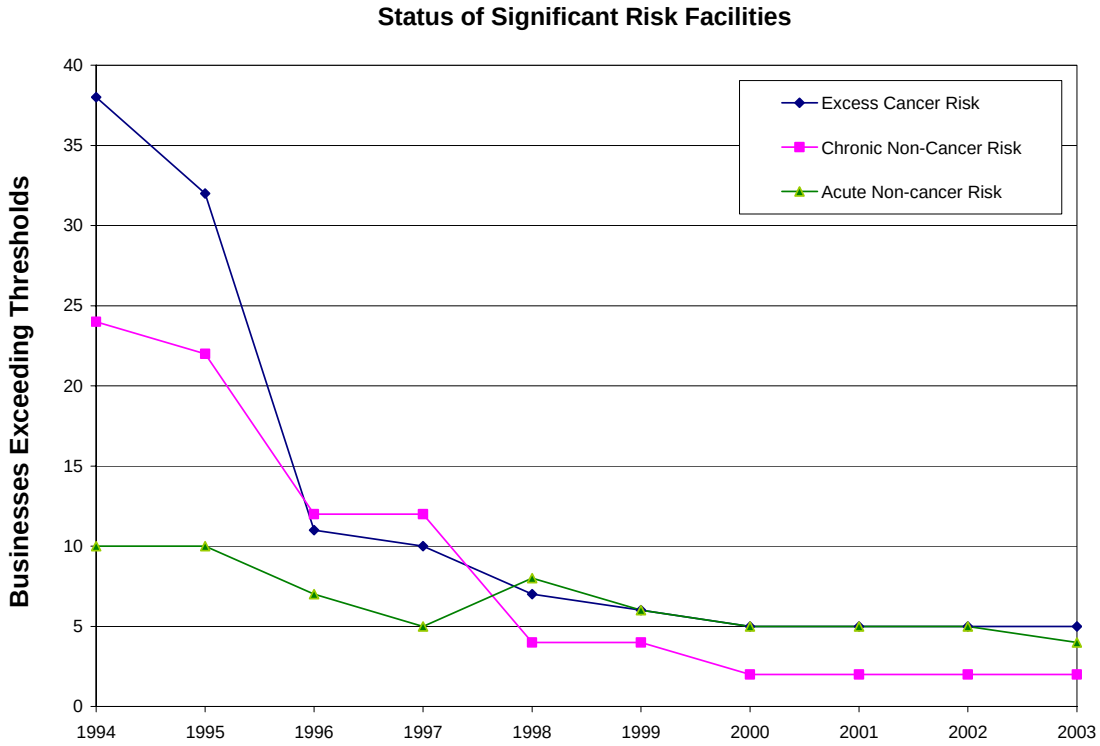
SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT
AIR TOXICS "HOT SPOTS" PROGRAM
2003 ANNUAL REPORT

INTRODUCTION

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, § 44363) requires air pollution control districts to prepare and publish an annual report describing the status of their Air Toxics "Hot Spots" Program. This annual report summarizes the status of the Air Toxics "Hot Spots" Program in Santa Barbara County as of December 31, 2003, and is being presented to the Santa Barbara County APCD Board of Directors in a public meeting on March 18, 2004. Consistent with HSC requirements, this report is also being provided to Santa Barbara County Environmental Health Services officials. It is available to the public, and may also be downloaded from the APCD's website at: http://www.sbcapcd.org/biz/airtoxrpt.htm.

Implementation of this program has resulted in significant reductions in the amount of air toxics emitted in Santa Barbara County. In 1991, 51 sources subject to the Air Toxics "Hot Spots" Program exceeded the Board-approved significant health risk thresholds. Currently, only 5 sources exceed the significant health risk thresholds, a 90% reduction. Additionally, the APCD expects that 4 out of the 5 remaining significant risk sources will reduce their risk below the significance level in 2004. The graph below shows this reduction. Table 1 (p. 3) summarizes the exceedances of the cancer and non-cancer risk thresholds by the five sources.



From 2000 to 2002, 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 in 2000 and, after analysis, showed that none of the stations in Santa Barbara County present a significant health risk.

In the next two years, we anticipate that risk assessments for auto body shops will be completed. Risk assessments for 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 APCD's Air Toxics web pages have provided the public with easy access to detailed information about the "Hot Spots" Program as well as information about health risks associated with chemicals emitted by neighboring businesses. The web pages for the significant risk facilities may be accessed at: http://www.sbcapcd.org/biz/toxsign.htm.

STATUS OF SIGNIFICANT RISK SOURCES

Since the last annual report, the stationary source status of Cat Canyon, UCB/Dominion and West Cat Canyon leases was revised due to ownership changes. Greka Energy now owns all of these facilities and thus, pursuant to the definition of "Stationary Source" in ACPD Rule 102, all these facilities comprise one stationary source. Due to this consolidation, the UCB/Dominion source and the Cat Canyon source, both of which were significant risk sources, are now considered one source and therefore one significant risk source under AB2588. The joining of these facilities has reduced the number of significant risk sources to five. Additionally, four out of the five significant risk sources are expected to reduce their risk below significance level in 2004, as required by HSC § 44391. A status of each individual source is summarized below.

Venoco Carpinteria Gas Plant

- Venoco Carpinteria's Air Toxics Emission Inventory Report (ATEIR or Report) for reporting year 1999 was deemed incomplete. Venoco submitted revisions to the Report on March 1, 2004. These revisions are currently under review by the APCD.
- Risk reduction below significance level due July 2004.

Venoco Ellwood Oil & Gas Plant

- As part of Venoco Ellwood's Risk Reduction Audit and Plan, Venoco requested to update their Air Toxics Emission Inventory Plan (ATEIP or Plan) and Report. The updated ATEIP was submitted to the APCD on September 30, 2003 and deemed incomplete on November 10, 2003. Venoco submitted revisions to the ATEIP on January 6, 2004. The APCD reviewed these revisions and conditionally approved the ATEIP on March 3, 2004.
- Risk reduction below significance level due July 2004.

Greka Zaca Lease

- The revised Risk Reduction Audit and Plan that Vintage Petroleum (the previous owner) submitted for the Zaca Lease requires that an updated ATEIP and ATEIR be submitted. Greka will submit an updated ATEIP based on reporting year 2002 in April 2004.
- Risk reduction below significance level due July 2004.

Greka Cat Canyon Lease (Including UCB/Dominion Lease)

- With Greka's purchase of oil properties known as the West Cat Canyon Lease from Vintage Petroleum, the new stationary source now contains Greka's Cat Canyon, UCB/Dominion and the West Cat Canyon leases. The new property boundary affects the health risk assessment results for these sources. Greka will submit an updated Air Toxics Emission Inventory Plan based on reporting year 2002 in April 2004 that will include the leases in Cat Canyon, UCB/Dominion, and West Cat Canyon. The risk associated with these facilities will be addressed in the health risk assessment performed based on the ATEIP and ATEIR to be submitted.
- Risk reduction below significance level is due July 2004 for the Cat Canyon lease as it was configured prior to Greka's purchase of UCB/Dominion and West Cat Canyon. Risk reduction below significance level is due August 2006 for UCB/Dominion lease.

Greka Santa Maria Refinery

- Air Toxics Emission Inventory Plan for reporting year 2002 is currently under review by the APCD.
- A revised Risk Reduction Audit and Plan is currently under review by the APCD.
- Risk reduction below significance level due August 2006.

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. 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 appropriately protective of public health.

Table 1: Risk Scores for Businesses Exceeding Significant Risk Thresholds

Facility	Cancer Risk[1]	Hazard Index[2]		HRA Date
		Chronic	Acute	
Venoco Carpinteria Gas Plant	**14.00**	**8.00**	0.92	04/25/97
Venoco Ellwood Oil &Gas Plant	**53.49**[3]	**2.28**	**20.97**	12/17/02
Greka Zaca Lease	**22.58**	0.33	**4.53**	03/23/00
Greka Santa Maria Refinery	**20.49**	0.04	**18.22**	06/08/00
Greka Cat Canyon Lease[4]	**12.00**	0.27	**22.93**	06/08/00
Greka UCB/Dominion[4]	2.00	0.05	**4.30**	06/08/00

Footnotes:

1) Cancer risk is measured in units of excess cases per million people. Any number greater than or equal to 10 represents significant health risk (shown in bold font).
2) Non-cancer risk is measured as a Hazard Index: the modeled concentration of pollutant/acceptable level of pollutant concentration. Any number greater than or equal to 1 represents significant health risk (shown in bold font).
3) The Venoco Ellwood Facility risk scores are currently under review by Venoco and the APCD; the risk shown here represents the APCD's latest modeled estimate, based on Venoco-submitted information.
4) Greka's UCB/Dominion is part of the Cat Canyon Stationary Source. In 2004 the APCD will assess the risk for the new stationary source.

AIR TOXIC EMISSION INVENTORY PLANS AND REPORTS

Of the approximately 600 businesses initially subject to the "Hot Spots" Program, 10 percent emitted more than 10 tons per year of a single criteria pollutant and submitted Air Toxic Emission Inventory Plans and Reports to the APCD. (Ten tons per year is the threshold that determines if sources are subject to the requirement to submit Plans and Reports.) From these Reports, health risk assessments (HRA or risk assessment) were conducted for those sources that were prioritized as a high priority source. Those sources exceeding one or more of the significant health risk thresholds are required to update their Plans and Reports 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 air toxic emission inventory update summary form every four years (Quadrennial Updates). The remaining sources are categorized as small businesses and the APCD compiles their toxic inventories.

In 2003, DuPont Displays submitted a Plan for each of its two facilities in Goleta and Venoco Ellwood submitted an updated Plan. No Quadrennial Update summary forms were received in 2003.

In early 2004, Pacific Scientific and Aluminum Filter Company (ALFCO), submitted updated Plans which are now under review. In 2004, approximately 20 Quadrennial Update summary forms from non-significant risk sources are due to be submitted for APCD review. If approved, a summary form fulfills a source's quadrennial update requirements. If a summary form is not approved, the source is required to submit a Plan and Report to the APCD.

HEALTH RISK ASSESSMENTS

In 2003, APCD staff performed numerous health risk assessments for facilities in Santa Barbara County:

- A refined HRA was performed for the Reliant Ellwood Energy facility in western Goleta, based on the facility's ATEIR as part of the Air Toxics "Hot Spots" Program. The results showed that Reliant Ellwood Energy does not present a significant risk to the surrounding community.

- APCD staff performed a preliminary HRA based on ALFCO's 2002 annual report. Based on those results, the APCD required ALFCO to submit an updated ATEIP and ATEIR.

- A New Source Review (NSR) health risk assessment was performed for the addition of two boilers at Greka's Santa Maria Refinery. The HRA showed that the addition of the two boilers would not significantly increase the risk at Santa Maria Refinery. The APCD issued Authority to Construct Number 10985 on July 24, 2003 for the installation of the boilers at the facility.

- NSR health risk assessments were performed for numerous gas stations that requested to increase gasoline throughput. The results of the health risk assessments showed that none of the requested permitted throughputs would pose a significant risk to the community.

NEW HEALTH RISK ASSESSMENT TOOLS

In 2003, the state Office of Environmental Health Hazard Assessment (OEHHA) released their new *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments,* and the California Air Resources Board (ARB) released a new health risk assessment modeling software called HARP (Hotspots Analysis Reporting Program). HARP is an

air dispersion modeling, risk assessment, and data management program that incorporates OEHHA's new guidance for performing health risk assessments. APCD staff have now been trained to perform health risk assessments with HARP and are working with other districts and the ARB to share our experience with the program.

PUBLIC NOTIFICATION

Public notification is required if the results from a health risk assessment show that the facility poses a significant risk to the community (ref: HSC § 44362 (b)). In 1999, 13 businesses were considered significant risk sources, and notified the affected public of the toxic risks created by their operations. Since that time, eight sources have dropped out of the category. The five remaining significant risk sources, identified in Table 1, will notify the affected public of the toxic risks to which they have been exposed pending the results of the health risk assessments which will be performed in 2004. These sources are located in Santa Barbara, Santa Maria, Lompoc, Goleta and Carpinteria. The purpose of the notification process is to explain the cancer and/or non-cancer health risks that may be attributable to each facility'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 mirror the public notification thresholds (≥ 10 per million for cancer risk and a Hazard Index of ≥ 1.0 for non-cancer risk). If a source's health risk assessment results indicate a significant health risk, the source operator is required to conduct a risk reduction audit and develop a plan to implement risk reduction measures. Implementation of these measures must reduce the risks, shown in bold font in Table 1, below the significance health risk thresholds within five years of the date the plan is submitted to the APCD. Listed below are the businesses required to provide Risk Reduction Audits and Plans (RRAP) and the status of each.

- **Venoco – Carpinteria Facility.** RRAP approved 10/06/00. Risk reduction below significance level due July 2004.

- **Venoco – Ellwood Oil & Gas Facility.** Cancer and non-cancer health risks under review based on proposed emission reduction and recalculation measures; effect on facility's risk and proposed RRAP are under review. Venoco has submitted an updated Air Toxics Emission Inventory Plan and Report in an effort to demonstrate that they have reduced their risk. The APCD conditionally approved the Plan March 3, 2004, and it will be used to update the facility's health risk assessment. Risk reduction below significance level due July 2004.

- **Greka – Zaca Lease.** RRAP revised 6/8/01; proposed reduction measures and recalculation of risk are under review by APCD. The APCD has required an updated Air Toxics Emission Inventory Plan and Report as part of the RRAP. The updated Plan and Report will be submitted in the first half of 2004. Risk reduction below significance level due July 2004.

- **Greka – Cat Canyon Lease.** Greka submitted a RRAP which is under review with APCD. Risk reduction below significance level due July 2004.)

- **Greka – UCB/Dominion Lease.** UCB/Dominion lease has been incorporated into the Cat Canyon Stationary Source. However, the timeline which the UCB/Dominion facilities will be required to reduce their risk below significance level will not change.

Greka submitted a RRAP which is under review with APCD. Risk reduction below significance level due August 2006.

- **Greka – Santa Maria Refinery.** Greka submitted a RRAP which is under review with APCD. Risk reduction below significance level due August 2006.

INDUSTRY-WIDE SOURCES

Of the approximately 600 businesses subject to the "Hot Spots" Program in Santa Barbara County, 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 assessments for small "industry-wide" 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 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 and will soon undergo industry and public review.

Gas Stations: 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 performed refined risk assessments. None of the five stations exceeded the significant health risk threshold using the more precise information.

The APCD has developed a health risk screening table for gas stations. The APCD uses this screening table to review permit applications for new and modified gas stations to ensure that public risk is maintained below Board-approved significant risk thresholds. The screening table was developed based on the CAPCOA's *Gasoline Service Station Industrywide Risk Assessment Guidelines*, conservative assumptions and meteorological data from the north and south county. If an applicant requests a gasoline throughput limit that is beyond the screening table limits, the APCD performs a refined HRA based on site-specific data. This program has ensured that the APCD does not permit facilities to operate at or beyond the significant risk threshold.

Auto Body Shops: The APCD anticipates applying the approved risk assessment guidelines to auto body shops in 2004 or 2005 using 2002 inventory data. Based on some initial analysis, we anticipate that most, if not all, of the auto body shops will be below the significant health risk threshold. If a body 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.

Dry Cleaners: Risk assessments for dry cleaners will be initiated once the risk assessment guidelines for dry cleaners are final. Using the draft guidelines, many of the large dry cleaners using perchloroethylene may exceed the significant health risk threshold for cancer and refined risk assessments will be required. Interestingly, the South Coast Air Quality Management District recently approved a landmark rule that will phase out the use of perchloroethylene, the toxic air contaminant that creates most risk from dry cleaners, by the year 2017. Other

cleaning methodologies and compounds are available now, and more are becoming available, to allow dry cleaners to conform to this new regulatory approach to the industry.

AIR TOXICS WEB PAGE

The APCD's Air Toxics web pages include 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 the web site. The risk information presented on these web pages is contained in the 2003 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. 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. Staff will update these pages periodically to reflect revised health risk assessments resulting from updated emission inventories submitted by the businesses. The web pages for these significant risk sources are found at www.sbcapcd.org/biz/toxsign.htm.

DIESEL PARTICULATE EXHAUST

In August, 1998, after nine years of study, the ARB formally identified the particulate matter in diesel exhaust as a Toxic Air Contaminant. Since that time, considerable effort involving state and local air pollution agencies and affected stakeholders has been undertaken to evaluate methods and design programs to control diesel particulate pollution. One result of this effort was the ARB's approval of the Permitting Guidelines for New Stationary Diesel Fueled Engines on September 28, 2000. Additionally, ARB and district staff and other stakeholders have been working together to identify potential requirements for ARB's proposed Air Toxic Control Measures (ATCM) for new and existing stationary and portable diesel engines. At the February 26, 2004 Board Hearing, the ARB staff presented these Diesel Engine ATCMs for the Board's approval. The hearing results may be found www.arb.ca.gov/regact/verpro03/verpro03.htm.

The OEHHA-approved inhalation cancer potency 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 cancer potency 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 programs being evaluated and proposed by the ARB will likely require risk assessments of those diesel-fueled engines under the APCD's jurisdiction. Because diesel engines are widely used, both for prime power applications and for back-up sources of power, the requirement to assess risk from such operations is likely to create substantial additional workload in the future. New technologies, such as ultra-low sulfur diesel fuel coupled with diesel particulate filters, may substantially reduce the risks associated with diesel particulates. This evaluation work is ongoing with the ARB and other sources and shows considerable promise.

GOALS FOR 2004 "HOT SPOTS" PROGRAM IN SANTA BARBARA COUNTY

- Oversee risk reduction for significant risk facilities.
- Integrate our existing emissions inventory database with other divisions of the district, i.e., toxics and permitting. Once in place, this will allow the APCD to perform health risk assessments with only annual report information (for facilities that have an approved ATEIP and ATEIR). This will allow the APCD to perform health risk assessments on an annual basis and in much less time.
- Evaluate and prioritize permit-exempt facilities that may not be exempt from the "Hot Spots" Program. The APCD is planning on conducting a widespread review in 2004/2005.
- Prepare risk assessments for dry cleaners and auto body shops (2004/2005).

- Streamline process for ATEIP and ATEIR submission by operators.

\\nt3\Groups\ENGR\TOXICS\AB-2588\Annual Report\2588-03annual_rpt.doc