



3279

December 8, 1992

Ms. Jennifer Eberle
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

92 DEC -9 10:12:32

Subject: **Site Remediation
Safety-Kleen Service Center
400 Market Street
Oakland, California**

Dear Ms. Eberle:

Safety-Kleen Corporation has prepared this letter to update the status of the subsurface remediation program for the above-referenced site. Currently, separate-phase product is removed via bailing on a weekly basis and groundwater samples are collected and analyzed on a quarterly basis. The results of the quarterly groundwater sampling program can be referenced in update reports which have been submitted each quarter. The remediation program will be upgraded in the near future and will consist of a soil vapor extraction system to remove adsorbed mineral spirits and volatile organic compounds (VOCs) from the soil and to aid in the removal of separate-phase product on the water table. In conjunction with the soil vapor extraction system, a pump will be installed to continuously skim separate-phase product from the water table.

A work plan was prepared in June 1990 which described the installation of a vapor recovery system. The system includes seven separate horizontal vapor recovery trenches with PVC piping installed in the trenches. The installation of the vapor extraction system piping was conducted in July 1990, in conjunction with the underground storage tank replacement at the site. The piping installed in the seven individual trenches is stubbed into a treatment compound where a vapor abatement device will be installed to treat the vapors removed from the subsurface.

The vapors removed via the vapor extraction system will be treated through a Purus self-regenerating vapor absorption treatment unit (See Attached Brochure). The unit has been ordered and has a delivery due date of January 25, 1993. The Purus system is capable of treating mineral spirits and VOCs which are expected in the vapor stream. Design specifications indicate the system can treat vapors up to 1,600 ppmv at 150 scfm to an efficiency of 99 percent. The unit is in the process of being permitted with the Bay Area Air Quality Management District (BAAQMD). The permit application will be submitted by December 15, 1992. Delays were encountered in submitting the air permit application due to delays in receiving a design specification clearance. A copy of the air permit application which will include site-specific design criteria will be forwarded to your attention.

OAKLAND.L01
12/08/92
Job No. #70005-009-01

Page 1

Ms. Jennifer Eberle
Alameda County Environmental Health

December 8, 1992

ck? To enhance the subsurface remediation, a pneumatic separate-phase product skimmer will be installed in monitoring well MW-9. The pump has a delivery due date of 2-to-3 weeks and should be installed by the middle of January 1993. The pump will be capable of continuously removing an accumulation of separate-phase product from the well. (The product will be pumped directly into the spent mineral spirits product tank at the site where it will be incorporated as part of the normal Safety-Kleen recycling process.) Weekly bailing of the product will continue until the product skimmer is installed.

I trust this letter adequately updates the status of the site remediation. An additional project update will be submitted on January 29, 1993. If you have any questions or require additional information, please contact Greg Hoehn of SEACOR at (510) 686-9780 or myself at (310) 831-3903.

Sincerely,



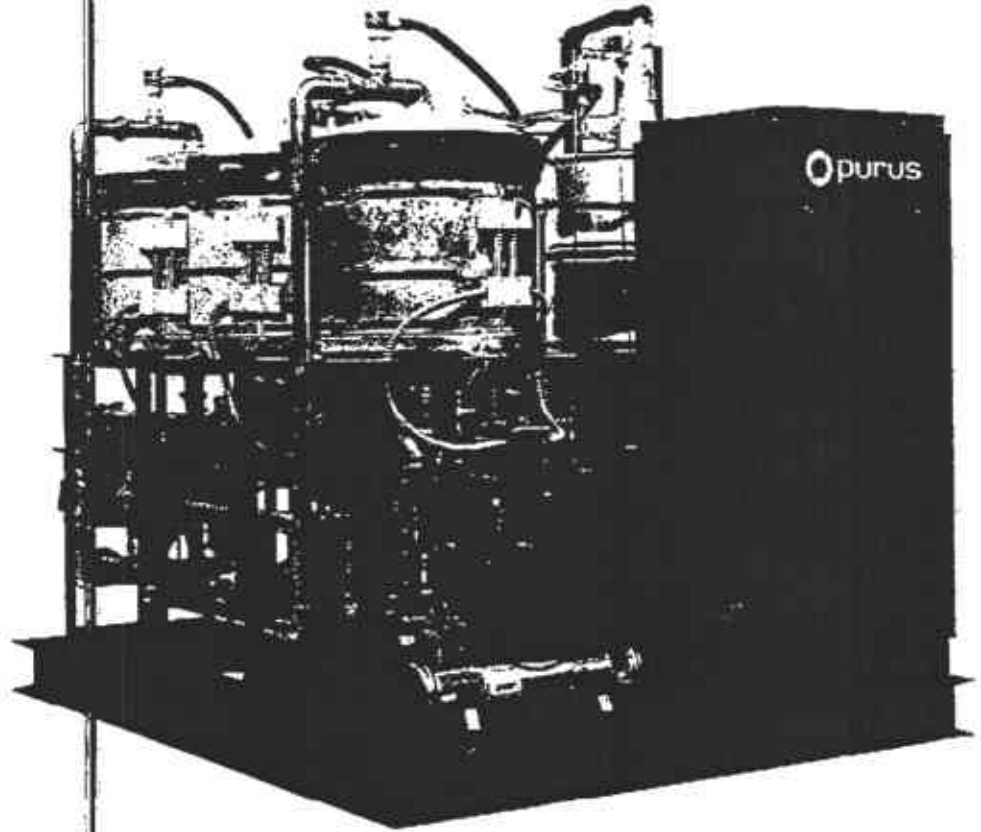
for Anne Lunt
Sr. Project Manager - Remediation
Safety-Kleen Corporation

cc: Steven Ritchie, RWQCB
Alfred Wong, CAL-EPA DTSC
Gary Long, Safety-Kleen Corporation
Jane Spetalnick, Safety-Kleen Corporation
Ray Orlando, Safety-Kleen Corporation
Greg Hoehn, SEACOR

PADRE™

...  purus
Leaders in Environmental Solutions

SYSTEM SPECIFICATIONS

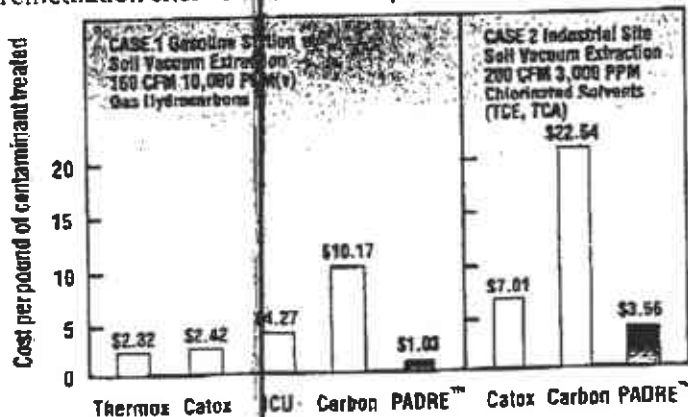


PADRE™ is a revolutionary new vapor phase treatment system that utilizes a proprietary adsorption-desorption process with new specialized adsorbents to filter organic contaminants from an air stream. This material can be recycled for a fraction of the cost of destruction techniques. The system can be applied to soil vacuum extraction or ground water air stripping systems at remediation sites or in industrial processes.

PADRE™ Advantages

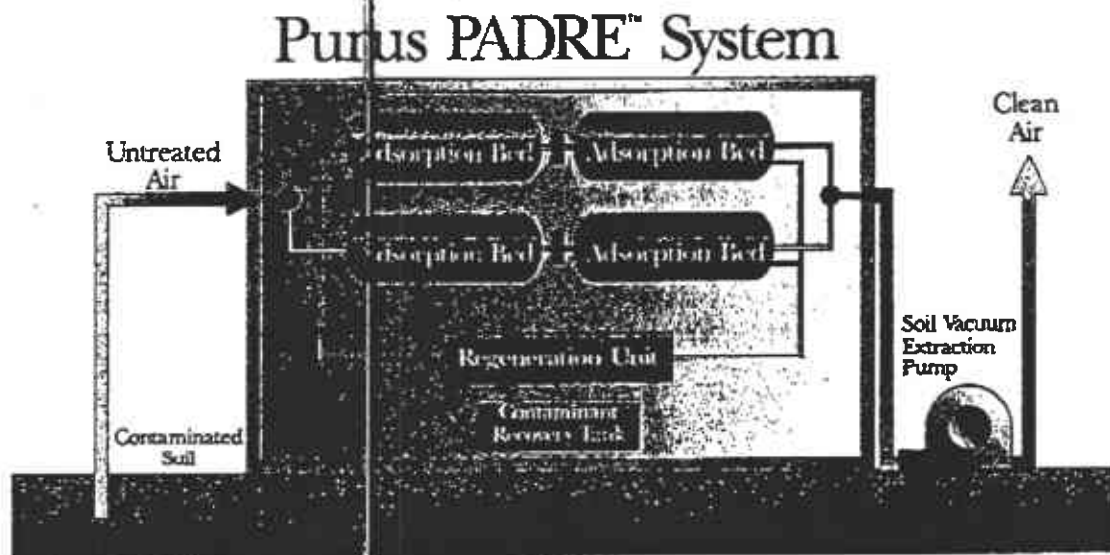
- Meets BACT permitting requirements
- Lower treatment costs than competing technologies
- Hands-off, automatic, computer controlled operation
- Safety controls with interlocks
- No relative humidity control necessary
- Treats high contaminant vapor concentrations
- Easily Maintained
- Performance guarantee

FIGURE 1. Total costs (Capital plus operating)



PADRE™ Operation: The PADRE™ system consists of adsorption beds that contain proprietary adsorption material which offers significant improvements over traditional activated carbon. During treatment, vapors from a soil extraction pump or an air stripper are passed through two adsorption beds in series. The organic contaminants are adsorbed on the beds and the resulting clean air is vented to the atmosphere. When the first series of beds approaches capacity, the air stream is diverted to fresh adsorbent beds on an

automatically timed basis. Once off-line, the first beds begin a desorption cycle which will remove and recover 99.9% of the contaminant into a storage tank. PADRE™ has demonstrated the ability to recycle the adsorbent beds in excess of 1000 times with no loss in adsorption capacity. The desorption process uses a proprietary combination of temperature, pressure, and an inert carrier gas. All PADRE™ functions are automatic, computer controlled, and can be monitored off-site via modem. A process flow diagram is shown below.



PADRE™ Specifications

Medium:	Air flow from soil vacuum extraction or groundwater air stripper systems
Contaminants:	Fuel hydrocarbons, chlorinated solvents, other volatile organics
Capacity (4 models):	PADRE™ - 150 (Treats air flows up to 150 scfm) PADRE™ - 250 (Treats air flows up to 250 scfm) PADRE™ - 500 (Treats air flows up to 500 scfm) PADRE™ - 1000 (Treats air flows up to 1000 scfm)
VOC Reduction:	Typically greater than 99% (for gasoline, no more than 0.03 pounds of benzene discharged per day).
Recovery:	Contaminant is recovered as liquid and transferred to a storage tank. Water will also be present (approx. 5% - 30% v/v) depending on relative humidity. Storage tank provided by user.
Concentration Range:	Up to 10,000 ppm(v), or higher organic concentrations in air.
Power:	208v, 3 phase, 50 amps (220v, single phase optional).
Footprint:	8 x 10 x 8 / Weight is approx. 3000 lbs. (skid mounted)
Optional Equipment:	Fully integrated systems including soil vacuum extraction pumps (or air strippers for groundwater), water knockout tank, and recovery storage tank are available upon request.
Permitting:	Meets or exceeds BAC1 permitting requirements.

PADRE™ Safety Features

- All components meet highest appropriate codes
- Continuous monitoring of temperature and pressure
- Oxygen-free regeneration cycle
- Automatic, computer controlled operation
- Remote monitoring via modem



purus

2150 Paragon Drive, San Jose, CA 95131 Phone: (408) 453-7804 FAX: (408) 453-7988