NON-TOXIC DRY CLEANING INCENTIVE PROGRAM

DEMONSTRATION SITE GRANT GUIDELINES FOR THE CALIFORNIA DRY CLEANING INDUSTRY

TRANSPORTATION AND TOXICS DIVISION
EMISSION ASSESSMENT BRANCH

State of California
AIR RESOURCES BOARD

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California Air Resources Board
1001 I Street
Sacramento, California 95814

CONTENTS:

CONTACT:

Eugene Rubin
Air Pollution Specialist
Phone: (916) 323-0006
Email: eugene.rubin@arb.ca.gov
Website: www.arb.ca.gov/toxics/dryclean/ab998.htm

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I. INTRODUCTION

The California State Legislature enacted Assembly Bill (AB) 998, which established the Non-Toxic Dry Cleaning Incentive Program. The objective of this program is to provide financial assistance to California dry cleaners who replace their existing perchloroethylene (perc) dry cleaning systems with non-toxic and non-smog forming systems such as water-based and carbon dioxide (CO_2) cleaning systems and to showcase these systems statewide.

AB 998 requires the Air Resources Board (ARB) to assess a three-dollar ($3) per gallon fee on the importers of perc for dry cleaning operations beginning January 1, 2004. This fee increased one dollar ($1) per gallon per year from 2005 through 2013. As required by the legislation, the majority of these funds are used to establish a grant program to provide $10,000 grants to assist dry cleaners in switching to non-toxic and non-smog forming cleaning technologies. The balance of funds is used to establish a demonstration program to showcase these technologies statewide. ARB is to ensure that at least 50 percent of the grant funds provided under the program are for the purposes of reducing air contaminants in communities with the most significant air contaminant exposures including, but not limited to, qualifying dry cleaners in environmental justice communities of minority populations or low-income populations.

This document discusses the criteria for determining the qualifications needed for a dry cleaning business to become a non-toxic and non-smog forming demonstration facility. If qualified and approved, the dry cleaning business will receive a demonstration site grant from ARB for the purposes of showcasing their non-toxic and non-smog forming technologies. Criteria for a Perc facility owner to receive a $10,000 grant award for switching to a non-toxic, non-smog forming technology is provided in a separate document titled "*Non-Toxic Dry Cleaning Incentive Program Grant Guidelines for the California Dry Cleaning Industry*." This document may be downloaded from our website: http://www.arb.ca.gov/toxics/dryclean/grantcriteria.pdf. For more information about the non-toxic dry cleaning incentive program, please visit our website at: *www.arb.ca.gov/toxics/dryclean/ab998.htm*.

II. ELIGIBILITY CRITERIA

To be eligible for a demonstration site grant, an applicant must have a dry cleaning facility located in the State of California and operate a qualifying non-toxic, non-smog forming technology. Only one application per facility is permitted. Additionally, the applicant must have no outstanding local air district permit fees or be currently involved in any local air district or ARB enforcement action. Applications will be accepted and processed on a continuous basis. Facilities will be awarded a demonstration site grant based on criteria established by participating local air districts and ARB, with priority given to facilities that are replacing their Perc machine with a non-toxic, non-smog forming technology.

If interested, please complete the demonstration site grant application that can be downloaded from the AB 998 website: http://www.arb.ca.gov/toxics/dryclean/ab998.htm, and send to:

TTD Dry Cleaning Incentive Program
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812

III. QUALIFYING TECHNOLOGIES

The demonstration site grants under this program are for facilities that operate a non-toxic and non-smog forming dry cleaning system as a non-toxic, non-smog forming facility only or used in a mixed shop. The following are approved non-toxic and non-smog forming technologies:

- Water-based cleaning systems; and
- Carbon dioxide (CO_2) cleaning systems

Below is a brief description of the approved non-toxic and non-smog forming technologies.

A. Water-based Cleaning Systems

Currently, there are four types of water-based cleaning technologies available to California dry cleaners. Those technologies are: 1) professional wet cleaning systems, 2) the Green Jet® cleaning system, 3) cold water cleaning systems, and 4) Green Dry to Dry (D2D).

1. Professional Wet Cleaning Systems

The professional wet cleaning system is an alternative to dry cleaning for fabrics labeled “dry clean only” and employ the use of specialized computer controlled

washers and dryers. The immersion-based washers use a frequency-controlled motor to control the rotation of the wash drum which produces a gentle wash action and smoother acceleration and deceleration. The wash program software can determine the appropriate combination of time, water level, water temperature, extraction, and drum rotation. Washers are also designed to mix water with cleaning agents prior to entering the cleaning drum. The dryers used in professional wet cleaning are based on humidity and are able to end the cycle when the desired humidity level in the garments has been achieved. Temperature, drying time, and direction of drum rotation can also be programmed. Finishing equipment includes pressing and tensioning machines. When selecting a professional wet cleaning system under this grant program, the tensioning pants topper and form finisher are required.

2. Green Jet® Cleaning System

The Green Jet® cleaning system cleans and dries garments in a single computerized unit. The cleaning process involves using a mist of water and detergent to clean the garments. The machine is designed to receive a full 45 pound load of garments. It then dehydrates the fabric to remove humidity to reduce surface tension, in order to allow the mechanical action and air jets pulsating to dislodge and remove the non-soluble soil from the garments. The soil is then collected in a lint chamber. The next step in the cycle is to inject a pre-determined amount of water-based cleaning solution through specially designed and placed air jet nozzles to re-hydrate the fabric. After about a pint of solution has been introduced to the load to remove soluble soil, heavy felt pads attached to the ribs and the cylinder absorb the soluble soil. This process is appropriate for cleaning garments that are lightly soiled. After the cleaning process, the unit goes into a conventional dry cycle and then a cool-down cycle.

3. Cold Water Cleaning Systems

Cold water cleaning systems are similar to traditional wet cleaning systems but incorporate other features. Cold water cleaning systems use chilled water and are designed to minimize shrinkage. The system consists of a washer and a dryer. The washer uses a computer to control the rotation of the cleaning drum in order to minimize agitation while cleaning the garments. The garments that are commonly dry cleaned are processed in icy water and are dried in cold air. The washer is fitted with a refrigerated condenser so it can operate with the water at lower temperature. In the dryer, the garments are partially dried in heated air and cold air, which is generated with a compressor. The garments can be fully dried in the dryer using longer drying cycle.

4. Green D2D System

The Green D2D System is both a washer and dryer. It cleans and dries garments in a single unit. It uses an advanced high heat moisture control system

and steam to remove dirt, stains, allergens, and odors. The machine is designed to wash and dry a 40 pound garment load in 40 minutes. This cleaning technology consumes about 30 percent less water than the standard wet cleaning machines and uses only 23 amps of energy. It requires no cooling tower, chiller, or tensioning equipment.

B. Carbon Dioxide (CO_2) Cleaning System

The CO_2 process is a carbon dioxide-based garment cleaning process that has been developed for use by commercial and retail dry cleaners. It is a high pressure cleaning system utilizing liquid CO_2 and a cleaning solvent. CO_2 is a non-flammable, non-toxic, colorless, tasteless, odorless naturally-occurring gas that, when subjected to pressure, becomes a liquid solvent. The CO_2 used in the garment cleaning process is an industrial by-product from existing operations, such as production of ethanol by fermentation and anhydrous ammonia (fertilizer) production. The CO_2 cleaning process does not produce any new CO_2 and, thus, does not contribute to global warming. The system is closed-loop, with a cleaning chamber, storage unit, distillation and lint trap.

Table 1 below identifies some of the key differences among the approved technologies.

Table 1. Summary of Approved Technologies[1]

Cleaning System	Comments
Professional Wet Cleaning	• Process can be labor intensive. • Training recommended to improve understanding of process and help reduce labor costs. • Tensioning equipment required to help minimize shrinkage.[2]
Green Jet	• Non-immersion system. • More suitable for lightly-soiled garments but not suitable for heavily-soiled garments. • Tensioning equipment may be purchased at dry cleaners discretion.
Cold Water Cleaning	• Longer drying cycle when compared to Perc-based systems. • Tensioning equipment may be purchased at dry cleaners discretion.
Green D2D	• Non-immersion system. • Training is provided with the purchase of equipment. • Tensioning equipment is not needed for this process.
Carbon Dioxide (CO_2)	• Longer drying cycle when compared to Perc-based systems. • Some issues with aggressiveness of available detergents.

1. ARB has not verified or certified the cleaning performance of these systems.
2. Facilities with professional wet cleaning systems must include tensioning equipment in order to be eligible for a grant.

IV. DEMONSTRATION SITE FACILITY TYPE AND AWARDS

Two types of demonstration grant awards are given. The first type involves dry cleaning facilities who newly replaced their Perc and non-Perc technologies with non-toxic and

non-smog forming technologies. As stated above, priorities will be given to those facilities who recently replaced their Perc machines with non-toxic and non-smog forming technologies. Such facilities may also be eligible or have received the $10,000 grant award for replacing their Perc machines. The new replacement of other non-Perc technologies is also eligible to become a demonstration site facility. The second type involves dry cleaning facilities that already have installed non-toxic and non-smog forming technologies and are eligible to become existing demonstration site facilities. Many of these existing facilities have been demonstration sites in the past and have been shown to effectively showcase these technologies to other dry cleaners in the state.

A summary of the facility types and award amount for facilities who have newly installed non-toxic and non-smog forming equipment is shown in Table 2. A summary of the facility types and award amounts for facilities with existing non-toxic and non-smog forming equipment is shown in Table 3.

Table 2. Demonstration Site Grant Awards for New Installations[1]

Facility Type	New Demonstration Site[2]
100% Non-Toxic Non-Smog Forming, Replaced Perc	$7,500
Non-Toxic Non-Smog Forming and Perc (Mixed Shop)	$7,500
100% Non-Toxic Non Smog Forming Only, Replaced Non-Perc Technology	$5,000
Non-Toxic Non-Smog Forming and a Non-Perc Technology (Mixed Shop)	$2,000

1. Funds will be awarded only to facilities with newly installed non-toxic, non-smog forming technology for the purposes of becoming an AB 998 grant and demonstration site.
2. Award covers a two year demonstration agreement.

Table 3. Demonstration Site Grant Award for Existing Installations[1]

Facility Type	Demonstration Site for Existing Installations[2]
100% Non-Toxic Non-Smog Forming	$2,000
Non-Toxic Non-Smog Forming and another technology (Mixed Shop)	$1,000

1. Funds will be awarded only to facilities operating a non-toxic, non-smog forming technology.
2. Award covers a two year demonstration agreement.

V. DEMONSTRATION SITE GRANT AWARD PROCESS

The demonstration site grant award process is comprised of two components: 1) the demonstration site grant application, and 2) the demonstration site grant agreement form. The demonstration site grant application needs to be completed and returned to ARB when an applicant is ready to become a demonstration site. After the applicant is received, ARB will review the qualifications of the application to determine the eligibility. The ARB will also consult the appropriate local air district for information about the applicant. When an applicant is pre-qualified, the applicant will receive a conditional demonstration site grant award letter with a demonstration site grant agreement followed by a verification process of the non-toxic and non-smog forming technologies installed or in operation. The demonstration site grant agreement would then need to be completed and returned to ARB within 90 days of the receipt. Applicants who do not provide a signed and dated demonstration site grant application or grant agreement may be disqualified from receiving a demonstration site grant. **Demonstration site grant award checks will not be issued until verification has been complete.**

Please be aware that, in order to receive a demonstration site grant, the facility must operate a non-toxic and non-smog forming dry cleaning technology (mixed shops would qualify), and all applicants must agree to the following conditions:

1. Commit to a two year agreement;

2. Agree to demonstrate their non-toxic and non-smog forming technology to prospective dry cleaning facility owners;

3. Agree to be available to respond to questions from prospective dry cleaning facility owners, via email, phone calls or site visits;

4. If ARB or a local district would like to organize a workshop, the facility owner would need to agree to work with the ARB/district staff to conduct a workshop at their facility;

5. Agree to be available, as a consultant, to prospective dry cleaning facility owners;

6. Allow ARB and the local districts to make public their facility contact information for prospective dry cleaning facility owners;

7. If facility ownership changes after receiving the grant, the new owner must carry the grant award obligations and maintain all the provisions the prior owner agreed to in accordance to ARB’s grant guidelines;

8. Agree to respond to any ARB surveys regarding experiences with using the new cleaning system.

All applications will be pre-screened for eligibility (see Section II). Demonstration site grants will be awarded with priority given to facilities that are switching from Perc and converting to non-toxic non-smog forming technologies only, as well as, facilities that are located in environmental justice communities of minority or low-income populations. The number of demonstration site grant awards maybe limited by funding availability. In the event a demonstration site grant application is not approved, ARB will send a letter to the applicant indicating the reason for disapproval. All demonstration site grant award decisions are final.

VI. USEFUL CONTACTS

When looking for additional information regarding the qualifying technologies under the demonstration site grant program, dry cleaners may find it useful to first contact their current equipment suppliers. For your information, you will find a limited list of vendors and suppliers of qualifying equipment on our website at *http://www.arb.ca.gov/toxics/dryclean/vendorslist.pdf*. **Please note that this information is provided as a courtesy and does not constitute an endorsement or recommendation. ARB has not verified or certified the cleaning performance of these systems.**

Should you have any questions, please contact Ms. Mei Fong at (916) 324-2570 or send your questions via email to Mei.Fong@arb.ca.gov. Additionally, visit our website at *www.arb.ca.gov/toxics/dryclean/ab998.htm*.