San Joaquin Valley
Air Pollution Control District

Guideline for Expedited Application Review (GEAR)
Perchloroethylene (Perc) Permit Processing Guidelines

Approved By: SIGNED Date: January 7, 2002
Seyed Sadredin
Director of Permit Services

Purpose: To outline the procedures for expedited processing of Authorities to Construct (ATCs) for area source perchloroethylene (Perc) dry cleaning facilities.

I. Applicability

This GEAR is applicable to Perchloroethylene (Perc) dry cleaning equipment subject to District Rule 7070.

II. Permit Application and Supplementary Forms

The applicant must complete a regular ATC application form and the Dry Cleaning Supplemental Application Form (Attachment I).

III. Priority Processing

The applications will be processed on an expedited basis if a complete application, a complete supplemental form, and the required filing fee for each permit unit are submitted. Since a health risk assessment (HRA) will be required on all projects to determine overall approvability, the applications will not be processed as over-the-counter projects.

In order to meet the expedited time frame, each regional office will log-in each application and then forward the application or copy of the application to Central Permit Services for further processing. The engineer assigned for preliminary review will deem the application complete (if appropriate), conduct an application review, and prepare the final ATC. The application review and final ATC will be submitted to the lead engineer for review and signature.

Final action on all projects will occur within 2 weeks after the application package is deemed complete.

The priority processing will be preempted if the application is subject to any public noticing requirements, including school notice per CH&SC 42301.6 (within 1,000 feet of any K-12 school).

IV. Application Review

In order to standardize the application reviews for this source category, the application review found on the Airnet (Permits => Processing Guide => Dry Cleaning) will be used as a base document. The following pages are a hard-copy version of this standard review. This hard-copy version for the GEAR Policy Manual includes a copy of the required supplemental application form (Attachment I), the standard ATC conditions (Attachment II), T-BACT Determination (Attachment III). These attachments will be referred to, but will not be included in the actual application review done for the pending application. The actual application review will only have draft ATC(s) attached to it. This will minimize the number of pages for the expedited review.

The use of this standard Application Review will ensure:

A. That the proposed project complies with District Rule 7070.

B. That the proposed project complies with the Toxic Best Available Control Technology (T-BACT) requirements as specified in the District's current BACT Clearinghouse.

V. Equipment Description

To ensure uniformity, the following standard description will be used in the database:

[MANUFACTURER, MODEL AND CAPACITY] CLOSED-LOOP DRY-TO-DRY PERCHLOROETHYLENE DRY CLEANING MACHINE WITH A REFRIGERATED VAPOR CONDENSER [OR EQUIVALENT PRIMARY CONTROL SYSTEM] AND A CARBON ADSORBER [OR EQUIVALENT SECONDARY CONTROL SYSTEM]

VI. Authority to Construct Conditions

To ensure uniformity, a standard set of conditions will be used as a base for all applications (See Attachment II).

VII. Updates

This GEAR will be updated as necessary to accommodate any changes in District Rule 7070, changes in BACT Clearinghouse, or any other rules/regulations pertaining to dry cleaning operations.

The Permitting Handbook will also be updated whenever this GEAR document is updated.

Each update will be submitted to the BACT coordinator for review and the coordinator will forward the updates for the Director's approval.

ATC Application Review

Perchloroethylene Dry Cleaning Facilities

ATC APPLICATION REVIEW

Perchloroethylene Dry Cleaning

Processing Engineer: [Name]
Lead Engineer: [Lead Name]
Date: [Date]

Facility Name: [Facility Name]
Mailing Address: [Address]
[State, City ZIP]

Contact Name: [Contact Name]
Phone: [Contact Phone]

Project Number: [Project #]
Permit Number: C-1234-0

I. PROPOSAL

[Facility Name] is applying for an Authority to Construct (ATC) for a [new/modified] closed loop dry-to-dry perchloroethylene (perc) dry cleaning machine.

The District has exempted Perc as a volatile organic compound (VOC), and Perc is not a non-attainment pollutant or precursor; therefore, District Rule 2201 (including DEL, BACT, and offsets) is not applicable.

II. APPLICABLE RULES

District Rule 4102 Nuisance (Amended December 17, 1992)

District Rule 7070 Perchloroethylene from Dry Cleaning Operations (Adopted June 15, 1995)

III. PROJECT LOCATION

The dry cleaning operation will be located at the following address:

[Street Address] in [City, CA].

The proposed dry cleaning equipment is [not] located within 1,000 feet of the outer boundary of any K-12 school. Therefore, the public health notification requirement of California Health and Safety Code 42301.6 is [not] applicable.

IV. PROCESS DESCRIPTION

The closed-loop operation proposed is a dry-to-dry process with no exhaust to the atmosphere during the drying cycle. One machine performs all three processes of cleaning: washing, solvent extracting, and drying.

During the washing cycle, the clothes are placed in a cylinder, soaked with solvent, and agitated for a short period of time. The solvent is then drawn from the cylinder through the button trap and filter, where it is recirculated by a pump through the charged solvent tank and back into the cylinder. This continues for the entire cycle to provide the clothes with a stream of relatively pure solvent. The clothes are then tumbled in the solvent for varying amounts of time depending on such factors as their weight, tightness of their weave, and how badly soiled they were.

At the end of the wash cycle, the solvent is drained from the cylinder through the button trap and into the base tank. It is then extracted from the clothes in the washer/extractor by programming the wash wheel to whirl faster than its rotation during the wash cycle. The force created by the tumbler causes the solvent to spin free of the fabric and drain through the button trap into the base tank.

Completion of the extraction cycle leads to the drying cycle so that the greater part of the solvent still in the cleaned fabrics can be removed and recovered. During the drying cycle, air is blown across steam- or electrically-heated coils and then into the drum to evaporate the solvent retained in the tumbling clothes. The solvent laden air is vented to the primary control system in a closed loop process, in which the air passes through the refrigerated condenser and then is returned to the drum.

At the end of the drying cycle, the air stream is routed to the secondary control system in which solvent vapors are stripped from the air by a carbon adsorber. The carbon adsorber must be periodically desorbed in accordance with the manufacturer's specifications.

V. EQUIPMENT LISTING

A. Closed-Loop Dry to Dry Cleaning Machine:

Manufacturer:	[Manufacturer]
Model:	[Model]
Capacity:	45 lb
Rating information:	15 hp

C-1234-0: [Manufacturer], Model [Model], 45 Lb Capacity Closed-Loop, Dry-To-Dry, Perchloroethylene Dry Cleaning Machine With Refrigerated Vapor Condenser And Carbon Adsorber

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

A. Type of Primary Control System Proposed:

The primary control system, utilizing a refrigerated vapor condenser, is expected to reduce the Perc concentration to 8,600 ppmv or less by maintaining an outlet vapor temperature of 45 °F or less.

B. Type of Secondary Control System Proposed:

For new permit units, all secondary control devices are expected to reduce perc concentration in the drum to 300 ppmv or less, because only secondary control systems approved by CARB to meet this limit are approved for use as new permit units.

VII. CALCULATIONS

A. Assumptions:

Proposed Perc Usage:	50 gallons-Perc/yr
Proposed Operating Schedule:	8 hr/day; 5 day/wk; 52 wk/yr
Waste Emission Credit[1]	25 %

[1]Most of the solvent purchased for make-up is emitted into the air; a smaller portion (typically 20-30%) is disposed as hazardous waste; and a very small portion is retained in the fabric and offgasses over several weeks. CAPCOA recommends a waste credit of 25% for the smaller portion disposed as hazardous waste. (*Air Toxics "Hot Spots" Program Perchloroethylene Dry Cleaner Industry-wide Risk Assessment Guidelines*; May 18, 1999; Page 11)

B. Emission Factors:

Perc Density: 13.5 lb-Perc/gal-Perc

C. Potential to Emit (PE) [Post-Project]:

Annual PE = (Annual Usage) x (Perc Density) x (1-Waste Credit)%
= (50 ~~gal-Perc~~/yr) x (13.5 lb-Perc/~~gal-Perc~~) x (100-25)%
= 506 lb-Perc/yr

Hourly PE = (Annual PE)x(1/wk per yr)x(1/days per wk)x(1/hr per day)
= (506 lb-Perc/~~yr~~)x(1~~yr~~/ 52 ~~wk~~)x(1 ~~wk~~/ 5 ~~day~~)x(1 ~~day~~/8 hr)
= 0.243 lb-Perc/hr

D. Project-Specific Increase in Permitted Emissions (IPE):

Annual IPE = PE (post-project) - PE (pre-project)
= 506 lb-Perc/yr - 0 lb-Perc/yr
= 506 lb-Perc/yr

Hourly IPE = PE (post-project) - PE (pre-project)
= 0.243 lb-Perc/hr - 0 lb-Perc/hr
= 0.243 lb-Perc/hr

VIII. COMPLIANCE

District Rule 2201 New and Modified Stationary Source Review Rule

Since the District has exempted Perc as a volatile organic compound (VOC) and is not considered an affected pollutant, the requirements of District Rule 2201 (including DEL, BACT, and offsets) are not applicable.

District Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Under this authority, a Perc dry cleaning project resulting in any increase in hourly or annual potential to emit hazardous air pollutants shall undergo a public health risk evaluation as a part of the permit review process prior to a final decision on the application for Authority to Construct and Permit to Operate.

[Since no increase in permitted emissions of a hazardous air pollutant is proposed for this unit, a public health risk evaluation is not required.]

{or}

[Since this project resulted in an increase in permitted emissions (as calculated in Section VII), a public health risk evaluation was conducted on {Date}. Because the cumulative prioritization score was less than or equal to one (see attached HRA evaluation), no further assessment was necessary.]

{or}

[Since this project resulted in an increase in permitted emissions (as calculated in Section VII), a public health risk evaluation was conducted on {Date}. Because the cumulative prioritization score was greater than one, a health risk assessment was necessary (see attached HRA evaluation). As a result of the health risk assessment, T-BACT is required. Best Available Control Technology (BACT) is considered T-BACT for the source category of Perc dry cleaning. In order to maintain the overall approvability of this project, a special condition (see

Attachment II) limiting the emissions unit to the proposed operating schedule is necessary.

The proposed closed-loop dry-to-dry system with refrigerated vapor condenser and carbon adsorber satisfies the equipment requirements listed in the BACT Clearinghouse Guideline 4.1.1 (__ Quarter, 200_).]

Compliance with this rule is expected.

District Rule 7070 Perchloroethylene from Dry Cleaning Operations

The proposed closed-loop dry-to-dry system with refrigerated vapor condenser and carbon adsorber satisfies the equipment requirements listed in Table 1 of this rule.

Per section 4.4.3.1.4.2, a temperature gauge with a minimum range of 0 to 150 ^{o}F will be required. Per section 4.4.3.1.4.1, the refrigerated condenser will be required to operate in a closed-loop mode until the air temperature from the condenser outlet is 45 ^{o}F or lower. Permit conditions will address these requirements.

Per section 4.4.3.3.4, the secondary control system must be capable of reducing the perc concentration in the drum to 300 ppmv or less. Per section 4.4.3.3.6, add-on secondary control systems must be capable of reducing the perc concentration from 8,600 ppmv or greater to 300 ppmv or less in the maximum volume of recirculating air in the dry cleaning machine and all contiguous piping. Since the secondary control system on this machine is on CARB's list of approved secondary control devices, this requirement has been satisified.

Permit conditions will also address the leak check and repair requirements of Section 4.2.2, the environmental training requirements of Section 4.3, the recordkeeping requirements of Section 5.1 and the annual reporting requirements of section 5.2.

Compliance with this rule is expected.

IX. RECOMMENDATIONS

Issue Authority to Construct (see attached draft ATC).

X. BILLING INFORMATION

The filing fee has been paid. Permit to Operate annual renewal fees are as follows:

Permit Unit	Description	Fee Schedule
C-1234-0	15 HP	3020-1-A

Numbers for Permits Database:

SIC #: 7216
EIC #: 210-200-3300-0000

ATTACHMENT I

Supplemental Form

San Joaquin Valley Air Pollution Control District
Supplemental Application Form

DRY CLEANING

This form must be accompanied by a completed Application for Authority to Construct and Permit to Operate form.

PERMIT TO BE ISSUED TO:
LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:

PROCESS DESCRIPTION

Type of Process	[ ] Closed-Loop, Dry-to-Dry [ ] Transfer [ ] Other: [ ] Vented, Dry-to-Dry
Type of Solvent	[ ] Perchloroethylene [ ] Petroleum [ ] Other:

EQUIPMENT DESCRIPTION

Process Unit	Manufacturer:	Motor HP Rating:
	Model:	Serial No.:
	Rated Capacity: pounds per load	Minimum Cycle Time: minutes
Transfer Unit	**Washer**	
	Manufacturer:	Motor HP Rating:
	Model:	Serial No.:
	Rated Capacity: pounds per load	Minimum Cycle Time: minutes
	Dryer	
	Manufacturer:	Motor HP Rating:
	Model:	Serial No.:
	Rated Capacity: pounds per load	Minimum Cycle Time: minutes
Boiler *(leave blank if not applicable)*	Manufacturer:	Heat Input Rating: MMBtu/hr
	Model:	Fuel Type:
	Burner Manufacturer:	Burner Model:

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CONTROL EQUIPMENT DESCRIPTION

Primary Control	**[ ]** Refrigerated Vapor Condenser	
	[ ] Vapor Adsorption: Adsorbent: [ ] Carbon [ ] Other	
	[ ] Other: _____	
Equipment Data	***(If the Control Equipment is not part of the Dry Cleaning machine, complete the following lines)***	
	Manufacturer:	Model:
	Serial No.:	Motor HP Rating:
Secondary Control	**[ ]** Vapor Adsorption: Adsorbent: [ ] Carbon [ ] Other	
	[ ] Other: _____	
Equipment Data	***(If the Control Equipment is not part of the Dry Cleaning machine, complete the following lines)***	
	Manufacturer:	Model:
	Serial No.:	Motor HP Rating:

ADDITIONAL INFORMATION

1. Maximum Operating Schedule: _____Hours per day _____Days per week _____Weeks per year

2. Maximum Process Weight Rate: _____Pounds of materials cleaned per day

3. Maximum Solvent (Perc/Petroleum) Usage: _____Gallons per year

4. Mileage: _____Pounds of materials cleaned per gallon of solvent used

5. If a solvent other than Perchloroethylene is used, include a Material Safety Data Sheet (MSDS) with this application.

6. Distance to nearest residence: _____meters or _____feet

7. Distance to nearest business: _____meters or _____feet

8. Exhaust Stack Parameters:
   Height above ground: _____feet
   Inside diameter: _____inches
   Stack gas flow rate: _____ cfm
   Is a rain cap (other than a flapper) present on exhaust stack? [ ] Yes [ ] No
   Exhaust direction: [ ] Vertical [ ] Horizontal

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9. Please **circle** the room ventilation system used at the facility:

A. **Natural Ventilation**: natural ventilation depends upon wind and convective forces to move air through windows, passive roof vents, and other small openings.

B. **Window Fans**: high flowrate propeller type fans that are installed vertically in a wall (window-type opening) and the air is exhausted horizontally near ground level.

C. **General Ventilation**: one or more large capacity fans on the roof that either have a rain cap or exhaust horizontally.

D. **Local Ventilation**: a ventilation system with a high capacity fan and physical structures (fume hoods, shrouds, flexible walls - vertical plastic strips) near the machine.

E. **Partial Vapor Rooms**: the back of the dry cleaning machine is enclosed in a small room with the front panel and loading door exposed for convenient loading and unloading.

F. **Vapor Barrier Rooms**: a room which completely surrounds a dry cleaning machine and is constructed of material resistant to diffusion of solvent vapors (e.g. metal foil faced foam insulation sheets).

ATTACHMENT II
Authority to Construct
Standard Conditions

Revised Dry Cleaning Conditions

(11/28/00)

HRA-based requirement

1. The dry cleaning equipment shall not use more than xx gallons of Perchloroethylene per year. [District Rule 4102] N

Standard Conditions

2. {118} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N

3. The dry cleaning operation shall comply with District Rule 7070 (Perchloroethylene from Dry Cleaning Operations) at all times. [District Rule 7070] N

4. Any solvent liquid or solvent vapor leaks shall be repaired within 24 hours of detection or as required in District Rule 7070, 4.2.2.4. [District Rule 7070] N

5. The dry cleaning system shall be inspected at least once per week for liquid leaks and vapor leaks. [District Rule 7070] N

6. Either a halogenated-hydrocarbon detector, or a portable gas analyzer or District-approved alternative method shall be used for detection of vapor leaks. [District Rule 7070] N

7. All inspections shall be performed by a trained operator, as defined in District Rule 7070 (Perchloroethylene from Dry Cleaning Operations), or his/her designee. [District Rule 7070] N

8. {355} All perchloroethylene and perchloroethylene-containing materials shall be stored in sealed containers. [District Rule 7070] N

9. All parts of the dry cleaning system where perchloroethylene may be exposed to the atmosphere or workroom shall be kept closed at all times except when access is required for proper operation and maintenance. [District Rule 7070] N

10. The refrigerated vapor condenser shall be operated to ensure that the exhaust gases are recirculated until the vapor stream temperature on the outlet side of the refrigerated condenser, downstream of any bypass, does not exceed 45 degrees F. [District Rule 7070] N

11. A temperature gauge with a minimum range from 0 to 150 degrees F shall be installed which measures the temperature of the outlet vapor stream downstream of any bypass of the condenser, and which is easily visible to the operator. [District Rule 7070] N

12. Regeneration of the carbon adsorber shall occur at the frequency recommended by the manufacturer. [District Rule 7070] N

13. The permittee shall retain all purchase and delivery receipts for perchloroethylene. [District Rule 7070] N

14. If solvent tanks are not filled by the supplier, the permittee shall record the date(s) and gallons of perchloroethylene added to the solvent tank of each dry cleaning machine. [District Rule 7070] N

15. For each dry cleaning machine, the permittee shall maintain a log showing the date and the pounds of materials cleaned per load. [District Rule 7070] N

16. Records shall be maintained on District-issued logs or District-approved logs. Records shall be retained for a minimum of five years or until the next District inspection, whichever period is longer, and shall be made available to the District upon request. [District Rule 7070] N

17. The owner/operator shall maintain an annual report and submit it to the District as requested. [District Rule 7070] N

18. The annual report shall include a copy of the record of completion for each trained operator, the total pounds of materials cleaned per load, and the gallons of perchloroethylene used for all solvent additions in the reporting period. [District Rule 7070] N

19. The annual report shall include the average facility mileage for the reporting period, computed as the total pounds of materials cleaned divided by the total gallons of perchloroethylene used. [District Rule 7070] N

20. The permittee shall maintain a log showing the detection and repair date and time of each solvent liquid or solvent vapor leak. [District Rule 7070] N

<u>HRA-based requirements</u>

21. The stack height (point of emissions) shall be at least XX feet from groundlevel. [District Rule 4102] N

22. The stack velocity, based on fan flow rate and stack diameter, shall be XXXX feet per minute or greater. [District Rule 4102] N

23. Drycleaning unit shall be enclosed by plastic containment strips. [District Rule 4102] N

24. The stack shall not be fitted with any device such as a rain cap which may interfere with the vertical flow. [District Rule 4102] N

25. Emissions must exit from the stack vertically. [District Rule 4102] N

ATTACHMENT III

T-BACT Determination

Toxic Best Available Control Technology (T-BACT) Determination

Pursuant to the District's "Risk Management Policy for Permitting New and Modified Sources", all projects resulting in any increase in permitted emissions of a hazardous air pollutant (as calculated in Section VII) shall undergo a public health risk evaluation as a part of the permit review process prior to a final decision on the application for Authority to Construct and Permit to Operate.

The first step in the health risk evaluation process is the prioritization. In accordance with the CAPCOA Facility Prioritization Guidelines, projects with a cumulative increase in prioritization score equal to or less than one will require no further assessment. For projects with a cumulative increase in prioritization score of greater than one, Health Risk Assessments, in accordance with CAPCOA Toxic "Hot Spots" Facility Risk Assessment Guidelines", shall be performed by the Technical Services staff. T-BACT will apply to each new and modified emissions units with (1) a greater than one per million increase in cancer risk, (2) an increase in hazard index greater than one in noncancer risk, or (3) a greater than deminimus increase in permitted emissions of any hazardous air pollutant (HAP) listed in Section 112 (b) of the Federal Clean Air Act that does not have an OEHHA approved health risk value.

Projects resulting in a significant increase in cancer risk (i.e. Maximum Excess Cancer Risk of at least ten per million) or significant increase in noncancer risk (i.e. hazard index of at least one) will be considered not approvable unless otherwise determined by the APCO.