

US EPA ARCHIVE DOCUMENT

EPA Progress Report 2006

Pacific Southwest Region

US EPA ARCHIVE DOCUMENT



U.S. Environmental Protection Agency
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Dear Readers,

Last December we marked EPA's 35th year of protecting public health and the environment. With our state and tribal partners we have made great progress in these three and a half decades. Our air, waters and land are much cleaner than in 1970. These gains have occurred at the same time that our population has nearly doubled, miles traveled have nearly tripled and the region has become an economic hub for much of the country.

This year's report offers many examples of how we have managed to align our needs for prosperity and environmental quality. It also shows the power of partnership, stewardship, collaboration, innovation and fair enforcement, focused on environmental results. Partnership dominated our work in 2006. More than half our annual budget went to support the environmental and public health work of states, tribes, local governments and non-governmental organizations. Building and supporting the capacity of others and leveraging their unique talents has enabled us to multiply necessary and durable benefits.

Voluntary effort and creative thinking were the trademarks of the West Coast Collaborative, and moved us significantly ahead in dealing with one of the region's worst air quality issues—diesel pollution. Our collaboration with agriculture is moving this important community to sustainability, as seen in the partnership to utilize new technologies to manage dairy manure. Reaching across borders, our work with Mexico is creating much-needed infrastructure in remote communities and eliminating significant public health threats.

On a broader stage, we have begun work with China's State Environmental Protection Agency to speed the pace at which they will be able to manage the pollution consequences of rapid growth. The benefits will be felt in our own environment as well as theirs. Closer to home, many employees of EPA's regional office went to the Gulf Coast to help the federal response to Hurricanes Katrina and Rita. Their work showed that our disaster preparedness work pays off in being able to respond effectively to major catastrophes.

Again this year our enforcement program secured significant commitments to on-the-ground improvements with big public health benefits, such as major sewer system work in southern California. In addition, many settling parties undertook supplementary environmental projects, bringing vital benefits like emergency equipment or access to safe drinking water to local communities. Under our Superfund program, responsible parties committed more than \$100 million to make progress in cleaning up some of the biggest and toughest toxic waste sites in the country.

As we move forward, we will continue to emphasize partnerships, collaboration, innovation and environmental results in maintaining our steadfast commitment to environmental protection.

A handwritten signature in dark ink, appearing to read 'Wayne Nasti', with a stylized flourish at the end.

Wayne Nasti

Regional Administrator

EPA Pacific Southwest Region

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Clean Air



Urban Areas Attain Clean Air Standards

Phoenix Area Breathing Easier

The best news for the 3.5 million people in the Phoenix metropolitan area is in the air: it's cleaner. Last year, EPA redesignated the Phoenix area (shown above) to attainment of the national health standards for carbon monoxide (CO) and the one-hour ozone (smog) standard. The area is close to attaining, but has not yet attained, the new eight-hour standard for ozone. Phoenix is the most recent major urban area in the U.S. to attain the CO standard. The area had been classified as a "serious non-attainment" area for both CO and ozone.

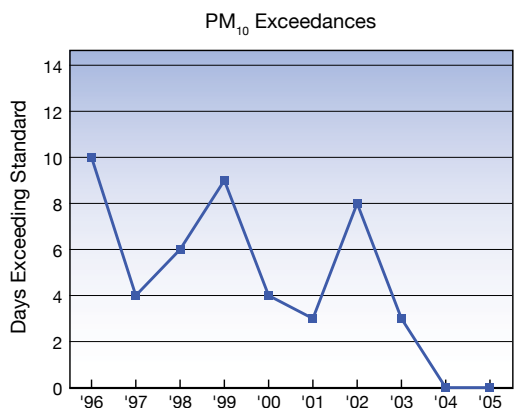
EPA also approved the Phoenix area's maintenance plans for CO and ozone, which lay out specific pollution control measures intended to keep the air clean despite anticipated urban growth. The work that the Phoenix area has done to

achieve the one-hour ozone standard will support future efforts as the Phoenix air quality agencies begin work on the eight-hour ozone plan.

Despite these air quality gains, Phoenix residents still experience the city's "brown cloud" in fall and winter. The urban haze issue is primarily caused by finer particulates resulting from combustion and motor vehicle sources. In addition, the Phoenix area has not attained the health standard for particulate matter, or PM_{10} . The "brown cloud" remains a challenge for the Arizona Department of Environmental Quality, the Maricopa Association of Governments and the new Maricopa County Air Quality Department and will be the focus of air quality activities during the coming year.

In the meantime, the Maricopa County Air Quality Department and EPA have been aggressively enforcing rules that minimize dust. Among them

Unhealthy Air Days in Las Vegas



Graph shows the number of days each year that particulate pollution (PM₁₀) in the Las Vegas area exceeded the national health standard.

is a new county regulation, which took effect in 2005, that reduces dust from sand and gravel operations in the Phoenix area by an estimated 183 tons per year.

Cleaner Air in Las Vegas and Reno Areas in Nevada

Nevada has also seen major gains in air quality in the last several years. Clark County (the Las Vegas area) went from eight days exceeding the PM₁₀ health standard in 2002 to zero in 2004, thanks to dust-control measures in the county's EPA-approved particulate pollution control plan. Last year, EPA made a finding of attainment for Clark County for carbon monoxide (CO), since the area has been consistently meeting the CO health standard.

EPA also made a finding of attainment for Washoe County (the Reno area) in northern Nevada for both the CO and the one-hour ozone health standards. Together, the Reno and Las Vegas areas have a population of more than two million people, the vast majority of Nevada's population.

New PM_{2.5} Standard Poses Challenges

In 2005, the new national health standard for fine particulate pollution—PM_{2.5}—took effect. PM_{2.5} is made up of very fine particles of sulfates, nitrates and carbon compounds that can lodge deeply in the lungs, causing a myriad of respiratory and heart health problems. The particles can be emitted directly from combustion or can form from chemical reactions in the air. These chemical precursors come from a variety of sources, including cars, trucks, buses, construction equipment, industrial facilities and power plants. In the Pacific Southwest Region, only the San Joaquin

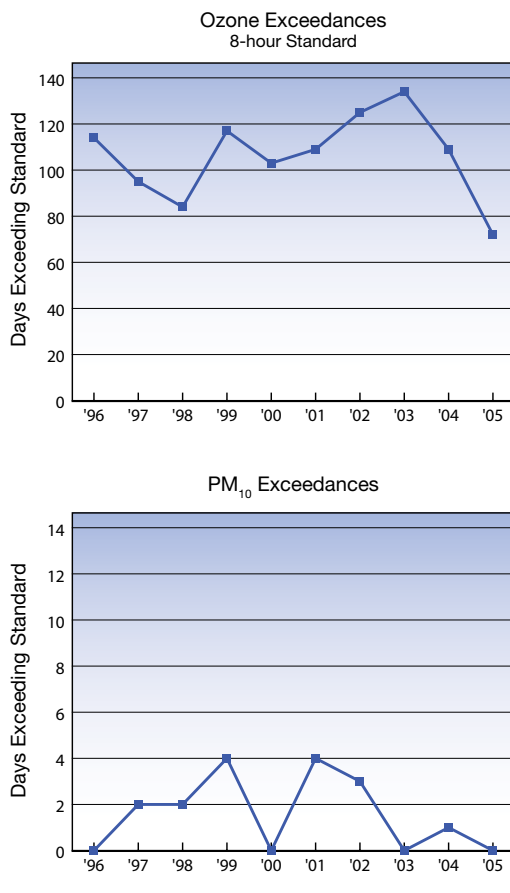
Valley and the Los Angeles area failed to meet the standard.

In California, PM_{2.5} tends to be higher in the fall and winter because nitrates form more readily in cooler weather and because increased use of wood stoves and fireplaces produces more carbon. This is especially true in the San Joaquin Valley, where PM_{2.5} reaches unhealthy levels during the fall and winter. In the Los Angeles area, by contrast, PM_{2.5} pollution can reach unhealthy levels at any time of year because the huge number of motor vehicles there emit PM_{2.5} year-round. The area reduced its PM_{2.5} pollution by 16% last year, but it was not enough to meet the health standard.

San Joaquin Valley Makes Progress

Air quality in the San Joaquin Valley is improving. Most PM₁₀ monitors within the valley are showing attainment with the PM standard. For ozone, the valley's air worsened in 2001-2003, reaching a peak of 134 days of unhealthy air in 2003. By 2005, however, the number of unhealthy smog days had fallen to 72.

Unhealthy Air Days in San Joaquin Valley



Graphs show the number of days each year that ozone (smog) and particulate pollution (PM₁₀) in the San Joaquin Valley exceeded national health standards.



Top: Sunflowers at Red Rock Ranch near Fresno, Calif.
Bottom: John Diener, owner of Red Rock Ranch, with oil press he uses to make biodiesel fuel from sunflower and safflower seeds.

Significant progress in reducing particulate pollution can be attributed to the San Joaquin Valley Unified Air Pollution Control District's Conservation Management Practices Program, which requires farmers with 100 acres or more of contiguous land to use crop-specific methods of reducing particulate emissions. Farmers were required to implement their pollution prevention measures by July 1, 2004, and submit their measures to the air district in permit applications by the end of 2004. The air district received 6,400 applications covering 3.2 million acres of farmland.

To help further reduce the valley's air pollution, EPA has funded two demonstration projects as

part of the West Coast Diesel Collaborative. EPA has provided \$100,000, and other Collaborative partners \$160,000, to the valley-based nonprofit Sustainable Conservation to demonstrate the farm-scale use of biodiesel and to test a fuel additive that can reduce nitrogen oxide emissions. The additive is made from plant-based oils, such as sunflower oil. The project will measure reductions in emissions of nitrogen oxides, CO, particulates, hydrocarbons, and sulfur dioxide.

EPA is also providing \$50,000 to Cal State University-Fresno's Center for Irrigation Technology (with \$25,000 in matching funds from partners) for low-cost irrigation pump efficiency tests, retrofit research, and rebates for retrofit and repair of inefficient pumps. This project alone is expected to reduce nitrogen oxide emissions in the valley by nearly 20 tons a year. Both demonstration projects also benefit farms and the environment by reducing energy costs and greenhouse gases, and providing new markets for crops that can be turned into biodiesel.

West Coast Diesel Collaborative Update

Reducing Diesel Emissions in the Sacramento Area

In 2004, EPA convened the West Coast Diesel Collaborative, an alliance of more than 60 federal, state, and local government agencies, as well as nonprofit and business partners working together to reduce diesel emissions from Baja California to British Columbia. Since the Collaborative's launch in September 2004, it has funded 28 separate diesel emissions reduction projects with nearly \$2.5 million in EPA grants and more than \$15 million in matching funds from other partners.

The Collaborative is part of EPA's nationwide Clean Diesel Campaign to reduce millions of tons of diesel air pollution, prevent approximately 21,000 premature deaths and eliminate hundreds of thousands of respiratory illnesses every year.

EPA Administrator Stephen L. Johnson traveled to West Sacramento, Calif., on August 22, 2005, to announce the latest \$1.4 million in diesel grants. "The public-private partnership of the West Coast Collaborative will yield immediate reductions in existing diesel fleet emissions and advance our progress toward cleaner air in our cities, ports and farmland," said Johnson.

The first of these grants, for \$211,000, was presented to the Sacramento Metropolitan Air Quality Management District for a construction equipment retrofit demonstration project. Another \$774,000 in matching funds is being provided from Collaborative partners.

The project is measuring the results of the retrofit technology in reducing particulate matter and other air emissions. Once the data are verified, this technology will be eligible under other grant and retrofit programs to be installed on a wide variety of diesel fueled vehicles.

Earlier in the year, EPA Regional Administrator Wayne Nastri joined CalTrans and Amtrak officials in presenting the Sacramento air district a \$150,000 EPA grant to reduce diesel pollution from locomotives that move commuter trains between Sacramento and Oakland. The Cleaire emission control systems installed on two locomotives in this pilot project filter particulates and transform additional pollutants into harmless compounds.

"This voluntary project reduces the risk from air pollution for nearly 20,000 residents who live along this vital train corridor," explained Nastri. "It means that the air district will be able to take 220 tons of diesel air pollution out of the air, a significant air pollution reduction."

EPA is funding a demonstration project using different technology to reduce diesel emissions from the Roseville Rail Yard in Placer County, just east of Sacramento. In rail yards, switching locomotives idle constantly when they're not moving rail cars around—creating air pollution constantly. The technology used here is a smokestack emission scrubbing system used in factories. The emissions will be captured by placing a hood over the exhaust stacks of the locomotives while they are being serviced.

This project, supported by a \$39,000 EPA grant and \$100,000 from the Placer County Air Pollution Control District and other Collaborative partners, is expected to reduce the rail yard's nitrogen oxide emissions by over 100 tons per year, and particulates by more than two tons per year.

Container cranes at Port of Long Beach, Calif. Diesel powered ships, trucks, and freight-moving vehicles at ports are a major source of air pollution.



Ports of Los Angeles and Long Beach Focus on Diesel Emissions

After decades of aggressive air pollution control measures in the Los Angeles Basin, the region's air is dramatically cleaner, though it still fails to meet national health standards. The ports of Los Angeles and Long Beach handle one-third of the entire nation's container cargo. The ports, with their ships, trucks and freight-moving vehicles, are among the basin's largest sources of air pollution. Container traffic through these two ports is projected to quadruple over the next 20 years, presenting an opportunity to improve air quality as older diesel equipment is replaced with cleaner-burning engines.

EPA was an active participant in a Port of Los Angeles task force dedicated to ensuring that there will be no net increase in air pollution from the port's operations as they expand in the years ahead. The Port of Long Beach has adopted a "Green Port Policy" with similar goals. EPA has provided a \$100,000 grant to the South Coast Air Quality Management District, with more than \$2.1 million in matching funds, to retrofit a locomotive servicing the two ports to operate primarily on cleaner-burning liquefied natural gas. This project is projected to cut annual emissions of smog-forming nitrogen oxides by about 17 tons, and particulates by 860 pounds.

EPA has also provided a \$75,000 grant to the Port of Long Beach, with \$525,000 in matching funds from other partners, to retrofit three yard hostlers with liquefied natural gas engines, and compare their power and effectiveness with equivalent diesel-powered freight moving vehicles over a six-month period. The goal is to cut the yard hostlers' nitrogen oxide emissions by 63%, and particulates by 80%.

EPA Administrator Stephen L. Johnson announced \$1.4 million in grants aimed at curbing diesel pollution as part of the West Coast Collaborative.

EPA has even put part of a company's air pollution penalty to work reducing the port's air emissions. As part of a \$900,000 legal settlement with EPA, the ARCO Terminal Services Corp. agreed to spend \$675,000 on a project to demonstrate a new emissions control technology for rubber-tired gantry cranes at the Port of Long Beach.

Diesel Collaborative Extended to Hawaii

In November 2005, EPA awarded a \$135,000 grant to the American Lung Association of Hawaii to replace older, dirtier diesel construction equipment engines with newer, cleaner engines to reduce air pollution on Oahu and Kauai. The grant marked Hawaii's first participation in the West Coast Diesel Collaborative.

The Grace Pacific Corporation will contribute \$592,200 for the project. Grace Pacific employs numerous diesel-powered vehicles in its quarries on Oahu and Kauai.

Turning Crops, Restaurant Waste into Biodiesel

Biodiesel is a sustainable fuel source that reduces emissions of carbon monoxide, unburned hydrocarbons, particulate matter and sulfur dioxide. Its use can improve air quality and help reduce dependence on limited energy resources and imports.

In May 2005, EPA awarded a \$75,000 grant to a group of nonprofit, business and government organizations in Santa Cruz, Calif., to fund an innovative project to convert restaurant wastes into biodiesel fuel for area transit systems.

The project hopes to demonstrate the economic viability of a community-based biodiesel collec-

tion, production and distribution chain using locally-generated waste vegetable oil.

Partnerships

Nevada Cuts Mercury Air Emissions by Building on Voluntary Program

The Nevada Division of Environmental Protection (NDEP) will require mercury air emission controls at precious-metal mining facilities through a new mercury air emissions control permitting program. The new state permit requirement will apply to precious-metals mining facilities that process mercury-containing ore and use thermal treatment processes that have the potential for emitting mercury into the atmosphere.

This state regulatory program will build on the success of the EPA/NDEP Voluntary Mercury Reduction Program for Nevada gold mines that reduced annual mercury air emissions from 21,098 to 3,755 pounds between 2001 and 2004, an 82% reduction in just three years. The state program will include mandatory monitoring, record keeping and reporting requirements, and improved and additional mercury air emission controls.

West Oakland Toxics Reduction Collaborative

In April 2005, EPA staff and community members of the West Oakland Environmental Indicator Project convened the West Oakland Toxics Reduction Collaborative in Oakland, Calif. West Oakland has high levels of air pollution because the freeways that pass through it are adjacent to the Port of Oakland, where diesel-powered trucks, trains, and ships are constantly loading and unloading. About 50 stakeholders are involved, including community groups and residents, industry, government, elected officials, and nonprofits focused on environmental justice and community health. The collaborative is putting together a diesel reduction action plan, expected to be completed by mid-2006.

Tucson Community Air Toxics Project

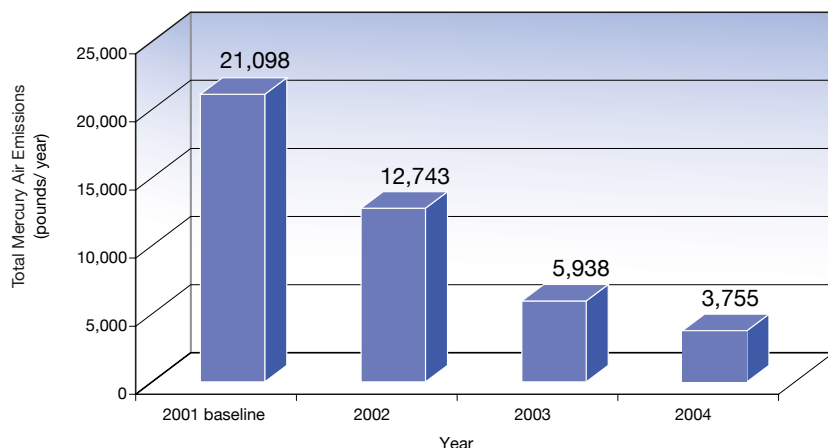
EPA awarded a \$60,920 grant to Arizona's Sonora Environmental Research Institute (SERI) for a community-based air toxics project in the southern metropolitan Tucson area and the nearby communities of Sunflower/Continental and Rillito. Goals include identifying localized air toxics hot spots and sources, engaging local residents in improving air quality, and approaching industry sectors to achieve voluntary emission reductions.

As a first step, SERI partnered with the Rose Family Wellness Centers to provide environmental health training to local residents who volunteer as "promotoras del barrio"—neighborhood co-

Between 2001 and 2004, Nevada's biggest gold mines reduced their emissions of toxic mercury vapors by 82%.

Reduction in Mercury Air Emissions

Reported by Members of the Voluntary Mercury Reduction Program (VMRP)



ordinators. SERI has completed an inventory of potential air toxics sources, and is setting up an air monitoring program to assess hot spots. Air sample collection devices, known as “buckets,” are being distributed to neighborhood volunteers so that when they notice chemical odors, the air can be sampled and analyzed.

Arizona Clean Fuels Refinery Permit

The proposed Arizona Clean Fuels Refinery in Yuma, Ariz., would be the first new oil refinery built in the U.S. in more than 30 years. EPA worked in partnership with the Arizona Department of Environmental Quality during their permitting process for the refinery, and the permit was issued in the record time of nine months. This collaboration led to major reductions of the planned refinery's emissions: 80 tons per year of volatile organic compounds, and 140 tons per year of nitrogen oxides, both precursors of smog. The refinery still needs approval from several other agencies before it can be built.

Air Monitoring on Tribal Lands, Baja California

Tribal lands are often remote from cities, but many of the Pacific Southwest's tribes are also affected by ozone and particulate air pollution. Of the region's 146 tribes, 48 are located in areas that fail to meet the national 8-hour health standard for ozone, and 28 are in areas that fail to meet the health standard for fine particulates (PM_{2.5}). To help tribes protect air quality, EPA supports tribal air programs: In 2005, the agency awarded a total of \$3.4 million in Clean Air Act grants to 25 tribes in the region. Much of this funding goes to purchase, install, and operate air monitoring equipment.

EPA is actively working to help build the capacity of tribal governments to regulate sources of air pollution located within their jurisdictions. Last year, EPA trained tribal inspectors by conducting joint EPA-tribal air permit compliance inspections at 11 facilities on the Navajo and Gila River Indian reservations.

The AirNOW Web site, at www.airnow.gov, gives current air quality conditions everywhere in the U.S., as well as some locations in other countries. In 2005, the site gained links to 13 air monitoring stations in Baja California that measure air quality along the U.S.-Mexico Border. Current air quality conditions in this area are now accessible on-line at www.aire.bajacalifornia.gob.mx/eng. Ten years ago, EPA worked with the California Air Resources Board (CARB) and Mexico's SEMARNAT (federal environmental agency) to install the monitoring stations. EPA funded the equipment and installation; CARB funds their operation.

EPA People

Two of the most productive and popular members of EPA's Pacific Southwest Air Division are also “charter employees” of the agency, having served EPA since 1971: **Jim Forrest** and **Julie Rose**. For most of the years since then, they've held two key positions: Jim oversees input of all air monitoring data throughout the region into EPA's national Air Quality System (AQS) database. Julie assists in processing EPA's review and approval of state and local air quality plans. These ongoing tasks are crucial to targeting pollution control measures to the areas where they're most needed.

Jim began working for the federal government as a computer programmer for the Navy in Washington, D.C. in the early 1960s, when computers were as big as school buses, had whirling tapes, and were fed thousands of keypunch cards to input data. Today, he works from a desktop computer to access air monitoring data for any of the 50 states.

Nationwide, thousands of air monitoring stations collect data around the clock, in rural as well as urban areas. In the Pacific Southwest, they are maintained by 35 local air agencies, tribes, and states. The agencies submit their data quarterly to the AQS. In 2006, 11 additional tribes are submitting their data for the first time.

For these new users, as well as people in EPA's regional Air Division and state or local air agencies, Jim sets up system accounts, user IDs and passwords, and walks them through the system. And as the new data comes in, Jim checks it for completeness and accuracy. If a number looks suspicious, he asks the technical contact questions and checks for errors.

Julie has been the keeper of the Pacific Southwest states' air quality plans,



technically known as State Implementation Plans, or “SIPs,” since 1972.

These plans detail the pollution control measures state and local air districts adopt to ensure that their area meets federal air quality standards, or is on track to meet them by specific deadlines. Such measures can include anything from regulating the recipe for asphalt to requiring car emission inspections—it's up to the states and their agencies to choose them. Major urban areas generally have voluminous SIPs, and revise them frequently. California's South Coast district, which includes the Los Angeles area, has thousands of pages of control measures in their SIP. Each SIP revision goes to EPA for review.

Last year, the Pacific Southwest states submitted a total of 40 SIP revisions. Julie reviews Nevada SIP revisions and helps Air Division staff write Federal Register notices consistent with the ever-changing regulatory requirements. These reviews determine if each revision will be effective in meeting federal health standards. Once a review is complete, Julie helps draw up Federal Register Notices proposing EPA's approval or disapproval.

Over the years, Julie has been instrumental in streamlining procedures to expedite review of SIPs. Once they are approved by EPA, the regulations in SIPs become federally enforceable. The work has been essential in achieving cleaner air throughout the Pacific Southwest despite huge increases in population and motor vehicles since 1970.

Clean Water



Protecting and Improving Water Quality

Ensuring the safety and quality of the public's drinking water and watersheds is of utmost importance. Our bays, rivers, streams and lakes support critical fisheries, habitat, drinking water, recreation, and urban and agricultural environments. Protecting and restoring the waters of the region is a responsibility EPA shares with its state, tribal, territorial and local partners, who implement many federal water programs and share the commitment to improve and restore the health of watersheds in the Pacific Southwest.

Investments in drinking water and wastewater infrastructure and watershed restoration form the backbone of restoring polluted waters throughout the region. EPA strives to achieve watershed restoration by using key program tools such as Total Maximum Daily Loads (TMDLs), water qual-

ity discharge permits, the nonpoint source grant program, and rigorous enforcement.

The TMDL process provides an assessment and planning framework for identifying pollutant load reductions or other actions needed to attain water quality standards that protect aquatic life, drinking water and other designated uses. TMDLs address all significant pollutants that cause or threaten to cause pollution in a water body that the state has determined to be impaired.

Focus on Watersheds

EPA's Pacific Southwest Regional Office is involved in geographic initiatives—such as the CALFED Bay-Delta Program, the U.S.-Mexico Border and other high priority watersheds such as Klamath River and Lake Tahoe.

Klamath River System Struggles with Toxic Algae, Water Diversions

The Klamath River, which starts in Oregon, travels for approximately 250 miles through California before flowing into the Pacific Ocean near Crescent City (as pictured on opposite page). The river is impounded by six dams—one for water delivery and five for hydroelectric generation, part of PacificCorp's Klamath Hydroelectric Project. EPA's two Pacific coast regional offices have been working with California, Oregon, and six local tribes to coordinate environmental programs and projects in water quality, fisheries and watershed restoration.

During the summer of 2005, monitoring by the Karuk tribe detected a significant and prolonged bloom of toxic blue-green algae in two reservoirs on the Klamath River. Water samples taken from Copco and Iron Gate Reservoirs—located in northern California, near the Oregon border—revealed high levels of the toxic blue-green algae *Microcystis aeruginosa* and its corresponding toxin microcystin. Due to concerns about potential adverse health effects, the State Water Resources Control Board and EPA joined tribal, state and federal agencies in warning residents and recreational users of the river to use caution when near such blooms. The nutrient-rich waters of the Klamath River, coupled with the warm temperatures and calm waters in the reservoirs, pro-

vide conditions conducive to the growth of this species of blue-green algae.

Several water bodies in the Klamath Basin—including the Klamath River from Link River to the Pacific Ocean, as well as the Lost, Shasta, Scott and Salmon Rivers—are impaired by pollution. Oregon and California are developing water quality improvement plans, or Total Maximum Daily Loads (TMDLs) for several parameters, including nutrients, pH, dissolved oxygen, ammonia toxicity, temperature and bacteria. EPA is working closely with the North Coast Regional Water Board to assist with TMDL development in northern California, and with the Oregon Department of Environmental Quality on TMDL development in Oregon. EPA is providing technical and financial support and is coordinating with tribes and federal resource agencies.

Protecting the Lake Tahoe Watershed

Lake Tahoe, 12 miles across and more than a quarter-mile deep, has been gradually losing its famed clarity since the 1960s as a result of nutrients entering the lake from air pollution, contaminated stormwater runoff and soil erosion. As Lake Tahoe is listed as an impaired water body under the Clean Water Act (Section 303(d)), EPA is working with the states of California and Nevada to develop Total Maximum Daily Loads (TMDLs) for

Impaired Waters in the Pacific Southwest

Reported by State, Type of Water Body

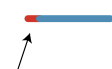
Arizona

187,067 total acres

4,980 total miles



6.5% of perennial lake acres impaired

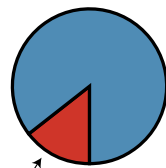


6.9% of perennial stream miles impaired

Nevada

533,239 total acres

14,988 total miles



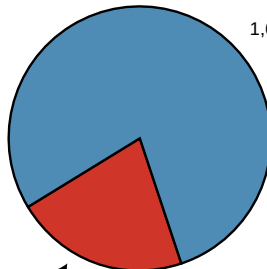
14.4% of lake and reservoir acres impaired



9.8% of perennial stream miles impaired

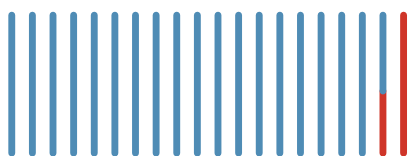
California

1,672,684 total acres



21.6% of lake and reservoir acres impaired

211,513 total miles



10.6% of stream miles impaired

Chart showing the percentages of total stream miles and reservoir acres that these states have reported as "impaired" based on their assessments to date. Hawaii reports 70 streams and 174 coastal stations showing impairment, but there is insufficient baseline data to compute percentages. Percentages may change as water bodies are further assessed.



Lake Tahoe's clarity has been reduced by sediment and nutrients entering the lake from stormwater runoff, soil erosion and motor vehicle exhaust.

sediment and nutrients. The TMDLs will identify how much sediment and nutrient reductions are needed in order to restore the lake's clarity.

Fifty-four percent of the Lake Tahoe Basin's residents and visitors get their drinking water directly from the lake. On May 5, 2005, EPA, the Tahoe Regional Planning Agency, and the Nevada Tahoe Water Suppliers Association hosted the first public forum to discuss protection of Lake Tahoe as a drinking water source. At the meeting, EPA announced a \$150,000 grant to the Nevada Tahoe Conservation District to fund additional staff to work with local leaders on critical issues such as runoff pollution, protecting the lake as a drinking water source, and forest health.

EPA is working with local researchers and agencies to establish a Tahoe Science Consortium to advise basin agencies on needed research and monitoring in the basin. On August 20, 2005, EPA, along with five other federal and state agencies and six research institutions, signed a Memorandum of Understanding to establish the consortium. In 2006, EPA is awarding a \$240,000 grant to the University of Nevada, Reno, to support a director to run the consortium and to develop a long-term science plan for the basin.

EPA has provided almost \$30 million since 1997 to promote water and air quality efforts in and around the lake, and has a full-time staff person, Jane Freeman, working with local officials on lake issues.

Maui Sustainable Farm Plan Helps Protect Coral

In 2004, as part of the interagency Coral Reef Task Force, EPA and the USDA's Natural Resources Conservation Service helped develop Hawaii's Local Action Strategy to Address Land-

based Pollution Threats to Coral Reefs. In 2005, the Maui Land and Pineapple Co. endorsed the Strategy and used it as a guide for their plans to restore and reuse lands formerly used to grow pineapple.

The company has agreed to restore hundreds of acres of high-elevation pineapple tracts to native forest. Lower cultivated lands will be converted to organic farming, sustainable livestock grazing, a golf course maintained without chemical pesticides and fertilizers, and adjacent housing. This conversion of a former pineapple plantation is expected to reduce polluted runoff that flows into Honolua Bay, and help restore coral reefs and marine life.

National Estuary Program Protects, Restores Coastal Habitat

EPA's National Estuary Program (NEP) in 2005 protected or restored thousands of acres of fish and wildlife habitat surrounding Morro Bay, Santa Monica Bay, and the San Francisco Bay-Delta Estuary. The EPA-funded San Francisco Estuary Project's many partners have acquired or restored more than 10 square miles of wetland wildlife habitat and six miles of riparian habitat for steelhead trout and other native fish species, including 1,000 acres at Dutch Slough.

On the central California coast, partners in the EPA-funded Morro Bay NEP acquired 10.3 acres of coastal dune scrub that had been zoned for urban development. Instead, the land was added to the adjacent Montana De Oro State Park. In Southern California, the EPA-funded Santa Monica Bay Restoration Authority and its many partners protected 1.2 square miles of estuary habitat, enhanced more than two square miles of habitat, and restored 7.4 acres. The project included acquisition of 588 acres of coastal woodland upland habitat at the SOKA Property in the Malibu Creek watershed, removal of invasive non-native plants on 600 acres (nearly a square mile) of Cold Creek Canyon, and reestablishing aquatic vegetation on 7.4 acres of submerged land.

Safe Drinking Water Challenges

In 2005, 95% of the population served by public water systems in the Pacific Southwest received drinking water that met all federal drinking water standards. Small water systems will be increasingly challenged by new federal drinking water rules designed to reduce people's exposure to disease-causing pathogens and disinfection by-products. The new rules require additional treatment and controls such as filtration, disinfection and source protection to reduce exposure to

waterborne pathogens while minimizing the risks from disinfection byproducts.

In addition, EPA's new standard of 10 parts per billion (ppb) of arsenic in drinking water took effect on January 23, 2006, affecting nearly 20% of the water systems in Arizona, California and Nevada, many of them small systems serving less than 500 persons. Many of these small systems, which pump ground water from wells, may need to install treatment technology for the first time and must find ways to pay for the treatment. Water system operators will need to be trained. Customer rate increases may result from these additional investments.

EPA is providing training for state, tribal, and water utility workers, and will collaborate with states and tribes on compliance assistance and enforcement. In 2006, EPA's Pacific Southwest Regional Office will make available to states \$110 million to provide as loans to help water systems make capital improvements to meet the new standards. EPA will also work with states, tribes, and water districts to identify alternative funding mechanisms, including other federal and state programs.

Reducing Stormwater Impacts

Taking Action Against Polluted Runoff

Polluted runoff can come from variety of sources—oil and toxic fluids from industrial sites, auto wrecking yards, highways, and airports; sediment from construction sites; livestock manure; and trash and pet waste from urban streets. In California, Nevada, Hawaii and Arizona, the rainy season brings the most polluted runoff, as these contaminants wash off the land and into nearby waterways. State and federal law require the people responsible for industrial pollution sources to prevent such pollution by preparing and implementing a stormwater management plan.

Hawaii Transportation Department to Reduce Polluted Runoff

In October 2005, EPA, the Hawaii Department of Health, and the Hawaii Department of Transportation (HDOT) reached a settlement regarding HDOT's violations of Clean Water Act requirements to prevent polluted runoff. Under the agreement, HDOT will perform an estimated \$50 million worth of actions over the next five years to reduce pollution in stormwater runoff from highways, airports, and road construction sites. The settlement requires HDOT to:

- Update and improve its existing plan for storm sewer management on Oahu highways. This includes improving removal of sediment and debris from roadsides and storm drain catch



PHOTO BY RUTH ANN ANGUS

basins, reducing roadside erosion, and controlling other sources of pollution in its storm drainage system.

- Set new procedures for controlling stormwater at highway construction projects. This will include improved planning of proposed projects, and inspecting the work of HDOT contractors.
- Improve management of stormwater at airports. This includes managing operations conducted by HDOT as well as an enhanced program of inspections and enforcement against airport tenants who violate stormwater rules.

These improved stormwater management activities will lead to cleaner streams and coastal waters, as well as healthier reefs. On Oahu, HDOT's activities will be focused on watersheds upstream from waters known to be stressed from pollutants such as sediment, turbidity, or litter.

In addition, under this settlement HDOT will pay \$1 million in penalties. HDOT will also spend about \$1 million to establish a management system for the agency's many environmental obligations at its highways, airports, and harbors, as well as \$60,000 to provide training on stormwater controls to construction contractors throughout the state.

Soft Drink Bottler Cleans Up Stormwater

In settling EPA's largest-ever water pollution case against a soft drink bottler, the Seven-Up/RC Bottling Company of Southern California last November agreed to install a new wastewater treatment system at its Buena Park facility and carry out stormwater control plans and inspections there and at another facility in Vernon, Calif.

A three-year investigation by EPA and the U.S. Attorney's office found that runoff from the bottling

Tidal wetlands of Morro Bay, on the Central California Coast.



Wetlands near Limantour Beach, Point Reyes National Seashore, Calif.

plants was polluting the Los Angeles and San Gabriel Rivers with grease, petroleum by-products, and acid drink product “rejects”—batches of drinks that had gone bad and could not be used. In addition, the Buena Park facility was discharging acidic wastewater into the Orange County Sanitation District sewer system and a tributary of the San Gabriel River. Acidic wastewater can corrode sewer pipes and damage sewage treatment facilities.

Under terms of a settlement in federal court, Seven-Up entered guilty pleas to 12 counts of violating the Clean Water Act and agreed to pay a \$600,000 criminal penalty and a \$428,250 civil penalty. Half of the company’s criminal fine will go to environmental projects administered by Channel Islands National Park, the National Marine Fisheries Service, Los Angeles County, and the California Hazardous Materials Association.

A Hard Look at Auto Wrecking Yards

Poorly-managed auto wrecking yards can release toxic fluids like fuel, oil, anti-freeze, power steering and brake fluids, and mercury onto the ground. When it rains, the toxics either seep downward into the ground water, or wash off into storm drains, polluting rivers, creeks, and coastal waters. Last year, EPA’s Pacific Southwest Office stepped up an ongoing effort to identify junkyard violators and bring their operations into compliance.

EPA has conducted outreach to the auto dismantler community for several years. In particular, EPA has worked with the industry trade association in California to improve environmental practices. Compliance assistance videos, brochures, and workshops have been developed in multiple languages to assist owners in understanding the requirements. EPA also brings enforcement cases

against violators: In 2005, the agency fined C&T Auto Wrecking of Pomona, Calif., \$15,000 for discharging contaminated stormwater into storm drains which flow to a nearby creek.

Initiating enforcement only for violating permits, however, would miss an equally important segment—those facilities that have evaded permitting altogether. In 2005, EPA identified 63 Northern California auto wrecking facilities that were suspected of operating without a stormwater discharge permit and sent them letters identifying their responsibilities for preventing pollution. After further investigation, EPA initiated enforcement actions against 11 facilities. Thirteen of the 63 facilities have since applied for stormwater permits (which require a plan to prevent polluted runoff), 11 have shut down or were sold to new owners, 12 were exempt from permit requirements, and seven were found to have obtained permits.

Wetlands

Wetlands are essential for flood control, filtering pollutants, and fish and wildlife habitat, and therefore the federal Clean Water Act prohibits filling most wetlands without a permit. These permits, issued by the U.S. Army Corps of Engineers, can only be granted when there is no “practicable alternative” to filling the wetland.

Saving “Aquatic Resources of National Importance”

When wetlands that qualify as “Aquatic Resources of National Importance” are threatened by a proposed development, EPA can initiate a dispute resolution process with the Corps and the developer. One matter resolved last year involved the controversial Montanera Development in the Gateway Valley of Contra Costa County, Calif. Community groups had opposed the development for 17 years. The developer agreed to eliminate a planned golf course, reduce the graded area by 119 acres, save two additional acres of wetlands and more than a mile of tributaries to Brookside Creek, plant 12 acres of riparian vegetation along creeks, and set aside 1,354 acres for permanent preservation by the East Bay Region Parks District and the East Bay Municipal Utilities District.

Enforcement Cases Protect Streams and Wetlands

In last year’s biggest wetlands enforcement case in the Pacific Southwest, Adam Brothers Farming, Inc. agreed to preserve approximately 23 acres of wetlands, creeks, and riparian habitat on their property in northern Santa Barbara County and perform other conservation projects as part of a \$1.15 million settlement. EPA alleged that the

company unlawfully filled 70 acres of federally-regulated wetlands in the late 1990s, including portions of Orcutt Creek.

The settlement will allow the Land Conservancy of San Luis Obispo County to purchase and permanently protect two key wetlands parcels: 12 acres at the Black Canyon Mouth, adjacent to the Guadalupe-Nipomo Dunes wetland complex; and the Dana Adobe Wetland Complex, a 40-acre parcel that includes nearly three-quarters of a mile of Nipomo Creek. These parcels shelter aquatic resources similar to the wetlands damaged by Adam Bros. along Orcutt Creek.

In another case, KB Home of Nevada Inc. bulldozed a 160-acre site in southwestern Las Vegas,

Nev., including a tributary to Las Vegas Wash, without a permit required by the Clean Water Act. After learning of the violations, KB Home agreed to fund \$193,000 to the Bureau of Land Management for work on riparian restoration projects in the Red Rock Canyon National Conservation Area. Projects included fencing Calico and Ash Springs, expanding the riparian enclosure at Wheeler Camp Spring and removing tamarisk and other invasive weeds at selected springs. The developer also paid an \$80,000 penalty. The restoration projects are ongoing.

EPA People

In 2004 and 2005, the threatened Delta smelt declined almost to extinction, and numbers of other fish species in the Sacramento-San Joaquin Delta also dropped alarmingly. Even more worrisome, the fish were disappearing despite above-average river flows, which have previously been associated with healthy fish populations. EPA ecologist and fish expert **Dr. Bruce Herbold** has been working with scientists, water agencies, and other stakeholders since 1989 to solve these and other Bay-Delta fish mysteries, so that the Delta's complicated water issues can be resolved in ways that protect the fisheries, including the popular salmon and striped bass.

Since 2000, Herbold has been working with the U.S. Fish and Wildlife Service, the state Department of Fish and Game, and San Joaquin River water users on the Vernalis Adaptive Management Program, which has been testing the survival rate of juvenile salmon in the Delta under differing regimes of river flow and water diversions.

The experiments showed the salmon needed more freshwater flow in April and May, so the program secured state and federal funding of \$4 million a year for water efficiency improvements by San Joaquin River water rights holders, to free up more water for April-May river flows without harming agriculture.

In the 1980s, such cooperation between water user groups, water agencies, and fish and wildlife agencies was unheard of. The state's water politics were roiled in seemingly endless strife known as the "Water Wars."



Herbold's first task at EPA was to develop a water quality standard (as required by the federal Clean Water Act) that would protect the Delta's beneficial uses, including fish habitat and fishing. Specifically, Herbold and EPA colleague Susan Hatfield put together the scientific backing for a proposed salinity standard for the Delta.

EPA's proposed salinity standard satisfied all sides in the "Water Wars"—water users (agriculture and cities), dam and water supply agencies, fish and wildlife agencies, sport and commercial fishers, and environmentalists. Since EPA adopted the salinity standard in 1994, the formerly contentious stakeholders have been cooperating, for the most part, on Delta water issues, through the continuing CALFED Bay-Delta Program.

"It's a completely different environment than 15 years ago," Bruce says. "CALFED changed the way state and federal water agencies [which control the dams and aqueducts] do business."

"There are fewer surprises, because fish biologists have a chance to comment on proposed actions by water agencies. Impacts are identified early, and efforts are made to solve problems," he says. Bruce enjoys working in this environment, and he's built a reputation as a bridge between the engineers, the scientists, and the policymakers. By working to understand the concerns of all stakeholders, he's helping address the Delta's current fisheries crisis in a cooperative manner.

Clean Land



Superfund Turns 25 in California

EPA marked the 25th anniversary of the Superfund law in December 2005. Some of Superfund's biggest challenges, and biggest successes, have been at California's 103 Superfund cleanup sites. The law was created in December 1980 to address the thousands of abandoned, uncontrolled hazardous waste sites across the nation that were contaminating our land and soil. Since then, EPA has cleaned up—or overseen cleanup of—hundreds of sites nationwide, including the infamous Love Canal in New York.

In California, many of the industries that have driven the state's economy—all the way back to the Gold Rush—have also left the biggest cleanup challenges. Superfund sites in the state range from abandoned mines, to former semiconductor manufacturing plants in Silicon Valley, to closed military bases. EPA has removed immediate health threats at all 103 sites, and currently has soil or groundwater cleanup systems in place or planned for the remaining contamination. In Sili-

con Valley, for example, soil has been cleaned up at all of the 26 sites, but groundwater cleanup will continue for years in the future.

At the Iron Mountain Mine near Redding (pictured above), EPA has reduced the amount of heavy metals and acid mine drainage flowing into the Sacramento River by almost one ton a day—nearly a 95% reduction (see graph, facing page).

In California, EPA has maintained an exceptionally high success rate in making polluters pay for the cleanup instead of having to dip into the federal "Superfund." Responsible parties are funding the cleanups at nearly 80% of California's Superfund sites. And in cases where the agency has used federal funding to get cleanups started rather than waiting for lawsuits to be settled, EPA has recouped most of the money spent. In 2005 EPA reached settlements with polluters that secured more than \$52 million for the San Gabriel Valley groundwater cleanup sites.

In those cases where the “little guy” may get caught in the liability net, EPA has negotiated hundreds of “de minimis” and “de micromis” settlements to small businesses over the past decade in order to let small waste contributors cash out early rather than get entangled in future lawsuits. These smaller settlements have helped continue cleanups at sites like the Casmalia site in central California.

With cleanups well underway, EPA has focused on redevelopment for many properties that were once seemingly written off for good. EPA is working closely with the Department of Defense and local communities to free up portions of former military bases that, while listed as Superfund sites, have plenty of clean property ready for reuse. EPA's Brownfields Program has already helped revitalize cities across the Pacific Southwest, including Emeryville, West Hollywood and Stockton in California.

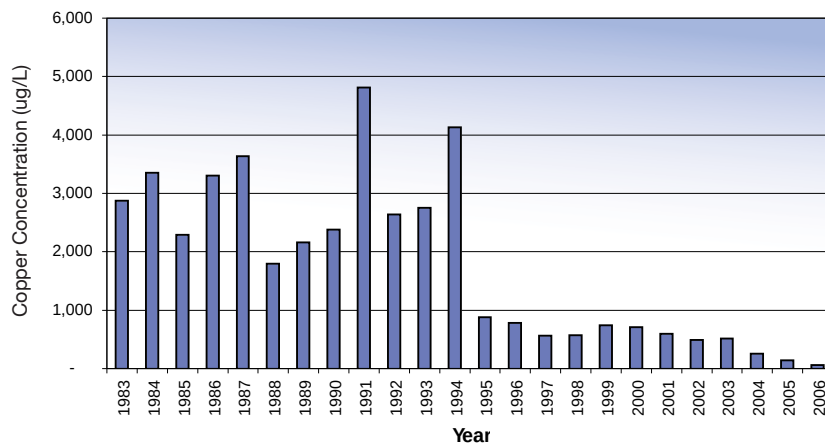
Many challenges remain, but EPA's successes in eliminating health risks, getting polluters to pay for their damages, and fostering redevelopment of sites once they're clean, bode well for the future.

Progress at Superfund Sites

In 2005, EPA's Pacific Southwest Region made major advances in the cleanup of many sites on the Superfund National Priorities List (NPL).

- EPA has begun construction on soil and groundwater cleanup at the **Pemaco** Superfund site in the city of Maywood, in Southern California. A clean soil cover will be placed over the entire site, and landscaping plants will be used to stabilize the soil. Contaminated groundwater and soil vapor will be extracted using vacuum pumps. The groundwater will be treated with carbon units, and the soil vapor will be treated with a flameless thermal oxidation system. The Pemaco Site is a former chemical blending facility with soil and groundwater contamination from volatile organic compounds, such as tetrachloroethene, a cleaning solvent, and vinyl chloride. The site is currently being developed into a city park.
- EPA completed negotiations with Del Monte on the cleanup of the only private NPL site in Hawaii. The agreement with Del Monte Fresh Produce requires the company to clean up soil and groundwater contamination at the **Del Monte** Superfund site in Central Oahu. Under the terms of the consent decree, Del Monte Fresh Produce will carry out the EPA-approved cleanup plan, estimated to cost approximately \$13 million by the time it is finished in 2014. Cleanup of shallow groundwater at the site has started by using Koa Haole plants, in a process called phytoremediation. The treat-

Average Total Copper Discharge from Spring Creek

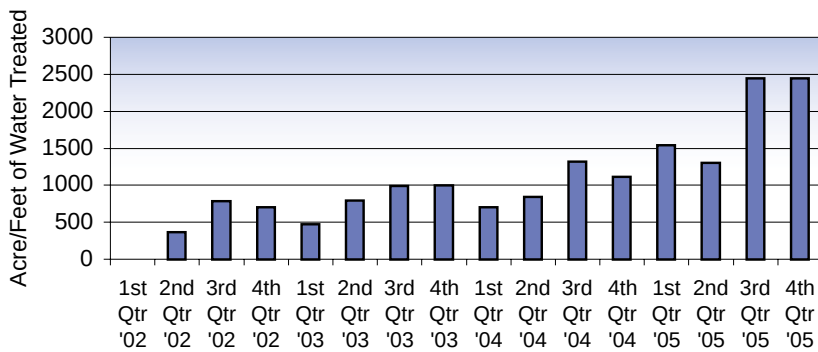


ment plant for the deep aquifer is operational, and the deep groundwater in the area will be pumped and cleaned using air stripping and carbon filters. The site is part of a 3,000-acre pineapple plantation in central Oahu that is leased by Del Monte Fresh Produce.

Discharges of toxic dissolved copper from the Iron Mountain Mine Superfund site into the Sacramento River have dramatically decreased due to construction of two dams and a water treatment plant.

- EPA began the cleanup of contamination resulting from mining more than half a century ago at the **Lava Cap Mine** Superfund site in Nevada County, northeast of Sacramento, Calif. The cleanup will prevent contamination of water and soil from arsenic and other heavy metals, which are byproducts of historic mining operations. The plan includes cleaning up mine tailings and waste rock, collecting and treating contaminated water from the mine, and diverting the flow of clean surface water around contaminated tailings.
- Under EPA's oversight, a group of potentially responsible parties has begun construction on a \$10 million groundwater cleanup project at the former **Omega Chemical Corp.** solvent and refrigerant recycling facility in Whittier, Calif. The system, which will extract and treat groundwater from five wells southwest of the property, is designed to contain the highest concentrations of contaminants in the underground “plume” of groundwater contaminated with volatile organic compounds released at Omega between 1976 and 1991.
- EPA took the lead at the **Anaconda Mine** site near Yerington, Nev., and ordered Atlantic Richfield Co. to begin immediate cleanup work. EPA's order outlined initial plans for addressing the six-square-mile mine site, including air and water monitoring and data collection, establishing a site security program, monitoring air for radiation, and tracking down any radiologi-

Groundwater Treated at Baldwin Park, San Gabriel Valley



Groundwater cleanup in the Baldwin Park area of the San Gabriel Valley Superfund sites in California is now providing drinking water to more than 35,000 businesses and residents.

cal contamination at the site. The former mine, about 55 miles southeast of Reno, produced copper for the Anaconda Company for about 30 years until 1978. Mining activities resulted in contamination of the soil and groundwater with several metals and radioactive materials. EPA is providing funding to the Yerington Paiute Tribe to assess potential environmental impacts on tribal lands.

- There are four major groundwater pollution sites in the **San Gabriel Valley**, near Los Angeles, and treatment plants have been built to pump out and treat the water. These facilities will have to be operated for years to come. In 2005, several long term negotiations were successful in securing the cooperation of recalcitrant parties who had contributed to the pollution. For the Baldwin Park site, EPA final-

Floating booms were deployed to collect oil from a pipeline rupture at Pyramid Lake, Los Angeles County, Calif.



ized seven different consent decrees with 16 separate parties who had not paid their share of past costs, committing \$16 million to this project. At the Puente Valley site, a consent decree with Carrier Corp. commits \$26.5 million for the work there, including a penalty for noncompliance with an earlier EPA order.

Emergency Response in Action

Complementing EPA's long-term cleanup program is an emergency response unit that mobilizes on a moment's notice to address everything from oil spills to tire fires to national emergencies like Hurricane Katrina.

Oil Spill Cleanups, Prevention: A Record-Breaking Year

It was a record-breaking year in the Pacific Southwest for compliance and enforcement actions to prevent oil spills. EPA inspected 90 oil or fuel storage facilities in the region in 2005, requiring operators at 18 of them to prove their readiness for oil spills by conducting unannounced drills—25% more inspections and 33% more drills than the previous year. The inspections and drills resulted in eight EPA compliance orders and 24 penalty complaints. These enforcement activities are crucial to reducing the environmental damage caused each year by oil and fuel spills.

When major spills do occur, EPA cooperates with other federal, state, and local agencies on cleanup efforts. In March 2005, a landslide on a steep slope overlooking Pyramid Lake in the Angeles National Forest, visible from I-5 north of Los

Angeles, broke a 14" crude oil pipeline owned by Pacific Energy Partners. The resulting spill, estimated at 126,000 gallons, quickly flowed downhill and into the lake, a drinking water reservoir for the city of Los Angeles.

EPA conducted the response efforts in a Unified Command with Pacific Energy, the U.S. Forest Service, and the state Department of Fish and Game. They immediately placed floating booms across the affected arm of the lake to stop the oil from spreading, and then deployed equipment to vacuum up the floating oil. Still, it took several months to recover more oil from the lake and shoreline. Restoration work continued in the landslide area through the end of the year.

In February 2005, EPA responded to an oil discharge from the Union Pacific Railroad's Ozol Service Track Area along the Suisun Bay shoreline at Martinez, about 40 miles northeast of San Francisco. The area is used for maintenance and re-fueling. The oil discharge originated from oil-stained soil and pads surrounding the track. The oil entered an adjacent storm drain and drained into Suisun Bay. In June, EPA ordered Union Pacific to improve oil spill prevention measures at the facility.

Naturally-Occurring Asbestos in California

In October 2004, at Oak Ridge High School in El Dorado Hills, east of Sacramento, Calif., news cameras recorded a bizarre sight: grown men in protective "moon suits," their faces covered by respirators, playing baseball. On the dry dirt, they kicked up dust running the bases, as part of an assessment of naturally-occurring asbestos hazards. Each of them carried asbestos air-sampling devices, and the "game" helped them collect more than 400 air samples and 180 soil samples. Several schools in the area are built on rock that contains asbestos, and it can be kicked up into the air as dust.

Analyzing the samples was technically challenging, and took several months. In May 2005, an EPA team presented the results of the investigation at a meeting attended by 1,000 people, most of them worried about the asbestos health hazards faced by their children. There were elevated asbestos levels at three schools. EPA has worked with the schools, and state and local agencies to prevent asbestos-laden dust from being generated by normal school activities.

Using the procedures developed at El Dorado Hills, EPA sampled asbestos-laden dust at the Clear Creek Management Area, a rugged 30,000 acre tract in San Benito and Fresno Counties, Calif., where off-road vehicle recreation is allowed by the Bureau of Land Management (BLM). The area

EPA Partnerships

EPA Supports China's Environmental Efforts

In 2005, EPA's Pacific Southwest Regional Office began offering technical assistance to China on hazardous waste cleanup and the formation of regional environmental offices in China. EPA's point person in this effort is Lida Tan, a native of China who left the country with her parents at age 17 in 1983. Tan, a project manager in the regional Superfund Division, has

assembled a team of EPA specialists with widely varying experience who are on call to meet with the Chinese delegations and share their expertise.

EPA's China Initiative is a high-level collaboration between EPA and the Chinese government. EPA and its Chinese counterpart, the China State Environmental Protection Agency (SEPA), have negotiated a Memorandum of Understanding pledging to cooperate in a number of areas. Tan was instrumental in negotiating the portion of the document dealing with hazardous and solid waste.

China faces enormous environmental challenges. Rapid industrialization has raised standards of living, but degraded air and water. The population is about four times that of the U.S. Two recent chemical spills have poisoned long stretches of major rivers, making international headlines. But the Chinese government has indicated it is serious about enforcing the nation's environmental laws, and SEPA wants to take advantage of EPA's experience. Some observers say China is at a turning point similar to the U.S. in the late 1960s, when a consensus was emerging that air and water pollution had reached intolerable levels.

In November 2005, Superfund Division Director Keith Takata and Tan participated in EPA and SEPA's first Joint



EPA emergency response specialist Harry Allen demonstrates monitoring technology to a delegation from China's State Environmental Protection Agency as EPA's Lida Tan (center) translates.

Environmental Cooperation Committee Meeting, at EPA Headquarters in Washington, D.C. Later that month, in San Francisco, EPA hosted a 14-member delegation involved in China's PCB demonstration cleanup project. The delegation came to learn more about PCB cleanup techniques. As a signatory to the Stockholm Convention, China has made a commitment to safely dispose of PCBs.

In December, EPA's China Team hosted a SEPA delegation touring EPA's regional offices to study how they're structured. Three of the four SEPA participants are or soon will be Director Generals for three of SEPA's five regional offices — counterparts to our regional administrators. And in February 2006, the team hosted a 20-member delegation from many provinces and cities, who came to learn about EPA's emergency response functions.

As this publication goes to press, EPA Administrator Steve Johnson is planning a visit to China in April 2006, where Johnson and his SEPA counterpart are expected to sign the Hazardous and Solid Waste Annex and Strategy document, making China officially EPA's newest partner in environmental protection.



Riders with monitoring equipment and protective gear prepare to kick up asbestos-laden dust in the Clear Creek Management Area to measure what ATV enthusiasts might be breathing into their lungs.

has thin soil composed mostly of the underlying serpentine rock—one of the largest naturally-occurring asbestos deposits in the world. As in El Dorado Hills, EPA contractors wore protective “moon suits” as they simulated recreational activities while gathering dust samples. They drove off-road vehicles on unpaved roads and trails, drove SUVs, hiked, and pitched tents. The results showed unhealthy asbestos levels in the air. EPA worked with the BLM to close the area to off-road vehicles during the annual dry season, when the soils create dust more easily.

The area is part of the Atlas Asbestos Mine Superfund site. Even though the mine site itself has been cleaned up and no longer poses a risk to human health, risks posed by naturally-occurring asbestos outside the mine site boundary must be assessed before the site can be removed from EPA's National Priorities List.

Brownfields: The Road to Revitalization

EPA's Brownfields Program works to assess, clean up and redevelop potentially contaminated lands. Last year, EPA issued \$6.35 million in grants to 26 entities in California, Arizona, Nevada, Hawaii, and tribal lands to help local governments start these projects.

On October 11, 2005, San Francisco Mayor Gavin Newsom and former mayor Willie Brown stood before a crowd of jazz musicians and supporters as they broke ground for a new 12-story development in the city's Fillmore District that will house a 420-seat jazz club, a jazz heritage center, 80 residential units, restaurants, and a parking garage. But before construction could begin, the

first step was to break up an asphalt parking lot on the site, and excavate and remove petroleum-contaminated soil. EPA helped clear this obstacle with a \$200,000 petroleum Brownfields grant to the San Francisco Redevelopment Agency.

The Fillmore District was once known as “the Harlem of the West,” since it was a center of African-American culture in the 1940s and 1950s, when black musicians were not allowed to play in whites-only downtown nightclubs. Instead, they played in black-owned clubs in the old Victorian homes of the Fillmore. But the neighborhood withered in the mid-1960s when redevelopment condemned block after block to demolition, and left many lots vacant for decades. A smaller African-American community is still there, and turned out in force for the groundbreaking. City officials and residents are hoping the new development will re-energize the neighborhood. Construction is now underway.

Last year, EPA officials joined local governments to celebrate the completion of EPA-funded petroleum Brownfields cleanups in Culver City, Calif., and Tucson, Ariz.

In Southern California, Culver City opened a new off-leash dog park on a former petroleum-contaminated oil well site. A \$250,000 EPA Brownfields grant made the assessment and cleanup possible. A number of canine attendees participated in the ribbon cutting ceremony.

In December 2005, EPA's Pacific Southwest Waste Division Director Jeff Scott joined the mayor of Tucson in a Brownfields event celebrating the completion of an underground storage tank cleanup that made way for a new high school. Tucson Mayor Robert Walkup shut off the soil vapor extraction unit, officially ending the site cleanup activity. The site, located in Tucson's Historic Warehouse Arts District, will be redeveloped into an alternative high school with an arts focus.

For more on Brownfields in the Pacific Southwest, see ‘EPA People’ on the opposite page.

Safely Managing Hazardous Waste

EPA's hazardous waste program, organized under the federal Resource Conservation and Recovery Act (RCRA), works to protect human health and the environment by reducing the generation of hazardous waste, and by ensuring that its transport, storage, and disposal is done safely. Under RCRA, hazardous waste is tracked and documented “from cradle to grave” so that waste generators and handlers can be held accountable.

Last year, EPA's Pacific Southwest Office took 24 administrative penalty actions against facili-

ties whose mishandling of hazardous waste was endangering their workers and surrounding communities. These waste handlers were required to clean up hazardous waste releases, ship hazardous waste to permitted facilities, close or replace leaking containers, properly train their personnel, develop plans for emergencies, and pay a total of \$378,220 in fines.

Two of the facilities also completed environmental projects as part of their legal settlements. One purchased life-saving equipment for the local fire department and air and weather monitoring equipment for a local environmental agency. The second conducted a series of free seminars on waste management for facilities that generate hazardous waste (auto shops, welding shops, photo shops, etc.).

EPA People

EPA's Brownfields Program grew out of an unintended effect of the 1980 Superfund law: At many former commercial sites, landowners were eager to sell to developers, but potential buyers did not want to get stuck with cleanup costs if the site turned out to be contaminated with toxics. So landowners couldn't sell, properties stayed vacant, and developers built on "greenfields" outside cities, worsening urban sprawl.



According to EPA Pacific Southwest attorney **Bill Keener**, there were lots of blighted sites like this in California and Arizona—languishing because of the stigma of contamination. In the early 1990s, Bill joined an EPA national workgroup seeking ways to resolve liability issues and remove barriers to redevelopment. Keener and the workgroup came up with a policy and model document called a Prospective Purchaser Agreement, which requires new property owners to make upfront contributions to cleanup costs, but frees them from additional liability.

Since Bill concluded the region's first such agreement, he became the "go-to guy" for creative legal solutions in the Brownfields arena. Bill joined EPA as a Superfund attorney in 1987, after leaving his private practice. For several years before coming to EPA he volunteered as director of the Marine Mammal Center in the Marin Headlands, a nonprofit organization dedicated to the rescue of sick or injured seals and sea lions.

Over the past decade, according to EPA's Pacific Southwest Brownfields Team Leader **Carolyn Douglas**, the team's nine employees have issued and managed 149 assessment, cleanup and job training grants to cities, tribes, and states throughout the region. Revolving loan fund grants to Arizona, Nevada, and Hawaii have helped these states establish their own Brownfields programs.

Carolyn has been with EPA's Superfund Division in the Pacific Southwest since 1989, when she left the Naval Supply Center Oakland, where she worked on environmental compliance and small cleanups. At EPA, she worked on



Superfund site assessments, tribal grants, and helped develop Nevada's State Superfund Program, before she was named Brownfields Team Leader in 2005.

The team's work involves outreach events for potential applicants, reviewing 60-70 applications per year, issuing 20-30 grants, working with the grantees to make sure the money is spent effectively, and leveraging funds from other sources to complete cleanups. When the job is done, state or tribal Brownfields programs certify that sites have met cleanup standards and are ready for redevelopment.

Carolyn cites a West Hollywood Brownfields site as one of the program's most recent successes. A decade ago, it was a corner frequented by drug dealers and addicts. Today, it's the site of a Target store and several other stores, whose sales tax revenues help the city provide vital public services.

Bobbie Kahan has been a member of the Brownfields Team since its inception in 1995. Bobbie has managed grants that spurred redevelopment of sites slated for affordable senior housing in San Francisco's Bayview Hunters Point neighborhood, a commercial/residential development in Los Angeles, a beachfront trail in Ventura, and a health clinic in East Palo Alto.



In her work, Bobbie also encourages eligible organizations to apply for Brownfields Job Training grants. The grants are intended to ensure that residents of low-income and minority communities around Brownfields sites get some of the jobs associated with cleanup and redevelopment. Unemployed people learn skills needed to work on hazardous waste cleanups, lead and asbestos removal, and construction. With one two-year grant, the City of Los Angeles in partnership with the Los Angeles Conservation Corps trained 48 people and placed all of them in jobs. In San Francisco, Young Community Developers trained 50 people and placed 48 of them in jobs.

After 31 years in EPA's Pacific Southwest Regional Office, Bobbie is planning to retire in June 2006. She's very proud that her son, Howard Kahan, "will carry on my environmental ethic"—he was recently hired to work for the region's Water Division, at EPA's Southern California Field Office.

Communities and Ecosystems



Healthy Approaches to Agriculture

Thousands of square miles of agricultural land in the Pacific Southwest provide food and fiber for the nation and for worldwide export. Good stewardship of working agricultural lands can benefit the environment by preventing polluted runoff to rivers and streams and providing seasonal wildlife habitat. EPA supports the industry's stewardship efforts by fostering collaborative, innovative actions that show the way to a sustainable future.

EPA also works with its state and local regulatory partners to ensure that agricultural practices don't harm the environment or threaten public health. EPA provides compliance assistance to educate members of the agricultural community about their obligations under federal environmental regulations and cost-effective ways to comply.

Promoting Sustainable Agriculture

In the context of the University of California's Sustainable Agriculture Research Program (UC-SAREP), EPA has been working with some of the most forward-thinking, innovative farmers, commodity groups, food processors, and university researchers to field-test crop-specific sustainable farming practices. In 2005, EPA issued \$1.6 million in grants for this purpose to California farm groups, leveraging \$2.67 million in grants from the state government, other federal agencies and foundations. California farmers funded by these grants have achieved impressive results.

From 2002 to 2005, growers associated with the Lodi-Woodbridge Winegrape Commission reduced acreage treated with the high-risk pesticides propargite and simazine by 55% and 72%

respectively, through a new self-assessment workbook that promotes sustainable practices. During a similar period, growers on the Central Coast Vineyard Team decreased use of herbicides and nearly eliminated the use of chlorpyrifos and diazinon through Integrated Pest Management (IPM)—the use of non-toxic or less-toxic pest management strategies. Similarly, the Sonoma County Grape Growers Association reduced their use of nine high-risk pesticides by 32% and their acreage treated by 31% between 1999 and 2003, through a grower-to-grower IPM education program. These methods show the potential for similar results throughout California's 826 square miles of winegrape vineyards.

EPA grants totaling \$519,000 over the past decade have funded similar efforts by California almond growers, who produce three-quarters of the world's almonds from nearly 900 square miles of orchards. Numbers are not yet available for results after 2000, but from 1991 to 2000, use of highly toxic organophosphate pesticides on almond trees during their dormant season dropped by 77%.

For more on sustainable agriculture efforts, see 'EPA People' on page 25.

Assessing Dairy Manure Technologies

Dairy manure can pollute ground and surface waters with nutrients, salts, bacteria, and organic matter; it can also pollute air with ammonia, methane, odors, and smog-forming volatile organic compounds. This is of particular concern in California's San Joaquin Valley, home to more than a million dairy cows.

In 2005, EPA led the Dairy Manure Collaborative, a diverse group of dairy industry stakeholders, in seeking solutions to the manure management problems in the valley. A first step was to find combinations of technologies that could address dairy manure's air, water and solid waste impacts. The group reviewed more than 70 technologies and issued a report assessing the environmental and economic performance of the first 44 of them in late 2005. This year, these technologies are being tested in dairy manure management pilot projects.

Protecting Endangered Species

With support from EPA, California has taken a giant step forward in assuring that agriculture will not jeopardize endangered species. The California Endangered Species Project has created a Web site that provides California pesticide users with use recommendations that protect listed species. The site allows pesticide users to specify which pesticide they plan to use and where, to determine if there are local use restrictions designed



This covered lagoon is part of a new biogas energy system funded by the California Energy Commission at Joseph Gallo Farms, a dairy in Atwater, Calif. The decomposing manure creates biogas—primarily methane and carbon dioxide—which is piped to generators and burned to generate 700 kW of electricity.

to protect any endangered fish and wildlife. It also includes the life histories of listed species, and how to identify them. With this information, the California pesticide user can be assured that the chemicals that they are using are not going to harm endangered species. To see how it works, go to www.calpip.cdpr.ca.gov/cfdocs/calpip/prod/main.cfm

Protecting Consumers

Shipments of produce in the U.S. are subject to inspection to determine if they have unsafe or illegal pesticide residues. On the Pacific islands of Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, Palau, and Yap, however, the local governments had no trained inspectors. EPA arranged for a Hawaii Department of Agriculture inspector to do joint inspections with local authorities on these remote islands to address the most egregious violations of pesticide laws and also to build their capacity to conduct inspections, take residue samples, and obtain lab analyses.

On American Samoa, the lab results showed residues of illegal pesticides on food crops, indicating that farmers were using pesticides not intended for food crops, or using too much. The American Samoa EPA used its enforcement authorities to stop several farms from selling their pesticide-contaminated produce. The agency has warned farmers throughout the territory that they must verify that the pesticides used on vegetables are approved, and are used in proper amounts.

U.S.-Mexico Border

Environmental and public health needs in the U.S.-Mexico border area include drinking water and wastewater services, waste disposal, and air pollution reductions. EPA has been actively engaged with agencies in Mexico, as well as with state and local partners, in significantly improving environmental conditions. These partnerships have

resulted in investments in water infrastructure, waste disposal and diesel emissions reductions, leading to substantial achievements in 2005.

Investing in Water Infrastructure

EPA's border water infrastructure program works to provide affordable drinking and wastewater services to border communities in the U.S. and Mexico. The program and its binational partners have so far certified 54 projects at a total cost of \$1.5 billion, with a third of the funding coming from EPA's Border Environment Infrastructure Fund. Last year's prioritization process identified 135 eligible projects representing \$900 million in need; 26 of these projects were selected for development and construction funding.

The three major border sister-city pairs continue to be a high priority for EPA's Pacific Southwest Region:

- In Tijuana/San Diego, four new projects to provide water and wastewater services to *colonias* in the Tijuana area were selected to receive assistance. Work also continued on the \$42 million Tijuana Sana project, which focuses on eliminating sewage overflows and leaks in the Tijuana River watershed and will benefit more than 1.3 million people.
- In Mexicali/Calexico, considerable progress was made on the \$30 million Mexicali II project, which will collect and convey up to 20 million gallons of raw sewage a day away from the New River to be treated at a new wastewater treatment plant in Las Arenitas. Another wastewater collection and conveyance project, Mexicali IV, was selected to receive development and construction assistance.
- In Nogales, Sonora/ Nogales, Ariz., three BEIF grant agreements were signed in December 2005, awarding over \$70 million for projects valued at more than \$100 million. These projects will upgrade the water distribution and wastewater collection systems in Nogales, Sonora, and the wastewater treatment plant just north of Nogales, Ariz. They also will great-

ly help to reduce fugitive wastewater flowing across the border and contamination levels in the Nogales Wash and Santa Cruz River.

Supporting Border Tribes

Last year, EPA and the Pala Band of Mission Indians used \$36,000 of EPA funding to assess drinking water quality in seven indigenous communities in Baja California, just across the U.S.-Mexico Border. The results showed contamination with *E. coli* and coliform bacteria at levels unsafe not only for drinking but for swimming. As a result of the findings, EPA provided \$66,000 and the Mexican government spent \$900,000 to build safe drinking water supply systems and evaluate ground water as a source for these communities.

Between 1996 and 2003, EPA's Tribal Border Infrastructure Program provided \$28.4 million in funding for drinking water and wastewater projects in the U.S. within 62 miles of the U.S.-Mexico Border. By 2005, these projects had brought safe drinking water to 7,765 tribal homes and built sewage collection and treatment systems for 1,888 homes.

One environmental issue unique to Border area tribes is trash left by undocumented immigrants. Remote stretches of desert have been littered with discarded clothing, plastic bags, drink cans and bottles, food wrappers, and miscellaneous items. Last year the Tohono O'odham Nation, whose land area is as large as Connecticut, cleaned up 84 sites, removing an astounding 40 tons of trash.

Reducing Diesel Emissions

In the first phase of the San Diego-Tijuana Diesel Retrofit Project, EPA provided more than \$200,000 to retrofit a dozen heavy-duty diesel trucks involved in shipping goods between the U.S. and Mexico with emission controls. EPA provided another \$200,000 to test technologies for measuring emissions from trucks crossing the border near Nogales, Ariz., including remote sensing units, opacity testing equipment, and portable emission monitors. And Mexico pledged to phase in low-sulfur diesel fuel over the next five years, starting with the six border states, which include Baja California and Sonora.

Cleaning Up Abandoned Tire Piles

The cleanup of abandoned scrap tire piles is a significant binational border priority. The tire piles are potential breeding grounds for mosquitoes and other organisms that are vectors of disease such as the West Nile virus. In addition, smoke from tire pile fires can pose a severe public health threat.

So far, more than 2.1 million tires have been removed from along the border in the Pacific South-

Monitoring system to measure air pollution from diesel trucks crossing the U.S.-Mexico border.



west, including 420,000 tires from the Innor tire pile and three-quarters of the 1.2 million tires at Centinela in Baja California last year. The Innor scrap tires were reused as fuel in a local cement plant as a result of a collaboration agreement among EPA, SEMARNAT (Mexico's Environment Secretariat), the State of Baja, the municipality of Mexicali, and the private sector.

Tribal Accomplishments

EPA's Pacific Southwest Region has 146 Indian tribes. Of these, 131 received a total of \$40 million in EPA grants for their environmental programs in 2005. Working in partnership with EPA and the Indian Health Service, tribes have made great strides in building and operating environmental infrastructure, such as drinking water and wastewater treatment systems and air monitoring equipment. EPA also provided training to tribal environmental staff, and certified tribal inspectors to perform compliance inspections of oil and hazardous waste facilities and pesticide use. And EPA is cooperating with six tribes planning to build casinos or permit industrial facilities, to ensure that these projects minimize environmental impacts.

In 2005, Pacific Southwest tribes and EPA cleaned up 158 dumps and 13 leaking underground fuel tanks, piped safe drinking water to 1,249 additional tribal homes, and recycled a million pounds of waste. Eighty-five tribes routinely monitor their air or water; 54 have recycling programs.

While the numbers are impressive, they just hint at the results on the ground. For instance, in 2005 the Pyramid Lake Paiute Tribe cleaned up and closed approximately 30 dumps, including three major sites, on their reservation northwest of Reno, Nev. The dumps had littered the landscape with household waste, medical waste, dead animals, and discarded water heaters and appliances. The tribe removed the trash to solid waste landfills or recycling facilities. Near Fallon, Nev., the Fallon Paiute-Shoshone Tribe completed a treatment plant that removes arsenic from the groundwater, providing a safe drinking water source for the community.

Forty-one Pacific Southwest tribes now have their own environmental regulatory programs. EPA and tribal regulators across the region conducted 600 inspections of pesticide use, and collected \$1.25 million in fines from polluters. The Hualapai Tribe in the Grand Canyon enacted water quality standards and supporting tribal ordinances to provide an enforceable means to change wildlife management and ranching practices to prevent pollution. Such measures include putting fencing around natural springs to keep livestock, deer, and elk from muddying and polluting them.



Providing training for tribal environmental field staff has been a high priority. Last year, for example, EPA conducted 19 underground storage tank inspector trainings with over 156 tribal participants. EPA and the tribes cooperated on inspecting 79 underground storage tanks, and issuing 17 field citations. The increased enforcement in recent years has gotten results. Over the last three years, underground tank compliance rates at the Navajo Nation jumped from 2% of facilities inspected to 54%.

Last year, tribes used EPA and other funding to initiate 60 watershed restoration projects and complete 45 of them. For example, the Torres Martinez Desert Cahuilla Tribe, near California's Salton Sea, broke ground for an 85-acre, \$1.5 million wetland project that will improve water quality and provide wildlife habitat. The Hualapai Tribe restored riparian wetlands, built fences in grazing areas, and removed feral animals around springs. And the Fallon Paiute-Shoshone Tribe received a grant from the U.S. Fish and Wildlife Service for mechanical removal and piling of invasive salt cedar on 800 acres within the tribal wetlands.

Pacific Islands: Making the Water Safer to Drink

In the past, unreliable drinking water delivery systems in Guam have been frequently contaminated with bacteria from sewage spills. These contamination incidents resulted in "boil water" notices sent to residents. Last year, however, improvements to the island's drinking water and wastewater treatment systems, along with EPA oversight of the Guam Waterworks Authority (GWA), resulted in the safest drinking water Guam has experienced in decades.

Torres-Martinez Desert Cahuilla Tribe officials break ground for an 85-acre wetland restoration project near California's Salton Sea. The project will improve water quality and provide wildlife habitat.

The GWA improved its management by hiring a new chief engineer on loan from EPA, and increasing the number of certified operators at its wastewater treatment plant. Better generators, pumps, and motors were installed; the disinfection system was improved. As a result of all these changes, sewage spills were reduced by 90%.

Saipan, an island with a population of 70,000 in the Commonwealth of the Northern Mariana Islands, not far from Guam, has a different drinking water problem: Water only comes out of the tap a few hours each day. Last year, EPA worked with the Department of the Interior and the CNMI government to support improvements to the drinking water system in Saipan following a \$1 million congressional appropriation. This funding helped Saipan drill new wells, establish a leak detection system, and install better water meters to discourage waste. Drinking water is still not available around the clock, but water in the system increased by 25%.

EPA's Pacific Islands Office has in recent years placed four staff people in the islands' own environmental agencies in American Samoa and Guam. Last year, EPA doubled the staff assignments to the islands, with three each in American Samoa and Guam, and two on Saipan. The additional staff helped make these drinking water improvements happen. In addition, EPA engineers travel to Palau and the Marshall Islands to assess problems in their drinking water systems. These efforts, in partnership with the islands' water agencies, will result in safer drinking water for more than 300,000 people on these distant islands.

Environmental Reviews Protect People, Species, Wetlands

Under the National Environmental Policy Act (NEPA), federal agencies must prepare an Environmental Impact Statement (EIS) on any proposed agency action that might significantly affect the environment. If there is a significant impact, agencies must analyze alternatives, and identify the one that best minimizes impacts.

Actions that require an EIS include land management plans by the U.S. Forest Service and the Bureau of Land Management, mining permits, dam construction and operation, and construction of federally-funded highways. Since more than half of the Pacific Southwest Region's land is federally-owned, the region has more than its share of EISs—in fact, 20% of the nationwide total. In 2005, EPA's Pacific Southwest Office completed reviews of 109 EISs.

In one significant project, the regional Environmental Review Office worked with the Bureau of

Land Management to ban off-road vehicles during the dry season at the Clear Creek Management Area near Hollister, Calif., after EPA found hazardous levels of naturally-occurring asbestos in the air resulting from dust kicked up by the vehicles (for details, see Clean Land chapter).

In another part of California, EPA analyzed a proposed tree-thinning project to reduce fire hazards in the Plumas National Forest, north of Lake Tahoe. To avoid potential impacts to spotted owls and northern goshawks, EPA recommended avoiding tree-cutting in watersheds that are already degraded, and limiting activities in Riparian Habitat Conservation Areas. As a result, the U.S. Forest Service has reduced by 1,800 acres the forest area that will be clearcut or thinned. The Forest Service also agreed to reduce dust and soil erosion by changes to road-building practices in the area.

EPA also reviewed an EIS on the proposed U.S. 93 highway bypass around Boulder City, Nev. The area provides habitat and movement corridors for the desert bighorn sheep. There, EPA worked with the Federal Highway Administration and the Nevada Department of Transportation to establish a 500-acre wildlife preserve, protect wildlife movement corridors, and fund continued monitoring of the bighorn sheep population.

In California, EPA worked with CalTrans and the Federal Highway Administration to revamp an interagency guidance for analyzing the cumulative impacts of road projects. The guidance is available online at www.dot.ca.gov/ser/cumulative_guidance/purpose.htm.

Building Capacity in Communities

To promote long-term community-based solutions to environmental problems, EPA works to build local capacity within communities to deal with environmental issues. Such "capacity building" efforts paid off in the urban Southern California communities of Pacoima and Barrio Logan last year.

In Pacoima, a neighborhood of Los Angeles, 200 Latino and African-American families took advantage of an EPA Collaborative Problem-Solving grant to make home improvements that reduced their risk of lead poisoning. The community group involved, Pacoima Beautiful, also surveyed local physicians and found that only 28% of low-income children were being tested for blood lead levels because physicians mistakenly thought there was no danger. The group persuaded 25 doctors to get training on lead poisoning prevention and screening.

In Barrio Logan, a low-income Latino neighborhood in San Diego where an EPA/Cal-EPA/Environmental Health Coalition pilot project began in 2000, many local residents were concerned about the health effects of large trucks parked on neighborhood streets that would idle for hours, pumping diesel exhaust into the air. The residents worked with city government staff to develop a simple but effective way to virtually eliminate truck idling: They changed street parking to diagonal spaces too small for the big rigs, posted more "No Parking" and "No Idling" signs, and worked with traffic enforcement officers to ensure that the new rules were enforced. Trucks stopped parking in the residential area, allowing residents to breathe easier.

Reducing Exposure to Toxics

Lead Still a Health Hazard to Kids

Lead-based paint hasn't been available in the U.S. for use in residential buildings since 1978, but it was so universally used earlier that it's still around in more than half our homes and schools—and still has the potential to poison young children. Children can also be poisoned if anyone in their home is scraping or sanding lead paint from the walls. Lead poisoning can lead to learning disabilities, decreased growth, hyperactivity, and brain damage in children.

To address this widespread hazard, EPA and the State of California since 1999 have accredited training providers and created a workforce of over 7,000 lead paint professionals. Between 2000 and 2005, 13,300 lead paint abatement projects in the Pacific Southwest Region removed over 580,000 pounds of lead from more than 19 million square feet of painted surfaces. However, this accounted for only a small fraction of the estimated 2.4 million homes in the region that may still have lead paint on their walls.

Before removing lead-based paint from homes, workers must take special precautions to minimize any risks to human health and the environment. For a list of EPA-certified lead paint removers in California, Arizona, Nevada, and Hawaii, go to www.epa.gov/region09/toxic/lead/firms.html

EPA requires that anyone selling or renting residential property built before 1978 provide information to prospective renters or buyers about lead-based paint used in the buildings. Landlords who fail to comply are subject to enforcement actions which may require lead paint abatement in addition to penalties. For example, last year EPA cited a San Jose, Calif., landlord for 292 violations of lead disclosure rules. To settle the charges, the landlord agreed to remove lead paint from 21 old-

er units where children live, at a cost of \$138,539, and pay a penalty of \$15,393.

TRI Enforcement Leads to Reductions in Toxics

Public disclosure through the Toxics Release Inventory (TRI) is a powerful incentive for facilities to reduce their use and emissions of toxic chemicals. Enforcement is needed to ensure compliance, however. In 2005, EPA's Pacific Southwest Region settled 31 TRI enforcement cases, resulting in disclosure of 125 million pounds of toxic releases, and penalties of nearly \$500,000.

After the enforcement actions, three facilities reduced their use of certain toxic chemicals. Professional Finishing of Richmond, Calif., substituted less-toxic acetone for methyl ethyl ketone, potentially reducing air releases by 204 pounds annually. Berg Lacquer Co. of Los Angeles has substituted acetone for toluene and xylene. Dionex Corp. of Sunnyvale, Calif., is planning to phase out its use of lead compounds by 2010.

EPA People

Karen Heisler joined EPA in 1992. As a senior member of the Agriculture Program, Karen brings a dedication to sustainable agriculture, a strong background in pesticides policy, and an understanding of the diversity of the California agricultural community to her work.

In her job with the Agriculture Program, Karen helps the Region and the Agency to address four broad areas related to agriculture: (1) strategic planning for agriculture-related activities, (2) better cross-program, cross-regional, and HQ/Regional communication (3) support of sustainable agriculture partnerships, (4) promotion of regional and national agriculture policies that better position the Agency to promote positive environmental and public health benefits.

Currently, Karen is working on an effort to link market-based incentives to innovation in agricultural production. Recognizing that economic viability is key to engaging innovation, the Ag Program is working with Protected

Harvest, a non-profit organization, to develop environmental production standards and certify producers in several California commodities, including stone fruit, strawberries, winegrapes, and processing tomatoes. Certification based on data-driven standards allows producers to secure a market position based on value of good food and good practices, and rewards effective stewardship.

Karen's commitment to sustainable agriculture extends beyond her work at EPA. As a member of Live Power Community Farm, Karen participated in the development of a novel mechanism for public-private agricultural land tenure, a model that has been replicated several times since. Karen's fifteen years of volunteer support to small farms and community food security projects have culminated in her becoming co-director of Pie Ranch, an educational farm center that inspires urban and rural residents to know and take intimate part in the food they eat, its healthy production and its history.



Compliance and Stewardship



Upholding Standards, Speeding Progress

Strong standards, consistently and fairly enforced, are the foundation for almost all of what gets done to protect public and environmental health. The history of the Pacific Southwest is rich with examples of federal, state and tribal regulators working together to assure compliance with national and local requirements. Broad compliance not only achieves results in terms of environmental quality, but also assures the essential economic "level playing field" for those who invest in compliance.

In the Pacific Southwest, EPA and its fellow regulators have worked together to provide the public health protection brought by compliance with environmental rules. They have used that foundation to partner with industry, advocates and the public to move beyond compliance in many creative ways, with often substantial gains in public health protection. In 2005, work on these closely allied fronts produced significant progress.

Compliance Assistance, Strong Enforcement Get Results

This past year, EPA and its partners continued to provide a broad presence through inspection programs targeted to significant public health threats and in response to citizen concerns. This compliance monitoring work was supplemented with focused compliance assistance designed to make sure those who have a duty to comply with environmental rules know what they must do and where to get technical help if needed. Through a variety of traditional and creative approaches, EPA has been able to reach out to many remote areas (such as tribes, outer islands and border communities) and often unite regulated entities with their communities to find solutions.

For enforcement, the year started strong with landmark settlements in Southern California for more than \$2.6 billion in sewer system upgrades (see last year's report, where these cases were previewed, for more details). More than 436 en-

forcement actions through the rest of the year garnered an additional \$385 million in funding to clean up and prevent pollution caused by violations. Collection of \$6.5 million in penalties assured that polluters gained no advantage over those who invest in compliance.

Public communication via the Web and the news media played a strong role in getting the compliance message out—both demonstrating sound results to local communities and putting industry groups on notice that they would be held accountable. The introduction of a new and easy-to-use “citizen complaints” badge on EPA’s Web sites also served to strengthen partnerships with the public in identifying and addressing serious violations.

For more information on enforcement activities in the Pacific Southwest, visit www.epa.gov/region09/enforcement.

If you've seen something that leads you to believe an environmental violation has occurred, report it to EPA by going to www.epa.gov and clicking on the badge with the words “Report Environmental Violations.”



Supplemental Environmental Projects Improve Health, Environment

In settling enforcement actions, EPA often negotiates settlements that include commitments to upgrade equipment to permanently reduce pollution. In some cases settlements include additional projects, known as Supplemental Environmental Projects (SEPs), to benefit nearby communities.

In 2005, companies in the Pacific Southwest Region spent a total of \$14.2 million in SEPs as part of EPA enforcement settlements. These projects, which go beyond investments needed for compliance with environmental regulations, offer a unique opportunity to further our nation’s goals for a cleaner, healthier environment.

Reducing Pollution

- Saint-Gobain Containers Inc. agreed to resolve Clean Air Act violations at its Madera, Calif., facility, reducing smog-causing air emissions by 400 tons per year. The company agreed to spend \$13.8 million to install and operate air pollution control equipment and will also further reduce pollution as part of a \$1.2 million supplemental environmental project. This precedent-setting settlement establishes the most stringent nitrogen oxide limit for a con-

tainer glass furnace in the country. Residents of the San Joaquin Valley will benefit from cleaner air.

- Chevron USA Inc. will reduce diesel emissions from fleet vehicles at its oil refineries in California and Hawaii. In addition, Chevron will reduce odors and air emissions at its refineries in El Segundo, Calif., and Kapolei, Hawaii, contribute \$100,000 for emergency response equipment for the El Segundo Fire Department, and provide a 29-year, rent-free lease of five acres to the city of Richmond, Calif., for emergency training exercises. The estimated cost of the refinery modifications is \$1.5 million.
- The Seven-Up Bottling Co. will replace the existing fleet of gasoline vehicles at its Sacramento, Calif., plant with propane forklifts and other alternative fuel vehicles, at a cost of \$135,000. The project is part of a settlement to resolve stormwater and wastewater violations.
- As part of a settlement involving lead paint disclosure violations, a San Jose, Calif., landlord agreed to perform lead abatement work. The owner will conduct lead inspections and risk assessments as well as lead abatement where hazards are found in 21 rental units in San Jose.

Restoring Natural Environments

- Los Angeles will undertake several environmental projects to restore streams and wetlands and to capture and treat polluted storm drain flows. The \$8.5 million projects are part of a \$2 billion settlement in one of the largest sewage cases in U.S. history.
- As part of a settlement with construction company Colorado Structures and Wal-Mart Stores, Inc. for stormwater pollution prevention violations at a store construction site, the Bentonville, Ark., retail giant will purchase a Central Valley vernal pool habitat for protection. Violations at the Sacramento, Calif.-area store construction site polluted a nearby creek with sediment.
- The San Gabriel Valley Superfund site’s Puente Valley agreement calls for a groundwater treatment system and an innovative environmental project to convert a former duck farm to community open space. (For more information about groundwater treatment at the San Gabriel Valley site, see pg. 16.)

Supporting Public Health

- Romic Environmental Technologies, a hazardous waste facility, will purchase life-saving equipment for the Gila River Indian Commu-

nity Fire Department and air monitoring and meteorological equipment for the Gila River Indian Community Department of Environmental Quality. The company was also fined \$67,888 for multiple hazardous waste violations at its facility on the Gila River Indian Reservation in the Lone Butte Industrial Park in Chandler, Ariz.

- Chemical Waste Management will purchase emergency response equipment for the Kings County, Calif., Environmental Health Services Department. The project was part of a \$47,500 settlement regarding the company's alleged failure to conduct monthly monitoring at one of four PCB disposal units at its Kettleman City facility.
- Anvil Cases, Inc. donated emergency response equipment to the Santa Fe Springs Fire Department. The project was part of a settlement with Anvil Cases, of the City of Industry, Calif., for allegedly filing chemical release forms late, a violation of the Emergency Planning and Community Right-to-Know Act.

Training for Handling Hazardous Materials

- The Arizona Department of Transportation agreed to finance seminars conducted by the Environmental Information Association on asbestos regulatory compliance training to contractors, charter schools, and building owners.
- Long Beach City College will perform an environmental project that will improve hazardous waste handling by other area colleges. The college will present seminars to 11 area school districts to get the word out about proper ways to handle hazardous waste.

EPA Prosecutes Ocean Oil Dumpers

EPA investigations into illegal discharge of pollutants to U.S. waters last year resulted in two ship-

ping companies being ordered to correct pollution violations on their vessels worldwide and pay large fines.

EPA investigates allegations of criminal wrongdoing under various environmental laws, including data fraud, illegal disposal of hazardous waste, illegal importation of certain chemicals; tampering with a drinking water supply; mail fraud, wire fraud, conspiracy and money laundering relating to environmental crimes.

Evergreen Pleads Guilty to Container-Ship Pollution

The U.S. Department of Justice announced criminal charges in Los Angeles last year against Evergreen International, S.A., one of many Evergreen-related companies involved in the container ship business. The charges included concealing deliberate, illegal discharge of waste oil, causing a negligent discharge into the Columbia River, making false statements, obstruction of Coast Guard inspections, and failing to maintain an accurate Oil Record Book.

Under the terms of a plea agreement, Evergreen paid \$25 million, the largest-ever amount for a case involving deliberate pollution from a ship, and pleaded guilty to 24 felony counts brought in Los Angeles; Newark, N.J.; Portland, Ore.; Seattle; and Charleston, S.C. Of the total, \$10 million will be divided equally and used for environmental community service projects in each of the five judicial districts where the violations took place.

Moller-Maersk Ordered to Develop Environmental Compliance Plan

A.P. Moller-Maersk Company of Denmark, which operates a fleet of over 200 vessels worldwide, was ordered to develop and carry out a fleet-wide environmental compliance program. The company pleaded guilty and was fined \$500,000 as a result of a criminal investigation conducted by EPA and the U.S. Coast Guard into waste oil in the overboard piping of the Motor Vessel Jane Maersk.

The investigation also uncovered evidence of false entries in the ship's oil record book. The false entries concerned the operation of the ship's incinerator which, in part, is used to burn waste oil sludge. In a related court action, the ship's second engineer was sentenced to four months' community confinement for his role in concealing and destroying key documents related to the investigation.

Cargo Ship Engineer Jailed for Concealing Oil-Tainted Water Dumping

The chief engineer of the M/V Katerina was sentenced to eight months in jail for bypassing

Dockside news conference to announce \$25 million penalty for oil pollution—the largest ever for deliberate oil discharges from a ship.



the ship's oil-water separator, a critical water-pollution control device. He tried to conceal the bypass when the ship came into port at Long Beach, Calif. The ship operator, DST Shipping, Inc., of Greece, pleaded guilty to two felony charges and paid a \$1 million fine.

Partnering to Prevent Pollution

S. Phoenix Industry Challenge/ Good Neighbor Partnership

On March 8, 2005, EPA joined with industry, city, county and Arizona state officials to launch a voluntary partnership aimed at reducing air pollution and preventing chemical releases in the South Phoenix area.

Goodrich-Aircraft Interior Products hosted the event at their South Phoenix facility. The Industry Challenge/Good Neighbor partnership seeks to reduce emissions of more than 30 hazardous air pollutants by 20% by 2007, and to enhance safety procedures to avoid accidental releases.

"This partnership shows that, working together, we can keep jobs in the community and have a healthy environment," said EPA Regional Administrator Wayne Nastri. "When industry is willing to explore ways to further reduce their emissions and enhance their safety practices, we all win."

More than 20 industries have joined the alliance of businesses and regulatory professionals responsible for environmental health and safety performance in the South Phoenix area. Companies joining the voluntary program range from locally-owned businesses to larger corporations, including pool companies, electronics manufacturers, fiberglass manufacturers, metal finishers, and aircraft product manufacturers. In addition, industries that store ammonia, chlorine and nitric acid will handle these chemicals more safely.

The partnership grew out of the South Phoenix Multi-Media Toxics Reduction project initiated by the Arizona Department of Environmental Quality (ADEQ) in 2003. EPA provides technical assistance to industry to help them meet their emission reduction and accident prevention goals.

For more information go to www.phoenixindustrychallenge.com

Northrop, Exide Honored for Hazardous Waste Reduction Efforts

In December 2005, EPA honored Northrop Grumman Space Technology and Exide Technologies for participating in the National Partnership for Environmental Priorities, which aims to reduce use of toxic chemicals and generation of hazardous waste.



EPA created the partnership to reduce 30 high priority chemicals—including dioxins and mercury—by 10% by the year 2008. These chemicals persist in the environment for many years.

Northrop Grumman is going beyond compliance with hazardous waste regulations to voluntarily reduce trichlorobenzene use at its Redondo Beach, Calif., microelectronics manufacturing facility.

Exide operates a battery smelter/recycling facility in Vernon, Calif., one of six similar plants in the U.S. The facility has committed to boost its lead recycling rate from 97.5 to 99% of its lead input, thus reducing the lead emitted each year in its blast furnace slag by 130,000 pounds. Last June, Exide's Vernon facility was the nation's first battery smelter/recycling facility to join the partnership.

Promoting Greener Computers

EPA's Pacific Southwest Region led a national effort on electronics product stewardship, facilitating a multi-stakeholder process to create a system to help purchasers buy environmentally preferable computer equipment. The Electronic Product Environmental Assessment Tool (EPEAT) includes a set of strict environmental criteria addressing the product's entire life cycle, a verification procedure to ensure that a product meets the criteria, and an easy-to-use tool for purchasers to find products that meet the standards. In 2005, EPA finalized the criteria as an American National Standard, and selected a host organization to run the registration, verification and marketing of the tool to purchasers and manufacturers.

The goals are to give institutional buyers of computers and other electronics a way to reduce environmental impacts such as energy use and hazardous waste, while giving the electronics industry an incentive to build "greener" products. The standard is already harnessing the purchas-

Dawn Kominsky of Tesserderlo Kerley, Inc. signs the Strategic Partnership Agreement on March 8, 2005 at the kick-off of the South Phoenix Industry Challenge/Good Neighbor Partnership. Maricopa County Supervisor Mary-Rose Wilcox, Arizona State Representative Leah Landrum-Taylor and EPA Regional Administrator Wayne Nastri look on (l to r).

ing power of large organizations to accomplish these goals.

Seven federal agencies have committed to using EPEAT in upcoming computer buying contracts, representing roughly \$17 billion in purchasing power. The state of California has also adopted EPEAT as their guide for buying environmentally-preferable electronics.

H2E: Health Care Industry Reduces Mercury Use

Kaiser Permanente's Hawaii Region Waste Minimization Team and 15 California health care organizations won awards in 2005 for their achievements as part of H2E, EPA's hospital pollution prevention partnership. By the end of the year, 25 additional hospitals in the Pacific Southwest had joined, making commitments to "Make Medicine Mercury-Free."

H2E, a joint project of EPA, the American Hospital Association, American Nurses Association, and Health Care Without Harm, has joined forces with California's Department of Toxic Substances Control (DTSC) and Department of Health Services (DHS) to eliminate the use of mercury, cut health care waste, and phase out the use of persistent, bio-accumulative and toxic chemicals.

The California DTSC and DHS provide local training and on-site assistance to help hospitals reach H2E goals. Activities include expanding mercury reduction efforts to include clinics and medical offices, promoting reprocessing of single use medical devices, and working to keep pharmaceutical waste out of wastewater.

For example, Catholic Healthcare West adopted a mercury-free purchasing policy, reducing overall waste by 9%, energy use by 7% and hazardous waste by 23%, despite growth in facilities. CHW also started organic gardens, composted food waste, and began using biodiesel fuel.

Alta Bates Summit Medical Center in Oakland, Calif., recycled 757 tons of paper, cans, bottles, and more than 50% of its construction and demolition materials. An equipment reuse program saved the facility \$53,500, and included 10 truckloads of equipment donated to international relief programs and the auctioning of old equipment that would otherwise be disposed of.

For more information on the program and other award winners, go to www.h2e-online.org

Performance Track Facilities Cut Waste, Smog

Performance Track is an EPA voluntary partnership that encourages facilities in both the private and public sectors to go beyond regulatory compliance to achieve superior environmental performance. In just one year, 2004, 21 facilities in the Pacific Southwest made good on earlier Performance Track commitments to cut their generation of solid waste by an impressive total of 117,000 tons, without reducing production.

Two facilities, Rohm and Haas in La Mirada, and Ricoh in Santa Ana (both in Southern California), reduced smog-forming nitrogen oxide emissions by 12.5% (a total of 1.1 tons per year), even while increasing production by 41% and 70%, respectively.

In 2005, Performance Track membership in the Pacific Southwest grew 35%, from 34 to 46 facilities. New members include facilities operated by Hewlett-Packard, Lockheed Martin, Coca-Cola, and Forever Resorts (a concessionaire in state and national parks).

EPA People

Greg Lovato of EPA's Pacific Southwest Waste Division has a difficult task—helping 100 local agencies in California clean up contaminated soil and ground water from 15,000 leaking underground fuel storage tanks. He's not alone: Some front-line project managers at local agencies find themselves directing investigation and cleanup work at over 100 sites in addition to other responsibilities.

Greg, who works out of EPA's Southern California Field Office, helps local agencies in three ways. Together with Matt Small of the Underground Storage Tank program, he organizes staff workshops, where he advises them on prioritizing sites and increasing efficiency. Greg and Matt also help establish dialogue between the agencies and the responsible parties. In addition, they secured EPA funding for eight contract employees who work in the local agencies to lighten the workload.

At EPA's regional office, Greg has been recognized for his "creativity in motivating individual parties to participate" in investigating and cleaning up leaking underground tanks and pipelines.

Some of the parties have been major oil companies and refineries.

"We look at the [ground water] data, and present a defensible argument on why participating would expose them to lower risk, and lower cost. The companies are ready to do the work if they know that we know what needs to be done, and we can back it up. It's a matter of fair dealing, and communicating our plans clearly to all stakeholders. They don't want to be caught shutting down drinking water wells."



That's a reference to Greg's experience working with the Los Angeles Regional Water Quality Control Board several years ago on the Santa Monica MTBE issue. Some of the city's drinking water wells had to be shut down because

they were contaminated with the fuel additive MTBE. Major oil companies agreed to pay for replacement water after extensive ground water data indicated that most of the MTBE came from their facilities.

After 13 years at EPA, Greg will bring his expertise to his new position at the Nevada Division of Environmental Protection this spring.

Meeting Solid Waste Challenges

EPA's Resource Conservation Challenge

EPA's Resource Conservation Challenge focuses on achieving a 35% recycling rate of municipal solid waste, reducing priority and toxic chemicals, supporting reuse and recycling of industrial materials, and supporting electronics product stewardship. In the Pacific Southwest, EPA funded a nonprofit Recycled Products Purchasing Cooperative (see story below). EPA also worked with partners to reduce the use of solvents with high levels of smog-forming volatile organic compounds (VOCs), by demonstrating alternative products. These efforts led to a reduction of 60 tons of VOCs per day in Los Angeles' South Coast air basin.

EPA worked with partners on the development of a "Design for Deconstruction" manual for builders to facilitate the reuse and recycling of building materials during construction and demolition. EPA also promoted both the safe recycling of electronic products and the safer design of electronic products. In addition to working with federal facilities in the Pacific Southwest to recycle thousands of tons of electronic equipment, EPA helped develop the Electronic Products Environmental Assessment Tool (see "Promoting Greener Computers," above).

Recycled Products Purchasing Co-op Saves Money, Resources

Approximately 44 million tons—or 48%—of the paper generated in this country each year ends up in landfills. To save trees, energy, and reduce landfill waste, EPA encourages paper recycling through voluntary partnerships like the Recycled Products Cooperative (RPC). Started through an EPA grant, the cooperative is a self-sustaining effort that uses group purchasing power to offer recycled paper at competitive prices.

Joining the RPC is free to anyone, from large companies and organizations like IKEA and the city of San Diego, to individuals. Buying small quantities of paper can be expensive. Since RPC buys in bulk, its members can purchase recycled paper at a lower cost that meets—or even beats—regular paper prices. Through the efforts of the RPC, 500 organizations and more than 120 businesses and universities have started using recycled paper. In just six months of 2005, the RPC sold 7,527 tons of postconsumer recycled paper.

In the past four years, the RPC has led to savings of:

- More than 60,000 forty-foot tall trees
- 71 Olympic sized swimming pools full of water (17,702,050 gallons)



Supai Falls, near the Havasupai Tribe's village of Supai, in the Grand Canyon.

- 151,329 pounds of carbon dioxide, nitrous oxide and other pollutants
- 10 million kilowatt hours of electricity.

For more information, go to www.recycledproducts.org

Mules, Helicopters to Help Havasupai Recycle in Grand Canyon

The Havasupai Tribe lives on tribal land at the bottom of the Grand Canyon, and the famous image of its waterfall is a scene of seemingly idyllic isolation. The only way to get there is by horse, mule, helicopter, or a long walk through the dry canyon. Despite the remoteness of the community, however, the residents—and approximately 30,000 annual visitors—buy and use many items from outside the village of Supai. Because the village is at the bottom of the canyon, it's much easier to bring materials in than to haul them out.

For a century, the cans, bottles, packaging, appliances, and everything else discarded has gone to an open dump near the village. But the dump was a growing eyesore as well as a source of air pollution, since the waste was regularly burned. Some of the heaviest metal items were airlifted out two years ago by helicopter.

EPA developed a series of waste management options for the tribe, providing detailed cost information with input from the Indian Health Service and the Bureau of Indian Affairs. After thorough evaluation, in August 2005, the tribe decided on a plan to haul trash out of the canyon via mule and helicopter, with a strong emphasis on recycling. This waste management plan will enable the tribe to close the dump and to utilize existing mule hauling enterprises, owned and operated by members of the Havasupai Tribe.

Responding to Katrina



EPA Aids Recovery from Devastating Hurricanes, Floods

In August and September 2005, southern Louisiana was hit with two hurricanes, Katrina and Rita, which destroyed lives and property along the state's coastline, in the city and suburbs of New Orleans, and up to 100 miles inland. In emergencies like this, EPA serves as the lead federal agency for the cleanup of hazardous materials, including oil spills. EPA's regional office in Dallas, Texas, coordinated response efforts by EPA personnel from around the nation. By the end of the year, 68 people from EPA's Pacific Southwest Regional Office had worked from two to six weeks in the disaster area—nearly 10% of regional EPA staff.

The hurricanes presented a very real test of EPA's efforts since 9/11 to enhance preparedness for emergencies that require a national response. Every regional office has plans to back up EPA's regional response in a major emergency anywhere in the U.S. These preparations enabled EPA staff from all regions to assist the South Central Regional Office by quickly taking pre-assigned places in the federal government's unified Incident Command Structure in Louisiana.

For the cleanup work, EPA partnered with the U.S. Coast Guard and the Louisiana Department of Environmental Quality (LDEQ). These three agencies cleaned up dozens of oil spills and collected both industrial and household hazardous waste all over southern Louisiana. In the first days after Katrina hit, EPA was also involved in collecting floodwater samples and testing them for contaminants. As the waters receded, EPA drinking water specialists fanned out across the affected area assessing drinking water systems and helping operators provide safe drinking water to returning residents.

Drinking Water Specialists Rush to New Orleans

Less than a week after Hurricane Katrina flooded New Orleans, seven drinking water experts from EPA's Pacific Southwest Regional Office joined 25 EPA staff from around the nation assigned to test 400 local drinking water systems in southern Louisiana.

The EPA staff joined with state and local drinking water experts to form 25 teams, each with a list of water systems to assess. Once they found the locations and gained access, the teams checked

the physical infrastructure for damage, and took water samples. Many water systems sustained no physical damage but were contaminated due to earlier power outages, which allowed floodwaters to leak into the pipes.

EPA staff advised operators of the contaminated systems on how to flush out the systems, check for leaks, and take more samples for lab testing. Once a system tested clean, operators faced the challenge of notifying customers—but phone lines were down in many places and there was no mail service. Some water system operators simply painted a sign on a piece of plywood and posted it on the nearest highway.

Despite the challenges, the 25 teams covered about 95% of the 400 systems in the first week. In the second week, they covered the rest, and made follow-up visits to systems that were contaminated or damaged. Getting new pumps and generators to replace those knocked out by flooding was another challenge.

According to EPA's Barry Pollock and Brian Smith, two of the seven drinking water specialists sent by the Pacific Southwest Water Division, conditions in those first weeks were often "chaotic, communication was difficult, and we were working 14- to 16-hour days." But they accomplished their mission of assessing water system damage, thus helping prevent the spread of water-borne diseases in the hurricane-stricken area.

Cleaning Up Oil and Toxic Spills

Within days of the hurricane, four on-scene coordinators from EPA's Emergency Response Team in San Francisco were on the ground to help address toxic threats. The hurricane left a mess—not only sewage-polluted floodwaters and debris from ruined buildings, but a series of oil spills across southern Louisiana that totaled tens of thousands of barrels. Emergency responders and other environmental specialists from the Pacific Southwest Region's Response Support Corps joined with other EPA personnel, the Coast Guard and LDEQ to locate the spills, assess needs, and clean them up.

One of the largest spills resulted from a ruptured above-ground oil tank at the Murphy oil storage facility in Meraux, La., that spilled 25,000 barrels of oil into a flooded residential neighborhood. When the waters receded, they left a two-inch-thick layer of oil-contaminated mud. The cleanup involved spreading sand onto the oil layer to create a sand-oil-mud mixture, which was then bulldozed, scooped into dump trucks, and taken to a hazardous waste landfill.

To locate other spills, EPA on-scene coordinator Tom Dunkelman joined a Coast Guard team that flew over oil tank farms, refineries, well plat-



An EPA team takes samples of floodwaters in New Orleans, September 2005.

forms, and other industrial facilities in planes and helicopters, looking for the telltale sheen of oil on water. Once located, the spills were mapped and ground teams sent in to assess the damage by taking water and soil samples. The top priorities for cleanup were waterways, where oil had to be contained to keep it from spreading. Workers in boats deployed booms and skimmers to corral and collect the oil.

Hazardous waste from flooded businesses also had to be cleaned up. Drums partially filled with chemicals had floated away on floodwaters and had to be retrieved, sampled, the chemicals identified, and properly disposed of.

And finally, as homeowners returned to formerly flooded areas and began removing mounds of ruined furniture, appliances, carpets, wallboard, and flooring, EPA staff collaborated with LDEQ to organize household hazardous waste curbside pickups. In each neighborhood, homeowners were given flyers asking them to separate the household hazardous waste—paints, solvents, cleaning fluids, etc.—from the rest of their debris, to prevent it from being mixed with the main body of trash headed for solid waste landfills. As of spring 2006, cleanup work was still underway.



Workers move a drum at a hazardous waste collection center near New Orleans. Thousands of small containers of waste were collected, sorted, and consolidated into larger containers like this, then taken to a hazardous waste landfill.

EPA People

As Geographic Information Systems (GIS) Coordinator for EPA's Pacific Southwest Office since 1991, **Cheryl Henley** has dealt with plenty of rush requests to create maps—but nothing like her experience coordinating mapping for EPA, the Coast Guard, and the Louisiana Department of Environmental Quality at the Incident Command Center in Metairie, La., in October 2005.

"Ordinarily, we get a couple of weeks of lead time," says Henley. "But there, the urgent map requests had to be completed the same day, and even the low-priority ones had to be done by the next day."

The workload was staggering. By the end of the year, the GIS unit produced more than 6,000 maps. Each day,



dozens of staff from the three agencies went into the field with Global Positioning System (GPS) units, plotting the location of hazardous waste, oil spills, and cleanup work. The GPS units were brought back to the Command Center, the data downloaded, and updated maps for field use generated for the next day's 7 a.m. meeting.

Cheryl's team also generated maps showing pipelines, churches, fire stations, and other locations agency staff had to find in the response effort, as well as maps illustrating the "big picture" to show progress to Incident Command officers, the news media, and staff as they rotated in for duty tours of two to three weeks.

Community Involvement Coordinators Help Returning Evacuees

A crew of 30 EPA Community Involvement Coordinators from around the nation, including eight from the Pacific Southwest, arrived in Louisiana in late September 2005, just as area residents who had evacuated were beginning to return home. This EPA team's initial task was to find out what environmental information residents in this area needed most, and then deliver that information.

By interviewing residents, the EPA team found that their most frequently-asked questions were how to deal with mold in homes that had been flooded, and how to make sure their water was safe to drink. Existing EPA fact sheets on these topics were revised for the hurricane-damaged area, translated into Spanish and Vietnamese (to serve the 40,000 Vietnamese Americans in coastal Louisiana), and printed in three languages plus pictograms for the illiterate. Kim Hoang, a Vietnamese speaker from EPA's Pacific Southwest Superfund Division, led the outreach to the Vietnamese community.

Mass communication faced several hurdles. Electricity was out, and there was no mail or newspaper delivery. The team built a communication network from scratch, by driving to rural churches, police and fire stations, and other community meeting places and enlisting the help of priests, ministers, firefighters, police officers, and others with existing social networks. Some EPA staffers stood

on the roadside and handed leaflets to people in passing cars; others stood outside churches on Sunday morning. Radio public service announcements were also used, since returning residents listened to their car radios for news.

Starting in late October, EPA staff used the distribution network to advertise household hazardous waste collection. Some worked in New Orleans, collaborating with local nonprofits. By late January 2006, EPA and LDEQ had distributed more than a million flyers on drinking water, private well testing, and EPA efforts to collect household chemicals and Freon from junked refrigerators and air conditioners, recycle damaged electronics, remove chemical drums, and collect flood-damaged firearms and ammunition for disposal.

Leadership and Support Staff Play Key Roles

EPA's response efforts could not have succeeded without support staff and managers to keep track of people and materials, make arrangements for meals and housing, and compile and distribute data from thousands of water and soil samples. Tasks ranged from directing operations in situation units and other cross-agency teams to financial accounting and contracting. These jobs were further complicated by the constant arrival and departure of personnel from around the nation.

Information from hundreds of EPA, Coast Guard, and Louisiana Department of Environmental Quality staff and contractors in the field was compiled at offices like this to prioritize and coordinate cleanup work.



While much work remains, EPA and its state and federal partners have made a significant contribution to helping millions of people in the hurricane-stricken area by providing safe drinking water and cleaning up oil spills and hazardous wastes. The challenges have been enormous, and the lessons learned will help EPA respond to the nation's next major emergency, which may well be in the Pacific Southwest.

For more details on EPA's ongoing response efforts in Louisiana, go to www.epa.gov/katrina

EPA's Field Offices in the Pacific Southwest

EPA's main regional office in the Pacific Southwest is in downtown San Francisco, but there are also three field offices that put EPA staff in key geographic locations: the Southern California Field Office, in Los Angeles; the San Diego Border Liaison Office; and the Pacific Islands Contact Office, in Honolulu.

The Southern California Field Office



More than 20 million people—nearly half the entire population of the Pacific Southwest Region—live in the Southern California counties of Ventura, Los Angeles, Orange, San Diego, Riverside and San Bernardino.

Taken together, these counties represent a large, globally significant population and economy, with challenging

environmental issues. EPA opened a field office in Los Angeles in 2004 to better manage environmental programs, projects and issues in this densely populated area.

Among the important environmental issues in Southern California are the adverse impacts associated with the growth of international trade—the Ports of Long Beach and Los Angeles together are the third largest port complex in the world—and the movement of goods. Other challenging issues include the worst air quality in the nation, water quality problems at the beaches and inland waterways, ground water contamination, waste disposal capacity limitations, numerous Superfund sites undergoing cleanup, emergency response needs, and environmental law enforcement.

The tremendous growth in the population of Southern California not only makes dealing with these problems more difficult, it makes managing them all the more important to ensure a safe and healthful environment for an increasing number of Southland residents. The Southern California Field Office provides a local EPA presence to work directly with state and local agencies, businesses, non-profit groups, press and news media, and the public to more effectively address these problems.

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The San Diego Border Liaison Office

EPA's San Diego Border Liaison Office was established in 1994 to support binational efforts to address environmental problems along the U.S.-Mexico border. The office plays a central leadership, diplomatic, and planning role for the Pacific Southwest Region on U.S.-Mexico border affairs.

The Border Office's functions include developing and implementing policies and funding strategies that leverage resources and promote measurable environmental improvements along the U.S.-Mexico border. The office also supports the U.S.-Mexico Border Program (Border 2012) and serves as a liaison with state and federal co-chairs and the 26 U.S. border tribes on program implementation and accountability.



EPA staff here provide information to stakeholders including non-governmental organizations; state, local, and federal governments; tribes; business groups; academic institutions; citizen groups; and the general public. In addition, the Border Office helps facilitate community feedback to EPA decision-makers about border programs.

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The Pacific Islands Contact Office

Located at the crossroads of the Pacific, EPA's Pacific Islands Contact Office (PICO) in Honolulu serves as a liaison between EPA and the State of Hawaii, and other Pacific Islands, including the U.S. flag territories of Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. The office also serves as a base for EPA staff and environmental officials of the Pacific Islands during temporary duty in Hawaii.



PICO's Dean Higuchi serves as EPA's spokesperson in Hawaii, and connects the Hawaii news media with EPA staff in San Francisco and Washington, D.C. PICO also conducts outreach to Hawaii schools, colleges and community groups, and participates in environmental events. PICO helps the public, as well as local governments in Hawaii and the Pacific Islands, to access EPA's extensive environmental information resources.

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Addresses and phone numbers for these offices can be found on the inside back cover.



News from EPA's Pacific Southwest/Region 9 Office

Web Site Celebrates 10 Years of Growth

The Pacific Southwest area of the EPA Web site (pictured above) has changed quite a bit since it went live in early 1996. It has evolved into the agency's primary communication tool in the region and an indispensable information resource for the public and EPA partners.

On an average day in February 2006, regional Web pages were viewed nearly 45,000 times—a far cry from less than 300 ten years ago. Web site visitors can subscribe to receive press releases by email, browse a featured area on agriculture issues, and read all EPA comments on environmental impact statements in the Pacific Southwest. It's all at www.epa.gov/region09

Regional Office Now ISO 14001 Certified

In June 2005, EPA's Pacific Southwest Regional Office became certified under ISO 14001, the international standard for Environmental Management Systems (EMSs). The regional office is the

third EPA facility nationally to implement an EMS, and the second regional office to do so.

An EMS is a systematic approach to managing and improving environmental performance. Certification includes an independent audit to ensure facility-wide commitment to pollution prevention, continuous environmental improvement and compliance with environmental laws. Regional EMS efforts in 2005 included battery recycling, halting purchases of products with toxic chemicals and switching to environmentally preferable janitorial products.

Richmond Laboratory Gets Upgrades

Staff and contract technicians at EPA's regional laboratory in Richmond, Calif., have been supporting EPA's field work in the Pacific Southwest since 1994. The lab's routine work includes chemical, biological, and physical analyses of samples—more than 10,000 of them in 2005. In addition, the Richmond Lab became the third EPA lab in the nation to receive accreditation under EPA's national laboratory accreditation system.

Recent upgrades at the lab include a new mobile trailer with instruments to measure mercury in the air. This mobile mercury monitor was used to investigate air emissions of mercury from



Region 9's home page at www.epa.gov/region09



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gold mining operations in Nevada, as well as tracking atmospheric mercury deposition in waterways.

The lab also has a new technique for measuring bacterial contamination of water, new chemicals of concern in living tissue (such as endocrine disrupters), and biological warfare agents such as anthrax spores. It's called Polymerase Chain Reaction Technology, an extremely sensitive method of analyzing DNA fragments.

A Great Place to Work

The Pacific Southwest Regional Office was honored in 2005 as the best place in the nation to work for EPA—and the second best small agency or regional office in the entire federal government—based on feedback from employees.



The top three small agencies/regional offices were the Federal Mediation and Conciliation Service, with a ranking of 81.2, EPA's Pacific Southwest Regional Office, at 80.5, and EPA's Pacific Northwest Regional Office in Seattle, at 78.4.

The Best Places to Work rankings (at www.bestplacetowork.org) were made by the Partnership for Public Service and American University's Institute for the Study of Public Policy Implementation.

EPA Pacific Southwest/Region 9

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