SELF-INSPECTION HANDBOOK

KNOW THE LAW
USE CERTIFIED EQUIPMENT
REDUCE AIR POLLUTION
STAY IN COMPLIANCE

GASOLINE FACILITIES

PHASE I & II VAPOR RECOVERY

AIR RESOURCES BOARD COMPLIANCE DIVISION COMPLIANCE ASSISTANCE PROGRAM
VAPOR RECOVERY SYSTEMS...

INCREASE PROFITS
REDUCE SMOG
REDUCE YOUR CANCER RISK
SAVE GASOLINE AND ENERGY
REDUCE FIRE HAZARDS
REDUCE GASOLINE ODORS

Because gasoline vapors contain air pollutants, the California Air Resources Board regulates gasoline vapor recovery through the authority granted in the California Health & Safety Code, Section 41950, Article 5. Your local air district enforces the State and local vapor recovery regulations which apply to your facility.

Vapor recovery systems save over 50 million gallons of gasoline per year in California, increasing your profits while reducing the formation of lung damaging smog. Capturing gasoline vapors also decreases fire hazards, gasoline odors, and your cancer risk, by keeping these toxic fumes out of the air you breathe.
Compliance Assistance?

Self inspections can save you money, help the environment and improve customer satisfaction!

This handbook is designed to help you know what the vapor recovery regulations are and how you can benefit from compliance. Read on, and see how easy it is to improve your working conditions, keep your boss out of trouble and make your customers happy.
The penalties for violating air pollution regulations can be $10,000 per day or more. Plus, your pumps may be locked out of service until they are repaired. Use this handbook to help you inspect your equipment daily to be sure you are in compliance. Remember, the benefit of keeping your equipment in good condition is not simply avoiding penalties...but also providing a safer workplace, a healthier environment and greater profits.
Inspect equipment daily.

 Repair or replace equipment when necessary.

Teach the public.

The California Air Resources Board is asking for your help to teach the public. When a customer has a problem with the equipment, take time to check it out. In most cases, just by showing the customer the correct way to operate the equipment, the problem can be solved. By inspecting your vapor recovery equipment every day and keeping it in good working condition, you can improve customer satisfaction while cleaning up the air. If you find a problem, remove the equipment from service until you can fix or replace it.
Don’t top off! Liquid gasoline will block the vapor line...

Just a little bit more...

...when a working nozzle shuts off—the tank is full!

and...

Locked lines are frustrating!

!@#$!@#$!!!

Click-click click-click

Nozzles that click off too soon...

Indicate a blockage in the vapor line.

The most common cause of blocked vapor lines is customers topping off their gas tank. When a gas tank overfills, gas travels back down the vapor hose and blocks the line. Unless the line is cleared, the next customer will have trouble keeping the nozzle from automatically shutting off while pumping gas. Please warn your customers not to top off their tanks!
CLEARING THE VAPOR LINE...

...BY RAISING AND EXTENDING THE HOSE...

CAN LEAD TO SATISFIED CUSTOMERS!

When a nozzle continually shuts off when trying to fill an empty tank, this indicates either: 1) a liquid blockage in the vapor line; or 2) a broken or improperly installed nozzle component. You can clear the line by raising and extending the hose. If the nozzle continues to shut off, contact your service representative. Remove a malfunctioning nozzle from service until the problem is fixed.
Your local air pollution control inspector will visit your station periodically throughout the year to conduct a complete inspection. The inspector will check your vapor recovery system to see that it is in good working order. This will include checking all components to see that they are certified and defect-free, and that operating instructions and a toll-free air district phone number are posted in plain view of the general public.
Fix your defects immediately! To avoid penalties, lock the nozzles out of service until the defects are corrected. Common defects are shown on the next few pages. For a complete listing, check the California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 8, Article 1, Section 94006, and the Executive Order which certified your vapor recovery system.

If your equipment doesn't have a defect, but is not set up as certified or is not in good working order, you need to correct the problem as soon as possible. If the district inspector finds this problem, you will have seven days to provide the air district with evidence that the equipment is again in good working order, or you will be liable for penalties.
Sometimes customers catch the boot fabric on a sharp object near the gas cap. When this happens, the boot fabric can tear, usually in the shape of a triangle. Any tear longer than 1/2 inch on one side of the triangle is a defect and the boot must be replaced or repaired.

Wear and tear may cause slits to form in the folds of the boot fabric, which will cause a vapor leak. Use your thumbs to separate the ribs of the boot to check for these slits. Replace or repair all boots that have a slit one inch or longer. It's a good practice to replace any torn boot.
If your vapor recovery system nozzles have flexible cones (vacuum-assist system), replace any damaged flexible cones. The law requires that at least 3/4 of the flexible cone must be present when it's used to dispense gasoline. Examine each flexible cone daily to ensure that at least 3/4 of the circle is intact. Remember, it's best to replace any flexible cone that is damaged or partially missing.

If your vapor recovery system nozzles have faceplates (balance system), replace any damaged or warped faceplates. The law requires that at least 3/4 of the faceplate circumference must make a good seal when used to dispense gasoline. Examine each nozzle faceplate daily to ensure that a good seal will occur and that at least 3/4 of the faceplate is intact. Again, it's best to replace any faceplate which does not provide a good seal with the automobile gas tank.
Wire or clamp placement is critical!

Install your boots correctly! Compression of the boot operates the vapor "check valve" in many nozzles equipped with a faceplate (not a flexible cone). In some older models, the wire or clamp on the upper portion of the boot attaches the boot snugly to the check valve inside. If the wire or clamp is too low, the valve will not open and the nozzle will click off. If the wire or clamp is too high, the valve will stay open and vapors will escape.

Watch for vapors exiting the idle nozzles when someone is fueling nearby. Should you see vapors, be sure your check valves are operating properly!
The latest assist nozzle design improvements have eliminated the need for a bellow. These bootless "coaxial spout" nozzles have small holes around the circumference of the tip to suck the saturated vapor from the vehicle as the fuel is being delivered. Some nozzles do require a shroud-like device at the base of the spout in order to effectively collect vapor. Check your system's Executive Order for the specific defects and any vapor shroud requirements.
Vapor collection by the newer vacuum assist systems is achieved through a vacuum pump, usually located inside the dispenser. Make sure your vacuum pump is operating while fuel is being pumped. When a customer pumps gas, you may hear a "whirring" sound coming from inside the dispenser, indicating it is working. Do not use the nozzles connected to that vapor pump if the pump is not working!
Sometimes the interior components of the nozzle can fail. When a micro-switch is broken the nozzle will not automatically shut off. This can cause overfilling of the tank and, as with topping off, result in liquid gasoline blocking the vapor line. Remove these malfunctioning nozzles from service and get them repaired.
The newer hoses carry the fuel and the vapors in a hose-within-a-hose system. The "coaxial" type carries vapors to the underground tank through the outer compartment and fuel to the vehicle in the inner compartment. The "inverted coaxial" type is the reverse. If a coaxial hose or single vapor line is torn, vapors escape into the air, exposing you and your customers to air pollutants. An internal tear in an inverted coaxial hose may leak fuel from the nozzle.

Hoses that are kinked, flattened or full of gasoline cause the nozzle to constantly shut off while fueling, making customers very unhappy. Some hoses contain liquid removal systems, which must be installed in the correct direction to work properly. Check your hoses daily for damage and proper installation. Replace any damaged lines.
Is the part certified?

CALL ... Your Distributor
or Your Local Air District
or The ARB!

Make sure your vapor recovery components are certified by the California Air Resources Board as being capable of recovering at least 95 percent of gasoline vapors displaced from refueling. Make sure all of your components are certified. If you cannot determine if a part is certified for use with your system, call and find out. First contact your company supplier. If you are still not sure, contact your local air district, or the California Air Resources Board at 1-800-952-5588. Remember, the use of uncertified components could subject you to a fine of $10,000 per day or more.
The California Air Resources Board certifies the Stage II Vapor Recovery Equipment to ensure that all components are working properly and do not cause a fire hazard. The use of equipment which has not been certified by the State is against the law and you may be subject to a large fine. It is your responsibility to make sure all of your equipment is certified. Look for the manufacturer's logo and the State Fire Marshal sticker.
Make sure your process unit (if you have one) is operating while gas is being pumped. For Hirt, Hasstech and similar systems, both process lights on the control panel must be lit. This will indicate that the power is on to the system and that the pilot light is lit. When a customer pumps gas, you should hear a "whirring" sound and the hiss of combustion from inside the process unit. For a Hirt system, vapors are often collected using pressure from the air compressor; take the time to see that the pressure gauge is within the normal range.
The reason your station is equipped with a vapor recovery system is to collect vapors from your customers' gasoline tanks and return them to a petroleum terminal to be recovered as gasoline. This process involves your customers, you, the delivery truck which delivers your gasoline, and the facilities where the delivery trucks got the gasoline. At any location along this chain, if someone fails to use the vapor recovery equipment or forgets to keep it in good working order, these harmful vapors escape and contribute to our air pollution.
Check to be sure your seals are in good operating condition and the caps are on your underground tanks. This is especially important after a gasoline delivery is made. Also, be sure that the driver of the delivery truck hooks up both the gasoline line and the vapor line, or uses a coaxial system.
Every morning when you unlock the pumps, or better yet at each shift change, give your vapor recovery system the "once over." Check each piece of vapor recovery equipment for wear and damage, making sure everything is in good working condition. Identify any potential problems and take action. Replace or repair defective components immediately. Do your part to help yourself, your customers, and the environment.
This self inspection checklist is a good way to protect yourself from large penalties and loss of business. This checklist, used with your vapor recovery handbook, will help you prepare for your periodic air pollution control inspection. The information contained in the handbook and checklist covers the basic requirements you need to know.

For further information, you should read your underground storage tank license and ask your inspector any specific questions you may have about your particular vapor recovery system.

Experience tells us that the best way to comply with air pollution regulations is to know the law and inspect your equipment daily!!