

# ATC APPLICATION REVIEW

Perchloroethylene Dry Cleaning

**Processing Engineer:** [Engineer]  
**Lead Engineer:** [Lead Engineer]  
**Date:** June 1, 2016

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

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

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

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## 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 1070 Inspections (Amended December 17, 1992)

District Rule 4102 Nuisance (Amended December 17, 1992)

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

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)

California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

## 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]
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[Facility Name]  
Facility #: 1234  
Project #: [Project #]

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June 1, 2016

Model:	[Model]
Capacity:	35 lb
Rating information:	15 hp

C-1234-0:

[Manufacturer], Model [Model], 35 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 <sup>1</sup>	25 %

<sup>1</sup>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]:**

$$\begin{aligned} \text{Annual PE} &= (\text{Annual Usage}) \times (\text{Perc Density}) \times (1-\text{Waste Credit})\% \\ &= (50 \text{ gal-Perc/yr}) \times (13.5 \text{ lb-Perc/gal-Perc}) \times (100-25)\% \\ &= \mathbf{506 \text{ lb-Perc/yr}} \end{aligned}$$

$$\text{Hourly PE} = (\text{Annual PE}) \times (1/\text{wk per yr}) \times (1/\text{days per wk}) \times (1/\text{hr per day})$$

$$\begin{aligned} &= (506 \text{ lb-Perc/yr}) \times (1 \text{ yr} / 52 \text{ wk}) \times (1 \text{ wk} / 5 \text{ day}) \times (1 \text{ day} / 8 \text{ hr}) \\ &= \mathbf{0.243 \text{ lb-Perc/hr}} \end{aligned}$$

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

$$\begin{aligned} \text{Annual IPE} &= \text{PE (post-project)} - \text{PE (pre-project)} \\ &= 506 \text{ lb-Perc/yr} - 0 \text{ lb-Perc/yr} \\ &= \mathbf{506 \text{ lb-Perc/yr}} \end{aligned}$$

$$\begin{aligned} \text{Hourly IPE} &= \text{PE (post-project)} - \text{PE (pre-project)} \\ &= 0.243 \text{ lb-Perc/hr} - 0 \text{ lb-Perc/hr} \\ &= \mathbf{0.243 \text{ lb-Perc/hr}} \end{aligned}$$

**VIII. COMPLIANCE**

**District Rule 1070 Inspections**

Compliance with the annual Perc limit is determined by keeping records of the amount of Perc added to the solvent tank. District Rule 7070, Section 5.1 requires that records be retained for at least 2 years or until the next District inspection of the facility, whichever period is longer. However, it has been determined that 2 years of record keeping does not provide sufficient information to verify the annual perc consumption, because most solvent tanks have enough capacity to operate for more than one year. Therefore, recordkeeping has been increased to 5 years to ensure 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 °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 °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 satisfied.

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.

**California Health & Safety Code 42301.6 (School Notice)**

Reference project location and its proximity to a school and state whether or not school notice is required for this project.

*Example (a): (For a Non-School Notice project - > 1,000 feet.)*

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

*Example (b): (For a Non-School Notice project – no increase in emissions)*

The District has verified that this site is located within 1,000 feet of a school. However, pursuant to California Health and Safety Code 42301.6, since this project will not result in an increase in emissions, a school notice is not required.

*Example (c): (For a School Notice project.)*

The District has verified that this site is located within 1,000 feet of the following school:

School Name: [Name]  
Address: [Address]

Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is required.

Prior to the issuance of the ATC for this equipment, notices will be provided to the parents/guardians of all students of the affected school, and will be sent to all residents within 1,000 ft of the site.

*[If there is no school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:*

The District has verified that there are no additional schools within ¼ mile of the emission source.

*[If there is a school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:*

Since a school notice has been triggered (due to the above-listed school within 1,000 of the emission source), notices will also be provided to the parents/guardians of all students from all school sites within ¼ mile of the emission source. The following schools(s) are within ¼ mile of the emission source:

School Name: [Name]  
Address: [Address]  
(add additional schools if necessary)

*(Note: Refer to [FYI - 71](#) for guidance on how to process a School Notice project.)*

### **California Environmental Quality Act (CEQA)**

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001.

The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District's Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit are based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

**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

## Revised Dry Cleaning Conditions

(1/16/02)

### 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 and District Rule 1070] 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

**{See HRA for additional requirements}**