EPA Progress Report 2003

Pacific Southwest Region

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Dear Readers,

When I joined EPA as Regional Administrator in the fall of 2001, I did so in the belief that everyone should be able to enjoy a healthy environment.

I have been inspired by the shared commitment of my colleagues at EPA to realize that vision. By focusing on vigorous enforcement of our laws, effective collaboration, and measurable results, we've set a clear course for our goal of cleaner air, purer water, and better protected lands in the Pacific Southwest.

Our 2003 Progress Report looks at the accomplishments of EPA and its partners in the past year and highlights the challenges before us in our diverse communities and ecosystems. As the map in the back of this report shows, our responsibilities span the globe from the Pacific islands of Guam and Palau to the tribal lands of Arizona.

The importance and the complexity of the problems we face are well known. Straightforward solutions are often elusive, and reaching consensus on the best choices requires patience and dedication. The new demands of homeland security – through protection of vital infrastructure and emergency preparedness – must also be fully addressed. These challenges are at the core of our day-to-day efforts, and they require the resources and creative thinking of all of our partners – state, local and tribal governments, industry, and environmental advocacy groups.

The pressures buffeting California's San Joaquin Valley illustrate the urgency and intricacy of creating such solutions. Long one of the world's most productive agricultural areas, the valley has felt the strain of growth. Air quality is some of the worst in the nation, and asthma rates are high – particularly among children. Water quality and quantity are a constant issue made particularly difficult by drought. It's clear that solving these problems will require the efforts of everyone with a stake in a healthy San Joaquin Valley.

EPA contributes to these solutions in a variety of ways. One of the most valuable is facilitating communication and coordination among the agencies, organizations and communities that come together to tackle such challenges. And while we always encourage voluntary measures and new approaches that go beyond simple compliance with the law, we rely on strong enforcement to ensure that minimum standards are met and that the playing field is even for all.

This report is one way we strive to articulate the challenges before us and the progress we're making to the people we serve. Through stories and numbers, we have tried to characterize these health and environmental issues and to demonstrate the results being achieved by EPA and its partners. We hope you find these challenges and solutions as compelling as we do.

Wayne Nastri
Regional Administrator
EPA Pacific Southwest Region

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This report is also available on the Internet at www.epa.gov/region09/annualreport
Cover photos: Golden Gate Bridge, David D. Schmidt. All other photos, Jim Grove.

chapter 1

CLEAN AIR

Despite long-term progress toward clean air, the Los Angeles area's peak ozone (smog) levels were still the nation's highest in 2002. The San Joaquin Valley has had almost as many days with unhealthy ozone as the Los Angeles area, though at lower peak levels.

Metro Areas Improve; San Joaquin Valley Faces Challenges

In 2002, progress toward cleaner air continued in all major metropolitan areas of the Pacific Southwest. EPA works with state and tribal governments, as well as local or regional air districts, to help keep them on track toward meeting (or continuing to meet) health-based standards on six major air pollutants regulated under the federal Clean Air Act. Nearly all areas now meet the health standards for nitrogen oxides (a contributor to smog), sulfur dioxide, lead, and carbon monoxide; most areas meet, or are close to meeting, the ozone (smog) and particulate (dust and soot) standards. (For a status report on major air basins in the Pacific Southwest, see the matrix on the facing page, and the ozone/particulate graphs on the following pages.)

While population in the Pacific Southwest has grown 84% since 1970, motor vehicle usage – the number of vehicle-miles traveled – has leaped by 177% (see graph, p. 6). Newer cars and trucks emit far less pollution than 1970s models, but they still account for about half the smog-forming emissions in the region's air.

Air Quality Status of Air Basins in the Pacific Southwest

Area	Ozone	Particulates (dust, smoke particles, aerosols)	Carbon Monoxide (CO), Nitrogen Oxides (NOx), Sulfur Dioxide (SO2)
Phoenix, AZ	Phoenix has gone five years without violating the health standard. EPA is reviewing state's vehicle inspection and maintenance (Smog Check) plan.	EPA approved state's "serious" area clean air attainment plan, including fugitive dust and agriculture best management practices rules, in July 2002.	Phoenix has gone five years without violating the CO health standard. The state is working on a plan to maintain clean air. Phoenix meets NOx and S02 standards.
Arizona (outside Phoenix)	Meets clean air standard.	Bullhead City and Payson met clean air standard in June 2002. EPA now reviewing draft plan to maintain clean air for Ajo and Paul Spur.	EPA is reviewing six S02 clean air maintenance plans. Three are expected to get quick approval because smelters that were major sources have shut down and dismantled. Meets NOx standard.
Imperial County, CA	The area is classified as a "transitional" nonattainment area. The county believes it would attain health standard without cross-border air pollution from Mexico.	EPA certified that county would have attained clean air standard in 1994 if not for cross-border air pollution from Mexico. EPA working with local air district on a new particulate plan.	Meets clean air standards, except for CO, which is being addressed in border planning efforts with Mexico.
Sacramento, CA	In the Sacramento area, the number of days with unhealthy ozone has declined. Enhanced Smog Check requirement has been extended to area vehicles. The area is classified as "severe," with an attainment date of 2005. The next step for Sacramento is to revise its motor vehicle emissions estimate in 2003 using the latest data, and make appropriate revisions to the area's ozone attainment plan.	EPA certified in Feb. 2002 that the Sacramento area has met the standard.	Meets clean air standards.
San Bernardino County, CA	The portion of San Bernardino County within the Los Angeles South Coast Air Basin is classified as "extreme" nonattainment for the ozone standard. The South Coast Air Quality Management District is revising its ozone plan using new data. The central portion of the county is a "severe" nonattainment area.	EPA certified in Feb. 2002 that San Bernardino County attained the clean air standard.	Meets clean air standards.
San Diego, CA	Attained clean air standard. EPA is working with air district to approve clean air maintenance plan for ozone.	Meets clean air standard.	Meets clean air standards.
San Francisco Bay Area, CA	Bay Area has two years of data meeting health standard. In 2003, EPA is reviewing area's 2001 ozone plan, which projects clean air attainment in 2006. Revised ozone plan is due 4/15/2004.	Meets clean air standard.	Meets clean air standard.
San Joaquin Valley, CA	Local air district says clean air attainment will not be reached by 2005. Area may be reclassified to "extreme" area. Enhanced Smog Check requirement has been extended to vehicles in Valley.	EPA working with state/local agencies to develop new "serious" area clean air attainment plan. Previous plan withdrawn in Feb. 2002.	Meets clean air standards.
Santa Barbara, CA	Attained clean air standard. EPA is working with air district to approve clean air maintenance plan for ozone.	Meets clean air standard.	Meets clean air standards.
South Coast (Los Angeles), CA	EPA assisted state/local agencies preparing revised ozone plan. Currently classified as the only "extreme" nonattainment area in the nation.	EPA assisted state/local agencies in revising clean air attainment plan.	L.A. met clean air standard for CO every day in 2002. EPA assisted state/local agencies in revising CO and NOx attainment plans.
Clark County, NV	Meets clean air standard.	Peak 24-hour particulate levels exceed clean air standard. EPA has proposed to approve the county's "serious" area plan.	Meets clean air standards.

Opposite photo: David D. Schmidt

California's San Joaquin Valley

The San Joaquin Valley's air quality meets neither the ozone nor the particulate health standards, and conditions have not improved as much as in other areas over the past decade. The San Joaquin Valley now has almost as many unhealthy ozone days per year as the Los Angeles area (see line graph below).

Particulate pollution aggravates asthma, which is a major health problem in San Joaquin Valley children. One in six children in Fresno County suffers from asthma – twice the rate of Los Angeles County.

There are many contributors to the valley's air pollution. First, the valley is surrounded by mountains, which trap the air and its pollution near the valley floor. Second, increasing urbanization in the valley has brought more motor vehicles, adding to the existing pollution from cars and diesel trucks, buses and irrigation pumps. Third, increasing numbers of dairy cows in the valley have added smog-forming volatile organic compounds (VOCs) and ammonia to the air. Fourth, dust from plowing and smoke from burning agricultural waste continue as sources of particulate pollution.

The valley's air district has notified EPA that the area will miss a 2005 deadline for achieving the national health standard for ozone. The situation has raised increasing concern among valley residents, as well as with the California Air Resources Board (ARB), EPA, and the local air district.

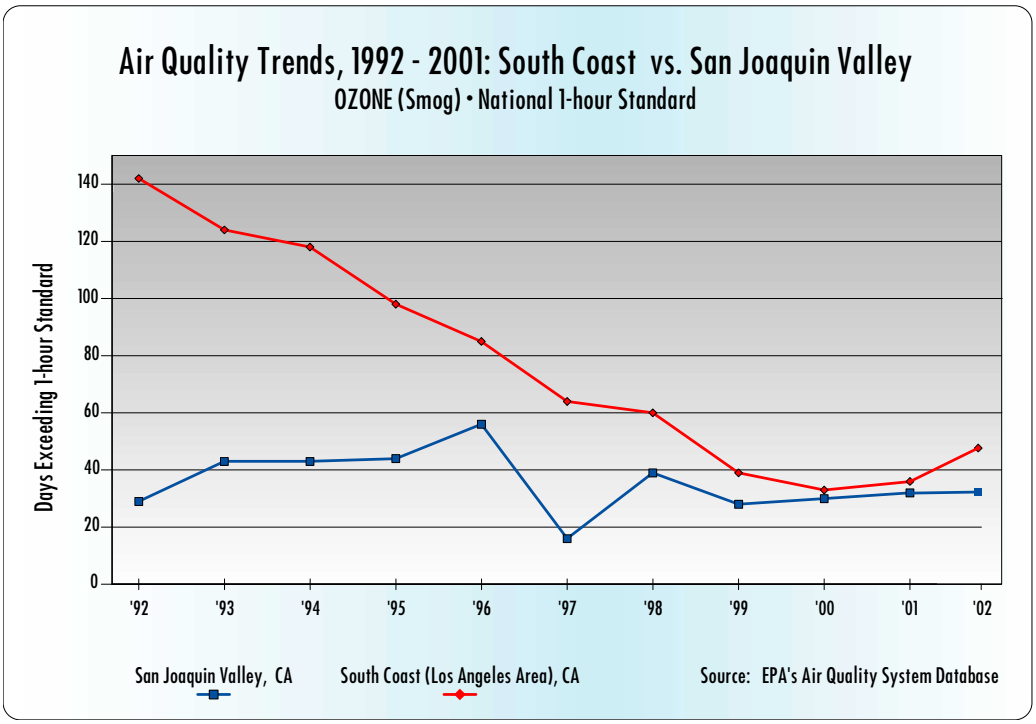
Since the San Joaquin Valley's particulate pollution levels failed to attain the national health standard by a 12/31/2001 deadline, EPA is working with ARB and the local air district as they draft a plan to reduce particulates or their precursors by 5% each year until the standard is reached. Over the last few years, Fresno and Bakersfield, two major cities in the valley, have recorded particulate levels 30-35% above the health standard.

Valley Solutions

Addressing this escalating public health problem is one of EPA's top priorities. In addition to doubling the number of staff devoted to the issue, the Pacific Southwest Regional Office is working with San Joaquin Valley citizens and governmental organizations to find innovative ways to help them meet federal clean air standards more quickly.

As one step toward cleaner air in the valley, EPA is moving ahead to issue permits regulating large, stationary diesel irrigation pumps. Under the federal Clean Air Act, a major stationary source of air pollution must obtain a permit from regulators. Because California exempts this equipment, EPA must step in as permitting authority until the state ends the exemption. Without state action, operators of the big diesel irrigation pumps would be required to apply for permits by May 2003. Other major agricultural air pollution sources would need to apply by August 1, 2003. Any operations with annual emissions over 25 tons of nitrogen oxide or VOCs, or 70 tons of particulate matter, would need to have the permits.

EPA is working with the USDA's Natural Resources Conservation Service,



The Los Angeles area (the red line) has made great progress toward clean air in the past decade; the San Joaquin Valley faces significant challenges in meeting air quality goals.

under the federal Farm Bill's Environmental Quality Incentives Program (EQIP), to secure funding that will assist farmers to install new, cleaner pump engines. This effort is part of EPA's commitment to help the valley achieve clean air.

Other major sources of particulate pollution include diesel engines that drive heavy-duty trucks, tractors, bulldozers, and buses; dust from plowing and unpaved roads; and smoke from burning agricultural waste and home fireplaces.

Los Angeles Area Milestone: No Unhealthy Carbon Monoxide Days

Although EPA has not yet made its official finding, California's South Coast Air Basin, including Los Angeles, reached a major milestone by finishing 2002 without a single day of carbon monoxide (CO) exceeding the national health standard – a tremendous improvement from the more than 100 days per year of unhealthy CO levels logged in the mid-1970s. Cleaner-burning reformulated gasoline, in use for the last ten years, and cleaner-burning new car engines, which generate only 1/23 as much CO as 1970 cars, are credited with the improvement.

However, the Los Angeles area still has a long way to go to meet the ozone health standard. In 2002, EPA worked with ARB and the South Coast Air Quality Management District to revise its plans to continue reducing ozone and particulate levels.

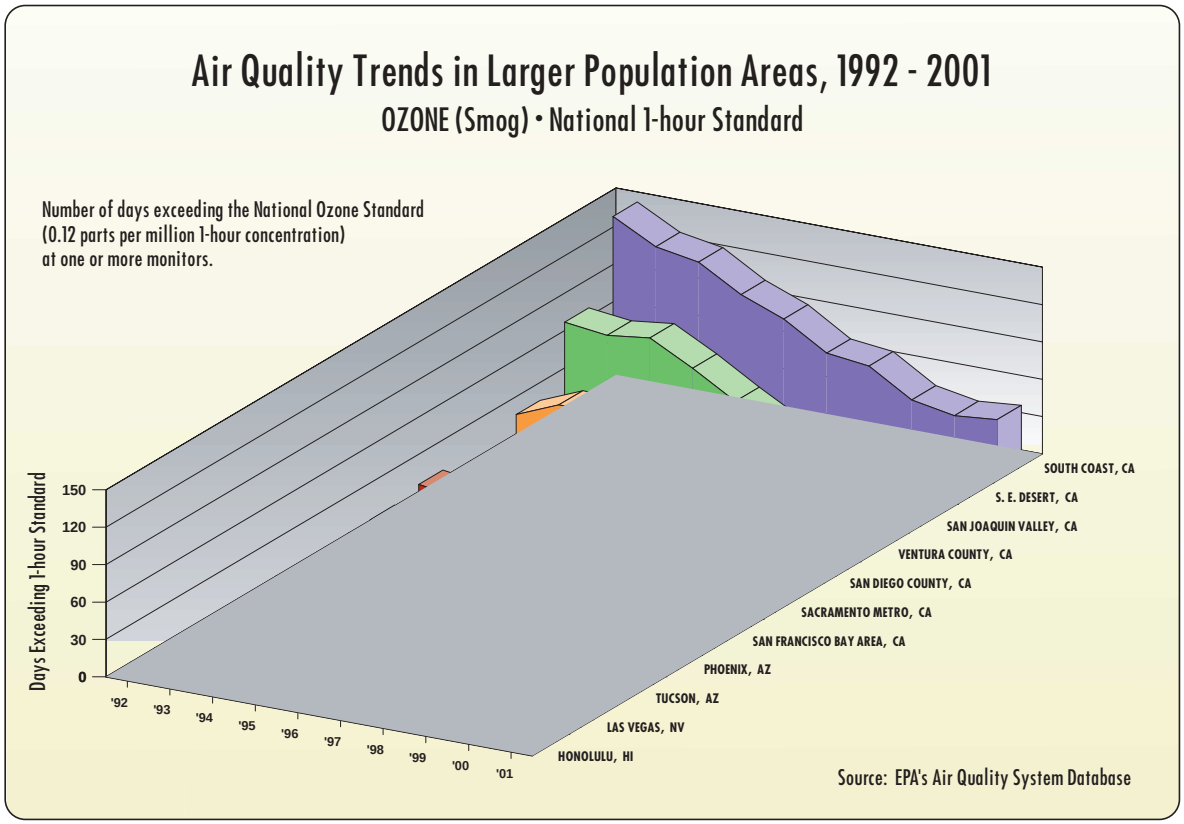
Partnerships for Cleaner Air

EPA provides funding for state, local, and tribal clean air programs through grants and cooperative agreements – over 200 grants last year, totaling over $32 million. EPA also provides technical support for air monitoring; works with states, tribes, local governments, and non-governmental organizations to promote cleaner indoor air; and works with Mexican government agencies on U.S. – Mexico Border air issues. Efforts by EPA and partner agencies in 2002 included:

Air Monitoring

- EPA is providing technical support and funding for all state and local air districts to monitor PM2.5 – tiny, harmful particles, mostly aerosolized liquids, under 2.5

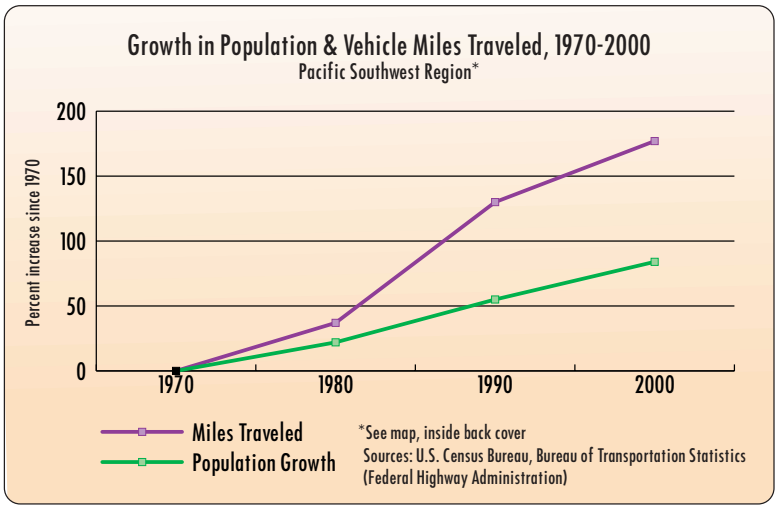
Graph shows trend toward fewer days with unhealthy smog levels in Pacific Southwest urban areas. San Joaquin Valley, both rural and urban, is an exception.



micrometers in diameter, which penetrate deep into the lungs. The new national particulate health standard, being phased in over the next two years, measures PM2.5. The earlier standard measures PM10, which consists of larger (but still microscopic) particles.

- EPA is setting up a National Air Toxics Monitoring Program, with air sampling sites in San Jose, Calif., Pearl City, Hawaii, Clark County, Nev., and Maricopa County, Ariz. Dioxin and mercury monitoring is underway in the San Francisco Bay Area; EPA is also monitoring for pesticides in McFarland in the southern San Joaquin Valley.

Population in the Pacific Southwest has nearly doubled since 1970, but motor vehicle use has almost tripled.



- EPA issued grants to 26 Indian tribes in the Pacific Southwest to help the tribes develop their own capacity to regulate air pollution. As of late 2002, these tribes had deployed air monitoring equipment at 23 sites.
- The California Air Resources Board (ARB) operates air monitoring stations in the Mexican border cities of Tijuana, Rosarito, Tecate, Mexicali, and Calexico. ARB is also deploying particulate samplers in Mexicali and Imperial County to study cross-border particulate pollution.
- The Arizona Department of Environmental Quality (ADEQ) is working with Mexican officials in cities adjacent to Arizona to set up monitoring systems and identify pollution sources.
- EPA's AIRNOW real-time ozone mapping and forecasts are now available online not only for major urban areas in the Pacific Southwest Region, but for many other areas, including Reno, Nev., and the Mojave Desert, Calif. – to access, go to www.epa.gov/airnow .

Indoor Air

- EPA awarded nine indoor radon grants to the following state and tribal agencies to reduce the threat of lung cancer from naturally-occuring but radioactive radon gas: Calif. Dept. of Health, Ariz. Radiation Regulatory Agency, Nevada Radiological Health Section, Guam EPA, Navajo Nation, Hopi Tribe, Inter-tribal Council of Arizona, Ely (Nev.) Shoshone Tribe, Yerington (Nev.) Paiute Tribe.
- EPA awarded five grants, totaling $123,000, to support work by American Lung Association affiliates and other organizations on asthma and related indoor environmental conditions. The programs include "Open Airways for Schools," EPA's "Indoor Air Quality Tools for Schools," and in-home education on asthma triggers.
- For more information on indoor air hazards, including tobacco smoke and toxic molds resulting from floods and roof leaks, go to EPA's Web site, at www.epa.gov/air/indoorair .

Preventing Pollution

- EPA worked with California's South Coast air district to inspect facilities that use halogenated solvent degreasers, which cause toxic air emissions when they evaporate. The inspections found eight violators, and all were required to comply immediately with federal standards. The district revised its regulation on such degreasers, a move that is expected to cut air emissions an incredible 98.8%, from 297 tons/year to just 3.65 tons/year.
- EPA worked with the South Coast air district to further develop its RECLAIM program, an innovative system that allows pollution sources to buy and sell emission reduction credits. This provides an incentive for companies to take the most cost-effective pollution control measures, reducing overall pollution while allowing economic growth.
- EPA is providing financial and technical support for a demonstration project at the Port of Long Beach to retrofit 50 diesel yard tractors with diesel oxidation

catalysts. EPA and the California Air Resources Board negotiated an agreement with airlines to cut emissions from ground service equipment at Los Angeles airports by 80 percent.

U.S.-Mexico Border Air Issues

Imperial County, California, has a problem: Air pollution crosses the border from Mexico and adds to the county's own pollution sources, causing the county's air to reach unhealthy

Particulates Map Shows Just How Bad It Gets – and Where

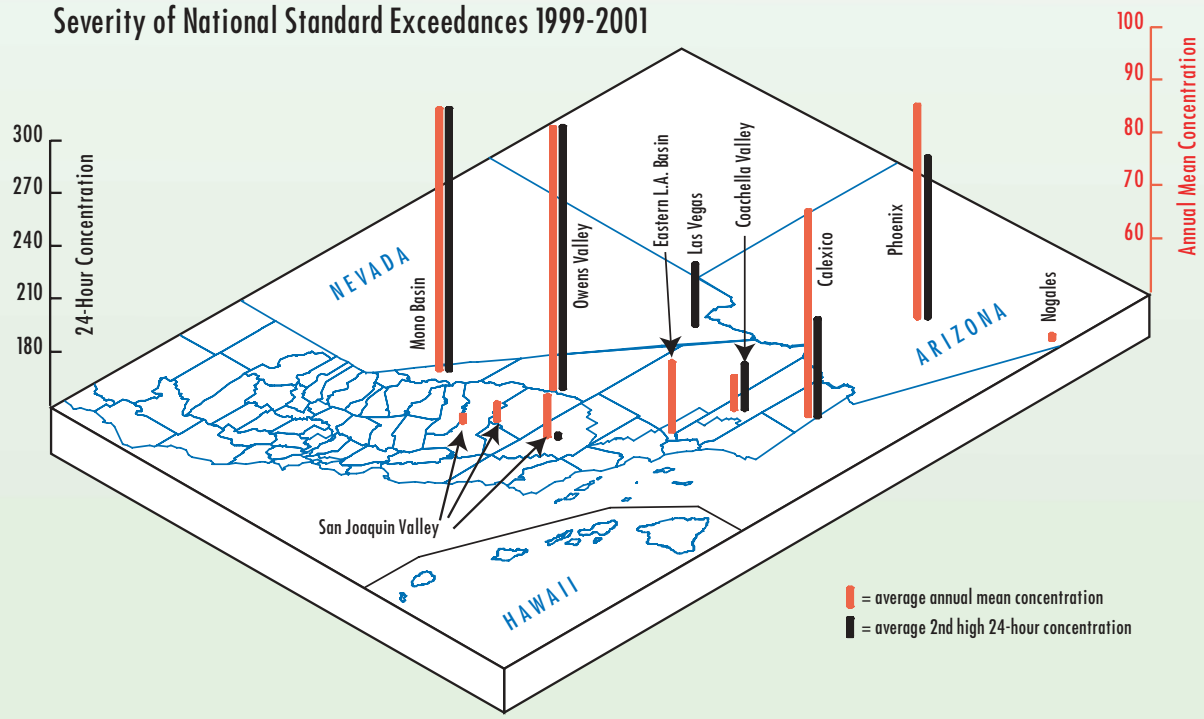
The map shows which areas exceeded the national health standard for particulates — dust, soot, and aerosols, known as PM10 (particulate matter up to 10 micrometers in size). The largest urban areas with unhealthy PM levels were Maricopa County (the Phoenix area), Clark County (the Las Vegas area), and the eastern edge of the Los Angeles air basin.

The highest overall PM levels were in the Owens Valley, Calif., where windblown dust from the Owens Dry Lake bed have produced the nation's worst particulate air pollution. Dust storms, which kick up toxic minerals like arsenic, started when the lake dried up around 1930, in part due to water diversions from the Owens River to the Los Angeles Aqueduct.

But in 2002 and 2003, PM levels are expected to drop markedly as a result of new dust control measures. Under an agreement finalized in 2000 between the local air district, Indian tribes, California's Air Resources Board, EPA, and the city of Los Angeles, the city installed many miles of water pipe on portions of the lakebed, with hundreds of sprinkler-like outlets to spread water widely, but just an inch or so deep.

The water is part of the Owens River flow that originally fed the lake, but until 2001 was diverted into the aqueduct. It's not enough to recreate the lake, but it's enough to greatly reduce the dust — a health benefit for residents of the Owens Valley.

Particulates (PM-10)
Severity of National Standard Exceedances 1999-2001



Measurements shown are from monitoring station in each air basin with highest particulate levels.
PM-10 Annual Standard = 50 ug/m3 annual arithmetic mean concentration PM-10 24-hour Standard = 150 ug/m3 24-hour average concentration
Concentrations higher than twice the standard have been truncated to twice the standard. Based on 1999 thru 2001 data from US EPA's AQS database.

levels of ozone and particulates. Any solution must be cooperative and binational.

In April 2002, EPA and its Mexican counterpart, SEMARNAT, convened a team of energy experts in Mexicali, Baja California, to find ways to ensure that new energy projects in the border area comply with applicable environmental regulations and prevent unacceptable impacts to border communities. In November, President Bush and Mexico's President Fox announced a new effort by both nations to address transboundary air pollution through enhanced cooperation. The strategy they agreed on will trigger pilot projects to evaluate market trading, emission reduction credit programs, and binational management of airsheds.

EPA continued to work closely with local governments, advocating for investment in local projects such as one to control road dust by paving streets in the border city of Agua Prieta, Sonora, Mexico. Also, EPA invested in binational projects such as the development of an air emissions inventory for the border region of Mexico, a bilingual border energy Web site, and an extensive air monitoring network along the border. Negotiations are underway with the municipalities of Mexicali, Tijuana, and Rosarito to assume operation and maintenance of the air monitoring networks in these areas.

Innovative Approach in Arizona Means More Power, Less Pollution

The Tucson Electric Power Company's coal-fired electric power plant in Springerville, Ariz., is located in the eastern part of the state near the Arizona-New Mexico border. Early in 2001, Tucson Electric Power came to EPA to discuss a draft operating permit application for an expansion plan that included an emissions cap for two existing units and two proposed units, which would double the facility's capacity, increasing it from 400 to 800 megawatts.

On April 29, 2002, after a year of negotiations between EPA and TEP that were facilitated by former Arizona Governor Jane D. Hull, the agency and the company reached agreement on a permit proposal that would allow the expansion while greatly reducing overall emissions from the facility. EPA Regional Administrator Wayne Nastri and Jim Pignatelli, CEO for TEP, joined the governor in acknowledging the successful collaboration with the Arizona Department of Environmental Quality.

The cooperative agreement provides flexibility to the company as well as emission reductions. The agreement represents a major reduction in emissions — almost 50% less sulfur dioxide (10,800 tons per year vs. 18,800) and 20% less nitrogen oxides (9,600 tons per year vs. 11,660). The settlement also accelerates the reductions to the date of startup of the new units, delivering cleaner air to the Colorado plateau five years earlier than required under the Clean Air Act.

Enforcement and Compliance

EPA works with state, local, and tribal agencies to provide compliance assistance to regulated businesses and facilities, and to enforce the laws to deter violations, deny violators any financial gain from noncompliance, and make substantial reductions in pollutants released into the air we breathe.

- Chrome plating shops are generally small businesses, but some release toxic chromium into the air. EPA compiled a manual for both plating shop operators and government inspectors on compliance with the "Maximum Achievable Control Technology" (MACT) regulation for chrome platers. EPA inspectors then used the manual to train state and local inspectors in Arizona and Hawaii.
- A legal settlement with Unocal over emissions of smog-forming gases from its Los Angeles ship loading terminal resulted in reduced emissions of 540 tons/year. The facility also paid a $1.75 million penalty for exceeding air emissions permit limits, the third highest civil penalty ever collected by EPA's Pacific Southwest Region for violations of the Clean Air Act. Unocal's facility failed to install and operate control equipment to reduce emissions of smog-forming compounds when loading oil tankers.
- Cal-Nev Pipeline, owner/operator of Las Vegas' largest bulk gasoline terminal, paid $204,000 to settle Clean Air Act violations at its Las Vegas terminal – and reduced smog-forming emissions by 85 tons/year. EPA and Clark County, Nev., worked closely to reach the agreement.

EPA People

Alberta Romanini and Argentia Cabanela: Extraordinary Administrative Coordination

Few would deny that a well-tuned machine requires the continuous support of qualified and caring technicians. As the staff of 100 people in EPA's Pacific Southwest Air Division go about the public's business of successfully implementing the complexities of the Clean Air Act, they can focus their full attention on reducing pollution in part because their administrative needs are well addressed.

Meet the Air Division's Administrative Officer, Alberta Romanini, and Assistant, Argentia (Argie) Cabanela. Having worked together for more than ten years, they make certain that non-programmatic burdens to staff and management are kept to a minimum so that the air, radiation and voluntary programs of the division function smoothly and productively.

They provide the support needed in order for the division to fully and efficiently utilize its human and fiscal resources. Alberta and Argie offer advice and give assistance to staff and managers to help them navigate through the various policies and processes associated with procurements, cooperative agreements, budget and finance, and staff travel, training, and awards.

Alberta Romanini (left), and Argentia Cabanela. Photo: Sally Seymour

As opportunities arise to alleviate time-consuming administrative loads for staff and management, Alberta takes the initiative to develop streamlined protocols and processes. She is adept in identifying and monitoring the array of internal funding sources that support the division. Alberta has developed sophisticated, but user-friendly, information and resource databases that assist managers and staff. Funds and staffing are monitored carefully to ensure that national requirements are met using sound fiduciary practices. Simultaneously, Argie supports the associated tracking and financial systems with her prompt and accurate data input. Both accomplish their varied and complex daily administrative tasks with a high degree of efficiency, while providing excellent customer service. As a team, Alberta and Argie are principal contributors to the effectiveness of the Air Division. Alberta may be reached at (415) 947-4140 or romanini.alberta@epa.gov; Argie at (415) 947-4138 or cabanela.argentia@epa.gov.

chapter 2

CLEAN WATER

Under the federal BEACH Act of 2000, EPA issues grants to coastal states to help them develop beach bacteria standards and systems to notify the public when swimming, wading, and surfing are unsafe due to bacterial contamination.

Protecting Beaches in the Pacific Southwest

EPA, States Focus on Beach Pollution

Hundreds of millions of people each year visit the coastal beaches of EPA's Pacific Southwest Region – California, Hawaii, American Samoa, the Commonwealth of Northern Mariana Islands, and Guam. These coastlines attract visitors from across the nation and around the world, making tourism the number one industry in Hawaii and other coastal areas. Increased monitoring of beach waters by Southern California counties in the last couple of years has sometimes revealed bacterial contamination, resulting in temporary beach closures. Raw sewage spills and polluted runoff are among the main causes. EPA, in concert with state and local governments, is taking action to prevent such pollution, protect public health, and keep beach waters clean.

The issue extends beyond environmental and health concerns. When contamination is found, and beaches are closed, there are economic losses to coastal businesses, as well as disappointed beachgoers. The economy of coastal areas depends on clean waters and beaches. For example, approximately 175 million visitors each year go to Southern California beaches. Coastal tourism is a $54 billion per year industry in California. At the same time, heavily urbanized Southern California

accounts for nearly half the nation's pollution-caused beach closures.

California beaches are a public resource. The entire California coastline is open to the public below the mean high tide line. Beach water monitoring has shown that the surf zone is subject to unseen bacterial pollution. The coastline is the end point for most pollutants on urban streets in coastal counties, from sewage spills and pet feces to engine oil and trash. All of it washes downstream into storm drains and creeks, and ultimately onto beaches.

EPA and state and local governments have a number of ways to combat coastal pollution. Beach monitoring and public notification programs identify problem areas and warn beachgoers. State agencies set limits on allowable pollutant discharges from many types of sources, including industry, sewage treatment facilities, urban stormwater systems, and stormwater runoff from construction sites. EPA works with states to assess water quality, develop watershed-based plans, and establish practices that reduce pollutant loads and help restore polluted waters. EPA also disburses grant funds to state and local governments and other organizations to enable them to carry out their roles in these efforts.

The BEACH Act and Beach Water Quality Standards

In October 2000, Congress passed the Beaches Environmental Assessment and Coastal Health Act (BEACH Act) to develop programs to better monitor water quality at our nation's beaches and to notify the public when health hazards exist. In 2001 and 2002, EPA's Pacific Southwest Office awarded grants totaling over $2 million to California, Hawaii, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands to assist them in developing their water quality monitoring and public notification programs for coastal recreational beaches. Under the BEACH Act, EPA established performance targets for state and local beach monitoring and notification. Governments must demonstrate that they meet the performance targets in order to qualify for new grants in 2003. California and Hawaii already had existing beach monitoring programs. EPA grants are providing better documentation of the states' programs, and improving their public notification process.

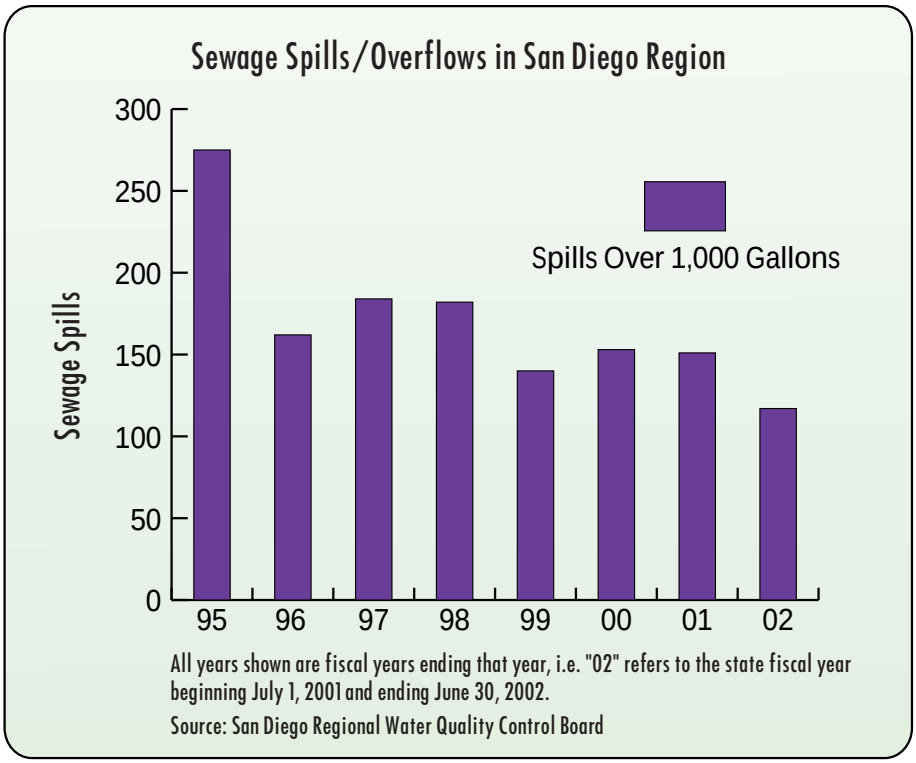
Also required under the BEACH Act is state adoption of water quality standards – maximum limits – on bacteria in beach waters. The Act calls for the states to adopt their own standards, subject to EPA approval. These will be added to the standards already in effect for over 100 other pollutants. EPA water quality standards expert Phil Woods (see: EPA People, p. 15) is helping California and Hawaii develop protective, science-based standards for bacteria indicators as well as other pollutants.

EPA, Regional Boards Take Action to Prevent Sewage Spills

Some beach closures are caused by spills or overflows from sewage collection systems. To reduce these spills, EPA surveyed every coastal

Opposite photo: Jim Grove

The San Diego Regional Water Quality Control Board's enforcement has helped reduce sewage spills and overflows in the 48 cities and special districts in its region.



sewage system in southern California and found many to be experiencing such spills. Some systems had few sewage spills, while others had hundreds. Only a small number of these were directly responsible for beach closures, but it only takes one to close a beach for several days. The others – usually on streets and sidewalks, ultimately emptying into storm drains, channels, and creeks – are also a hazard to public health.

In 2001, EPA and the Los Angeles Regional Water Quality Control Board (one of nine state-appointed regional boards in California that enforce state and federal clean water laws) jointly sued Los Angeles to ensure that the city takes additional measures to stop sewage spills. In 2002, EPA also issued compliance orders to the cities of San Diego, Laguna Beach (Orange County) and Carpinteria Sanitary District in Santa Barbara County, requiring them to take similar actions to reduce sewage spills. The orders require specific measures aimed at reducing the number and volume of spills over a sustained period. The orders are expected to help achieve measurable reductions in sewage spills, to protect the Southern California Coast and beaches.

Waterfall on a coastal stream near Shelter Cove, Mendocino County, Calif. Photo: David D. Schmidt

The San Diego Regional Water Quality Control Board had similar problems with sewage spills in the 48 cities and special districts that collect and treat sewage in its region. In 1996, the San Diego Regional Board issued a permit that requires cities and districts to:

- Control, terminate, and recover spilled sewage and monitor impacts
- Correct problems that caused the spills
- Maintain spill prevention and response plans
- Maintain records of spills and responses
- Open their operations to Regional Board inspectors

The Regional Board enforced the requirements of this permit, in some cases imposing substantial penalties. Over the past seven years, the number of significant sewer spills and overflows has dropped by 57%. Mindful of this success, the Santa Ana and Central Coast Regional Boards have taken similar actions. EPA's compliance orders complement the regional boards' actions by focusing on long-term infrastructure upgrades.

Polluted Runoff and Stormwater

Several Southern California beaches and watersheds with coastal outlets are designated by the State of California as "impaired" due to excessive bacteria. To reduce bacterial contamination to these waters and protect public beaches, the state is required to identify sources of bacteria and allocate amounts of pollutants that these sources can discharge under the Clean Water Act's Total Maximum Daily Load (TMDL) program. EPA and the state are working together to develop bacteria TMDLs for several impaired waterbodies, especially in Southern California, including Santa Monica Bay and San Diego Bay. Over time, TMDLs can alleviate contamination of beaches from controllable sources.

Another major challenge in dealing with coastal pollution is stormwater. The term is somewhat of a misnomer – it's not just creek and drain channel flows resulting from storms, but any flow in a stormwater drainage system, regardless of season. In the dry season, when natural stream flows are reduced to a trickle, stormwater flows might result from washing cars, watering lawns, or spraying sidewalks, streets, and parking lots. Runoff reaching a beach from a creek or storm drain may be heavily laden with bacteria from pet feces and other litter.

Industrial sites, such as auto salvage yards, can also pollute stormwater. In 2002, EPA and the state's regional water boards conducted compliance inspections at several hundred industrial sites subject to stormwater requirements. Since then, numerous followup actions have been taken to ensure that these facilities don't pollute our waterways.

EPA Works with States and Tribes to Ensure Safe Drinking Water

Under the Safe Drinking Water Act, EPA is responsible for overseeing efforts by states, tribes, and Pacific islands to ensure the safety of their drinking water. Last year, this responsibility grew to encompass protecting drinking water supplies from potential terrorist threats.

Drinking Water and Homeland Security

EPA is actively engaged in homeland security efforts to protect drinking water systems. EPA's primary focus is to assist utilities in their efforts to conduct vulnerability assessments and upgrade emergency response plans to address terrorism issues. As part of this effort, EPA has given a total of $10 million in grants to more than 100 large drinking water utilities in the Pacific Southwest. In addition, the agency has an aggressive program to provide up-to-the-minute information on Bioterrorism Act requirements, federal activities, and state and utility support through an ongoing series of workshops. Eight of these have been conducted during the past year; eight more are planned for the upcoming year.

EPA is coordinating efforts to train staff from over 100 medium-sized utilities in vulnerability assessment methodologies to allow them to comply with federal mandates and increase their systems' security. Grants have also been given to state drinking water programs to assist in their security efforts. EPA is working closely with states, tribes and drinking water providers to ensure an integrated and complete effort. EPA staff are providing support to both federal and local utility efforts in security research and enhancement, including participation on American Water Works Association and AWWA Research Foundation security advisory groups.

Grants Fund Drinking Water Improvements for Hopi and Navajo Tribes

During a September 2002 tour of the Hopi and Navajo Reservations in the northern Arizona area, EPA Regional Administrator Wayne Nastri announced $5 million in drinking water grants for the Navajo Nation and the neighboring Hopi Tribe.

A $1.9 million grant to the Navajo will fund feasibility studies, and design and construction of drinking water wells for 23 Navajo communities. The projects will provide additional sources of water and help protect water supplies from arsenic and other pollutants. A $3.1 million grant to the Hopi Tribe will pay for exploration and development of a drinking water source for the Hopi villages of Moenkopi and Shungopavi.

The tour allowed Nastri to witness first-hand the environmental problems faced by some of the largest tribes in the United States. The Navajo Nation estimates that 40 percent of its tribal members lack running water, compared with less than half of one percent of the U.S. population as a whole. Nationwide, seven percent of all tribal families lack running water.

Above: photo by Jim Grove. Below: A technician takes water samples from the New River, which flows across the U.S. - Mexico border and through California's Imperial Valley. Photo: Eugenia McNaughton

The Hopi grant is part of a larger effort by EPA and the Hopi Tribe to protect water resources in the Moenkopi area. EPA has been working with the tribe to expedite cleanup efforts at the Tuba City leaking underground storage tanks site on both Hopi and Navajo lands.

Earlier in 2002, EPA ordered Thriftway Marketing Corp. of Farmington, N.M., to begin construction of its second cleanup system at the SunWest Express gas station in Tuba City, Ariz. The new system is part of an overall effort to remove petroleum contamination from soil and groundwater at the gas station, and protect groundwater supplies in the area.

Merced River, Yosemite Valley, Calif. Photo: Michael Feeley

Cleaning Up MTBE in Santa Monica Groundwater

Since 1997, EPA has worked with the Los Angeles Regional Water Quality Control Board to clean up the MTBE contamination from leaking underground fuel storage tanks and pipelines that has made water from some of Santa Monica's drinking water wells undrinkable. Through enforcement actions and close work with the responsible parties, including major oil companies, over 200 million gallons of water tainted by the gasoline additive have been removed and treated in the past four years. In addition, the responsible parties have provided over $9.6 million worth of clean replacement water to the coastal city.

EPA continues to work with the responsible parties and the city of Santa Monica to ensure that all sources of the MTBE contamination are identified, to clean up the sources of the contamination, and to restore the city's wells as a source of drinking water.

Oil Spill Enforcement Actions

The Oil Pollution Act of 1990, passed in the wake of the disastrous 1989 Exxon Valdez oil spill, imposes tough penalties that give oil companies a strong incentive to prevent spills. Even small oil spills can severely damage ecosystems. In 2002:

- EPA, the U.S. Department of Justice, the U.S. Fish and Wildlife Service, and the Calif. Department of Fish and Game reached a settlement under which ExxonMobil Oil Corp. will pay the U.S. and the state of California $4.7 million for a spill of crude oil from a Southern California pipeline operated by the former Mobil Oil Company.
- EPA reached a $3 million settlement with Torch Energy Services Inc., Nuevo Energy Co. and Black Hawk Oil and Gas Co. for a 1997 oil spill that washed up on forty miles of California coastline.
- EPA reached a $65,000 settlement with Chevron U.S.A., Inc. for an oil spill at its Honolulu Harbor terminal in the summer of 2000.
- EPA levied a fine of $40,000 against Napa State Hospital for a 230-gallon diesel spill in March 2002, which threatened Northern California's Napa River.

EPA People

Phil Woods, Water Quality Standards Expert

EPA water quality expert Phil Woods. Photo: Fred Woods

Phil Woods, one of the most senior employees of EPA's Pacific Southwest Regional Office, retired in 2000 after 33 years of distinguished service at EPA and its predecessor, the Federal Water Pollution Control Administration, but he wasn't about to let retirement get in the way of his career. He returned six weeks later as a part-time employee to "finish up a few projects," like helping the state of California develop a new bacteria standard for beaches, as required by the federal BEACH Act of 2000.

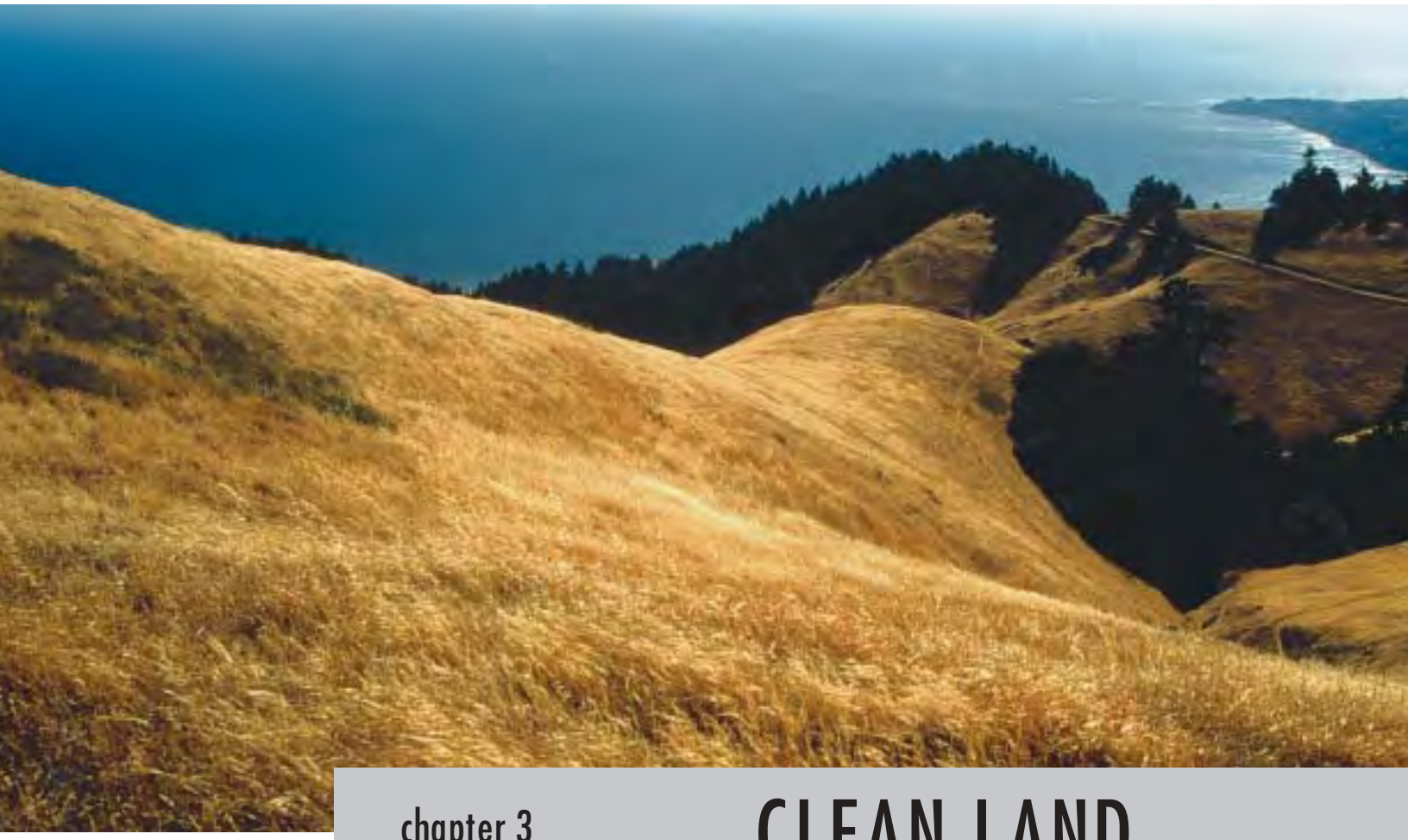
"I had to go through the whole hiring process again, even getting sworn in again," Woods recalls, chuckling at the irony of it. He's still working, he says, because "the challenges of setting water quality standards are still fascinating."

Woods has been the regional office's point man on water quality standards since 1971, though he now shares that responsibility with a team of colleagues. They advise state government agencies that normally set the standards for pollutants in local bodies of water, based on designated uses (such as fishing and swimming), and on EPA's specified limits, known as "numeric water quality criteria," for over 100 priority pollutants. States also have "narrative criteria," which are designed to prevent pollutants from reaching harmful levels.

In the case of beach bacteria, the old standards were based on levels of fecal coliform, which indicate the presence of pathogens from raw sewage or animal feces in the water. In recent years, scientists found that enterococcus bacteria survive longer in salt water, making it a better indicator. So the new standards, including California's, are based on enterococcus levels.

California's Regional Water Quality Control Boards are now putting the new standard into effect. Official EPA guidance documents for each pollutant spell out how to do it, while leaving some flexibility to adapt limits to local conditions. Woods' long experience is invaluable, because the criteria for all pollutants were adopted during his tenure, and he's familiar with their scientific justification. He shares this knowledge with state agencies such as the regional water boards so they can set standards and write discharge permits that are scientifically and legally defensible.

For more information on water quality standards, contact Terry Oda at (415) 972-3527 or oda.terry@epa.gov, or Phil Woods at (415) 972-3405 or woods.philip@epa.gov .



chapter 3

CLEAN LAND

EPA's hazardous waste program staff work with state, tribal, and local governments, as well as businesses and federal facilities, to clean up toxic sites and prepare them for reuse.

EPA's Hazardous Waste Cleanup Programs

EPA uses a variety of legal mandates to clean up hazardous waste sites and spills under the Brownfields, Superfund, Resource Conservation and Recovery Act, and Underground Storage Tank programs. Together with a variety of federal, state, local, and tribal agencies, EPA works on cleanups at thousands of sites nationwide each year to protect communities and the environment from toxic threats.

The principal goals of all these programs are the same: Prevent human exposure to toxics, prevent pollution of the environment, and clean up toxic sites so they can again be used productively.

Land Reuse: New Brownfields Law

The goal of Superfund's Brownfields Program is to empower states, communities, and other stakeholders to assess, safely clean up, and sustainably reuse former industrial sites – "Brownfields." With the passage of the new Brownfields legislation in January 2002, the Brownfields program took a significant step toward a more mature, continuing program. EPA is now able to address petroleum contamination at sites such as abandoned gas stations, and provide direct grants for cleanup. Additional funding is now available to EPA's state and tribal partners to

enhance response capabilities and Brownfields program development activities such as revolving loan funds and insurance.

EPA's existing grant programs continued to foster cleanup and redevelopment successes at the local level. Interest in these programs remained high, as indicated by the three new assessment grants and four new revolving loan fund grants awarded this year, bringing the Pacific Southwest Region's totals to 41 site assessment grants, 14 revolving loan fund grants, and five job training grants. Through these grants, EPA has provided $25 million to communities and leveraged $754 million for cleanup and redevelopment.

EPA continues to support the states' voluntary cleanup and Brownfields programs as critical links to local government redevelopment efforts. In addition, EPA and its state Brownfields counterparts continue the Brownfields Targeted Site Assessment program. Completed assessments include a future recreation development site in Hawthorne, Nev., a future industrial development site in Tonopah, Nev., and a commercial/recreation site for the Port of San Francisco.

In addition to the Brownfields program, EPA is fostering land revitalization at National Priorities List (NPL) toxic cleanup sites and former military bases. Santa Fe Springs, Calif., is one of three municipalities in the Pacific Southwest receiving funds as part of the Superfund Redevelopment Initiative to plan redevelopment activities at an NPL site. EPA worked with Santa Fe Springs to integrate their interests into the remedy selection for the Waste Disposal, Inc., site. The city of Davis, Calif., used its funds for a redevelopment plan for the Frontier Fertilizer site. The city of Alameda, Calif., used its redevelopment grant to assist in designing the golf course that is planned for construction over a closed solid waste landfill at the former Naval Air Station, Alameda.

Superfund at Work

EPA is making significant progress towards cleaning up its Superfund toxic sites in the Pacific Southwest. Site cleanup or construction of facilities for ongoing cleanup, such as treatment of contaminated groundwater, has been completed at 43% of the region's 123 Superfund NPL sites. Construction is underway at another 36%, and early actions to prevent people from being exposed to toxics have been taken at another 14% of these sites (see chart, pg. 18). In the Pacific Southwest Region, EPA has had great success bringing responsible parties into the Superfund cleanup process – as intended by the law's "polluter pays" principle. Responsible parties are paying for cleanup work at over 70% of the region's 123 Superfund NPL sites. Last year, EPA negotiated settlements for cleanup work in the Pacific Southwest valued at $211 million – about 42% of the total value of settlements nationwide. All these funds will be used for cleanups.

Opposite photo: Christy Shake.

Cleanup Highlights

San Gabriel Valley, Calif.

The four San Gabriel Valley Superfund sites include areas of groundwater contamination underlying over 30 square miles of the valley's 170 square-mile area. The San Gabriel Valley aquifer provides approximately 90% of the drinking water to the valley's residents.

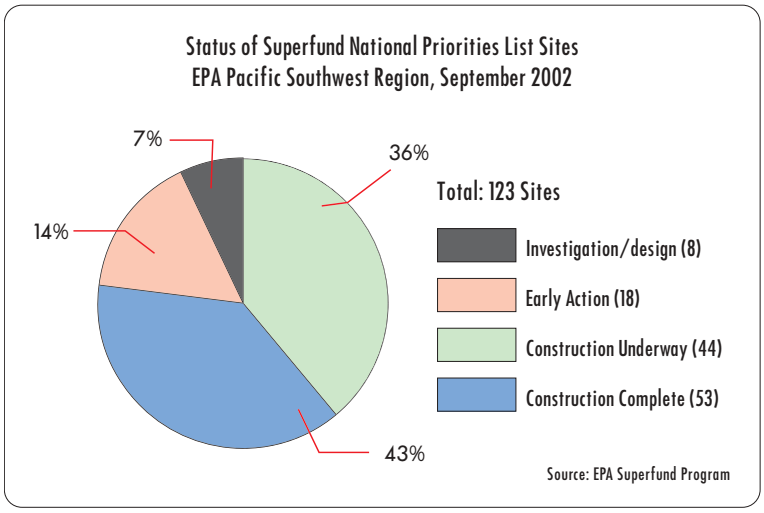
To clean up such a large area, EPA has divided the sites into eight study areas known as operable units. Last year, EPA made significant progress at both the Whittier Narrows and Baldwin Park Operable Units, meeting

EPA has awarded Brownfields grants to 41 tribal and local governments to assess toxic contamination at former industrial sites.

both EPA objectives and those of local communities whose drinking water supplies have been contaminated. In March 2002, EPA completed construction of the groundwater treatment plant at the Whittier Narrows unit. The plant is currently treating 11,000 gallons per minute – enough water to fill a swimming pool each minute. Once the necessary agreements and infrastructure are in place, the clean water will be available to water purveyors to provide drinking water to homes and businesses.

Cleanup work or construction of cleanup facilities such as groundwater treatment plants is now complete at 53 of EPA's 123 priority toxic sites in the Pacific Southwest. Construction is underway at another 44 sites.

In May 2002, the Baldwin Park Operable Unit Project Agreement, a complex agreement among eight responsible parties and seven water agencies, took effect. Pursuant to this agreement, the eight parties will fund design, construction, and operation of one of the largest groundwater cleanups in the nation by providing funds to the water agencies. To date, one treatment plant, the La Puente plant, has been constructed and is providing drinking water to a community of 9,000 residents. Two out of three other treatment plants are currently under construction; the third treatment system is in the design phase. When completed, these four treatment systems will provide enough drinking water for eight cities in eastern Los Angeles County.



Luke AFB Clean; Delisted from NPL

Luke Air Force Base, a 4,000-acre site in Glendale, Ariz., is the first active Air Force installation to be fully cleaned up and removed from EPA's Superfund National Priorities List. Currently, there are 36 Air Force bases on the list nationwide.

The base has served as an advanced fighter pilot training station since 1941. Discharges and waste disposal from aircraft maintenance and light industry resulted in soil and groundwater contaminated with petroleum products, cleaning solvents and volatile organic compounds. Since cleanup began in 1990, the Air Force, with EPA and Arizona Department of Environmental Quality oversight, treated more than 625 cubic yards of contaminated soil, removed 66,584 gallons of leaked jet fuel from soil, and monitored groundwater.

Superfund Emergency Response Program

In 2002, EPA's Pacific Southwest Emergency Response Team was extremely effective throughout the region. EPA On-Scene Coordinators were on the front line to respond to numerous hazardous substance and oil spill emergencies in 2002, continuing their distinguished record. Highlights included:

- At **Honolulu Harbor**, EPA supervised the cleanup of ongoing petroleum releases from abandoned and active pipelines and storage tanks. After extensive subsurface investigations, an extraction system was installed and began operating in October 2002.
- EPA assumed responsibility for the cleanup of **Denova Environmental Inc.**, an abandoned hazardous waste and explosives storage facility in Rialto, Calif., which posed an immediate threat to nearby residents. With the assistance of the Rialto Fire Department and San Bernardino County Hazardous Materials Team, EPA emergency response crews investigated, identified, stabilized and properly disposed of thousands of containers of explosive materials, medical wastes, corrosives, toxins, flammable compounds and methamphetamine lab wastes stored at the site. The U.S. Army and Marine Corps provided critical assistance with the disposal of eight tons of highly explosive materials.
- EPA concluded a very successful partnership with the California Integrated Waste Management Board and the Sonoma Fire Department to clean up the abandoned **Sonoma Burn Dump**, a former municipal dump. Work crews removed over 23,000 tons of soil contaminated with radioactive materials, lead and other toxins from the two-acre dump.

Managing Waste Safely

Ensuring the safe management of hazardous waste, municipal garbage, and underground fuel storage tanks is the responsibility of EPA's Pacific Southwest Waste Management Division. In 2002, EPA awarded over $12 million in grants to states and tribes, to build their own waste programs and to work with EPA on waste management.

EPA has been working for more than 20 years to ensure the safe handling and disposal of hazardous waste. The Pacific Southwest has thousands of facilities that produce hazardous waste and more than 315 facilities that, either currently or in the past, treated or disposed of hazardous waste. EPA has worked with state, local and tribal partner agencies to issue permits, inspect facilities and clean up sites contaminated with hazardous waste.

In the 1970s, the Pacific Southwest Region had some of the largest hazardous waste landfills in the country. Today, EPA and state agencies have the difficult task of ensuring that these landfills, now closed, are properly and permanently secured to protect nearby communities.

By October 2002, EPA and state and tribal environmental agencies in the Pacific Southwest had supervised the cleanup of more than 32,000 leak-prone underground fuel storage tanks (see graph). All underground tanks in the region are now required to meet strict standards to prevent leaks. EPA and partner agencies conduct thousands of inspections each year to make sure fuel tanks meet these standards. In 2002, EPA's tank inspectors focused on improving compliance in Indian Country and at facilities in Hawaii and other Pacific islands.

While EPA works with its tribal partners to ensure the safe handling of garbage on Indian lands, each state in the Pacific Southwest is responsible for carrying out federal requirements for safe trash handling and disposal. EPA also works with states and tribes to encourage the recycling and reuse of materials, and to reduce the amount of waste sent to landfills. Two important projects in 2002 were a $400,000 EPA grant to Hawaii County to establish a model reuse and recycling center, and a project with the city of Sacramento, Calif., to produce high quality compost using turkey manure and municipal green waste.

UC Labs Protect Students, Faculty from HazWaste with Self-Audits

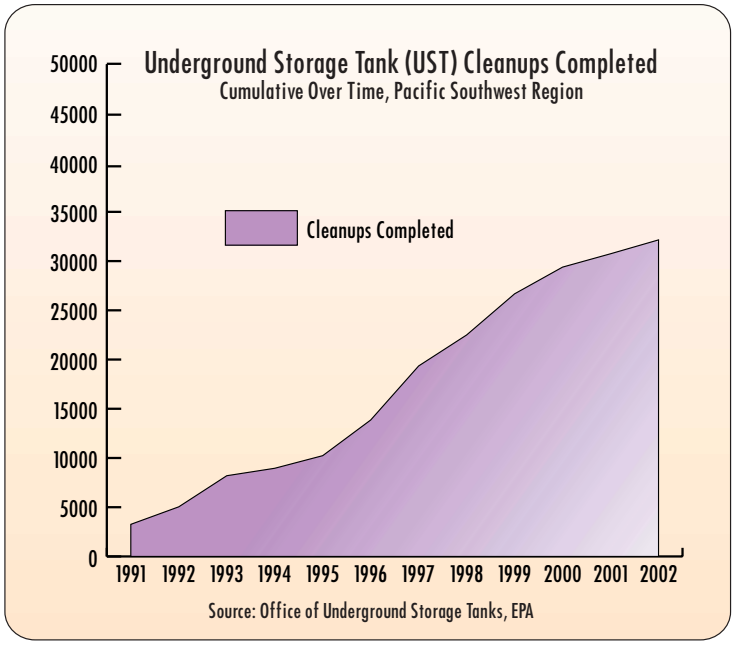
Nationwide, EPA has frequently found universities in violation of hazardous waste regulations. Working with the University of California (UC) and in partnership with the California Department of Toxic Substances Control (DTSC), EPA completed the first phase of an innovative project that involved UC completing environmental self-audits on all nine campuses in the UC system. The self-audits covered hazardous waste and emergency planning requirements. This was the first time that all nine campuses coordinated on an environmental project.

UC audited 47 separate facilities on the nine campuses, trained 112 staff to complete the project, and submitted comprehensive audit reports to EPA and DTSC. The agencies are evaluating the reports and working with UC to ensure that measures are in place to prevent future problems. Greater overall compliance has resulted from these self-audits than would have been possible through traditional inspections.

Rocket Fuel Cleanup

Perchlorate is a man-made chemical used in rocket fuel. Wastes from the manufacture and improper disposal of perchlorate-containing chemicals are increasingly being discovered in soil and water. EPA is aggressively pursuing the parties responsible for the perchlorate contam-

EPA and state and tribal environmental agencies have supervised the cleanup of more than 32,000 underground fuel storage tanks.



ination that has been found in California drinking water.

In addition to perchlorate contamination coming from Southern California facilities, the Colorado River is also a pathway for contamination. Kerr McGee Chemical Corporation (KMCC), a chemical company near Las Vegas, Nev., was a major source of the perchlorate contamination that seeps from contaminated groundwater into the Las Vegas Wash, Lake Mead and ultimately the Colorado River. EPA has been working closely with the Nevada Division of Environmental Protection and KMCC since 1997 to reduce perchlorate seepage to Las Vegas Wash and Lake Mead as quickly as possible. KMCC is extracting groundwater at three locations and treating it to remove more than 2500 pounds of perchlorate per day. Within one to three years, KMCC's share of perchlorate entering Las Vegas Wash and Lake Mead is expected to decrease by approximately 90%.

KMCC has committed to install and operate additional extraction wells. These wells should provide additional reductions in perchlorate releases to Las Vegas Wash.

In addition to cleaning up perchlorate at the Las Vegas Wash, EPA has been at the forefront in detecting and treating perchlorate contamination at Superfund sites. EPA has demonstrated cost-effective, full-scale perchlorate treatment technologies at California's Aerojet, San Gabriel Valley, Lawrence Livermore Site 300, and NASA-Jet Propulsion Laboratory Superfund sites. The San Gabriel perchlorate treatment system was the first in the nation to treat millions of gallons of water per day to deliver clean water to a municipal water supply.

The new Regional Response Center is equipped to serve as a communications hub in the management of large-scale incidents. Photo: Sally Seymour

Homeland Security

As a result of September 11, 2001, EPA has been given greater responsibilities in the area of homeland security. To meet the challenges posed by these responsibilities, Region 9 has focused on three key areas during the past year:

Emergency Response Capability

EPA hired five new On-Scene Coordinators (OSCs), the EPA's front-line staff for emergency response, bringing the Pacific Southwest Region's number of OSCs to a total of 18. Two of them are stationed in Los Angeles, Calif., so they can be available to respond quickly to incidents in the southern part of the region. In addition to performing toxic cleanups, EPA provided emergency response staff for high visibility events such as the World Series, the Superbowl and the Winter Olympic Games. EPA has also completed construction of a Regional Response Center that is well equipped to manage large-scale incidents and to communicate with local, state and federal agencies.

Critical Infrastructure Protection

The Agency is responsible for protecting critical infrastructure in the chemical and water utility sectors. In the Pacific Southwest, EPA recently conducted seven site security visits at high-risk chemical facilities. This was done to evaluate the state of security and raise awareness within the industry about security concerns. EPA representatives have spoken at a number of industry forums to continue sending that message. To protect drinking water, EPA has issued assistance grants totalling more than $10 million to over 100 large water utilities to help them conduct security vulnerability assessments.

Training and Exercises

EPA has conducted 13 anthrax emergency response training courses at local, state and federal agencies in all parts of the Pacific Southwest to help first responders develop the capacity to deal with anthrax incidents. Out of six targeted sister city agreements along the U.S.-Mexico border, EPA has signed four that include homeland security annexes. EPA is nearing completion of the fifth sister city agreement between San Diego and Tijuana. As part of the sister city agreements, EPA conducted training in the Incident Command System and sponsored exercises to test cross-border response capacities.

EPA People

Vicki Rosen and Community Involvement; John Chesnutt and Military Hazardous Waste

Vicki Rosen has been an EPA Community Involvement Coordinator since 1990 and has worked on nearly two dozen Superfund and RCRA hazardous waste sites. Her job is to involve communities in investigation and cleanup activities to make sure their concerns are heard and addressed. At the Operating Industries Inc. site, a former hazardous and solid waste landfill in California, Vicki went door-to-door to 200 households speaking to the residents to gain their trust and involvement with sampling their homes for vinyl chloride and methane gases seeping underground from the landfill. To prevent residents from exposure to unsafe levels of gases, gas control systems were installed in six houses. Vicki coordinated continued monitoring of these homes to ensure the threat was eliminated.

EPA's Vicki Rosen (right) greets members of the Yerington (Nev.) Paiute Tribe at a community meeting, February 2003. EPA photo

For EPA's Abandoned Uranium Mine Project, Vicki worked with Navajo Nation staff and residents of 30 chapters, or local communities, scattered across a vast desert landscape on tribal lands, to sample water from springs and wells for arsenic and uranium.

Vicki is also a member of the agency's Emergency Communications and Outreach Team, who are on call to travel anywhere EPA is responding to an emergency. In November 2002 she assisted the U.S. Postal Service in Washington, D.C., during the anthrax incident.

John Chesnutt has been an EPA Project Manager since 1988 and has worked on several significant federal facility sites, including Lawrence Livermore National Lab and Mather Air Force Base in California, and Schofield Barracks in Hawaii. Currently, John is working on Fort Ord in California, one of the most significant closing military bases in the nation. Over 27,000 acres will be made available for housing, commercial development, state parks, golf courses and recreational areas. Seven thousand acres have already been put into use for a state university. John has played a key role in working with the community, the Department of Defense (DOD), and other agencies to address the difficult issues posed by unexploded ordnance – duds or lost ammunition – and ensure that ordnance will be cleared before handing over parcels to local government for redevelopment. Lessons learned here are relevant to similar cleanups that will be needed on 25 million acres of former military training lands nationwide.

EPA Project Manager John Chesnutt. EPA photo.

On another assignment, John worked with officers at 20 U.S./NATO military bases in Belgium, the Netherlands, Italy, and Germany to make pollution prevention standard operating procedure. John organized a hazardous materials inventory and developed procedures for efficiently handling materials to prevent the generation of hazardous waste materials, saving millions of dollars in disposal costs. In addition, John advised Romanian and Hungarian officials how to assess and clean up toxic waste and fuel spills left behind on military bases by former Communist regimes. His influence extended worldwide when he provided EPA input on revisions to the DOD's "Overseas Environmental Baseline Guidance Document" used by U.S. forces in countries where environmental laws are lacking.

For more information contact Vicki Rosen at (415) 972-3244 or rosen.vicki@epa.gov; or John Chesnutt at (415) 972-3005 or chesnutt.john@epa.gov .

chapter 4 COMMUNITIES & ECOSYSTEMS

EPA places special emphasis on working to protect ecosystems and communities that are particularly vulnerable to pollution.

Under a number of federal laws, executive orders, and treaties, EPA has special responsibilities to protect human health and the environment in communities that are especially vulnerable to pollution: Indian tribal communities, which often lack basic infrastructure like safe drinking water and sewage disposal systems; Pacific Island communities, including U.S. territories like American Samoa and Guam, which face solid waste disposal problems and needs for basic drinking water and sewage infrastructure; U.S.-Mexico Border communities, which are dealing with the cross-border impacts of poverty, population and industrial growth; communities with environmental justice concerns stemming from their proximity to major pollution sources; children, whose bodies are more sensitive to pollution than adults, and who face unique threats like poisoning from lead paint; and wetlands and watersheds, ecosystems that provide critical habitat for fish and wildlife, but are vulnerable to water diversion and land development.

Working with Tribal Communities

EPA works with tribal governments in much the same way as with state governments: providing grants, training, and other support to build up the tribes' own programs to carry out federal and tribal environmental laws. Thanks to EPA's work with the 146 tribes of the Pacific Southwest,

90% of these tribes now have their own environmental programs, compared to only 7.5% a decade ago (see graph below).

Indian Country accounts for 11% of the Pacific Southwest Region's land area, and is home to about 400,000 people. EPA works cooperatively on environmental issues with the region's tribes, from the vast lands of the Navajo Nation in the Four Corners area, to small tribal communities in California.

For example, EPA worked with the Navajo Nation to pursue an enforcement case against a major oil company for violations of the federal Clean Air, Oil Pollution, and Community Right-to-Know laws at the Aneth Oil Field. The facility agreed to pay over $600,000 in penalties for dozens of oil spills and other violations, and to spend over $478,000 to provide drinking water and sanitation facilities for Navajo communities that lack indoor plumbing. Additional benefits included reducing air pollution from the oil field by 29 tons per year, plus a $51,000 grant for emergency response equipment for the Navajo Fire Department.

EPA worked with the Shoshone-Paiute Tribes of the Duck Valley Reservation on the Rio Tinto Mine site, and the Yerington Paiute Tribe and Yerington, Nev., on the Anaconda Mine site, to investigate and plan cleanups for these two former open pit mines, which have polluted streams with acidic runoff.

EPA currently manages $83 million in grants for environmental programs to 131 Pacific Southwest tribes, funding a variety of projects, from setting up air pollution monitoring stations to constructing sewage treatment plants. For example:

- EPA worked with the tribes to assess polluted runoff on 80% of Indian lands in the Pacific Southwest.
- Tens of thousands of tribal homes lack potable water. EPA's Drinking Water Infrastructure Program has funded 46 tribal drinking water projects totaling $17.7 million, which provided safe drinking water to 3,298 homes.
- Tribes cleaned up and closed 45 open dumps, opened 10 recycling operations, and removed and recycled abandoned cars from six reservations. Closure of 13 more open dumps is under way in 2003.
- An EPA-led Interagency Solid Waste Workgroup secured funding for closure of 62 open dumps on the Tohono O'odham Nation, second largest reservation in the Pacific Southwest Region. The tribe closed the first five during 2002.
- Under cooperative agreements with EPA, 23 tribes operate a total of 42 air monitoring stations.

Opposite photo: Gerry Hiatt.

EPA Provides Technical Assistance to Ensure Tribal Grants Get Results

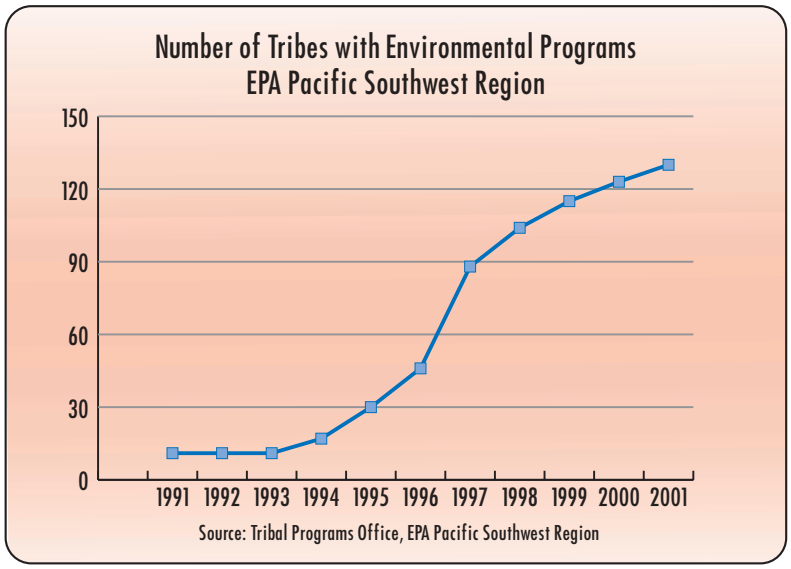
After EPA issues grants for tribal drinking water and wastewater infrastructure projects, the agency provides technical assistance, by sending technicians to provide hands-on training to help tribal communities operate and maintain their drinking water and wastewater systems. The technicians work with operators and tribal officials on a routine schedule, but are also available on short notice when problems arise.

EPA funds this technical assistance through grants to the nonprofit Rural Community Assistance Corporation. Six technicians serve about 100 tribal communities in California and Western Arizona, and make as many as 100 site visits each month. The technicians also organize drinking water and wastewater workshops for tribes, and make wastewater operation and maintenance evaluations.

Some examples from 2002:

- Big Sandy Rancheria, Calif.: Technician Tom Belluomini helped tribal water operator Tyler Kamalani disinfect the water system by setting up a procedure to remove fecal E. coli bacteria.

A decade ago, only 7.5% of the 146 tribes in the Pacific Southwest had their own environmental programs, compared to 90% today.



- Pauma, San Pasqual, Rincon, and Pala communities, Calif.: Technicians Ed Young, Chris Devers, Dave Harvey, and Angela Hengel provided technical assistance and training to the water operators on handling chemicals, troubleshooting the chemical feed systems and methods of measuring the fluoride concentration in the water system.
- Santa Ysabel community, Calif.: Technicians Chris Devers and Ed Young assisted the new water operator with rebuilding chemical feed pumps used for disinfection of two water systems, and getting the systems back online.

EPA Regional Administrator Wayne Nastri (right) presents Chairman Dean Mike of the Twenty-Nine Palms Band of Mission Indians with an award recognizing the tribe's development of a state-accredited environmental laboratory. Photo: Clancy Tenley

Pacific Island Communities

Saipan a Bright Spot

The solid waste situation on Saipan, the main island in the U.S.-affiliated Commonwealth of the Northern Mariana Islands (CNMI), took a dramatic turn for the better in 2002. Saipan is home to the infamous Puerto Rico dump, the island's largest man-made structure. The dump, which resembles a 100-foot-high tiered wedding cake, is a shoreline eyesore that leaks an oily leachate into a lagoon near the island's principal tourist hotels. After years of negotiating with EPA, the CNMI government made it a priority to close the dump and build a new municipal waste landfill that doesn't pollute waterways. Groundbreaking for the new Marpi landfill began in February 2002.

When the landfill opened in February 2003, it was the first new public landfill in the western Pacific to fully comply with U.S. environmental regulations. Not content merely to move trash to a new spot, the CNMI government also opened a recycling facility on Saipan. In addition, an EPA grant is helping the CNMI recycle remnant waste from garment factories, which generate an amazing 30 tons of cloth waste per day. EPA congratulates the CNMI for "putting waste in its place," or as they say in Saipan's native language, Chamorro, "Packeti i basula mu."

Guam's Ordot Dump

It looked like lava flowing, but there's no volcano on Guam. In October 2002 the Ordot dump had caught fire again, creating dense smoke from burning, molten trash, and causing neighbors to evacuate. The fire underscored the environmental risks of continuing to operate this open dump. Besides being plagued by fire, rats, and a potential for the whole structure to slide downhill, Ordot constantly leaks a black oily leachate of unknown chemicals directly into the nearby Lonfit River. The dump is on EPA's Superfund list of the nation's most polluted sites.

After nearly two decades of numerous environmental violations, ignored shutdown orders, and failed attempts to negotiate with the local government, in 2002 EPA sued the government of Guam to ensure it closes the dump and opens a new landfill. Since then, EPA has been working with the new gubernatorial administration on Guam to site a new landfill that complies with all environmental regulations, safely close Ordot, and take necessary actions to ensure it stops polluting the air and water.

Guam's Water Woes

One of the poorly kept secrets of the tropical Pacific is substandard water infrastructure. The problem is especially serious on Guam, where in the last four years over 600 million gallons of raw sewage have spilled onto the land and waters, contaminating the groundwater as well. Even when residents don't receive one of the frequent notices to boil their tap water before drinking it, there is some risk that the water will be contaminated with raw sewage. To protect public health, in 2002 EPA and the federal Justice Department sued the local government to force improvements, potentially including putting the water utility under outside management. EPA is now working with Guam's new gubernatorial administration to make specific improvements, with the ultimate goal of consistently safe, drinkable water.

EPA Helps Guam Recover from Two Typhoons

On a Sunday morning in July 2002, just 36 hours after receiving a call for assistance, EPA's Michael Mann was on a flight to Guam to help out in the relief effort that followed Typhoon Chata'an. Once President Bush declared the typhoon a national emergency, EPA quickly mobilized a contingent to assist the Federal Emergency Management Agency on Guam. EPA's Michelle Rogow, Barry Pollock and Lance Richman also participated in the effort, helping prevent exposure to hazardous debris, and making sure that residents had access to safe drinking water. Mann and Pollock, working with their counterparts from the Guam EPA, discovered that some of the water being delivered to villages in tanker trucks, and even some of the locally bottled water, had unsafe levels of fecal coliform bacteria. They quickly took measures to ensure that clean water was delivered. Rogow also traveled to the island of Chuuk where Typhoon Chata'an had even more disastrous results–47 people died in mudslides. These four EPA employees, working with other federal and local agencies, put in long hours every day for several weeks to help put Guam back on its feet.

In December, another tropical storm, Supertyphoon Pongsona, swept the island. It was the worst disaster to hit Guam in decades. Water, power, and the island's phone system were all knocked out. Cars were overturned, buildings destroyed. Much of the island's fuel supply burned up in a dramatic fire, making transportation extremely limited. This time Mann was already there, on loan to the Guam EPA, and he experienced the typhoon first hand. Although his own apartment was wrecked, Mann volunteered his time and energy again to help Guam recover. From San Francisco, EPA sent Chris Weden and Lance Richman to help out. Once again EPA staff worked tirelessly to help when it counted. And this time, they knew the drill.

U.S.-Mexico Border Communities

Border Communities Help Shape New U.S.-Mexico Border Program

In October 2001, EPA Administrator Christie Whitman and Mexico's Environment Secretary Victor Lichtinger announced their commitment to give special attention to the unique needs of the U.S.-Mexico Border Region. EPA has worked with Mexico to develop a new binational program, "Border 2012," to build upon previous efforts to improve environmental conditions in the border area.

In September 2002, EPA and its Mexican counterpart, the Secretariat of Environment and Natural Resources (SEMARNAT), in partnership with other federal agencies, the 10 states on both sides of the border, and U.S. border tribes, published the first draft of Border 2012.

Immediately thereafter, EPA, SEMARNAT, the 10 border states, and U.S. tribes in the border region began an intense two-month public involvement process that included meetings in 27 different border cities. EPA and SEMARNAT representatives also met with many interested community and stakeholder groups to obtain additional comments and recommendations. They received over 500 comments, and incorporated many of them into the draft Border 2012 Plan.

Technicians taking a sample from a drinking water treatment system on Guam. EPA photo.

Border 2012 aims to achieve concrete, measurable results while maintaining a long-term vision and transparency to the public. Progress will be measured by tracking environmental and public health indicators. The Border 2012 draft and response-to-comments summary is available at www.epa.gov/usmexicoborder.

In 2002, EPA worked with Mexico's state and national environmental agencies to:

- Involve Baja California communities in developing a Tijuana Master Plan identifying drinking water and wastewater infrastructure needs in this burgeoning city for

the next 20 years – the first effort of its kind in Mexico.

- Secure an $18 million EPA sewage treatment infrastructure rehabilitation grant for the Tijuana Sana project, which will be matched by $18 million from the local Tijuana wastewater utility, and a loan of $7 million from the North American Development Bank (NADBank).
- Complete the fourth in a series of Border Sister City agreements – this one between Cochise County, Arizona, and Naco, Sonora – for mutual cooperation on environmental threats and emergencies in the U.S.-Mexico Border area. EPA also provided binational hazmat response training exercises for earlier Sister City participants in Douglas, Ariz., and Agua Prieta, Mexico.

The Binational Tire Pile Waste Project Team stands on the lip of a tire pile at the San Luis Rio Colorado, Sonora, landfill. EPA photo.

- Investigate the size and location of used tire piles in the Border area, as a first step toward eliminating threats of air and water pollution from tire fires.

For details on these and other projects, go to www.epa.gov/region09/border .

Environmental Justice Efforts

The goal of EPA's Environmental Justice Program is to reduce disproportionate environmental impacts to low income neighborhoods and communities of color. Environmental justice at EPA means that the agency's work is done with fair treatment and meaningful involvement of all people regardless of race, color, national origin or income.

EPA continues to integrate the principle of environmental justice into permitting, enforcement, compliance assistance, training, inspection, and cleanup activities, as well as grants to regulatory agencies and communities. In the Pacific Southwest, this includes the work of EPA's Tribal, Border, Pacific Islands, and Brownfields programs. In 2002, EPA accomplished a wide range of environmental protections in geographical priority areas such as East Palo Alto and Barrio Logan (a San Diego neighborhood), Calif.

Several years ago, EPA formed the Barrio Logan Task Force, a cooperative effort with state and local agencies in San Diego to improve environmental conditions in this Hispanic inner city neighborhood. Results of this collaborative effort include:

- A $1.9 million grant from the U.S. Department of Housing and Urban Development to test for lead-based paint in homes and take measures to prevent lead poisoning;
- Providing local auto body shop owners with a compliance assistance workshop and technical support;
- Enforcement action at Master Plating, a metal plating shop in Barrio Logan, which led to a settlement agreement ensuring closure and clean up of the property; and
- An emergency ordinance prohibiting electroplating operations on the former Master Plating property.

The city of East Palo Alto, Calif., has been another important focus of EPA's environmental justice efforts. More than 90% of the city's population are members of ethnic minorities, and 85% of its families with children are on some form of public assistance. In addition to air pollution, as a result of freeway congestion, the residents of East Palo Alto also live with an industrial area containing a former Superfund hazardous waste site, nearly a dozen auto wrecking and towing shops, a cement batch plant, and Silicon Valley's biggest hazardous waste processing facility. Results of EPA's efforts in East Palo Alto include:

- Two grants for youth environmental education were given and a multi-cultural Back-To-School Resource Carnival was organized to provide environmental outreach to 400 youth;

- EPA's Brownfields Program assisted in opening a new community health clinic and nonprofit center on a former industrial site;
- EPA conducted lead poisoning prevention outreach (in cooperation with local governments), providing free lead testing to hundreds of children at Back-to-School Resource Carnival, and institutionalizing lead disclosure throughout the city;
- EPA ensured compliance with the residential Lead Disclosure Rule by conducting inspections at all property management firms, real estate offices, and apartment complexes of more than four units.

Children's Environmental Health

Protecting our children's health is an EPA priority. Children's bodies are still developing, and they may be exposed to more environmental contaminants than adults both because they eat, drink and breathe more per pound of body weight, and because their behaviors – like playing on the floor – may bring them in greater contact with contaminants than typical adult behaviors.

EPA recently released a report, *America's Children and the Environment: Measures of Contaminants, Body Burdens, and Illnesses (Second Edition)*, which includes key measures of children's health and the environment that illustrate trends, progress, and areas that need improvement (at www.epa.gov/envirohealth/children).

EPA has a vital role to play in prevention efforts and has partnered with a number of constituencies to address the most serious children's health threats. Examples include:

Lead

Childhood exposure to lead contributes to learning problems such as reduced intelligence and cognitive development as well as impairment of fetal organ development. A blood lead level of 10 micrograms per deciliter or greater is considered "elevated." However, there is no demonstrated safe level. Despite the significant reduction in blood lead levels in recent years, hundreds of thousands of children between the ages of one and five still have elevated levels.

A primary means of exposure to lead is through peeling paint chips and paint dust in older housing. To settle a lead enforcement case with EPA and HUD involving a large apartment complex in Norwalk, Calif., AIMCO (the property management firm responsible for disclosure of lead information) agreed to test and abate lead hazards in 130,000 rental units nationwide.

Asthma

Asthma is a serious lung disease, and the leading cause of long-term illness in children. It can even cause death. Symptoms include wheezing, shortness of breath, and coughing. Asthma can be triggered by allergens and irritants found indoors, such as second hand smoke, and outdoors, such as emissions from buses and trucks. EPA is encouraging school districts to adopt the *EPA Indoor Air Quality (IAQ) Tools for Schools Program* to provide more healthy school environments, and promoting cleaner school buses to reduce exposure to harmful diesel bus fumes.

Children are more sensitive to pollution than adults because they eat, drink, and breathe more per pound of body weight. Photo: Stephen Delaney.

Healthy Schools Initiative

Over 53 million children spend their day in schools, and a majority of those schools have conditions harmful to learning and health. EPA has a wide range of school programs to help, including a pilot effort with the Los Angeles Unified School District focused on school siting; high performance facility design and construction; and comprehensively assessing environmental health problems at existing facilities.

For a complete description of EPA's ongoing efforts to protect children's health, go to www.epa.gov/region09/childhealth .

Wetlands and Watersheds

U.S., California Finalize Deal to Restore 18,000 Acres of Wetlands in S.F. Bay

In December, 2002, the federal government, the State of California, and Cargill Salt finalized an agreement to purchase 18,000 acres of salt production ponds for wetlands restoration on the southern fringe of San Francisco Bay, concluding four years of negotiation and launching one of the nation's largest wetlands restoration efforts. Some of the ponds will become part of the San Francisco Bay National Wildlife Refuge; others will be owned by the California Department of Fish and Game. The ponds became available because Cargill is reducing and restructuring its local saltmaking operations.

The ponds vary widely in salinity: all are saltier than the ocean, and some are so salty that the brines must be removed before the property can be restored. As part of the acquisition agreement, Cargill will remove the brines from the highly saline ponds. The state and federal agencies will restore some of the ponds to their original state as tidal salt marshes, which provide habitat for fish, birds and wildlife including the endangered California Clapper Rail and Salt Marsh Harvest Mouse. Some ponds will be maintained as habitat for seabirds that feast on brine shrimp, which thrive in the less-salty of the existing ponds.

EPA played a leadership role in the early stages of the negotiation, coordinating the state and federal agencies negotiating with Cargill, and advising the company on its continuing responsibilities to prevent pollution of the Bay and clean up toxic materials left from salt production. EPA also took the lead in public outreach and early coordination with Congressional offices. Once the transaction moved into the formal land acquisition process, the acquiring agencies (U.S. Fish and Wildlife Service and California Department of Fish and Game) and Calif. Senator Diane Feinstein's office led the negotiations. EPA continued to provide substantial support, resolving critical issues associated with managing brines and other saltmaking byproducts that are toxic to fish and wildlife.

A natural salt marsh along San Pablo Bay, Calif. EPA photo

Coastal America, Dow, EPA Start California Corporate Wetlands Restoration Partnership

On November 19, 2002, EPA Administrator Christie Whitman presided over a ceremony that officially launched the California Corporate Wetlands Restoration Partnership (CWRP). The CWRP is an innovative public-private initiative designed to attract private sector funding to restore wetlands and coastal environments. The CWRP coordinates its efforts with Coastal America, a partnership of federal agencies with similar habitat restoration goals. As the CWRP lead for California, Dow Chemical is responsible for attracting other corporate interests to the partnership and working with the Southwest Team of Coastal America to fund wetland restoration projects.

The ceremony was held at the Dow Wetlands Preserve – a 150-acre site adjacent to the Dow Chemical Plant in Pittsburg, Calif. Dow has been a good steward of this wetland and has done much to enhance the habitat and share this resource with the community. Dow hosts school field trips and environmental fairs at the wetlands and has a dedicated group of employees who manage the wetlands.

The CWRP began in Massachusetts in 1999 through the initiative of The Gillette Company, the Massachusetts Executive Office of Environmental Affairs, and EPA's New England Regional Office. To date, there are CWRPs in Alaska, Maine, Connecticut, Rhode Island, Vermont, Massachusetts, New Hampshire, and California. Plans are underway to establish CWRPs in Texas and Canada in 2003. Over 100 companies and over 45 other organizations have pledged more than $3 million in funds and in-kind services to the CWRP. Generally, corporate contributions are matched at a 4:1 ratio by federal or state funds.

EPA People

Michele Dineyazhe

Michele Dineyazhe, right, and Yerington Paiute Tribe Chairman Elwood Emm, Jr., view the abandoned Anaconda Mine Pit near Yerington, Nev. EPA photo.

Michele Dineyazhe is a member of the Dine Nation – known to most Americans as the Navajo – from Cold Springs, Arizona. "I am Todich'iinii (Bitter Water-maternal clan) and born for the Kiyaa'aanii (Towering House-paternal clan)," she says, explaining that growing up on the Navajo reservation, she always had strong ties to her family and their environment.

For the last two years, Dineyazhe has been working as an environmental scientist in EPA's Pacific Southwest Tribal Program Office. She assists Nevada and California tribes with developing and maintaining environmental protection programs. But more than that, she views herself as a resource to the tribes she works with. She loves being able to call a Tribal Chairperson and talk about mining impacts one minute and then about family the next. Dineyazhe says she enjoys meeting new people on visits to the tribes in their homelands.

Prior to joining EPA, Dineyazhe worked in the mining industry and for the Navajo Nation, including internships with mining companies throughout the southwest. Her favorite job was doing geology field mapping for Broken Hill Proprietors Copper at the San Manuel Mine east of Tucson, Arizona. She also worked as a mine surveyor and a production supervisor. At that time, she thought she would always work in the mining industry, but her heart wasn't in it.

Leaving the mining industry, her next job focused on cleanup of abandoned mines, with the Navajo Nation's Uranium Mill Tailings Remedial Action Program (UMTRA). "Our task was to remediate and oversee four uranium mill tailings sites," she says. All four sites have groundwater and soil contamination from uranium milling and processing. She collaborated with federal, state, local agencies, universities, community groups and especially people living next to the mine sites.

She takes pride in knowing that people like a grandmother who lived above the contaminated groundwater plume at Cane Valley, Ariz., will not be drinking water from a contaminated well, or that children swimming in the San Juan River right next to the Shiprock UMTRA site will live long lives and be able to tell their great, great grandchildren, "that's where I went swimming one time." "Ever striving in protecting our people and our Mother Earth; that is where my heart is," she says.

To find out more about tribal programs in EPA's Pacific Southwest Region, contact Michele Dineyazhe at (415) 972-3786 or dineyazhe.michele@epa.gov.

chapter 5 COMPLIANCE & STEWARDSHIP

Compliance information about facilities regulated by federal clean air, clean water, and hazardous waste laws nationwide is now available online at ***www.epa.gov/echo****. For summaries of enforcement cases in the Pacific Southwest Region, go to* ***www.epa.gov/region09/enforcement*** *.*

Combining Voluntary Stewardship and Compliance Assistance with a Strong Enforcement Program

EPA and its state and tribal partners are committed to strong environmental enforcement because it is central to protecting public health and the environment, achieving credible deterrence to noncompliance, and guaranteeing a level economic playing field. Compliance assistance is an important complement to EPA's enforcement efforts, particularly to small businesses, as it helps owners and operators understand how to comply with often-complex environmental law. EPA also employs voluntary approaches to encourage innovations that can lead industries and agencies to go beyond basic compliance.

These voluntary approaches include EPA partnerships with regulated industries; grants that support research and demonstration projects, such as the University of California Sustainable Agriculture Research and Education Program; working with a host of federal, state, local, and tribal agencies to reduce the environmental impact of their own operations; and working to resolve compliance issues wherever possible in ways that benefit the environment and local communities.

Enforcement Highlights

In Fiscal Year 2002, EPA's Pacific Southwest regional office took 276 civil enforcement actions, including administrative orders, penalty actions, field citations and official requests to the Department of Justice to file lawsuits. These actions achieved significant reductions in pollution, underwritten by more than $1 billion in commitments to cleanups and plant improvements. For example, Clean Air Act cases in the region are expected to reduce, eliminate, or control over 1.1 million pounds of air pollutants, while Clean Water Act cases showed reductions of more than 2 million pounds of water pollutants. Some of these cases required parties to undertake "Supplemental Environmental Projects," worth a total of $1.4 million, that benefitted communities through pollution prevention and reduction, and better emergency response capabilities. Regional enforcement actions also garnered more than $6.9 million in penalties. Where appropriate, EPA investigations led to referrals to the Department of Justice for criminal prosecutions. (Highlights of EPA's enforcement accomplishments in protecting air, water and land in the Pacific Southwest Region also can be found in preceding chapters.)

Industry/Agency Stewardship in Agriculture

Over 50% of the nation's fruits and vegetables are produced in California, with additional crops coming from Arizona and (in the case of pineapples) Hawaii. California also leads the nation in dairy production. But agriculture is not just an important sector of the Pacific Southwest Region's economy, it's also the region's largest category of land use, aside from rangeland and forests. Farmers are the owners and caretakers of vast tracts of the region's land.

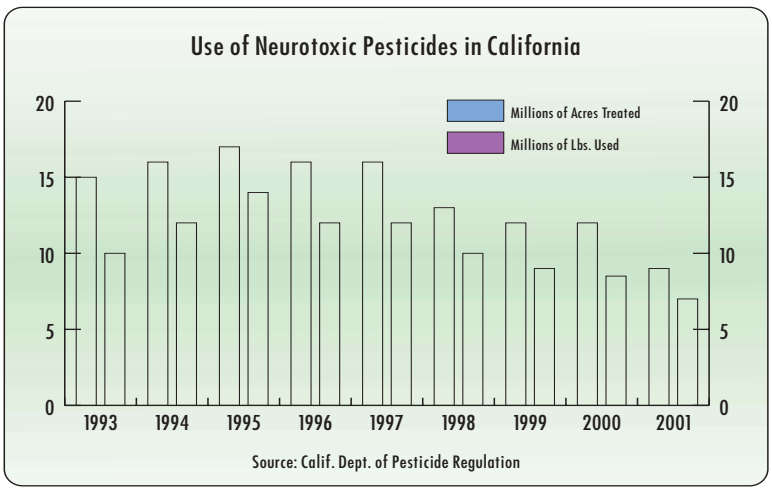
EPA works with farmers, the U.S. Department of Agriculture, state and local government agencies, and state universities to help farms and livestock feedlots comply with federal clean water and pesticide laws, and to encourage sustainable farming methods that promote healthy ecosystems, healthy workers, and a safe food supply. In 2002, EPA managers and staff met with state officials and agriculture industry representatives from all four states and several tribes of the Pacific Southwest Region to discuss priorities on pollution prevention and pest management. EPA also participated in Pest Management Strategic Plan meetings with USDA and commodity producers.

Other notable efforts included:

- EPA grants, in partnership with the University of California, funded Biologically Integrated Farming Systems demonstration projects – such as the 33 California prune growers who eliminated their use of the pesticide diazinon, which is toxic to people as well as aquatic life. Other projects included 11 dairies that used manure as forage fertilizer, 10 (out of 12) walnut growers who eliminated organophosphate pesticides during the trees' dormant season and reduced nitrogen fertilizer use by 53%, and 38 vineyards that cut their use of the herbicide simazine by 65%.
- EPA named Hawaii's Pineapple Growers Association one of 18 nationwide "Pesticide Environmental Stewardship Program Champions" of 2002. The member companies, Dole Food Hawaii, Del Monte Fresh Produce, and Maui Pineapple Company reduced their pesticide/herbicide use through techniques such as:
  - a combination of fallow periods and limited nematicide applications, to control nematodes;
  - using granular ant bait to control ants, which reduces total insecticide use;
  - growing pineapple plants on raised beds, thereby reducing incidence of root rot;
  - using plastic mulch, covering 75 percent of the planted area, which helps reduce herbicide use.

Opposite photo: Jim Grove

As a result of the 1996 Food Quality Protection Act, California farmers have reduced their use of neurotoxic pesticides.



National CAFOs Rule

EPA Administrator Christie Whitman and Agriculture Secretary Ann Veneman announced a final rule in December 2002 that will require large Concentrated Animal Feeding Operations (CAFOs – for example, dairies with over 700 cows; there are about 1,600 CAFOs in the Pacific Southwest) to obtain permits to ensure they protect America's waters from manure. The rule will control discharges from these feeding operations, preventing billions of pounds of pollutants from entering America's waters. Dairy cows, and their manure, have increased by 44% in California alone since 1988, which has increased the importance of proper manure management. EPA has funded an environmental stewardship program that includes training and certification for dairy operators through the California Dairy Quality Assurance Program, a broad partnership including industry, the University of California and other organizations (www.cdqa.org/es). Information on efforts in Arizona is available at www.ag.arizona.edu/animalwaste, and for all of the Pacific Southwest Region at www.epa.gov/region09/animalwaste .

An orchard near Brentwood, Contra Costa County, Calif. Photo: Christy Shake.

Manure-to-Energy

In Riverside County, which has too much cow manure to safely apply to local cropland, the Inland Empire Utility Agency, in partnership with the Milk Producers Council, Synagro Technologies, USDA's Natural Resources Conservation Service and the California Energy Commission, built California's first regional anaerobic digester to turn cow manure into energy. The manure generates methane gas to power a regional water desalting facility that cleans up the salts and nitrates that originally seeped into the groundwater basin from cow manure. The project will ultimately produce over 1 megawatt of clean, renewable energy.

Pesticides Web Sites; Toxic Compost

EPA's Pesticides Web site, www.epa.gov/pesticides, has a new, user-friendly design. Another source for technical information is www.pesticideinfo.org . This site, developed by the Pesticide Action Network North America and several (California) state and federal agencies, sponsors the largest and most comprehensive database on pesticide regulation, registration, and toxicity – and even pesticides compatible with organic production.

EPA also worked with state agencies and composters to respond to concerns about clopyralid, a herbicide used on turf. Clopyralid persists over time, so compost from grass clippings may be toxic to plants. EPA worked with Dow Chemical to withdraw its registration for some clopyralid uses on turf.

Preventing Pollution

Toxics Release Inventory Shows Pollution Declining

The Toxics Release Inventory, a product of the 1986 Emergency Planning and Community Right-to-Know Act (EPCRA), has proven to be one of the most effective non-regulatory approaches to prevent pollution. Under the law, facilities that process or release toxic substances into the environment must annually report their inventory of each of several hundred specific chemicals, and how much of each has been recycled or released into the environment. This has created an incentive to reduce toxic releases, since public disclosure of toxic releases generates public pressure to reduce them. How, or whether, the facility reduces its toxic releases is entirely up to its management.

Among the toxic chemicals recently listed are metals such as arsenic and mercury. Since the first TRI reports from the mining industry revealed that Nevada gold mines were releasing over 13,000 pounds per year of mercury in the air, EPA's Dave Jones (see EPA People, p. 35) has been working with the mines and the state Division of Environmental Protection to voluntarily reduce these emissions. The four largest mines all installed new air pollution

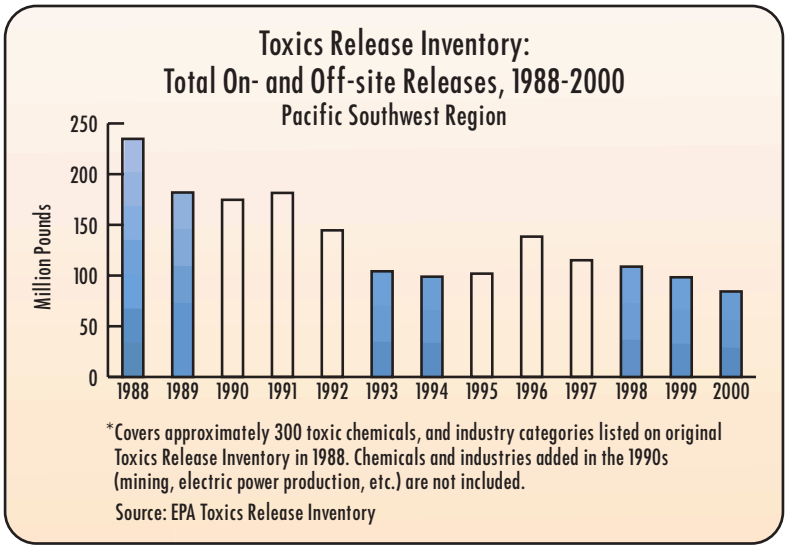
control devices or made process changes to reduce mercury air emissions in 2002. While the data quantifying these reductions is not due until later in 2003, preliminary information from the mines indicates that these actions will reduce mercury air emissions by more than 50%.

Voluntary Pollution Prevention Initiatives

EPA's voluntary pollution prevention programs have achieved impressive results through grants, technical assistance, and recognition of superior environmental performance in both the private and public sectors. Some examples:

- The National Environmental Performance Track program, EPA's premier recognition program promoting pollution prevention, superior performance and sustained environmental compliance, continued to grow in 2002. In the Pacific Southwest, EPA accepted three new facilities into Performance Track: Ricoh Electronics facilities in Tustin and Santa Ana, Calif., and Rohm and Haas' La Mirada, Calif., facility. For the first time, members who joined the Performance Track program in 2000 reported progress toward their three-year pollution prevention commitments. In one year, these 28 facilities reduced their energy use by 15,982 million BTU, used 66,722,418 fewer gallons of water and reduced their hazardous waste disposal by 20.6 tons.
- EPA conducted Environmental Management Systems reviews at 15 federal government facilities in the Pacific Southwest, resulting in 190 EPA recommendations on how the facilities could reduce pollution and mimize waste. The facilities carried out 77% of the recommendations, many involving changes to standard operating procedures. One success story: At the NASA-Ames Research Facility near San Jose, Calif., groundskeepers reduced use of herbicides and chemical fertilizers from 4,000 to just 50 gallons per year, and have set aside 81 acres for burrowing owl habitat.
- Because of its limited land area, Hawaii faces unique waste management and land use concerns. EPA has worked with federal and state facilities to promote the purchase of recycled products such as recycled paper, and carpet made from soda bottles. In 2001 EPA issued a report summarizing green purchasing progress at Department of Defense installations in Hawaii and recognizing the achievements of Hickam Air Force Base. Under a $25,000 EPA grant, the state developed a Hawaii Recycled Products Guide and held an environmental purchasing conference attended by 200 government and commercial procurement officials.
- As a result of the EPA Pacific Southwest Region's Hospital Partnership, each of six San Francisco Bay Area hospitals removed and recycled between eight and 15 kilograms of highly toxic mercury. One hospital switched to a microfiber mopping system that resulted in a 95% reduction in water and chemical use. For more on EPA's Hospitals for a Healthy Environment program in the Pacific Southwest, go to www.epa.gov/region09/features/hospital .
- In 2002, EPA's Pacific Southwest Regional Office in San Francisco recycled a record 285 tons of office paper and five tons of used carpet for a total recycling rate of 56.5%. This is up from 182.81 tons recycled in 2001. The recycling effort generated $5,300 for Child Care Center low-income tuition assistance scholarships and to expand the regional office's waste prevention and recycling programs. The regional office also began using 100% post-consumer recycled paper that is process chlorine-free.

Through annual public disclosure of toxics releases by industrial facilities, EPA's Toxics Release Inventory has led to major reductions in toxic releases in the Pacific Southwest.



EPA's Solid Waste Program

EPA's Solid Waste Program also issues grants to promote recycling. Some results from 2002:

- An EPA grant to Santa Barbara's Community Environmental Council developed a model construction and demolition debris reduction ordinance that has been successfully used in many San Francisco Bay Area jurisdictions. The project also produced three construction debris case studies that achieved 83% - 95% job site waste diversion, recycled 466 tons of waste, and saved $5,532 in disposal costs.
- An EPA grant to the City of Tucson piloted a 90-gallon blue barrel commercial recycling project with 180 small businesses to divert approximately 250 tons of materials per year. The program is being expanded to all 3,200 small businesses citywide to recycle approximately 5,000 tons of waste per year.
- An EPA contract with Building Green, Inc., supported sustainable building practices by verifying and identifying EPA recycled content building materials (such as insulation made from newspaper and playground surfaces made from recycled tires) that must be used on federally funded construction projects. Product environmental information and local availability are included in the GreenSpec Product Directory and database.
- An EPA contract with the Tellus Institute funded a report on using a new contracting technique, Resource Management, to cost-effectively increase recycling rates in Clark County (Las Vegas), Nev., which has one of the nation's lowest recycling rates. The report found that recycling in Clark County could be tripled to 35%, raising recycling revenues and saving over $11 million.

Working with State and Tribal Regulatory Partners

Federal environmental laws are enforced not only by EPA, but by state and tribal agencies as well, once a state or tribal environmental agency shows it has the capacity to do the job. EPA then authorizes the agency to carry out the specific law, and provides annual grants for the added expense to state governments. Most states in the Pacific Southwest have already been authorized to enforce the major federal environmental laws. The most recent example was Arizona's authorization to write permits and enforce pollutant discharge limits under the federal Clean Water Act.

Arizona Gains Water Enforcement Powers

With EPA's approval in December 2002, Arizona became the 45th State with federal Clean Water Act regulatory authority. To reach this milestone, EPA approved Arizona's application to administer and enforce the pollutant discharge permits program, under the federal Clean Water Act. The approval gives the Arizona Department of Environmental Quality (ADEQ) the authority to regulate facilities and municipalities that discharge pollutants into Arizona waterways. Prior to the shift, EPA issued permits to all such facilities. This approval puts the program in the hands of those most familiar with local environmental issues and the needs of Arizona residents. EPA is confident that the state will do a great job administering the program and will continue to protect Arizona's precious water resources.

ADEQ will continue to work closely with EPA to ensure that the Clean Water Act requirements are met. EPA will review draft permits prepared by the state, oversee program requirements and performance, review proposed changes to state laws and rules related to the program, as well as review compliance actions.

Arizona Cities Win EPA National Wastewater Pretreatment Award

The cities of Glendale, Mesa, Phoenix, Scottsdale and Tempe won first place for municipalities, recognizing their partnership in treating industrial wastewater. Such "pretreatment" – removal of toxics from industrial wastewater before it reaches publicly-owned sewage treatment facilities – is essential, since toxics can kill the bacteria that break down the sewage.

Working with Tribes

Law enforcement cases on tribal lands in 2002 resulted in major environmental cleanups and more than $500,000 worth of environmental improvement projects, while penalties totaled over $800,000. Among them:

- EPA fined the city of Phoenix $198,532 for hazardous waste and water pollution violations at the Verde (drinking water) Treatment Plant, on the Salt River Pima-Maricopa Indian Community, and on the Fort McDowell Yavapai Nation. The city

EPA People

Dave Jones

Waste Management Division Associate Director Dave Jones. Photo: Sally Seymour.

David B. ("Dave") Jones' EPA colleagues have called him creative, energetic, innovative, and inspiring. His career at EPA's Pacific Southwest Regional Office, which began in 1973, has spanned six presidencies. During the last 30 years, Jones has contributed to the success of EPA's water, waste and Superfund toxic cleanup programs, and even spent time organizing computer management.

In 1973 Jones started in EPA's Enforcement Division writing wastewater discharge permits. A creative thinker, he pioneered many innovations in the permit process. As a manager in the Water Division from 1976-1987, he oversaw various functions, from wastewater treatment plant construction grants to safe drinking water programs.

In 1987 Jones was chosen to lead a task force to determine how to organize regional computer and information systems, and he became the Region's first Information Resource Management Branch Chief in 1988. Through his insight and energy, the Regional Office made its first leap into the desktop computer age.

For six years, from 1989 to 1995, Jones used his talents to solve problems at some of the most complex and difficult Superfund toxic cleanup sites. He and his staff were responsible for hazardous waste cleanup activities at over 60 Superfund sites, including Stringfellow, San Gabriel, and McColl in Southern California, and the Iron Mountain Mine near Redding, Calif.

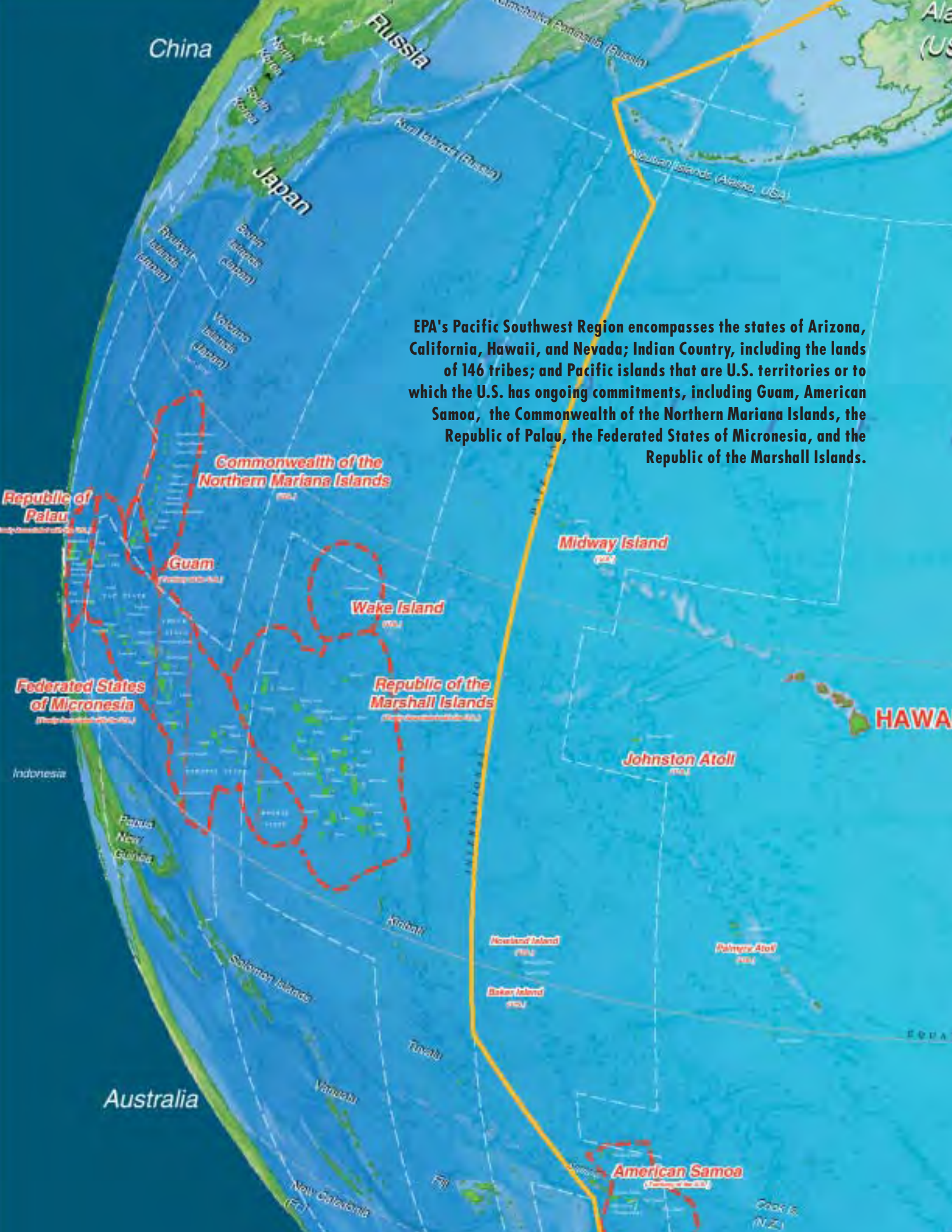
From 1996 to 2000, Jones was responsible for leading a national EPA effort to work with the computer and electronics industry to develop cleaner, cheaper, and smarter approaches to manufacturing and waste management. During this time he also took the lead in developing a mining strategy for the Pacific Southwest Region, to address contamination from abandoned and active mines, with a focus on mercury contamination from abandoned gold mines in California and mercury air emissions from active gold mines in Nevada.

Recently, Jones became an Associate Director of the Waste Management Division, where he shares his talents and creativity working with EPA staff on pollution prevention, solid waste recycling, industrial partnerships, and internal planning.

Dave Jones' many years of public service and dedication to EPA have meant a cleaner environment for everyone in the Pacific Southwest Region. For more information on EPA's pollution prevention and solid waste programs, contact Dave Jones at (415) 972-3388 or jones.davidb@epa.gov.

will also spend $401,468 to buy emergency response vehicles for each tribe.

- In Tuba City, Ariz., leaking underground fuel storage tanks threatened the drinking water for many Hopi and Navajo communities. EPA ordered gas station operators to take action to protect tribal groundwater supplies. By September 2002, work was well underway to remove 13,000 gallons of gasoline from soil and groundwater.



EPA's Pacific Southwest Region encompasses the states of Arizona, California, Hawaii, and Nevada; Indian Country, including the lands of 146 tribes; and Pacific islands that are U.S. territories or to which the U.S. has ongoing commitments, including Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Republic of Palau, the Federated States of Micronesia, and the Republic of the Marshall Islands.

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