions as the ratio of horizontal distance to vertical rise (H:V).

(15) "Moving ground." Any ground, which for any reason, will not remain in its original location.

(16) "Protective system." A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping systems, shield systems, and other systems that provide the necessary protection.

(17) "Ramp." An inclined walking or working surface used as access from one point to another. They may be constructed from earth or materials such as steel or wood.

(18) "Registered professional engineer." A person that is registered as a professional engineer in the state of Washington. The registered professional engineer shall comply with the Washington state department of licensing requirements, chapter 18.43 RCW.

(19) "Sheeting." The members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system:

Tight sheeting: The use of specially-edged timber planks (e.g., tongue and grove) at least three inches thick, steel sheet piling, or similar construction that when driven or paced in position provide a tight wall to resist the lateral pressure of water and to prevent the loss of backfill material.

Close sheeting: The placement of planks side-by-side allowing as little space as possible between them.

(20) "Sheet pile." A pile, or sheeting, that may form a continuous interlocking line. A row of timber, concrete, or steel piles, driven in close contact providing a tight wall to resist the lateral pressure of water, adjacent earth, or other material.

(21) "Shield (shield system)." A structure that can withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. Shields can be permanent structures or designed to be portable and moved along as work progresses. Shields can be premanufactured or job-built according to data from the manufacture or designed by a registered professional engineer. Shields used in trenches are usually called "trench boxes" or "trench shields."

(22) "Shoring (shoring system)." A structure such as a metal hydraulic, mechanical, or timber shoring system that supports the sides of an excavation that is designed to prevent cave-ins.

(23) "Sides," "walls," or "faces." The vertical or inclined earth surfaces formed because of excavation work.

WAC 296-155-650 (Continued)

(24) "Sloping (sloping system)." A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions or exposure, and application of surcharge loads.

(25) "Support system." A structure such as underpinning, bracing or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.

(26) "Trench." A narrow excavation made below the surface of the ground. The depth is generally greater than the width, but the width of a trench is not greater than 15 feet.

(27) "Trench jack." Screw or hydraulic type jacks used as cross bracing in a trench shoring system.

(28) "Trench shield" or "trench box." See shield in this section.

(29) "Upright." The vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual member are closely spaced, in contact with or interconnected to each other, are often called "sheeting."

(30) "Unstable rock." Rock material on the side or sides of the excavation not secured against caving-in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.

(31) "Unstable soil." Earth material, other than running because of its nature cannot be depended upon to remain in place without extra support that would be furnished by a system of shoring.

(32) "Wales." Horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth. [Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-155-650, filed 1/10/91, effective 2/12/91; Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-650, filed 1/21/86. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-650, filed 6/17/81; Order 74-26, § 296-155-650, filed 5/7/74, effective 6/6/74.]

WAC 296-155-655, General protection requirements.

(1) Protection systems for use in excavations more than 20 feet in depth shall be designed by a registered professional engineer according to WAC 296-155-66109.

(2) Trench and excavation protection. Except in solid rock, the sides of trenches and excavations, including embankments, 4 feet or more in depth shall be shored, sheeted, braced, sloped, or supported by a means of sufficient strength to protect employees.

(3) Protection for trenches less than 4 feet. Trenches less than 4 feet in depth shall be effectively protected when there are indications that hazardous ground movement is possible.

(4) Storage of excavated material.

(a) In excavations or trenches that employees are required to enter, excavated or other material shall be stored and retained at least 2 feet away from the edge of the excavation or trench.

(b) Barriers or other effective retaining devices may be used to prevent excavated or other material from falling or rolling into the excavation or trench.

WAC 296-155-655 (Continued)

(5) Excavation and trench exits. When employees are required to be in excavations or trenches 4 feet deep or more, an adequate means of exit, such as a ladder or steps, shall be provided and located within 25 feet of lateral travel. An earth ramp is acceptable providing all following requirements are met:

(a) The stability of the earth is adequate for good footing; and

(b) The total travel distance does not exceed 25 feet; and

(c) Adequate shoring or equivalent protection is provided for the entire escape route.

(6) When sloping does not extend to the bottom of the trench, shoring shall be required to support the vertical part of the trench. The shoring shall extend above the bottom of the slope a minimum of 18 inches to prevent material from sliding or rolling into the trench.

(7) Surface encumbrances. Trees, boulders, utility poles and other surface encumbrances, located to create a hazard to employees involved in excavation or trenching work or in the vicinity during operations, shall be removed or made safe before excavation or trenching is begun or continued.

(8) Installation and removal of support.

(a) Members of support systems shall be securely connected to prevent sliding, falling, kickouts, or other predictable failure.

(b) Support systems shall be installed and removed in a way that protects employees from cave-ins, structural collapses, or from other members of the support system.

(c) Individual members of support systems shall not be subjected to loads exceeding their design.

(d) Before removal of individual members begins, additional precautions shall be taken to ensure the safety of employees installing other structural members to carry the loads imposed on the support system may be required.

(e) Removal shall begin at the bottom of the excavation. Members shall be released slowly, noting any indication of possible failure of the remaining members or possible cave-in.

(f) Backfilling shall progress together with the removal of support systems from excavations.

(9) Physical barrier protection.

(a) Adequate physical barrier protection shall be provided at all remotely located excavations or trenches.

(b) All wells, pits, shafts, etc., shall be barricaded or covered.

(c) Upon completion of exploration and similar operations, temporary wells, pits, shafts, etc., shall be completely backfilled.

WAC 296-155-655 (Continued)

(10) Inspections.

(a) Daily inspections of excavations, adjacent areas, and protective systems shall be made by a competent person for a situation that would result in cave-ins, failure of protective systems, or other hazardous conditions. An inspection shall be conducted by the competent person before the start of work and as needed throughout the shift. Inspections shall be made after every rainstorm or other hazard increasing occurrence.

(b) When the competent person finds evidence of a situation that could result in a possible cave-in, failure of protective systems or other hazardous conditions, exposed employees shall be removed from the area until the necessary precautions have been taken.

(11) Manufactured materials and equipment used for protective systems shall be used and maintained consistent with the manufacturer's recommendations.

(12) Stability of adjacent structures.

(a) Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems shall be provided to ensure their stability.

(b) Excavation below the level of the bases or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted unless:

(i) A support system is provided to ensure the safety of employees and the stability of the structure; or

(ii) The excavation is in stable rock; or

(iii) A registered professional engineer has determined the structure is sufficiently removed from the excavation and unaffected by the excavation; or

(iv) A registered professional engineer has determined such excavation work will not pose a hazard to employees.

(c) Sidewalks, pavements, and other structures shall not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse.

(13) Underground utilities. Before opening an excavation or trench, underground utilities such as sewer, telephone, fuel, electric, water line, or other installations shall be located. The appropriate utility company shall be notified and requested to identify the exact location of the underground installation.

(a) Proper supports and precautions shall be provided for existing utility installations.

(b) When electric lines are of the direct burial type, a qualified person shall make positive identification of the cable.

(c) Mechanical excavating equipment shall maintain a 2 foot clearance from the direct burial cable.

(14) When excavation operations approach the location of underground installations, the exact location of the installations shall be determined by safe and acceptable means.

WAC 296-155-655 (Continued)

(15) While the excavation is open, underground installations shall be protected, supported, or removed as necessary to safeguard employees.

(16) Water main safeguards. When existing loop water mains are running laterally within two feet of the excavation or trench wall, the valve the greatest distance from the work site shall be closed.

(a) The exact location of the open valve and the valve key shall be given to the workers before they enter the excavation or trenches.

(b) The open valve location shall be marked and clear access to the valve maintained.

(17) Protection from hazards associated with water accumulation. Employees shall not work in excavation when water is accumulating unless adequate precautions have been taken to protect employees against the hazards of water accumulation. Precautions necessary to protect employees adequately vary with each situation, but could include special support, shield systems to protect from cave-ins, or water removal to control the water level.

(18) Surface water control. Diversion ditches, dikes, adequate drainage, or other suitable means shall be used next to the excavation or trench to prevent surface water from entering.

(19) Ramps and runways.

(a) Ramps or runways used for vehicles shall be of a width of not less than four feet wider than the vehicle used and shall be provided with:

(i) Timber guards no less than 8 inches by 8 inches placed parallel to and secured to the sides of the runway or ramp; or

(ii) Berms on earthen ramps; or

(iii) Other equivalent protection.

(b) All ramps and runways shall receive daily inspection, and shall be maintained in a safe and serviceable condition.

(c) Workers shall stay off ramps and runways when vehicles are passing over them.

(d) All ruts and holes shall be filled in, humps leveled off, and the runway or ramp made smooth.

(20) Walkway and bridge requirements. Where employees or equipment cross over excavations or trenches, walkways or bridges with standard guardrails shall be provided. Such walkways or bridges shall be designed and constructed by competent persons according to accepted engineering requirements and practices.

(21) Employees next to excavations, and not directly involved in the excavation work, shall be protected by standard guardrails or equivalent means to prevent their falling.

(22) Top person. No person shall be allowed to work in a trench over 4 feet in depth unless there is a top person in constant attendance. The top person shall be in addition to the equipment operator when the person in the trench is not in constant view of the equipment operator.

WAC 296-155-655 (Continued)

(23) Signalperson. Signalpersons shall be used to direct equipment when backfilling when the operator does not have a clear view of the excavation.

(24) Stop logs. When mobile equipment is used or allowed next to excavations or trenches, stop logs, or barricades shall be installed. Such devices shall not be required for equipment doing the actual excavating or backfilling operation.

(25) Dust control. Dust conditions shall be minimized by using water, or other effective means. [Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-155-655, filed 1/10/91, effective 2/12/91; Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-655, filed 1/21/86. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-655, filed 6/17/81; Order 76-29, § 296-155-655, filed 9/30/76; Order 74-26, § 296-155-655, filed 5/7/74, effective 6/6/74.]

WAC 296-155-657, Sloping Systems.

(1) Scope and application. This section contains specifications for sloping used as a method of protecting employees working in excavations from cave-ins.

(2) Soil and rock deposits shall be classified according to WAC 296-155-664, Appendix A.

(3) Design of sloping systems. Slopes and configurations shall be selected and constructed by the employer or his designee and shall be according to the requirements of this section.

(4) Maximum allowable slope. The maximum allowable slope for soil or rock deposit shall be determined from Table 1.

(5) Actual slope.

(a) The actual slope shall not be steeper than the maximum allowable slope.

(b) The actual slope shall be less steep than the maximum allowable slope when there are signs of distress. If that situation occurs, the slope shall be cut back to an actual slope that is at least 1/2 horizontal to 1 vertical (1/2H:1V) less steep than the maximum allowable slope.

(c) When surcharge loads from stored material, equipment or traffic is present, a competent person shall determine the degree the actual slope must be reduces below the maximum allowable slope, and shall assure the reduction is achieved.

(6) Configurations. Configurations of sloping systems shall be according to Figures A-1 through D-6.

(7) Sloping systems. Employees shall not work on the faces of sloped excavations at levels above other employees unless employees at the lower levels are protected from the hazard of falling, rolling, sliding material, or equipment.

WAC 296-155-657 (Continued)

TABLE 1
MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V) [1] FOR EXCAVATIONS LESS THAN 20 FEET DEEP [2]
STABLE ROCK	VERTICAL (90°)
TYPE A	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 1/2:1 (34°)

NOTES:

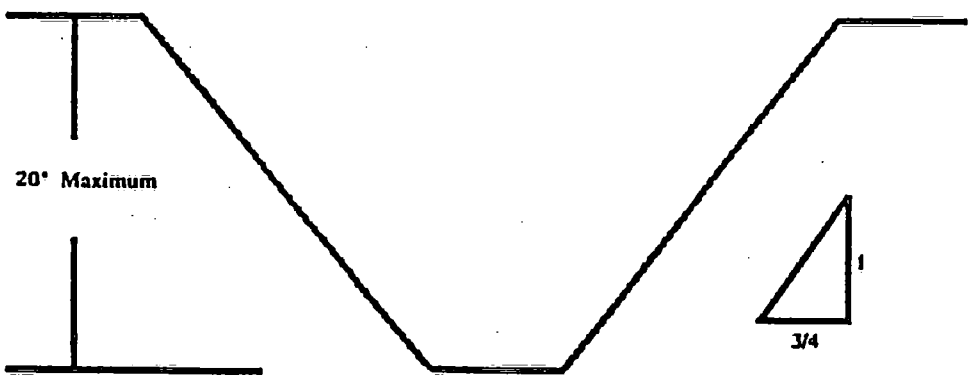
[1] Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

[2] Sloping for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

Figure A-1

Slope Configuration for *Type A Soil*

(All Slopes stated below are in the horizontal to vertical ratio)



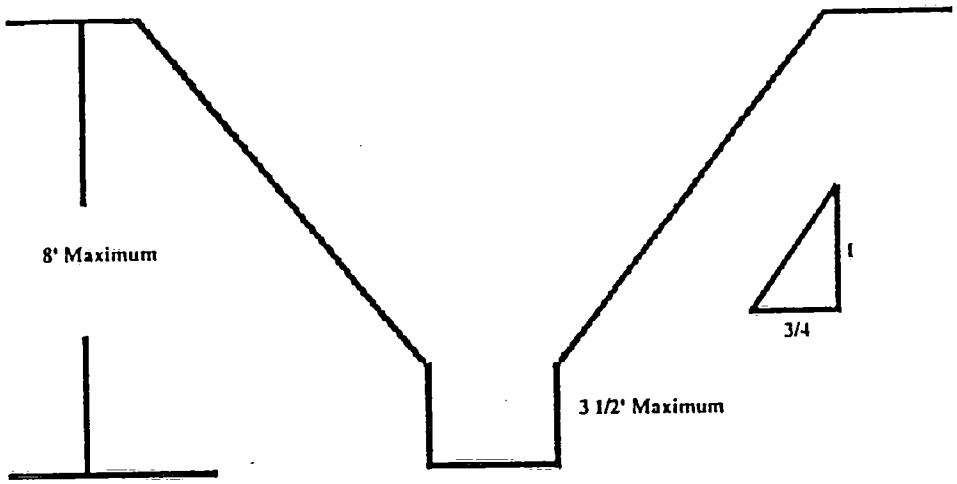
Simple Slope - General

Simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of 3/4:1

WAC 296-155-657 (Continued)

Figure A-2

Slope Configuration for *Type A* Soil

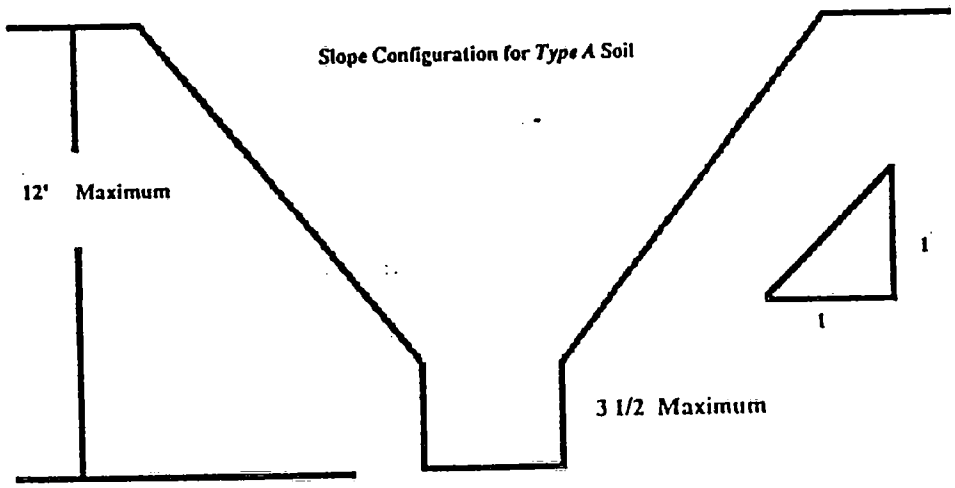


Unsupported Vertically Sided Lower Portion -- Maximum 8 Feet in Depth

4. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3 1/2 feet.

Figure A-3

Slope Configuration for *Type A* Soil

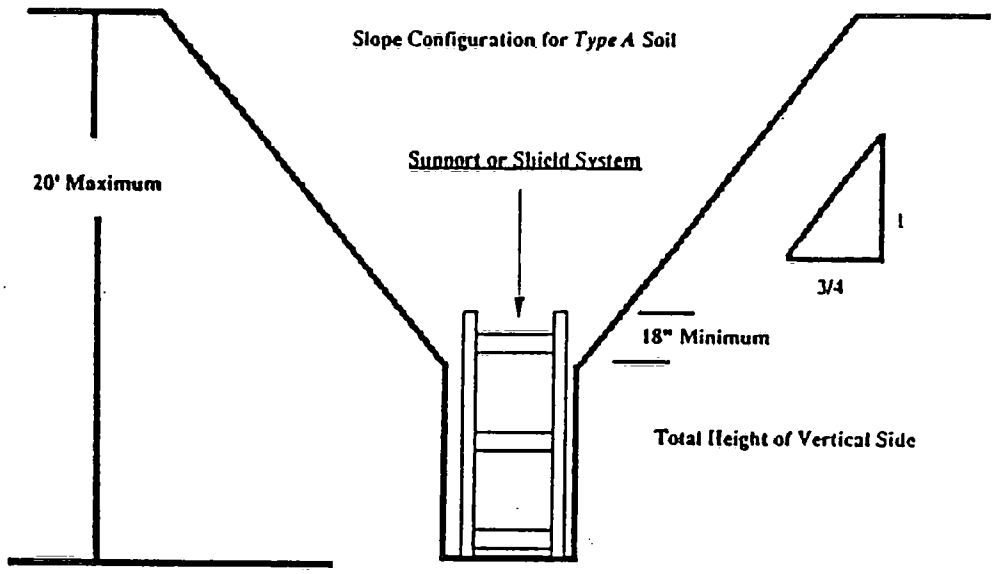


Unsupported Vertically Sided Lower Portion--Maximum 12 Feet in Depth

5. All excavations more than 8 feet but not more than 12 feet in depth with unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3 1/2 feet.

WAC 296-155-657 (Continued)

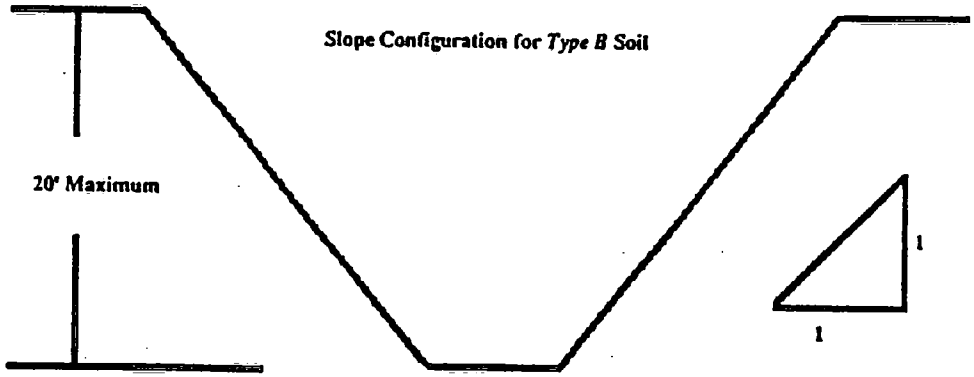
Figure A-4



Supported or Shielded Vertically Sided Lower Portion

Excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of 3/4:1. The support or shield system must extend at least 18 inches above the top of the vertical side.

Figure B-1



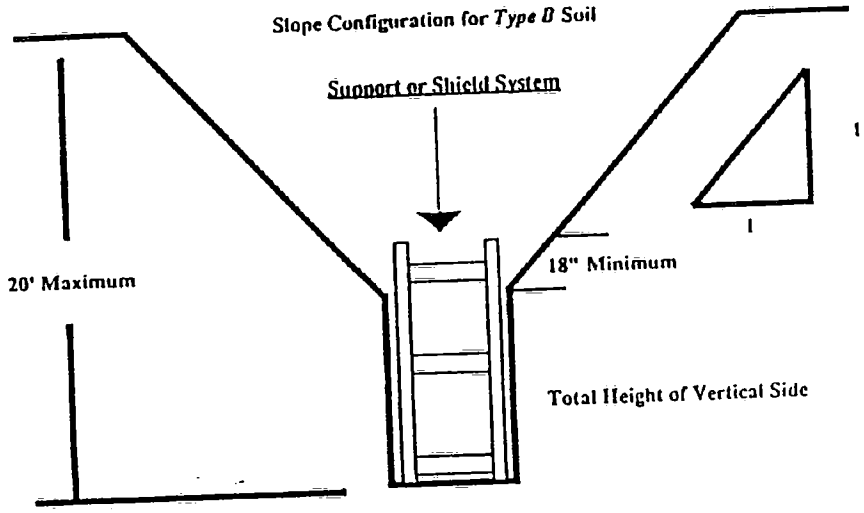
Simple Slope

1. **All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.**

WAC 296-155-657 (Continued)

Figure B-2

Slope Configuration for *Type B* Soil

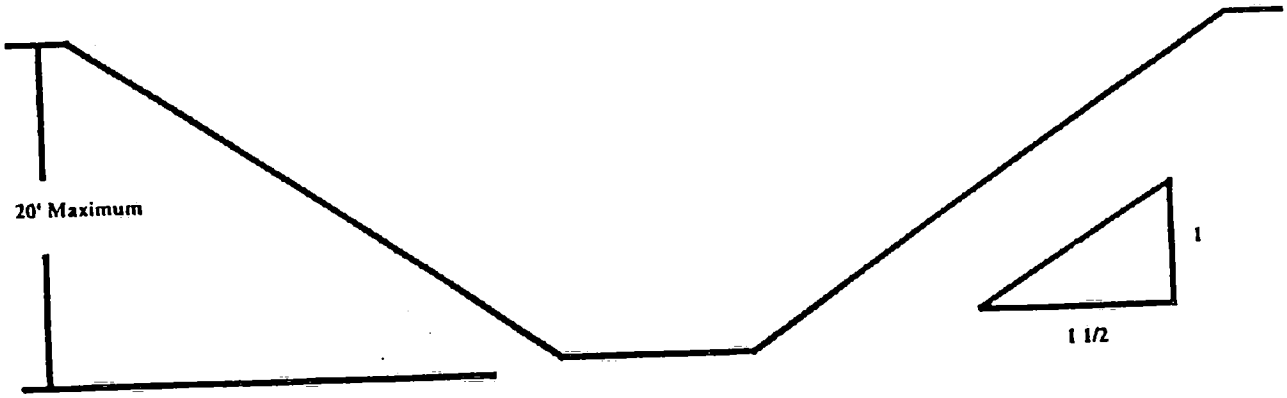


Vertically Sided Lower Portion

Excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

Figure C-1

Slope Configuration for *Type C* Soil



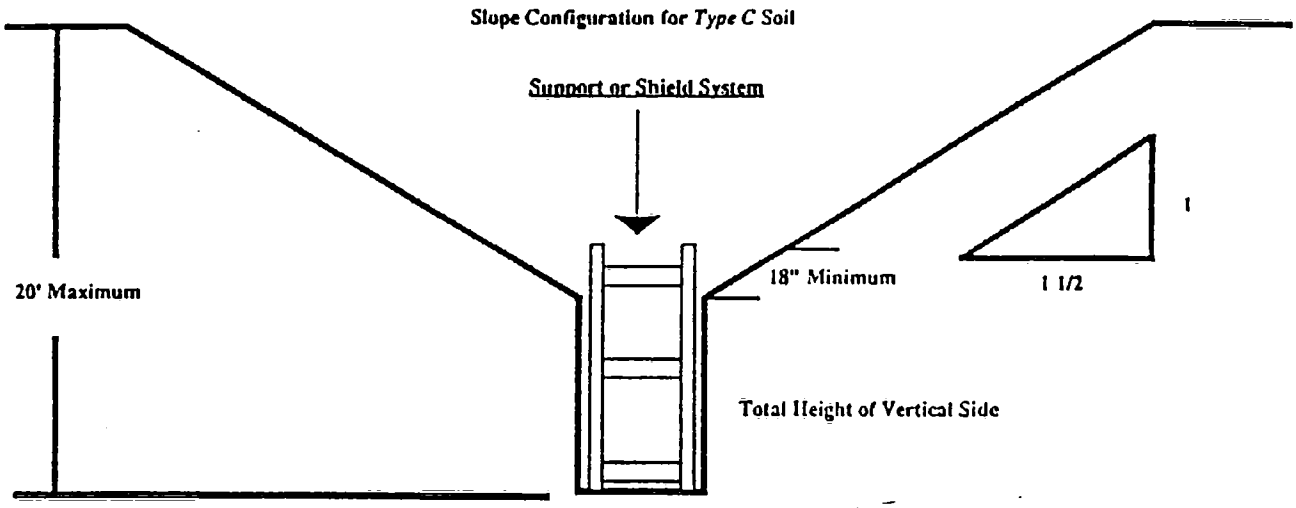
Simple Slope

L. Simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1 1/2:1.

WAC 296-155-657 (Continued)

Figure C-2

Slope Configuration for *Type C* Soil



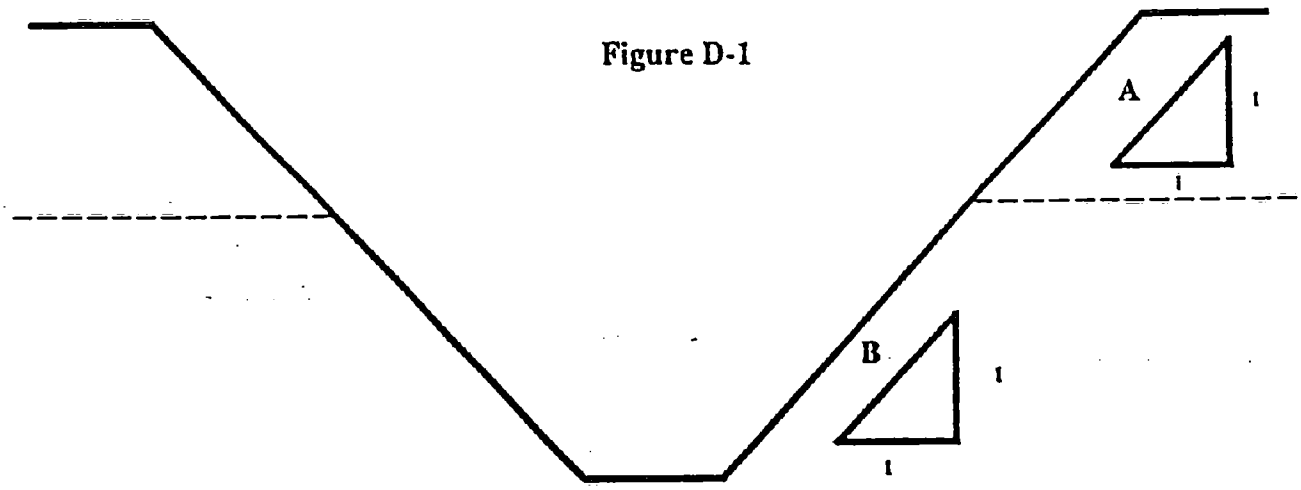
Vertically Sided Lower Portion

2. Excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1 1/2:1.

EXCAVATIONS MADE IN LAYERED SOILS

Excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth below:

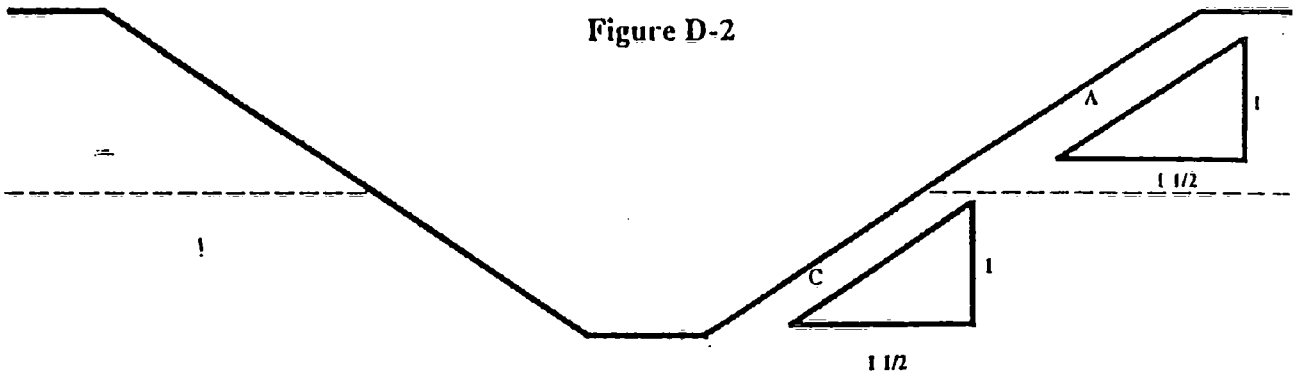
Figure D-1



A OVER B

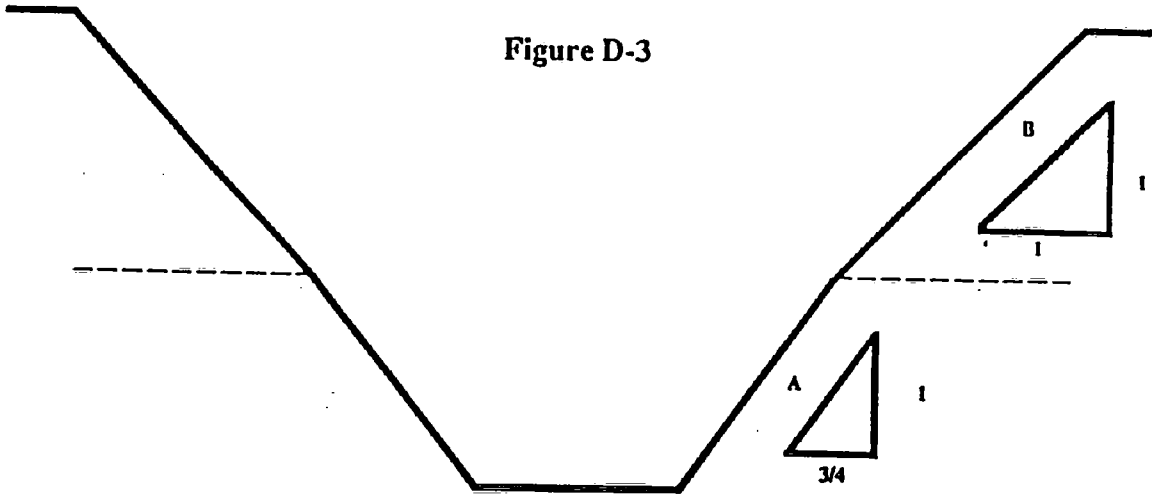
WAC 296-155-657 (Continued)

Figure D-2



A OVER C

Figure D-3



B OVER A

WAC 296-155-657 (Continued)

Figure D-4

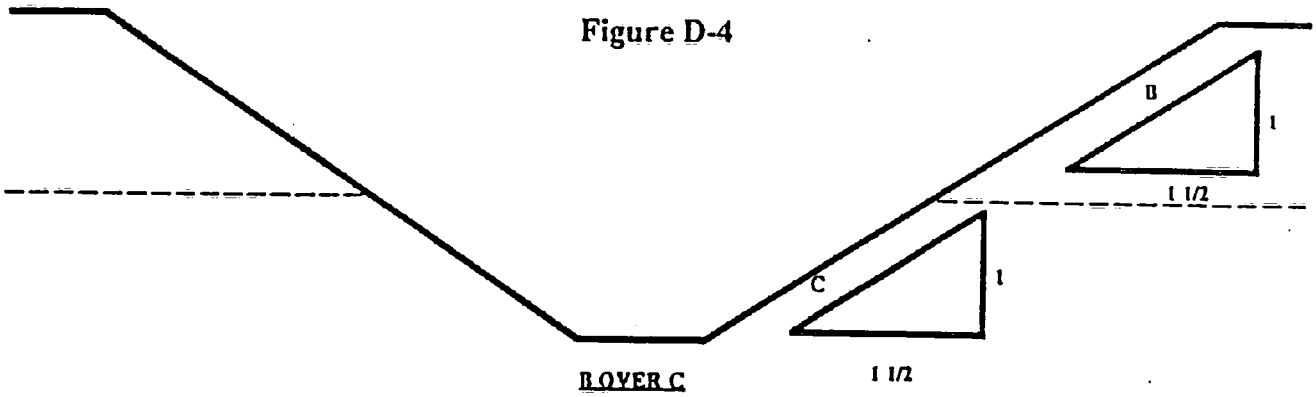
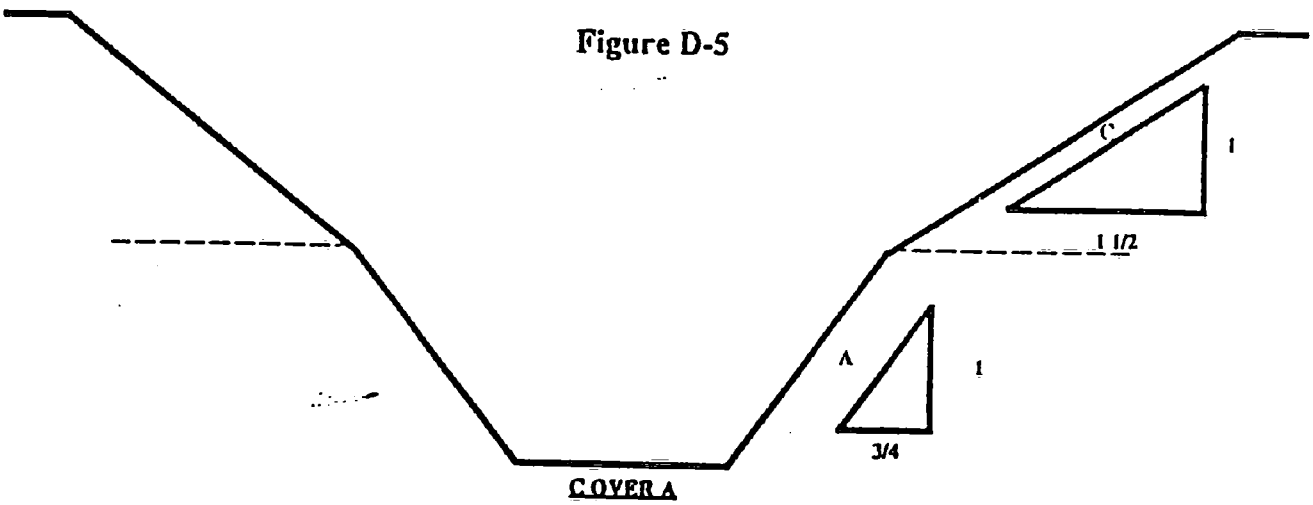
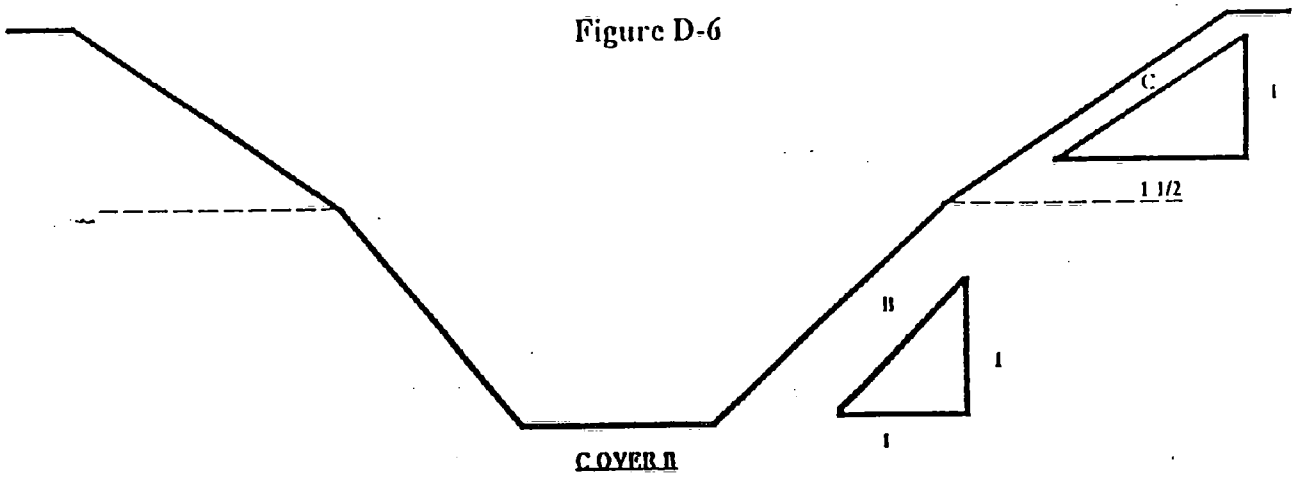


Figure D-5



WAC 296-155-657 (Continued)

Figure D-6



[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-155-657, filed 1/10/91, effective 2/12/91]

WAC 296-155-66103, Timber Shoring for Trenches.

(1) Scope and application. This section shall be used when designing a timber shoring protective system. Shoring systems for use in situations that are not covered by this section shall be designed as specified in other sections of this part.

(2) Soil and rock deposits shall be classified according to WAC 296-166-664, Appendix A.

(3) Design of support systems. Support systems, shield systems, and other protective systems shall be selected and constructed by the employer or his designee.

(4) The support system shall extend to the bottom of the trench or excavation. The system shall be designed to resist the forces calculated for the full depth of the trench.

(5) Installation of a support system shall be closely coordinated with the excavation of trenches.

(6) When voids form in the sides or face of the trench, after placement of shoring or bracing, they shall be promptly filled with compacted material and blocking. Voids are filled to uniformly distribute the load onto the shoring or bracing.

(7) When any of the following conditions are present, the members specified in the tables are not considered adequate. Either an alternate timber shoring system must be designed or another type of protective system designed in accordance with WAC 296-155-66109.

(a) When loads imposed by structures or by stored material adjacent to the trench weigh in excess of the load imposed by a two-foot soil surcharge. (The term "adjacent" as used here means the within a horizontal distance from the edge of the trench equal to the depth of the trench.)

(b) When vertical loads imposed on crossbraces exceed a 240-pound gravity load distributed on a one-foot section of the center of the crossbrace.

(c) When surcharge loads are present from equipment weighing more then 20,000 pounds.

(d) When only the lower portion of a trench is shored and the upper portion of the trench is sloped unless:

(i) The sloped portion shall be at an angle of at least 3 horizontal to 1 vertical; or

(ii) The shoring members shall be selected from the tables-for the total depth of the trench.

(8) Protective systems.

(a) The timber trench shoring system used in trenches or excavations shall be according to tables 1 through 3.

(b) When conditions are saturated or submerged tight sheeting shall be used.

(c) All spacing shall be measured center to center.

(d) Wales shall be installed with greater dimension horizontal.

(e) Trench jacks may be used instead of, or in combination with timber crossbraces.

WAC 296-155-66103 (Continued)

(f) Placement of crossbraces. When the vertical spacing of crossbraces is 4 feet, place the top crossbrace no more than 2 feet below the top of the trench. When the vertical spacing of crossbraces is 5 feet, place the top crossbrace no more than 2.5 feet below the top of the trench.

(9) Plywood used shall be 1.125 inch thick softwood or 0.75 inch thick, 14 ply, arctic white birch (Finland form). Plywood is not intended as a structural member, but only for preservation of local raveling (sloughing of the trench face) between shores.

TABLE 1

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS*

SOIL *TYPE A* $P_a = 25 \times H + 72$ psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	NOMINAL SIZE AND SPACING OF MEMBERS**														
	CROSS BRACES							WALES		UPRIGHTS					
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)					VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)					
		Up To 4	Up To 6	Up To 9	Up To 12	Up To 15				CLOSE	4	5	6	8	
4 TO 10	Up to 6	4X4	4X4	4X4	4X4	4X6	4	Not Required	Not Required				4X6		
	Up to 8	4X4	4X4	4X4	4X4	4X6	4	Not Required	Not Required					4X6	
	Up to 10	4X6	4X6	4X6	6X6	6X6	4	8X8	4			4X6			
	Up to 12	4X6	4X6	4X6	6X6	6X6	4	8X8	4				4X6		
10 TO 15	Up to 6	4X4	4X4	4X4	6X6	6X6	4	Not Required	Not Required				4X10		
	Up to 8	4X6	4X6	4X6	6X6	6X6	4	6X8	4		4X6				
	Up to 10	6X6	6X6	6X6	6X6	6X6	4	8X8	4			4X8			
	Up to 12	6X6	6X6	6X6	6X6	6X6	4	8X10	4		4X6		4X10		
15 TO 20	Up to 6	6X6	6X6	6X6	6X6	6X6	4	6X8	4	3X6					
	Up to 8	6X6	6X6	6X6	6X6	6X6	4	6X8	4	3X6	4X12				
	Up to 10	6X6	6X6	6X6	6X6	6X8	4	8X10	4	3X6					
	Up to 12	6X6	6X6	6X6	6X8	6X8	4	8X12	4	3X6	4X12				
OVER 20	Protective systems for trenches over 20 feet shall be designed by a registered professional engineer. See WAC 296-155-655(1)														

* Douglas Fir or Equivalent with a Bending Strength not less than 1500 psi.
** Manufactured Members of Equivalent Strength may be Substituted for Wood.

WAC 296-155-66103 (Continued)

TABLE 2

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS*

SOIL *TYPE B* $P_a = 45 \times H + 72$ psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	NOMINAL SIZE AND SPACING OF MEMBERS**														
	CROSS BRACES							WALES		UPRIGHTS					
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)					VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)					
		Up To 4	Up To 6	Up To 9	Up To 12	Up To 15				CLOSE	1	3	4	6
4 TO 10	Up to 6	4X6	4X6	4X6	4X6	4X6	5	6X6	5			3X11 4X8		4X11
	Up to 8	4X6	4X6	4X6	4X6	4X6	5	8X8	5		3X8		4X8	
	Up to 10	4X6	4X6	4X6	4X6	4X6	5	8X10	5			4X8		
	See Note 6													
10 TO 15	Up to 6	6X6	4X6	4X6	6X6	4X6	5	4X8	5	3X6	4X10			
	Up to 8	6X6	4X6	4X8	6X6	6X6	5	10X10	5	3X6	4X10			
	Up to 10	6X6	4X6	4X8	6X6	6X6	5	10X12	5	3X6	4X10			
	See Note 6													
15 TO 20	Up to 6	6X6	4X6	6X6	6X6	6X8	5	6X10	5	4X6				
	Up to 8	6X6	6X6	6X8	6X6	6X8	5	10X12	5	4X6				
	Up to 10	6X6	6X6	6X8	6X6	6X8	5	12X12	5	4X6				
	See Note 6													
OVER 20	Protective systems for trenches over 20 feet shall be designed by a registered professional engineer. See WAC 296-155-655(1)													

* Douglas Fir or Equivalent with a Bending Strength not less than 1500 psi.
** Manufactured Members of Equivalent Strength may be Substituted for Wood.

TABLE 3

TIMBER TRENCH SHORING -- MINIMUM TIMBER REQUIREMENTS*

SOIL *TYPE C* $P_a = 80 \times H + 72$ psf (2 ft. Surcharge)

DEPTH OF TRENCH (FEET)	NOMINAL SIZE AND SPACING OF MEMBERS**													
	CROSS BRACES							WALES		UPRIGHTS				
	HORIZ. SPACING (FEET)	WIDTH OF TRENCH (FEET)					VERT. SPACING (FEET)	SIZE (IN)	VERT. SPACING (FEET)	MAXIMUM ALLOWABLE HORIZONTAL SPACING (FEET)				
		Up To 4	Up To 6	Up To 9	Up To 12	Up To 15				CLOSE	1	3		
4 TO 10	Up to 6	4X6	4X6	4X6	4X6	4X6	5	6X6	5	3X6				
	Up to 8	4X6	4X6	4X6	4X6	4X6	5	10X10	5	3X6				
	Up to 10	3X6	4X6	4X8	4X8	4X8	5	10X12	5	3X6				
	See Note 6													
10 TO 15	Up to 6	4X6	4X6	4X6	4X6	4X8	5	10X10	5	4X6				
	Up to 8	4X6	4X6	4X6	4X6	4X8	5	12X12	5	4X6				
	See Note 6													
	See Note 6													
15 TO 20	Up to 6	4X6	4X6	4X6	4X10	4X10	5	10X12	5	4X6				
	See Note 6													
	See Note 6													
	See Note 6													
OVER 20	Protective systems for trenches over 20 feet shall be designed by a registered professional engineer. See WAC 296-155-655(1)													

* Douglas Fir or Equivalent with a Bending Strength not less than 1500 psi.
** Manufactured Members of Equivalent Strength may be Substituted for Wood.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-155-66103, filed 1/10/91, effective 2/12/91]

WAC 296-155-66105, Aluminum Hydraulic Shoring for Trenches.

(1) Scope. This section shall be used for the design of an aluminum hydraulic protective system when the trench does not exceed 20 feet in depth.

(2) Soil and rock deposits shall be classified according to WAC 296-155-664 Appendix A.

(3) Tables D-1 through D-4 shall be used for an aluminum hydraulic shoring system.

(a) All spacing indicated shall be measured center to center.

(b) Vertical shoring rails shall have a minimum section modulus of 0.40 inch.

(c) When vertical shores are used, there must be a minimum of 3 shores spaced equally, horizontally, in a group.

(d) Plywood shall be 1.125 inch thick softwood or 0.75 inch thick, 14 ply, arctic white birch (Finland form). Plywood is not intended as a structural member, only for prevention of local raveling (sloughing of the trench face) between shores.

(4) When any of the following conditions are present, the members specified in the tables are not considered adequate. Here the aluminum hydraulic shoring system or other type of protective system shall be designed using manufacturer's data or designed according to WAC 296-155-66109.

(a) When vertical loads imposed on crossbraces exceed a 100-pound gravity load distributed on a one-foot section of the center of the hydraulic cylinder.

(b) When surcharge loads are present from equipment weighing more than 20,000 pounds.

(c) When only the lower portion of a trench is shored and the upper portion of the trench is sloped unless:

(i) The sloped portion shall be at an angle of at least 3 horizontal to 1 vertical; or

(ii) The shoring members shall be selected from the tables for the total depth of the trench.

(5) Hydraulic cylinders capacities.

(a) Two-inch cylinders shall be a minimum 2-inch inside diameter with a safe working capacity of not less than 18,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.

(b) Three-inch cylinders shall be a minimum 3-inch inside diameter with a safe work capacity of not less than 30,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.

(6) Shield systems.

(a) Shield systems shall be designed by a registered professional engineer.

(b) Shield systems shall be designed to resist the forces calculated for the full depth of the trench.

(c) Plans and calculations prepared by the registered professional engineer shall be made available at the work site to the director or authorized representative.

WAC 296-155-66105 (Continued)

(d) The employer shall establish a permanent means of identifying the shield system.

(e) Shield systems shall not be subjected to loads exceeding those the system is designed to withstand.

(f) Shields shall be installed to restrict lateral or other hazardous movements if sudden lateral loads are applied.

(g) Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields.

(h) Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically.

(i) Shields shall extend to the bottom of the trench.

TABLE D - 1
ALUMINUM HYDRAULIC SHORING
VERTICAL SHORES
FOR SOIL *TYPE A*

Depth of Trench (Feet)	Maximum Horizontal Spacing (Feet)	Maximum Vertical Spacing (Feet)	Hydraulic Cylinders Width of Trench (Feet)		
			Up to 8	Over 8 Up to 12	Over 12 Up to 15
Over 4 Up to 10	8	4	2 INCH DIAMETER	2 INCH DIAMETER See NOTE (1)	3 INCH DIAMETER
Over 10 Up to 15	8				
Over 15 Up to 20	7				
Over 20	Protective systems for trenches over 20 feet shall be designed by a registered professional engineer. See WAC 296-155-655(1)				

NOTE (1): 2 inch diameter cylinders, at this width, shall have structural steel tube (3.5 X 3.5 X 0.1875) oversleeves, or structural oversleeves of manufacturer's specification, extending the full, collapsed length.

WAC 296-155-66105 (Continued)

TABLE D - 2
ALUMINUM HYDRAULIC SHORING
VERTICAL SHORES
FOR SOIL *TYPE B*

Depth of Trench (Feet)	Hydraulic Cylinders				
	Maximum Horizontal Spacing (Feet)	Maximum Vertical Spacing (Feet)	Width of Trench (Feet)		
			Up to 8	Over 8 Up to 12	Over 12 Up to 15
Over 4 Up to 10	8	4	2 INCH DIAMETER	2 INCH DIAMETER See NOTE (1)	3 INCH DIAMETER
Over 10 Up to 15	6.5				
Over 15 Up to 20	5.5				
Over 20	Protective systems for trenches over 20 feet shall be designed by a registered professional engineer. See WAC 296-155-655(1)				

NOTE (1): 2 inch diameter cylinders, at this width, shall have structural steel tube (3.5 X 3.5 X 0.1875) oversleeves, or structural oversleeves of manufacturer's specification, extending the full, collapsed length.

WAC 296-155-66105 (Continued)

TABLE D-3
ALUMINUM HYDRAULIC SHORING
WALER SYSTEMS
FOR SOIL *TYPE B*

Depth of Trench (Feet)	Wales: Vertical Spacing (Feet)	Wales: Section* Modulus (In³)	Hydraulic Cylinders, Width of Trench (Feet): Up to 8 — Horiz. Spacing	Up to 8 — Cylinder Diameter	Over 8 - Up to 12 — Horiz. Spacing	Over 8 - Up to 12 — Cylinder Diameter	Over 12 - Up to 15 — Horiz. Spacing	Over 12 - Up to 15 — Cylinder Diameter	Timber Uprights (Max. horizontal bearing on Center): Solid Sheet	2 Feet	3 Feet
Over 4 Up to 10	4	3.5	8.0	2 IN	8.0	2 IN (Inner Sleeve)	8.0	3 IN	—	—	3 X 12
		7.0	9.0	2 IN	9.0	2 IN (Inner Sleeve)	9.0	3 IN			
		14.0	12.0	3 IN	12.0	3 IN	12.0	3 IN			
Over 10 Up to 15	4	3.5	6.0	2 IN	6.0	2 IN (Inner Sleeve)	6.0	3 IN	—	3 X 12	—
		7.0	8.0	3 IN	8.0	3 IN	8.0	3 IN			
		14.0	10.0	3 IN	10.0	3 IN	10.0	3 IN			
Over 15 Up to 20	4	3.5	5.5	2 IN	5.5	2 IN (Inner Sleeve)	5.5	3 IN	3 X 12	—	—
		7.0	6.0	3 IN	6.0	3 IN	6.0	3 IN			
		14.0	9.0	3 IN	9.0	3 IN	9.0	3 IN			
Over 20	Protective systems for trenches over 20 feet shall be designed by a registered professional engineer. See WAC 296-155-655(1)										

NOTE (1): 2 inch diameter cylinders, at this width, shall have structural steel tube (3.5 X 3.5 X 0.1875) oversleeves, or structural oversleeves of manufacturer's specification, extending the full, collapsed length.
*Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

TABLE D-4
ALUMINUM HYDRAULIC SHORING
WALER SYSTEMS
FOR SOIL *TYPE C*

Depth of Trench (Feet)	Wales: Vertical Spacing (Feet)	Wales: Section* Modulus (In³)	Hydraulic Cylinders, Width of Trench (Feet): Up to 8 — Horiz. Spacing	Up to 8 — Cylinder Diameter	Over 8 - Up to 12 — Horiz. Spacing	Over 8 - Up to 12 — Cylinder Diameter	Over 12 - Up to 15 — Horiz. Spacing	Over 12 - Up to 15 — Cylinder Diameter	Timber Uprights (Max. horizontal bearing on Center): Solid Sheet	2 Feet	3 Feet
Over 4 Up to 10	4	3.5	6.0	2 IN	6.0	2 IN (Inner Sleeve)	6.0	3 IN	3 X 12	—	—
		7.0	6.5	2 IN	6.5	2 IN (Inner Sleeve)	6.5	3 IN			
		14.0	10.0	3 IN	10.0	3 IN	10.0	3 IN			
Over 10 Up to 15	4	3.5	4.0	2 IN	4.0	2 IN (Inner Sleeve)	4.0	3 IN	3 X 12	—	—
		7.0	5.5	3 IN	5.5	3 IN	5.5	3 IN			
		14.0	8.0	3 IN	8.0	3 IN	8.0	3 IN			
Over 15 Up to 20	4	3.5	3.5	2 IN	3.5	2 IN (Inner Sleeve)	3.5	3 IN	3 X 12	—	—
		7.0	5.0	3 IN	5.0	3 IN	5.0	3 IN			
		14.0	6.0	3 IN	6.0	3 IN	6.0	3 IN			
Over 20	Protective systems for trenches over 20 feet shall be designed by a registered professional engineer. See WAC 296-155-655(1)										

NOTE (1): 2 inch diameter cylinders, at this width, shall have structural steel tube (3.5 X 3.5 X 0.1875) oversleeves, or structural oversleeves of manufacturer's specification, extending the full, collapsed length.
*Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-155-66105, filed 1/10/91, effective 2/12/91]

WAC 296-155-66109, Approval or Design by a Registered Professional Engineer.

(1) Sloping systems, support systems, shield systems, or other protective systems not meeting the requirements of this part shall be approved by a registered professional engineer. Approval or designs shall be in written form and shall include the following:

(a) The magnitude of the slopes that were determined to be safe for the particular project and the configurations that were determined to be safe for the project; or a plan indicating the sizes, types, and configurations of the materials to be used in the protective system.

(b) The identity of the registered professional engineer approving the designs.

(c) A copy of the approval or design shall be maintained at the work site and made available to the director or the authorized representative of the director upon request.

(2) Excavations not meeting the requirement of this part which are approved by a registered professional engineer shall be monitored as follows:

(a) The registered professional engineer shall inspect the work site at the beginning of each shift, after any change in weather conditions, and after any change in the circumstances of adjacent property.

(b) The registered professional engineer shall make a written report of each inspection, the report shall be kept on file at the work site, and the report shall be made available to the director or the authorized representative of the director upon request.

(c) All recommendations of the registered professional engineer regarding the excavation and soil conditions shall be followed. [Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-155-66109, filed 1/10/91, effective 2/12/91]

WAC 296-155-664, Appendix A--Soil Classification.

(1) Scope and application--Scope. This appendix describes a method of classifying soil and rock deposits based on site and environmental conditions, and on the structure and composition of the earth deposits. The appendix contains definitions, sets forth requirements, and describes acceptable visual and manual tests for use in classifying soils.

(2) This appendix applies when constructing or using a protective system according to the requirements set forth in this part.

(3) Definitions. The definitions and examples below are based on the American Society for Testing Materials (ASTM) Standards D653-85 and D2488: The Unified Soils Classification System, U.S. Department of Agriculture (USDA) Textural Classification Scheme, and The National Bureau of Standards Report BSS-121.

(a) Cemented soil. A soil where the particles are held together by a chemical agent, such as calcium carbonate. A hand-size sample cannot be crushed into powder or individual soil particles by finger pressure.

(b) Cohesive soil. Dry clay (fine grained soil), or soil with a high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical sideslopes, and is plastic when moist. Cohesive soil is hard to break up when dry, and exhibits significant cohesion when submerged. Cohesive soils include clayey silt, sandy clay, clay and organic clay.

WAC 296-155-664 (Continued)

(c) Dry soil. Soil that does not exhibit visible signs of moisture content.

(d) Fissured. A soil material that tends to break along definite planes of fracture with little resistance, or a material that exhibits open cracks, such as tension cracks, in an exposed surface.

(e) Granular soil. Gravel, sand, or silt, (coarse grained soil) with little or no clay content. Granular soil lacks no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

(f) Layered system. Two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered.

(g) Moist soil. A condition in which a soil looks and feels damp. Moist cohesive soil can easily be shaped into a ball and rolled into small diameter threads before crumbling. Moist granular soil that contains some cohesive material will exhibit signs of cohesion between particles.

(h) Plastic. A property of a soil that allows the soil to be deformed or molded without cracking, or appreciable volume change.

(i) Saturated soil. A soil in which the voids are filled with water. Saturation does not require flow. Saturation, or near saturation, is necessary for the proper use of instruments such as a pocket penetrometer or sheer vane.

(j) Soil classification system. This section categorizes rock and soil into stable rock, type A, B, and C soils, in decreasing order of stability. Categories are based on properties analysis, performance characteristics, and environmental conditions.

(k) Stable rock. Natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

(l) Submerged soil. Soil which is underwater or is free seeping.

(m) Type A. Cohesive soils with an unconfined compressive strength of 1.5 ton per square foot (tfs) or greater. Examples of cohesive soils are clay, silty clay, sandy clay, clay loam and, sometimes, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. No soil is Type A if:

(i) The soil is fissured; or

(ii) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or

(iii) The soil has been previously disturbed; or

(iv) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of 4 horizontal to 1 vertical (4H.1V) or greater; or

(v) The material is subject to other factors that would require it to be classified as a less stable material.

WAC 296-155-664 (Continued)

(n) Type B.

(i) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf. but less than 1.5 tfs: or

(ii) Granular cohesionless soils including angular gravel (similar to crushed rock), silt, silt loam, sand loan and, sometimes, silty clay loam and sandy clay loam.

(iii) Previously disturbed soils except those that would otherwise be classified as Type C soil.

(iv) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration: or

(v) Dry rock that is not stable: or

(vi) A sloped, layered system where the layers dip into the excavation on a slope less than 4 horizontal to 1 vertical (4H.1V), but only if the material would otherwise be classified as Type B.

(o) Type C.

(i) Cohesive soils with an unconfined compressive strength of 0.5 tsf or less; or

(ii) Granular soils including gravel, sand, and loamy sand: or

(iii) Submerged soil or soil from which water is freely seeping: or

(iv) Submerged rock that is not stable, or

(v) Material in a sloped, layered system where the layers dip into the excavation or a slope of 4 horizontal to 1 vertical (4H.1V) or steeper.

(p) Unconfined compressive strength. The load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests, and other methods.

(q) Wet soil. Soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flow when vibrated. Granular material that would exhibit cohesive properties when moist will lose those cohesive properties when wet.

(4) Requirements–Classification of soil and rock deposits.

(a) Each soil and rock deposit shall be classified by a competent person as Stable Rock, Type A, B, or C according to the definitions set forth in subsection (3) of this appendix.

(b) Basis of classification. The classification of the deposits shall be made based on the results of at least one visual and at least one manual analysis. Such analyses shall be conducted by a competent person using tests in subsection (5) or in other recognized methods of soil classification and testing such as those adopted by the American Society for Testing Materials, or the U.S. Department of Agriculture textural classification system.

WAC 296-155-664 (Continued)

(c) Visual and manual analyses. The visual and manual analyses, such as noted is subsection (5) of this appendix, shall be designed and conducted to provide quantitative and qualitative information necessary to identify properly the properties, factors, and conditions affecting the classification of deposits.

(d) Layered systems. In a layered system, the system shall be classified according to its weakest layer. Each layer may be classified individually where a more stable layer lies under a less stable layer.

(e) Reclassification. If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumstances.

(5) Acceptable visual and manual tests.

(a) Visual tests. Visual analysis is conducted to determine qualitative information regarding the excavation site soil next to the excavation, soil at the sides of the excavation, and the soil taken as samples from excavated material.

(i) Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the relative amounts of the particle sizes. Soil that is primarily composed of fine-grained material is cohesive material. Soil composed primarily of course-grained sand or gravel is granular material.

(ii) Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.

(iii) Observe the side of the opened excavation and the surface area by the excavation. Crack-like openings such as tension cracks could suggest fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground and are indications of potentially hazardous situations.

(iv) Observe the area by the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil.

(v) Observe the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.

(vi) Observe the excavation and sides of the excavation for evidence of surface water, water seeping from the sides of the excavation, or the level of the water table.

(vii) Observe the area by the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face.

WAC 296-155-664 (Continued)

(b) Manual tests. Manual analysis of soil samples is conducted to find quantitative, also, qualitative properties of soil and to provide more information in order to classify soil properly.

(i) Plasticity. Mold a moist or wet sample of soil into a ball and attempt rolling it into threads as thin as 1/8-inch in diameter. Cohesive material can be successfully rolled into threads without crumbling. For example, if at least a 2 inch length of 1/8-inch thread can be held on one end without tearing, the soil is cohesive.

(ii) Dry strength. If the soil is dry and crumbles on its own or with moderate pressure into grains or fine powder, it is granular (any combination of gravel, sand, or silt). If the soil is dry, falls into clumps that break into smaller clumps, and those clumps are broken with difficulty, it may be clay with gravel, sand or silt. If dry soil clumps are broken with difficulty into smaller clumps, and there is no indication the soil is fissured, it maybe considered unfissured.

(iii) Thumb penetration. The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. (This test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard designation D2488-"Standard Recommended Practice for Description of Soils (Visual--Manual Procedure).") Type A soils with an unconfined compressive strength of 1.5 tsf can be readily indented by the thumb and penetrated by the thumb with great effort. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, soon after excavation to keep drying effects to a minimum. If the excavation is later exposed to wetting (rain, flooding), the classification of the soil must be changed accordingly.

(iv) Other strength tests. Estimates of unconfined compressive strength of soils also can be obtained by use of a pocket penetrometer or by using a hand-operated shear vane.

(v) Drying test. The basic purpose of the drying test is to differentiate between cohesive material with fissures, unfissured cohesive material, and granular material. The procedure for the drying test involves drying a sample of soil that is approximately 1 inch thick and 6 inches in diameter until it is thoroughly dry:

(A) If the sample develops cracks as it dries, significant fissures are indicated.

(B) Samples that dry without cracking are to be broken by hand. If considerable force is necessary to break a sample, the soil has significant cohesive material content. The soil can be classified as a unfissured cohesive material and the unconfined compressive strength should be determined.

(C) If a sample breaks easily by hand, it is wither a fissured cohesive material or a granular material. To distinguish between the two, pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cohesive with fissures. If they pulverize easily into very small fragments, the material is granular. [Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-155-664, filed 1/10/91, effective 2/12/91]

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EMERGENCY FACILITIES AND NUMBERS

HOSPITAL: - Holy Family Hospital, N. 5633 Lidgerwood Street, Spokane, WA 99207
Emergency: (509) 482-2460
Information: (509) 482-0111

DIRECTIONS - Drive to Highway 2 (Highway 2 runs north and south between the Little Spokane River and Chattaroy Road). Drive south on Highway 2 toward Spokane and follow through town (turns into Division Street). Get in the far left lane. Turn left at Central Avenue (at Perkins Restaurant). Drive one block and take a right on Lidgerwood Street. Follow signs to the emergency entrance. See map (Figure 1) on next page for emergency route.

TELEPHONE - A telephone will be located onsite in the project office trailer.

EMERGENCY TRANSPORTATION SYSTEMS (Fire, Police, Ambulance) - 911

EMERGENCY CONTACTS

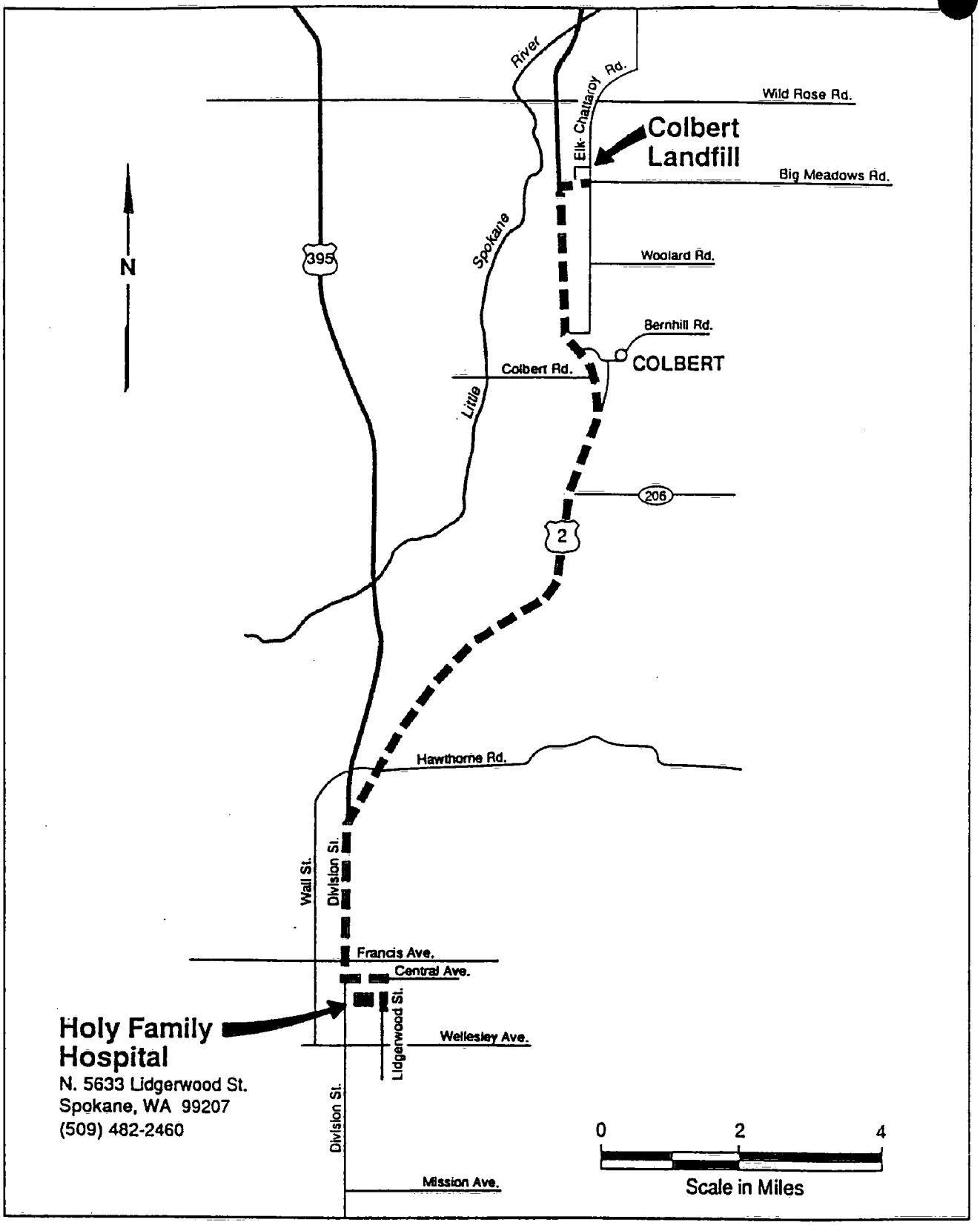
Fire District #4	911
Holy Family Hospital	(509) 482-2460
Ambulance Service	911
Sheriff's Desk	(509) 456-2240
Washington State Department of Ecology	(509) 456-2926
EPA Region 10 (Environmental Emergencies)	(206) 553-1263
Poison Center	1-800-572-5842

In the event of an emergency, do the following:

1. Call 911 for help as soon as possible. Give the following information:
   - WHERE the emergency is - the Colbert Landfill is located at the northwestern quadrant of the intersection of Elk-Chattaroy, Yale, and Big Meadows Roads.
   - PHONE NUMBER you are calling from.
   - WHAT HAPPENED - type of injury.
   - WHAT is being done for the victim(s).
   - YOU HANG UP LAST - let the person you called hang up first.

2. If the victim can be moved, transport the individual to the hospital while one person calls the hospital to notify them. If the injury or exposure is not life threatening, decontaminate the individual first. If decontamination is not feasible, wrap the individual in a blanket or sheet of plastic prior to transport.

3. Notify the Site Safety Officer/Field Coordinator and the Project Manager.



DIRECTIONS: Drive to Highway 2 (Highway 2 runs north and south between the Little Spokane River and Chattaroy Road). Drive south on Highway 2 toward Spokane and follow through town (turns into Division St.). Get in the far left lane. Turn left at Central Avenue (at Perkins Restaurant). Drive one block and take a right on Lidgerwood Street. Follow signs to the emergency entrance.

Route to Holy Family Hospital | Figure 1

1.0 INTRODUCTION

This document presents the Health and Safety Plan for Phase II Remedial Design/ Remedial Action (RD/RA) activities (Plan) to be conducted as part of the Colbert Landfill Superfund Project (Project). The Health and Safety Plan contains a description of the Project background and existing site conditions, and establishes health and safety requirements to be followed during Project Phase II RD/RA activities. This Plan addresses only those health and safety procedures and requirements relevant to Phase II construction activities, which include construction of the groundwater extraction, treatment, and discharge systems provided for in the Consent Decree Scope of Work (SOW), and associated groundwater monitoring system expansion. Health and safety procedures and requirements relevant to long-term operation of these systems will be addressed in the operations and maintenance plans, to be submitted with the Phase II plans and specifications.

The Plan covers activities regulated by 29 CFR 1926 (Federal safety and health regulations for construction) or WAC 296-155 (State safety standards for construction work), and includes Phase II criteria for hazard and risk evaluation, Project health and safety organization, air monitoring procedures, descriptions of levels of personal protection and required equipment, decontamination procedures, safety rules and procedures, emergency information, training requirements, and requirements for routine health care and health monitoring.

This Plan has been prepared by Landau Associates, Inc. (Landau Associates), Spokane County's engineering consultant for design of the Colbert Landfill Remedial Action. In addition to those references cited in the text of this Plan, several general references were also used in its preparation. These include: American Conference of Governmental Industrial Hygienists (1990), American Red Cross (1987), NIOSH/OSHA/USCG/EPA (1990), Sax (1989), and Sittig (1985).

1.1 PROJECT BACKGROUND

The Colbert Landfill (Landfill) is an inactive 40-acre municipal solid waste landfill located approximately 15 miles north-northeast of Spokane, WA, and 2.5 miles north of Colbert, WA, as shown on the Regional Location Map (Figure 1.1). The Landfill operated until 1986, when it became filled to capacity with municipal and commercial waste.

Groundwater in the vicinity of the Landfill is contaminated with chlorinated organic solvents. At least a portion of this contamination has been traced to spent solvents that were

disposed of at the Landfill. Solvents were reportedly disposed of at an average rate of several hundred gallons per month for a number of years, and consisted primarily of 1,1,1-trichloroethane (TCA) and methylene chloride (MC). Other organic solvents were also detected in groundwater near the Landfill, including trichloroethylene (TCE), tetrachloroethylene (PCE), 1,1-dichloroethylene (DCE), and 1,1-dichloroethane (DCA). These six chlorinated organic solvents are referred to as the "Constituents of Concern."

A remedial investigation (RI) conducted by Golder Associates (1987a) determined that the two primary aquifers in the Landfill vicinity (the Upper and Lower Sand/Gravel Aquifers), and a low-productivity aquifer to the east of the Landfill (Weathered Latah/Basalt Aquifer) are contaminated with some or all of the Constituents of Concern previously described. A feasibility study (FS) conducted by Golder Associates (1987b) recommended a pump and treat remedy to address this groundwater contamination.

The U.S. Environmental Protection Agency (EPA) released its Colbert Landfill Record of Decision (ROD) for public comment in September 1987 (EPA 1987). The remedial action site (Site) is defined in the ROD as the area of potential impact surrounding and including the Landfill, as shown on Figure 1.1. Based on recommendations in the FS, the ROD specifies that a performance-based groundwater pump and treat system be used to meet ROD-specified Project performance criteria for the Constituents of Concern (Performance Standards). These Performance Standards establish the level of treatment for extracted groundwater and define the maximum constituent concentrations that must be achieved for completion of the remedial action. The ROD, while requiring a pump and treat remedy, allows flexibility in the system's design and configuration. The pump and treat system to be implemented in Phase II is described briefly in Section 1.2 of this plan.

Subsequent to implementation of the ROD, a Consent Decree for the Colbert Landfill (U.S. District Court 1988) was negotiated between the EPA and the Washington State Department of Ecology (Ecology) (as Government Plaintiffs), and Spokane County (County) and Key Tronic Corporation (Key Tronic) (as Potentially Responsible Parties). By this action, the County agreed to implement the EPA-selected remedy in accordance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) requirements and the State of Washington Hazardous Waste Cleanup Act, codified as Chapter 70.105B RCW.

It was recognized during development of the Consent Decree that available data were inadequate to design the selected remedial action. Consequently, the remedial action is being implemented in phases. Phase I activities included additional characterization of groundwater

contaminant distribution and hydrogeology at the Site, and development of engineering parameters needed for design of the final (Phase II) remedial action. During Phase I, only groundwater samples were analyzed for contaminants; soil samples were analyzed for physical properties only to support hydrogeologic characterization. The design, construction, and operation of the final remedial action will be accomplished during Phase II.

Phase I activities were completed in July 1991, and Phase I results are provided in the Final Phase I Engineering Report (Landau Associates 1991). Phase II health and safety considerations are largely based on the data collected and observations made during Phase I.

1.2 REMEDIAL ACTION DESCRIPTION

This Health and Safety Plan has been prepared to address Phase II construction associated with the groundwater pump and treat remedial action specified in the ROD. The remedial action is subdivided into the following three systems: 1) the groundwater extraction system, 2) the groundwater treatment system, and 3) the discharge system. The groundwater extraction system is comprised of three subsystems:

- The South Interception System, which will consist of a series of extraction wells installed to intercept the contaminant plume in the Upper Sand/Gravel Aquifer
- The West Interception System, which will consist of a series of extraction wells installed to intercept the contaminant plume in the Lower Sand/Gravel Aquifer
- The East Extraction System, which will consist of extraction wells installed in the Lower Sand/Gravel and Latah/Basalt Aquifers near the Landfill for source control.

Extracted groundwater will be pumped via a subsurface piping system to the treatment system, which will be designed to reduce Constituents of Concern in the extracted groundwater to ROD-specified Performance Standards. Air stripping has been identified as the method of treatment. After treatment, water will be discharged to the Little Spokane River (from all systems) via a tight line discharge system. A conceptual design for the Phase II remedial action, presented in the Phase I Engineering Report (Landau Associates 1991), is shown on Figure 1.2.

1.3 SITE CONDITIONS

The Colbert Landfill Site (as designated in the ROD) is approximately 6,800 acres in area and is located entirely within the drainage basin of the Little Spokane River. The Site extends north of the Landfill about ½-mile, west about 1 mile to the Little Spokane River, east a similar distance, and south approximately 5 miles to Peone (or Deadman) Creek, as shown on Figure 1.1.

The Landfill is located on a plateau that is bounded on the west by a steep slope descending toward the Little Spokane River and on the east by low granite and basalt hills. Surface drainage is to the west, towards the Little Spokane River.

The climate is characteristic of eastern Washington, with temperatures ranging from typical average summer highs of about 83°F to average winter lows of around 23°F. The relatively low annual precipitation of approximately 17 inches falls mainly during the winter months of November through February (NOAA 1985).

The geology of the Landfill area consists of a series of glacially and fluvially-derived materials deposited on an eroded landscape of clays, basaltic lava flows, and granitic bedrock. Groundwater in the area is primarily obtained from the Upper and Lower Sand/Gravel Aquifers, which have become contaminated by the Constituents of Concern. The remedial action is focusing on the extraction and treatment of contaminated groundwater from these two aquifers. The approximate extent of groundwater contamination is shown on Figures 1.3 and 1.4 for the upper and lower aquifers, respectively. The locations for existing and proposed Phase II monitoring and extraction wells are provided on Figure 1.5.

A detailed description of hydrogeologic conditions for the Landfill vicinity is presented in the Phase I Engineering Report (Landau Associates 1991).

1.4 HEALTH AND SAFETY PLAN PURPOSE, APPLICABILITY, AND ADHERENCE

This Plan describes specific responsibilities, training, protective equipment, and operating procedures required for Phase II RD/RA construction activities. Modifications, where appropriate, may be made to this Plan to address specific activities.

This Plan applies to all personnel onsite. Contractors, subcontractors, regulatory agency representatives, and visitors entering the Project work zones must adhere to the requirements of this Plan by adoption, or use another plan which meets the minimum requirements established by this Plan.

All individuals must read this Plan prior to participation in intrusive field work[1]. If any information presented in this plan is unclear, the reader must contact the Site Safety Officer/Field Coordinator or the Field Construction Project Manager (Project Manager) for clarification prior to participating in any intrusive field activity. Once the information has been read and understood, the individual must sign the ACKNOWLEDGMENT (Form 1.1), and the signed form will be placed in the Project file. Before any intrusive activities are conducted under this work phase, a training session will be conducted to familiarize personnel with Project health and safety procedures, including a discussion of safety issues pertinent to the area of work (see Section 10).

This Plan is flexible and allows unanticipated site-specific problems to be addressed, while providing adequate and suitable worker protection. The Plan may be modified at any time, based on the judgment of the Site Safety Officer/Field Coordinator and the Project Manager. Any modification will be presented to the onsite team during a safety briefing and documented using Form 1.2. Team members will sign this form, and the original will be attached to the Plan copy maintained in the Project file. Copies will be attached to the Plan in the Project office trailer and in each field team vehicle.

1.5 RESPONSIBLE INDIVIDUALS

The Project Manager, the Site Safety Officer, and the Field Coordinator will have primary responsibility for health and safety during Phase II field investigations. Any one of these individuals may temporarily suspend an investigation if there appears to be a threat to health or safety. The Site Safety Officer, Field Coordinator, or a qualified designee (approved by the Site Safety Officer) will be present at all times during intrusive activities. The Site Safety Officer and Field Coordinator will be adequately trained (before site work begins) to meet MISHA and OSHA minimum training requirements. The responsibilities of the Site Safety Officer and Field Coordinator will likely be fulfilled by one person. Therefore, while the responsibilities of each position are discussed separately in the description of safety-related responsibilities presented below in this section, the remainder of the Plan will treat the two positions as one (Site Safety Officer/Field Officer).

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(1) For the purpose of this Plan, intrusive activities is defined as any subsurface work accomplished in an area and at a depth where contamination may reasonably be expected to be present.

1.5.1 Project Manager

The Project Manager has responsibility over all Project safety policies, planning, and execution. The Project Manager will be responsible for making project-level decisions regarding safety rules and operations in consultation with the Site Safety Officer/Field Coordinator.

1.5.2 Site Safety Officer

The Site Safety Officer will conduct the initial orientation training and will be the main point of contact on Project health and safety issues. He/she will be present onsite, intermittently, throughout the Project, and will periodically audit safety at the Site. The Site Safety Officer shall:

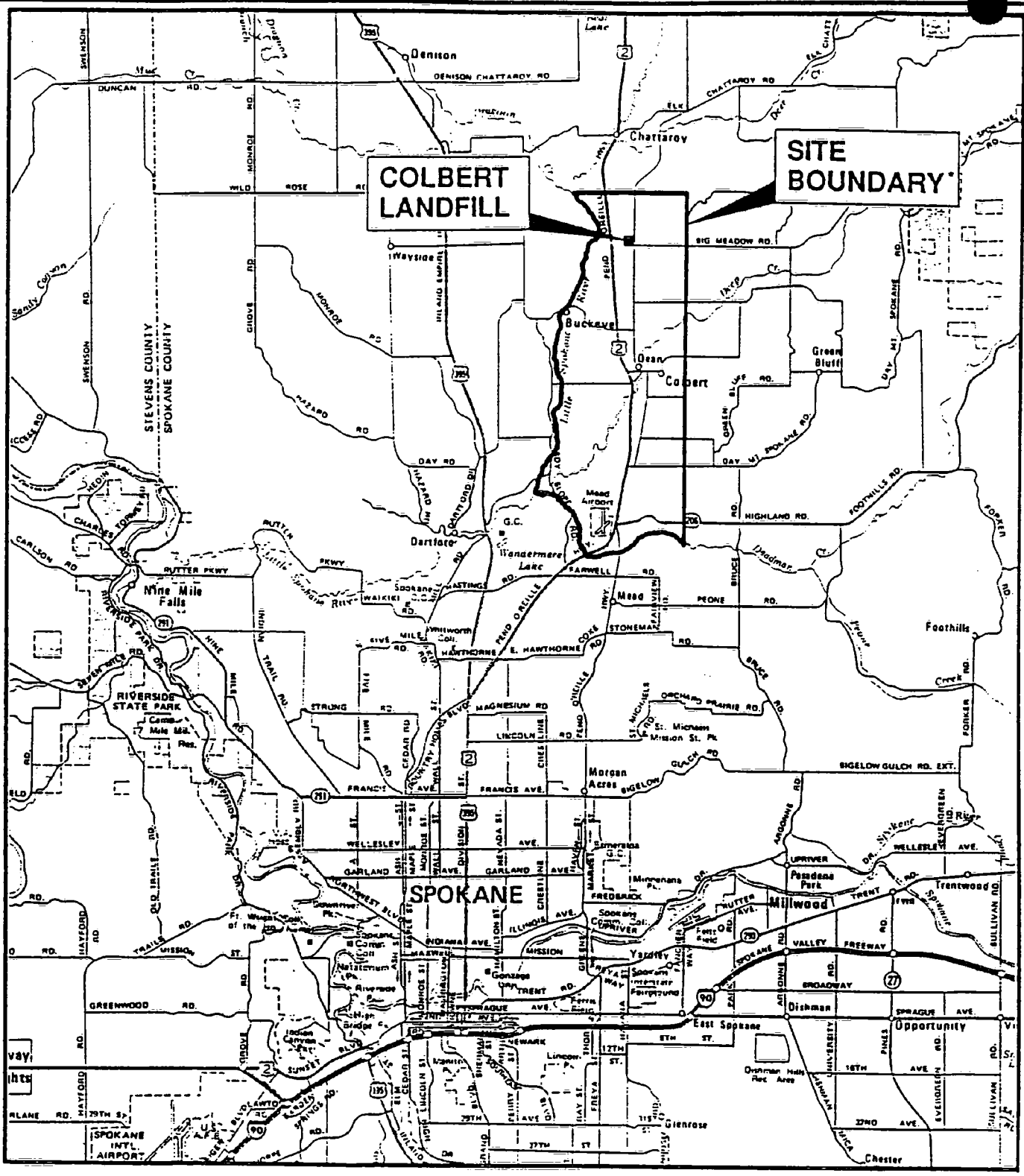
- Ensure that personnel are aware of the provisions of this plan, are instructed in safe work practices, and understand the planned procedures for dealing with onsite emergencies
- Inform personnel of the potential hazards associated with onsite operations
- Determine personal protection levels, necessary clothing, and equipment
- Correct any work practices or conditions that may result in injury to personnel or exposure to hazardous substances
- Verify that appropriate personal protective equipment is properly used by all employees at the start of the project and periodically thereafter
- Coordinate monitoring of organic vapors and explosive gases by field personnel (where applicable).

1.5.3 Field Coordinator

The Field Coordinator is responsible for all day-to-day activities, including implementation of the Plan. The Field Coordinator will implement the Plan as written, or consult with the Site Safety Officer (if separate positions) where alternatives or assistance may be desirable or necessary. The Field Coordinator will notify the Site Safety Officer (if separate positions) of any unanticipated conditions that arise so that any necessary modifications can be made to the Plan. Field team members will report suspect or unfamiliar conditions to the Field Coordinator. The Field Coordinator shall:

- Evaluate weather and hazard information and make any necessary modifications to work plans and personal protection levels to maintain personnel safety

- Ensure that appropriate personal protection equipment is available and properly utilized by all employees
- Ensure that contractors, subcontractors, regulatory agency representatives, and site visitors planning to enter the industrial work zone, exclusion zone, or the contamination reduction zone (described in Section 3.0) read this plan and sign a form acknowledging that either this plan becomes their own or they will adhere to the minimum standards of this plan.



* As specified in the ROD (EPA 1987)

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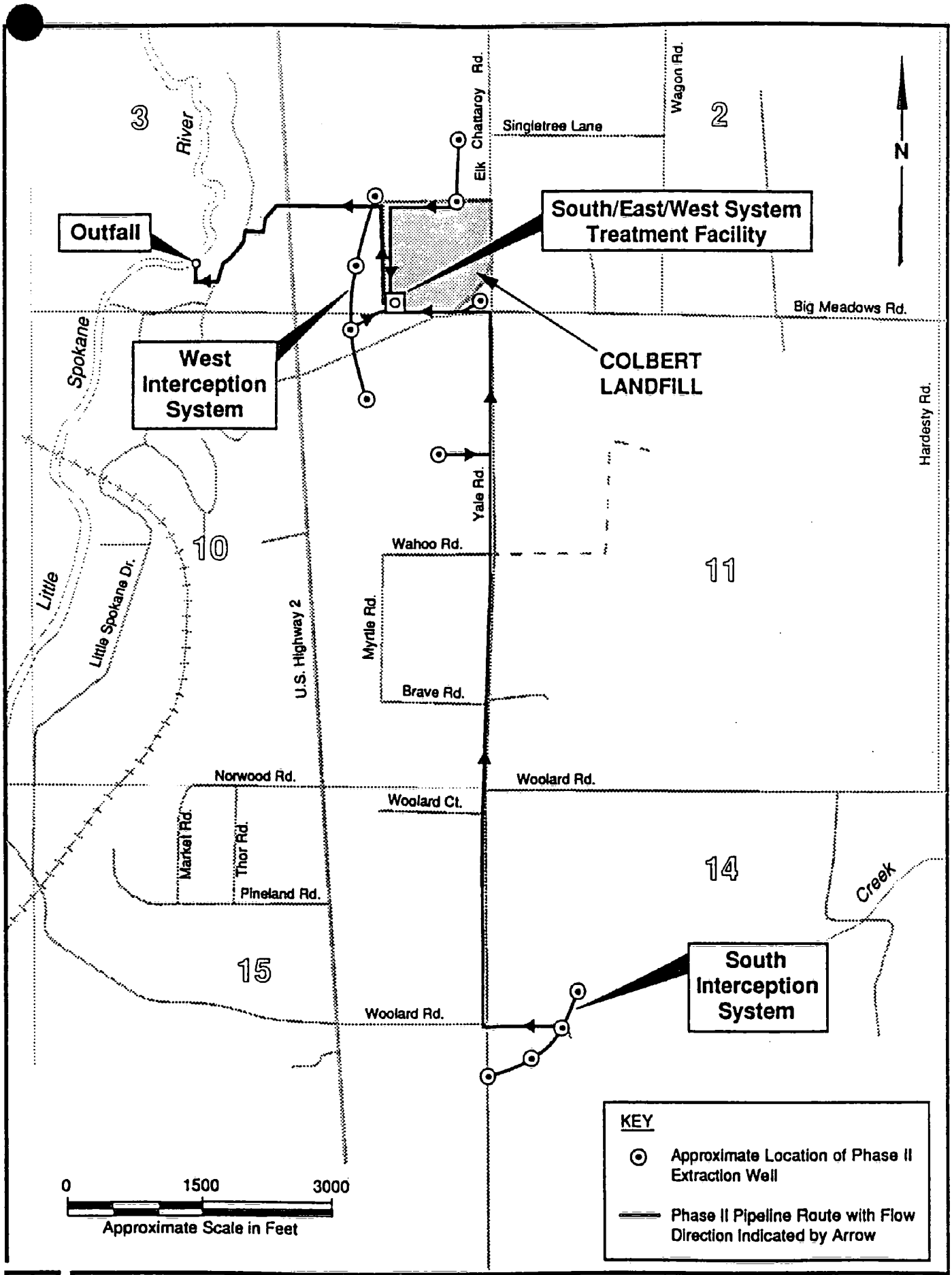
Regional Location Map

Figure 1.1



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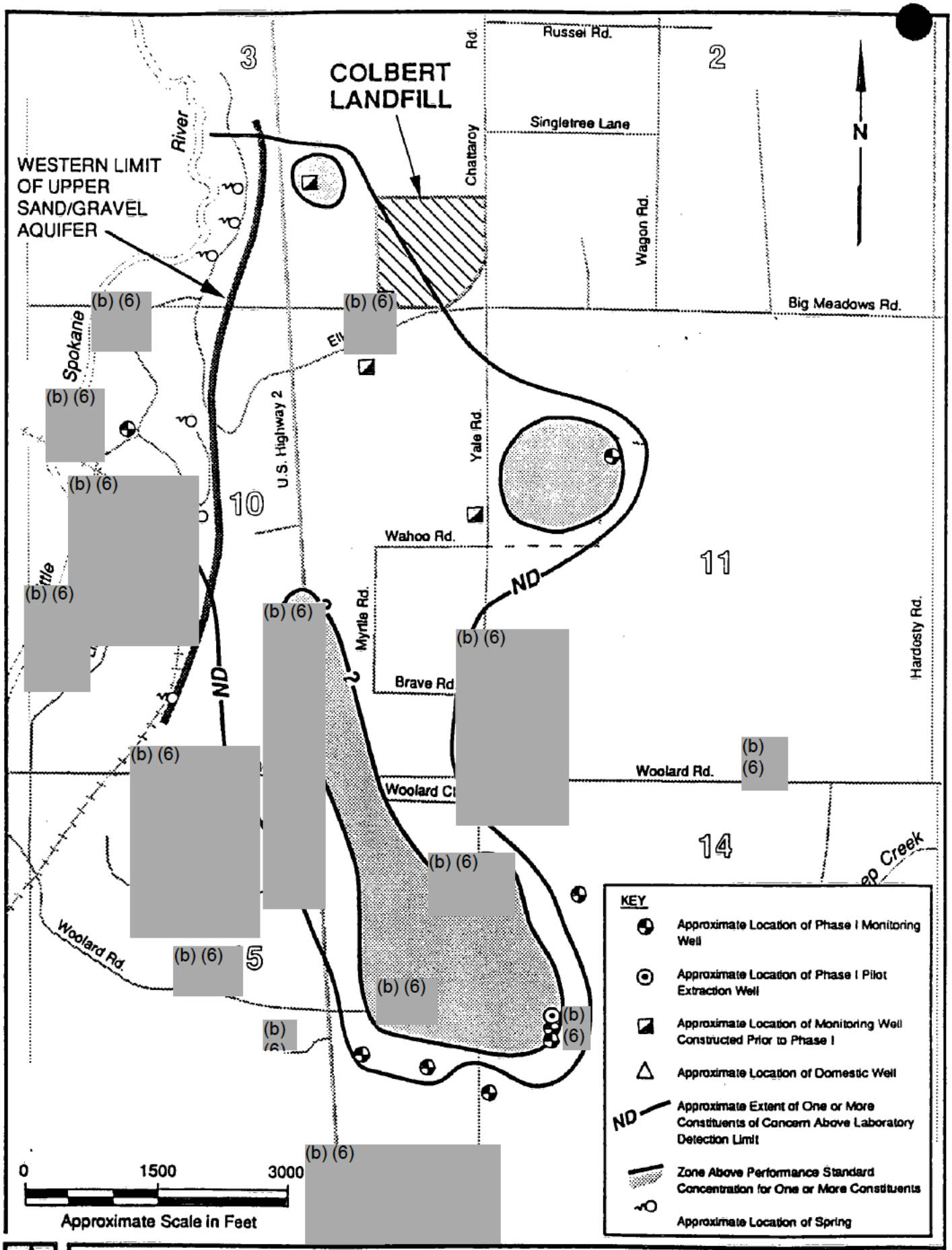
Phase II Conceptual Design

Figure 1.2



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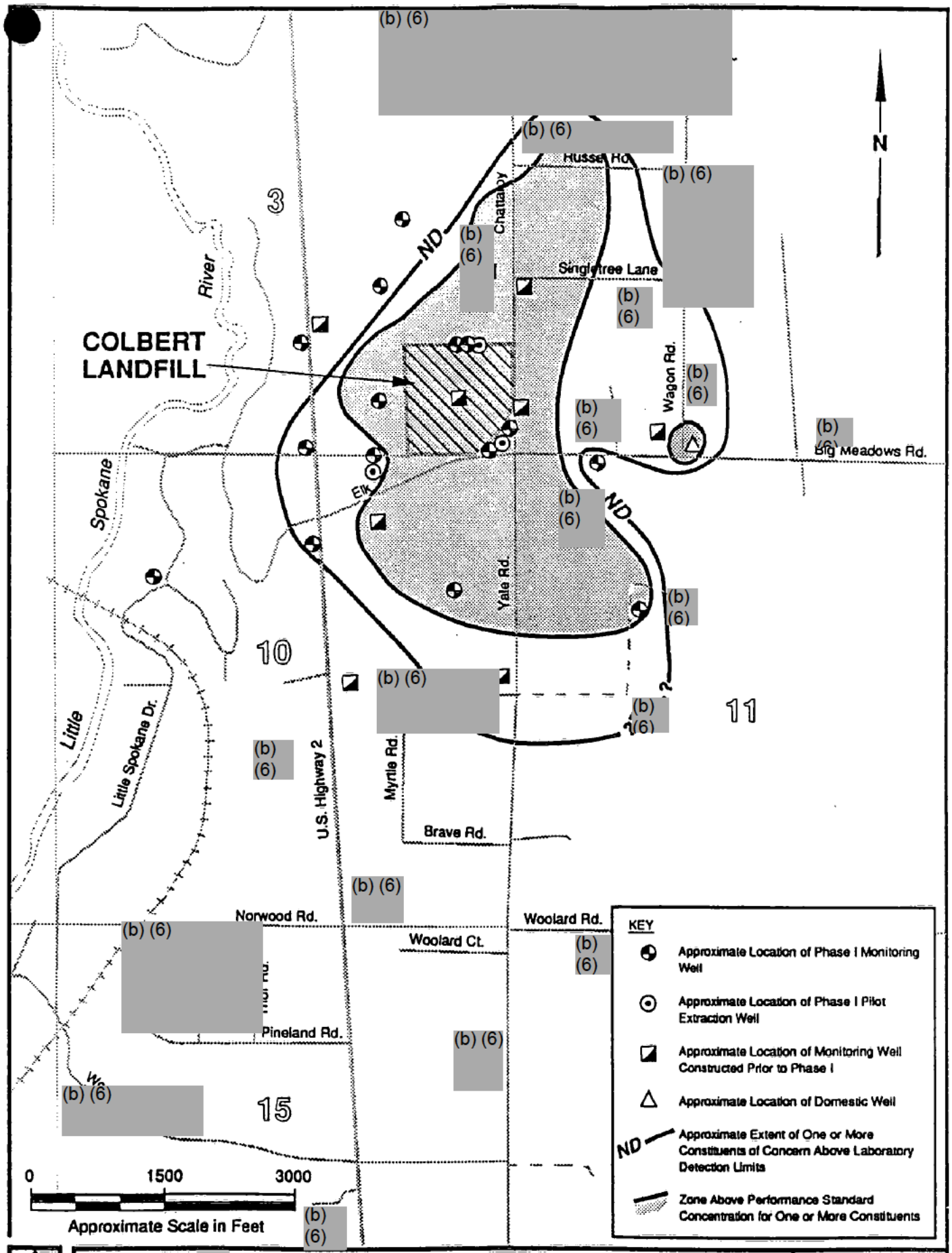
Upper Aquifers
Approximate Extent of Constituents of Concern

Figure 1.3



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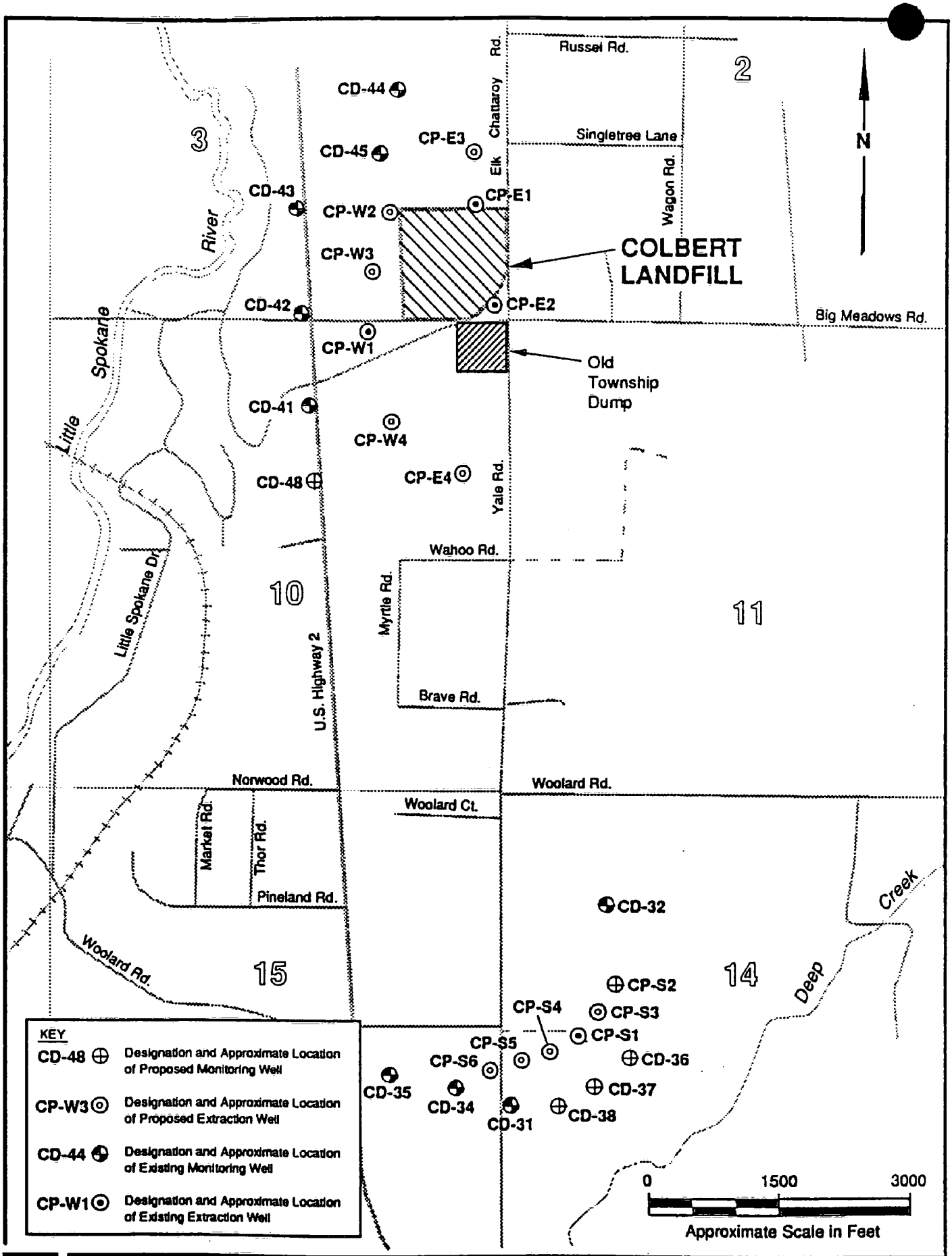
Lower Aquifers
Approximate Extent of Constituents of Concern

Figure 1.4



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Location of Phase II Monitoring and Extraction Wells

Figure 1.5

FORM 1.1

ACKNOWLEDGEMENT

I have read the attached Health and Safety Plan[a] for the Phase II RD/RA Activities at the Colbert Landfill. I have discussed any questions I have regarding this plan with my supervisor and/or the Site Safety Officer/Field Coordinator, and I understand the requirements.

Employee _____ Date _____

Supervisor _____ Date _____

(a) A copy of this Health and Safety Plan is to be placed in the support zone trailer and in each field vehicle.

FORM 1.2[a]

MODIFICATION TO HEALTH AND SAFETY PLAN
PHASE II RD/RA ACTIVITIES
COLBERT LANDFILL

DATE __/__/__

Modification: _____

_____

_____

_____

Reasons for Modification: _____

_____

_____

_____

Signature of Site Personnel Briefed:

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Approvals

Site Safety Officer/Field Coordinator: _____

Project Manager: _____

Others: _____

(a) The original of this Health and Safety Plan modification form will be filed in the project file. A copy of this form is to be placed with the Health and Safety Plan maintained in the support zone trailer and in each field vehicle.

2.0 HAZARD/RISK EVALUATION

The scope of Phase II RD/RA activities includes: 1) installation and sampling of groundwater monitoring wells and extraction wells near the anticipated perimeter of the contaminant plumes, and 2) construction of the treatment system (stripping tower), and water conveyance system. Most of the wells are located at a distance from the Landfill, although the treatment system will be located near the southwest corner of the Landfill.

The degree of overall hazard depends on the potential for: 1) exposure to toxic chemicals; 2) physical hazards from the use of general construction, drilling, sampling, and testing equipment; 3) physical hazards including debris, uneven terrain, rattlesnakes, poisonous spiders, poor footing, and surface water; 4) extremes of the summer and winter climate in the Spokane area; and 5) the possibility for fire/explosion when drilling or excavating through soil adjacent to the refuse disposal area. The degree of hazard or risk associated with intrusive activities, and the accompanying level of stringency for health and safety procedures varies, depending upon the area where the intensive work is to take place. For example, health and safety procedures will be the most stringent for intrusive work performed in the refuse disposal area(1) and less restrictive for work performed in areas outside of the refuse disposal area. Currently, no intrusive activities are planned in Phase II for the refuse disposal area, where potential worker health risk is greatest. However, because the potential exists for intensive activity in this area, associated health and safety risks and procedures for this area are addressed in this Plan.

Well drilling and general construction activities pose the greatest risk of physical injury during Phase II. To minimize the risk of injury from these activities, the drilling contractor and general contractor will be required to operate all equipment in a safe and appropriate manner. All drilling activities will be conducted in a manner consistent with the recommendations provided in the National Drilling Federation Drilling Safety Guide (NDF 1985). Although not specifically covered by this Plan, all construction activities are to be conducted in compliance with the requirements of 29 CFR 1926 (Federal safety and health regulations for construction) and WAC 296-155 (State safety standards for construction work).

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(1) According to Spokane County, an approximate 30-ft buffer zone exists between the refuse disposal area and the Landfill property boundary.

2.1 CONTAMINANT CHARACTERISTICS

Several previous investigations and sampling efforts have been performed to determine the type and concentration of chemical contaminants in groundwater, and in soil samples collected at aquifer depths (between about 80 feet and 180 feet). There is only limited data available on the concentration of the Constituents of Concern in soil within the refuse disposal area of the Landfill.

Information developed during Phase I was used for assessing the hazards and risks outside of the refuse disposal area. These assessments focused on the Constituents of Concern, which are common industrial solvents (or their breakdown products).

The maximum concentrations detected in groundwater for the six Constituents of Concern during Phase I are presented in Table 2.1. Low levels (less than 0.04 ppm) of seven other volatile organic chemicals (chloroform; chloroethane; dichlorodifluoromethane; freon; 1,2-dichloroethane; 1,2-dichloropropane; and vinyl chloride) were also detected, but were less widely distributed.

Several soil samples were collected during the advancement of five borings drilled within the refuse disposal area to approximately 20 feet below the refuse as part of the RI. MC was the only chemical detected in these samples. However, volatile organic compounds other than MC may be present in refuse disposal area soils, since the borings were located outside of areas where the solvents were disposed and the drilling technique (air rotary) may have volatilized organic solvents prior to sampling.

2.1.1 Toxicity

Selected health and safety criteria for the Constituents of Concern are shown in Table 2.2. Vapor pressures are given to provide an indication of the chemicals' tendency to volatilize (the higher the vapor pressure, the more volatile the chemical is). Possible exposure routes include inhalation of vapors, absorption through the skin or eyes, and ingestion. Specific health effects associated with the Constituents of Concern are described below.

1,1,1-Trichloroethane (TCA)

TCA is a colorless, nonflammable liquid with a sweet odor. Target organs include the skin, eyes, cardiovascular system, and the central nervous system. TCA is irritating to the eyes, and repeated skin contact can lead to dermatitis. TCA acts as a narcotic and depresses the

central nervous system. Exposure symptoms include dizziness, uncoordination, and drowsiness. Available data indicate that TCA is not a cancer-causing substance (EPA 1991).

1,1-Dichloroethylene (DCE)

DCE is a liquid with a slight acrid odor at room temperature. Target organs include the respiratory system, eyes, and central nervous system. DCE is irritating to the eyes and other mucous membranes. Exposure symptoms include dizziness, nausea, and intoxication similar to alcohol. DCE is classified as a possible human carcinogen (EPA 1991).

1,1-Dichloroethane (DCA)

DCA is a colorless, clear, flammable liquid with a sweet odor. Target organs include the skin, liver, and kidneys. Exposure symptoms include central nervous system depression, skin irritation, drowsiness, and liver and kidney damage. DCA is classified as a possible human carcinogen (EPA 1991).

Trichloroethylene (TCE)

TCE is a colorless, non-flammable liquid with a sweet odor. Target organs are the respiratory system, heart, liver, kidneys, central nervous system, and skin. TCE vapor irritates the eyes, nose, and throat. Repeated and prolonged skin contact may cause dermatitis. Exposure symptoms include headache, dizziness, nausea, irregular heart beat, drowsiness, and fatigue. TCE is classified as a probable human carcinogen (EPA 1991).

Tetrachloroethylene (PCE)

PCE is a clear, colorless, nonflammable liquid with a sweet odor similar to ether or chloroform. At higher concentrations, the odor tends to become unnoticeable after a short period of time. Repeated skin contact can cause dermatitis. High concentrations may cause eye and nose irritation. Target organs include the liver, kidneys, eyes, upper respiratory system, and central nervous system. Signs and symptoms of overexposure include malaise, dizziness, headache, increased perspiration, fatigue, and decreased mental ability. PCE is classified as a probable human carcinogen (EPA 1991).

Methylene Chloride (MC)

MC is a clear, colorless, liquid with an aromatic odor. Target organs include the skin, cardiovascular system, eyes, and the central nervous system. Repeated contact with MC vapor irritates the eyes and upper respiratory tract. Repeated skin contact may cause dermatitis. Prolonged exposure symptoms include headache, irritability, and numbness and tingling in the limbs. MC is classified as a probable human carcinogen (EPA 1991).

As some of the above exposure symptoms resemble signs of cold or flu, workers should inform the Site Safety Officer/Field Coordinator whenever they are feeling ill. The Site Safety Officer/Field Coordinator will review the work area and previous activities to determine if overexposure may have occurred, and if current safety procedures are adequate.

2.1.2 Potential for Chemical Exposure

All major intrusive construction activities conducted during Phase II will be outside of the refuse disposal area, and most intrusive activities will be at a distance of more than 100 feet from the refuse disposal area. Potentially contaminated soil outside the Landfill boundary (including its 30-ft buffer zone) is limited to the saturated zone, which begins at approximately 80 feet below the ground surface for the upper aquifer. Thus, the soil outside the Landfill boundary, and above the water table, is not considered potentially contaminated outside the Landfill boundary.

Levels of contamination in groundwater outside the refuse disposal area are anticipated to be relatively low (less than about 4 ppm). Consequently, vapor exposure hazards from groundwater or the potential for inhaling contaminated dust are minimal. However, the potential for inhaling chemical vapors or contaminated dust is greater for drilling or excavation within the refuse disposal area and (to a lesser extent) the 30-ft buffer zone immediately adjacent to the refuse disposal area. It should be noted that no exceedances of permissible exposure level (PEL) were detected during Phase I health and safety monitoring, including work performed in the buffer zone adjacent to the refuse disposal area.

Although no construction is anticipated for Phase II within the refuse disposal area, pipeline construction will occur within the buffer zone adjacent to the refuse disposal area. Worker protection measures will be necessary for intrusive activities within this area during Phase II.

In addition, the Old Township Dump, located immediately south of the Landfill, also offers a potential source for chemical exposure. While not specifically evaluated as part of this

Project, available data indicate that chlorinated solvents similar to those disposed of at the Landfill may also have been disposed of at the Old Township Dump. The location of the Old Township Dump is shown on Figure 1.4.

No intrusive activities are anticipated within the Old Township Dump boundary. However, a pipeline will be constructed along the east boundary, adjacent to Yale Road. Worker protection measures applied to the Landfill buffer zone also will be applied during pipeline construction adjacent to the Old Township Dump.

2.2 PHYSICAL INJURY

Field work near drill rigs, trucks, cranes, compressors, pumps, generators, and other construction-related equipment will pose physical hazards associated with heavy equipment operation. Workers will need to be aware of this activity and be prepared to avoid moving equipment. The Site Safety Officer/Field Coordinator will be responsible for notifying utility officials prior to initiating intrusive activities and for verifying that the drilling location is free of underground utilities (i.e., gas, electrical, water, and sewer lines). The general contractor will be responsible for notifying utility officials prior to initiating all other intrusive activities, and for addressing underground utilities encountered during construction in a safe and appropriate manner.

Construction Safety Standards and General Occupational Health Standards provided in Washington Administrative Code (WAC) 296-155 and WAC 296-62, respectively, will be followed. These WAC chapters provide personal health and safety provisions and requirements related to avoiding physical injury as follows:

- WAC 296-155; Construction Safety Standards: This chapter provides general health and safety requirements associated with construction sites and equipment, including:
  - Part A: General safety and health provisions
  - Part B: Occupational health and environmental control
  - Part C: Personal protective and life saving equipment
  - Part D: Fire protection and prevention
  - Part E: Signs, signals, and barricades
  - Part F: Material handling, storage, use, and disposal
  - Part G: Tools - hand and power
  - Part H: Welding and cutting

- Part I: Electrical
- Part J: Ladders, scaffolds, and elevated work platforms
- Part K: Floor openings, wall openings, and stairways
- Part L: Cranes, derricks, hoists, elevators, and conveyors
- Part M: Motor vehicles, mechanized equipment
- Part N: Excavation, trenching, and shoring
- Part O: Concrete, concrete forms, and shoring
- Part P: Steel erection
- Part Q: Tunnels and shafts, caissons, coffer dams, and compressed air
- Part R: Miscellaneous construction requirements

  (and others)

- WAC 296-62; General Occupational Health Standards: This chapter provides general rules for occupational health and safety at the workplace, including:
  - Part A: Occupational health and environmental control
  - Part B: Access to records
  - Part C: Hazard communication
  - Part D: Controls and definitions
  - Part E: Respiratory protection
  - Parts F/G: Carcinogens
  - Parts H/I: Air contaminants

2.3 HEAT-RELATED ILLNESSES

Summer temperatures in the Spokane area may at times exceed 100 degrees Fahrenheit (°F). Heat-related illness can cause physical discomfort, loss of efficiency, personal injury, and, in the extreme, can be life-threatening. During periods of extreme hot weather, the Site Coordinator/Site Safety Officer may implement modified work hours, or suspend field activities, until more temperate weather returns.

Construction workers, drillers, and samplers are highly susceptible to heat-related illness when wearing protective clothing, which decreases natural body ventilation and, hence, cooling. Causes of heat-related illnesses include unacclimated workers, lack of physical fitness, being overweight, recent alcohol intake, dehydration, individual susceptibility, and cardiovascular disease. The three most common types of heat-related illness are heat cramps, heat exhaustion, and heat stroke, the symptoms of which are briefly described below.

Heat cramps are caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Symptoms include muscle spasms and pain in the extremities and abdomen. First-aid treatment includes drinking half a glass of salt water (one teaspoon of salt per glass) every 15 minutes over a period of about one hour.

Heat exhaustion is caused by dehydration, or water deficiency. Symptoms include fatigue, nausea, headache, clammy and moist skin, and a pale complexion. First aid treatment includes taking the individual to a cooler environment and administering fluids.

Heat stroke is a life-threatening condition resulting from a failure of the body's temperature regulation ability, which leads to the loss of evaporative cooling and an uncontrolled accelerating rise in body temperature. If heat stroke is suspected, immediate medical attention is necessary. Symptoms of heat stroke include red, mottled, hot, and dry skin. First-aid treatment includes immediate cooling by spraying the individual with cool water or wrapping the individual in a wet sheet and vigorous fanning of the individual to reduce body temperature.

2.3.1 Personnel Monitoring

Prevention of heat-related illness can be accomplished by medically screening workers, allowing workers to slowly acclimate to heat exposure, monitoring workers during sustained heat, and ensuring that ample drinking water is available at all times and is taken frequently during the work day.

The potential for heat-related illness can be drastically reduced by following a work/rest schedule for workers wearing protective gear. The schedule will be determined by the Site Safety Officer/Field Coordinator and will be based on field conditions, level of work effort, and individual reactions.

The Site Safety Officer/Field Coordinator will evaluate the health and physical fitness of field personnel wearing protective gear prior to beginning Project field activities. This may include taking baseline pulse and temperature readings. These readings will provide the basis for comparison if vital sign monitoring becomes necessary during hot weather conditions. A person's body temperature and pulse rate will tend to rise while working in hot weather conditions. Workers who are ill (i.e., cold or flu), have sunburns, or other difficulties should inform the Site Safety Officer/Field Coordinator, as these conditions can affect vital sign readings.

If necessary, at the end of each work period, the workers will remove their protective clothing and the Site Safety Officer/Field Coordinator shall do one or more of the following for each worker:

(1) Take their oral temperature and proceed as given below:

a. Less than or equal to 99° F - no action.

b. Greater than 99° F and less than or equal to 99.7° F - cool them off with a water spray and do not allow them to return to work unless their temperature is 99° F at the end of the rest period.

c. Greater than 99.7° F and less than or equal to 100.4° F - cool them off with a water spray, double their rest period, and do not allow them to return to work unless their temperature is less than or equal to 99° F. If heat exhaustion or heat stroke symptoms are present, seek medical attention.

(2) Take their pulse. If their pulse is over 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same. If the heart rate still exceeds 110 beats per minute at the next rest period, shorten the following work cycle by one-third.

(3) Check carefully for symptoms of heat illness and react accordingly.

(4) Have each person slowly drink cool, but not cold, water or diluted unsweetened fruit juice. It is important that fluid intake be regular (suggested intake is approximately 1 cup every 20 minutes).

Prior to each day's field activities, the team will ensure that sufficient drinking water or diluted fruit juice and ample cooling water (in a pressure sprayer) is on-hand. Be sure to keep all fluids and cooling water in the shade. Workers should remove their protective clothing as completely as possible during rest breaks to let the body cool and to help prevent heat rashes.

2.4 COLD-RELATED ILLNESSES

Cold temperatures can also pose health hazards to field workers. Winter temperatures in the Spokane area are known to drop well below freezing. To prevent cold-related health hazards, field activities may be delayed during extreme cold weather. The serious health effects that can result from exposure to cold temperatures include hypothermia and frostbite. Hypothermia results from the lowering of the body's deep core temperature. Body core temperatures below 96.8° F cause reduced mental alertness, reduction in rational decision-

making, and possibly the loss of consciousness (which is potentially fatal). A person with hypothermia should receive medical attention immediately.

Signs of frostbite include sudden whitening of the skin and numbness. Treatment includes warming with blankets, warm compresses, or lukewarm water. Hot water, ointments, or massage should not be used.

Workers should inform the Site Safety Officer/Field Coordinator if their hands, feet, or face feel numb, and workers should monitor each other for patches of pale skin on the face and ears.

Wind chill, or the cooling power of moving air, is of critical importance when evaluating cold exposure to field workers. The potential for frostbite increases with colder temperatures and higher wind speeds. Table 2.3 provides information on determining wind chill.

Pain in the extremities may be the first early warning sign of the onset of cold-related illnesses; one of the last stages is severe shivering. Workers experiencing shivering should inform the Site Safety Officer/Field Coordinator and should go to the heated support zone trailer until they feel that they have totally recovered from the effects of the cold weather. The Site Safety Officer/Field Coordinator should monitor the remaining field team members.

Workers must wear adequate insulating clothing whenever temperatures are expected to be below 40° F. The most difficult areas to keep warm are the hands and feet. Light polypropylene or cotton liner gloves (worn under PVC inner gloves) will be provided during the cold season. Workers may choose to wear leather or another type of heavier outer gloves (rather than the usual neoprene gloves). However, these outer gloves will then be treated as contaminated if they have been used in the refuse disposal or buffer zone areas. In addition, these outer gloves will be left in a clean plastic bag in the support zone area and shall not be taken back to the worker's car or home.

The steel-toe insert in neoprene chemical resistant boots aggravate the problem of cold feet during the winter months. To help alleviate this problem, workers will be provided neoprene boots with oversized steel toe and shank that will accommodate extra wool socks or a felt liner. Workers should not try to wear extra socks inside their normally-sized steel toe and shank boots, as this can lead to reduced circulation, resulting in even colder feet.

Other problems can arise during the cold season (i.e., duct tape may not stick, nitrile outer gloves can freeze, respirator exhalation valves can freeze shut, pens may not write, and decontamination water may freeze). Some of these problems can be eliminated (i.e., using a special tape made for cold weather use, or adding a little antifreeze to the boot wash water);

however, workers and managers should be prepared for tasks taking more time during the winter months.

2.5 FIRE/EXPLOSION

There is the potential for encountering pockets of potentially explosive methane gas (commonly present at landfills) when conducting intrusive activities in the area adjacent to the refuse disposal zone, as well as encountering unknown hazardous materials if intrusive activities are conducted within the refuse disposal zone. Fire extinguishing equipment will be available and easily accessible on each drill rig. This equipment will include dry chemical fire extinguishers and shovels for use in responding to minor fires only. In the event of a major fire or explosion, all personnel will immediately evacuate to a safe area upwind. The Site Safety Officer/Field Coordinator will evaluate the need for further evacuation and/or emergency services.

Catalytic converters on the underside of vehicles are sufficiently hot to ignite dry prairie grass. Workers should avoid driving over dry grass that is higher than the ground clearance of the vehicle, and be aware of the potential fire hazard posed by the catalytic converter at all times. A running vehicle should never be allowed to sit in a stationary position over dry grass or other combustible materials.

2.6 RATTLESNAKES

Rattlesnakes are known to be present in the Spokane area, and although the potential for encountering a rattlesnake is low, workers should be cautious when walking through brush and vegetation. Rattlesnakes are usually 35 to 45 inches long, have a pit between the eye and nostril on each side of a triangular-shaped head, elliptical pupils, and two large fangs. Non-poisonous snakes have round pupils, more rounded heads, and no fangs or pits.

First aid for a snakebite victim includes: 1) transporting the victim to the hospital as quickly as possible; 2) keeping the victim still, calm, and preferably in a lying position; and 3) immobilizing the bitten extremity and keep it at or below the heart level.

2.7 SPIDERS

Black widow spiders have been observed at the Site, and brown recluse spiders are also likely to be present. Both are typically reclusive and prefer warm dark areas for their nests. Care should be taken when disturbing such potential nesting areas. First aid for a black widow, brown reclusive, or other venomous spider bite is identical to first aid for a snakebite.

TABLE 2.1

PHASE I MAXIMUM CONTAMINANT CONCENTRATIONS IN GROUNDWATER
COLBERT LANDFILL[a]

Constituent of Concern	Maximum Concentration (ppb)[b]	
	Upper Aquifer	Lower Aquifer
1,1,1-Trichloroethane (TCA)	400	4,200
1,1-Dichloroethylene (DCE)	43	560
1,1-Dichloroethane (DCA)	180	120
Trichloroethylene (TCE)	14	580
Tetrachloroethylene (PCE)	ND[c]	2.9
Methylene Chloride (MC)	14	4,400

(a) Landau Associates (1991).

(b) ppb = parts per billion; equivalent to micrograms per liter (μg/L).

(c) ND = not detected in any well in aquifer.

TABLE 2.2

SITE EXPOSURE ASSESSMENT
COLBERT LANDFILL

Chemical Constituent	Abbreviation	Maximum Concentration in Groundwater (ppb)[a]		Health and Safety Criteria		Vapor Pressure mm[d]
		Upper Aquifer	Lower Aquifer	Exposure Limit In Air[b](ppm)	IDLH[c] (ppm)	
1,1,1-Trichloroethane	TCA	400	4,200	350	--	100
1,1-Dichloroethylene	DCE	43	560	1.0	--	--
1,1-Dichloroethane	DCA	180	120	100	4,000	230[e]
Trichloroethylene	TCE	14	580	50	1,000	100
Tetrachloroethylene	PCE	ND[f]	2.9	25	500	16
Methlyene Chloride	MC	35	4,400	100	5,000	380

(a) ppb = parts per billion; equivalent to micrograms per liter (µg/L).

(b) Washington State Permissible Exposure Levels (PELs), as provided in WAC 296-62 (May 1989); expressed in parts per million (ppm); equivalent to milligrams per liter (mg/L).

(c) IDLH = Immediately Dangerous to Life and Health (NIOSH; U.S. Dept. of Health and Human Services 1990).

(d) mm = millimeters of mercury. Vapor pressure will increase with temperature. From Dangerous Properties of Industrial Materials, 5th edition, Sax, 1989, except as noted otherwise.

(e) From NIOSH Pocket Guide to Chemical Hazards (U.S. Dept. of Health and Human Services 1990).

(f) ND = Not Detected.

TABLE 2.3

COOLING POWER OF WIND ON EXPOSED SKIN*

Estimated Wind Speed (in mph)	Actual Temperature Reading (Degrees F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	Equivalent Chill Temperature Reading (Degrees F)											
calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148

(Wind speeds greater than 40 mph have little additional effect.)	LITTLE DANGER In < hr with dry skin skin. Maximum danger of false sense of security.	INCREASING DANGER Danger from freezing of exposed skin within one minute.	GREAT DANGER Skin may freeze within 30 seconds.

* Expressed as an equivalent temperature under calm conditions. Developed by U.S. Army Research Institute of Environmental Medicine, Natick, MA., as cited by the American Council of Hygienists, 1990-1991 Threshold Limit Values.

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3.0 WORK AREAS

This section presents descriptions of the designed controlled access zones to be established around areas where intrusive activities will occur during Phase II RD/RA construction. Intrusive activities are not anticipated to occur in the refuse disposal area. Therefore, only industrial work zones (established around intrusive activities outside the refuse disposal area) are anticipated under Phase II. However, since some minor potential still exists for intrusive activities to occur within the refuse disposal area during Phase II construction, the establishment of the more stringent concentric controlled access zones around such intrusive activities may be required. Therefore, refuse disposal area controlled access zones (exclusion zones, contaminant reduction zones, and support zones) are also described in this section. Work area designations only apply to drilling activities. General construction activities are subject to the construction safety standards discussed in Section 2.2.

3.1 INDUSTRIAL WORK ZONE

Chemical exposure hazards are suspected to be minimal for intrusive activities conducted outside of the refuse disposal area. However, physical hazards posed by the use of heavy equipment (e.g., drill rigs, compressors, etc.) warrant the institution of controlled access to any of these work areas. Therefore, an industrial work zone, designated with caution tape or traffic cones, will be instituted within 50 ft of Phase II intrusive activities conducted outside of refuse disposal areas. When working adjacent to public roads, work zone boundaries may be modified to allow continued traffic flow. Only field team members will be allowed in this industrial work zone. Protective clothing requirements in the industrial work zone are less stringent than those in the zones (described below) that would be established around intrusive work in the refuse disposal area (Section 6.0).

3.2 EXCLUSION ZONE

The exclusion zone is the area in which the highest hazard level exists. The exclusion zone will be an area within a 50-ft radius immediately surrounding any borehole or monitoring well located within the refuse disposal area. The exclusion zone will be designated with traffic cones or caution tape. Only field team members will be allowed in the exclusion zone. Protective gear (including full-face respiration, as described in Section 6.0 of this plan) will be required in those areas of the zone where air monitoring results indicate unacceptably high

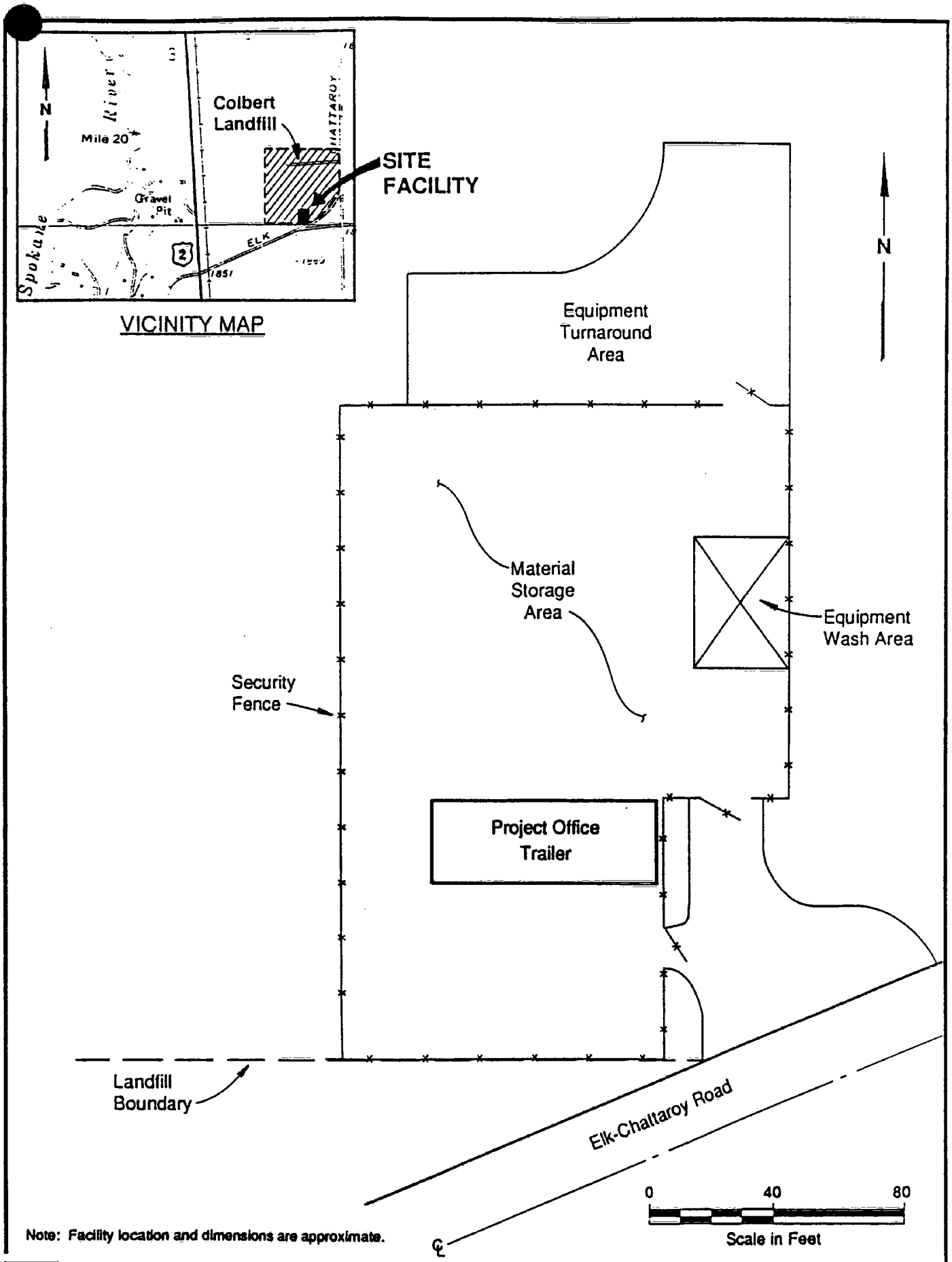
levels of volatile organic compounds (see Section 5.0, Table 5.1). As described for the industrial work zone, the boundaries of the exclusion zones may be modified to allow traffic flow along public roads, provided that doing so does not expose the public to health or safety risks.

3.3 CONTAMINATION REDUCTION ZONE

The contamination reduction zone will consist of the 10-ft wide area located between the 50 and 60 ft radii from a monitoring well or borehole located within the refuse disposal area, and will be established for both personnel and equipment decontamination. This zone will be used to prevent the transfer of contaminants to the support zone, and will be equipped with garbage bags, decontamination solutions, and other supplies. All potentially contaminated materials will be placed on plastic sheeting. Personnel will follow the decontamination procedures specified in Section 7.0 of this Plan. As described for the industrial work zone and exclusion zone, the boundaries of the contamination reduction zone may be modified to allow traffic flow along public roads, provided that doing so does not pose a threat of exposure or injury to the public.

3.4 SUPPORT ZONE

The support zone covers all areas outside of the contamination reduction zone and includes the Project support zone (which will be established for the duration of Phase II construction for the Project) and the field support zone (car or van at a distance from the Project support zone). The Project support zone will be located as indicated on Figure 3.1. The Project support zone will provide a secure area for clean equipment storage, an equipment wash area, and parking. Personnel rest and eating facilities and a telephone will be provided in the Project office trailer. Shower facilities will also be provided in the Project office trailer.



Note: Facility location and dimensions are approximate.

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Project Support Zone Layout

Figure 3.1

4.0 SITE SECURITY

Site security will be the responsibility of the Site Safety Officer/Field Coordinator. Access to the Project support zone will be controlled by security gates. These gates will be closed during non-working hours.

All site visitors must be approved by the Project Manager or the Site Safety Officer/Field Coordinator. Visitors will be allowed to observe operations from the support zone only, and must obey all instructions of the Site Safety Officer/Field Coordinator. Individuals entering the work zones (other than the support zone) to work in potentially contaminated areas must complete the training and medical monitoring (discussed in Sections 10.0 and 11.0 of this Plan) prior to admittance.

Field team members will also be responsible for preventing unauthorized individuals from entering the industrial work, exclusion, or contamination reduction zones at drilling or sampling locations where contamination is suspected to be present. As public and news media interest in this Project has been high in the past, field team members should be prepared to advise onlookers to maintain a safe distance from intrusive activities. Field team members should direct the press to the Spokane County Utilities Department representative, or to the Site Safety Officer/Field Coordinator. Answers to questions posed by property owners should be limited to providing a description of the work that the field team is about to perform. Questions requiring interpretation or value judgements should be directed to the Spokane County Utilities Department representative or the Site Safety Officer/Field Coordinator.

At the end of each day's intrusive activities, boreholes or monitoring wells will be secured with a lock if possible, or by using the drill rig to place an immovable object over the opening. Equipment should be stored in a secure area each evening.

5.0 AIR MONITORING FOR RESPIRATORY PROTECTION

Inhalation is one of the potential routes of exposure to chemical toxicants, particularly for volatile organic compounds (such as those known to be present). The level of respiratory protection required for workers performing intrusive activities in contaminated or potentially contaminated areas will be determined based on the location of these activities (with respect to the Landfill), and the concentration of organic vapors measured near the work site during these intrusive activities.

Monitoring for organic vapors will be accomplished within the worker breathing zone using a photoionization detector (PID). The PID is a portable instrument that measures the concentration of ionizable compounds in air. The PID will be configured with a 10.6-electron volt ultraviolet lamp, which is sufficient to ionize most of the volatile organic chemicals previously detected in the groundwater (see Table 2.1) and which may be present in the atmosphere around intrusive activities. MC cannot be detected with standard field photoionization equipment. However, since the Permissible Exposure Level (PEL) for MC is relatively high (see Table 2.2), and during previous investigations it has only been present in combination with other "detectable" compounds, the use of field monitoring equipment capable of detecting MC is not considered necessary for Phase II construction work. DCE has a PEL of 1.0 ppm and cannot be reliably detected at that concentration with a PID. However, the maximum concentration of DCE detected onsite was 0.5 ppm in groundwater near the center of the Landfill. Therefore, based on the results of previous sampling, DCE is not considered to present an inhalation hazard at the concentration present onsite, and the use of field monitoring equipment capable of detecting DCE is not considered necessary for Phase II construction work. If significant concentrations (above 20 ppm) of volatile organic compounds are detected by the PID, other field monitoring equipment (i.e. detector tubes) will be used to ensure that MC and DCE are not present in concentrations approaching the PEL.

Air monitoring for total particulates or airborne dust levels will not be performed because soil samples collected during the RI did not reveal appreciable levels of contamination. However, physical dust control methods will be used (especially during air rotary drilling, if used). These dust control methods include wetting disturbed soil, and/or covering the rotary drill rig cutting hose and keeping it securely tied down as far downwind from workers as possible.

A Combustible Gas Indicator (CGI) will be used to monitor the atmosphere for potentially explosive methane gas near, and in boreholes installed in, the refuse disposal area, and in areas of intrusive work conducted within 50 ft of the refuse disposal area or the Old Township Dump (including pipeline trenches). The CGI will provide results as a percentage of the Lower Explosive Limit (LEL).

Backup instrumentation will be maintained onsite to ensure availability. The calibration of the PID and CGI will be checked each morning, and after each day's work. The instruments will not be recalibrated at the end of the day; however, the results of the calibration check will be recorded. These results will be recorded for the duration of Project construction.

5.1 ACTION LEVELS

Table 5.1 lists action levels for the Project that will trigger an upgrade of respiratory protection, or when area evacuation is necessary due to the presence of explosive gases. Workers will evacuate the area if the CGI indicates readings of over 20 percent of the LEL. Workers will allow the gases to vent and dissipate for at least 30 minutes before returning to take another reading with the CGI.

An action level of 25 ppm has been established for volatile organic vapors. The 25 ppm action level is the PEL for TCE. Action levels will not be based on DCE, which has the lowest PEL of all constituents detected onsite, because of its low detected concentrations. Respiratory protection will be required if breathing zone organic vapor reading exceed 25 ppm for over one minute, or exceed 50 ppm for a momentary peak.

All personnel who will be conducting intrusive work in the refuse disposal area will provide documentation of a successful fit test with a full-face respirator prior to beginning work. Subcontractors will be responsible for fit-testing their own employees. Respirators will be placed in clean plastic bags and stored in the work zone for easy access if they are needed.

A full-face respirator, equipped with organic vapor and high-efficiency particulate cartridges, provides a protection factor of 100. Thus, it may be worn in concentrations up to 100 times those established above. Field conditions are not expected to result in concentrations that reach or exceed this 100 protection factor level, conditions that would require use of an supplied air respirator (Level B protection). If conditions are encountered which would warrant Level B protection, the work area will be evacuated until concentrations fall below the action level for evacuation (Table 5.1).

TABLE 5.1

ACTION LEVELS FOR RESPIRATORY PROTECTION
COLBERT LANDFILL

Monitoring Parameter	Reading[a]	Level of Protection
Combustible Gas (during intrusive activities in the refuse disposal and work areas within 50 ft of the refuse disposal area	10-20% of Lower Exposure Limit (LEL)	Continue onsite monitoring with extreme caution as higher levels are encountered
	> 20% LEL	Explosion hazard; withdraw from area immediately
Organic Vapors[b] (during all intrusive activities within the refuse disposal area)	0-15 ppm over background[c]	Level D (modified)
	15-100 ppm over background	Level C: Full-face air purifying respirator equipped with organic vapor and high efficiency particulate cartridges
	>100 ppm over background	Withdraw from area immediately

(a) Sustained readings over a one minute duration.
(b) Determine using a PID or other appropriate organic vapor detector.
(c) Background readings obtained 50 ft upwind of site activity.

6.0 PERSONAL SAFETY EQUIPMENT

Levels of protection have been defined by the EPA in the Standard Operating Safety Guides (EPA 1984). The levels of protection that will be needed are described below.

6.1 LEVEL D

Level D protective equipment may be worn when there is no potential for splashing or unexpected inhalation of chemicals. Level D equipment includes:

- Hard hat when working around construction or moving equipment
- Safety glasses when working around construction or moving equipment
- Long-sleeved shirt and long-pants, or coveralls
- Gloves (neoprene or PVC gloves must be used when handling potentially contaminated items such as sample bottles or equipment)
- Boots/shoes with leather or chemical-resistant steel (or impact-resistant plastic) toe and shank.

Level D equipment may be worn during the following activities:

- During non-intrusive construction work in all areas
- During the first 60 ft of drilling outside the Landfill boundary (including the buffer zone) where contamination is limited to the saturated zone beneath the ground surface
- During intrusive work (other than drilling) within the 30-ft buffer zone adjacent to the refuse disposal area, provided air monitoring in excavation does not detect organic vapors above background.

6.2 LEVEL D (MODIFIED)

Level D equipment (modified) will be worn when a higher degree of dermal or skin protection is needed and respiratory protection is not needed. For intrusive work performed outside of the refuse disposal area at depths greater than 60 ft, Level D (modified) protective equipment will be required; however, contaminated vapor and dust exposure levels are expected to be minimal. Level D (modified) equipment includes:

- Hard hat (a splash shield will be used when a high splashing potential is present)
- Safety glasses

- One-piece disposable coveralls, hereafter referred to as "Tyvek" (saran or poly-coated Tyvek when needed for greater splash protection, or when raining)
- Thin PVC inner-disposable gloves
- Outer-disposable gloves (leather outer gloves may be worn, but gloves will be treated as contaminated if used in the exclusion zone)
- Boots with chemically resistant neoprene steel (or impact-resistant plastic) toe and shank
- Boot to Tyvek and glove to sleeve seams must be sealed with duct tape when drilling within the refuse disposal area.

Level D (modified) equipment may be worn during the following work activities:

- Drilling within the 30-ft buffer zone adjacent to the refuse disposal area
- During intrusive work (other than drilling) within the 30-ft buffer zone adjacent to the refuse disposal area, if air monitoring in excavations detects organic vapors above background
- Drilling at more than 60 ft below the ground surface at locations outside the refuse disposal area and 30-ft buffer zone
- Installing and developing wells
- Conducting minor intrusive work within the refuse disposal area (to depths less than depth of disposed refuse; encountered approximately 2-4 ft below present grade)
- Taking water level readings (eye protection required when deconning tape)
- Collecting groundwater samples (eye protection required when taking flow readings while purging well, and whenever the potential for splashing exists)
- When pressure washing.

Periodic (approximately once per hour and more frequently when necessary) air monitoring is required during these activities.

6.3 LEVEL C

Level C protection differs from Level D (modified) protection in that it affords a higher degree of respiratory protection. Air-purifying respirators are worn to reduce atmospheric contaminant levels before air enters the lungs. Level C protective equipment includes:

- Level D (modified) equipment (saran or poly-coated Tyvek) required when conducting intrusive work in the refuse disposal zone, and taped glove to Tyvek and boot to Tyvek seams whenever Level C is required
- Full-face respirator with high-efficiency particulate and organic vapor cartridges (MSHA/NIOSH approved).

Level C protection will be required for intrusive activities within the refuse disposal area where substantial volumes of disposed waste may actually be encountered (depths of 2-4 ft below ground surface or greater), or any areas where air quality monitoring indicates concentrations in excess of action levels listed in Section 5.0, Table 5.1, outside the refuse disposal area. Air monitoring during drilling is required about every ½ hour to a depth of about 90 ft, and about every hour at greater depths.

7.0 DECONTAMINATION

Workers leaving the industrial work zone (designated work area at locations outside the perimeter of the refuse disposal area) will remove disposable clothing and gloves. These items will be disposed of daily and will be treated as non-contaminated trash.

Strict decontamination procedures are required for intrusive work performed within the refuse disposal area. In these areas, all personnel and equipment must be properly decontaminated before entering the support zone from the exclusion zone.

7.1 REFUSE DISPOSAL AREA PERSONNEL DECONTAMINATION PROCEDURES

A decontamination area will be set up in the contamination reduction zone. Before commencing work, all personnel will be trained by the Site Safety Officer/Field Coordinator in decontamination procedures. Personnel decontamination will be as follows:

Step 1:	Place equipment on plastic sheeting just inside contamination reduction zone.
Step 2:	Discard outer gloves.
Step 3:	Wash and rinse boots.
Step 4:	Decontaminate equipment with disposable wetted rags. Place disposables in receptacles.
Step 5:	Remove Tyvek. Place disposables in receptacles.
Step 6:	Remove, wash, rinse, and sanitize respirator (if used).
Step 7:	Discard inner gloves.
Step 8:	Enter support zone.
Step 9:	Wash hands and face.
Step 10:	Workers should shower in the Project office trailer or immediately upon returning home.

7.2 EMERGENCY DECONTAMINATION

In case of an emergency, gross decontamination procedures will be implemented as rapidly as possible. Portable eye washes will be available in the first-aid kits maintained for each command post (i.e., van or trailer) located within the field support zone. Portable water sprayers will be available in all contamination reduction zones. If a life-threatening injury occurs that results in the individual becoming highly contaminated, and the injured individual cannot undergo decontamination procedures without incurring additional injuries or risk, the

individual will be transported wrapped in plastic sheeting. The medical facility will be: 1) informed that the injured individual has not been decontaminated and, 2) given information regarding the most probable contaminants.

7.3 RESPIRATOR DECONTAMINATION

Certain parts of contaminated respirators, such as the harness assembly or cloth components, are difficult to decontaminate. If grossly contaminated, these parts will be discarded. Rubber components will be soaked in soap and water and scrubbed with a brush. Respirators will be sanitized by rinsing them in a detergent solution followed by several clear rinses, before hanging them to dry.

Each person will be responsible for decontaminating their own respirator at the end of each day of use, and will be trained in respirator maintenance as part of the health and safety training program.

7.4 SAMPLING EQUIPMENT DECONTAMINATION

Sampling equipment will be decontaminated prior to, and at the end of, sampling activities. Sampling equipment decontamination includes a tap water rinse, an Alconox wash, another tap water rinse, and a final rinse with distilled water. Sampling equipment used outside the refuse disposal area will be decontaminated primarily to prevent cross-contamination, since soil and water in these areas are considered non-hazardous.

7.5 HEAVY EQUIPMENT DECONTAMINATION

Drilling equipment, and heavy equipment used for intrusive activities within refuse disposal area, will be decontaminated at the project support zone. As described above for sampling equipment, decontamination of drilling equipment is primarily to prevent cross-contamination between borings. Particular care will be taken in decontaminating heavy equipment parts that have come into direct contact with contaminants.

For wet decontamination procedures, high-pressure hot water cleaning will be used. Physical scrubbing with disposable brushes will be used when necessary to loosen materials.

The equipment decontamination area will be established downwind of field workers, if possible. Workers should stand as far away from the steam plumes as possible, as steam will tend to entrain potentially contaminated particulates.

7.6 DISPOSAL OF CONTAMINATED FLUIDS AND MATERIALS

All equipment and materials used for decontamination of personal protection will be cleaned or collected for appropriate disposal. All non-disposable clothing and equipment will be decontaminated. Disposables will be containerized. Equipment decontamination water, drilling water, and well purge water will be screened for organic vapors by passing a PID over the water's surface. If readings above background are detected, air will be bubbled through the water to remove residual volatile organics. Once the residual volatile organics have been removed, the water will be considered non-hazardous and disposed of at the work station.

Soil cuttings from the refuse disposal area will be disposed of in the refuse disposal area. Soil cuttings from outside this area will be screened for organic vapors in a manner similar to that described above for water. If readings above background are detected, the cuttings will be disposed of in the refuse disposal area. Otherwise, cuttings will be considered non-hazardous and may be disposed of at the work site, if appropriate, or in the refuse disposal area.

7.7 HOUSEKEEPING

Work areas will be kept clean and orderly. Ordinary refuse will be placed in suitable trash containers. Extraneous materials will be minimized within the exclusion zone (if applicable) as this increases the decontamination load and introduces possibilities for cross-contamination.

8.0 SAFETY RULES AND PROCEDURES

Safety is the responsibility of every individual involved with the Project. Whether in the office or field, properly followed procedures are essential for personal safety and to minimize lost time due to injuries or accidents involving equipment.

8.1 OVERALL SAFETY RULES

All personnel working in contaminated or potentially contaminated environments onsite will follow these rules and procedures:

- All personnel must comply with established safety procedures. Any employee who does not comply with any provision of this Health and Safety Plan may be immediately dismissed.
- Working under the influence of intoxicants, narcotics, or controlled substances is prohibited.
- Personnel taking prescription medicine should inform the Site Safety Officer/Field Coordinator if the medication is suspected to impair the worker's abilities, and if the medication must be taken at specific times during the day. Personnel may not take medicine in areas other than the support zone.
- Only properly trained and licensed drillers or driller's assistants will be allowed to climb or stand on drilling machinery, unless otherwise authorized by the Site Safety Officer/Field Coordinator. Other individuals (i.e., samplers and air monitoring personnel) will stand at a safe distance from the drill rig when it is operating. All personnel should remain alert and prepared to avoid moving equipment.
- Long hair must be tied back and contained inside a hard hat when working around moving machinery.
- Special care should be taken around drill rigs, compressors, and pumps, as protective clothing, fingers, or hair can be caught in moving parts. Also, machinery such as the compressor and generator may become extremely hot during use.
- Ear plugs should be used when working around loud machinery and when reduced hearing would not present a hazard (i.e., well development, and purging).
- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the exclusion and industrial work zones.
- Smoking is allowed in designated areas of the support zone only.

- Meals will be eaten only within the support zone.
- Whenever possible, field team activities will be staged upwind of the drill rig and monitoring wells. The air rotary drill cutting outlet will be placed as far downwind from field workers as possible.
- Whenever possible, walking through puddles, mud, or across any discolored ground surface in the refuse disposal area or buffer zone is to be avoided. If work is to be performed inside the refuse disposal area, kneeling, leaning, sitting, or placing equipment on potentially contaminated drums, containers, vehicles, or the ground is prohibited.
- Care will be exercised when proceeding on foot through uneven terrain, and workers should remain alert as rattlesnakes are sometimes found in the area.
- Exchange of personal protective equipment will not be allowed.
- If any physical discomfort is experienced (abnormalities, light-headedness), immediately stop work, tell your co-workers, and leave the exclusion zone together.
- If any personal protective equipment fails, proceed immediately to the contamination reduction zone.
- At least two persons must be present in the exclusion zone at all times while it is occupied.

8.2 BEFORE LEAVING THE PROJECT OFFICE TRAILER

- Prior to leaving the Project office trailer, review Project information updates. These will provide important information concerning:
  - Expected hazards
  - Special conditions
  - Sampling procedures
  - Location of phone
  - Emergency medical information
  - Level of personal protection required
- Finish eating and extinguish cigarettes
- Attend safety briefing and worker question-and-answer period
- Check safety gear and equipment.

8.3 BEFORE ENTERING THE EXCLUSION ZONE

- Prior to entering the exclusion zone, place sample containers in field sample carrier
- Check location of portable first-aid kit, two-way radio, fire extinguisher, and water supply
- Conduct daily inspection of primary personal safety equipment for damage or wear, and replace or repair faulty equipment before re-entering the exclusion zone. Workers will assist each other in this inspection.
- Lay out and check alternate safety gear (first-aid kit, and extra clothing) daily for tears or malfunctions. Immediately repair or replace any damaged or missing gear or equipment.

9.0 EMERGENCY RESPONSE PROCEDURES

9.1 EMERGENCY COMMUNICATIONS

9.1.1 Location of Nearest Phone

A telephone will be located in the support zone at the Project office trailer. Numbers of emergency facilities and personnel will be located adjacent to the telephone.

9.1.2 Air Horn

An air horn will be located in each vehicle and at the Project office trailer, and will be used in the following manner:

Blasts	Meaning
1 long (L)	Evacuate zone immediately.
2 short (S)	Localized problem (not dangerous to workers). Workers move to contamination reduction zone for further instructions.
L/S/L/S	Need help at work location.
2 L	All clear. Resume work.

9.1.3 Two-Way Radios

Portable two-way radios or cellular telephones will be used at each field team location to communicate with the Project office trailer and other field team members.

9.1.4 Wind Direction Indicators

Wind direction indicators will be located at each work area. In an emergency situation, workers should check the wind direction indicator and then evacuate in the upwind direction.

9.1.5 Hand Signals

Hand signals will be established and standardized among all workers. Each worker will immediately inform co-workers of dangerous situations. The following hand signals will be used by team members:

Signal	Meaning
Thumbs up	Okay
Thumbs down	Not okay
Hands on Waist	Exit exclusion zone
Hands on Throat	Cannot breath
Rotating hands above head	Need help
Rotating hands to the side	Situation under control

9.2 ONSITE EMERGENCY EQUIPMENT

An Industrial First-Aid Kit, including a description of CPR and other emergency first aid, a portable air horn, and an eyewash kit will accompany each field vehicle.

9.3 OFFSITE EMERGENCY SERVICES

Phone numbers for offsite emergency services are listed inside the front cover page of this Plan. Copies of the emergency numbers will be located in each vehicle and at the Project office trailer.

9.4 NON-LIFE THREATENING INJURIES

In emergency situations that are not life-threatening (e.g., a broken leg), some decontamination procedures may be modified according to the specific circumstances. The victim should be moved outside the exclusion zone and outer protective clothing should be removed, if doing so would not cause delays or aggravate the injury. Respirators should only be removed: 1) if the victim has stopped breathing, or 2) after the victim has been removed from a breathing hazard area. Normal decontamination procedures should be followed when possible.

Bodily injuries that occur as a result of an accident during operations will be handled in the following manner:

- The victim will be moved outside of the exclusion zone and will be administered to by an individual who holds current first-aid and/or CPR certifications utilizing the emergency equipment onsite (Project office trailer or field vehicles).
- The local first-aid squad/rescue unit, a local hospital, and the Site Safety Officer/Field Coordinator will be notified depending on the nature of the emergency.

9.5 EVACUATION

The Site Safety Officer/Field Coordinator will be responsible for determining if circumstances exist that require re-evaluation and/or evacuation, and should always assume worst-case conditions until proven otherwise. Specific evacuation procedures and warning signs and signals will be covered in the health and safety training session prior to beginning work. Two levels of evacuation have been considered: 1) withdrawal from the immediate work area onsite, and 2) evacuation of the surrounding area.

9.5.1 Work Area

Withdrawal to a safe upwind location will be required under the following circumstances:

- Detection of volatile organics and/or toxic gases at concentrations above action levels for the level of protection being worn (see Section 5.1)
- Occurrence of a minor accident – field operations will resume after first-aid and decontamination procedures have been administered
- Malfunction or failure of protective equipment, clothing, or respirator.

9.5.2 Surrounding Area

There are no foreseeable conditions, based on current knowledge, that would require evacuation of the surrounding area. The Site Safety Officer/Field Coordinator will be responsible for determining if circumstances exist for area-wide evacuation, and should always assume worst-case conditions until proven otherwise. Fire and police departments must be contacted. A list of emergency response individuals familiar with Project work, including addresses and telephone numbers (inside cover page), will be located at the Project office trailer, and will be carried by the Site Safety Officer/Field Coordinator. If evacuation is necessary, it will be implemented with the assistance of these emergency response personnel.

9.6 ACCIDENT/INCIDENT REPORTING PROCEDURES

Procedures for reporting accidents/incidents are listed below. They will be performed in the order indicated.

(1) Call appropriate emergency services numbers (ambulance, fire, etc.). Provide information specified on page 1 of this Health and Safety Plan.

(2) The Site Safety Officer/Field Coordinator will complete a written accident/ incident report using Form 9.1, within 24 hours, sending copies to the persons listed below:

Distribution of Accident/Incident Reports:

Project Manager

Spokane County Utilities District Project Manager

The information provided in the "Employee Exposure/Injury Incident Report" is not to be released under any circumstances to parties other than those listed in this section, bona fide emergency response team members, or appropriate regulatory agency personnel.

FORM 9.1
EMPLOYEE EXPOSURE/INJURY INCIDENT REPORT
(Use additional page if necessary)

Date: _____ Time: _____

Name: _____ Employer: _____

Site Name and Location: _____

Site Weather (clear, rain, snow, etc.): _____

_____

Nature of Illness/Injury: _____

_____

_____

Symptoms: _____

Action Taken: Rest _____ First Aid _____ Medical _____

Transported by: _____

Witnessed by: _____

Hospital's Name: _____

Treatment: _____

Comments: _____

_____

_____

What was the person doing at the time of the accident/incident? _____

_____

_____

Personal Protective Equipment Worn: _____

_____

_____

Cause of Accident/Incident: _____

_____

_____

What immediate action was taken to prevent recurrence: _____

_____

_____

Additional Comments:

Employee's Signature: _____ Date

Supervisor's Signature _____ Date

Site Safety Officer/Field Coordinator Signature _____ Date

Distribution: 1) Project Manager, 2) Spokane County Utilities District Project Manager

10.0 TRAINING

All personnel performing well construction or sampling tasks, intrusive tasks within the refuse disposal area or intrusive tasks in other areas where health and safety monitoring indicate personnel protection above Level D is required, shall have completed formal training that complies with 29 CFR 1910.120 and WAC 296-62-3040 (certificates of successful completion of training will be maintained in onsite job files), and shall verify on-the-job training for those tasks they are assigned to perform. All operations will be reviewed and all unfamiliar operations will be rehearsed prior to performing the actual procedure. Training will be conducted by a qualified safety professional.

Orientation training will be held prior to beginning drilling or intrusive work within the refuse disposal area. The initial training will be supplemented, as necessary, in subsequent safety meetings. Orientation training will include:

- Health effects and hazards of the chemicals identified or suspected to be present.
- Personal protection requirements.
- Personal hygiene (beards, etc.).
- Use, care, maintenance, and fitting of personal protective equipment, including air purifying respirators. Training in respiratory equipment use will conform to ANSI Z88.2(1980) and 29 CFR 1910.134, which establishes the necessity, effectiveness, and limitations of respiratory equipment.
- Decontamination procedures.
- Accepted practices for entry, exit, and activities within specified areas, including prohibition of food consumption and smoking within the exclusion and contamination reduction zones.
- Emergency response procedures as specified in Section 9.0.
- Review and assessment of equipment.
- Review of job descriptions and assignments.
- Medical requirements.

Written documentation (Form 10.1) of training will be required from all Project personnel and will be maintained by the Site Safety Officer/Field Coordinator.

A Health and Safety Logbook will be maintained for recording events relating to worker health and safety. Issues discussed during safety briefings and any pertinent activities or conversations will be recorded in the log book.

FORM 10.1

TRAINING RECORD

Employee Name: _____

Address: _____

Phone: _____

Company: _____

Training:

(List all successfully completed Health and Safety Training)

Date	Location	Trainer	Hrs.	Title/Subject Matter

I certify that I have successfully completed the training programs listed above.

Signature: _____

Date: _____

11.0 ROUTINE HEALTH CARE AND MONITORING

A baseline medical evaluation and an annual update exam will be required for all contractors and subcontractors providing drilling services, performing intrusive activities in the refuse disposal area, or intrusive tasks in other areas where health and safety monitoring indicate personnel protection above Level D is required. Annual exams must be maintained throughout the Project for these personnel. Follow-up examinations are appropriate if exposures are known or suspected to have occurred. Documentation of medical evaluations (including medical clearance for respirator use) will be maintained by the Site Safety Officer/Field Coordinator for all workers performing intrusive activities in the refuse disposal area.

12.0 REFERENCES

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U.S. Department of Labor, Occupational Safety and Health Administration, Federal Register: 29 CFR Part 1910, Hazardous Waste Operations and Emergency Response, Final Rule, 6 March 1989.

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U.S. Environmental Protection Agency. 1987. Record of Decision, Decision Summary, and Responsiveness Summary for Interim Final Remedial Action, Colbert Landfill Site, Colbert, Washington, (September).

U.S. Environmental Protection Agency. 1991. Health Effects Assessment Summary Tables, Annual FY-1991, Environmental Criteria and Assessments Office, OERR 9200.6-303 (91-1).

APPENDIX C

System Operating Description

SECTION 17700

SYSTEM OPERATING DESCRIPTION

PART 1 GENERAL

1.01 DESCRIPTION

A. Requirements specified in Conditions of Contract and Division 1 form part of Division 17 and this section. This section describes functional requirements of and processes for instrumentation, control, and monitoring systems.

1.02 SYSTEMS - GENERAL

A. This project comprises a groundwater extraction, treatment, and discharge system for the Colbert Landfill. The groundwater extraction system consists of 10 groundwater extraction wells as shown on Drawings. Extraction wells will be outfitted as part of Work of this project to convey groundwater through a series of interconnecting pipelines to a treatment facility. The treatment facility features an air stripping tower as the fundamental treatment process. Subsystem processes for treatment of groundwater include: scale control, Air Stripper Treatment Equipment batch cleaning, and other ancillary subsystems.

B. Intent of Drawings and this section is to provide the instrumentation, control, and monitoring (ICM) system subcontractor a generalized schematic and functional description of how instrumentation, control and monitoring systems are to operate. Owner-approved ICM subcontractor shall furnish and install services and equipment for a fully functional system, including primary elements, transmitters, panel mounted and field instruments, computer systems, program logic, telemetry equipment, and other necessary system components to assure system uniformity, subsystem compatibility, and coordination of system interfaces. Deviations proposed by ICM subcontractor may be considered in special circumstances and may be approved at sole discretion of Owner.

1.03 SYSTEM RESPONSIBILITY

A. ICM system specified in this section and shown on Drawings is an integrated system that shall be provided by a single competent and qualified instrumentation subcontractor (ICM Subcontractor), who shall have total responsibility for Work of this section and Sections 17000, 17100, 17200, 17300, and 17600.

B. ICM Subcontractor shall furnish tools, equipment, material, and supplies and perform labor required to complete furnishing and installation, including instrumentation signal and power wiring, validation, start-up, and operational testing of a complete and operable ICM system as indicated on Drawings and as specified herein; shall provide equipment components and interconnections, and services of manufacturers' engineering representatives for engineering, implementation, start-up, operation, and instruction, to ensure that Owner receives a completely integrated, functional, and operational ICM system as specified herein and as shown on Drawings.

1.04 SYSTEM DESCRIPTIONS

A. The following paragraphs describe functional requirements of ICM systems and processes to which they apply. Automatic control of process systems shall be accomplished through use of programmable logic controllers (YICs). A programmable logic controller shall be furnished and installed at each ground extraction pump control panel (PCP) located at well-head and at Main Control Panel output signals to YICs is presented in Section 17600, which is part of this section.

1. System 100 - Groundwater Extraction:

   a. The theory of the operation and control system for each respective extraction pump system is identical. The following description is exemplary of the operation and control system for Extraction Pump P 101-1 at Extraction Well CP-S1.

   b. Groundwater shall be pumped from each respective well and conveyed to the groundwater treatment system through a series of interconnecting pipelines. Quantity of groundwater pumped from each well shall be metered through a magnetic flow meter (e.g., FE 101-1). Flow rate (e.g., FIT 101-1) and total accumulative flow (e.g., FQI 101-1) shall be indicated locally and transmitted to YIC 101. These flow measurements shall be transmitted by YIC 101-1 to YIC 1 located at treatment plant and indicated at MCP as FI 101-2 and FQI 101-2, respectively. Water level in each respective well shall be monitored and indicated locally, transmitted to PCP, and transmitted by YIC 101-1 to YIC 1 located at treatment plant and indicated at MCP as LI 101-2.

   c. Submersible Well pumps shall be controlled by HOA (Hand-Off-Automatic) switch. For example, HS 101-1 located at PCP controls operation of Pump P 101-1. With this switch in HAND mode, pump shall operate continuously without regard to automatic interlock controls. In AUTOMATIC mode, pump shall be controlled by YIC 101 located at PCP. Pump operation shall be indicated at PCP by illumination of green operating light, OL 101-1, and shall be indicated at treatment plant MCP as OL 101-3. Power ON shall be indicated by illumination of amber light at PCP as OL 101-2. Motor overload or system failure shall be indicated at PCP by illumination of red alarm light, OA 101-1. Pump running time shall be indicated in total cumulative hours at Running Time meter, KQI 101-1.

   d. YIC 101 shall control pump discharge by modulating the input signal to the variable frequency drive (VFD), which shall vary the speed of the groundwater extraction pump to achieve preset level of water in well. Pump speed shall be transmitted from the VFD to YIC 101 which shall in turn transmit to YIC 1 located at the treatment plant. Pump discharge pressure shall be monitored by PIT 101-1, which shall send a signal to YIC 101. Set points for low or high pressure conditions shall be established at YIC 101 and shall be interlocked with operation of pump. YIC 101 shall stop pump after preset but operator adjustable time period, if pressure is below low pressure set point or above high pressure set point. Low and high pressure failure signals shall be indicated at PCP by PAL 101-1 and PAH 101-1, respectively. If pump system should fail for pressure, motor overload, level control valve position or low water level in well, respective alarm light shall remain illuminated until failure is cleared by pressing Reset Switch, HMS 101-1; activation of any of these system failures shall cause YIC 101, through the telemetry system, to activate general operation

alarm, OA 101-2, at the treatment plant MCP for respective groundwater extraction well.

e. The following description presents the normal sequence of operation. Assume Pump P 101-1 is initially off and HS 101-1 is in OFF position, and liquid level in well is above pump stop level. When HS 101-1 is placed into AUTO position, pump shall start at the operator adjustable but preset minimum set speed. After a preset time period (adjustable at YIC), and discharge pressure is above low pressure set point as sensed by PIT 101-1, then YIC 101 shall signal the VFD to increase the speed of the control valve at a preset but operator adjustable rate until liquid level in well reaches preset but operator adjustable liquid level as monitored by LIT 101-1. Level signal shall be transmitted to treatment plant and level indicated at MCP as LI 101-2. YIC 101 shall modulate the pump speed to maintain set point liquid level in well. If water level in well does not decrease to set point water level and YIC 101 has signalled the VFD to increase the speed of the pump to the maximum set point speed, then YIC 101 shall activate and stop pump after adjustable but preset time delay. Similarly, if liquid level in well should fall below set point, YIC shall gradually decrease the speed of the pump at preset but operator adjustable rate until liquid level in well reaches set point liquid level. If the YIC should reduce the speed of the pump to the preset minimum speed, then the YIC shall stop pump and activate OA 101-1, located at PCP and OA 101-2 at the MCP.

f. Additionally, if level in well continues to fall, triggering LSL 101-1, YIC 101 shall energize low-level alarm light, LAL 101-1, and stop pump after operator adjustable but preset time period. YIC 101 shall cause YIC 1 to activate OA 101-2 at the MCP.

g. The groundwater extraction pump process control system shall feature another mode of automatic control based on maintaining a constant groundwater flow rate. Selection of the level or flow mode of automatic control shall be through a selector switch located at the PCP through the program logic. The target flow rate shall be established at YIC 101 for the specific extraction well. The set point flow rate shall be operator adjustable. Selection of the mode of operation (i.e., flow or level) and target flow or water level set points shall be displayed and adjustable through the MCP. When a groundwater extraction pump is operated in the flow control mode, YIC 101 shall modulate the speed of the pump through the VFD to maintain the flow set point. The groundwater flow rate shall be monitored by YIC 101 through the signal received from the inline groundwater flow meter (FIT 101-1)

h. The telemetry data acquisition and control system, shall be interfaced with the YIC at each respective extraction well and YIC 1 located at treatment facility. Telemetry system at each extraction well shall also receive signals from treatment plant to start, stop, and change control and alarm set points for each respective extraction well pump system independently from treatment plant MCP. All other extraction well pumping systems furnished and installed under this Contract shall feature an equivalent operating system.

i. Proper functioning of the variable frequency drive shall be monitored by each respective YIC located at the groundwater extraction wells. For example, at Well CP-S1 (P 101), YIC 101 shall monitor a relay contact (YS 101-2) at the VFD for P 101 which shall indicate when the VFD is at

speed. If YS 101-2 is not triggered within an operator adjustable but preset time period established at YIC 101, YIC 101 shall activate operation alarms, OA 101-1 at the PCP and OA 101-2 at the MCP. YIC 101 shall also monitor a second relay contact YS 101-3 at the VFD which shall signal YIC 101 in the event of a VFD alarm condition. If YS 101-3 is triggered then YIC 101 shall stop P 101 and activate operation alarms OA 101-1 at the PCP and OA 101-2 at the MCP.

j. Access doors at each groundwater extraction well shall be continuously monitored by each respective YIC to detect both authorized and unauthorized access to each well. A limit switch located on the primary access door to each well vault shall signal the YIC at the well whenever the access door to the well vault is opened. The YIC located at the well shall relay the signal to YIC 1, which shall activate an alarm at the MCP. For well CP-S1, when a door for the well vault is opened, limit switch(es) YS 101-1 (a or b) shall signal YIC 101 of the event; in turn YIC 101 shall signal YIC 1 that the door is opened, which shall cause an alarm OA 101-3 to be triggered at the MCP. If the alarm is not acknowledged at the MCP within an operator adjustable but preset time period then YIC 1 shall trigger the automatic telephone dialing alarm system located at the MCP to signal the persons on predetermined list of telephone numbers at the ADAS. The operator interface at the MCP shall allow a qualified operator to disable any specific well head intruder alarm detection system. Disabling of the well head intruder alarm detection system shall require a password and shall be on a well by well basis.

k. The floor sump of each groundwater extraction well vault shall be continuously monitored for the accumulation of water by a magnetic reed float switch, LSH X-1. If water accumulates in the vault sump above the setpoint level, LSH X-1 shall signal the YIC by a switch contact closure. In turn, the YIC shall activate the high water alarm light LAH X-1 at the PCP. YIC shall stop the groundwater extraction pump and then signal the MCP of the alarm condition by causing LAH X-2 to be energized at the MCP.

2. System 20 - Groundwater Influent to Treatment Facility:

a. Groundwater influent flow to treatment facility from each of the conveyance pipelines shall be monitored by magnetic-type flow meters, FE 20-1, FE 20-2, and FE 20-3. A flow proportional signal shall be transmitted from each respective flow meter transmitter, YIC 1. Flow rate (FI) and accumulated total accumulated flow (FQI) shall be indicated at MCP for each meter. Flow of groundwater conveyed from the extraction wells shall be continuously recorded by a dedicated data logger for each respective extraction well conveyance pipeline entering the treatment facility. YIC 1 shall compare the rate of flow measured by the respective flow meter at the treatment facility with the sum of the individual flow rates measured by the extraction well head flow meters. The YIC 1 shall determine if there is a significant difference in the pumped and received flow rate by comparison between an operator adjustable but preset value. If the difference in the flow rates exceeds the operator adjustable but preset value, then YIC 1 shall stop only those extraction wells conveying water into the pipeline in question and establish flow failure alarm for the affected wells at the MCP. If the alarm condition is not acknowledged within the allocated operator adjustable but preset time period, YIC 1 shall signal the ADAS system of the respective well(s) failure.

YIC 1 shall sum the flow rates for FE 20-1, FE 20-2, and FE 20-3 and subtract any measured flow by FE 21-1. The resulting computed flow represents the flow conveyed to the Air Stripper Treatment Equipment. Flow and accumulated flow conveyed to the Air Stripper Treatment Equipment shall be indicated at the MCP as FI 20-4 and FQI 20-4. Flow rate of groundwater conveyed to Air Stripper Treatment Equipment shall be recorded continuously by a data logger, FR 24-1.

b. Flow control valve, FCV 20-1, is provided on influent pipeline to regulate groundwater flow rate into Air Stripping Treatment Equipment and also prevent flooding of Air Stripping Treatment Equipment clearwell. Operation of FCV 20-1 is controlled through YIC 1, which shall modulate position of FCV 20-1 to maintain flow set point as measured by FE 20-4 within preset but operator adjustable range. Position of FCV 20-1 shall be indicated at MCP as ZI 20-1. If influent flow rate rises above operator adjustable but preset rate established at YIC 1, YIC 1 shall send signal to flow control valve positioner ZC 20-1 to close valve at operator adjustable but preset rate until flow rate is within defined normal operating range. Position switches on flow control valve shall signal YIC 1 when valve is fully open (ZSH 20-1) and fully closed (ZSL 20-1). Pressure upstream of FCV 20-1 shall be locally indicated and monitored by PIT 20-1. Operating pressure shall be indicated at the MCP. If pressure in influent pipeline should increase above operator adjustable but preset value established at YIC 1, YIC 1 shall activate audible and visual alarm, PAH 20-1. If alarm condition exists after operator adjustable but preset time delay, YIC 1 shall initiate system shutdown sequence of extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices.

c. Operation of FCV 20-1 shall also be controlled through YIC 1 to modulate position of FCV 20-1 to maintain liquid level in stripper clearwell as measured by LE 24-1 within preset but operator adjustable range. Control of operation of FCV 20-1 to maintain liquid level shall be higher control priority than flow control operation described previously. Position of FCV 20-1 shall be indicated at MCP as ZI 20-1. If level in stripper clearwell rises above operator adjustable but preset liquid level established at YIC 1, YIC 1 shall send signal to control valve positioner ZC 20-1 to close valve at operator adjustable but preset rate until liquid level in clearwell is within defined normal operating range. Position switches on level control valve shall signal YIC 1 when valve is fully open (ZSH 20-1) and fully closed (ZSL 20-1).

3. System 21 - Groundwater Bypass System:

a. A bypass pipeline is provided to allow groundwater not requiring treatment to be diverted around treatment facility and to be discharged into clearwell of Air Stripper Treatment Equipment. Flow through bypass line is manually controlled and flow rate, if any, is monitored by magnetic flow meter, FE 21-1. A flow proportional signal shall be transmitted from flow meter transmitter FT 21-1 to YIC 1. Flow rate and accumulated total flow shall be indicated at MCP as FI 21-1 and FQI 21-1, respectively. Flow rate

of groundwater bypassing Air Stripping Treatment Equipment process shall be transmitted to YIC 1 and recorded continuously on a data logger,FR 21-1.

b. Level control valve, LCV 21-1, is provided on bypass pipeline to prevent flooding of Air Stripper Treatment Equipment clearwell. Operation of LCV 21-1 is controlled through YIC 1, which shall modulate position of LCV 21-1 to maintain liquid level in stripper clearwell as measured by LE 24-1 within preset but operator adjustable range. Position of LCV 21-1 shall be indicated at MCP as ZI 21-1. If level in stripper clearwell rises above operator adjustable but preset liquid level established at YIC 1, YIC 1 shall send signal to level control valve positioner, ZC 21-1, to close valve at operator adjustable but preset rate until liquid level in clearwell is within defined normal operating range. Position switches on bypass level control valve shall signal YIC 1 when valve is fully open (ZSH 21-1) and fully closed (ZSL 21-1). Pressure upstream of LCV 21-1 shall be locally indicated and monitored by PIT 21-1. Operating pressure shall also be indicated at the MCP. If pressure in bypass pipeline should increase above operator adjustable but preset value established at YIC 1, then YIC 1 shall activate audible and visual alarm, PAH 21-1. If the alarm condition exists after operator adjustable but preset time delay, YIC 1 shall initiate system shutdown sequence of extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices.

4. System 22 - Scale Control Chemical Storage and Injection System:

a. Scale control chemical shall be added to influent water to Air Stripper Treatment Equipment to inhibit formation of calcium carbonate scale. Scale control chemical storage and injection system consists of scale control chemical storage tank, T-1; duplex diaphragm metering pump arrangement, P 22-1 and P 22-2, for injection of scale control chemical into Air Stripper Treatment Equipment influent line; and bulk scale control chemical transfer drum pump, P 22-3, for bulk transfer of scale control chemical to T-1.

b. Selector switch, HS 22-3, located at MCP shall control selection of duty and standby sequence for scale control chemical injection pumps, P 22-1 and P 22-2. When hand-switch, HS 22-3, is in OFF position, neither pump shall be operable; with HS 22-3 in 1 position, P 22-1 shall be duty pump, with P 22-2 as stand-by pump in case of failure of duty pump; similarly, when HS 22-2 is in 2 position, P 22-2 shall be duty pump with P 22-1 as standby.

c. Operation of each respective scale control chemical feed pump shall be controlled by HOA switches, HS 22-1 and HS 22-2, respectively, located at MCP. Operating lights and alarm lights at main control panel shall be provided for each respective scale control chemical injection pump. In LOCAL position, pump output shall be controlled locally at pump by stroke frequency and stroke length controls provided with pump. In COMPUTER controlled mode, pump output shall be controlled by YIC 1, which shall send 4-20 mA signal (i.e., proportional to flow rate, as measured by FE 20-4) to current to frequency converter supplied with each metering pump. Converter shall send pulsed output signal to pump varying in frequency from 0 to 100 pulses per minute in proportion to input signal.

d. Flow in discharge line shall be monitored by flow switch, FS 22-1. If duty pump should fail, as indicated by triggering of pump discharge flow switch FS 22-1, YIC 1 shall detect failure and shall subsequently activate respective pump fail light, then deactivate duty pump and start standby pump. Operation of standby pump is similar to that previously described for duty pump; however, should standby pump fail after operator adjustable but preset time delay (if fail condition still exists), YIC 1 shall initiate shut down of groundwater extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices.

e. Level of scale control chemical solution in scale control chemical storage tank shall be monitored by level element, LE 22-1. At operator adjustable but preset value corresponding to low liquid level in tank (LSL 22-1), YIC shall activate level alarm light, LAL 22-1, located at MCP. If alarm condition is not cleared within adjustable but preset time period, YIC 1 shall initiate shut down of groundwater extraction and treatment system. During filling of scale control chemical tank, T-1, at operator adjustable but preset value corresponding to high liquid level in tank (LSH 22-1), YIC shall activate audible and visual alarm, LAH 22-1, located at tank T-1 and at the MCP, LAH 22-2.

f. Bulk scale control chemical transfer drum pump, P 22-3, is manually controlled by plant operator with ON/OFF hand-switch (HS 22-4) provided on pump.

5. System 23 - Process Piping Drain System:

a. Two process piping drain valve systems are located at a low point on Air Stripper Treatment Equipment influent, and bypass piping shall permit draining of pipelines for freeze protection. The theory of the operation and control system for each respective drain valve system is identical. The following description is exemplary of the operation and control system for Air Stripper Treatment Equipment influent drain valve, FV 23-1.

b. Operation of valve FV 23-1 is controlled by Open-Close-Automatic hand switch, HS 23-1, located at MCP. When HS 23-1 is in OPEN position, drain valves shall open to degree established by adjustable stop on valve; when valve is fully open, position switch, ZSL 23-1, shall be triggered activating red alarm light, OA 23-1, located at MCP. Similarly, when HS 23-1 is in CLOSE position, valve shall close to degree established by adjustable stop on valve; when valve is closed, position switch, ZSH 23-1, shall be triggered activating green operating light, OL 23-1, located at MCP. When HS 23-1 is in AUTO position, position of FV 23-1 shall be controlled by YIC 1. YIC 1 shall close FV 23-1 when extraction wells or Air Stripper Treatment Equipment is operating. If YIC 1 should initiate shutdown sequence for extraction wells and Air Stripper Treatment Equipment, then YIC 1 shall open FV 23-1 after operator adjustable but preset time period. In case of power failure, FV 23-1 shall fail open, which shall be accomplished by internal battery power cell located at ZC 23-1.

6. System 24 - Air Stripper Treatment Equipment:
   a. The Air Stripping Treatment Equipment specified shall treat influent groundwater over a range of flow rates. Pressurized air is supplied to Air Stripper Treatment Equipment from centrifugal fan powered by variable frequency drive (VFD). Fan system is designed to maintain a constant but operator adjustable air to water ratio when Air Stripper Treatment Equipment is operated in COMPUTER controlled mode; as influent groundwater flow rate increases or decreases, as measured by FE 20-4, YIC 1 shall proportionally increase or decrease air flow rate supplied to stripper, as measured by FE 24-1, by signaling VFD to speed up or slow down fan. Air output of fan is adjustable though variable frequency drive installed for fan. When hand switch, HS 24-1, is in COMPUTER controlled position, control of fan motor speed shall be controlled by YIC 1 as function of influent groundwater flow rate to Air Stripper Treatment Equipment, as measured by FE 20-4. YIC 1 shall control the speed of the fan to obtain the operator adjustable but preset ratio of air flow rate to water flow rate as measured by FE 24-1 and FE 20-4, respectively.
   b. When hand switch HS 24-1 is in LOCAL position, fan speed shall be controlled by manual speed control knob, HIK 24-1, located at MCP. Operating light, OL 24-1, shall be provided at MCP. Speed of fan shall be locally indicated at variable frequency drive panel by SI 24-1. Air flow from fan is monitored by in-line vane-type flow switch, FS 24-1. If flow switch for fan is not triggered after fan has been in operation for operator adjustable but preset time period, then YIC 1 shall stop fan and energize operation alarm, OA 24-1, and initiate shutdown of groundwater extraction and treatment system after operator adjustable but preset time period. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices. Air flow is measured by FE 24-1 and indicated as rate (FI 24-1) and accumulated total flow (FQI 24-1) at MCP.
   c. Vibration of fan shall be monitored by vibration switch, VS 24-1, and if triggered shall send signal to YIC 1, which shall in-turn stop fan and energize alarm light, VA 24-1, at MCP. Vibration switch shall be manually reset at switch.
   d. Differential pressure across air intake filter unit to fan shall be monitored by differential pressure element, PDE 24-1, and locally indicated and transmitted to YIC 1 by indicator/transmitter, PDIT 24-1, and indicated at MCP as PDI 24-1. If differential pressure across filter unit rises above operator adjustable but preset value established at YIC 1, then YIC 1 shall energize audible and visual alarm PDAH 24-1 at MCP.
   e. Temperature of water in clearwell of Air Stripper Treatment Equipment shall be monitored by temperature transmitter TT 24-1, which shall send a temperature proportional signal to YIC 1. Temperature shall be indicated at MPC as TI 24-1. At preset but operator adjustable low temperature, YIC 1 shall activate alarm TAL 24-1 at MCP.
   f. Differential pressure across Air Stripper Treatment Equipment packing shall be determined by YIC 1 based on signals received from pressure element PIT 24-2 at PIT 24-1. Differential pressure shall be indicated at MCP as PDI 24-2. If differential pressure across Air Stripper Treatment Equipment

packing rises to above operator adjustable but preset valve (PDSH 24-1) established at YIC 1, then at PDIT 24-2, YIC 1 shall energize audible and visual alarm PDAH 24-2 at MCP.

g. Liquid level in Air Stripper Treatment Equipment clearwell is monitored by LE 24-1 and locally indicated and level signal transmitted to YIC 1 by LIT 24-1. The liquid level in the Air Stripping Treatment Equipment clearwell shall be indicated at the MCP as LI 24-1. If level in clearwell rises causing LSH 24-1 to be triggered, YIC 1 shall activate LAH 24-1 at MCP and reduce bypass flow rate as described for System 21, if bypass line is in service; if bypass system is not in service, YIC 1 shall reduce influent flow rate as described for System 20; if alarm condition exists after operator adjustable but preset time delay, YIC 1 shall initiate system shutdown sequence of extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices.

h. Liquid level detection switch, (LSH 24-2), is provided at the allowable high water level in distribution tray at top of Air Stripper Treatment Equipment. If water (or foam) level in Air Stripper Treatment Equipment backs-up above maximum allowable high water level, LSH 24-2 shall be trigger YIC 1 to activate level alarm light, LAH 24-2, at MCP, then YIC 1 shall stop groundwater extraction system and treatment system after operator adjustable but preset time delay.

i. pH of water leaving Air Stripper Treatment Equipment clearwell is monitored by two independent pH analysis elements, AE 24-1 and AE 24-2, respectively. pH as measured by each of these elements is remotely displayed by AIT 24-1 and AIT 24-2 near MCP and a 4 to 20 mA dc signal from each is transmitted to YIC 1. pH of each element shall be indicated at MCP. A 30-day recorder, AIR 24-1 shall be displayed at MPC. YIC 1 shall monitor difference between pH values as measured by pH sensors and shall activate alarm, ADA 24-1, at MCP if measured difference exceeds operator adjustable but preset value for operator adjustable but preset time period, both established at YIC 1. If pH as measured by either analysis element should exceed operator adjustable but preset value established at YIC 1, YIC 1 shall activate analysis high alarm 5AAH 24-1 at MCP. Similarly, if pH as measured by either analysis element should exceed operator adjustable but preset value established at YIC 1, YIC 1 shall activate analysis low alarm AAL 24-1 at MCP. After operator adjustable but preset time period alarm condition is not cleared, YIC 1 shall initiate shutdown of groundwater extraction and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices.

7. System 25 - Batch Cleaning System (base bid):

a. Operation of groundwater Air Stripper Treatment Equipment may result in formation of calcium carbonate or other hard mineral scale and biological slime on Air Stripper Treatment Equipment packing. Such scales and slime, if allowed to accumulate, could impair effectiveness and operation of Air Stripper Treatment Equipment process. During batch cleaning process,

YIC 1 shall maintain all groundwater extraction wells OFF. Process air fan system, if operated, shall only be operable in local (manual) mode.

b. Operation of batch cleaning pump, P 25-1, shall be controlled by HOA hand switch, HS 25-1, located at MCP. Operation light, OL 25-1, and alarm light, OA 25-1, shall be provided to indicate pump status at MCP. When HS 25-1 is in HAND position, P 25-1 shall operate without regard to control interlocks provided by YIC 1. When HS 25-1 is placed in AUTO position, operation of pump P 25-1 shall be controlled by YIC 1. YIC 1 shall close FCV 20-1 and LCV 21-1 and shall receive verification of valve closure by receiving signals from ZSL 20-1 and ZSL 21-1, respectively. YIC 1 shall not allow P 25-1 to operate until these valves are fully closed. If level in clearwell, as measured by LE 24-1, is within operator adjustable but preset level range established at YIC 1 for operation of P 25-1, YIC 1 shall start P 25-1 causing recirculation flow of cleaning solution through Air Stripper Treatment Equipment. If level in Air Stripper Treatment Equipment clearwell should fall below operator adjustable but preset level range for P 25-1, YIC 1 shall stop P 25-1 until level in clearwell reaches mid point of allowable operating level range for clearwell, whereby YIC 1 shall again start P 25-1.

c. Successful operation of recirculation system shall be indicated to YIC 1 by triggering of pressure switch, PS 25-1. If after operator adjustable but preset time period of operation of P 25-1 and PS 25-1 fails to signal YIC 1, YIC 1 shall stop pump, P 25-1, and activate operation alarm light, OA 25-1, at MCP.

d. Recirculation flow rate is manually controlled by throttling valve HV 25-3 located on discharge pipeline from P 25-1. Recirculated solution flow rate is monitored by FE 25-1 with the resulting flow signal transmitted to YIC 1 by FT 25-1. YIC 1 shall calculate the total accumulated flow and display the resultant as FQI 25-1 at the MCP. YIC 1 through FE 25-1 shall also serve to assist an operator in controlling the rate and quantity of potable water added to the Air Stripping Treatment Equipment for preparing batch cleaning solution or for flushing. For either of these conditions, the operator may enter at MCP a volume of water to be added to the Air Stripper Treatment Equipment. After YIC 1 determines that the operator set volume of water has been conveyed to the Air Stripper Treatment Equipment as calculated from the FT 25-1 signal, YIC 1 shall initiate an audible and visual alarm at the MCP.

e. Batch cleaning chemical addition can be accomplished through operation of Chemical Addition System 26. Batch cleaning defoaming agent can be injected into batch cleaning solution by operation of System 27.

f. Time required for batch cleaning will be empirically determined and consequently controlled by the operator entering at YIC 1 through MCP either the total volume to be recirculated as compared to FQ1 25-1 or total time to be allocated.

g. After batch cleaning is determined complete by treatment plant operator, plant operator shall manually disengage all batch cleaning chemical addition systems by placing appropriate hand switches for Systems 26 and 27 in OFF position. Spent batch cleaning solution may be pumped from Air Stripper Treatment Equipment drain pipeline to tank truck load connection located on discharge piping from P 25-1 at HV 25-4. Pump P 25-1 may be used to convey spent batch cleaning solution to waste hauler tanker by operation of

P 25 1 in HAND mode. Pressure switch PS 25-1 shall be interlocked when P 25-1 is operated in HAND mode to stop pump if pressure on discharge side of pump is insufficient (i.e., after adjustable but preset time period) to trigger pressure switch. Residual batch cleaning solution shall be flushed from stripper and batch cleaning recirculation piping and appurtenances through manual activation of potable water flush system by operation of HV 29-3.

8. System 25 - Batch Cleaning System (bid option):
   a. Operation of groundwater Air Stripper Treatment Equipment may result in formation of calcium carbonate or other hard mineral scale and biological slime on Air Stripper Treatment Equipment packing. Such scale and slime, if allowed to accumulate, could impair effectiveness and operation of Air Stripper Treatment Equipment process. During batch cleaning process, groundwater extraction wells shall be OFF. Process air fan system, if operated, shall only be operable in local (manual) mode.
   b. Operation of batch cleaning pump, P 25-1, shall be controlled by HOA hand switch, HS 25-1, located at MCP. Operation light, OL 25-1, and alarm light, OA 25-1, shall be provided to indicate pump status at MCP. When HS 25-1 is in HAND position, P 25-1 shall operate without regard to control interlocks provided by YIC 1. When HS 25-1 is placed in AUTO position, operation of pump, P 25-1, shall be controlled by YIC 1. YIC 1 shall close FCV 20-1 and LCV 21-1 and shall receive verification of valve closure by receiving signals from ZSL 20-1 and ZSL 21-1, respectively. YIC 1 shall not allow P 25-1 to operate until these valves are fully closed. If level in clearwell as measured by LE 24-1 is within operator adjustable but preset level range established at YIC 1 for operation of P 25-1, YIC 1 shall start P 25-1 causing recirculation flow of cleaning solution through Air Stripper Treatment Equipment. If level in Air Stripper Treatment Equipment clearwell should fall below operator adjustable but preset level range for P 25-1, YIC 1 shall stop P 25-1 until level in clearwell reaches mid point of allowable operating level range for clearwell whereby YIC 1 shall again start P 25-1.
   c. Successful operation of recirculation system shall be indicated to YIC 1 by triggering of pressure switch, PS 25-1. If after operator adjustable but preset time period of operation of P 25-1, PS 25-1 fails to signal YIC 1, YIC 1 shall stop pump, P 25-1, and activate operation alarm light, OA 25-1, at MCP.
   d. Recirculation flow rate is manually controlled by throttling valve, HV 25-3, located on discharge pipeline from P 25-1. Recirculated solution flow rate is monitored by FE 25-1 with the resulting flow signal transmitted to YIC 1 by FT 25-1. YIC 1 shall circulate the total accumulated flow and display the resultant as FQI 25-1 at the MCP, YIC 1 through FE 25-1 shall also serve to assist an operator in controlling the rate and quantity of potable water added to the Air Stripper Treatment Equipment for both preparation of batch cleaning solution or for system flushing. For both of these conditions, the operator may enter at the MCP a predetermined volume of water to be added to the Air Stripper Treatment Equipment. After YIC 1 determines that the operator set volume of water has been conveyed to the Air Stripper Treatment Equipment as calculated from the FT 25-1 signal, YIC 1 shall initiate an audible and visual alarm at the MCP.

e. Batch cleaning chemical addition can be accomplished through operation of Chemical Addition System 26. Batch cleaning defoaming agent can be injected into batch cleaning solution by operation of System 27.

f. Time required for batch cleaning will be empirically determined and consequently controlled by the operator entering at YIC 1 through MCP either the total volume to be recirculated as compared to FQI 25-1 or total time to be allocated.

g. After batch cleaning is determined complete by treatment plant operator, plant operator shall manually disengage all batch cleaning chemical addition systems by placing appropriate hand switches for Systems 26 and 27 in OFF position. Spent batch cleaning solution may be pumped by P 25-1 from Air Stripper Treatment Equipment drain pipeline to tank truck load connection or to batch cleaning tank, T-3. Spent batch cleaning solution may be conveyed by operation of P 25-1 in HAND mode. Residual batch cleaning solution shall be flushed from stripper and batch cleaning recirculation piping and appurtenances through manual activation of potable water flush system by operation of HV 29-3.

h. Storage tank is provided as part of Air Stripper Treatment Equipment batch cleaning system. Liquid level in tank is monitored by LE 25-1 and level proportional signal is transmitted by LT 25-1 to YIC 1. Level in tank is indicated by LI 25-1 at MCP.

i. Another level sensing device (LSH 25-1) is provided at batch cleaning storage tank to detect high level condition in tank caused by foam or liquid. If level in tank should rise to level established for LSH 25-1 or other level alarm set point established at YIC 1 for LI 25-1, then both audible and visual alarms (LAH 25-1) shall be triggered at MCP and YIC 1 shall stop batch cleaning recirculation pump, P 25-1. Audible alarm shall be silenced by operator acknowledging alarm condition at MCP; however, alarm light, LAH 25-1, shall remain energized until alarm condition is cleared.

j. Spent batch cleaning solution in batch cleaning tank T-3 may be disposed by contract with mobile waste tanker for transport to approved disposal facility or through controlled injection to treated groundwater effluent pipeline by operation of pump, P 25-2. Batch solution may be pumped directly from batch cleaning solution storage tank truck load connection or through tank truck load connection located on discharge piping from P 25-1 at HV 25-5. Pump 25-1 may be used to convey spent batch cleaning solution to waste hauler tanker by operation of P 25-1 in HAND mode. Pressure switch, PS 25-1, shall be interlocked when P 25-1 is operated in HAND mode to stop pump if pressure on discharge side of pump is insufficient (i.e., after adjustable but preset time period) to trigger pressure switch. When HS 25-1 is in HAND position P 25-1 shall operate regardless of signals received at UCP by YIC 1. When HS 25-1 is in AUTO position, P 25-1 shall operate only if YIC 1 signals that liquid level in batch cleaning solution storage tank as measured by LE 25-1 is within operator adjustable but preset range established for operation of P 25-1.

k. P 25-2 may be used for controlled injection of spent batch cleaning solution from batch cleaning tank, T-3, to treated groundwater effluent pipeline. Operation of P 25-2 is controlled through HOA hand switch, HS 25-2, located at Unit Control Panel (UCP) 25 mounted adjacent to P 25-2. Operating light, OL 25-2, shall indicate when pump is operating. When HS 25-2 is in HAND position, P 25-2 shall operate regardless of signals received

at UCP by YIC 1. When HS 25-2 is in AUTO position, P 25-2 shall operate only if YIC 1 signals that liquid level in batch cleaning solution storage tank as measured by LE 25-1 is within operator adjustable but preset range established for operation of P 25-2, and pH of water leaving Air Stripper Treatment Equipment clearwell, as monitored by pH analysis elements AE 24-1 and AE 24-2, is within operator adjustable but preset range established for operation of P 25-2.

9. System 26 - Batch Cleaning Chemical Feed System:
   a. Batch cleaning chemical feed system operates in conjunction with that part of batch cleaning system described under System 25. Batch cleaning chemical shall be added to batch cleaning solution piping on suction side of pump P 25-1. Operation of drum pump, P 26-1, is controlled through hand switch, HS 26-1, located at pump. Chemical shall be drawn by pump from chemical drum.
10. System 27 - Batch Cleaning Defoamer Feed System:
   a. Batch cleaning defoamer feed system operates in conjunction with that part of batch cleaning system described under System 25, if desired by operator. Batch cleaning defoamer shall be injected into batch cleaning solution piping on suction side of pump P 25-1. Operation of P 27-1 is controlled through HOA hand switch, HS 27-1, located at Unit Control Panel 27 mounted adjacent to P 27-1. Operating lights, OL 27-1 and OL 27-2, shall be energized at UCP and MCP, respectively, when pump is operating. When HS 27-1 is in HAND position, P 27-1 shall operate regardless of any signal received at UCP by YIC 1. When HS 27-1 is in AUTO position, P 27-1 shall operate only if YIC 1 signals that P 25-1 is in operation. Flow from batch cleaning defoamer feed pump shall be monitored by FS 27-1; if YIC 1 fails to detect activation of FS 27-1 after adjustable but preset time period, YIC 1 shall stop P 27-1 and activate alarm light OA 27-1 at MCP. YIC 1 shall stop P 27-1 immediately whenever P 25-1 is OFF, stopped, failed, or alarm status. Defoamer injection flow rate by P 27-1 shall be manually controlled with stroke and pulse frequency controls provided with defoamer feed pump. Defoamer shall be drawn by pump from chemical drum. Defoamer level in drum shall be locally monitored and indicated by LI 27-1.
11. System 28 - Sump Pump System (base bid):
   a. Sump pump system consists of two separate pumping systems: building drain sump (pump P 28-1); and Air Stripping Treatment Equipment containment area sump (P 28-2). Building drain sump collects water from several sources within building and conveys water to Air Stripping Treatment Equipment influent pipeline. Air Stripping Treatment Equipment sump collects rainwater as well as other water collected in sump and conveys it to Air Stripping Treatment Equipment influent line.
   b. Building drain sump system utilizes submersible sump pump, P 28-1, which is controlled by hand switch, HS 28-1, located at MCP. In HAND position, pump shall operate without regard to level switch interlocks. In AUTO position, P 28-1 shall operate in response to triggering of level switches. When level of water in building drain sump rises to adjustable but preset level, LS 28-1 shall be triggered, which in turn shall start P 28-1. P 28-1 shall operate continuously until LS 28-1 signals YIC 1 that level in sump is low; YIC 1 shall then stop P 28-1. Second level switch, LS 28-2, shall monitor level in sump and if triggered YIC 1 shall activate LAL 28-1 if water level in sump falls below preset liquid level or LAH 28-1 if water in

sump rises above preset liquid level. If alarm condition due to high water level exists after operator adjustable but preset time delay, YIC 1 shall initiate system shutdown sequence of extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices.

A truck unload connection is provided outside the treatment building to accommodate the treatment of well development water or leachate that might be transported to the facility by tanker truck. A motor actuated valve FCV 28-1 is controlled by YIC 1 through OPEN-CLOSE Hand switch HS 28-7. When HS 28-7 is in the CLOSED position, YIC 1 shall send a signal to valve position controller ZC 28-1 to close the valve. When the value is fully closed, position switch ZSL 28-1 shall signal YIC 1; YIC 1 shall then energize closed lights: OA 28-2 at MCP and OA 28-3 at UCP 28. When HS 28-7 is placed in the OPEN position, YIC 1 shall signal ZC 28-1 to open FCV 28-1; position switch ZSH 28-1 shall signal YIC 1 when FCV 28-1 is open; then YIC 1 shall energize OL 28-2 at the MCP and OL 28-3 at MCP 28 indicating to the operator that the truck unload station is ready to receive flow. Operation of FCV 28-1 is interlocked with both HS 28-1 and LS 28-2. If HS 28-1 is not in the AUTO position or YIC 1 detects a failure of P 28-1 then YIC 1 shall close FCV 28-1 and inhibit opening of FCV 28-1, if already closed. If YIC 1 detects a high liquid level in the sump as triggered by LS 28-1 (LAH 28-1), then YIC 1 shall close FCV 28-1. A leak detections switch AS 28-1 shall signal YIC 1 if liquid is detected in the annular space beneath building drain sump tank T-2; upon receiving leak signal, YIC 1 shall energize alarm light AA 28-1 at MCP.

Off-gas from Building Sump is controlled through operation of exhaust fan EF 28-1. Operation of the fan is controlled through a Hand-Off-Auto Hand Switch HS 28-11 located at the MCP. A local lock-out-stop hand switch HS 28-10 shall prevent power from being applied to pump regardless of position of HS 28-11. When HS 28-11 is in Hand position EF 28-1 shall operate independent of system interlocks. When HS 28-11 is in AUTO position, EF 28-1 shall operate on an operator adjustable but present time interval and for an operator adjustable but preset duration established at YIC 1. In addition, YIC 1 shall operate the fan continuously when ever the water level in the sump is at or above the start pump (P 28-1) liquid level. Operation of the fan shall be monitored by YIC 1 and indicated at the MCP as OL 28-6; YIC 1 shall detect fan motor failure and in event of such failure indicate failure at MCP as OA 28-6.

c. Air Stripping Treatment Equipment containment sump system utilizes submersible sump pump, P 28-2, which is controlled by hand switch, HS 28-3, located at MCP. In HAND position, pump shall operate without regard to level switch interlocks. In AUTO position P 28-2 shall operate in response to triggering of level switches. When level of water in Air Stripping Treatment Equipment containment sump rises to an adjustable but preset level, LS 28-3 shall be triggered, which in-turn shall start P 28-2. P 28-2 shall operate continuously until LS 28-3 signals YIC 1 that level in

sump is low; YIC 1 shall then stop P 28-2. Second level switch, LS 28-4, shall monitor level in sump and shall activate LAL 28-2 if water level in sump falls below or LAH 28-2, if the water level rises above the preset liquid levels. If alarm condition due to high water level exists after operator adjustable but preset time delay, YIC 1 shall initiate system shutdown sequence of extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices. Temperature of the liquid in the Air Stripper Treatment Equipment sump shall be monitored by a temperature transmitter TT 28-1 which shall send a signal proportional to temperature to YIC 1. Temperature of the monitored liquid shall be indicated at the MCP as TI 28-1. An electric powered submersible unit heater IH 28-1 shall be installed in the sump to prevent freezing of the residual liquid in the sump. Operation of the heater shall be controlled though a Hand-Off-Auto hand switch HS 28-7 located at the MCP. A local lock-out-stop hand switch HS 28-8 shall interrupt the power to the heater is placed in OFF position. When HS 28-7 is in the HAND position the heater shall operate without regard to temperature and level interlocks, however YIC 1 shall interrupt the power supply to the heater after an operator adjustable preset time period (e.g. the initial timer interlock shall be set at 5 minutes); if the heater is operated in the HAND mode and the timer at YIC 1 times-out, then YIC 1 shall interrupt the power supply to the heater, thereby preventing it from operating in the HAND mode until the operator resets the HAND mode of operation by placing HS 28-7 in the OFF position. When HS 28-7 is in the AUTO position, operation of the heater shall be controlled by YIC 1 based on the monitored temperature of the liquid in the sump. Assuming HS 28-7 is in the AUTO position, YIC 1 shall allow IH 28-1 to be energized only if the temperature of the water in the sump is less than the low temperature set point established at YIC 1 and the liquid level in the sump is as monitored by LS 28-4 is at or above the pump shut off level. YIC 1 shall maintain the temperature of the liquid in the sump at the operator adjustable but preset temperature. If the temperature of the liquid in the sump falls below the low temperature alarm set point (TSL 28-1), which shall be established at YIC 1, then YIC 1 shall activate a low temperature alarm TAL 28-1 at the MCP. If the water level in the sump is less than the low liquid level alarm, then YIC 1 shall not energize the heater.

d. Water accumulation in the floor sump separating the Control Room from the Process Area shall be monitored by a liquid level float switch LSH 28-1. If water accumulates in the sump, LSH 28-1 shall signal YIC 1 that the process area is flooded and cause LAH 28-1 to be activated at MCP. If after an operator adjustable but preset time period the alarm condition is not acknowledged at the MCP, YIC 1 shall initiate the extraction well and treatment facility emergency shut down sequence and signal the ADAS system of the treatment system failure.

12. System 28 - Sump Pump System (Alternate 1):

a. Sump pump system consists of three separate pumping systems: building drain sump (pump P 28-1); Air Stripping Treatment Equipment containment area sump (P 28-2); and batch cleaning tank containment sump (pump P

28-3). Building rain sump collects water from several sources within building and conveys water to Air Stripping Treatment Equipment influent pipeline. Air Stripping Treatment Equipment and batch cleaning tank sumps collect rainwater, as well as other water collected in sumps, and conveys it to Air Stripping Treatment Equipment influent pipelines.

b. Building drain sump system utilizes submersible sump pump P 28-1 which is controlled by hand switch, HS 28-1, located at MCP. In HAND position, pump shall operate without regard to level switch interlocks. In AUTO position, P 28-1 shall operate in response to triggering of level switches. When level of water in building drain sump rises to adjustable but preset level, LS 28-1 shall be triggered, which in-turn shall start P 28-1. P 28-1 shall operate continuously until LS 28-1 signals YIC 1 that level in sump is low; YIC 1 shall then stop P 28-1. Second level switch, LS 28-2, shall monitor level in sump and shall activate LAL 28-1 if water level in sump falls below present liquid level or LAH 28-1 if water rises above preset liquid level. If alarm condition due to high water level exists after operator adjustable but preset time delay, YIC 1 shall initiate system shutdown sequence of extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices.

A truck unload connection is provided outside the treatment building to accommodate the treatment of well development water or leachate that might be transported to the facility by tanker truck. A motor actuated valve FCV 28-1 is controlled by YIC 1 through OPEN-CLOSE hand switch HS 28-7. When HS 28-7 is in the CLOSED position, YIC 1 shall send a signal to valve position controller ZC 28-1 to close the valve. When the value is fully closed, position switch ZSL 28-1 shall signal YIC 1; YIC 1 shall then energize closed lights: OA 28-2 at MCP and OA 28-3 at UCP 28. When HS 28-7 is placed in the OPEN position, YIC 1 shall signal ZC 28-1 to open FCV 28-1; position switch ZSH 28-1 shall signal YIC 1 when FCV 28-1 is open; then YIC 1 shall energize OL 28-2 at the MCP and OL 28-3 at MCP 28 indicating to the operator that the truck unload station is ready to receive flow. Operation of FCV 28-1 is interlocked with both HS 28-1 and LS 28-2. If HS 28-1 is not in the AUTO position or YIC 1 detects a failure of P 28-1 then YIC 1 shall close FCV 28-1 and inhibit opening of FCV 28-1 if already closed. If YIC 1 detects a high liquid level in the sump as triggered by LS 28-1 (LA 28-1), then YIC 1 shall close FCV 28-1. A leak detections switch AS 28-1 shall signal YIC 1 if liquid is detected in the annular space beneath building drain sump tank T-2; upon receiving leak signal, YIC 1 shall energize alarm light AA 28-1 at MCP.

Off-gas from Building Sump is controlled through operation of exhaust fan EF 28-1. Operation of the fan is controlled through a Hand-Off-Auto Hand Switch HS 28-11 located at the MCP. A local lock-out-stop hand switch HS 28-10 shall prevent power from being applied to pump regardless of position of HS 28-11. When HS 28-11 is in Hand position EF 28-1 shall operate independent of system interlocks. When HS 28-11 is in AUTO

position, EF 28-1 shall operate on an operator adjustable but present time interval and for an operator adjustable but preset duration established at YIC 1. In addition, YIC 1 shall operate the fan continuously when ever the water level in the sump is at or above the start pump (P 28-1) liquid level. Operation of the fan shall be monitored by YIC 1 and indicated at the MCP as OL 28-6; YIC 1 shall detect fan motor failure and in event of such failure indicate failure at MCP as OA 28-6.

c. Air Stripping Treatment Equipment containment sump system utilizes submersible sump pump, P 28-2, which is controlled by hand switch, HS 28-3, located at MCP. In HAND position, pump shall operate without regard to level switch interlocks. In AUTO position, P 28-2 shall operate in response to triggering of level switches. When level of water in Air Stripping Treatment Equipment containment sump rises to adjustable but preset level, LS 28-3 shall be triggered, which in-turn shall start P 28-2. P 28-2 shall operate continuously until LS 28-3 signals YIC 1 that level in sump is low; YIC 1 shall then stop P 28-2. Second level switch, LS 28-4, shall monitor level in sump and shall activate LAL 28-2, if water level in sump falls below or rises above preset liquid levels. If alarm condition due to high water level exists after operator adjustable but preset time delay, YIC 1 shall initiate system shutdown sequence of extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to two selected telephone numbers located at Spokane County offices. Temperature of the liquid in the Air Stripper Treatment Equipment sump shall be monitored by a temperature transmitter TT 28-1 which shall send a signal proportional to temperature to YIC 1. Temperature of the monitored liquid shall be indicated at the MCP as TI 28-1. An electric powered submersible unit heater IH 28-1 shall be installed in the sump to prevent freezing of the residual liquid in the sump. Operation of the heater shall be controlled though a Hand-Off-Auto hand switch HS 28-7 located at the MCP. A local lock-out-stop hand switch HS 28-8 shall interrupt the power to the heater is placed in OFF position. When HS 28-7 is in the HAND position the heater shall operate without regard to the temperature and level interlocks, however YIC 1 shall interrupt the power supply to the heater after an operator adjustable preset time period (e.g. the initial timer interlock shall be set at 5 minutes); if the heater is operated in the HAND mode and the timer at YIC 1 times-out, then YIC 1 shall interrupt the power supply to the heater, thereby preventing it from operating in the HAND mode until the operator resets the HAND mode of operation by placing the HS 28-7 in the OFF position. When HS 28-7 is in the AUTO position, operation of the heater shall be controlled by YIC 1 based on the monitored temperature of the liquid in the sump. Assuming HS 28-7 is in the AUTO position, YIC 1 shall allow IH 28-1 to be energized only if the temperature of the water in the sump is less than the low temperature set point established at YIC 1 and the liquid level in the sump is as monitored by LS 28-4 is at or above the pump shut off level. YIC 1 shall maintain the temperature of the liquid in the sump at the operator adjustable but preset temperature. If the temperature of the liquid in the sump falls below the low temperature alarm set point (TSL 28-1), which shall be established at YIC 1, then YIC 1

shall activate a low temperature alarm TAL 28-1 at the MCP. If the water level in the sump is less than the low liquid level alarm, then YIC 1 shall not energize the heater.

d. Water accumulation in the floor sump separating the Control Room from the Process Area shall be monitored by a liquid level float switch LSH 28-1. If water accumulates in the sump, LSH 28-1 shall signal YIC 1 that the process area is flooded and cause LAH 28-1 to be activated at MCP. If after an operator adjustable but preset time period the alarm condition is not acknowledged at the MCP, YIC 1 shall initiate the extraction well and treatment facility emergency shut down sequence and signal the ADAS system of the treatment system failure.

e. Batch cleaning tank containment sump system utilizes submersible sump pump, P 28-3, which is controlled by hand switch, HS 28-5, located at MCP. In HAND position, pump shall operate without regard to level switch interlocks. In AUTO position, P 28-3 shall operate in response to triggering of level switches. When level of water in batch cleaning tank containment sump rises to adjustable but preset level, LS 28-6 shall be triggered, which in-turn shall start P 28-3. P 28-3 shall operate continuously until LS 28-6 signals YIC 1 that level in sump is low; YIC 1 shall then stop P 28-3. Second level switch, LS 28-5, shall monitor level in sump and shall activate LAL 28-3 if water level in sump falls below or LAH 28-3 if water level rises above preset liquid level. If alarm condition due to high water level exists after operator adjustable but preset time delay, YIC 1 shall initiate system shutdown sequence of extraction system and treatment system. If shutdown sequence of extraction system and treatment system is initiated, YIC 1 shall send output signal to activate automatic telephone dialing system located at treatment facility, which will in turn send alarm telephone signal over commercial lines to selected telephone numbers located at Spokane County offices. Temperature of the liquid in the batch cleaning containment sump shall be monitored by a temperature transmitter TT 28-2 which shall send a signal proportional to temperature to YIC 1. Temperature of the monitored liquid shall be indicated at the MCP as TI 28-2. An electric powered submersible unit heater IH 28-2 shall be installed in the sump to prevent freezing of the residual liquid in the sump. Operation of the heater shall be controlled though a Hand-Off-Auto hand switch HS 28-12 located at the MCP. A local lock-out-stop hand switch HS 28-13 shall interrupt the power to the heater is placed in OFF position. When HS 28-12 is in the HAND position the heater shall operate without regard to the both level and temperature interlocks, however YIC 1 shall interrupt the power supply to the heater after an operator adjustable preset time period (e.g. the initial timer interlock shall be set at 5 minutes); if the heater is operated in the HAND mode and the timer at YIC 1 times-out, then YIC 1 shall interrupt the power supply to the heater, thereby preventing it from operating in the HAND mode until the operator resets the HAND mode of operation by placing the HS 28-7 in the Off position. When HS 28-7 is in the AUTO position, operation of the heater shall be controlled by YIC 1 based on the monitored temperature of the liquid in the sump. Assuming HS 28-12 is in the AUTO position, YIC 1 shall allow IH 28-2 to be energized only if the temperature of the water in the sump is less than the low temperature set point established at YIC 1 and the liquid level in the sump is as monitored by LS 28-6 is at or above the pump shut

off level. YIC 1 shall maintain the temperature of the liquid in the sump at the operator adjustable but preset temperature. If the temperature of the liquid in the sump falls below the low temperature alarm set point (TSL 28-2), which shall be established at YIC 1, then YIC 1 shall activate a low temperature alarm TAL 28-2 at the MCP. If the water level in the sump is less than the low liquid level alarm, then YIC 1 shall not energize the heater.

13. System 29 - Potable Water System:
    a. Potable water system is manually controlled and distributed to several locations within treatment plant. Flushing connections are provided on process piping as discussed under other system descriptions and as shown on Drawings.
    b. Two emergency showers and eye wash units are provided, one in the process area and one in the Air Stripper Treatment Equipment containment area. A third emergency shower and eye wash facility shall be installed as part of the Work of Alternate 1 if so award to the Contractor. The water supply to each eye wash is monitored by a flow switch, FS 29-1 and FS 29-2 (FS 29-3 for Alternate 1). Flow switches shall be monitored by YIC 1. If a flow switch is activated, YIC 1 shall activate an alarm FA 29-1 at the MCP. If after an operator adjustable but preset time period the alarm is not acknowledged, YIC 1 shall activate the ADAS system and the security/fire alarm system.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

3.01 GENERAL

A. Coordinate the descriptions presented in this section with Section 17600 and configure computer and telemetry hardware and software to accomplish the fully integrated and functional supervisory control and data acquisition system specified.

END OF SECTION