Dry Cleaning Industry

Self-Inspection Handbook

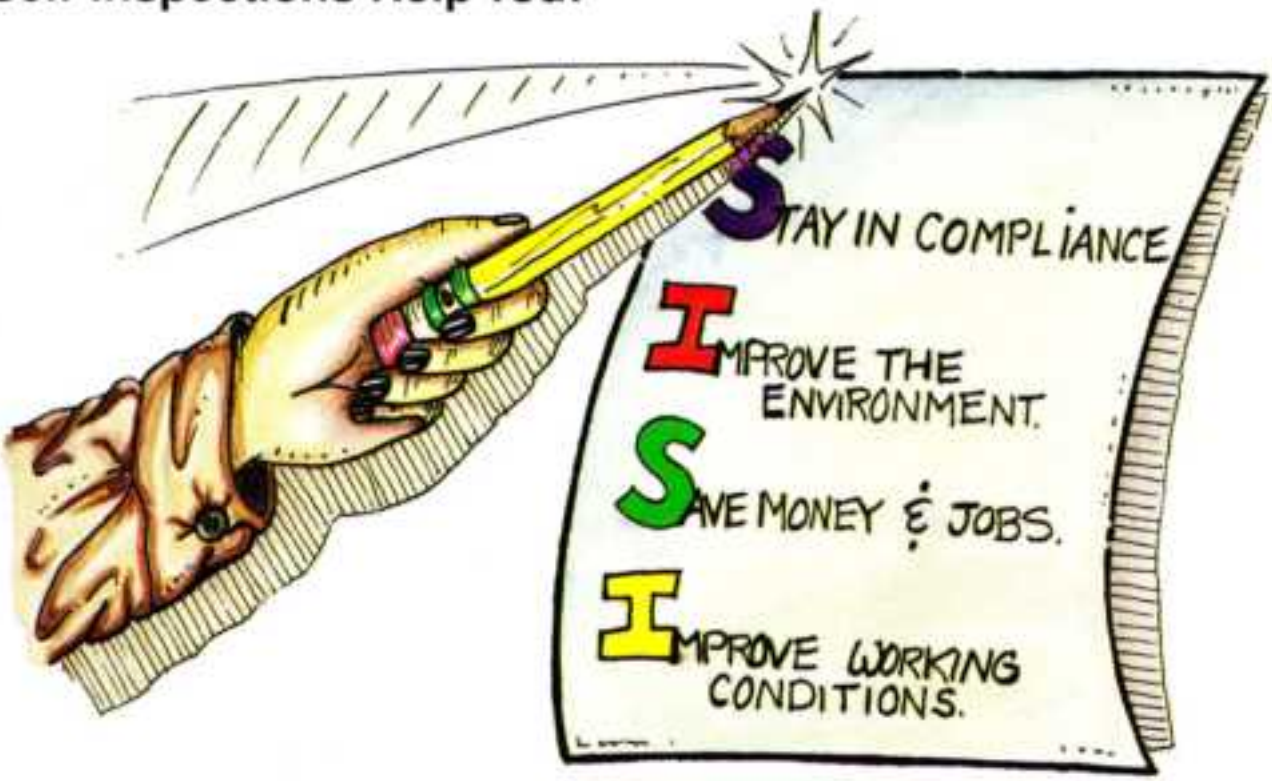
For Dry Cleaning Operations Personnel

Cal/EPA
Air Resources Board
Compliance Division
Compliance Assistance Program

In Cooperation with
Local Air Pollution Control Districts
and Private Industry

Compliance Assistance

Self-Inspections Help You!



This handbook is designed to help you understand the air pollution control laws dealing with the dry cleaning industry and its operations. It illustrates how to comply with these laws by using self-inspections. Read on and see how you can comply with the law, avoid penalties, improve your working conditions, keep your customers and neighbors satisfied, and have a healthy working environment. Self-inspections can even help you save money!

District Inspections Help You!

At regular intervals, an inspector from the local air pollution control district will conduct a complete inspection of your facility. Your dry cleaning operations will be examined to see that you are in compliance with the local regulations.

The Inspector Will Review:

- Records of Solvents Used
- Operation & Maintenance Checklist
- Record of Completion for Trained Operators
- Records of Clothes Cleaned
- Repair Checklist
- Permit to Operate Conditions
- Weekly Solvent Leak Inspection Records
- Waste Storage & Disposal Records

The Inspector Will Examine:

- Solvent Leaks
- Facility Equipment
- Solvents Storage
- Waste Storage

Also, the inspector may want to take samples of your solvents for laboratory analysis.

What Do I Need to Know About Perchloroethylene (Perc) Use At My Dry Cleaning Facility?

Because perchloroethylene (perc) is a toxic air contaminant, it is regulated by the Air Resources Board (ARB) and the local districts. ARB can help you understand the Air Toxic Control Measure (ATCM) for perc and how to comply. Physical reactions to inhaling perc at various concentrations are shown on the next page.

Perc is Toxic!!
Inhalation Response to Perchloroethylene

Parts Per Million by Volume	Typical Physiological Responses
50	- Odor threshold to un-acclimated persons
100	- Faint odor definitely apparent to un-acclimated persons
200	- Moderate to faint odor upon exposure - Faint to moderate eye irritation - Minimal light-headedness - Eye irritation threshold -- 100-200 ppm
400	- Strong and unpleasant odor - Definite eye irritation - Slight nose irritation - Definite lack of coordination (2 hours) of exposure at this limit
600	- Strong odor, very unpleasant but tolerable - Definite eye and nose irritation - Dizziness, loss of inhibitions (10 minutes)
1000	- Very strong, intense, and irritating odor - Marked irritation to eyes and respiratory tract - Considerable dizziness, not likely to be tolerated voluntarily (2 minutes)
1500	- Almost intolerable odor, "gagging" - Intolerable irritation to eyes and nose - Complete lack of coordination in minutes to unconsciousness within 30 minutes

Reactions to the Exposure of Perc at Various Concentrations

The following table highlights **some** of the requirements of the dry cleaning regulation set forth by the California Air Resources Board. Although some air pollution control districts already regulate dry cleaners, district rules may need to be updated in order to incorporate these new requirements.

Overview of Major State Requirements for Dry Cleaners

Applicability

- No perc dry cleaning facility is exempt from this rule.

Recordkeeping/Reporting

- All existing facilities must register with the district within 60 days of effective date of this rule in the district. New facilities will register upon application for permit.
- Initial notification should include details of equipment, controls, and annual perc consumption.
- Design specifications and operating manuals for all dry cleaning machines and control devices are to be retained on site by all new facilities.
- At the district's discretion, facilities would need to submit four pieces of information once a year: total perc use, total pounds of clothes cleaned, the facility's average mileage, and a copy of the certificate for their trained operator.
- Records should be retained on site for at least two years, or until the next district inspection - whichever is later.
- Owner/Operator must furnish an annual report to the district.

Good Operating Practices

- All equipment is to be operated in accordance with this regulation and conditions specified in the operating permit. For operations not specifically addressed, components shall be operated and maintained in accordance with the manufacturer's recommendations.
- All systems shall be checked at least once a week for liquid and vapor leaks. To detect vapor leaks, operators are to use a halogenated leak detector, a portable gas analyzer, or an alternative method approved by the district. The district will supply a leak inspection checklist to each facility.

- Each facility shall have a trained operator present at the time of operation in the facility who attended initial and refresher environmental training courses authorized by the California Air Resources Board.

- Existing facilities are required to use good operating practices within 18 months of implementation of the regulation.

Operation and Maintenance

- The trained operator, or his/her designee, shall operate and maintain all components of the dry cleaning system in accordance with the requirements of the regulation and the conditions specified in the facility's operating permit. For operations not specifically addressed in the regulation, the components shall be operated and maintained in accordance with the manufacturer's recommendations.

- The district shall provide an operation and maintenance checklist to the facility. Each operation and maintenance function and the date performed shall be recorded on the checklist.

If you would like to order a technical manual on dry cleaning operations which includes a complete copy of the Air Toxic Control Measure (ATCM) for dry cleaners, please contact the Compliance Assistance Program of the California Air Resources Board at (916) 327-7211.

Inspect Your Equipment Often !!!

Good operating and maintenance practices are essential to achieve the best performance and lowest emissions from even the best equipment. Maintain your control systems in accordance with the manufacturer's recommendations. If you **inspect** your machines often and keep them in good working condition, you can improve the environment, improve working conditions, and save money and jobs. If you find a problem, remove the equipment from service until you can **fix** it or have it **replaced.**

Store Your Solvents Properly!!!

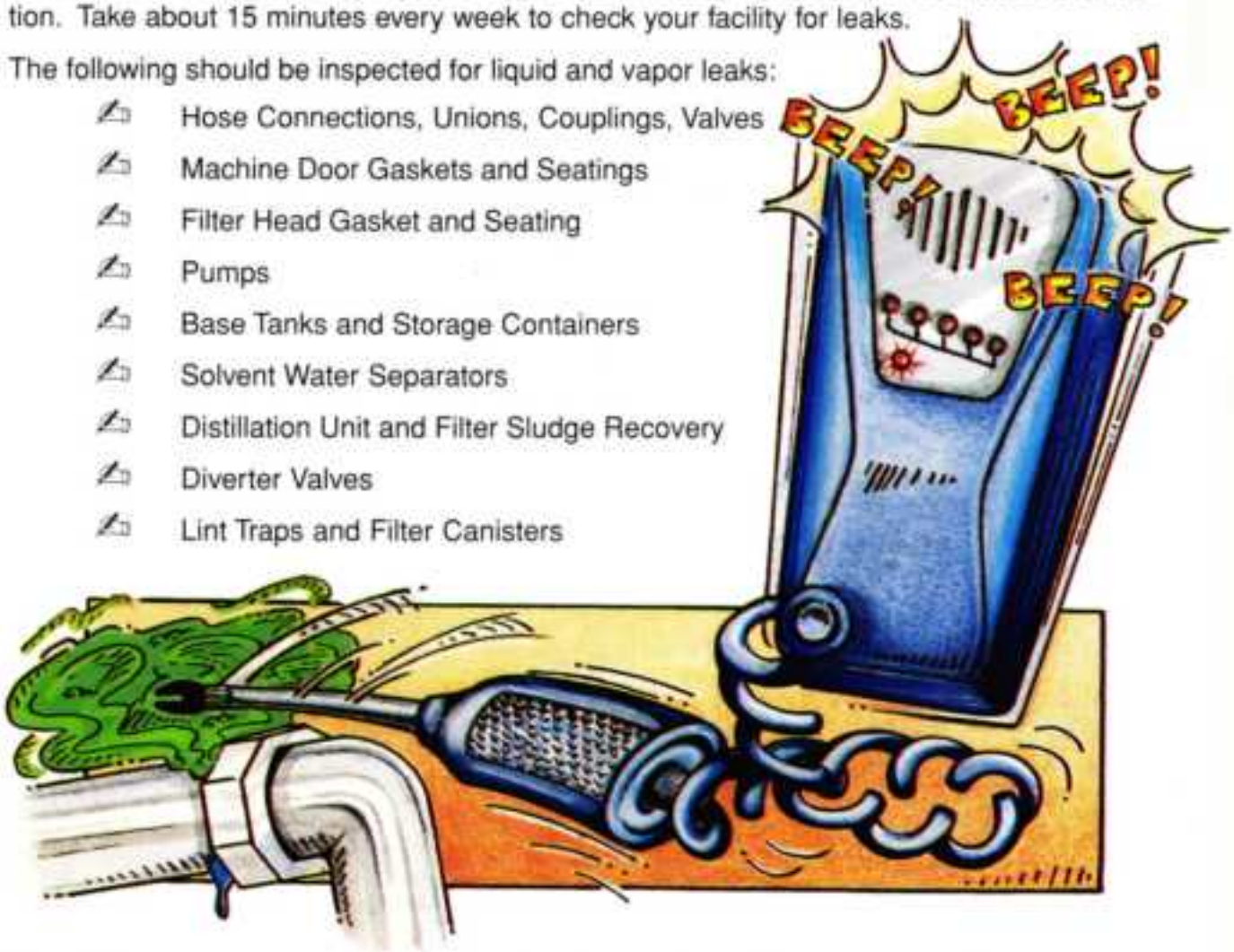
Solvent vapor released in the workplace not only exposes employees to a potentially toxic substance but eventually may find its way to the outside air or into apartments or adjoining businesses. Your containers, such as water repellent dip tanks, should be covered whenever they are not being used. This is a requirement of the ATCM, prevents evaporation of perc emissions to the atmosphere and reduces solvent loss.

Check for Leaks!!!

Investigate strong solvent odors immediately. Leaks can be detected by using your smell, sight, and hearing senses; however, the ATCM requires each facility to use a portable halogenated-hydrocarbon detector, a portable gas analyzer, or an alternative method approved by the district to locate vapor leaks. Components such as the machine door, pumps, compressors, vapor recovery systems, and filter housings can also be checked for leaks. A vapor leak is an emission of perc vapor from unintended openings in the dry cleaning system. A vapor leak is indicated by a rapid, audible or visual signal from a halogenated-hydrocarbon detector or a concentration of perc exceeding 50 ppmv as methane, as indicated by a portable analyzer. The ATCM also requires liquid leaks to be repaired. One drop of liquid solvent from any one component in three minutes is considered to be a violation in the districts. Any liquid or vapor leak must be repaired within 24 hours of detection. Take about 15 minutes every week to check your facility for leaks.

The following should be inspected for liquid and vapor leaks:

- Hose Connections, Unions, Couplings, Valves
- Machine Door Gaskets and Seatings
- Filter Head Gasket and Seating
- Pumps
- Base Tanks and Storage Containers
- Solvent Water Separators
- Distillation Unit and Filter Sludge Recovery
- Diverter Valves
- Lint Traps and Filter Canisters



Check these components while the dry cleaning equipment is in use, especially during the drying cycle, to be sure that there are no leaks. This provides you with an opportunity to review your operating parameters and practices. The temperature of the air leaving the refrigerated condenser during the cool down cycle can be maintained at this time. You can also determine whether the clothes are left in the machine through completion of the drying cycle.

About Fugitive Emissions . . .

Fugitive emissions occur whether the machine is operating or not. Opening the machine door after a load has been cleaned and performing any type of maintenance on the lint trap, button trap, recovery still, and filter canister all release of fugitive emissions. These are best controlled with good housekeeping and workplace practices, and by installing control equipment, such as door fans and floor vents, ducted to an adsorber type air pollution control device. Check with your local district to see what equipment may be required for your facility.

Fugitive emissions can also result when adding solvent to the machine. In most cases solvent is pumped from the delivery truck, using the traditional hose fill system, to the button trap, however, some solvent distributors are offering a container with fresh solvent, equipped with a quick connect, to reduce the release of fugitive emissions during filling. Close the empty container to prevent evaporative emissions.

Handle Waste Carefully . . .

Exposure to solvent vapors is most likely to occur during filter changing and when the filter medium and accumulated filter solids or muck are processed for recovery or disposal. Before disposal, the filter cartridges must be drained in their canister for at least 24 hours, 48 hours for adsorptive cartridges in the filter housing. This may leave 1/4 to 1/2 gallon of solvent in the filter cartridge after drainage. Any hazardous waste materials generated from dry cleaning operations such as filter wastes, still bottoms or muck, still oil, spent carbon, or condensate from the steam presses and carbon desorption process must be properly stored and labelled in sealed metal containers at all times.

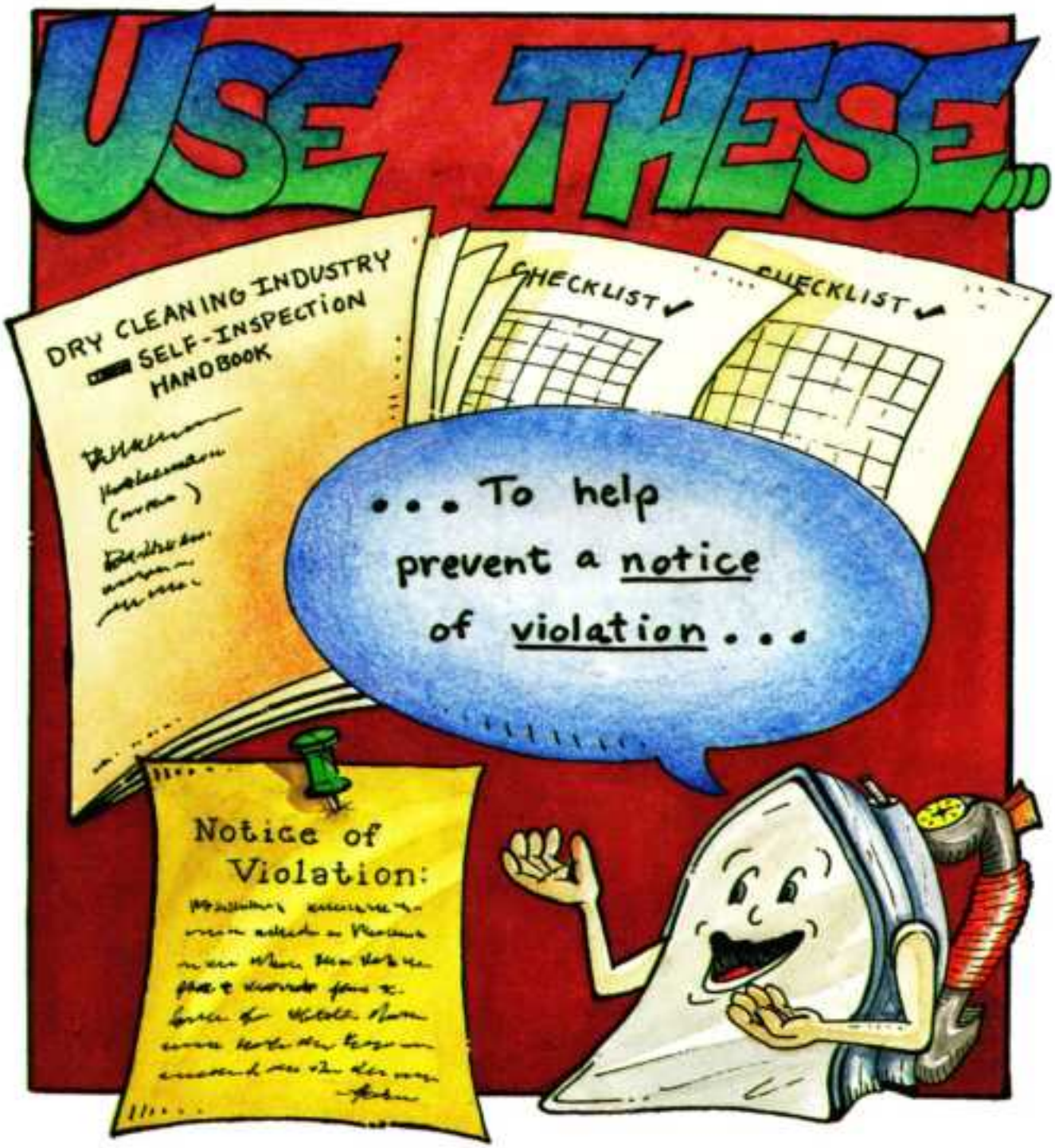
Recordkeeping Made Easy . . .

Permits to Operate and the local air pollution control district regulations require all dry cleaning facilities in California to keep simple, but accurate, records. Making sure your dry cleaning equipment is operating at optimum efficiency is good business and saves money. Keeping accurate records may also protect you from unnecessary penalties and loss of business. Plant records should document the following:

- The number of cleaning cycles for each day, week, and month.
- The number of pounds of clothes cleaned per cycle.
- The amount of solvent purchased and used per year.
- The dates the solvent tank is filled and the amount of solvent that is added to the tank.
- The solvent mileage, calculated annually. This is expressed as the pounds of materials cleaned per gallon of solvent used (lbs/gal).
- The last time the carbon adsorber was regenerated (until vented machines are phased out).
- The carbon replacement frequency in the adsorber.
- The refrigerated condensers achieve 45°F or less at the end of the cool down cycle for each load.
- The dates of shipment and the types and quantities of hazardous waste leaving the facility including the size and number of cartridge filters, the volume of still bottoms and muck, and the volume of wastewater.
- Filter replacement.
- The dates of service, types of service, and any repairs made to any portion or component of the dry cleaning system.

These records may consist of daily receipts, supplier and contractor invoices, hazardous waste manifests, and daily log entries by the operator. Keeping these records up to date should take about an hour or more a week.

Self-Inspection Checklists



Self-Inspection Checklists are an easy way to keep more accurate records. Checklists similar to the ones illustrated on the following pages, used with your dry cleaning handbook, will help you prepare for your air pollution control inspection. Information is contained in the handbook and the checklists that follow. Keep all your records for at least two years or until the next district inspection, whichever period is longer. Please contact your local district for any specific forms they require to be filled out.

Pounds of Clothes/Load
(Begin at the Annual Starting Period)

Year: _____ Month: _____ Facility ID: _____ Machine ID: _____

Date	Day	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	Total
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
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31														
Total Up to This Month												Total This Month		
												Total-To-Date		

Service and Repair Log

Machine ID: _____ Facility ID: _____ Inspector ID: _____

Date	Service/Repair Description	Date Tagged	Parts Ordered*	Date Ordered	Parts** Installed	Date*** Repair Completed

* Parts shall be ordered within three working days of the detection of a leak.

** Repair parts shall be installed within five working days after receipt.

*** A facility with a leak that has not been repaired by the end of the 15th working day after detection shall not operate the drycleaning equipment, until the leak is repaired, without a leak-repair extension from the district.

NOTE: All leaks must be repaired within 15 working days or you must contact the district at ( ) - _____.

Annual Reporting....

The owner/operator must prepare an annual report. A sample of an annual report is presented on the next page. Ask the district if they want it, and by what date. The annual report shall include all of the following:

- A copy of the record of training course completion for each trained operator.
- The total of the pounds of materials cleaned per load and the gallons of perc used for all solvent additions in the reporting period.
- The average annual facility mileage, determined from all solvent additions in the reporting period, as follows:

$$\frac{\text{The Total of the Pounds of Materials Cleaned Per Load}}{\text{The Total of the Gallons of Perchloroethylene Used}}$$

Annual Report*

Facility Name: _____

Street Address _____

City _____ State _____ Zip Code _____

Facility ID: _____ Machine ID: _____

Period: _____ to _____

Month	lbs. Clothes Cleaned

Total (A): _____

Perc Added	
Date	Perc (Gallons)

Total (B): _____

Mileage
Mileage= $\frac{A}{B}$
Mileage=

Submitted By: _____ _____
Printed Name Signature

Telephone # ( ) - _____

* Attach copy of certificates for all trained operators. _____
Date

NOTES...

NOTES...

NOTES...

Remember to Check...

Item	Yes	No
Solvent Containers Closed?		
Filters Properly Drained?		
Liquid Leaks?		
Vapor Leaks?		
Refrigerated Condenser @ 45°F or less?		
Fugitive Control System Operating Correctly?		
Halogenated-hydrocarbon Detector In Good Working Order?		
Button & Lint Traps Cleaned?		
Recordkeeping Completed?		
Repairs Made/Reported?		
Notes:		

Do your part to protect public health, clean up the environment, and save money!! Check your equipment for leaks and do the required maintenance. Identify any problems and take action! Good operating and maintenance routines keep your equipment working properly and prevent complaints. Use this pocket to keep your self-inspection list, local district recordkeeping forms, and other helpful information. In this way, you can reduce your operating costs and prevent costly violations.

Need More Information?

Air Resources Board (800) 952-5588 **District: _____**

Multi-County Districts

1 - Bay Area (415) 749-5000
2 - Feather River (530) 634-7659
3 - Great Basin (760) 872-8211
4 - Monterey Bay (831) 647-9411
5 - North Coast (707) 443-3093
6 - Northern Sierra (530) 274-9360
7 - South Coast (909) 396-2000
8 - Yolo-Solano (530) 757-3650
9 - San Joaquin Valley (559) 230-6000

County Districts

Amador (209) 257-0112
Antelope Valley (661) 723-8070
Butte (530) 891-2882
Calaveras (209) 754-6504
Colusa (530) 458-0590
El Dorado (530) 621-6662
Glenn (530) 934-6500
Imperial (760) 482-4606
Kern (661) 862-5250
Lake (707) 263-7000
Lassen (530) 251-8110
Mariposa (209) 966-2220
Mendocino (707) 463-4354
Modoc (530) 233-6419
Mojave Desert (760) 245-1661
No. Sonoma (707) 433-5911
Placer (530) 889-7130
Sacramento (916) 874-4800
San Diego (858) 650-4700
San Luis Obispo (805) 781-4247
Santa Barbara (805) 961-8800
Shasta (530) 225-5789
Siskiyou (530) 841-4029
Tehama (530) 527-3717
Tuolumne (209) 533-5693
Ventura (805) 645-1400

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http://www.arb.ca.gov/training/training.htm

California Environmental Protection Agency
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