Lilyblad Petroleum

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (206) 407-6300

October 30, 1995

CERTIFIED MAIL

Mr. Dennis Montgomery, Site Manager
Lilyblad Petroleum, Inc.
P.O. Box 1556
2244 Port of Tacoma Road
Tacoma, WA 98401-1556

Mr. John Spencer, Site Manager
Sol-Pro, Inc.
3401 Lincoln Avenue
P.O. Box 1781
Tacoma, WA 98401-1781

Dear Sirs:

Re: Agreed Order No. DE 95HS-S292 for Facility ID WAD027543032

Enclosed is the subject agreed order which has been issued with effective date today, October 30, 1995. Only two changes have been made as a result of the public review. They were as follows:

- On Page 5, Section IV,1, the last number in the parenthesis was changed from (11) to (13)
- On Page 6. Section V, the name of the oil/water separator was changed from "Girard" to "off-site".

Please note the RI Workplan is due 14 days after today, or November 13, 1995. After the RI Workplan has been approved by Ecology, it will become an enforceable part of the Order as provided in Section V 8 on page 7.

Another copy of Attachment Number 5 has not been included, as it was provided with the original draft order. Please let us know if you need additional copies.

We appreciate both companies signing the agreed order and we look forward to completing the corrective action process as expediciously as possible. If you have any questions regarding the content of the agreed order, please contact Howard Steeley, Project Manager. You can call Howard at (360) 407-6463, or fax him at (360) 407-6305.

Sincerely,

K Seiler

K Seiler, Supervisor
Hazardous Waste & Toxics Reduction Section
Southwest Regional Office

HS:dn
Enclosure
cc: Dave Bartus, EPA Region 10
Jack Boller, EPA/WOO
Steve Thiele, AAG, Eikenberry Building
PW Pipe Company
Girard Custom Coatings

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action at: Lilyblad Petroleum, Inc 2244 Port of Tacoma Road Tacoma, WA 98421	))))	AGREED ORDER No. DE 95HS-S292

BY: Lilyblad Petroleum, Inc.
P.O. Box 1556
2244 Port of Tacoma Road
Tacoma, WA 98401-1556

Sol-Pro, Inc.
3401 Lincoln Avenue
P O. Box 1781
Tacoma, WA 98401-1781

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ATTACHMENTS

Number 1: Facility Diagram
Number 2: Summary of Types of Wastes Managed at the Facility
Number 3: Summary of Dangerous Waste Management Units
Number 4: Summary of Solid Waste Management Units and Areas of Concern
Number 5: Guidelines and Specifications for Preparing Quality Assurance Project Plans, May 1991, Department of Ecology

I. JURISDICTION

This Agreed Order ("Order") is issued pursuant to the authority of RCW 70.105D.050(1).

II. DEFINITIONS

Unless otherwise specified, the definitions set forth in Chapter 70.105D RCW and Chapter 173-340 WAC shall control the meanings of the terms used in this Order.

Additional definitions are as follows:

1. Agreed Order or Order means this Order issued under WAC 173-340-530. The term includes the text of this Order, all Attachments to this Order, and all Department of Ecology (Ecology)-approved submittals required pursuant to this Order. Order Attachments and Ecology-approved submittals are incorporated into this Order by this reference and are enforceable parts of this Order as if fully set forth herein.

2. Area of Concern (AOC) means any area of the facility where a release of hazardous substances (including dangerous waste and dangerous constituents) has occurred, is occurring, is suspected to have occurred, or threatens to occur.

3. Cleanup Action Plan (CAP) means the document issued by Ecology under WAC 173-340-360 which selects facility specific corrective measures and specifies cleanup standards (cleanup levels, points of compliance and other requirements for the corrective measures).

4. Cleanup Standards means the standards promulgated under RCW 70.105D.030(2)(d) and include (1) hazardous substance concentrations (cleanup levels) that protect human health and the environment, (2) the location at the facility where those cleanup levels must be attained (points of compliance), and (3) additional regulatory requirements that apply to a cleanup because of the type of action and/or the location of the facility.

5. Corrective Action means any activities including investigations, studies, characterizations, and corrective measures, including actions taken pursuant to Chapter 70.105D RCW and Chapter 173-340 WAC, undertaken in whole or in part to fulfill the requirements of WAC 173-303-646.

6. Corrective Measure means any measure or action to control, prevent, or mitigate releases and/or potential releases of hazardous substances (including dangerous waste and dangerous constituents) reviewed and approved by Ecology for the facility and set forth in a facility specific CAP prepared in compliance with the requirements of Chapter 173-340 WAC, including WAC 173-340-360. Corrective measures may include interim actions as defined by Chapter 173-340 WAC. Interim actions will not necessarily be set forth in a facility specific CAP.

7. Dangerous Constituent means any constituent identified in WAC 173-303-9905 or 40 CFR Part 264 Appendix IX, any constituent which caused a waste to be listed or designated as dangerous under the provisions of Chapter 173-303 WAC, and any constituent defined as a hazardous substance at RCW 70.105D.020(7).

8 Dangerous Waste means any solid waste designated in WAC 173-303-070 through 173-303-100 as dangerous or extremely hazardous or mixed waste. Dangerous wastes are considered hazardous substances under RCW 70.105D 020(7).

9 Dangerous Waste Constituent means any constituent listed in WAC 173-303-9905 and any other constituent that has caused a waste to be a dangerous waste under Chapter 173-303 WAC. Dangerous waste constituents are considered hazardous substances under RCW 70.105D.020(7)

10. Dangerous Waste Management Facility (DWMF) means all contiguous property to the 2244 Port of Tacoma Road facility under the control of Lilyblad Petroleum, Inc., and Sol-Pro, Inc., who are seeking or required to have a permit under Chapter 173-303 WAC to treat, store, recycle, incinerate, or dispose of dangerous waste.

11. Facility means the Lilyblad Petroleum, Inc., DWMF controlled by Lilyblad Petroleum, Inc., and Sol-Pro, Inc., located at 2244 Port of Tacoma Road; all property contiguous to the DWMF also controlled by Lilyblad Petroleum, Inc., and Sol-Pro, Inc ; and all property, regardless of control, affected by releases or threatened releases of hazardous substances, including dangerous wastes and dangerous constituents, at and from these areas.

12. Feasibility Study (FS) means the investigation and evaluation of potential corrective measures performed in accordance with the FS requirements of WAC 173-340-350, which includes the requirements for a RCRA Corrective Measures Study, undertaken in whole or in part to fulfill the corrective action requirements of WAC 173-303-646.

13. Permit or Permitting Requirement, unless otherwise specified, means the requirements of Chapter 173-303 WAC for applying for, obtaining, maintaining, modifying, and terminating dangerous waste management facility permits.

14. RCRA Facility Assessment (RFA) means the Environmental Protection Agency (EPA) conducted investigation of releases and potential release at the dangerous waste management facility and the information contained in the report entitled "U.S. Environmental Protection Agency and PRC Environmental Management, Inc., 1992, RCRA Facility Assessment, Lilyblad Petroleum, Inc., 2244 Port of Tacoma Road, Tacoma, Washington ("RFA Report")." The "RFA Report" is incorporated into this Order by this reference as if fully set forth herein.

15. Release means the definition of release at RCW 70.105D.020(19), which includes any intentional or unintentional spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous substances, including dangerous waste and dangerous constituents into the environment. It also includes the abandonment or discarding of barrels, containers, and other receptacles containing hazardous substances, including dangerous waste and dangerous constituents.

16. Remedial Investigation (RI) means a facility wide investigation and characterization performed in accordance with the requirements of Chapter 173-340 WAC, and includes the requirements for a RCRA facility investigation, undertaken in whole or in part to fulfill the corrective action requirements of WAC 173-303-646

17. Solid Waste Management Unit (SWMU) means any discernible location at the dangerous waste management facility where solid wastes have been placed at any time, irrespective of whether the location was intended for the management of solid or dangerous waste. Such locations include any area at the dangerous waste management facility at which solid wastes, including spills, have been routinely and systematically released and include regulated units as defined by Chapter 173-303 WAC.

III. FINDINGS OF FACT

Ecology makes the following Findings of Fact:

1. Lilyblad Petroleum, Inc., is and has been the owner and operator of the dangerous waste management facility since on or about March 1977. Sol-Pro, Inc., operated the facility both as a joint venture with Lilyblad Petroleum, Inc., and later as a sole operator of a leased portion of the facility operated a portion of the facility.

2. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., owned and/or operated the Lilyblad facility as a dangerous waste management facility on or after November 19, 1980, the date which subjects facilities to RCRA permitting requirements, including interim status requirements pursuant to Section 3005 of RCRA and implementing regulations thereunder, and including authorized state regulations promulgated in Chapter 173-303 WAC.

3. In 1981, Lilyblad Petroleum, Inc., notified Ecology of its dangerous waste management activities.

4. Pursuant to the 1981 notification, Lilyblad Petroleum, Inc., was issued identification number WAD027543032 by EPA.

5. On March 18, 1981, Lilyblad Petroleum, Inc., submitted to Ecology Part A of the RCRA permit application and was granted interim status in September 1981. The Part A application was subsequently modified several times. A summary of the types of wastes managed at the facility is shown in Attachment Number 2. On June 1, 1991, the facility stopped receiving off-site wastes for storage or processing, and stopped storing on-site generated wastes over 90 days. The dangerous waste management units subject to closure are: tanks 32, 37, and 47; Sol-Pro tanks 122 and 123; the Sol-Pro drum storage area; the new drum storage area; the area previously occupied by the Washex Unit; and the Sol-Pro Brighton Unit area. A figure showing the dangerous waste management units on site is shown in Attachment Number 3.

6. On July 18, 1991, EPA performed a RFA at the dangerous waste management facility. The purpose of the RFA was to identify those areas at the dangerous waste management facility where releases of hazardous substances, as defined in Section II of this Order, may have occurred or may be occurring.

7. Pursuant to the RFA Report and other information, Ecology identified the SWMUs and AOC at the dangerous waste management facility. A summary describing the SWMUs and AOC Number 3 at the site is shown in Attachment Number 4. AOC Number 1 is the PW Pipe catchment basin and storm drain area. AOC Number 2 is the Girard Oil/Water Separator, the storm drain, and the Lincoln Avenue Ditch. Lilyblad Petroleum, Inc., submitted a RCRA Post-

Closure permit application on January 29, 1993. Ecology and EPA determined in the Notice of Deficiency on the Post-Closure Permit Application issued on December 6, 1993, that further investigation is needed at SWMUs 1, 2, 3, 7, 10, and 12; and AOCs 1, 2, and 3.

8. Releases and/or potential releases of hazardous substances including, but not limited to volatile, and semi-volatile organic compounds, total petroleum hydrocarbon compounds, and some toxic metals from SWMUs and AOCs at the dangerous waste management facility are documented in the RFA Report and by sampling conducted by Ecology on June 20, 1991, which was summarized in the Post-Closure permit application submitted by Lilyblad Petroleum, Inc., on January 29, 1993.

9. Hazardous substances have been, and may continue to be, released from the dangerous waste management facility into the environment including surface water drainage areas, groundwater beneath and beyond the dangerous waste management facility, air, human work areas, and floral and faunal habitats.

10. On March 20, 1995, Ecology received from PW Pipe a *Background Assessment* and *Limited Environmental Site Assessment and Subsurface Investigation Report* which showed some dangerous constituents similar to those found or managed on the Lilyblad Petroleum site were found in soil borings on the PW Pipe site in the area of the storm drain identified as AOC Number 1.

11. During 1993-1994, Sol-Pro, Inc., and Lilyblad Petroleum, Inc., held negotiations with Ecology to formulate and complete a Surface and Sub-Surface Soils Closure Plan for the site. In this plan, which was subsequently approved, Sol-Pro, Inc., and Lilyblad Petroleum, Inc., were advised that a RFI/CMS was not necessary at that time, but the investigation normally accomplished under such process would be accomplished in the closure activity and subsequent activities supporting the Post-Closure permit application and permit

12. On November 4, 1994, Ecology received authorization for RCRA corrective action and notified Lilyblad Petroleum, Inc., and Sol-Pro, Inc., on November 23, 1994, that Ecology would proceed with corrective action via the MTCA process.

IV. ECOLOGY DETERMINATIONS

1. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., are persons within the meaning of RCW 70.105D.020(13).

2. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., are the owners and operators of a dangerous waste management facility that has operated under interim status subject to Section 3005(e) of RCRA and regulations promulgated thereunder, including authorized state regulations in Chapter 173-303 WAC.

3. Certain waste and constituents found at the facility are dangerous wastes and/or dangerous constituents as defined by Chapter 173-303 WAC, and shown in Section II of this Order.

4 These dangerous wastes and dangerous constituents are considered hazardous substances within the meaning of RCW 70.105D.020.

5. Based on the Findings of Fact and the administrative record, Ecology has determined that releases and potential releases of hazardous substances at, and/or from, the facility present a possible threat to human health and the environment.

6. By letter dated January 18, 1995, Ecology notified Lilyblad Petroleum, Inc., and Sol-Pro, Inc., of Lilyblad Petroleum, Inc.'s and Sol Pro, Inc.'s status as "potentially liable persons" under RCW 70.105D.040 after notice and opportunity for comment.

7. Pursuant to RCW 70.105D 030(1) and RCW 70.105D.050, Ecology may require potentially liable persons to investigate or conduct other remedial actions with respect to the release or threatened release of hazardous substances, whenever it believes such action to be in the public interest.

8. The actions, including investigations, required by this Order are in the public interest.

V. WORK TO BE PERFORMED

Based on the foregoing facts and determinations, it is hereby ordered that Sol-Pro, Inc., take the following remedial actions and that these actions be conducted in accordance with Chapter 173-340 WAC and applicable provisions of Chapter 173-303 WAC, unless otherwise specifically provided for herein.

1. Provide a RI workplan for determining the nature and extent of contamination in the subsurface soils and groundwater which may have come from releases from SWMUs 1, 2, 3, 7, 10, and 12; and AOCs 1, 2, and 3 on and off-site as necessary. This workplan shall incorporate the Soil Sampling and Analysis Plan contained in Chapter 7 of the Approved Closure Plan as conditioned on November 28, 1994, for the dangerous waste management units and SWMUs. The workplan must be responsive to the comments Ecology and EPA have provided on the *Part B Permit Application Field Work Plan* (Pacific Groundwater Group, October 1992), and the *Contaminant Assessment Plan* (Pacific Groundwater Group, November 1991). The groundwater portion of the workplan must determine the nature and extent of contamination in the upper and lower aquifers both on-site and off-site. The workplan shall incorporate all site characterization aspects addressed in the Notice of Deficiency on the Part B application issued by Ecology on December 6, 1993. The workplan shall consider the *Background Assessment* and *Limited Environmental Site Assessment and Subsurface Investigation Report* submitted by PW Pipe when preparing the portion of the workplan addressing AOC Number 1. Also, for AOC Number 1, the workplan shall provide for sampling at the catchment basin and along the storm drain to its connection with the storm drain from US Oil and Refining, Inc. For AOC Number 2, the workplan shall provide for soil sampling at the off-site oil/water separator, along the storm drain to Lincoln Avenue Ditch, and the sediments behind the cofferdam in Lincoln Avenue Ditch. AOC Number 4 is the area with solvents contamination identified by the City of Tacoma Sewer Utility along their sanitary sewer main in Port of Tacoma Road across from the facility. The workplan shall provide for sampling along the bedding material of Lilyblad Petroleum Inc.'s sanitary sewer and the stub sewer bedding material to determine if either is serving as a flow pathway for contaminants from the facility to reach the sewer main. The workplan shall focus and schedule the site investigation work such that interim measures can be designed to stop the migration of contaminated groundwater off-site as soon as possible. The workplan shall provide

for other interim actions which can correct problems which may become substantially worse or cost substantially more to address if action is delayed. An example of such an interim action would be removal of non-aqueous phase liquids (NAPLs) in soils before they contaminate larger areas, as provided in WAC 173-340-430. The workplan shall include a schedule for all activities and for submittal of a final remedial investigation report.

2 The RI workplan is to be submitted in triplicate as soon as possible and no later than 14 days after the issuance date of this Order.

3 The RI workplan must describe analytical methods, parameters, and detection limits, in addition to all quality assurance/quality control details needed as described in SW-846. Attachment Number 5 titled *Guidelines and Specifications for Preparing Quality Assurance Project Plans* is provided to assist you.

4. Following approval of the remedial investigation report, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., will be required to submit a workplan for a Feasibility Study per the requirements of Chapter 173-340 WAC. The purpose of the feasibility study shall also be to satisfy the corrective action requirement for a RCRA corrective measures study in WAC 173-303-646. Upon approval by Ecology of the feasibility study workplan, the feasibility study shall be performed and a feasibility report will be submitted for Ecology's review and approval.

5 After completion and approval of the feasibility study, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall draft a Cleanup Action Plan to satisfy the requirements of Chapter 173-340-400 and to concurrently satisfy the corrective action requirements of WAC 173-303-646.

6 After public review and comment, the Cleanup Action Plan will be finalized by Ecology and Lilyblad Petroleum, Inc , and Sol-Pro, Inc., will be required to design, construct, operate, and monitor the selected cleanup or corrective actions via a consent decree or agreed order as determined by the parties hereto or an enforcement order or a permit, as determined by Ecology.

7. In accordance with WAC 173-340-840(5), environmental sampling data shall be submitted on paper within ten (10) working days of receipt from the laboratory.

8. Once approved or modified and approved in writing by Ecology, all Ecology-approved submittals are incorporated by reference and become enforceable parts of this Order as if fully set forth herein.

9. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall notify Ecology's project manager in writing of any newly-identified SWMU(s), newly-discovered releases from known SWMU(s), and newly-discovered areas of concern at the facility no later than 15 days after discovery, and shall investigate and report on these areas as directed by Ecology's project manager. If required, the investigation (assessment) and reporting shall be done in accordance with the approved corrective action site investigation workplan described in number 1 above.

10. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall provide a progress report every two which will include the following:

- Activities that happened in the past two months.

- Activities planned for the next two months.
- A paper summary of all lab data required by this order. All lab data required by this order or available and requested by Ecology in an Ecology approved electronic format.

This progress report frequency may be revised by Ecology if adequate justification is provided by Lilyblad Petroleum, Inc., and Sol-Pro, Inc., or if Ecology provides justification for a change.

11 Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall provide a an update report every two months by telephone on progress of the closure and corrective action work on the months that a written report is not submitted.

VI. TERMS AND CONDITIONS OF ORDER

1. Public Notices: WAC 173-340-600(10)(c) requires a 30-day public comment period before this agreed order becomes effective. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that the Order is inadequate or improper in any respect.

2. Remedial and Investigative Costs: Lilyblad Petroleum, Inc., and Sol-Pro, Inc., agree to pay costs incurred by Ecology pursuant to this Order. These costs shall include work performed by Ecology or Ecology's contractors since December 1, 1994, for preparing potentially liable persons' letters, investigations, remedial actions, and Order preparation, negotiations, oversight, and administration. Ecology costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Lilyblad Petroleum, Inc., and Sol-Pro, Inc., agree to pay the required amount within thirty (30) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general description of work performed will be provided upon request. Itemized statements will be prepared quarterly. Failure to pay Ecology's costs within thirty (30) days of receipt of the itemized statement of costs will result in interest charges. Nonpayment could result in referral to a collection agency or a suit by the Attorney General.

3. Designated Project Managers: The project manager for Ecology is:

Name: Howard R. Steeley, PE

Address: Department of Ecology
Southwest Regional Office
PO Box 47775
Olympia, WA 98504-7775

Telephone: (360) 407-6463

FAX: (360) 407-6305

E-Mail: HSTE461@ecy.wa.gov

The project managers for Lilyblad Petroleum, Inc., and Sol-Pro, Inc., are:

Company:	Sol-Pro, Inc.	Lilyblad Petroleum, Inc.
Name:	John R. Spencer	Dennis Montgomery
Address:	P. O. Box 1731 3401 Lincoln Ave.	P.O. Box 1556 2244 Port of Tacoma Road
Telephone:	(206) 627-4822	(206) 572-4402
FAX:	(206) 627-4997	(206) 627-3534

The project manager(s) shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communications between Ecology and Lilyblad Petroleum, Inc., and Sol-Pro, Inc., and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be signed by the signatories to this order and/or their designees and directed through the project managers. Should Ecology or Lilyblad Petroleum, Inc., and Sol-Pro, Inc., change project managers, written notification shall be provided to Ecology or Lilyblad Petroleum, Inc., and Sol-Pro, Inc., at least ten calendar days prior to the change if possible.

4. Performance: All work performed by Lilyblad Petroleum, Inc., and Sol-Pro, Inc., pursuant to this Order shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or similar expert, with appropriate training, experience and expertise in hazardous waste facility investigation and cleanup. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall notify Ecology as to the identity of such expert professionals, and of any contractors and subcontractors to be used in carrying out the terms of this Order, in advance of their involvement at the facility. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order and shall ensure that all work undertaken by such agents, contractors, and subcontractors will be in compliance with this Order.

Except where necessary to abate an emergency situation, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall not perform any remedial actions at Lilyblad Petroleum, Inc., for any activity subject to this order involving any DWMU or SWMU or AOC, outside that required by this Order unless Ecology concurs, in writing, with such additional remedial actions.

WAC 173-340-400(7)(b)(i) requires that "construction" performed on the facility must be under the supervision of a professional engineer registered in Washington.

Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall provide seven days notice to Ecology's site manager prior to conducting work activities that Ecology identifies on-site.

5. Access: Ecology, or any Ecology authorized representative, shall have the authority to enter and freely move about the facility at all reasonable times for the purposes of, among other things, inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the progress in carrying out the terms of this Order; conducting such tests or collecting samples as Ecology or the project manager may deem necessary; using a camera,

sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by Lilyblad Petroleum, Inc., and Sol-Pro, Inc By signing this Agreed Order, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., agree that this Order constitutes reasonable notice of access, and agree to allow access to the facility at all reasonable times for purposes of overseeing work performed under this Order. Ecology shall allow split or replicate samples to be taken by Lilyblad Petroleum, Inc., and Sol-Pro, Inc., during an inspection unless doing so interferes with Ecology's sampling. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall allow split or replicate samples to be taken by Ecology and shall provide seven days notice before any sampling activity as required by this order, its submittals, and modifications, or the Closure Plan as defined herein.

6. Public Participation: A public participation plan will be prepared. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall complete a public participation plan worksheet for the facility within 30 days of issuance of this Order. Ecology will develop a fact sheet and public notices and will maintain the responsibility for public participation at the facility. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall help coordinate and implement public participation for the facility as necessary.

7. Retention of Records: Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall preserve in a readily retrievable fashion during the pendency of this Order and for ten years from the date of issuance by Ecology of written notification that all requirements of this Order have been satisfactorily completed, reports, documents, and underlying data in their possession relevant to this Order. Should any portion of the work performed hereunder be undertaken through contractors or agents of Lilyblad Petroleum, Inc., and Sol-Pro, Inc., then Lilyblad Petroleum, Inc., and Sol-Pro, Inc., agree to include in their contract with such contractors or agents a record retention requirement meeting the terms of this paragraph.

8. Dispute Resolution: Lilyblad Petroleum, Inc , and Sol-Pro, Inc., may request Ecology to resolve disputes which may arise during the implementation of this Order. Such requests shall be in writing and directed to the signatory, or his/her successor(s), to this Order. Ecology resolution of the dispute shall be binding and final. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., are not relieved of any requirement of this Order during the pendency of the dispute and remain responsible for timely compliance with the terms of the Order unless otherwise provided by Ecology in writing.

9. Reservation of Rights/No Settlement: This Agreed Order is not a settlement under Chapter 70.105D RCW. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any Ecology rights or authority or those of any party thereto. Ecology will not, however, bring an action against Lilyblad Petroleum, Inc., and Sol-Pro, Inc , to recover remedial action costs paid to and received by Ecology under this Agreed Order. In addition, Ecology will not take additional enforcement actions against Lilyblad Petroleum, Inc , and Sol-Pro, Inc., to require those remedial actions required by this Agreed Order, provided Lilyblad Petroleum, Inc., and Sol-Pro, Inc., comply with this Agreed Order.

Ecology reserves the right, however, to require additional remedial actions at the facility should it deem such actions necessary.

Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the releases or threatened releases of hazardous substances from Lilyblad Petroleum, Inc.

In the event Ecology determines that conditions at the facility are creating or have the potential to create a threat to the health or welfare of the people on the facility or in the surrounding area or to the environment, Ecology may order Lilyblad Petroleum, Inc., and Sol-Pro, Inc., to stop further implementation of this Order for such period of time as needed to abate the threat.

10. Transference of Property: Prior to any voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the facility, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall provide for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to transfer of any legal or equitable interest Lilyblad Petroleum, Inc., and Sol-Pro, Inc., may have in the facility or any portions thereof, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall serve a copy of this Order upon any prospective purchaser, lessee, transferee, assignee, or other successor in such interest. At least ninety (90) days prior to finalization of any transfer, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall notify Ecology of the contemplated transfer by submission of a revised Part A RCRA permit application.

11. Compliance with Other Applicable Laws:

A. All actions carried out by Lilyblad Petroleum, Inc., and Sol-Pro, Inc., pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in paragraph B of this section.

B. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., have a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event Lilyblad Petroleum, Inc., and Sol-Pro, Inc., determine that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify Ecology of this determination. Ecology shall determine whether Ecology or Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by Lilyblad Petroleum, Inc., and Sol-Pro, Inc., and on how Lilyblad Petroleum, Inc., and Sol-Pro, Inc., must meet those requirements. Ecology shall inform Lilyblad Petroleum, Inc., and Sol-Pro, Inc., in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

Ecology shall ensure that notice and opportunity for comment is provided to the public and appropriate agencies prior to establishing the substantive requirements under this section.

C Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency which is necessary for the state to administer any federal law, the exemption shall not apply and Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

D. Some requirements herein are based on the applicable requirements of Chapter 70.105 RCW and Chapter 173-303 WAC.

VII. STIPULATED PENALTIES

1. For each day Lilyblad Petroleum, Inc., and Sol-Pro, Inc., fail to comply with any time schedules contained within Section VI of this Agreed Order, or any other time schedules approved or modified in writing by Ecology, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., stipulate and agree that Ecology may, at its discretion, assess a civil penalty under RCW 70.105.080. Ecology will provide advance written notification that Ecology is assessing a penalty because of failure by Lilyblad Petroleum, Inc., and Sol-Pro, Inc., to meet a time schedule. The notice period will not stay the penalty accrual. The penalties to be assessed are up to $2000.00 for the first day and up to $5000.00 for each additional day of noncompliance. Should a penalty be assessed under this Part, the penalty shall accrue from the date on which the work was to have been performed, or the submittal was to have been made, and shall cease to accrue on the date when Lilyblad Petroleum, Inc., and Sol-Pro, Inc., perform the required work or deliver the required submittal to Ecology. If imposed, all penalties will be payable within 30 days of assessment to the Department of Ecology, Cashiering Section, P.O. Box 5128, Olympia, WA 98503-0210.

2. Lilyblad Petroleum, Inc., and Sol-Pro, Inc., shall not be liable for payment under this Section if Lilyblad Petroleum, Inc., and Sol-Pro, Inc., have submitted to Ecology a timely request for an extension of schedules under Section IV of this Agreed Order, and if Ecology has not denied the request.

VIII. SATISFACTION OF THIS ORDER

The provisions of this Order shall be deemed satisfied upon Lilyblad Petroleum, Inc.'s and Sol-Pro, Inc.'s receipt of written notification from Ecology that Lilyblad Petroleum, Inc., and Sol-Pro, Inc., have completed the corrective actions required by this Order, as amended by any modifications, and that all other provisions of this Agreed Order have been complied with.

IX. ENFORCEMENT

1 Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

A. The Attorney General may bring an action to enforce this Order in a state or federal court.

B. The Attorney General may seek to recover, by filing an action if necessary, the amounts spent by Ecology for investigative and remedial actions and orders related to the facility.

C. In the event Lilyblad Petroleum, Inc., and Sol-Pro, Inc., refuse, without sufficient cause, to comply with any term of this Order, Lilyblad Petroleum, Inc., and Sol-Pro, Inc., will be liable for:

(1) up to three times the amount of any costs incurred by the state of Washington as a result of its refusal to comply; and

(2) civil penalties of up to $25,000 per day for each day it refuses to comply, however, the provisions of Section VII.1. above shall be the limit for any penalty with respect to any compliance with any time schedule contained in Section VI of this agreement.

D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: October 30, 1995

Lilyblad Petroleum, Inc.

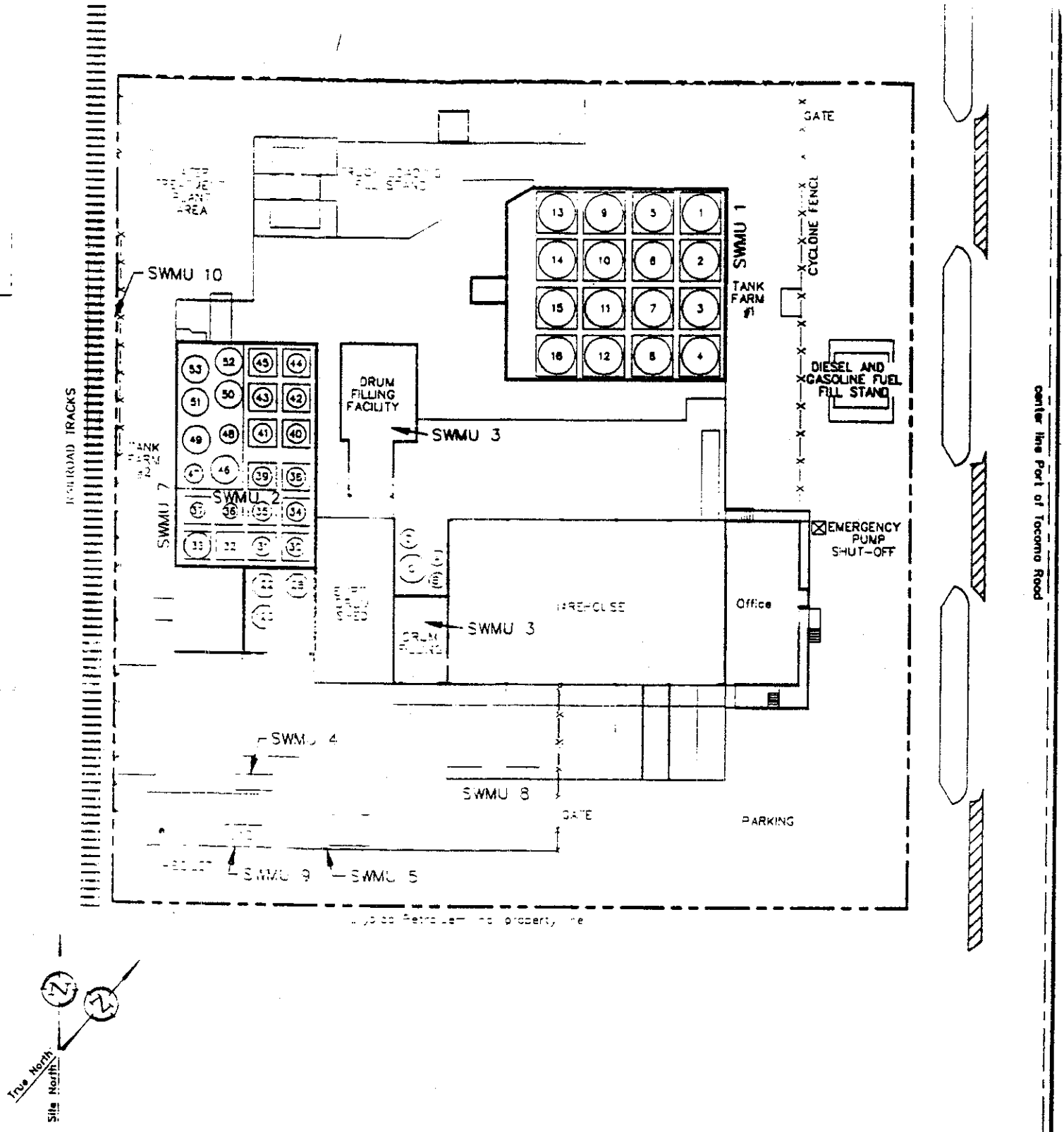
By _____ 9-15-95

Sol-Pro, Inc

By _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
K. Seiler

By K Seiler



SWMU 12, STORMWATER COLLECTION SYSTEM
(SEE FIGURE B-5)

SOURCE: U.S. EPA RFA, 992

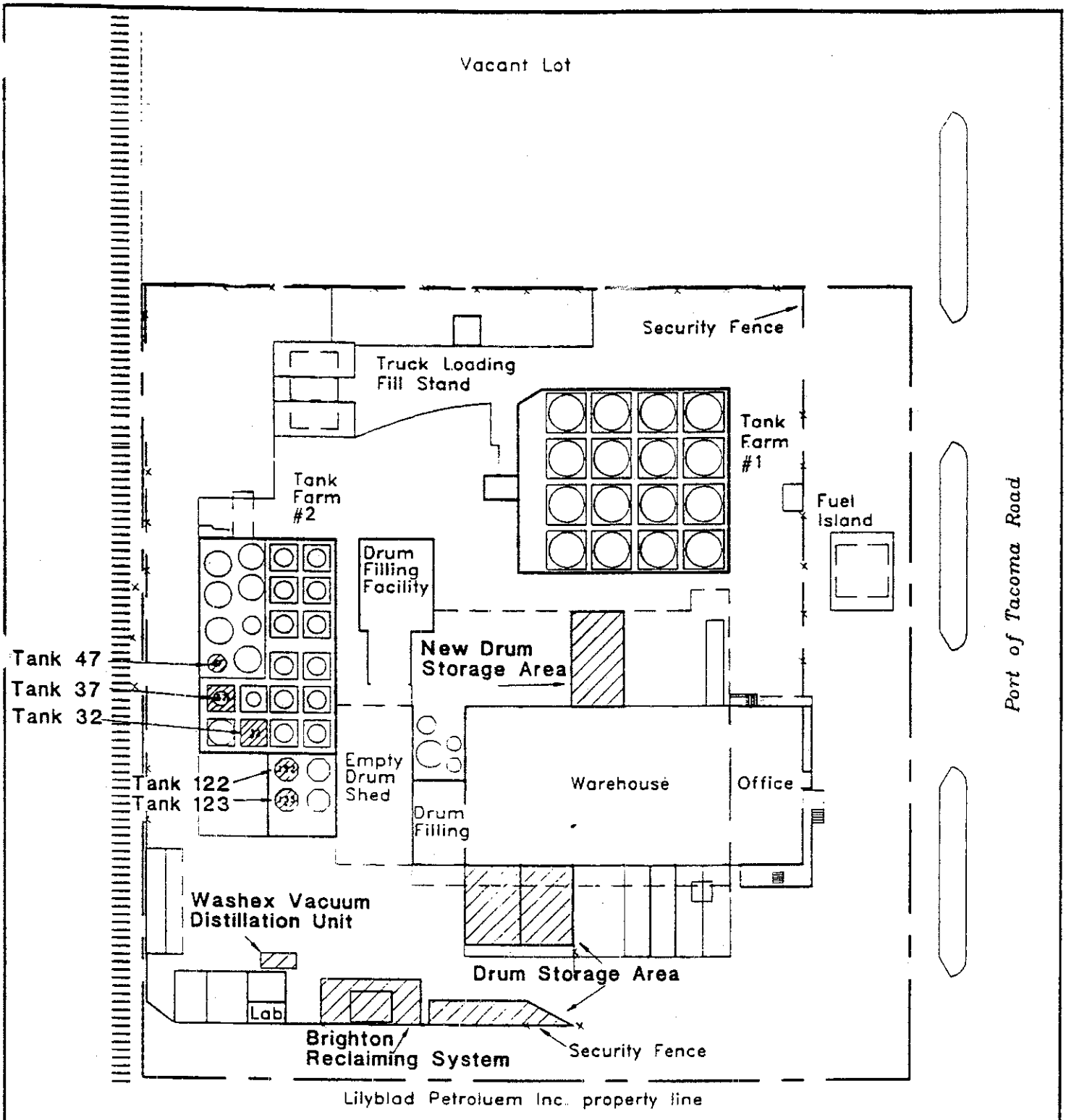
ATTACHMENT NO. 1
SOLID WASTE MANAGEMENT UNITS

LILYBLAD PETROLEUM, INC.

ATTACHMENT NO. 2
WASTES MANAGEED AT LILYBLAD PETROLEUM FACILITY

Waste Code Dangerous Waste Number	Waste Type		
1981-1983, Lilyblad Petroleum, Inc.			
F001, F002, F003, F004, F005, F017, F052, K078	Halogenated solvents (not otherwise specified) Nonhalogenated solvents (not otherwise specified) Tank bottoms from petroleum refining (not otherwise specified)		
1984-1988, Sol-Pro/Lilyblad Hazardous Waste Management, Inc.			
D001, F001, F002, F003, F004 F005, D008, K049, WT01, WT02, WP01, WP02, WP03	Lacquer thinner Hexane Isopropyl alcohol Paint mixture Denatured alcohols Ink/solvent mixture Polyester resins Fiberglass resin Coal tar pitch Mineral spirits Hydraulic fluids Latex paint Grease	Paraffins Sodium chromate Ketones Kerosene Methylene chloride 1,1,1-Trichloroethane Tetrachloroethene Trichloroethane Acetone Petroleum naphtha Contaminated soils Stoddard solvent	Various resins Ethylene glycol Styrene Kerosene Petroleum distillate Gasoline Xylene/toluene Fuel oils Perchloroethene Oils Freon Paint-related materials
1989-1990, Sol-Pro, Inc.			
D001, F001, F002, F003, F004, F005, WT01, WT02, WP01, WP02 WP03, D004, D006, D007, D008, D009, D010, D011, K049	Lacquer thinner Mineral spirits Alcohols Ketone Paint Mixture Paint-related material Xylene, toluene Hydraulic fluids Latex paint Grease Paraffins Cyclohexane Glycol ether Cresylic acid	Methylene chloride, oil Soil/gasoline 1,1,1-Trichloroethane Perchloroethene Stoddard solvent Freon Various resins Acetone Kerosene Gasoline Petroleum distillate Orange peel Solvent Ink	Oils, fuel oils (various types) Contaminated waste water Hydraulic oil transmission fluid Pentane Contaminated absorbent rags Chloroform, pyridine, toluene mixture Asphalt, sludge Ethylene glycol Styrene Mineral oil Jet fuel, foam blocks
1989-Present, Lilyblad Petroleum, Inc.			
D001, F002, F003, F004, F005, D008, D018, K049, K001, K086, D019, D022, D023, D024, D025, D027, D028, D029, D035, D036, D037, D038, D039, D040, D041, D042, WT01, WT02, WP01, WP02, WC01, WC02, D006, D005	Oil Carbon tetrachloride Chloroform O-Creosol M-Creosol P-Creosol	Cadmium Barium Trichlorophenol Trichloroethene Methyl ethyl benzene Nitrobenzene	1,4-Dichlorobenzene 1,2-Dichlorobenzene 1,1-Dichlorobenzene Lead Pyridine Pentachlorophenol
	Halogenated solvents (not otherwise specified) Nonhalogenated solvents (not otherwise specified) Wood preservative sludges (not otherwise specified)		

[a] Information is based on RCRA Part A applications, dangerous waste permit forms, and information reported by Lilyblad Petroleum and Sol-Pro (July 18-19, 1991).



Regulated Units

True North

0 30 60 120 240

SCALE - FEET

ATTACHMENT NO. 3
REGULATED UNITS

Lilyblad Petroleum, Inc.
2244 Port of Tacoma Road
Tacoma, Washington

March 31, 1994

ATTACHMENT NO. 4
SUMMARY OF SOLID WASTE MANAGEMENT UNITS

Name	SWMU 1 (Front) Tank Farm 1	SWMU 2 (Back) Tank Farm 2	SWMU 3 Product drum filling facility (areas 1 and 2)	SWMU 4 Washex vacuum still Area
Operating status	Active	Active	Active	Inactive
Waste type	Stormwater, solvent, and petroleum hydrocarbon residues	Waste solvent and petroleum hydrocarbons residues	Petroleum hydrocarbons and solvents	Mineral spirits, draw-water, burner oil
Release controls	Containment structures, stormwater collection and treatment system, overflow gauges, relief valves	Containment structures, stormwater collection and treatment system, overflow gauges, relief valves	Concrete floors, asphalt paving	Covered building with concrete floor
Release history	No spills. Leaks from tanks, valves, and pipes are repaired. Regular maintenance inspections	Recorded spills. Leaks from tanks, valves, and pipes are repaired. Regular maintenance inspections	Operational spills at drum filling line	Release of solvent to Port of Tacoma storm drain system
Release pathway	Cracks/joints in secondary containment dike and floor, storm drain system, and outfall.	Cracks/joints in secondary containment dike and floor, storm drain system, and outfall	Cracks in floor	Overland flow to catchment basins and Port of Tacoma storm drain system
Release potential	Moderate	High	High	Moderate
Potential media	Soil, groundwater, surface water	Soil, groundwater, surface water	Soil, groundwater	Soil, groundwater, surface water
Reason for release potential rating	Containment dikes, floor, and storm drain system are possibly inadequate. No visible staining on floor	Containment dikes floor, and storm drain system are possibly inadequate. Visible staining on floor	Floor is possibly inadequate. Oily substance in pipe penetrating pavement into subsoil	No visible stains, however, subsoils likely contaminated
Need for RCRA facility investigation (RFI)	Yes	Yes	Yes	Yes
Area for further investigation	Soils and groundwater	Soils and groundwater	Soils and groundwater	Soils and groundwater

ATTACHMENT NO. 4 (continued)
SUMMARY OF SOLID WASTE MANAGEMENT UNITS

Name	SWMU 9 Laboratory	SWMU 10 Beltline Railroad	AOC 3 Recovery vaults	SWMU 12 Stormwater collection and treatment system
Operating status	Active	Active	Inactive	Active
Waste type	Laboratory wastes (i.e., chlorobenzene, perchloric acid, acetic acid)	Oils and solvents	Oils and solvents	Oils and solvents
Release controls	Not applicable	Drip pan	None	Oil/water separators, coalescing tank, air stripper, Landa water maze, storage tanks
Release history	No spills reported	Leaks and other releases from coupling/uncoupling; drips from rail cars	Free-floating oil and solvent material	In the past, contaminated stormwater released. At present, stormwater runoff mostly contained on-site
Release pathway	Sanitary sewer	Vertical migration through gravel road bed, discharge from facility stormwater collection and treatment system	Groundwater movement	Port of Tacoma storm drain system, Lincoln Avenue ditch
Release potential	Low	High	Not applicable	High
Potential media	Not applicable	Soils, groundwater surface water	Soil, groundwater	Soil, groundwater, surface water
Reason for release potential rating	Wastes are transferred to hazardous waste storage room	Subsoils likely contaminated	Not applicable	Subsoils around drain pipes likely contaminated
Need for RCRA facility investigation (RFI)	No	Yes	Yes	Yes
Area for Further Investigation	None	Soils and groundwater	Soils and groundwater	Soils and groundwater

ATTACHMENT NO. 4 (continued)
SUMMARY OF SOLID WASTE MANAGEMENT UNITS

Name	SWMU 5 Brighton/DCI building	SWMU 6 Hazardous waste storage area	SWMU 7 Waste drum storage area A	SWMU 8 Waste drum storage area B
Operating status	Inactive	Active	Inactive	Inactive
Waste type	Halogenated and nonhalogenated solvents, draw-water, and burner oils	Facility process wastes, well purge water, laboratory waste, oil/water separator wastes, residual wastes	Mineral spirits and mineral spirits sludges	Variety of waste solvents, oils, and other hydrocarbon wastes
Release controls	Covered building with concrete floor and curbs	Covered building, concrete floor, portable secondary containment vessels	Asphalt and concrete paving	Asphalt and concrete berms
Release history	No spills reported	No spills reported	Reported releases from leaking containers	Accumulated runoff water discharged to Port of Tacoma storm drain system
Release pathway	Overland flow to catchment basins and Port of Tacoma storm drain system	Overland flow to Port of Tacoma storm drain system. Penetration of floor	Penetration of asphalt paving and overland flow to railroad bed	Penetration of asphalt paving and overland flows to Port of Tacoma storm drain system
Release potential	Moderate	Low	High	Moderate
Potential media	Soil, groundwater, surface water	Soil, groundwater	Soil, groundwater	Soil, groundwater, surface water
Reason for release potential rating	No visible stains, however, subsoils likely contaminated	No record of releases, no visible stains	Visible staining and subsoils likely contaminated	No visible staining, however, subsoils likely contaminated
Need for RCRA facility investigation (RFI)	Yes	Yes	Yes	Yes
Area for further investigation	Soils and groundwater	Groundwater	Soils and groundwater	Soils and groundwater

Appendix C
Potential Contaminants in Extracted Groundwater and Water Quality Criteria
Ilivblad Petroleum
coma, Washington

Contaminant	Influent [a]	National Toxics Rule (40CFR131.36) [b] Human Health		WAC 173-201A [c] Freshwater		WAC 173-201A Marine Water	
		Water & Org.	Org. Only	Acute	Chronic	Acute	Chronic
Semivolatile Organic Compounds (µg/L)							
1,2,4-Trichlorobenzene	0 03	260	940	250 [d]	50 [d]	-	-
2,4 5-Trichlorophenol	4 0	2.600	9,800	100 [d]	63 [d]	see gold book	
2,4,6-Trichlorophenol	0.58	2.1	6.5	-	970	-	-
2,4-Dichlorophenol	0.39	93	790	2,020	365	-	-
2,4-Dimethylphenol	100	540	2,300	2.120	-	-	-
2,4-Dinitrotoluene	0.06	0.11	9.1	330	230	590	370
2378-TCDD (dioxin)	NM	0.000000013	0 000000014	0 01	0 00001	-	-
2-Methylnaphthalene	22	-	-	-	-	-	-
2-Methylphenol	120	-	-	-	-	-	-
3-&4-Methylphenol	180	-	-	-	-	-	-
Acenaphthene	1.1	1200	2700	1,700 *	520 *	970	710
Anthracene	0.04	9,600	110,000	-	-	-	-
Benzo(a)anthracene	NA	0.0044	0.049	-	-	-	-
Benzo(a)pyrene	NA	0 0044	0.049	-	-	-	-
Benzoic Acid	56	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	1.9	1.8	5.9	400 [d]	360 [d]	2,944	3.4
Chrysene	NA	0.0044	0.049	-	-	-	-
Dibenzofuran	0.32	-	-	-	-	-	-
yl Phthalate	1.1	23,000	120,000	940	3	2,944	3.4
Dimethyl Phthalate	0.89	313,000	2,900,000	940	3	2,944	3.4
Fluoranthene	0.06	300	370	3,980	-	40	16
Fluorene	0.68	1,300	14,000	-	-	-	-
Naphthalene	71	-	-	2,300	620	2,350	-
Nitrobenzene	0 53	17	1,900	27,000	-	6,680	-
N-Nitrosodiphenylamine [e]	0.10	0 00069	8 1	5 850 [d]	-	3 300 000	-
Pentachlorophenol	960	0.28	8.2	9 07	5.73	13.00	7.90
Phenanthrene	0.61	-	-	30.00 [d]	6 3 [d]	-	-
Phenol	5.8	21 000	4,600 000	10,200	2,560	5 800	-
Pyrene	0.04	960	11,000	-	-	-	-
Pyridine	0.07	-	-	-	-	-	-
Conventional Parameters							
Alkalinity (mg/L CaCO3)	450	-	-	-	20,000	-	-
Total Ammonia as N (mg/L) **	1 9	-	-	20 15	2.24	233	35
Chloride (mg/L)	170	-	-	860	230	-	-
Cyanide, Total (µg/L)	ND	700	220,000	22	5.2	1 0	1 0
Dissolved Oxygen (mg/L)	0 28	-	-	-	-	-	-
Dissolved Sulfide (mg/L)	0.02	-	-	-	-	-	-
Hardness (by calculation) (mg/L CaCO3)	480	-	-	-	-	-	-
Nitrate+Nitrite (mg/L as N)	0.62	-	-	-	-	-	-
pH (std Units)	6.6	-	-	-	-	-	-
Silica (SiO2) (µg/L)	57,000	-	-	-	-	-	-
Solids, Total Dissolved (mg/L)	1,300	-	-	-	-	-	-
fic Conductance @ 25C (µmhos/cm)	1,000	-	-	-	-	-	-
te (mg/L)	6.8	-	-	-	-	-	-
Temperature (°F) **	66	-	-	-	-	-	-
Fluoride (µg/L)	NM						

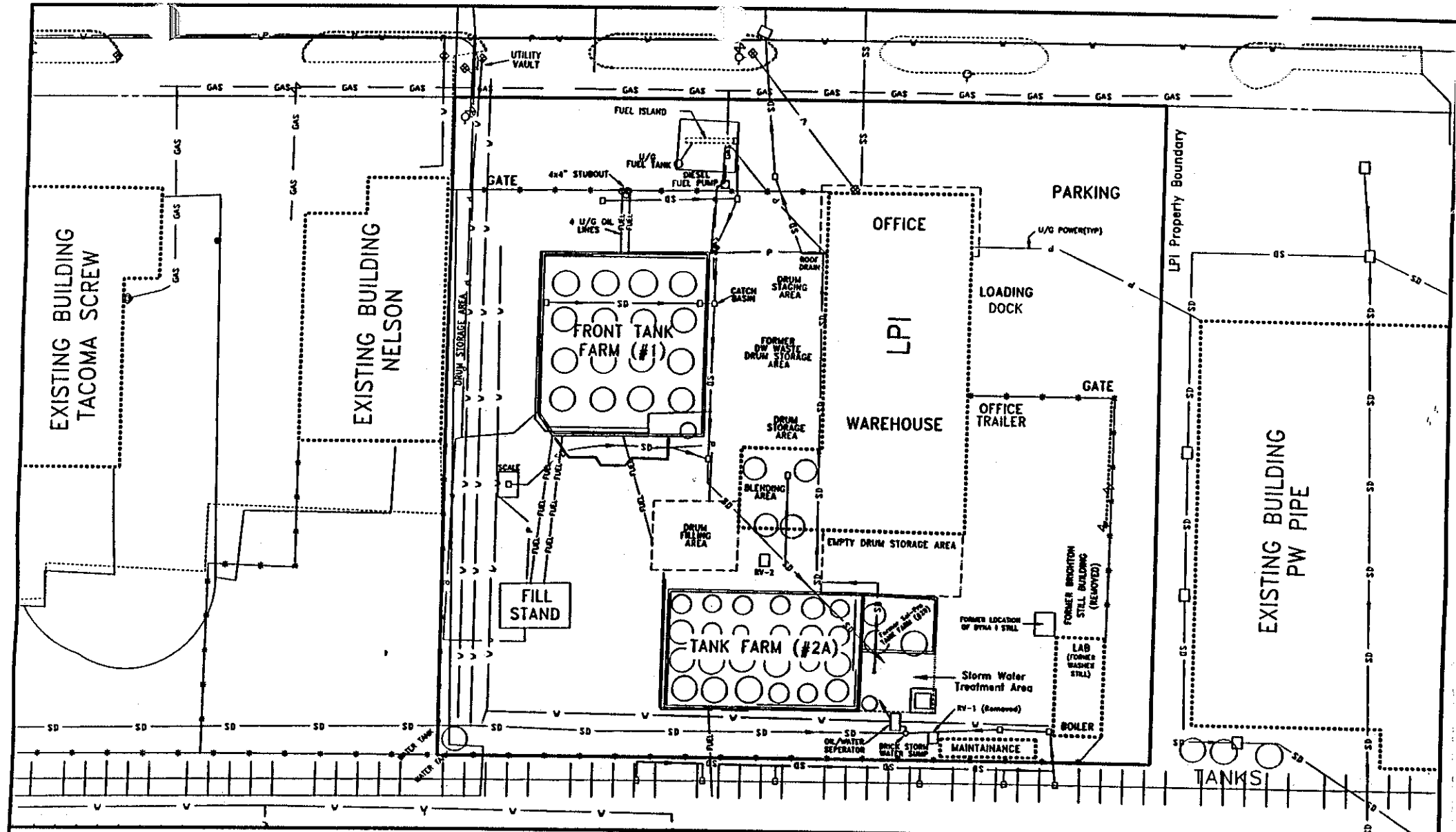
AB

Appendix C
Potential Contaminants in Extracted Groundwater and Water Quality Criteria
f ilyblad Petroleum
:oma, Washington

Contaminant	Influent [a]	National Toxics Rule (40CFR131.36) [b]		WAC 173-201A [c]		WAC 173-201A	
		Human Health		Freshwater		Marine Water	
		Water & Org.	Org. Only	Acute	Chronic	Acute	Chronic
Pesticides (µg/L)							
Chlorpyrifos [f]	0.07	-	-	0.083	0 041	0 011	0.0056
Ethoprop	0.02	..	-	..	-	-	-
Metals (µg/L)							
Antimony	4.6	14	4,300	9,000	1,600	-	-
Arsenic	7.5	0 018	0.14	360	190	69	36
Barium (dissolved)	170	1,000	-	-	..	-	..
Beryllium	<3 - <5	-	-	130	5.3	-	-
Cadmium	0.44	..	-	5 08	1 28	42	93
Calcium, Total	140	-	-	..	-	..	-
Chromium (III)	27	-	-	697 4	226.2	10,300.0	-
Copper	(g)	1,300	-	22.4	14.6	4 8	3.1
Iron, Total	32	300	-	-	1,000	-	-
Lead	4 0	-	-	88 7	3.46	210.00	8.10
Magnesium, Total	33	-	-	-	-	-	-
Mercury	<0.2 - <0.5	0.05	0.051	2.1	0.012	1.8	0.025
Nickel	<10 - <40	610	4,600	1,813	201	74	8
Potassium, Total	29	-	-	..	-	-	-
Selenium	0.66	170	11,000	20	5	290	71
	<10 - <20	-	-	5.7	0 12 [d]	1 9	..
Sodium, Total	130	..	-	-	-	-	-
Thallium	<1 - <2	1.7	6 3	1 400.0	40	2,130	-
Zinc	120	9,100	69,000	147	134	90	81

Notes:
* Total Ammonia N (mg/L) - Converted from unionized ammonia criteria of 0 09 for acute, and 0 01 for chronic (T=19 °C) - using formulas identified in EPA document: *Overview of Ammonia Toxicology*.
**Temperature = 19 °C - Based on WAC 173-201A-030(3) regarding Class B waters.
a) Influent values calculated for 90th percentile of maximum concentrations observed during sampling events of 1998 and 1999.
b) National Recommended Water Quality Criteria - Correction (April 1999).
c) Based on criteria limits established in WAC 173-201A-040(3) or as noted otherwise in accordance with WAC 173-201A-040(5).
d) Proposed US EPA, Quality Criteria for Water, Summary 1994 [NOAA Screening Quick Reference Table]
e) This compound was detected only once and was present at such a low concentration that it was flagged as an estimate. Therefore, it was dropped from further consideration.
f) This compound also was detected only once and at a very low concentration Therefore. it was dropped further consideration
g) RI detected values: 2 µg/L. (3 values) and 20 µg/L (1 value)
RI PQL: <20 µg/L (19 values).
Treatability Study detected values: 3 and 5 µg/L.
Anticipated influent concentration range: 2 µg/L to 5 µg/L.
ND - not detected.
NM - not measured.
- water quality criteria not available

AB



LEGEND

- Storm Drain Line
- Sanitary Sewer Line
- Gas Line
- Product Line
- Power Line
- Water Line
- Railroad Tracks

0 37.5 75
Scale in Feet

FIGURE
Site Structures and On-Site Utilities

Llyblad/Sol-Pro
Remedial Investigation Report

Pacific Groundwater Group

JE9018, FIG4.1-3.dwg, 10/98

Appendix C
Potential Contaminants in Extracted Groundwater and Water Quality Criteria
Lilyblad Petroleum
coma, Washington

Contaminant	Influent [a]	National Toxics Rule (40CFR131.36) [b]		WAC 173-201A [c]		WAC 173-201A	
		Human Health		Freshwater		Marine Water	
		Water & Org.	Org. Only	Acute	Chronic	Acute	Chronic
Petroleum Hydrocarbons (µg/L)							
Diesel	9,200	-	-	-	-	-	-
Motor (heavy) oil	3,600	-	-	-	-	-	-
Volatile Organic Compounds (µg/L)							
1,1,1-Trichloroethane	8,000	-	-	18,000 [d]	-	31,200	-
1,1,2-Trichloroethane	0.33	0.6	42	18,000 [d]	9,400	-	-
1,1,2-Trichlorotrifluoroethane	7.0	-	-	-	-	-	-
1,1-Dichloroethane	2,800	-	-	-	-	-	-
1,1-Dichloroethene	300	0.057	3.2	11,600	-	224 000	-
1,2,4-Trimethylbenzene	1,200	-	-	-	-	-	-
1,2-Dichlorobenzene	85	2,700	17,000	1120	763	1 970	-
1,2-Dichloroethane	320	0.38	99	118 000	20,000	113,000	-
1,2-Dichloropropane	0.19	0.52	39	23,000	5,700	10,300	3,040
1,3,5-Trimethylbenzene	280	-	-	-	-	-	-
1,3-Dichlorobenzene	2.6	400	2,600	1,120	763	1,970	-
1,4-Dichlorobenzene	24	400	2,600	1,120	763	1,970	-
1-Butanol	1,500	-	-	-	-	-	-
2-Butanone (MEK)	190	-	-	-	-	-	-
[illegible]lorotoluene	0.66	-	-	-	-	-	-
[illegible]lorotoluene	0.66	-	-	-	-	-	-
4-Isopropyltoluene	29	-	-	-	-	-	-
4-Methyl-2-pentanone (MIBK)	270	-	-	-	-	-	-
Acetone	290	-	-	-	-	-	-
Benzene	320	1.2	71	5,300	-	5,100	700
Carbon Disulfide	3.0	-	-	-	-	-	-
Chlorobenzene	14	680	21,000	-	-	-	-
Chloroethane	420	-	-	-	-	-	-
Chloroform	1.6	5.7	470	28 900	1,240	-	-
cis-1,2-Dichloroethene	420	-	-	11,600 [d]	-	-	-
Dichloromethane	9.600	4.7	1,600	-	-	-	-
Ethyl benzene	270	3,100	29,000	32,000	-	430	-
Isopropyl alcohol	3,900	-	-	-	-	-	-
Isopropylbenzene (Cumene)	42	-	-	-	-	-	-
Methanol	320	-	-	-	-	-	-
n-Butylbenzene	32	-	-	-	-	-	-
n-Propylbenzene	94	-	-	-	-	-	-
sec-Butylbenzene	240	-	-	-	-	-	-
tert-Butylbenzene	1.3	-	-	-	-	-	-
Tetrachloroethene	540	0.8	8.85	5,280	840	10.200	450
Toluene	2,300	6,800	200 000	17 500	-	6,300	5,000
trans-1,2-Dichloroethene	11	700	140,000	11.600 [d]	-	-	-
Trichloroethene	470	2.7	81	45,000	21,900	2,000	-
Trichlorofluoromethane (CFC 11)	0.49	-	-	11,000 [d]	-	-	-
[illegible] chloride	82	2	525	-	-	-	-
[illegible]ene (o,m,p)	1.300	-	-	-	-	-	-

AB