

THE AIR TOXICS "HOT SPOTS" PROGRAM 2000 ANNUAL REPORT

The Air Toxics "Hot Spots" Information and Assessment Act requires businesses and industries throughout the state to: 1) quantify and report their emissions of listed air toxics; 2) assess the possible health risks from their emissions; 3) notify members of the public who are exposed to significant risks attributable to their emissions; and, 4) take steps to reduce this risk. The California Health and Safety Code (HSC, Section 44363) requires air pollution control APCDs to prepare and publish an annual report, describing the status of the Air Toxics "Hot Spots" Program within that APCD. This annual report summarizes the implementation status of the Program in Santa Barbara County as of December 31, 2000.

This report is being presented to the Santa Barbara County Air Pollution Control APCD Board in a public meeting on March 15, 2001. Consistent with HSC requirements, this report is also being provided to Santa Barbara County Environmental Health Services officials and will be available to the public upon request. The report will also be available on the APCD's Website (www.sbcapcd.org).

"Hot Spots" PROGRAM STATUS

The implementation of the "Hot Spots" Program has resulted in significant reductions in the amount of air toxics emitted in Santa Barbara County. Reductions in toxic compounds from large and medium size sources subject to the "Hot Spots" Program have helped reduce the ambient air background cancer risk. In 1991, the *significant health risk* thresholds were exceeded by 51 large and medium sources. Currently, the *significant health risk* thresholds are exceeded by only six of these sources. This represents an 88% reduction. Table 1 summarizes the exceedances of the cancer and non-cancer risk thresholds by the six sources.

In 2000, the emphasis of the "Hot Spots" Program began to shift from large and medium size sources to small (industry-wide) sources. Risk assessments of gas stations were completed and none were found to exceed the *significant health risk* thresholds. In 2001, risk assessments for auto body shops will be completed. Risk assessments of dry cleaners and diesel-fueled engines will be completed after risk assessment guidelines have been developed, public workshops conducted and the guidelines for each are approved.

The development of the Air Toxics web page has been a tremendous effort and success. This web page will enhance the public's knowledge about the "Hot Spots" Program and the public's right to know about the chemicals emitted by facilities in their areas, and associated health risks from possible exposure. The web pages for the significant risk facilities are available to the public on our website (www.sbcapcd.org/biz/toxics).

HEALTH RISK

As used in this report, the term *health risk* addresses the likelihood that exposure to a given toxic air contaminant under a given set of conditions will result in an adverse health effect. The health risk is affected by several factors, such as: the amount, toxicity, and concentration of the contaminant; the meteorological conditions; the distance from emission sources to people; the distance between emission sources; the age, health, and lifestyle of the people living or working at a location; and, the length of exposure to the toxic air contaminant. Health effects are divided into cancer and non-cancer risks.

“Cancer risk” refers to the increased chance of contracting cancer as a result of an exposure, and is expressed as a probability: chances-in-a-million. The values expressed for cancer risk do not predict actual cases of cancer that will result from exposure to toxic air contaminants. Rather, they state a possible risk of contracting cancer over and above the background level.

For non-cancer health effects, risk is characterized by a “hazard index” (HI), which is obtained by dividing the predicted concentration of a Toxic Air Contaminant by a reference exposure level (REL) for that pollutant that has been determined by health professionals. RELs are used as indicators of the potential adverse effects of chemicals. A REL is the concentration at or below which no adverse health effects are anticipated for specific exposure duration. Thus, the HI is a measure of the exposure relative to a level of safety and is very protective of public health.

RESULTS

Update Plans and Reports

Of the approximately 600 businesses (sources) initially subject to the “Hot Spots” Program, 10 percent emitted more than 10 tons per year of a single criteria pollutant and submitted an air toxic emission inventory plan and report to the APCD. From these reports, Health Risk Assessments (HRAs) were conducted for those sources that were prioritized as a high priority source. Those sources that exceeded one or more of the *significant health risk* thresholds are required to prepare update plan and report documents every four years. These plans and reports take into consideration changes in measurement techniques, changes in equipment and process rates, revisions to the list of toxic compounds that must be quantified, and revisions to the toxicity of compounds. Non-significant risk sources are required to submit an emission inventory update summary form every four years. The remaining sources are categorized as small businesses and the APCD compiles their toxic inventories.

In 2000, one source (Venoco’s Carpinteria Oil & Gas Facility) submitted an update plan to the APCD for review. The submittal and review of this facility update report and subsequent updated HRA, if required, will be completed in mid 2001.

Summary forms are required to be submitted quadrennially by those non-significant risk sources that are in the “Hot Spots” Program. In 2000, 22 update summary forms were received. These summary forms

were reviewed and all were approved by APCD staff. If approved, a summary form fulfills a source's quadrennial update requirements.

Risk Assessments

In calendar year 2000, the APCD performed 11 health risk assessments. Five sources had health risk assessment results that exceeded one or more of the significant health risk thresholds of cancer, chronic non-cancer, and acute non-cancer. Three of these sources were on the 1999 list of significant risk sources and two sources are new to the significant risk list. One source, Venoco – Carpinteria Oil & Gas, did not have a revised health risk assessment performed in 2000 and remains on the significant risk list. Table 1 lists the six sources that currently exceed one or more of the *significant health risk* thresholds of cancer, chronic non-cancer, and acute non-cancer.

TABLE 1

**Cancer and Non-Cancer Risk Scores
For Businesses Exceeding
Significance Thresholds**

<u>Facility</u>	<u>Excess Lifetime</u>	<u>Noncancer Hazard Indexes</u>		<u>Date HRA Prepared</u>
	<u>Cancer Risk (Per Million)</u>	<u>Chronic/Endpnt*</u>	<u>Acute/Endpnt*</u>	
Venoco - Carpinteria O&G	14.00	8.00 RESP	0.90 EYE	04/25/97
Venoco - Ellwood O&G	76.09	1.97 CNS	21.96 RESP	03/23/00
Vintage – Zaca Lease	22.58	0.33 RESP	4.30 RESP	03/23/00
Greka Energy - Cat Canyon Lease	12.00	0.27 RESP	22.93 RESP	06/08/00
⁺ Greka Energy–Dominion/UCB Leases	2.00	0.05 RESP	4.30 RESP	06/08/00
⁺ Santa Maria Refinery	20.49	0.04 RESP	18.22 RESP	06/08/00

*RESP - respiratory system

CV – cardiovascular system

CNS – central nervous system

EYE – eyes

⁺ New Significant Risk Sources

Public Notifications

Public notification is a biennial requirement for all significant risk facilities. In 1999, 13 sources notified the affected public of the toxic risks to which they had been exposed. In the fall of 2001, six sources (see Table 1 above) will be required to notify the affected public of the toxic risks to which they have

been exposed. These sources are located in Santa Barbara, Santa Maria, Lompoc, Goleta and Carpinteria. The purpose of the notification letter is to explain the cancer and/or non-cancer health risks that had been or may be attributable to a source's emissions. As a result of the comments and interest received from the notifications, the APCD will determine whether or not a public meeting is necessary for each source.

Risk Reduction

On September 17, 1998, the APCD Board of Directors adopted risk reduction thresholds. These risk reduction thresholds were set at the same level as the public notification thresholds (≥ 10 per million for cancer risk and a Hazard Index of > 1.0 for non-cancer risk). If the results of a source's health risk assessment indicate a *significant health risk*, the source operator is required to conduct an airborne toxic risk reduction audit and develop a plan to implement airborne toxic risk reduction measures. Implementation of these measures must reduce the risk, highlighted on Table 1, from source emissions below the *significance health risk* thresholds within five years of the date the plan is submitted to the APCD. Table 2 lists eight sources that submitted a Risk Reduction Audit and Plan (RRAP) in 1999 and their status. Two additional RRAPs will be due in 2001 for Greka Energy – Dominion/UCB Leases and Santa Maria Refinery that recently had health risk assessment results greater than one or more of the significant risk levels.

TABLE 2

Risk Reduction Audits and Plans

	<u>Facility Name</u>	<u>RRAP Status</u>
1.	McGhan Medical Corporation – Goleta	approved - 9/20/00
2.	Exxon/POPCO – Las Flores Canyon Facility	approved – 10/6/00
3.	Venoco – Carpinteria Facility	approved – 10/06/00
4.	McGhan Medical Corporation – Carpinteria	approved – 12/11/00
5.	Vintage Petroleum – Clark Ave. Lease (voluntary submittal)	approved – 12/11/00
6.	Venoco – Ellwood Oil & Gas Facility	revised – 1/25/01 under review
7.	Greka Energy – Cat Canyon Lease	incomplete
8.	Vintage Petroleum – Zaca Lease	incomplete

Industry-wide Sources

Of the approximately 600 businesses subject to the Hot Spots Program, over 80% are in the small business or “industry-wide” category. Each of these businesses emits less than 10 tons per year of criteria pollutants. For these sources, the APCD compiles their air toxics emissions inventory based on responses to surveys completed and submitted by the operator. Because risk assessments are used as a ruler to compare one source with another and to prioritize concerns, the APCD performs the health risk assessment for small businesses to provide consistency and fairness. Risk assessment methodologies have been developed by the California Air Pollution Control Officers Association (CAPCOA) in consultation with the state Office of Environmental Health Hazard Assessment (OEHHA) for three types of “industry-wide” businesses: gas stations, auto body shops and dry cleaners. Risk assessment guidelines for gas stations and auto body shops have been developed and undergone industry and public review. Draft guidelines for dry cleaners have been developed but have not gone through industry and public review.

The APCD collected emission inventory information for gas stations and applied the risk assessment guidelines for gas stations using 1998 inventory data. Benzene is the pollutant of greatest concern with gas stations’ toxic emissions and risk assessments. Five of the 230 gas stations reviewed exceeded the *significant health risk* threshold for cancer of 10 in a million using the approved risk assessment guidelines for gas stations. Because these guidelines are intended to provide a generic assessment, the APCD obtained detailed site-specific data from each of the five stations and ran refined risk assessments. None of the five stations exceeded the *significant health risk* threshold using the more precise information. The APCD will again evaluate all gas stations in 2001 using 2000 inventory data.

The APCD will also apply the approved risk assessment guidelines to auto body shops in 2001 using 2000 inventory data. It is anticipated that most, if not all, of the auto body shops will be below the *significant health risk* threshold. If a shop exceeds the *significant health risk* threshold, a refined risk assessment will be conducted using site-specific data. If this assessment still indicates a significant risk, the facility will be required to notify the public and identify and implement measures to reduce that risk.

Risk assessments for dry cleaners will be initiated once the risk assessment guidelines for dry cleaners are final and public workshops have been conducted. The dates for these workshops (one to be held in Sacramento and the other in Southern California) are still pending. Using the draft guidelines, it is predicted that many of the large dry cleaners using perchloroethylene may exceed the *significant health risk* threshold for cancer and refined risk assessments will be required.

Air Toxics Web Page

The Air Toxics web page includes a “Hot Spots” Program overview as well as an update regarding the status of the program. In 2000, APCD staff added information for *significant health risk* facilities to this web page. The risk information presented on these web pages is contained in the 2000 Annual

Report. Additional information is presented that explains how risks are calculated, and links are provided to allow the public access to information about particular pollutants from each source. Staff will update these pages periodically to reflect revised health risk assessments resulting from updated emission inventories submitted by the businesses. These web pages have been developed with the intent of enhancing the public's right to know about the chemicals emitted by sources in their areas, and associated health risks from possible exposure. These web pages for these sources are available to the public on our website (www.sbcapcd.org/biz/toxics).

Diesel Particulate Exhaust

In August, 1998, after nine years of study, the California Air Resources Board (ARB) formally identified the particulate matter in diesel as a Toxic Air Contaminant. As such, the ARB is required by law to determine if there is a need for further control of diesel particulates. Since August, 1998, the following activities have been started: 1) preparation of a report on the need and appropriate degree of control – the Needs Assessment; and 2) preparation of Risk Assessment Guidelines for addressing emissions from new, modified, and existing diesel-fueled engines. An ARB-led committee with numerous subcommittees and more than 300 stakeholders took part in the development of the Needs Assessment and Risk Management Guidelines. These guidelines and the guidelines Permitting Guidelines for New Stationary Diesel Fueled Engines were approved by the CARB on September 28, 2000.

The OEHHA-approved unit risk factor for diesel particulate matter is approximately 10 times that of benzene, the primary toxic pollutant of gasoline, and 50 times that of perchloroethylene, commonly used in dry cleaning. Because of this high unit risk factor, even small diesel-fueled engines and large stand-by emergency engines can pose a *significant health risk* if operated full time near people exposed to the exhaust. The Hot Spots program will likely require risk assessments of those diesel-fueled engines under the APCD's jurisdiction. During the calendar year 2000, the APCD began to explore the development of a policy regarding the health risk assessment of new and existing stationary diesel-fueled engines.