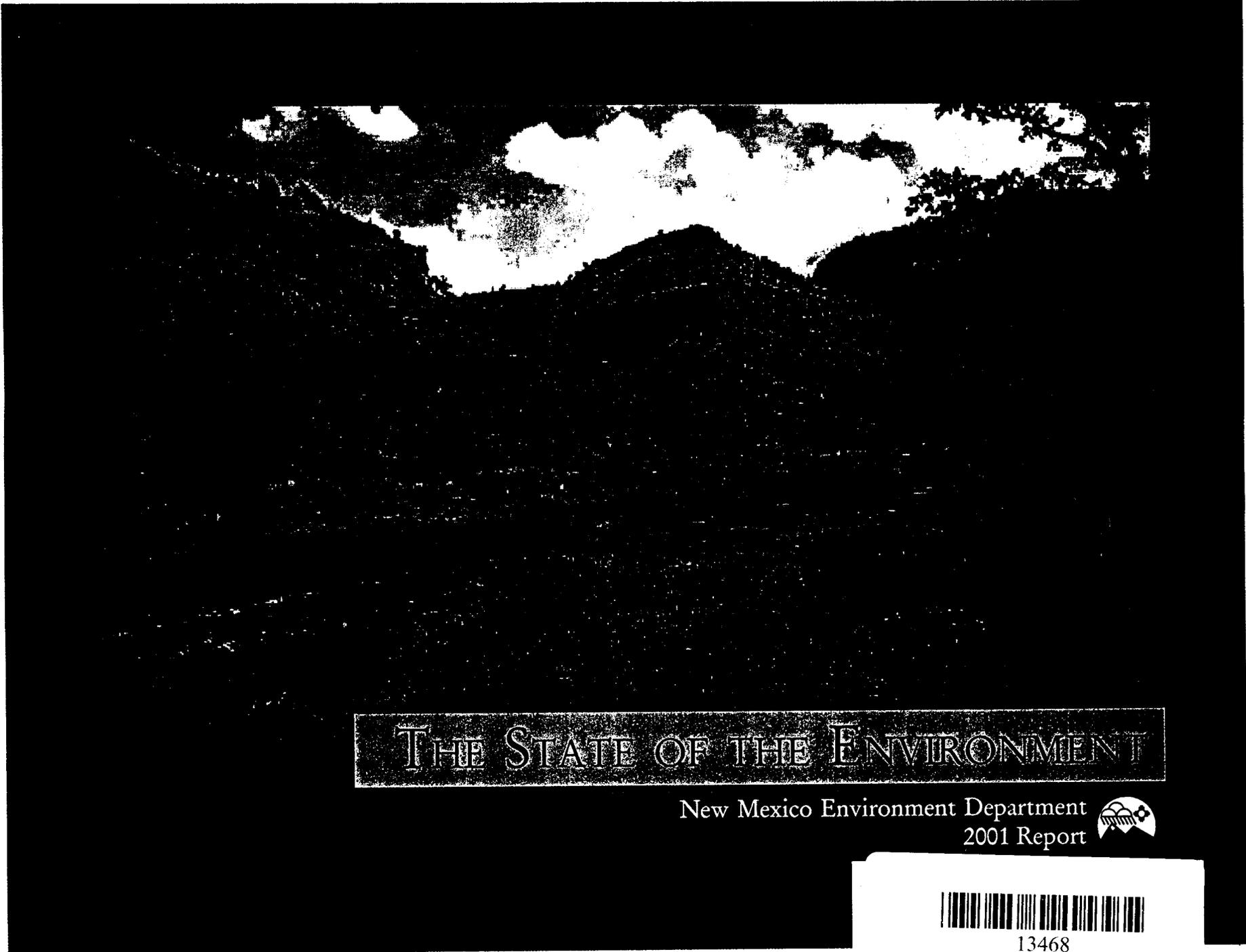


July 2002



THE STATE OF THE ENVIRONMENT

New Mexico Environment Department
2001 Report



13468

THE STATE OF THE ENVIRONMENT



New Mexicans are endowed with landscapes and natural resources that match the beauty and diversity of its people—from Shiprock marking the high deserts to Carlsbad Caverns declaring the wonder of the underground and all the pristine peaks, forests, mesas, and rivers between. New Mexico is truly a land of enchantment.

As governor, one of my main goals has been to promote "smart government" for the state. The people of New Mexico have asked for increased efficiency and responsibility from government. I have promoted each of these. For the environment, this has meant the wise use of our resources and protection of our land, air, and water. We are simplifying some Environment Department processes, such as permitting, increasing the use of computers and on-line commerce; developing or modifying regulations so that they are effective and practical, and promoting the balance of use, conservation, and preservation so that New Mexico's natural resources are protected while supporting economic growth.

New Mexico's environment is the embodiment of this state's heritage, goals, peoples, economy and health. Our intellect and conscience compel us to use it wisely while protecting it for our children and grandchildren.

— GOVERNOR GARY E. JOHNSON



Bright blue skies, clean, safe, drinking water, contaminant-free food in restaurants, land, air and water that support vigorous ecosystems and diverse human activities—these are the things that the New Mexico Environment Department (NMED) strives for daily. So how are we doing?

The answer is complex. On one hand, our air, water, and land are better protected than ever before. The NMED administers funds for drinking water systems and wastewater treatment plants to insure support for infrastructure that keeps water clean. The permit for the Waste Isolation Pilot Plant (WIPP) finally allows mixed radioactive waste to be disposed in a responsible manner. Protection of streams from a variety of contaminants is ongoing. On the other hand, we face new, serious health and environmental risks. Population growth and shifting industrial and technological trends are creating new environmental concerns, including nuclear waste disposal and pharmaceutical drugs in water. We are also just identifying and cleaning up some older landfills, gas stations, and businesses that are causing air, ground, or water contamination. Finally, the cost of complying with new laws can create staffing and financial strains.

Ultimately, the state of New Mexico's environment is one of constant flux. The NMED continuously monitors air, land, and water, evaluates business practices, identifies environmental trends, and implements new federal regulations to identify, develop, and sustain a healthy, productive environment.

This biennial report, the first of its kind, features the recent work of the NMED, provides program descriptions, and describes events and initiatives. Where possible, meaningful measurements and comparisons are provided. The NMED's almost 600 staff are proud to share our work with you. While the NMED is a designated government steward of our natural surroundings, New Mexico's natural resources are dependent on the commitment of us all. We acknowledge and appreciate the support provided by New Mexico citizens, businesses, non-profit organizations, educators, local governments, and the many others in reaching toward our goals.

I hope you find this report informative, and that it inspires you to work to improve your environment.

— PETER M. GGIORIO, New Mexico Environment Department, Acting Secretary





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Cover: East Fork Gila River
above Black Canyon.
By Seva Joseph

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AIR QUALITY

Air Quality in New Mexico

Air quality in New Mexico remains generally excellent. In the past year, with the exception of dust storms in the southern part of the state, all areas of the state met the health-based federal standards for air quality. Across the state, emissions from trucks and autos have been increasing with the population.

This will continue to impact the quality of New Mexico's air. The New Mexico Environment Department's Air Quality Bureau (AQB) has continued its efforts to protect air quality in our jurisdiction, and to implement last year's legislative changes to the Air Quality Control Act.

Meeting State and Federal Requirements - For more than 25 years, the AQB has carried out a number of responsibilities under the federal Clean Air Act and state Air Quality Control

Act. The AQB's jurisdiction is statewide except for Albuquerque and Bernalillo County (program administered by Albuquerque Environmental Health Department), and Tribal lands (see map on page 4).

AQB activities include:

- Maintaining a network of air quality monitors to measure the levels of pollutants around the

state (see map on page 4).

- Inspecting to verify that air pollution sources are meeting state and federal limitations and requirements, and takes enforcement action when needed.

• Issuing and modifying air quality permits for new and changing sources of air pollutants ("New Source Reviews"). These permits contain conditions to ensure that the air around these sources will remain within standards.

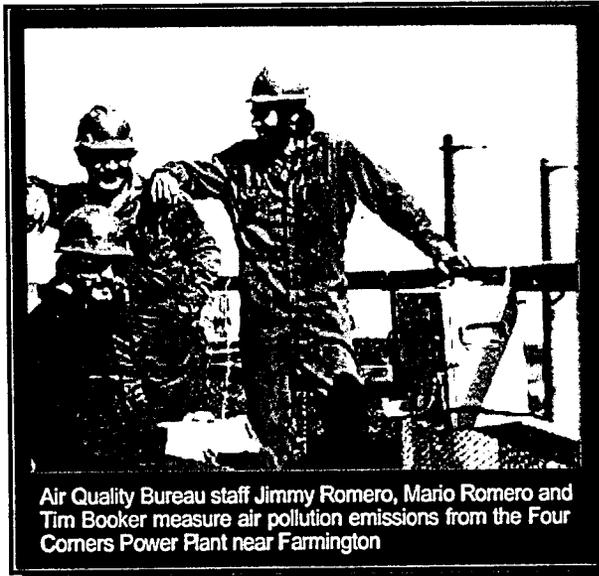
- Issuing operating permits for ex-

isting major sources of air pollutants, consolidating all applicable air quality requirements.

- Evaluating the continuing stream of new federal requirements relating to air quality. For example, new requirements regarding the protection of visibility will be in place in the coming years.

Hindrances - The AQB has encountered a few hindrances in its efforts to protect air quality:

- Increasing workload — The workload in the AQB has increased, while staffing has decreased (see tables for trends in numbers of permit applications and inspections).
- Taking the time to do it right — One of the regulatory changes required by legislation passed last year (effective January 1, 2000) is still under development. Changing the regulations to provide for accelerated review of permit applications (New Source Review) by using outside contractors has been difficult because of the complexity of issues. The AQB is consulting with interested parties to affect these changes. While consultation takes time, it ensures that the differing views are properly addressed and contributes to the building of partnerships with the varied interests served.



Air Quality Bureau staff Jimmy Romero, Mario Romero and Tim Booker measure air pollution emissions from the Four Corners Power Plant near Farmington



Air Quality Bureau

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"Remote" Bureau Staff:
Las Cruces, Farmington,
Silver City, Carlsbad, and
Roswell offices



Air Quality by County

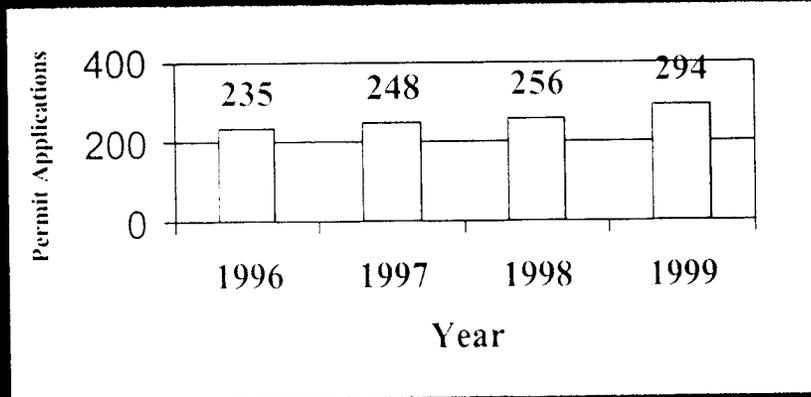
Doña Ana County - Higher pollutant levels (dust, ozone [smog]) have been measured just across the border from El Paso and Juarez. Another trend has been the increasing industrialization and vehicle emissions along the border with Mexico (in Santa Teresa, NM).

Over the past several years, Bureau monitors in Doña Ana County have recorded high levels of airborne fine particles (PM10) on more days than allowed by federal air quality stan-

viduals can take to reduce their exposure. The AQB also will work with local communities to identify significant human-caused sources of windblown dust and to implement measures for controlling dust from such sources where feasible.

Eddy, Lea and San Juan Counties -- In the northwest and southeast portions of the state, air pollutant emissions (carbon monoxide, nitrogen oxides, sulfur dioxide and volatile organic components) from oil and gas facilities have been increasing.

New Source Permit Applications Received Annually

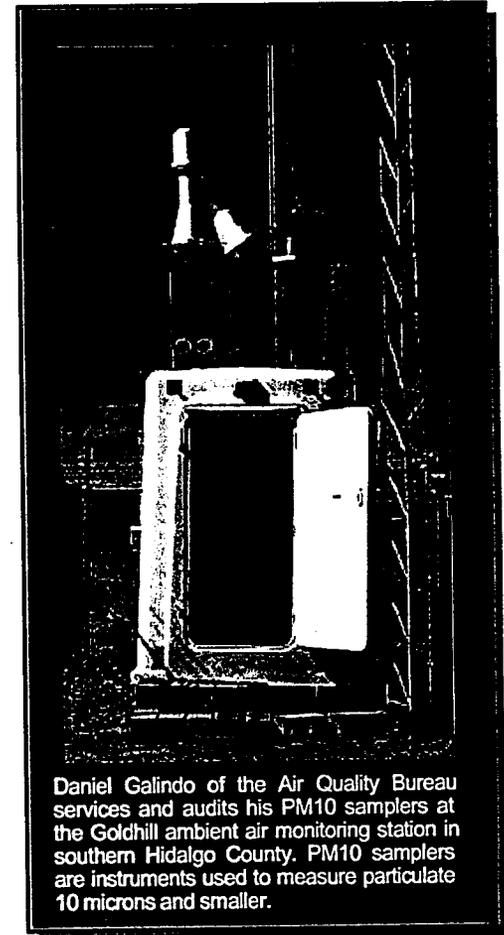


Implementing Legislative Changes to the Air Quality Control Act

In the 1999 legislative session, sections of the Air Quality Control Act pertaining to New Source Review (NSR) permits were amended by the State Legislature. As discussed above, the regulatory language for establishing a program to allow accelerated review of permit applications through the use of out-

side contractors is still under development. The following regulatory changes to the appropriate air quality regulations were proposed by the Department, adopted by the Environmental Improvement Board (EIB), and became effective on January 1, 2000:

side contractors is still under development. The following regulatory changes to the appropriate air quality regulations were proposed by the Department, adopted by the Environmental Improvement Board (EIB), and became effective on January 1, 2000:



Daniel Galindo of the Air Quality Bureau services and audits his PM10 samplers at the Goldhill ambient air monitoring station in southern Hidalgo County. PM10 samplers are instruments used to measure particulate 10 microns and smaller.

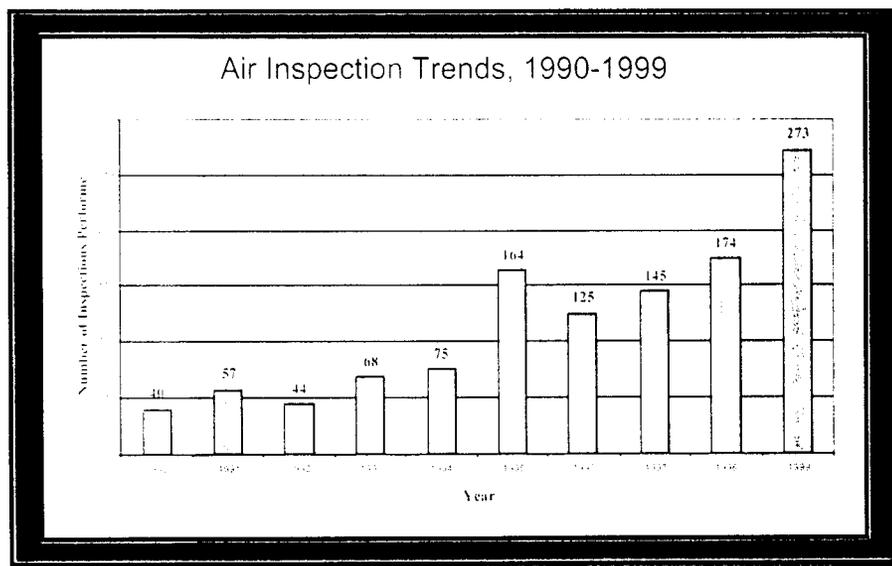
- The time allowed for review of NSR permits has been reduced. The Department Secretary may extend permit deadlines for good cause.
- The regulations now include a description of what a NSR application must contain to be deemed administratively complete.
- The time in which the EIB must hear appeals to NSR permit applications has been reduced.



Further Improvements to the Air Quality Construction Permit Program - "Red Team" - At the request of the Department Secretary, an independent technical review of the New Source Permitting Process was conducted. The 'Red Team' final report was released in August 1999. In response to this report and to improve Bureau performance, the following efforts have been made:

- A new bureau chief was assigned.
- The Department increased pay for some of the technical positions in the AQB. Efforts continue to create a meaningful career ladder.
- The AQB improved training materials, permit application forms, permit application processing procedures, and permit templates.
- The AQB continued development of "general permits" for specific source types. These permits allow the qualified applicant to start operating within 30 days of submitting their registration application. General permits for "crushing, screening and quarrying facilities" and certain "oil and gas equipment" are two general permits available at the end of 2000.

- The AQB is establishing a procedure on permit application processing, including permit denial, that is consistent with the new regulations and statute.
- The AQB encouraged and received greater involvement by representatives of industry and the public in rulemaking and policy development.



Continuing Outreach - The Bureau has continued outreach efforts with members of industry, the public, and other agencies. Outreach efforts in 1999 have included:

- Consultative planning efforts with various constituents including industry working groups and public advocacy groups to implement statutory changes.

- Periodic meetings of the Air Quality forum, a discussion group on air quality issues in New Mexico consisting of industry working groups, public advocacy groups, other government agencies, and the Bureau.
- A "road show" to inform local and government officials of the development of a "general permit" for aggregate rock crushers,

asphalt batch plants and concrete batch plants.

(Communities visited include: Farmington, Clovis, Roswell, Silver City, Las Cruces, Sunland Park, Alamogordo and Luna.)

- Mass mailings to keep interested parties informed and solicit comments concerning current regulatory changes and general construction permit development.

AQB's Response to Air Quality Trends

Permitting - The AQB is reviewing new (non-vehicle) sources of pollutants through the air quality permit process. The Bureau also providing incentives for stricter air pollution controls by developing general permits that can be obtained more quickly by businesses.

Jurisdiction:
All of New Mexico, except Bernalillo County and tribal lands.

Number of air monitoring sites: 35 (See map of sites on following page.)

Number of air pollution source inspections: 260

Number of notices of violation issued: 23

Amount of fines collected in 1999: \$357,323

Value of supplemental environmental projects (in lieu of fines): \$265,000



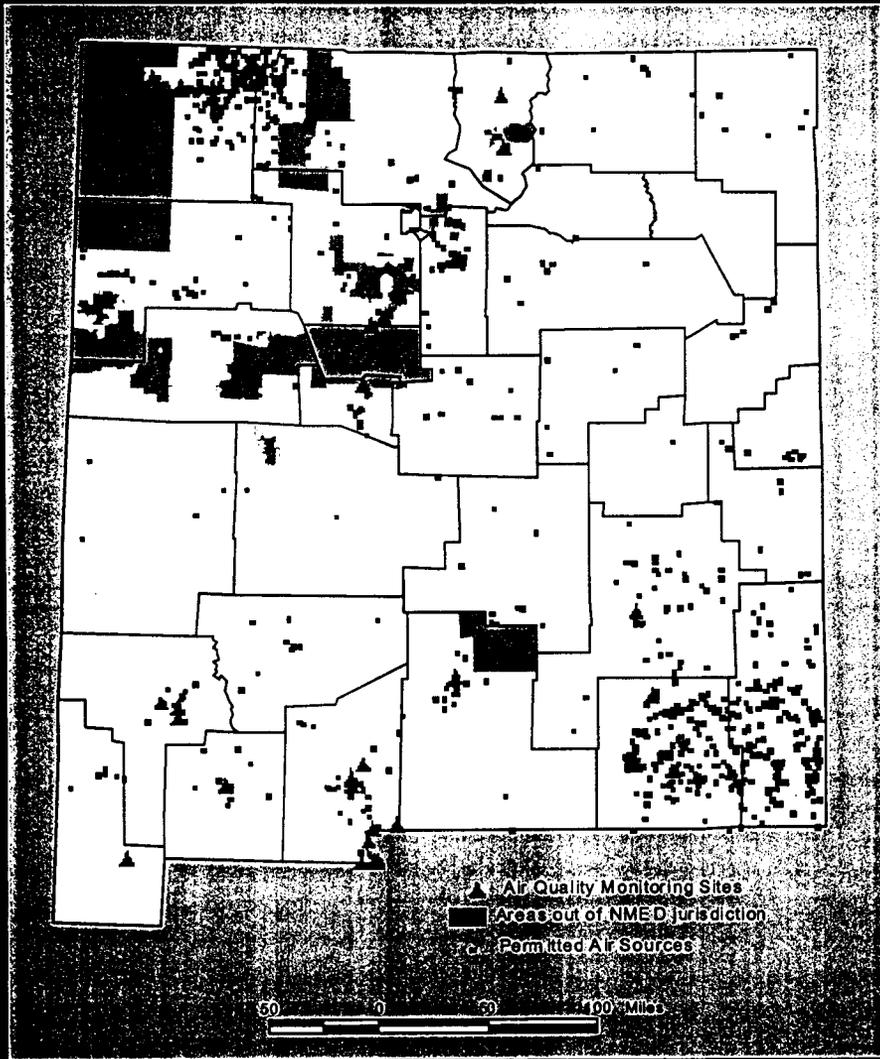
Federal requirements for Prevention of Significant Deterioration continue to apply, and new federal requirements that protect visibility will be implemented.

Enforcement/Compliance - The AQB is increasing the use of

'supplemental environmental projects' to mitigate portions of proposed penalties. The Bureau is also utilizing the Department's Environmental Self-Disclosure Policy, which allows for significant penalty reductions if specific criteria are met.

Education about Burning Trash - The AQB has done extensive outreach to reduce residential trash burning, as the smoke produced can be toxic.

Bureau Resource Needs
As the state's population grows, so do the number of air pollution sources and emissions. Numbers of permit applications, inspections, and penalties collected have been increasing yearly. (See figures on previous page.) Due to legislative changes, permit engineers must now process permit applications in half the time they once had. Compliance actions have also been steadily increasing over the years as industry grows and more permits are issued. In response to federal and state initiatives, the demand for regulatory development has been growing as well. The AQB continues to work hard at streamlining and improving procedures.



COMMUNITY SERVICES AND FIELD OPERATIONS

Public Protection through Field Operations

The primary objective of the NMED Field Operations is to protect public health and the environment. Specific programs provide protection from unsafe food and water as well as air pollution caused by open burning.

The public health and environmental protection programs implemented by NMED Field Operations include:

- Liquid waste.
- Food safety.
- Swimming pools and spas.
- Vector control.
- Open burning.
- Radon in homes and public buildings.
- Radiation protection.

The district and field offices are located throughout the state and implement the programs of Field Operations Division and other NMED bureaus from these offices.

Following are descriptions of each of the Field Office programs, the current (1999) status of these programs and their apparent trends

Liquid Waste

The New Mexico Liquid Waste Regulations are applicable to systems that receive 2,000 gallons or less of domestic liquid waste per day (most septic tanks). District and field office staff perform permitting, inspections, and enforcement activities to assure compliance; protect the public from exposure to raw sewage capable of transmitting diseases; and, to prevent ground-water contamination.

Approximately 180,000 liquid waste systems exist in the state, receiving a total of 68 million gallons per day of liquid waste. At least 36,000 of these systems are not permitted.

Program status. The Community Services Bureau (CSB) has been working to update the liquid waste

regulations, including the initiation of liquid waste fees, and to provide centralized training and technical support. The fees will provide for increased personnel and training to respond to the increase in liquid waste permitting, inspections and enforcement.

Program trends:

- A trend in the Northeast part of the state (District 1) has been the lack of wastewater treatment caused by rapid growth in Sandoval and Torrance counties. Rio Rancho's infrastructure and city wastewater treatment system have been able to handle less than 50 percent of its growth, leaving the remaining development dependent on liquid waste systems. The cities of Moriarty and Edgewood do not provide sewage and other services to the majority of residential and business growth. Valencia County's population, 66,500 in the year 2000, is expected to double in the next 20

FIELD OPERATIONS	DISTRICT I	DISTRICT II	DISTRICT III	DISTRICT IV
Main Office	Albuquerque	Santa Fe	Las Cruces	Roswell
COUNTIES	San Juan, McKinley, Sandoval, Valencia, Cibola, Socorro, and the western half of Rio Arriba	Taos, Colfax, Union, Mora, Harding, San Miguel, Los Alamos, Santa Fe and the eastern half of Rio Arriba	Catron, Grant, Hidalgo, Luna, Doña Ana, Sierra, Otero, and the southwestern portion of Chavez	Eddy, Lea, Roosevelt, Curry, Quay, Guadalupe, Lincoln, De Baca, and a portion of Chavez
FIELD OFFICES	Farmington, Gallup, Grants, Los Lunas, Rio Rancho, and Socorro	Española, Las Vegas, Los Alamos, Raton, and Taos	Alamogordo, Deming, and Silver City	Carlsbad, Clovis, Hobbs, Ruidoso and Tucuman



Community Services Bureau and District and Field Offices

Field Operations Division

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Santa Fe, NM 87502

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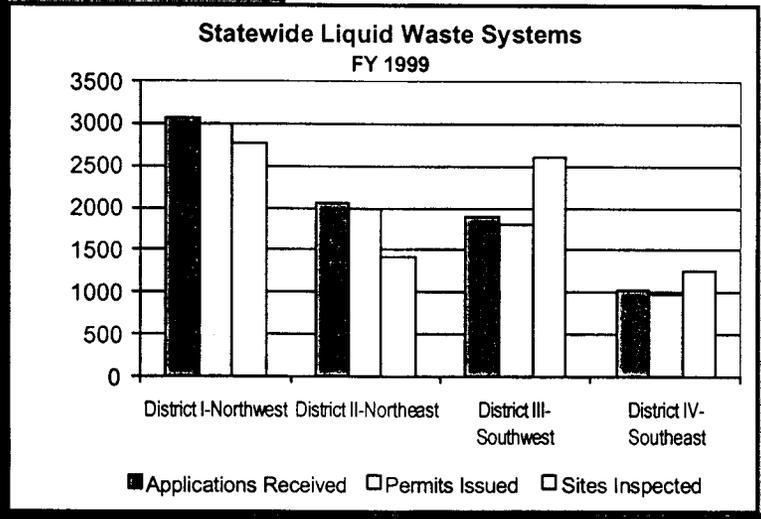
District and Field Offices (details page 64)

The NMED Field Operations Division consists of the following:

- The Community Services Bureau (CSB);
- 4 District Offices and 19 Field Offices; and,
- The Drinking Water Bureau (described separately in this report).



years. San Juan County and Farmington experienced significant growth in 1999 that is reflected in the number of liquid waste systems permitted. The number of permits has been increasing by about 11 percent for each of the past five years. The number of systems installed in environmentally sensitive areas (high water table or shallow depth to bedrock) continues to increase annually.

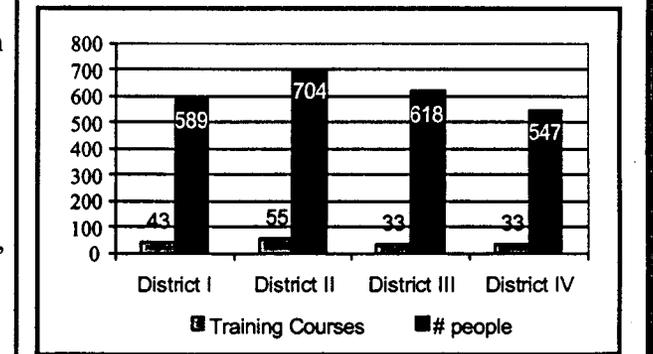
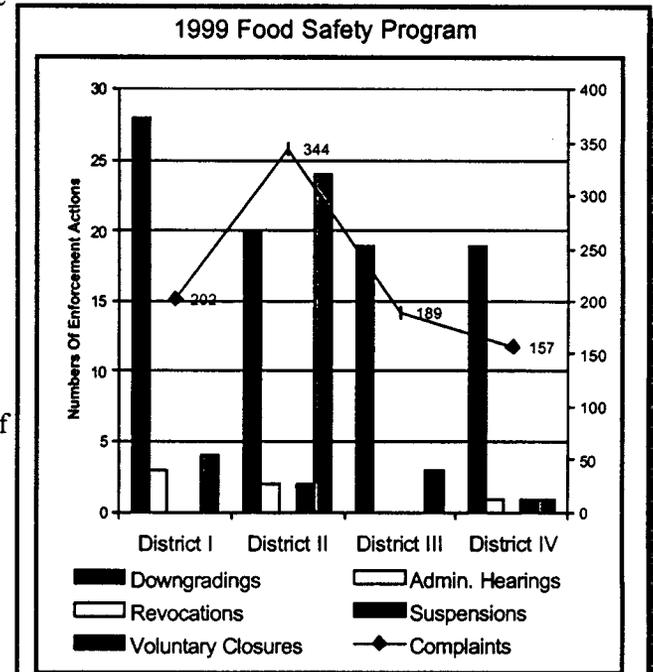


- In District 2, the Northwest portion of the state, numerous liquid waste systems have been discovered that were either illegally installed or installed prior to the permit regulations. Many of these systems are failing due to age or installation of conventional systems in unsuitable areas. These problems are most pronounced in Taos, San Miguel and Rio Arriba counties.

- A trend in District 3, southwestern New Mexico, has been the continued rapid population growth in Dona Ana County that has resulted in the conversion of desert and agricultural lands into residential areas, generally lacking centralized sewage treatment. The county's liquid waste permit applications have increased in 1999 over previous years. The number of inspections in 1999 was more than twice the number of inspections done in 1997. Continued rapid population growth in Luna County is expected to result in a doubling of the liquid waste permits issued in 2000 over the number of permits issued in 1999.
- A trend in District 4, southeastern New Mexico, has also been an increase in population, a better economy and a large increase in new construction resulting in increased liquid waste permitting, inspections and enforcement. In an effort to encourage compliance with the liquid waste regulations, most counties now require proof of a legal liquid waste system

from NMED before a homeowner can get a permit for occupancy of a home or business or for installation of a mobile home.

Food Safety
The food safety program consists of food service and processor permitting,



inspections, and an enforcement program to protect the public from food-borne diseases. District and field offices staff and CSB staff inspect permanent and temporary food-service establishments to assure that food protection requirements are being met as well as to provide food safety training to food service operators and processors.

Program status: The adjacent charts show the food safety activities and training in 1999 by district. The Food Service and Food Processing Regulations were recently revised. These revisions have standardized the regulations with those of the City of Albuquerque and Bernalillo County and incorporated the federal Food and Drug Administration food protection guidelines.

Food Safety Trends: Statewide, there has been an increase in unpermitted and uninspected facilities, particularly bed and breakfast facilities that are being discovered, as well as a moderate increase in new food service establishments. There has also been a surge in the number of new food processors, such as salsa and jerky makers, butchers, bakeries, and chile canning operations. Much of this growth is along the U.S./Mexico border and the Rio Grande corridor. There have also been increases in food recall, embargoes, and condemnations, which impact grocery stores and food product manufacturers.

Swimming Pools and Spas
This program consists of the design review, approval and inspection of swimming pools and spas to ensure that disinfection protects the public from health problems such as fungal and yeast infections, impetigo, influenza viruses, and skin rashes.

Program Status and Trends: More swimming pools are being built statewide at hotels, motels and public recreational facilities, necessitating more time be allocated to perform inspections.

Vector Control
A vector is an animal, usually an insect or a tick, that carries a germ or disease that poses a health threat. NMED District and Field Office staff investigate plague, Hantavirus, and other vector-borne diseases. The program provides public outreach and education, including vector-control training for local and tribal vector-control agencies and exterminators.

The number of plague cases in the state has fluctuated over the years (see chart). In 1999, there were six human, 25 feline and seven canine cases of plague, with no

human fatalities because of timely treatment with antibiotics. Ten human cases of Hantavirus Pulmonary Syndrome were diagnosed with five fatalities. Data for human plague cases dating back to 1988, shows Santa Fe County had the most cases in the state at 51. The NMED has increased surveillance of cats, and has



Top - Field staff control vectors by dusting rodent burrows with an insecticide to kill plague-carrying fleas. Right - CSB staff collect blood samples and feces from rodents during a human plague case investigation.

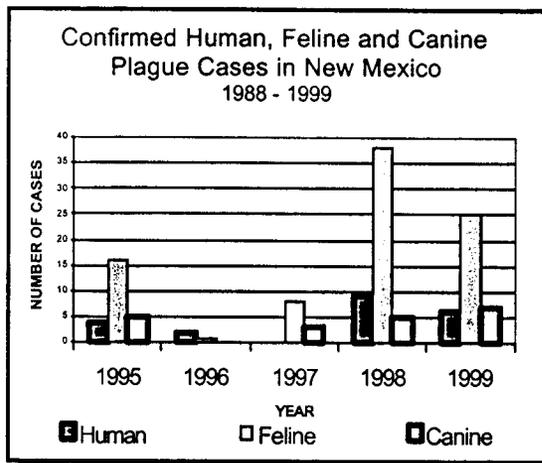




Community Services
and Field Operations

1999 Division Statistics

- 6850 Food establishment or processing permits issued;
- 7348 Food establishments or processors inspected;
- 145 Food establishment owner or operator schools;
- 2000 Participants in food safety schools;
- 80 Food safety enforcement actions taken;
- 7773 Liquid waste system permits issued;
- 8039 Liquid waste inspections performed;
- 175 Liquid waste enforcement actions taken;
- 7500 Estimated open burn permits issued;
- 3 Annual vector control courses;
- 1524 Participants in vector control courses;
- 45 Vector control presentations to schools and other public entities;
- 31 Plague and hantavirus case investigations;
- 2 Radon mitigation on homes by Rocky Mountain Youth Corporation (pilot program), and 4 consultations;
- 6 Public buildings tested for indoor radon;
- 2 Courses, "Radon Resistant New Construction" were contracted through Auburn University;
- 1 Radon training classes for the real estate industry.



increased rodent trapping and testing as an indicators of human risk.

Open Burning

Open Burning is any manner of burning materials, usually waste, where the products of combustion are released directly or indirectly into the open air. The NMED regulates open burning to protect air quality, minimize the likelihood of an open burn causing a wildfire or the smoke causing a hazard on roadways.

The NMED issued an estimated 7,500 open burning permits in 1999. The Department has begun an internal review of this program to consider amending the regulation or providing guidance to its implementation.

Program Trends: Statewide, the number of complaints from citizens about open burning has been increasing. This may be influenced by the urbanization of rural areas. Also, it

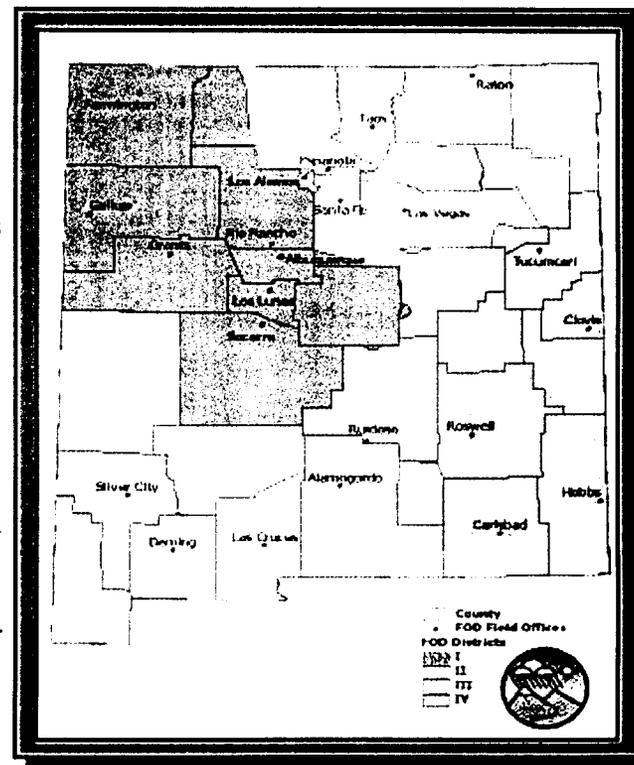
may be increasingly inappropriate for citizens to burn trash or yard waste because of the air pollution generated, drought conditions resulting in an uncontrolled wildfire, and increased availability of waste disposal facilities and services.

Radon in Houses and Public Buildings

Individuals receive exposure to radon, a naturally occurring radioactive gas that can build up inside structures. The presence of radon depends on the geology of an area; its concentration indoor depends on the construction of the building. In an effort to protect the public from lung cancer that can result from exposure to radon, the NMED provides education and testing to home and business owners to identify radon problems. Should a problem exist, CSB staff can provide information on modifying a structure or changing the air exchange in order to protect residents. The NMED has also sponsored courses on "Radon Resistant New Construction" for builders. The NMED continues to participate in the New Mexico Radon/Indoor Air Quality Coalition.

Radiation Protection

The purpose of this program is to ensure that human exposure to radiation from x-rays and material releases are within federally established limits and at levels as low as reasonably achievable. The program provides for the oversight of the activities of 238 radioactive material licenses in the medical, industrial and research and academic categories; registers and inspects x-ray machines in over 1,400 facilities statewide; administers the radiological technologists certification program; and administers the radiological services program.



CONSTRUCTION PROGRAMS

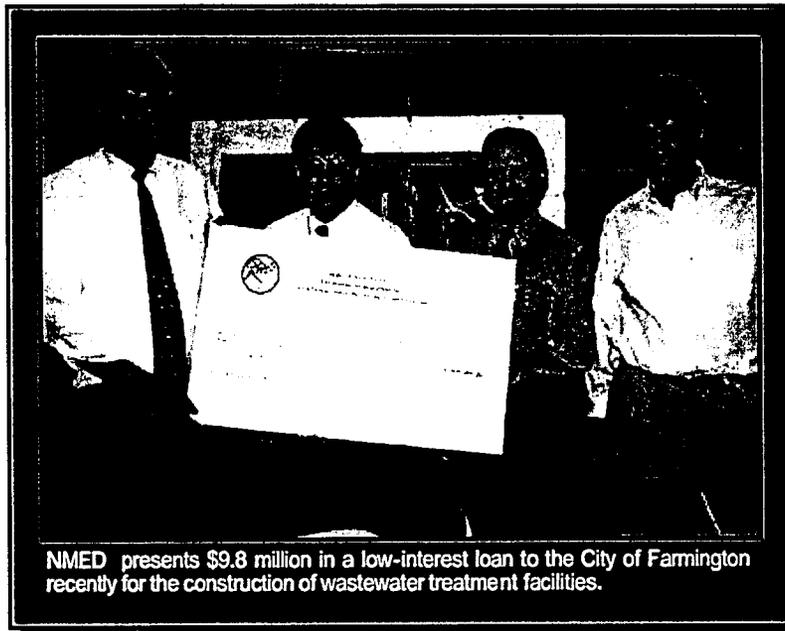
The existing water, wastewater, and solid waste infrastructure in New Mexico cannot meet the needs of a rapidly growing population without consistent upgrades and construction of new facilities.

There are roughly 1,350 public water supply systems in the state. There are wastewater collection and treatment systems serving 102 municipalities, and many smaller communities. There are 50 registered landfills and two federal/state funded septage waste disposal facilities.

Water Supply Systems - Many of the water supply systems constructed under the Water Supply Construction Act grants and other programs in the 1960s, 1970s, and early 1980s are now in need of major replacements and upgrades. Population increases create a demand for construction of wells and water distribution extensions.

Wastewater Facilities - Many wastewater facilities constructed in the

late 1970s and early 1980s are in need of replacement or improvement. Many rural residences and businesses are not on sewer systems, and rely on individual septic systems for wastewater treatment. Additionally, thousands of septic tanks are installed each year in New Mexico. This is



undesirable because septic tanks can pollute groundwater. In more densely populated areas, there are demands for sewer extensions, which further increase loads on wastewater collection and treatment systems.

The 1999 New Mexico Wastewater Facility Construction Loan priority list

identifies \$170.3 million in needs for construction of wastewater collection, treatment, and non-point source projects.

Solid Waste Management - Solid waste management needs identified statewide in the most recent Solid Waste Facility Grant Fund application cycle consisted of \$12.5 million in requests compared to less than \$3.2 million in available funds.

The Construction Programs Bureau

The mission of the New Mexico Environment Department Construction Programs Bureau (CPB) is to finance the construction of water, wastewater, and solid waste facilities for New Mexico local governments using state and federal funds; and to accomplish this in an efficient manner, while performing oversight in order

to prevent waste, fraud, or abuse of public funds. The CPB administers loan and grant programs for construction of environmental infrastructure including public water supply, wastewater collection and treatment, non-point source water pollution control, and solid waste collection and disposal.



Construction Programs Bureau

Administrative Services Division

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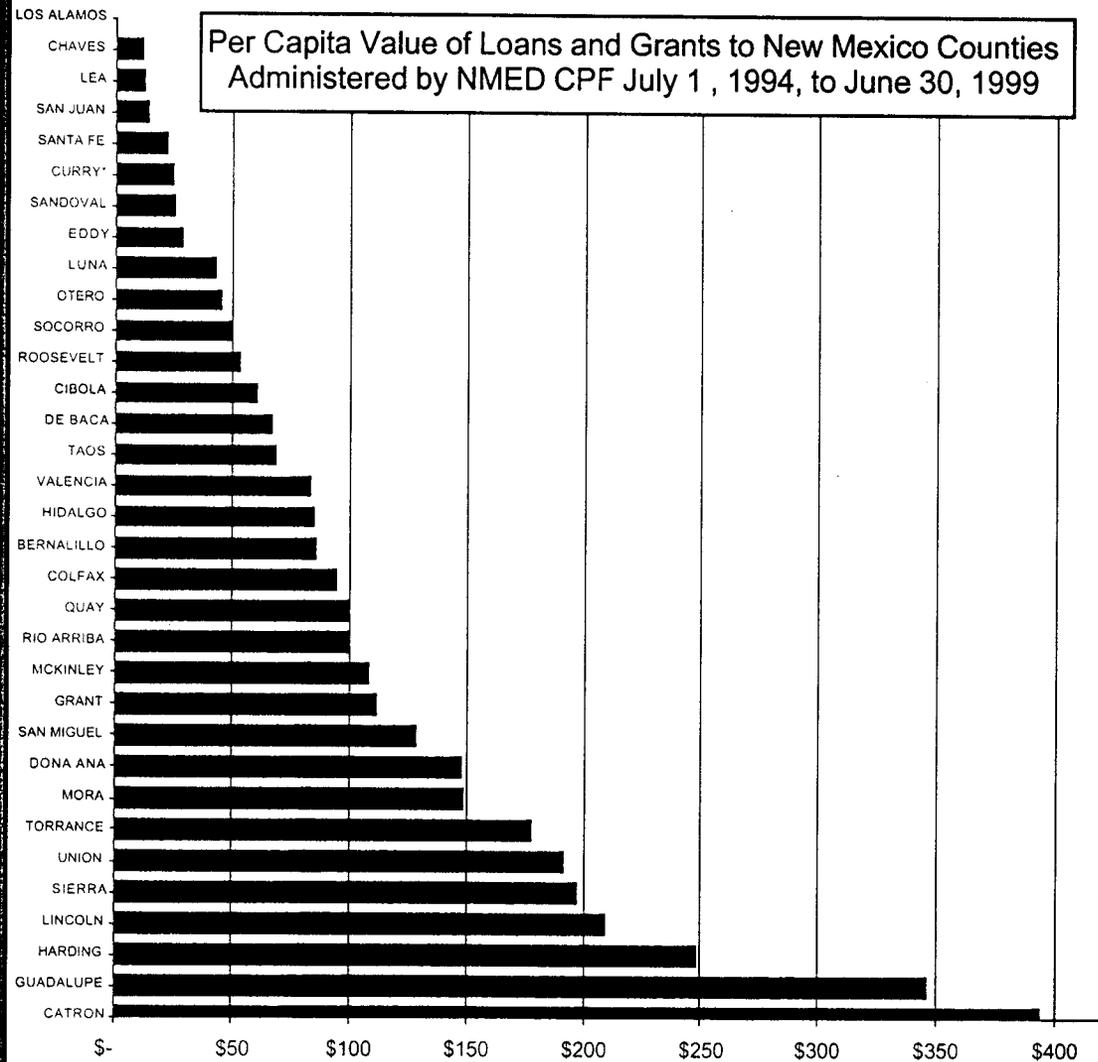


The CPB administers eight different funding programs for construction of environmental infrastructure for New Mexico local governments:

1. Special Appropriations Program – New Mexico legislative appropriations for design and construction of water, wastewater,

and solid waste projects. CPB currently administers 219 active projects that total \$14.1 million.

2. Rural Infrastructure Program (RIP) – This is a state-funded revolving loan program for construction of public water system improvements for communities with a population of less than 10,000. Loan funds are available at 5 percent interest for a term of 20 years. There are 20 active construction projects that total \$3.6 million. The program manages outstanding loans for 145 projects with a balance of principal and interest totaling \$13.3 million.
3. Solid Waste Facility Grant Fund – State-funded grants are provided for solid waste collection, transportation, and disposal facilities. CPB currently administers 55 active projects that total \$7.7 million. A total of over \$19 million has been obligated to projects through this fund.
4. Clean Water State Revolving Fund (CWSRF) – Provides federally subsidized low-interest loans for construction of wastewater collection and treatment facilities and for other projects to control water pollution. Loan funds are currently available at 3 to 0 percent interest for a term of 20 years. There are 8 active projects that total \$19.3 million. Binding loan commitments for projects total \$106.3 million.
5. Rural Communities Assistance



Program – This federally subsidized combination loan/grant is for communities with populations of less than 3,000 that are not currently served by sewer systems. Funding in this program is limited to \$410,000 total for the state.

6. Colonias Wastewater Facilities Construction Grants – These are federal grants for construction of wastewater facilities in New Mexico within 62 miles of the Mexico border. There are 13 active projects totaling \$17.7 million. A total of \$21.2 million has been allocated through this fund.
7. South Valley Special Congressional Appropriation – Federal funds for sewers in the Albuquerque/Bernalillo County south valley. Current projects administered by the CPB total \$12.5 million.
8. U.S. Environmental Protection Agency Construction Grants – These federal grants fund construction of wastewater collection and treatment facilities. The program is in closeout and is being transitioned to the CWSRF program.

The adjacent bar chart shows total and per capita grant and loan funds for construction in New Mexico counties that were administered through the CPB over the past five years.

1999 Bureau Accomplishments
As of June 30, 1999, the Construction Programs Bureau was administering



In 1999, the CPB provided Rio Rancho with a \$10.8 million low-interest loan to upgrade one of its three wastewater treatment plants. The upgrade will increase the facility's capacity from 2.5 million gallons per day to 4.5 million gallons per day.

319 active projects with funding commitments totaling over \$74 million. The CPB also administers loans in repayment that total \$37.9 million for the Clean Water State Revolving Fund, and \$13.3 million for the Rural Infrastructure Program.

In FY 1999, the CPB reviewed 151 proposed capital outlay projects for the New Mexico legislature. Additionally, the Bureau reviewed for projects administered by agencies outside of NMED:

- 33 Community Development

Block Grant (CDBG) capital projects proposals, and 27 sets of plans and specifications for CDBG projects administered by the NM Department of Finance and Administration, Local Government Division;

- 30 reviews of plans and specifications for USDA Rural Utilities Service; and,
- miscellaneous project reviews for N.M. Economic Development Department, the Espanola Valley Regional Study Committee, and others.



Environmental Infrastructure Trends and Needs

The Construction Programs Bureau prioritizes funding for water, wastewater, and solid waste infrastructure projects based on environmental, health, and safety criteria. As such, these funding programs form an important part of Environment Department strategies for achieving environmental and health improvements in the state. Programs administered by the Construction Programs Bureau are most effective in areas served by New Mexico local governments and water consumers associations, and in areas of higher density population currently served by on-site water and wastewater systems.

Population growth and higher densities of population in the Rio Grande corridor are creating steadily increasing needs for federal and state funded water, wastewater, and solid waste systems to prevent nuisances and degradation of water quality, and to support acceptable living conditions. Areas outside of the Rio Grande corridor that maintain relatively stable population numbers, or even gradual declines, will demand water, wastewater, and solid waste infrastructure to replace aging systems and to support the quality of life in established communities.

NMED Resources

The Construction Programs Bureau has projected a rising demand for public funds administered by the

Department and a long-term decline in federal funding for administrative support. The CPB and the Department must increase state administrative support, or develop fee-based support for administration of programs to meet the projected demand. The Bureau currently is working on increasing the fee-based share of support for loan programs and adjusting interest rates and other program characteristics.

DEPARTMENT OF ENERGY OVERSIGHT



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Current operations at DOE facilities are required to meet strict standards imposed by federal and state law. At the state level, the Department of Energy Oversight Bureau's (Oversight Bureau) monitors DOE facilities for regulatory compliance. The Oversight Bureau is funded by a grant from the

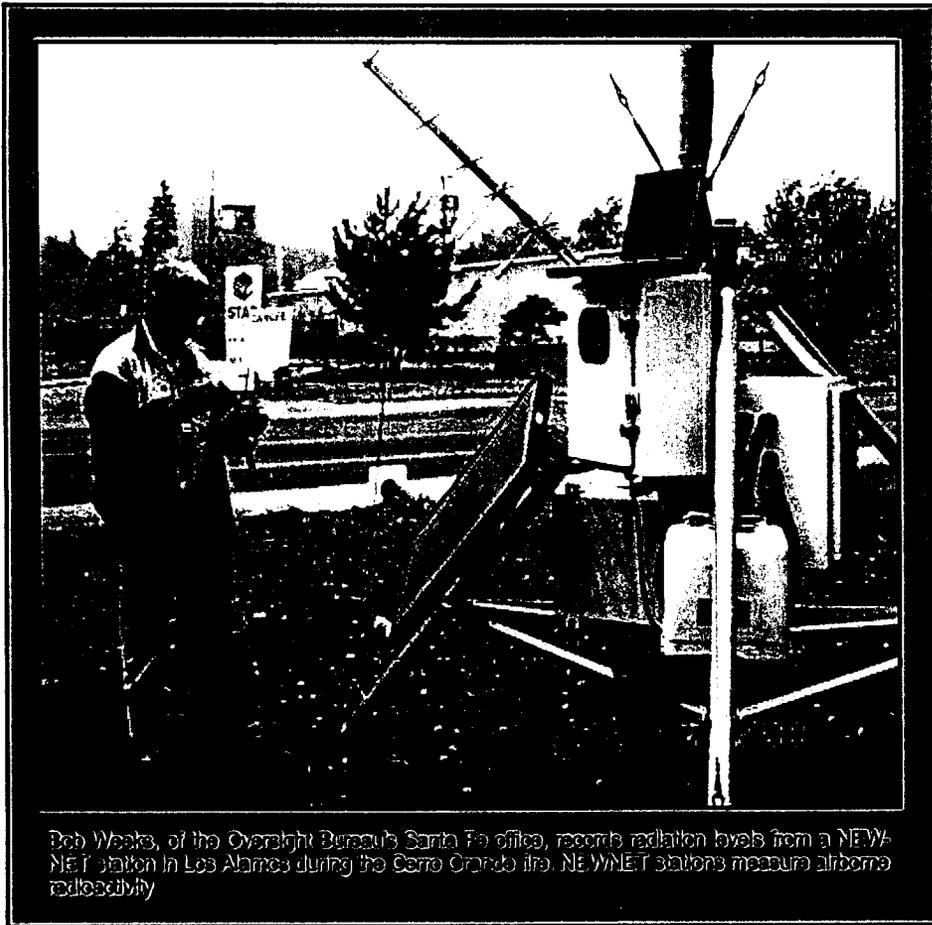
U.S. Department of Energy (DOE) in accordance with the provisions set forth in the *Agreement-In-Principle between the State of New Mexico and the U.S. Department of Energy*. This agreement and focuses on state oversight of environmental impacts of the DOE facilities: Sandia National

Laboratories (SNL) in Albuquerque, Los Alamos National Laboratory (LANL) in Los Alamos, and the Waste Isolation Pilot Plant (WIPP) near Carlsbad.

The *Agreement-In-Principle* resulted from an initiative by DOE to improve its accountability concerning public health, safety, and environmental protection. States hosting DOE facilities were provided funding and staff security clearances needed to develop and maintain a credible oversight program. The first Agreement-In-Principle was effective from October 22, 1990 through September 30, 1995. The second five-year agreement became effective on October 1, 1995. The agreement consists of four primary objectives:

- To assess the DOE's compliance with existing laws including regulations, rules, and standards;
- To participate in the prioritization of cleanup and compliance activities at the DOE's facilities;
- To develop and implement a vigorous program of independent monitoring and oversight;
- To increase public knowledge of environmental matters about the facilities, and coordinate with local and tribal governments.

The mission of the Bureau is to help assure that activities at the U.S. DOE



Bob Weeks, of the Oversight Bureau's Santa Fe office, records radiation levels from a NEWNET station in Los Alamos during the Cerro Grande fire. NEWNET stations measure airborne radioactivity.



facilities in New Mexico are protective of the public health and safety and the environment. The State's oversight activities are funded through the current five-year agreement. The State is in the initial stages of negotiating a new agreement with the DOE.

DOE Facilities' Affects on New Mexico's Environment

Both LANL and SNL have contamination from legacy wastes created during the cold war era prior to

modern environmental laws and regulations. Sites containing radioactive or hazardous legacy wastes are being characterized and in some cases cleaned up by "Environmental Restoration" programs at the facilities.

While contamination from New Mexico DOE activities has occurred, it has not caused exceedances of regulatory standards off-site. Contamination of surface water and ground water have been documented at LANL. While the Oversight Bureau has documented low-levels of both radioactive and chemical contaminants in storm water runoff leaving LANL property, and trace levels of contaminants have been detected in the regional aquifer underlying the Pajarito Plateau where LANL is located; these detections of contaminants, resulting from operations of DOE facility activities but off of DOE property, have been below regulatory standards. Chemical and radioactive contaminants were detected in water supply wells operated by Los Alamos County in late 2000. Again, tests of the drinking water supply for Los Alamos indicated the contaminant Tritium to be well below the drinking water standards.

There is a large plume of tetrachlorethene (TCE) contamination at Kirtland Air Force Base that may be associated with activities at SNL. The contamination has not been detected in City of Albuquerque drinking water.

The results from ongoing environmental monitoring programs at LANL and SNL were consistent with historical measurements and did not exceed federal or state standards. Results from samples taken at sites with documented contamination verified levels of contaminants reported by the DOE facilities, some of which did exceed standards or health-based reference levels. Samples taken from monitoring wells near the former Interstate Technology and Regulatory Cooperation (ITRI) facility between 1988 and 1998, show six of 23 wells consistently exceeding drinking-water standards and ten wells consistently below drinking-water standards.

Department of Energy (DOE) Oversight by County

Three New Mexico counties, Bernalillo, Eddy and Los Alamos, host DOE facilities. In coordination with both LANL and Los Alamos County, the Oversight Bureau investigated sediments in a streambed of Kinnikinnik Park, an urban park in Los Alamos where LANL discharged liquid radioactive waste in the fifties and sixties. Following the treatment facility's demolition in 1964, sporadic investigations and cleanup efforts continued until the 1980s. However, these efforts concentrated mainly on removing the buildings and contaminated soil from the mesa top. In 1992, the environmental restoration project investigated Acid Canyon

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below old Technical Area-45 as a potential release site. Using less-sophisticated sampling techniques than those that LANL currently employs, investigators concluded that the annual radiological dose

contribution was below acceptable limits, and the site was proposed for No Further Action in 1996.

The Bureau chose to re-investigate the site because it contained residual

radioactive contamination and was located in a public park. The Bureau's results showed considerably higher values than previous results for plutonium, americium and polychlorinated biphenyls (PCBs). Because of the cooperative efforts by the County, LANL and the Bureau, the environmental restoration project team conducted an aggressive sampling effort in December 1999, to refine the characterization of this narrow drainage using the current technical approach. Results from these latest field activities will be combined with all previous data (including the Bureau's) to re-evaluate risk and remediation options.

Summary of 1999 Work

Support Environmental Compliance - The Oversight Bureau continued to bring technical and regulatory concerns to the attention of decision makers at LANL and SNL to promote more efficient investigations and effective cleanups by the environmental restoration programs. These earlier and more frequent communications helped the two facilities complete work and expedite regulatory approvals.

Citizen Advisory Board - The Oversight Bureau worked closely with the site-specific advisory boards for SNL and LANL through attending the monthly meetings, and participating in various sub-committees. The Bureau continued to facilitate the community program for the Neighborhood Environmental Watch Network (a LANL sponsored radiation monitoring network, accessible on the internet at: <http://newnet.lanl.gov>), and assisted with a formal training program for citizen station managers. Staff members gave presentations at environmental conferences and released several technical reports. In addition, staff members worked more closely with the environmental offices of San Ildefonso, Jemez, Santa Clara, and Cochiti Pueblos, coordinating our sampling programs and expanding shared geographic information system data.



Michael Dale, of the Oversight Bureau's White Rock office, collects a sample of an ash-laden deposit after a late June storm that dropped .79 inch of rain on Los Alamos.



Neighborhood Environmental Watch Network

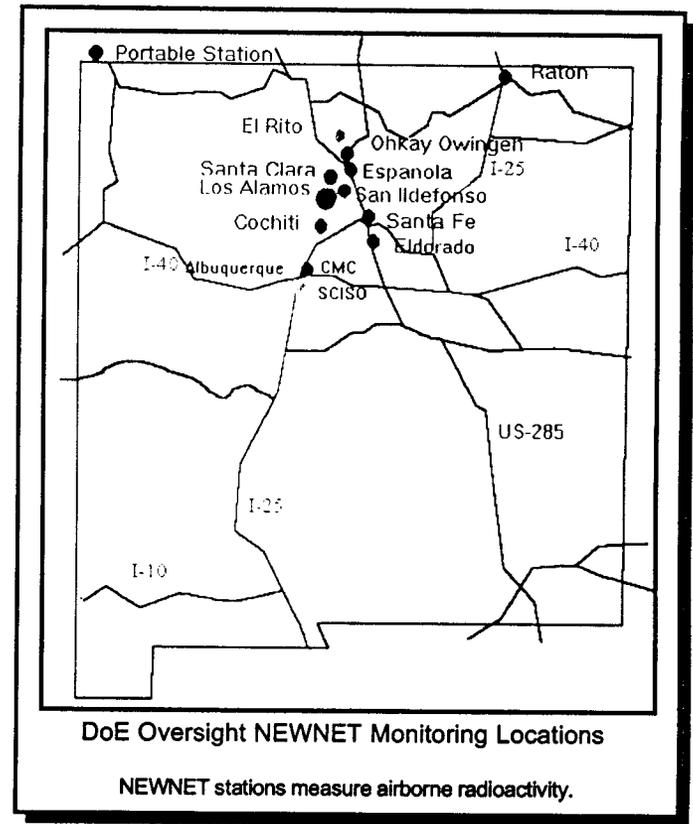
newnet.lanl.gov
features data from
environmental
monitoring stations

LANL Watershed Monitoring - At LANL, Oversight Bureau staff helped to develop a watershed-based approach to addressing contaminant migration and Clean Water Act permitting issues. Oversight Bureau staff worked closely with laboratory investigators as regional groundwater monitoring wells were installed under the *Hydrogeologic Work Plan*. Bureau staff assisted a property owner in the characterization of contamination left there by a former LANL employee. Oversight Bureau staff sampled stormwater runoff from canyons that bisect LANL technical areas and potentially carry sediments off LANL property.

Environmental Trends at DOE Facilities

Cleanup of legacy wastes will continue at LANL through the end of the decade and possibly into the next (at the present rate of remediation). SNL is slated for completion in 2003. It is expected that a significant portion of the legacy wastes will be left in place, due to the low risk they pose. We are working with DOE and the facilities to develop long-term surveillance and monitoring programs for these sites. Operations at SNL and LANL are expected to continue at their present level as some older facilities are mothballed or decommissioned and new facilities are built. They are complex, dynamic institutions that will continue to impose a significant workload to the State in its regulatory oversight.

WIPP will be increasing the number of shipments as more "generator sites" begin shipping. The Oversight Bureau will work in conjunction with NMED regulatory programs to assure that wastes destined for WIPP which were generated by other DOE facilities are in compliance with the permit issued to the WIPP facility. Monitoring of the environment surrounding WIPP will continue to assure that wastes are not migrating from the repository. The Oversight Bureau will require additional resources if a new office is located in Carlsbad to oversee WIPP.



DRINKING WATER

Drinking Water Quality in New Mexico

The water quality of New Mexico's public water systems is generally very high, as documented by routine sampling and analysis. The primary problem encountered throughout the state is with bacteriological (coliform) contamination. A small but increasing number of water sources are contaminated by chemicals or nitrates or are threatened by such

contamination. The major causes of contamination affecting public drinking water in New Mexico are inadequate disinfection treatment for microbiologicals and nitrate pollution originating from septic tanks located too close to drinking water sources.

New Mexico's ground water (the major source of drinking water in this state) is also affected by naturally occurring arsenic and radon at concentrations that exceed limits now

being proposed by the U.S. Environmental Protection Agency. New Mexico currently has over 1,300 active public water systems regulated by the NMED Drinking Water Bureau. A public water system is any system that has at least fifteen service connections or serves an average of at least 25 individuals daily for 60 or more days a year. There are three categories of systems:

Community Water System: A public water system that serves at least 15

service connections used by year-round residents or regularly serves at least 25 year-round residents.

Non-Transient Non-Community Water System: A public water system that is not a community system and regularly serves at least 25 of the same persons (non-residents) over six months per year.

Transient Non-Community Water System: A public water system that is not a community water system and regularly serves an average of at least 25 individuals (non-residents/different persons) for at least 60 days a year.

Each year the Drinking Water Bureau prepares, submits to the U.S. EPA, and makes available to the public a "Compliance Report" listing the public water systems that violated Safe Drinking Water regulations and the types of violations reported. As column 7 of the adjacent table shows, the vast majority of the drinking water quality violations in public water systems, were Total Coliform Rule (TCR) violations. Violations of the total coliform rule are caused primarily by inadequate system operation, maintenance and disinfection.

In 1999, 230 public water systems (or 17%) were in violation of some

Drinking-Water Systems

Population Types

10,000 +	30	(2%)
3,300 - 9,999	35	(3%)
500 - 3,299	131	(14%)
less than 500	1030	(81%)

Supply Types

Groundwater	1226	(91%)
Surface Water	51	(4%)
Combined (Groundwater & Surface Water) ¹	1	
Purchased Water ^{2,3}		
surface	3	(1%)
ground	50	(4%)

Ownership Types

Federal Government	101	(8%)
State Government	39	(7%)
Local Government ²	339	(29%)
Private/Cooperative	757	(66%)

¹ 123 systems are currently being evaluated as ground water under the direct influence of surface water.

² Local government includes municipalities, water and sanitation districts, and MOWC Associations.

³ Purchased Water - drinking water provided by a community that is purchased from a third party.



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Total Coliform Rule (TCR)

Coliforms are a group of bacteria common in both the environment and digestive tracts of humans and animals.

The presence of coliforms in water indicates that disease-causing agents may also be in the water.

Treatment options for systems exceeding the TCR include mandatory disinfection, boil water advisories, and repair of faulty distribution systems.

primary drinking water standard. Sampling for total coliform bacteria (from human and animal feces) is the responsibility of each public water system. Most of the violations reported are for failure to monitor and report on bacteriological quality. Compliance trends have been similar for several years.

Summary of Major Drinking Water Issues Affecting New Mexico Counties

1. System Regionalization - Small systems in certain regions of the state could benefit by combining to form a larger more viable system. The cost associated with connecting smaller systems to larger ones may be prohibitive for some small water systems. Satellite management or shared billing/financial management, and shared operations and maintenance are other examples of the potential beneficial partnerships among small systems and these are not as dependent on physical proximity.

2. Total Coliform - Many violations of the total coliform standard

could be eliminated with routine disinfection treatment and improved operation. These violations occur throughout the state, most frequently in small systems.

3. Operator Certification - Many small water systems lack a trained, certified operator. Improvements to the training and certification program have been initiated by the Facility

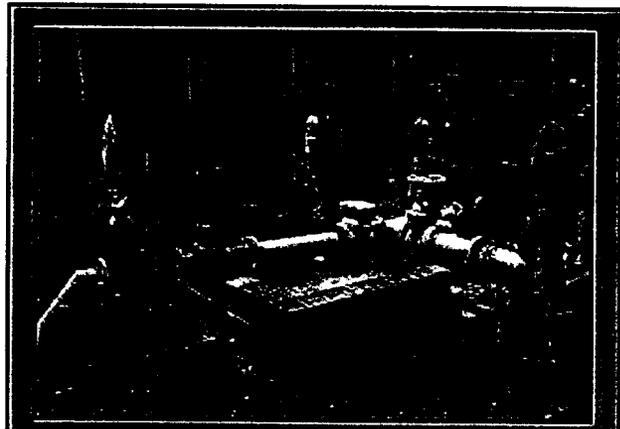
4. Nitrates - A number of New Mexico public water supplies have been placed on quarterly monitoring for nitrates. This mandatory monitoring is required when a system exceeds 5mg/l or half the maximum contaminant level of 10 mg/l. Nitrates have potentially acute health effects and must be monitored closely. Most violations of nitrates in drinking water are the result of drinking

Violations of Safe Drinking Water Act regulations by Public Water Systems in New Mexico in 1999						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Type of Water System	Total #	Population Served	Pop. In All Violations	% of System Pop. Affected by Violation	Pop. In TCR Violation	% of pop. in TRC violation
Community	642	1,510,906	69,530	4.3%	37,223	97%
Non-Tran Non-Com	532	208,876	16,260	7.8%	15,810	97%
Trans. Non Com	161	36,674	1,753	4.3%	1,399	30%
Totals	1335	2,056,456	87,546	4.3%	84,435	96%

Operations Section, which is responsible for operator training and certification (see Surface Water Quality Bureau). This lack of trained, certified operators in small systems throughout the state will become more problematic as federal regulations become more complex.

water sources located too close to septic tanks. Examples of counties and communities with one or more systems recently exceeding 5 mg/l nitrate include Santa Fe, Taos, Rio Arriba, Cibola, San Miguel and Harding counties

5. Flouride - Some water systems exceeded the secondary maximum



DWB staff inspect an Alamogordo Domestic Water System well during a sanitary survey training exercise on June 7, 2000.

This standard is set to protect against crippling skeletal fluorosis. Communities affected are seeking treatment and alternative sources to bring the system into compliance. The communities have provided notification to the public. Examples of counties and communities which exceed flouride MCL are San Jon, Lordsburg, Floyd, Grove, Luna County and Sierra County.

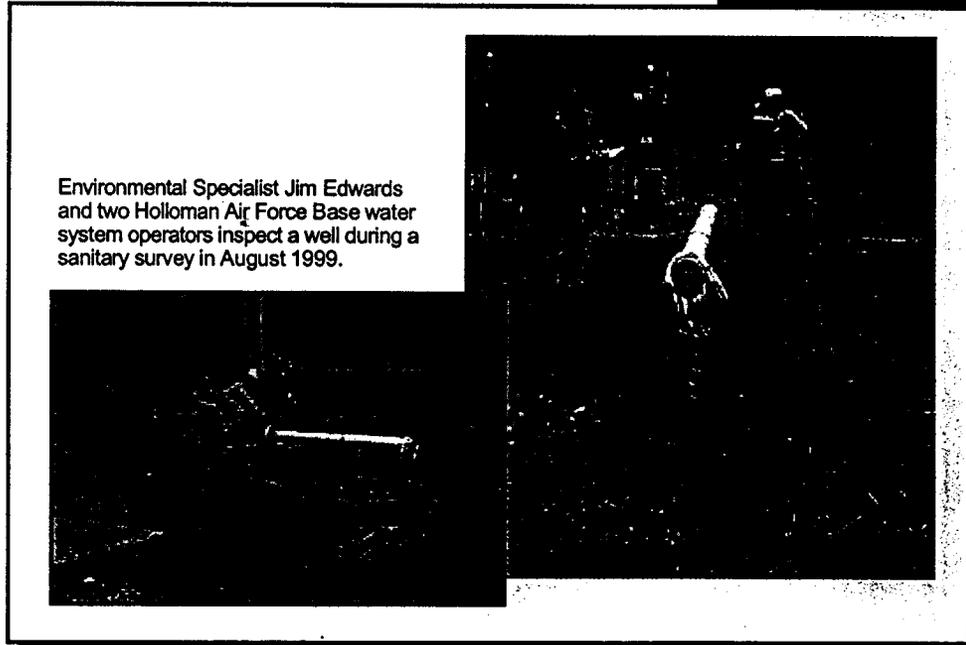
system, modifying the system to exclude surface water, or adding treatment systems to bring them into compliance with the Surface Water Treatment rule. Water systems most often found to be GWUDI are located in areas that relay on springs, very shallow wells, or infiltration galleries for their source of drinking water.

- 8. Wildfire - The increase in area wildfires has demonstrated the need for improved watershed management for communities relying on surface water for their drinking water. The Scott Able Fire in the summer of 2000 affected some public water systems, completely destroying one. Other water systems were

contaminant level (MCL) of 2 mg/l for fluoride in drinking water. The secondary MCL is set to protect against objectionable dental fluorosis, not considered by EPA to be an adverse health effect. Secondary MCLs are not enforceable. Recommended MCLs are intended to prevent adverse aesthetic effects, as opposed to health effects. An exceedance of the secondary standard requires public notification. Examples of areas which exceed the secondary standard include the Espanola area and Curry, Sandoval and Guadalupe counties.

- 6. Flouride: Primary MCL - In more severe instances, some public water supplies exceed the Maximum Contaminant Level (MCL) of 4.0 mg/l for fluoride.

7. Ground Water Influenced by Surface Water - Ground water under the direct influence of surface water (GWUDI) is subject to new federal regulations because it was found to be subject to the same health risks as surface water. These risks include parasites, such as giardia and cryptosporidium, and possibly bacteria and viruses. The Bureau reviewed about 100 community water sources, and 15 requirements, by either disconnecting the GWUDI source from the



Environmental Specialist Jim Edwards and two Holloman Air Force Base water system operators inspect a well during a sanitary survey in August 1999.



Consumer Confidence Report

The federal Safe Drinking Water Act now requires all community public water supply systems to provide to their customers an annual Consumer Confidence Report (CCR) listing the contaminants found in their waters. There are 643 community public water supply systems in New Mexico, each providing a CCR.

affected by flooding that occurred when rains arrived, washing ash and mud from the just-burned slopes.

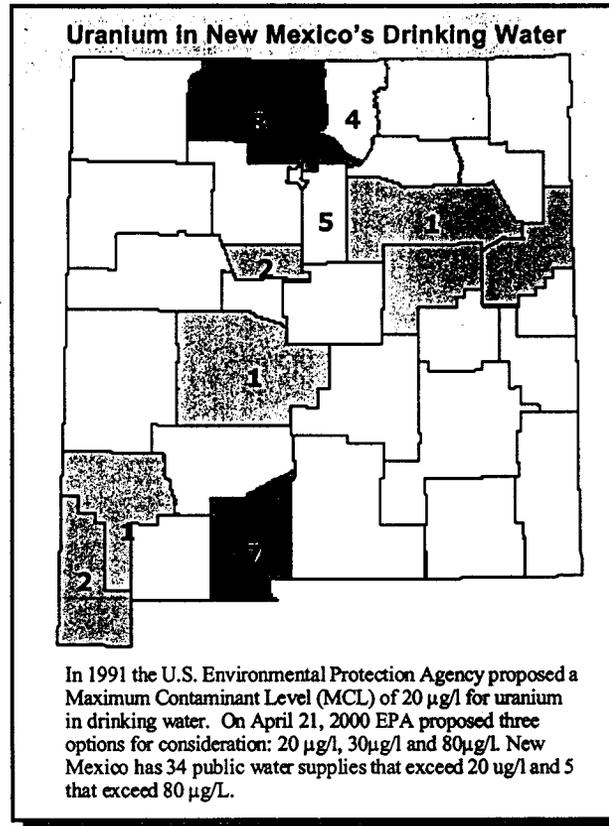
Concerns and Ongoing Actions

Potential Health Threats: Many small systems were constructed in the 1950s. These systems are now suffering galvanized pipe and storage tank failures. The systems have not been well maintained, nor have they been brought into compliance with new laws and regulations. Most emergencies are compounded by lack of financial resources. New responses by the NMED and funding agencies to these problems are being developed.

New Regulations: The new surface water regulations and requirements for disinfection by-product monitoring are complex and require a great deal of training.

Four new federal regulations are projected to be transmitted by the U.S. EPA in 2000. These rules strengthen the enforcement, microbiological, and public notification provisions of current regulations. Their complexity will make compliance by small systems even more difficult, and necessitate an increase in training and public outreach provided by the NMED.

Furthermore, the U.S. EPA has proposed maximum contaminant



levels for radon, arsenic, and uranium. Many systems in New Mexico exceed the levels being considered. The maps on these pages summarize uranium levels by county.

Source Water Issues: Close to 100 drinking water supply sources were tested to determine if they were groundwater under the direct influence of surface water (GWUDI). Fifteen systems were found to be GWUDI and there is ongoing work to bring them into

compliance with the Surface Water Treatment rule.

The second source water issue is source water that does not meet the primary drinking water standards. In some cases the source of contamination is difficult to determine and requires extensive Bureau technical assistance. In most cases the high capital cost of treating the contamination or developing additional sources poses a serious problem to the community.

Drought conditions and wildfires highlighted the need for source protection in many communities. Small systems, relying on one well, have since begun to anticipate the need for alternate sources and source protection. Increasingly, watershed management is recognized by public water systems as an essential element of source protection.

The New Mexico Source Water Assessment and Protection Program (SWAPP) gathered information on public drinking water sources and involved communities in source water protection through public outreach and education, the formation of local planning teams.

Identification of Troubled Systems Prior to "Crisis": The NMED has begun gathering more technical

information on the financial and managerial capacity of the systems' owners and operators. In doing so, the Department offers assistance in updating bylaws, rules, regulations and rate structures.



DWB staff Becky Crown and Andrew Edmondson and Timberon Water and Sanitation District water system operator Jason Hamill (far left) at a water supply spring infiltration area during a sanitary survey of the Timberon water system on August 30, 2000.

As sanitary surveys are completed, systems are evaluated and ranked on the State's Revolving Loan Fund priority list for construction projects. Public meetings were held in the spring of 2000, with all stakeholders invited, to develop a state strategy to assist existing systems with obtaining and maintaining the technical, managerial, and financial capacity necessary to consistently deliver safe drinking water.

1999 Drinking Water Bureau Highlights:

- 114 engineering plan checks/ environmental reviews completed;
- Three Comprehensive Performance Evaluations completed on surface water treatment plants;
- 91 non-community systems were tested to see if the source water was under the direct influence of surface water;
- An average of 52 site visits were made by each member of the Technical Assistance Staff in the past year;
- Under contract with the Bureau, technical assistance providers worked on-site with an average of over 33 systems per month;
- 145 sanitary surveys of public water supplies were completed;
- Performed six on-site assessments for existing microbiological laboratories, resulting in recertification of them all;
- Added 99 drinking water systems to the Revolving

Loan Fund Priority List of potential construction projects. Capacity assessments were completed for sixteen;

- Provided Consumer Confidence Report training.

Drinking Water Protection Trends, Current and Future Needs

The most significant changes affecting New Mexico's drinking water are

coming from new federal standards proposed for radon and arsenic, and new regulations which will be difficult to implement. The 1996 Amendments to the federal Safe Drinking Water Act (SDWA) have had, and will continue to have, a significant impact on drinking water protection in New Mexico.

Due to requirements of the new rules and most funding sources, there will be a major increase in the number of hours required to manage and operate a public water system.

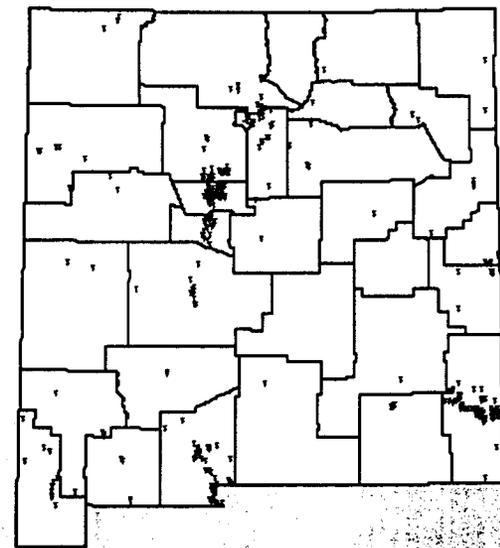
In order for water systems to maintain compliance with ever-tightening requirements of the new rules, many will need to upgrade or add new water treatment technology. Additionally, New Mexico has many small, volunteer-operated systems that were constructed 30 – 50 years ago pursuant to the State Sanitary Projects Act. All of these systems will require a major overhaul of distribution networks.

Arsenic - EPA has proposed a standard of 5 ug/l which will affect both small and large system



When violations of the drinking water regulations occur, Department staff ensure public notification.

Public Water Supply Sources with Arsenic Levels > 0.005 mg/l



DRUG-TAINTED WATER

The New Mexico Environment Department (NMED) has been analyzing streams, drinking water and groundwater from across the state for about 28 drugs. Results detailed in the adjacent map showed trace amounts of pharmaceutical drugs in surface water near Espanola and Bloomfield.

Humans and animals excrete some portion of the drugs they consume, sending the pharmaceuticals into sewage treatment systems. Standard sewage-treatment technologies are ineffective for eliminating drug residues. While activated carbon filtration can remove drug residues from water, most waste-water treatment systems and drinking water systems do not have it.

The NMED and the Scientific Laboratory Division (SLD) of the New Mexico Department of Health are conducting initial tests to determine what drug residues are present in water in the state and at what concentrations. Sampling locations include: sewage outfalls near eight of New Mexico's larger cities; surface water from eighteen sites along four rivers; ground water from 16 municipalities and military bases; and, drinking water from six wells.

The SLD has initially tested for antidepressants, hormones and lipid

(cholesterol) regulating agents because they are frequently detected in water and are heavily prescribed in the United States. The SLD will begin testing for analgesics, antibiotics, anti-convulsants, and cardiovascular pharmaceuticals after acquiring specialized equipment sometime in 2001. Antibiotics in surface water have been linked to the development of antibiotic-

resistant bacteria in rivers and birds. Antibiotic-resistant bacteria have been detected in United States rivers, including salmonella in the Rio Grande.

The most commonly prescribed drugs in the United States are: analgesics, such as ibuprofen and acetaminophen; antibiotics, such as penicillin; anti-convulsants; anti-depressants; cardio-



Drug Residue Sampling Locations (ppt = parts per trillion)

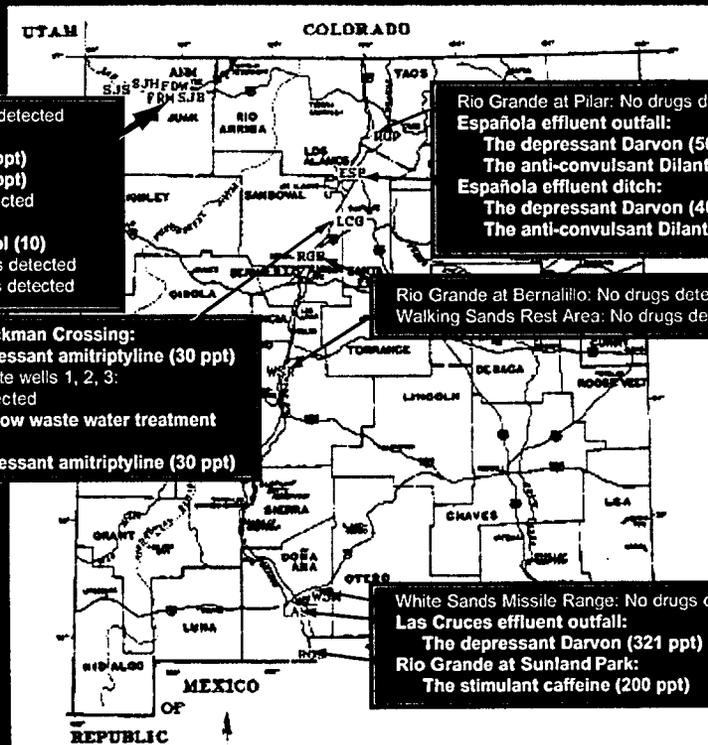
Farmington drinking water: No drugs detected
Farmington effluent outfall:
 The stimulant caffeine (1000 ppt)
 The depressant Darvon (820 ppt)
 Animas River at Aztec: No drugs detected
San Juan River at Bloomfield:
 The hormone ethynyl estradiol (10)
 San Juan River at Hogback: No drugs detected
 San Juan River at Shiprock: No drugs detected

Rio Grande at Buckman Crossing:
 The antidepressant amitriptyline (30 ppt)
 La Cieneguilla private wells 1, 2, 3:
 No drugs detected
Santa Fe River below waste water treatment plant:
 The antidepressant amitriptyline (30 ppt)

Rio Grande at Pilar: No drugs detected
Espanola effluent outfall:
 The depressant Darvon (500 ppt)
 The anti-convulsant Dilantin (300 ppt)
Espanola effluent ditch:
 The depressant Darvon (400 ppt)
 The anti-convulsant Dilantin (250 ppt)

Rio Grande at Bernalillo: No drugs detected
 Walking Sands Rest Area: No drugs detected

White Sands Missile Range: No drugs detected
Las Cruces effluent outfall:
 The depressant Darvon (321 ppt)
Rio Grande at Sunland Park:
 The stimulant caffeine (200 ppt)





Featured
Drug Res and Water

Details about sampling locations, protocol and results, as well as a bibliography, can be found on the Internet at: <http://www.nmenv.state.nm.us/gwb/DrugResSurv.html>

vascular drugs; hormones, such as estrogen; and lipid-lowering agents.

The NMED began testing for pharmaceutical drugs after limited monitoring in Switzerland, the United States, Canada, and Brazil detected drug residues in ambient water. Swiss scientists studying pesticides in water discovered Clofibrilic Acid, a cholesterol drug, in ambient surface water because of its similarity to the pesticide Mecoprop.

While the heavily populated middle Rio Grande Valley had not yet been sampled, test results through November 2000 have provided no evidence that drug residues widely occur in ambient water in New Mexico. Estrogenic substances were detected in a sample from the San Juan River at Bloomfield; and testing of water being released to the Rio Grande from the Espanola wastewater treatment plant showed trace amounts of a narcotic like Darvon, and an epileptic seizure drug like Dilantin. All four sewage samples contained at least one drug residue, but did not contain a complex variety of them. Drugs were detected in only two of six surface-water samples. All of the detected drugs were measured in the parts-per-trillion range, which is very small. No drug residues, whatsoever, were detected in any of five ground-water samples.

While these very low drug concentrations near Espanola and Bloomfield are not expected to directly affect hu-

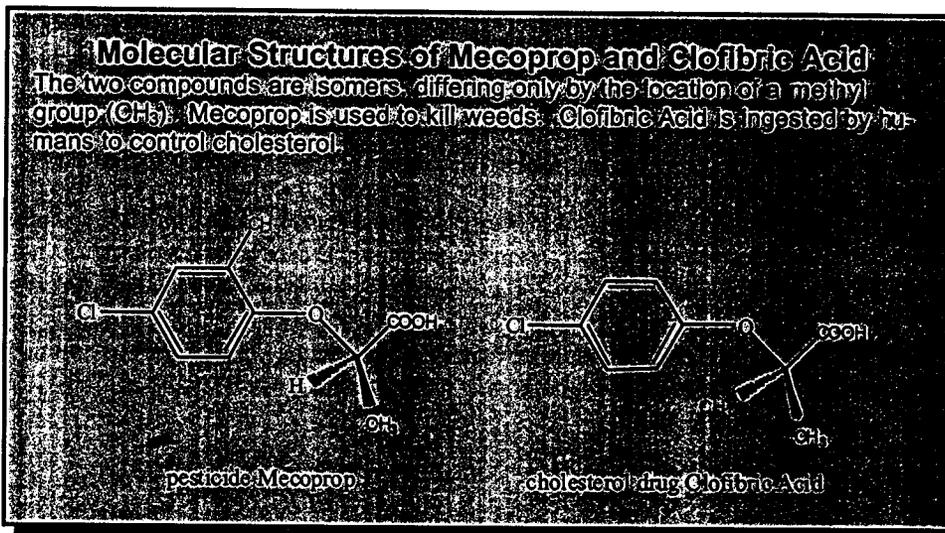
man health, they are a concern for potential effects on river animals.

Documented effects of pharmaceutical drugs in water include the development of antibiotic-resistant bacteria in rivers and birds, and sexual disruption of fish exposed to estrogenic chemicals. Antibiotic-resistant bacteria have been detected in United States rivers, including salmonella in the Rio Grande.

Male fish in rivers receiving sewage effluent with estrogenic compounds in

the same range as those causing sexual disruption in fish in Great Britain.

Positive test results from New Mexico will be compared with concentrations found in study areas outside New Mexico and known to affect aquatic life. The NMED will review actions taken by authorities in other areas, in response to similar discoveries. If human health issues arise, the New Mexico Department of Health Office of Epidemiology will be consulted.



the very low amounts (part-per-trillion, or ng/L) produce the female egg-yolk protein, vitellogenin. The appearance of female characteristics and the progressive disappearance of male characteristics, as seen in fish in the United Kingdom, can be a serious threat to the survival of that species. Hormone concentrations in the San Juan River are in

GROUND WATER

Approximately 90% of the population of New Mexico depends on ground water for its drinking water. Nearly one half of the total water used for all purposes in New Mexico is ground water. In many locations, ground water is the only available water supply. New Mexico's water quality protection programs apply to all ground water with a total dissolved solids concentration of 10,000 mg/l or less (of relatively good water quality) for present and potential future use as a domestic and agricultural water supply.

State Regulation of Ground Water

Ground-water quality management in New Mexico has both state and federal aspects. The State establishes ground-water quality standards, assesses the quality of ground waters, adopts regulations, and takes actions to protect and maintain ground water quality. At the federal level, the U.S. Environmental Protection Agency supports the state in implementing the Clean Water Act, the Safe Drinking Water Act, the Comprehensive Environmental Restoration and Compensation Liabilities Act (CERCLA, or Superfund) and other federal acts that contain ground water quality protection provisions.

The State of Ground Water in NM

The quality of ground water in New Mexico varies widely. It contains naturally occurring minerals that dissolve from the soil and rock that it has flowed through. Mountain aquifers, recharged by recent rain and melted



GWB scientists Dennis McQuillan and Jennifer Parker sample a monitoring well at the Santa Fe Railway where gasoline, from a former tank farm, and perchloroethylene, a dry cleaning fluid, have contaminated groundwater. They use a flame ionization detector and a conductivity meter to test for hydrocarbon vapors and electrical conductivity. Sampling is done to monitor changes in contaminant levels over time.

snow, often yield high quality water. A tremendous amount of fresh water occurs in the Rio Grande valley fill aquifer, stretching from Colorado to Texas. Some ground water in the southern part of the state is too salty to be used for drinking. High levels of natural uranium occur in some ground

waters in northern Santa Fe County, in the Grants-Gallup area, and in Quay County. Naturally high fluoride and arsenic also occur in various areas around the state. Ground-water pollution caused by humans is discussed below.

The New Mexico Water Quality Control Commission (WQCC), under the authority of the New Mexico Water Quality Act (NMWQA), has adopted ground-water quality standards and regulations for the prevention and abatement of ground-water contamination. (Programs established under the New Mexico Oil and Gas Act, Hazardous Waste Act, Ground Water Protection Act, Solid Waste Act, Emergency Management Act, Voluntary Remediation Act, and Environmental Improvement Act also contain provisions that are designed to protect ground water quality.)

The cornerstone of New Mexico's ground-water pollution prevention is the state's ground-water discharge permit program, which protects groundwater quality through the issuance of ground-water pollution prevention permits pursuant to the NMWQA. This program, in place since 1977, regulates all discharges that have the potential to adversely im-

Ground Water

Ground Water Quality Bureau

Water and Waste Management Division

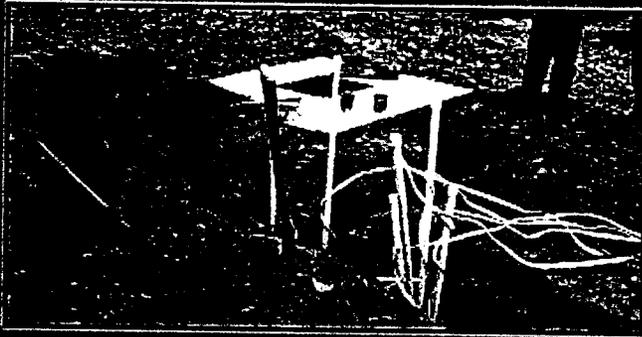
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"Remote" Bureau Staff:
Albuquerque District Office

compact ground-water quality, including domestic wastewater treatment systems, mining operations, dairies, industrial facilities, and food processing plants.

Ground-water protection costs are generally orders of magnitude less than the costs of cleaning up aquifers. In some



Bart Paris of the NMED Ground Water Quality Bureau works on the construction of an in-situ ground-water bio-denitrification system. Sodium acetate will be injected into nitrate-contaminated ground water to provide native bacteria with a carbon energy source. While "feeding" the acetate, the ground-water bacteria will reduce toxic nitrate to harmless nitrogen gas. This pioneering, innovative technology being launched jointly by NMED and UNM, is attracting international attention.

cases the contaminated ground water can never be restored. In 2000, the NMED handled approximately 800 active permits. That number increases yearly.

Ground-Water Contamination Inventories - The New Mexico Water Quality Act gives the state authority to require the assessment and abatement of releases that cause or threaten to cause poor ground-water quality standards, and includes provisions for the reporting and cleanup of spills that po-

tentially impact ground-water quality. The Department maintains an inventory of known ground water contamination cases in the state. At least 1,235 cases have been identified from 1927 through March 1999, with 188 public and 1,719 private water-supply wells impacted. Ground-water contamination most frequently occurs in vulnerable aquifer areas where the water table is shallow.

Causes and Sources of Contamination

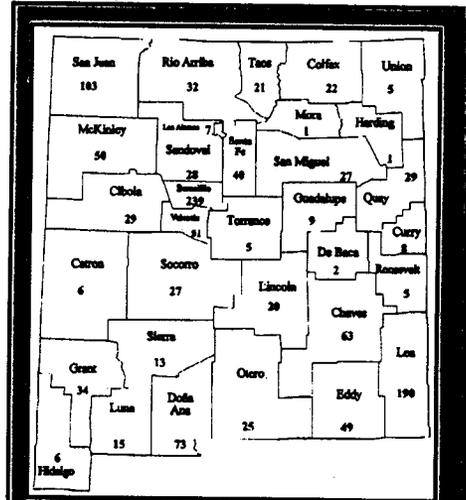
Between 1927 and 2000, more than 1,400 cases of ground-water contamination have been identified by NMED. More than one-half of these cases have been caused by non-point (or diffuse) sources, predominantly by large numbers of domestic septic tanks and cesspools concentrated in an area such as a subdivision. Point sources also contribute to ground water contamination through accidental spills, leaks, and illegal discharges. Leaking underground storage tanks account for almost one-half of all point source contamination. Other principal point sources of ground water pollution are oil and gas production activities, mining and milling, sewage (including septage) disposal, dairies, and miscellaneous industrial sources. At least 1,907 water-supply wells have been impacted by these cases.

Ground-Water Cleanups

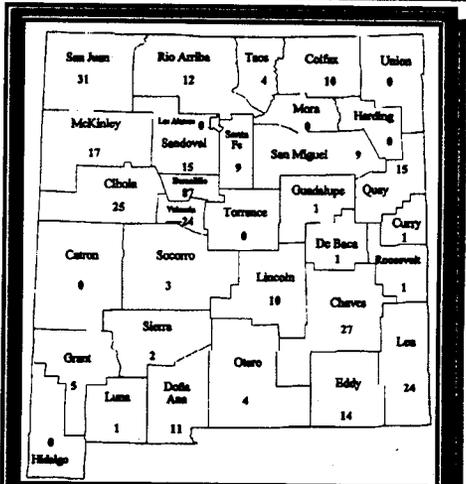
Once contaminated, ground water is difficult, or, in some cases, impossible

to return to its original quality. Common methods of cleanup include:

- Removal and recycling of oil float-



1,235 cases of point sources of ground water contamination in 1999 - 2000.



A total of 383 ground-water contamination sites have been or are currently being remediated.

- ing on top of the water table (free-product recovery);
- Pumping contaminated ground water out and treating it (pump-and-treat);
 - Blowing air into the aquifer and vacuuming contaminant vapors out from the soil (sparge-and-vent);
 - Stimulating native ground-water bacteria with oxygen, food and/or nutrients to enable them to more rapidly biodegrade pollutants into harmless byproducts (enhanced bioremediation); and
 - Monitoring natural abatement processes as they reduce contaminant concentrations to within standards (monitored natural attenuation), if there are no imminent risks to human health and welfare.

Restoration of ground-water quality often takes decades to accomplish, and can be very expensive. NMED also oversees Superfund "toxic waste" sites. Eleven sites have been placed on the National Priorities list, and 20 additional sites are under investigation.

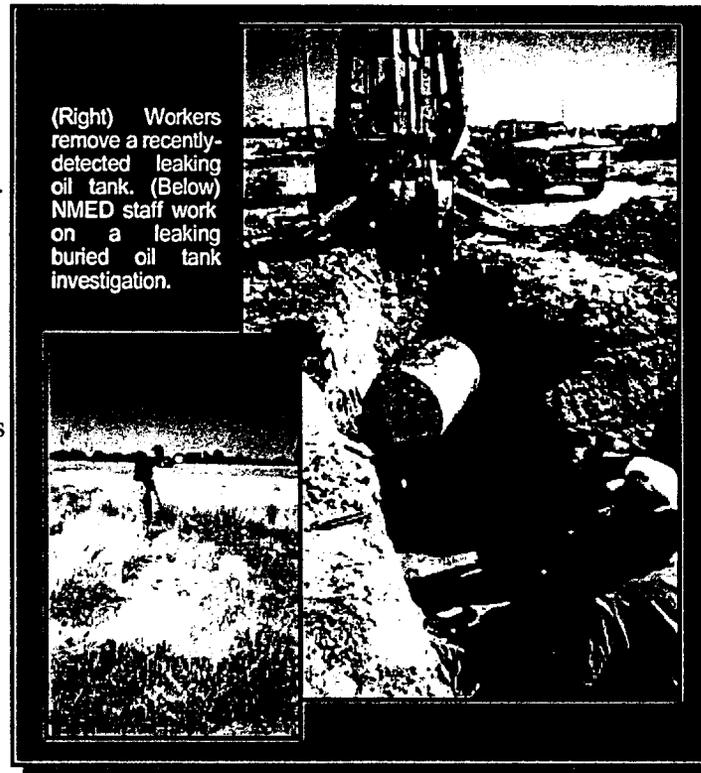
Environmental Trends Relating to New Mexico's Ground Water

While much of New Mexico's program for prevention and abatement of ground-water pollution has proven to be effective, some remaining problems need to be addressed. These problems are briefly discussed below under three categories: non-point sources,

point sources, and general problems. Non-Point Source Pollution - More than half of all known ground-water contamination cases in the state were caused by non-point sources, predominantly household septic tanks and cesspools. Programs to cope with pollution from these small domestic sewage systems need to be improved.

More work needs to be done to assess the extent to which agricultural practices are a source of ground water contamination.

Point Source Pollution - Point source discharge is water pollution that is discharged from a discrete location, such as a tank, pipe, landfill, injection well, industrial or large multi-family septic system leach field, or land application site for domestic, animal and industrial wastewater. Current discharges from most types of point sources are controlled under permitting requirements. However, problems are still caused by some permitted point source discharges.



Many ground-water contamination cases were caused by past practices that would not be allowed under present-day regulations. The ability to require cleanup of those historical contamination plumes is largely limited to those cases where the responsible party can be found. The provision of taxpayer-financed cleanup is limited.

Accidental discharges, including releases from underground storage tanks, transportation and pipeline spills, and illegal dumping can be a significant cause of water contamination. Regulations requiring the responsible party to remediate damage is only useful if the

1999 Statistics

New permits approved
42

Renewal of existing permits
93

Permit modifications
14

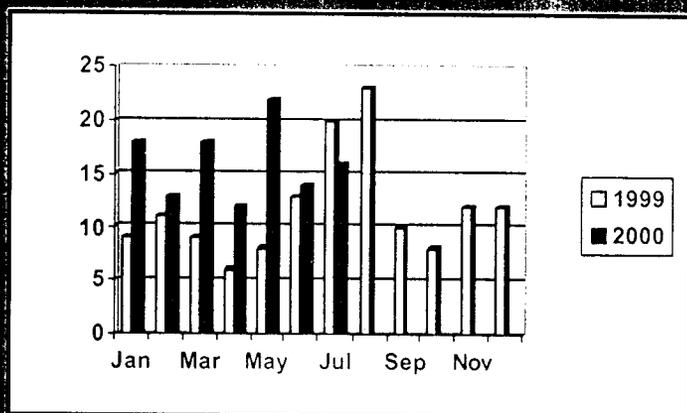
Number of current ground water protection permits
802



responsible party can be found and is not bankrupt. The state's emergency response program, under the Emergency Management Act, is underfunded to provide sufficient staff or to train and equip workers properly.

Vacuum truck pumpage, such as septage, car wash grit-trap wastes, or res-

Unauthorized Discharges Reported



taurant grease-trap wastes, is no longer accepted at sanitary landfills. Attempts to establish separate permitted disposal facilities have met with neighborhood resistance; despite this, several facilities have been permitted.

General Problems - Programs to prevent ground-water pollution have proven to be much more effective than cleanup programs. Prevention of ground-water pollution is much faster and more cost effective than trying to cleanup an aquifer after it has become contaminated. Cleanup is always ex-

pensive, often costing hundreds of thousands or even millions of dollars, and taking many years. In fact, cleanup is sometimes impossible at any price. Therefore, it is much less expensive in the long run to be sure that adequate resources are devoted to prevention of ground-water pollution. However, the success of preventive programs depends on having adequate staff to review proposed actions to ensure that plans are adequate to protect ground water, inspect the sites to verify that plans are carried out as approved, and promptly correct developing problems. Success is also dependent on having adequate legal resources to pursue enforcement actions as well as effective enforcement tools such as strong policies and regulatory requirements. In times of tight budgets, resources for preventive programs are often threatened.

There is a need for better data management and better coordination of data handling by the various agencies that collect, record, and use ground water data.

Public understanding is key to people behaving in an environmentally sound manner. Although these problems have been the focus of attention for years, the solutions have proven to be troublesome.

Potential Bureau Initiatives

Providing resources are needed for the following activities:

- Implementation of ground-water quality protection outreach activities.
- Evaluation of disposal practices for untreated discharges, such as sludge and septage disposal, large volume septic tank/leachfields, and some agricultural discharges.
- Identification and permitting of unpermitted dischargers, including outreach and enforcement as necessary.
- Development of cost-effective treatment technologies for nitrogen-based discharges such as food processing plants, dairies, and other agricultural facilities.
- Development and maintenance of a data management system for ground water quality data.
- Coordination of water quality and water quantity activities and initiation of joint quantity/quality decision-making.
- Evaluation of ambient ground water quality throughout New Mexico.

HAZARDOUS WASTE

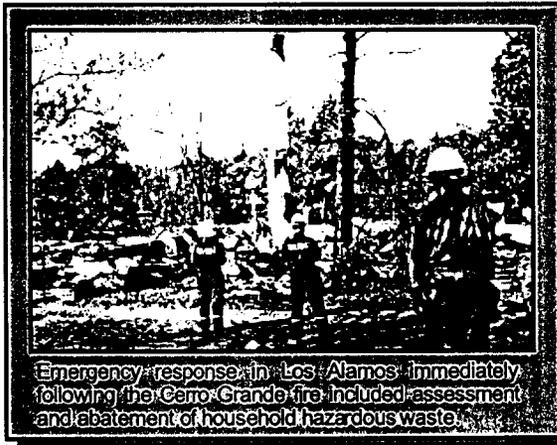
Hazardous Waste in New Mexico

The use of hazardous materials is pervasive and almost unnoticed throughout our society. These materials are often discarded, becoming hazardous waste, and potentially posing a significant risk to human health and the environment if handled improperly.

Safe management of hazardous waste starts with the waste generator. There are nearly 2,000 hazardous waste generators in New Mexico ranging from neighborhood auto body shops and community hospitals, to petroleum refineries, military installations and national laboratories. The Hazardous Waste Bureau (HWB) is responsible for ensuring these generators manage, transport and dispose their wastes safely.

The Bureau's cornerstones for assuring safe management of hazardous materials are site inspections and compliance assurance through audits. The HWB also maintains an active Technical Assistance Program, which provides consultative services to any business that requests it.

HWB staff will help the business not only achieve regulatory compliance, but also establish better ways of minimizing, reusing, or recycling waste. These efforts often result in significant cost savings.



Emergency response in Los Alamos immediately following the Cerro Grande fire included assessment and abatement of household hazardous waste.

Some hazardous waste generators do more than create waste; they also treat, store and dispose of hazardous waste. There are 25 such (RCRA, Subtitle C) facilities in New Mexico with over 200 hazardous waste

“operating units” cleaning up over 3000 sites. Half of the facilities are owned by the federal government. Half of all operating units are at Los Alamos National Laboratory (LANL).

New Mexico has three radioactive disposal sites. One, the Waste Isolation Pilot Plant (WIPP) near Carlsbad, was issued a permit in 1999. The other two, at LANL and Sandia National Laboratories (SNL), have buried radioactive and/or mixed waste that is too “hot” with radioactivity to safely excavate even by remote equipment. Safely managing this material is further complicated by the fact that no disposal facility in the nation can accept these wastes.

Clean up activities are receiving increased attention from permitted facilities and NMED staff. Since June of 1999, the HWB has changed its focus and method of operation by implementing a “project team” approach. This redirects all parties’ efforts away from exhaustive studying and toward making timely decisions on clean-up strategies. The HWB provides a report to the Environmental Improvement Board each year that summarizes permitting and corrective action document review activities. This report is available to the public. The following sites are of particular concern for HWB permitting or clean up:

- White Sands Missile Range has multiple ground water plumes that are being investigated by the HWB.
- NASA has a large, multiple-constituent, ground-water plume for which efforts are underway to stop migration toward municipal water supplies.
- Contaminated ground water is under the northern part of Kirtland Air Force Base and Sandia National Laboratories. A study is underway to determine origin and remediation needs. Potential sources include SNL, but also Kirtland Air Force Base, and an old city-owned landfill.

Land Disposal	51
Tank Units	11
Open Burn	13
Open Detonation	23
Incinerators	1
Container Storage	105
Surface Impoundments	13
Miscellaneous Units	3



Hazardous Waste Bureau

Water and Waste Management Division

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Hazardous Waste

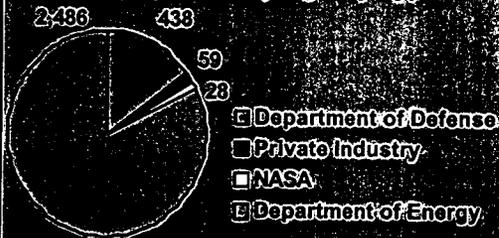
New Mexico has:

25 hazardous waste treatment, storage and disposal facilities.

Nearly 2,000 generators of hazardous waste.

Over 3,000 releases of hazardous waste to the environment.

Cleanup Sites By Agency Type



- Fort Wingate, near Gallup, has multiple groundwater plumes that are currently being addressed by staff.
- Giant Refining Company in Bloomfield has contaminated ground water at the facility and the plume has migrated off-site.
- Contamination has been discovered in ground water under LANL. Studies are ongoing to determine the nature, rate, and extent of the problem.

Summary of 1999 Work

Major efforts were undertaken in 1999 to finalize operating permits for the Waste Isolation Pilot Plant (WIPP) near Carlsbad and the Triassic Park hazardous waste disposal facility. The WIPP permit was issued in late 1999. The site is the first permitted geologic repository for the nation's weapons-related transuranic waste. WIPP is intended to keep disposed wastes safe for 10,000 years. (See more on WIPP as a "Featured Topic" in this report.) The Triassic Park facility's permit is expected to be issued in 2001. It will be the first commercial hazardous

waste disposal facility in the state.

A new fee program was initiated in 1999 with the first annual audit of all hazardous waste release sites, as well as treatment, storage and disposal facilities in the state.

The fee program also assesses costs for reviewing corrective action documents

and permit actions, thus helping to assure that regulatory submittals are handled in a timely manner.

The Bureau maintained its presence along the international border, with 30 international transportation inspections during the year. The HWB also secured hazardous materials and waste inspection training for border officials.

The Bureau responded to several emergency hazardous substance incidents, funded by the state's Hazardous Waste Emergency Fund. These incidents have been very diverse. A major response action in Albuquerque involved removing abandoned hazardous waste from a South Valley residential neighborhood. Another response involved securing and disposing of a large amount of abandoned mineral processing materials and wastes stored at a residence near Caballo Lake. Several other responses dealt with clandestine drug laboratories. The largest of all responses, however, was the Los Alamos town-site cleanup after the Cerro Grande Fire. (See the "Wildfires" section of this report).

Future Environmental Trends in Hazardous and Radioactive Materials

Emerging issues with hazardous waste generation in certain industries support targeting those industries for outreach. Waste minimization and pollution pre-



vention programs are being substantively incorporated into facility permits.

Discovery of abandoned chemicals and the emerging problems of clandestine drug labs, particularly in small communities, further increases the need for increasing the Hazardous Waste Emergency Fund.

Current and Future Needs

Prior to 2000 the HWB had a tremendous backlog of corrective action documents and permit applications. New Department and Bureau management developed a team-oriented approach to deal with high-priority facilities. The new fee program promises to provide the resources needed to expedite review and processing of permit applications and corrective action documents, some awaiting action for over three years. The fledgling fee program will require several years to accurately assess the resource challenges ahead.

OCCUPATIONAL HEALTH AND SAFETY

The vision of the NM Occupational Health & Safety Bureau (OHSB) is to make New Mexico's workplaces the safest in the nation.

OHSB continued to make substantial progress in the health and safety of New Mexico employees in 1999. The overall injury and illness rate continued to drop while the total number of employees in the workforce rose. Most notable has been the construction industry, which has seen a reduction in the injury/illness rate from 12.2 workers per 100 in 1992 to 7.4 per 100 workers in 1998. During the same time, employment in the industry rose by more than 3,700 jobs, and the OHSB directed over 50% of total resources to this one industry.

Targeted Industries for Injury and Illness Reduction Efforts:

Fabricated Metal Products
Commercial Machinery
Heavy Construction
Radiator Shops

To meet the challenges of the 21st century, the OHSB has implemented a five-year strategic

plan, with yearly performance plans. The primary purpose of the Strategic Plan is to effectively and efficiently utilize limited Bureau resources in those industries which continue to have high injury/illness rates. Services

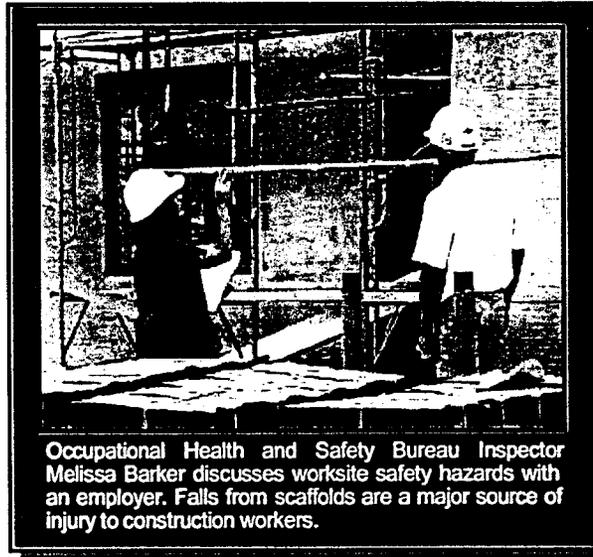
to those new employers and to employers with low rates of injury/illness will be scaled back in order to address health and safety issues with existing high hazard industries.

Lost Work Day Injury & Illness Rate – The primary indicator of hazard reduction is the

Lost Work Day Injury & Illness Rate of New Mexico's employees. There has been a steady reduction in the overall rate during the past five years, with a most notable reduction in the General Construction Industry.

Fatality Rate – The fatality rate in New Mexico has remained fairly steady during the past five years, averaging 52 incidents per year. Of these, approximately one-half of the total are related to traffic deaths. The oil and gas industry accounts for 17-20% of all the New Mexico work related fatalities, while only employing 2% of

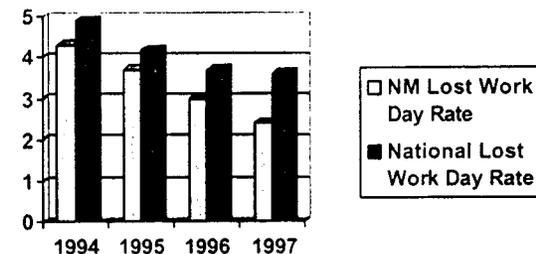
New Mexico's workforce. New Mexico's oil and gas industry accounts for 14% of the total recorded fatalities in the oil and gas industry nationwide.



The Construction Industry – There has been a reduction of the Lost Work Day injury/illness rate of 4.3 workers per 100 in 1994 to a low of 2.4 per 100 workers in 1997.

The National trend also saw a reduction, but not as dramatic as in New Mexico. During the same time frame, NM employment rose by over 3,700 workers in the Gen-

Lost Work Days per 100 Construction Workers



Occupational Health & Safety Bureau

Environmental Protection Division

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OSHB 1999 FACTS and FIGURES

Conducted 478 enforcement inspections:

- 401 safety, 77 health;
- 451 private sector, 27 public sector.

Investigated 9 work-related fatalities.

Conducted 113 on-site consultative inspections.

Performed 124 consultation health and safety interventions.

- 78 on-site, 46 off-site.

Enforcement inspections covered 79,587 employees.

Consultation interventions affected 24,000 employees.

Cited 659 violations.

Issued \$138,049 in civil penalties.

eral Construction Industry. Other industries also saw a reduction in their injury/illness rates, while also increasing employment.

Environmental Trends Relating to Occupational Health and Safety

The challenge of making satisfactory progress towards continued reductions in workplace illness and injuries is affected by a number of factors:

- The number of workers OHSB is responsible for protecting has expanded dramatically from 661,540 in 1990 to over 770,000 in 1999.
- The number of small employers (1-19 employees) has increased from 33,341 in 1992 to over 37,000 in 1999.
- The number of employers in rural areas of the state has increased requiring greater travel time of staff to reach and provide services.
- The staffing and financial resources for the OHSB has remained static or declined since 1990, while the demand for services has increased.

NMED – OHSB Response to Occupational Health and Safety Trends

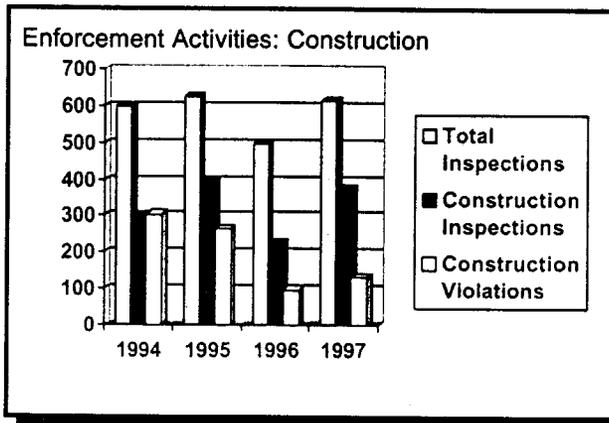
The OHSB continues to make substantial progress in reducing the health and safety hazards employees encounter on the job.

Target Selected Industries – To achieve significant reductions in the

injury/illness rates, the OHSB must direct limited resources to a few selected industries. During 1994 to 1997, over 50% of the total OHSB resources were directed to the General Construction Industry. Measurable results were obtained as evidenced by the dramatic reduction in the Lost Work Day injury/illness rate.

Strategic Planning – As part of its strategic planning, the OHSB has identified three industries that continue to have higher than average injury/illness rates, and have not achieved even modest reductions in those rates during the past five years. The focus of the Bureau has been redirected

from the General Construction Industry to Fabricated Metal Products (SIC 34), Commercial Machinery (SIC 35), and Heavy Construction (SIC 16). Special emphasis will also be placed on Radiator Shops, as lead poisoning of workers continues to be a problem.



An OSHA inspector makes worksite safety suggestions.

POLLUTION PREVENTION

Pollution prevention means not creating a waste at all — providing the most effective way to protect New Mexico's environment. Prevention-first almost always reduces costs associated with waste management or pollution control equipment, providing a bridge between a clean environment and a healthy economy.

The New Mexico Environment Department administers the Green Zia Environmental Excellence Program, a voluntary program that assists all organizations, from the smallest, corner business to the largest manufacturers or federal facilities, in developing pollution prevention programs and reach-

ing "beyond-compliance". This is accomplished by establishing environmental management systems designed to meet the organization's specific cultural and environmental issues. While each Bureau within the Environment Department performs some pollution prevention education, the Green Zia Program, begun in 1998, is the first program dedicated to protecting the environment through prevention.

The Green Zia Environmental Excellence Program is modeled after the Malcolm Baldrige Performance Excellence Program and is the only quality-based environmental excellence program in the country, OR, in the world.

The Green Zia Environmental Excellence Program emphasizes integration of environmental improvement into core business practices.

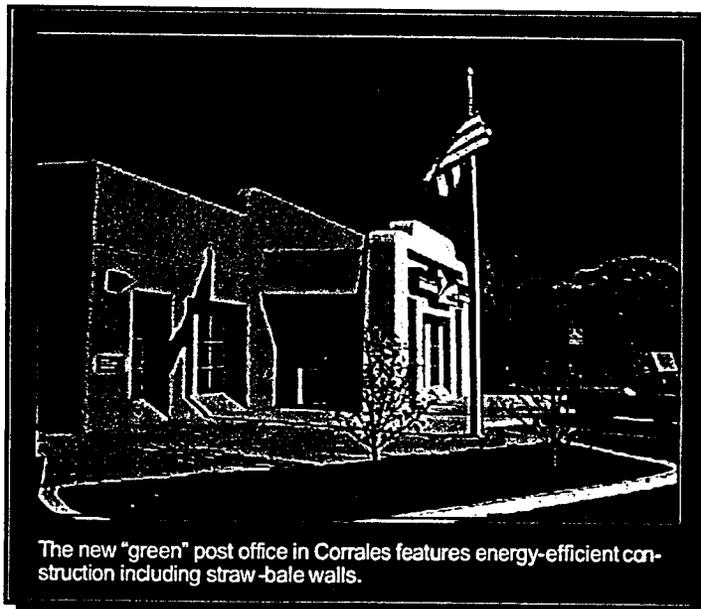
The Green Zia Environmental Excellence Program provided recognition to 300 service stations in 1997 that met regulatory requirements for underground storage tanks one full year

in advance of the regulatory deadline. In 1999, Governor Gary E. Johnson presented 22 companies with Green Zia Environmental Excellence Commitment and Achievement recognitions. These companies ranged from a three-person document management company to Los Alamos National Laboratory. In 2000, Governor Gary E. Johnson presented 30 companies with same. Green Zia companies demonstrated chemical use reductions, energy savings and water use reductions. The Green Zia Program also places an emphasis on community environmental leadership. Green Zia companies have begun to establish community outreach programs to improve communication with communities and to support environmental improvement projects at the local level.

Recognized companies demonstrate that financial benefits can be tied to environmental benefits. A few examples of environmental and financial improvements claimed by participating companies include:

Cottonwood Printing:

- Disappearance of film, mylar, chemical solutions, and tape due to the new computer-to-plate process;
- Faster turnarounds, cleaner plates, increased predictability, and higher quality;
- Increased production;



The new "green" post office in Corrales features energy-efficient construction including straw-bale walls.



Green Zia
Environmental
Excellence
Program

Office of the
Secretary

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"It is not possible to repeat too often that waste is not something which comes after the fact... Picking up and reclaiming scrap left over after production is a public service, but planning so that there will be no scrap is a higher public service."

**Henry Ford,
1924**

- Decreased pressroom wastewater and use of additional chemicals;
- Reduction in make ready paper use.

Holloman Air Force Base:

- Reduction of hazardous waste by 107,000 lbs;
- Savings of \$56,000 in hazardous waste;
- Composting program using yard waste and horse manure from on base made available for base personnel;
- Compost and wood chips produced on base used as a soil amendment at both the landfill and sewage lagoon closure projects on base Co-building project maximizes use of materials and energy;
- Use locally grown materials to support local economy.

Intel New Mexico:

- Set new record of 75% of Solid Waste Recycled;
- Began solvent recycling program;
- Started recycling plastic for use in asphalt;
- Began Environmental Awareness Group to spread information to all employees;
- Began process to segregate all solvents and make reusable.

McKinley Paper:

- Providing an economical use for up to 75% of OCC as well as other waste papers that previously went to landfill in New Mexico;
- Reclamation of all available water for reuse;

- Increased recycling capabilities for waste papers within and outside the state;
- Reduced fiber loss;
- Training of all employees in health, safety, and environmental issues.

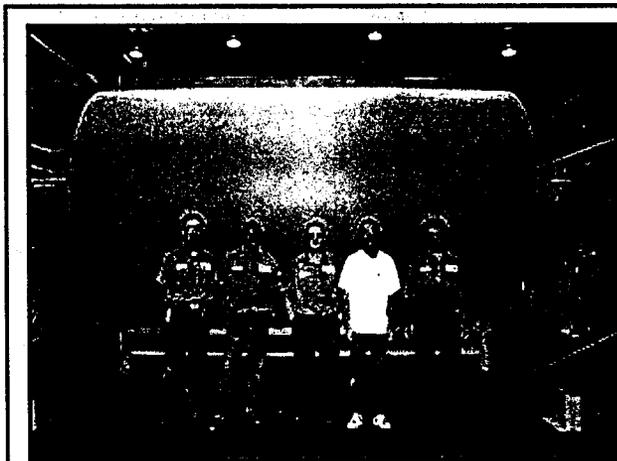
Philips Semiconductors' Water Reuse program:

- Reduction of average water use of plant by 100 million gallons per year;
- Savings of \$130,000 annually.

- Increase in yield and decrease in chemical cost.

LANL ----- Transuranic Waste Inspectible Storage Project:

- Implementation of drum washers, which save money and use a non-hazardous soap;
- Recycling of water through use of the drum washers;
- Reduction of secondary waste by 90 percent;
- Discovery of 44,400 hours worked without injury or illness;
- Savings of \$1.3 million dollars annually for drums;
- Increase in training hours by 20 percent over the past two years.



Employees stand around a newly created roll of liner board at McKinley Paper Company. McKinley uses 100% recycled cardboard to make the liner board, which forms the outside layers of cardboard.

The US Postal Service Albuquerque Cluster:

- 40% reduction in electricity use at the Processing and Distribution Center;
- 25% reduction in electricity use at smaller New Mexico facilities;
- Reduction of hazardous waste generation to conditionally-exempt-small-quantity levels at

all facilities in the Cluster.

Green Zia Program – Support

Although administered by the Environment Department, the Green Zia

Philips has also reduced their solvent air emissions with the following results:

- Reduction of VOC emissions by approximately 90 percent;
- Savings of \$30,000 per week after a payoff time of 13 months;



Program is a partnership that includes the Energy, Minerals and Natural Resources Department, the State Engineers Office, the Consortium for Environmental Education and Technology Development (WERC), the City of Albuquerque, industry, consultants, environmental advocacy groups and economic development agencies such as the Small Business Development Centers and the Manufacturing Extension Partnership.

The Green Zia Program works closely with the Green Zia/Pollution Prevention Technical Resource which is administered by WERC.

The Green Zia Program utilizes a volunteer Board of Examiners who

review applications and provide third-party assessments of applicants' programs. The assessments are then provided to the applying businesses in the form of a feedback report detailing strengths and opportunities for improvement. In 2000, the Green Zia Program was supported by 70 volunteer examiners that serve as a cadre of pollution prevention experts to help disseminate the prevention-first ethic across New Mexico.

Green Zia Program – Tools for Achieving P2 Results

Tools to establish a basic, systematic prevention-based environmental management system support the Green Zia Program. The tools are in two categories:

the "Systems Approach to Pollution Prevention" and a simplified version for small businesses, the "Nothing to Waste" Program. These tools provide a basic framework for an ongoing prevention-based environmental management system.

Systems Approach to P2 — The tools featured in the Systems Approach facilitate problem solving, and decision-making. They provide a framework for an organization to identify pollution prevention opportunities on an ongoing basis. Management and employees utilize the tools in teams in order to gain a complete understanding of their operations.

The Systems Approach tools are widely used quality program tools that provide an excellent means to integrate pollution prevention into an organization's business activities.

Nothing To Waste Program – The Nothing to Waste Program is a simplified version of the "Systems Approach to Pollution Prevention", for use in small businesses. The Nothing to Waste Program explains how a very small business can use quality tools to improve all aspects of their business, with an emphasis on environmental improvements. The program walks a business through these tools from process analysis through action planning for implementation. A copy of this program can be downloaded from the web site: www.pollutionprevention.com or by calling Patricia Gallagher at

Results:

Participating companies attribute \$46 million dollars in cost savings to pollution prevention along with and significantly reduced air emissions, water discharges, and solid and hazardous waste streams.



Workers wear protective suits at Los Alamos National Laboratory's Transuranic Waste Inspectible Storage Project (TWISP).



Through the Green Zia Program, organizations have learned that employees are the cog in the environmental excellence wheel.

**People
Prevent
Pollution**

505-827-0677. The program is also available in Spanish.

Any type of organization from a small, one-person shop to a major manufacturer or federal facility can use the Green Zia Program tools.

Training and Technical Assistance

Training and technical assistance is available for any organization that wishes to participate in the Green Zia Program. Organizations may contact Patricia Gallagher at (505) 827-0677 for more information.

Future Directions

The Green Zia Program had a 30 percent increase in participation from 1999 to 2000. Longer-term goals for

the Green Zia Program include increasing outreach to small businesses and businesses located along the New Mexico/Mexico/Texas border, and developing criteria for sustainable communities. Also, the New Mexico Environment Department is developing approaches to integrate pollution prevention into regulatory activities such as permits, inspections and enforcement agreements.



Employees at Academy Corporation in Albuquerque. Academy Corp. received the Commitment Level Green Zia Pollution Prevention Recognition in 1999.

POLLUTION PREVENTION

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The Green Zia Environmental Excellence Program emphasizes integration of environmental improvement into core business practices.

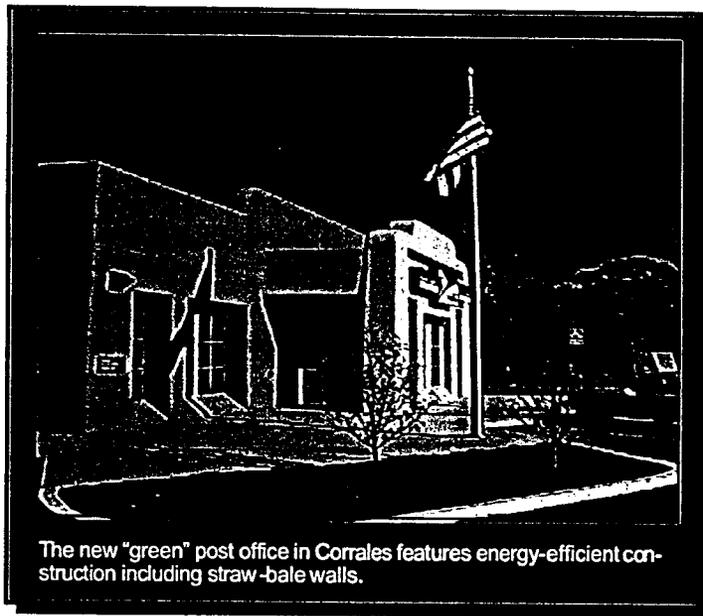
The Green Zia Environmental Excellence Program provided recognition to 300 service stations in 1997 that met regulatory requirements for underground storage tanks one full year

in advance of the regulatory deadline. In 1999, Governor Gary E. Johnson presented 22 companies with Green Zia Environmental Excellence Commitment and Achievement recognitions. These companies ranged from a three-person document management company to Los Alamos National Laboratory. In 2000, Governor Gary E. Johnson presented 30 companies with same. Green Zia companies demonstrated chemical use reductions, energy savings and water use reductions. The Green Zia Program also places an emphasis on community environmental leadership. Green Zia companies have begun to establish community outreach programs to improve communication with communities and to support environmental improvement projects at the local level.

Recognized companies demonstrate that financial benefits can be tied to environmental benefits. A few examples of environmental and financial improvements claimed by participating companies include:

Cottonwood Printing:

- Disappearance of film, mylar, chemical solutions, and tape due to the new computer-to-plate process;
- Faster turnarounds, cleaner plates, increased predictability, and higher quality;
- Increased production;



The new "green" post office in Corrales features energy-efficient construction including straw-bale walls.



Green Zia
Environmental
Excellence
Program

Office of the
Secretary

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"It is not possible to repeat too often that waste is not something which comes after the fact... Picking up and reclaiming scrap left over after production is a public service, but planning so that there will be no scrap is a higher public service."

**Henry Ford,
1924**

- Decreased pressroom wastewater and use of additional chemicals;
- Reduction in make ready paper use.

Holloman Air Force Base:

- Reduction of hazardous waste by 107,000 lbs;
- Savings of \$56,000 in hazardous waste;
- Composting program using yard waste and horse manure from on base made available for base personnel;
- Compost and wood chips produced on base used as a soil amendment at both the landfill and sewage lagoon closure projects on base Co-building project maximizes use of materials and energy;
- Use locally grown materials to support local economy.

Intel New Mexico:

- Set new record of 75% of Solid Waste Recycled;
- Began solvent recycling program;
- Started recycling plastic for use in asphalt;
- Began Environmental Awareness Group to spread information to all employees;
- Began process to segregate all solvents and make reusable.

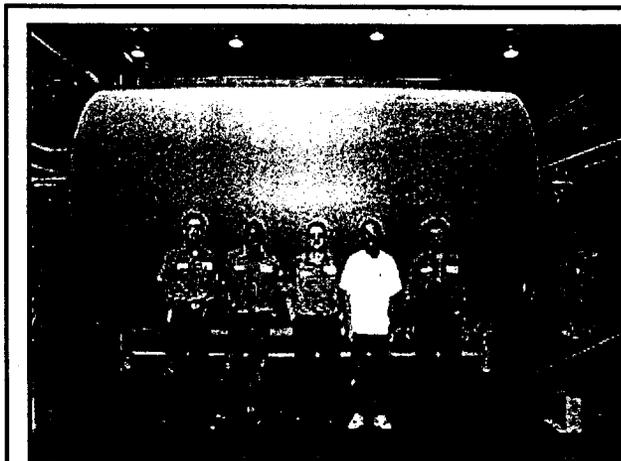
McKinley Paper:

- Providing an economical use for up to 75% of OCC as well as other waste papers that previously went to landfill in New Mexico;
- Reclamation of all available water for reuse;

- Increased recycling capabilities for waste papers within and outside the state;
- Reduced fiber loss;
- Training of all employees in health, safety, and environmental issues.

Philips Semiconductors' Water Reuse program:

- Reduction of average water use of plant by 100 million gallons per year;
- Savings of \$130,000 annually.



Employees stand around a newly created roll of liner board at McKinley Paper Company. McKinley uses 100% recycled cardboard to make the liner board, which forms the outside layers of cardboard.

Philips has also reduced their solvent air emissions with the following results:

- Reduction of VOC emissions by approximately 90 percent;
- Savings of \$30,000 per week after a payoff time of 13 months;

- Increase in yield and decrease in chemical cost.

LANL — Transuranic Waste Inspectible Storage Project:

- Implementation of drum washers, which save money and use a non-hazardous soap;
- Recycling of water through use of the drum washers;
- Reduction of secondary waste by 90 percent;
- Discovery of 44,400 hours worked without injury or illness;
- Savings of \$1.3 million dollars annually for drums;
- Increase in training hours by 20 percent over the past two years.

The US Postal Service Albuquerque Cluster:

- 40% reduction in electricity use at the Processing and Distribution Center;
- 25% reduction in electricity use at smaller New Mexico facilities;
- Reduction of hazardous waste generation to conditionally-exempt-small-quantity levels at all facilities in the Cluster.

Green Zia Program – Support

Although administered by the Environment Department, the Green Zia

Program is a partnership that includes the Energy, Minerals and Natural Resources Department, the State Engineers Office, the Consortium for Environmental Education and Technology Development (WERC), the City of Albuquerque, industry, consultants, environmental advocacy groups and economic development agencies such as the Small Business Development Centers and the Manufacturing Extension Partnership.

The Green Zia Program works closely with the Green Zia/Pollution Prevention Technical Resource which is administered by WERC.

The Green Zia Program utilizes a volunteer Board of Examiners who

review applications and provide third-party assessments of applicants' programs. The assessments are then provided to the applying businesses in the form of a feedback report detailing strengths and opportunities for improvement. In 2000, the Green Zia Program was supported by 70 volunteer examiners that serve as a cadre of pollution prevention experts to help disseminate the prevention-first ethic across New Mexico.

Green Zia Program – Tools for Achieving P2 Results

Tools to establish a basic, systematic prevention-based environmental management system support the Green Zia Program. The tools are in two categories:

1. The "Systems Approach to Pollution Prevention" and a simplified version for small businesses, the "Nothing to Waste" Program. These tools provide a basic framework for an ongoing prevention-based environmental management system.

Systems Approach to P2 — The tools featured in the Systems Approach facilitate problem solving, and decision-making. They provide a framework for an organization to identify pollution prevention opportunities on an ongoing basis. Management and employees utilize the tools in teams in order to gain a complete understanding of their operations.

The Systems Approach tools are widely used quality program tools that provide an excellent means to integrate pollution prevention into an organization's business activities.

Nothing To Waste Program – The Nothing to Waste Program is a simplified version of the "Systems Approach to Pollution Prevention", for use in small businesses. The Nothing to Waste Program explains how a very small business can use quality tools to improve all aspects of their business, with an emphasis on environmental improvements. The program walks a business through these tools from process analysis through action planning for implementation. A copy of this program can be downloaded from the web site: www.pollutionprevention.com or by calling Patricia Gallagher at

Results:

Participating companies attribute \$46 million dollars in cost savings to pollution prevention along with and significantly reduced air emissions, water discharges, and solid and hazardous waste streams.



Workers wear protective suits at Los Alamos National Laboratory's Transuranic Waste Inspectible Storage Project (TWISP).



Through the Green Zia Program, organizations have learned that employees are the cog in the environmental excellence wheel.

**People
Prevent
Pollution**

505-827-0677. The program is also available in Spanish.

Any type of organization from a small, one-person shop to a major manufacturer or federal facility can use the Green Zia Program tools.

Training and Technical Assistance

Training and technical assistance is available for any organization that wishes to participate in the Green Zia Program. Organizations may contact Patricia Gallagher at (505) 827-0677 for more information.

Future Directions

The Green Zia Program had a 30 percent increase in participation from 1999 to 2000. Longer-term goals for

the Green Zia Program include increasing outreach to small businesses and businesses located along the New Mexico/Mexico/Texas border, and developing criteria for sustainable communities. Also, the New Mexico Environment Department is developing approaches to integrate pollution prevention into regulatory activities such as permits, inspections and enforcement agreements.



Employees at Academy Corporation in Albuquerque. Academy Corp. received the Commitment Level Green Zia Pollution Prevention Recognition in 1999.

SOLID WASTE

Every New Mexican creates an average of 6.5 pounds of trash daily. That amounted to almost 2 million tons of municipal solid waste (residential and commercial trash) in 1999. The total amount of solid waste generated in New Mexico, including 776,089 tons of construction and demolition debris, was 2,966,276 tons.

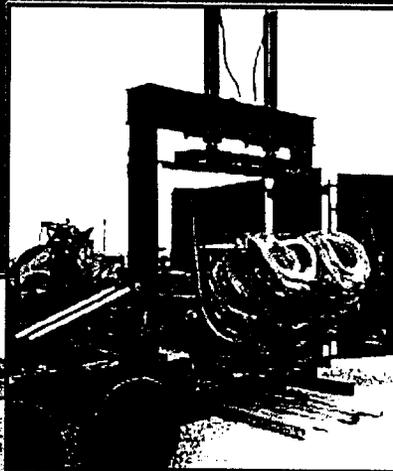
The cost of solid waste disposal in New Mexico has risen significantly in recent years due to the more stringent landfill design criteria and the use of comprehensive collection and waste transfer systems. While most citizens willingly paid the additional costs of disposal, many have attempted to avoid disposal costs by illegally dumping their waste along rural roads, in arroyos, or in other secluded areas.

In an effort to lessen the financial burden of meeting solid waste regulatory requirements, the State Legislature appropriated funding to the Solid Waste Facility Grant Fund. Since 1995, the Solid Waste Bureau (SWB) has awarded more than \$19 million from that fund for projects in 23 counties and 56 municipalities. Awards have also benefited several Indian tribes. As of Fall 2000, the fund balance was approximately \$632,000.

Tire Disposal and Recycling

The Department has funded cleanup of the state's 20 largest scrap tire piles through Tire Recycling Grant projects since the program began in 1994. The City of Carlsbad, with grant funding assistance, constructed a highly successful riverbank erosion control project using scrap tire bales generated by local abatement projects as well as tires from Albuquerque and other areas of the state. Funding for the Tire Recycling Program was eliminated by the legislature in 1999, so management costs of on-going projects must be absorbed into the Bureau's general fund. A final round of grants totaling approximately \$500,000 will be awarded in 2000 using the final funds remaining. Eighteen entities requested funding during the final round.

One-ton tire bales are placed on the banks of the Pecos River at Lake Carlsbad to rebuild riverbanks and stop erosion. The state has funded six regional tire-baling programs.



Solid Waste Bureau

Environmental Protection Division

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Solid Waste

Solid Waste Facility Grant Fund Awards since 1995

1995
 Projects: 24
 Total Awards: \$7,752,495

1996
 Projects: 22
 Total in Awards: \$4,472,996

1997
 Projects: 24
 Total in Awards: \$3,635,000

1999
 Projects: 21
 Total Awards: \$3,176,500

Summary of 1999 Work

The volume of solid waste facility permit application and closure plan submittals, after a large initial surge in the early 1990s, has remained fairly constant at about eight and ten per year, respectively. Comparable numbers of permit applications are expected for the next three or four years as owners of existing landfills either apply for permits (or permit renewals) or submit closure plans. At current staffing levels, the backlog of permit applications and closure plans awaiting review will likely remain until at least 2005.

Ground-water monitoring activities have increased substantially in the past three years as the majority of landfill operators have complied with requirements of the Solid Waste Act. Ground-water monitoring will continue to increase as landfill owners install additional monitoring wells and as more incidents of ground-water contamination occur.

Landfills where contamination is a concern include Clovis, Gallup, Las Vegas, Silver City, Tucumcari and Portales. Landfill owners are in the process of determining the nature and extent of detected contamination.

This section continues to assist the Construction Program Bureau in overseeing the projects funded by the Solid Waste Facility Grant Fund.

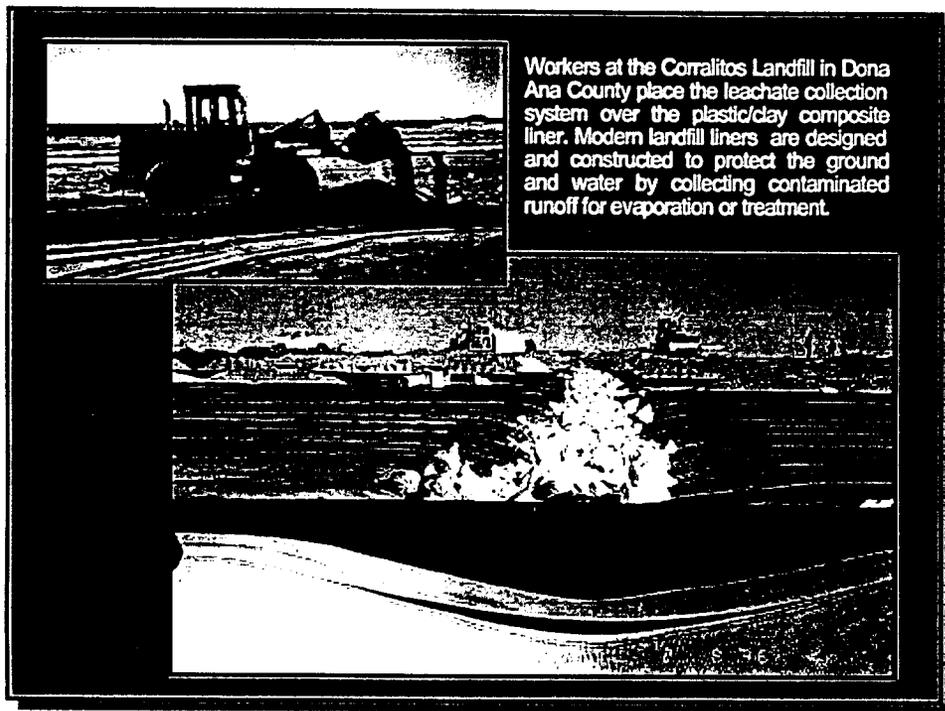
Enforcement - The SWB regularly perform routine inspections of permitted and registered solid waste facilities, closed landfills, infectious waste generators, and waste A great deal of the Bureau's enforcement effort is spent responding to incidents of illegal dumping.

In cases where compliance orders are issued, the offenders are sometimes offered the opportunity to perform environmental remediation projects in lieu of, or to reduce the severity of, fines or penalties. These projects serve as a meaningful deterrent for future violations while also enabling the Department to address needed environmental improvements.

Permit Applications	1997	1998	1999	2000
Pending on Jan. 1	13	14	12	13
Received during year	3	7	3	3
Withdrawn	2	1	0	0
Issued	10	3	4	5
Closure Plans				
Pending on Jan. 1	29	33	23	27
Received during year	10	7	9	NA
Approved	3	12	10	NA

Ground-Water Monitoring at Landfills	2000
Landfills conducting full detection monitoring	10
Landfills conducting partial detection monitoring	17
Landfills conducting assessment monitoring	1
Landfills in corrective action phase of monitoring	5
Landfills granted full GW monitoring suspensions	3
Landfills with pending GW monitoring suspension	4
Small landfills that perform detection monitoring	11
Small landfills that may be required to monitor	51
Small landfills that are not required to monitor	7
Landfills not in compliance w/ monitoring requirements	14

1999	
Routine Inspections	
Active landfills	62
Closed landfills	38
Transfer stations	65
Waste haulers	3
Infectious waste	72
Recyclers	9
Total	249
Enforcement Actions	
Facility Notices of Violation	106
Administrative Compliance Orders	3
Field Compliance Orders	10
Remediation Projects > \$1,000	74
Illegal Dumping	
Incidents investigated	344
Notice Of Violations Issued	295



Workers at the Corralitos Landfill in Dona Ana County place the leachate collection system over the plastic/clay composite liner. Modern landfill liners are designed and constructed to protect the ground and water by collecting contaminated runoff for evaporation or treatment.

Technical Assistance - The Technical Assistance Section coordinates a variety of activities for the Bureau, including:

- compiling data submitted annually by facility operators for legislatively mandated reports;
- providing technical assistance to facility operators, other government agencies, and the general public;
- supporting statewide recycling efforts and America Recycles Day;
- assisting with Governor Johnson's Trek for Trash;
- managing Tire Recycling Grant projects; and,
- providing certification training for facility operators.

In the past year, staff have helped define solid waste management needs and assisted numerous communities: Socorro County, the City of Socorro, and the Village of Magdalena; Catron County; Guadalupe County and the City of Santa Rosa; the City of Carlsbad; Lea County Solid Waste Authority; Sierra County and the City of Truth or Consequences; Luna County and the City of Deming; and the Northwest New Mexico Regional Solid Waste Authority (McKinley County and Cibola County).

Staff also assisted in implementing technical responses to, and

educating landfill operators on, the landfill gas collection requirements recently implemented by the U.S. Environmental Protection Agency.

Environmental Trends & Response to Trends Relating to New Mexico's Trash

The Bureau will focus efforts on:

- Developing cost-effective solid waste management systems;
- Assisting communities with chronic regulatory compliance problems;
- Prosecuting dumpers, and reducing illegal dumping; and,
- Implementing ground-water monitoring programs at required sites.

Specifically, affordable disposal options are still needed in several regions, including Rio Arriba County, Los Alamos County, Socorro County, Catron County, Guadalupe County and Quay County.

Efficient collection and transfer systems are needed in Rio Arriba County, Catron County, Roosevelt County and Guadalupe County.

New Mexico recycles about 12 percent of the trash it makes. This is the same as the average recycling rate in the Rocky Mountain Region.

Facility Type	Students Taught in 1999	Certifications Issued in 1999	Certifications Issued to Date
Landfill	45	25	244
Transfer Station	65	65	267
Compost	44	44	178
Recycling	24	24	139

Meeting Future Needs

The process of adapting to more stringent solid waste management regulations has been difficult for some communities. While the need for technical assistance, permit reviews and approv-

als, ground-water monitoring oversight, illegal dumping prosecution, and compliance monitoring have steadily increased over the past five years, the resources required to effectively deliver these services have decreased dramatically. In the past three years

alone, the number of authorized positions for Bureau staff has gone from 31 to 23 full-time employees, a reduction of 26%. The potential impact on the quality of the environment caused by a lack of resources is a continuing concern.

Solid Waste Figures in New Mexico: 1993 through 1999

The table below summarizes New Mexico's solid waste generation and disposal data. An increase in solid waste generated over the years is attributed to an increase in population and support services, economic growth, increased reporting accuracy and tourism.

	1994	1995	1996	1997	1998	1999
Total MSW Generated	1,237,538	1,395,956	1,789,217	2,009,319	2,081,036	2,190,187
Construction & Demolition waste (C&D)	874,033	918,525	989,603	898,435	839,867	776,089
Total Waste	2,111,571	2,314,481	2,778,820	2,907,754	2,920,903	2,966,276
Out-of-state Waste Disposed in NM landfills	293,028	239,067	305,529	112,160	236,542	241,771
Diverted (Recycled/ Reused) Waste	145,789	151,866	207,209	267,134	263,782	290,427
Total Solid Waste Disposed in NM	2,258,810	2,401,702	2,877,140	2,752,779	2,893,663	2,917,620

SURFACE WATER QUALITY



Surface Water Quality in New Mexico

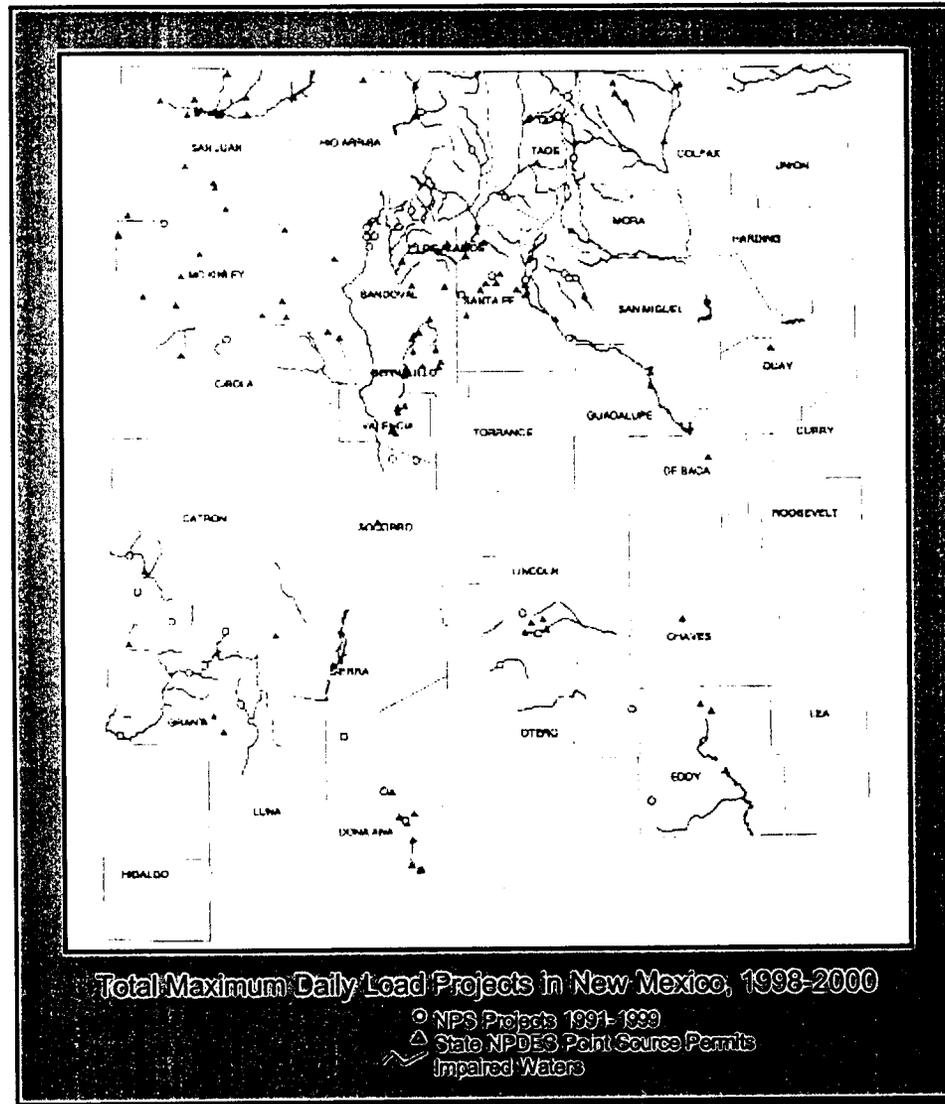
The SWQB continuously evaluates surface water conditions in all continuously flowing rivers and streams (approx. 4,000 miles) in New Mexico. In addition to assessing conditions, the Department funds "non-point source" pollution cleanup projects designed to improve surface water quality (see definitions in box). Improved surface water often leads to improvements in aquatic habitat, the quality of waters used for irrigation, and even increased water yield, thus better enabling New Mexico to meet the needs of its people, wildlife, and required deliveries to Mexico and Texas.

The map on the right shows surface waters of the State of New Mexico which are considered to be impaired — waters that are either found to have pollutants exceeding state standards, or waters that fall short of state standards for life-supporting constituents such as oxygen.

Surface Water Quality Bureau (SWQB) projects for reducing Non-Point Source (NPS) pollutants from 1991 through 1999 are also identified on the map. The focus of the projects is to improve the quality of these impaired waters. Specifically, these projects are designed to clean up pollutants through land restoration, revegeta-

tion, and other management practices which positively affect our state's waters. Impaired waters are included on

the state 303(d) list of Impaired Waters. NPS projects are funded through federal Clean Water Act monies.



Surface Water Quality Bureau

Water and Waste Management Division

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Watershed: an area of land which drains to a common point. It can range in size from a few acres to thousands of square miles.

Riparian Area: the land and vegetation along continuously and intermittently flowing rivers, streams and lake shores.

Non-point Source Pollution: water pollution that originates from diffuse sources such as rainfall runoff or snowmelt.

Point Source Pollution: water pollution that is discharged from a discrete location such as a pipe, tank, pit or ditch.

The map also identifies locations of National Pollutant Discharge Elimination System (NPDES) permits that are certified by the state. The NPDES permits are for point sources of pollution. Typically, this includes such things as sewage treatment plant outfalls and industrial dischargers. The NPDES permits include effluent concentration limits that are calculated so that they are protective of state water quality standards.

Additionally, the map shows those reaches of surface waters with pending Total Maximum Daily Loads (TMDL), as well as waters with written TMDLs that have been adopted by the Water Quality Control Commission (WQCC).

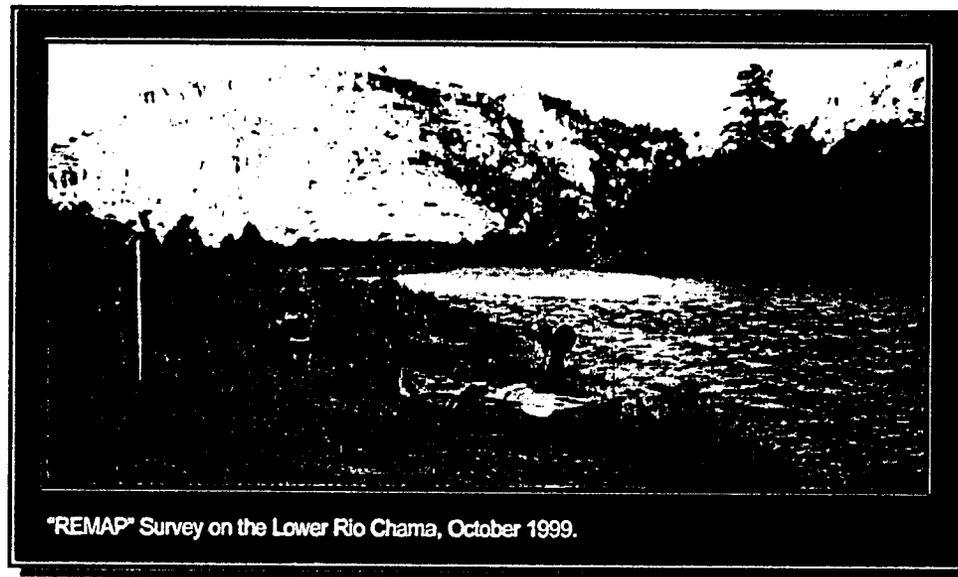
Surveillance and Standards

The SWQB conducted three-season, intensive, water quality surveys of:

- Middle Rio Grande
- Santa Fe River
- Lower Rio Chama watershed
- Abiquiu Reservoir
- Gila River watershed
- Red River (in support of the Department's efforts to characterize the effects of the Molycorp molybdenum-mining activities).

The SWQB also conducted:

- A special two-season, intensive, water quality survey of the Mora River;
- Supplemental sampling in the upper Rio Chama, Jemez River and Cimarron River watersheds;



"REMAP" Survey on the Lower Rio Chama, October 1999.

- Special biological assessment known as a "REMAP survey" of the lower Rio Chama watershed.

The SWQB also assisted the WQCC in reviewing the water quality standards, and the NM Department of Game and Fish in updating the standards in support of native fish restoration activities.

This large number of water quality samples submitted to the state's laboratory used all of the funds allocated by the Health Department for support of this work.

Facility Operations

The SWQB's Facility Operations Section administers the Utility Operator Certification Regulations. During 1999, this section accomplished the following:

- Conducted 10 examinations throughout the State;

- Administered 1004 examinations;
- Endorsed 2112 utility operators with 2840 certificates;
- Worked to improve the availability and quality of operator training in the State;
- Recorded more than 40,000 trainee-hour credits for approved courses; and
- Conducted a series of eight meetings with operators around the state to review and update criteria documents used for development of training courses and new examinations.

Point Source Regulation

The SWQB's Point Source Regulation Section is responsible for review and certification of National Pollutant Discharge Elimination System (NPDES) permits, as well as inspections of permitted facilities to ensure that New

Mexico water quality standards are protected. NPDES permit holders are usually municipalities and industries. The permitted facilities include wastewater treatment plants, mines, ski areas and industrial plants. Currently, there are 128 individual and 4 general NPDES permits in New Mexico. These permits cover the majority of point source dischargers in the state.

Prior to re-issuing a five-year permit, the Bureau completes a certification procedure that ensures that the conditions in the New Mexico Water Quality Standards (WQS), New Mexico Water WQCC, and the New Mexico Water Quality Management Plan (WQMP) will be met.

NPDES inspections resulted in 2,736 data entries into the EPA national water quality data base. This database is used by EPA and the states to track water quality conditions throughout the nation. Additionally, in 1999, critical low-flow calculations were performed for five receiving streams. These calculations are necessary for the calculation of permit effluent limits.

Non-Point Source

The SWQB's Non-point Source (NPS) Section administers projects designed to reduce non-point source pollution in New Mexico's surface waters. Funding for this program comes from the federal grants. During 1999, eighteen NPS projects were funded in:

- Upper Rio Grande Watershed
- Middle Rio Grande Watershed

- Lower Rio Grande Watershed
- Upper Pecos Watershed
- Lower Pecos Watershed
- Rio Chama Watershed
- Cimarron River Watershed
- Jemez River Watershed
- Gila River Watershed
- San Francisco Watershed

During 1999, the NPS Section was reorganized to accomplish two complementary activities:

A. Support ongoing activities, including:

- Involvement in watershed and pollution prevention projects;
- Lead participation in various State and federal non-point source pollution projects in prioritizing watersheds for future work;
- Coordinating the Total Maximum Daily Load (TMDL) sampling effort with Section 319 project implementation;
- Responding to daily inquiries regarding water health and safety.

B. Provide for increased project implementation by:

- Encouraging a larger number of on-the-ground water quality protection projects designed and operated by organizations outside the Department;
- Expanding access to the grant funds by instituting a Request for Proposal (RFP) format for project proposals;
- Increasing contact with cooperators throughout the state, including numerous State and Federal agen-

cies, Tribal interests, Soil and Water Conservation Districts, environmental organizations, corporations, and private citizens.

This approach helped establish 40 NPS projects in New Mexico. These projects address pollution abatement and prevention, environmental education, and watershed health in priority watersheds.

All of New Mexico's watersheds were classified according to surface water conditions. This was a very important step in a comprehensive watershed based approach to improve the quality of the state's waters. This assessment will help New Mexico to leverage additional federal grant monies for watershed restoration activities.

TMDL Development

During 1999, the SWQB's TMDL Development Section performed worked to assess and protect surface water quality:

- Developing 24 TMDLs, each approximately 50 pages, describing conditions of various surface waters in the state. The water conditions are quantified using an estimate of



(Below) SWQB Scientists Betsy Reed and Susan Hill plant willows along Blue Water Creek near Grants for riparian restoration. (Inset) SWQB Scientist Larry Smolka measures riparian plant growth along the Jemez River.





the loading (pounds per day) of a given pollutant, and the target loading which would allow the waterbody to attain its water quality standards. The number of samples necessary for the development of each TMDL varied from several hundred to several thousand, depending on the complexity and size of the waterbody;

- Managing the SWQB website;
- Developing Geographic Informa-

- be distributed in 2000); and,
- Initiated a Volunteer Monitoring Program - Approximately 45 people have helped monitor the Red River, Ruidoso River, Gila River, and the San Francisco Watershed.

Environmental Trends Relating to New Mexico's Surface Water Quality

The vast majority — 92 percent — of streams and rivers in watersheds throughout the state are impacted by non-point sources of pollution.

These impacts range from slight increases in turbidity, temperature, and sediment levels to severe erosion, sediment deposition, and increased water temperatures due to the loss of river/stream vegetation.

Point sources of pollution contribute very little to the pollution of surface waters in New Mexico.

Detailed surface water quality trends in the state are not available due to a

lack of historical database.

Future Directions of the Surface Water Quality Bureau

1. Surface Water Quality Data Base: The bureau will continue to develop a comprehensive surface wa-

ter quality data base to allow integration and management of all bureau program activities;

2. Continue development of TMDLs as defined by the list of impaired waters;
3. Review and certify of all NPDES permits throughout the state;
4. Refine field data collection methods; and,
5. Coordinate implementation of federal Storm Water Phase II regulations by March 10, 2003.

Bureau Resource Needs

The SWQB will continue to increase its sampling efforts in order to have a better understanding of surface water conditions throughout the state. This increased sampling requires increased laboratory analysis. The Scientific Lab Division (SLD) of the NM Department of Health receives state general fund appropriations in support of SWQB work. The allocation is completely used every year. An increase in funding of 50 percent, or direct funding of the Department to allow increased use of the SLD or contract laboratories would better support SWQB efforts.



SWQB's Chris Cudia teaches kids about macroinvertebrates that live in the river.

tion Service (GIS) mapping of New Mexico waters;

- Developed the "305(b)" Report to Congress on *Water Quality and Water Pollution Control in New Mexico*, distributed April 1, 2000;
- Produced the *New Mexico 2000 Wetlands Conservation Plan* (to

UNDERGROUND STORAGE TANKS

There are 1,039 leaking underground storage tank (UST) sites in New Mexico that are being addressed. The State Corrective Action Fund reimburses many of the cleanup costs.

There are approximately 53 known abandoned or improperly closed USTs

at approximately 23 sites that will require intensified enforcement action. Often, parties responsible for these tank sites are not clearly established, ownership is in dispute, or the tanks are beyond the deadline for temporary closure. These tank systems present a potential environmental hazard that

must be properly addressed to alleviate future liability to the state of New Mexico.

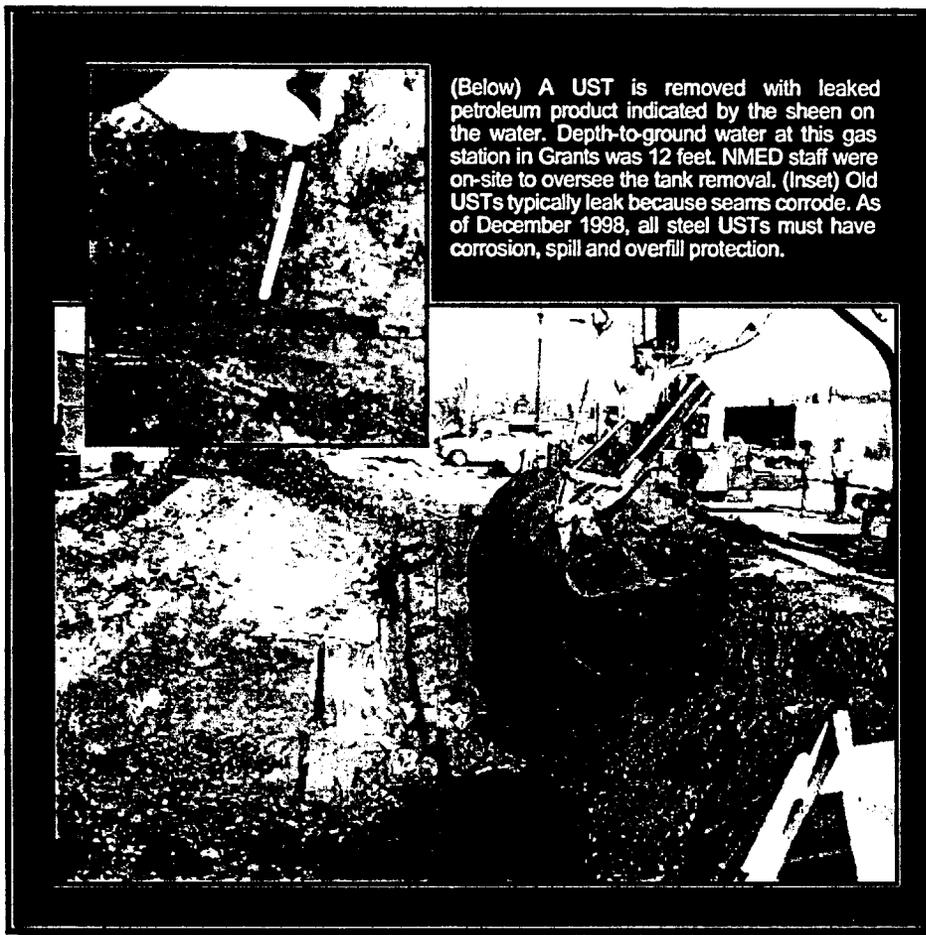
The early detection of releases from underground storage tank systems is an important factor in successful mitigation of contamination in the environment.

UST Bureau Overview

The Underground Storage Tank Bureau (USTB) is responsible for the detection, prevention and mitigation of petroleum product releases from underground storage tanks.

The USTB accomplishes its mission with four integrated Programs; the Prevention/Inspection Program, Remedial Action Program, Financial Management Program and the Regulation, Information and Data Management Program.

Prevention and Inspection - The USTB ensures that owners and operators of USTs comply with regulations concerning operation and maintenance of their UST systems. USTB staff are present at all removals installations, repairs, and modifications to UST systems. They also conduct annual on-site compliance inspections at 1369 facilities with 3789 tanks in New Mexico. This front-line effort results in early detection of releases from underground storage tanks, minimizing the spread of pollutants.



(Below) A UST is removed with leaked petroleum product indicated by the sheen on the water. Depth-to-ground water at this gas station in Grants was 12 feet. NIMED staff were on-site to oversee the tank removal. (Inset) Old USTs typically leak because seams corrode. As of December 1998, all steel USTs must have corrosion, spill and overfill protection.

Underground Storage
Tanks

Underground Storage Tank Bureau

Environmental
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Underground Storage Tanks

\$\$\$\$

The USTB manages the Corrective Action Fund, which provides eligible owners and operators of USTs with money for cleaning up leaking underground storage tank sites. A portion of the Petroleum Products Loading Fee, as established by the Ground Water Protection Act, provides financing for this fund.

By the end of fiscal year 1998, 98 percent of New Mexico's tanks were in compliance with all of the federally mandated performance standards and other regulatory requirements. The national average compliance rate was 60 percent.

Remedial Action -- The USTB oversees corrective action at 1039 sites with confirmed leaking underground storage tanks. During the year 2000, 61 new release sites were reported, and 54 sites were declared "no further work required" status.

The USTB directs and oversees cleanup (or corrective action) at sites where a leak or spill of a regulated petroleum product has occurred. The Bureau prioritizes cleanup sites, approves and oversees all investigations and cleanups, and approves associated costs charged to the state's Corrective Action Fund.

Prioritization determines the severity of a release by evaluating the effect or potential effect of the release on human health, safety and welfare, or the environment. Sites are addressed in priority, beginning with the most severe.

The Remedial Action Program also ensures that cost-effective measures are selected for clean up for efficient use of the Corrective Action Fund.

Work plans for corrective action totaling \$11,565,762 were approved in fis-

cal year 2000. With implementation of the revised regulations, the USTB expects to be more aggressive about cleaning up contamination at more sites, resulting in greater expenditures for corrective action than in the recent past.

Regulations, Database and Information Management -- USTB's Regulation, Database and Information Management Program provides the support needed to keep the other programs in the bureau electronically connected and functioning. This work includes developing and maintaining a reliable USTB database, identifying hardware and software needs and training staff to use them. This program has been a leader in the development of a department-wide database that will allow all department programs to disseminate and share information, resulting in a more integrated and user-friendly agency. In addition, program staff act as USTB's liaisons with other Depart-



A 20,000-gallon, double-walled petroleum storage tank is installed at the University of New Mexico. This underground storage tank (UST) was installed as a supply tank for the boiler system that heats the majority of the campus. The UST is equipped with spill containment, overfill prevention, automatic tank gauging and double-walled piping for the supply and return lines.

ment agencies and the EPA.

Financial Management -- In association with managing the UST Corrective Action Fund, the USTB must invoice and collect annual tank registration fees, maintain compliance records, audit and process claims and invoices for corrective action reimbursement, track expenditures and revenue, and maintain a financial database. Just under \$9 million was paid in 1999 for completed cleanup work at leaking under-

ground storage tank sites.

Bureau Outreach Activities

- Maintained a display booth at annual Petroleum Marketers Convention;
- Maintained a display booth at the New Mexico Environmental Health Conference and the State Fair;
- Disseminated materials pertaining to regulation and enforcement;



- Maintained USTB web page;
- Published two editions of *Tank Notes* newsletter for distribution to certified tank installers, certified scientists, tank owners and operators, and others.;
- Reminded tank owners of important deadlines in special mailings;
- Performed annual inspections of 99 percent of all UST facilities;
- Held bi-monthly UST Committee meetings;
- Held the UST Conference providing information regarding changes in policy and regulation, a forum for discussion and technical training.

Success stories and Milestones:

- The USTB adopted revised Underground Storage Tank Regulations. One of the most important revisions was the development and implementation of a science based decision-making process for corrective action. This process allows the USTB to identify sites

that require aggressive corrective action and sites that are eligible for closure more rapidly.

- The USTB signed cooperative agreements with two tribal governments to allow joint regulatory control over non-tribal facilities. The benefits of these agreements are the UST facilities will adhere to the UST Regulations including complying with all tank performance standards and paying all required fees, and the sites can utilize the Corrective Action Fund for cleanup. The greatest benefit is the increased protection of human health, safety and welfare and the environment for all New Mexicans.

- Since the December 1998 deadline for implementation of EPA mandated UST performance standards, the USTB has overseen tank system owners and operators achieve a 98% compliance rate — one of the highest in the nation. However, even with this high compliance rate, tank failures and new releases continue. The EPA has initiated a

study to determine the adequacy of the current leak detection methods. Results of this study may indicate that even more stringent performance standards are required in or-

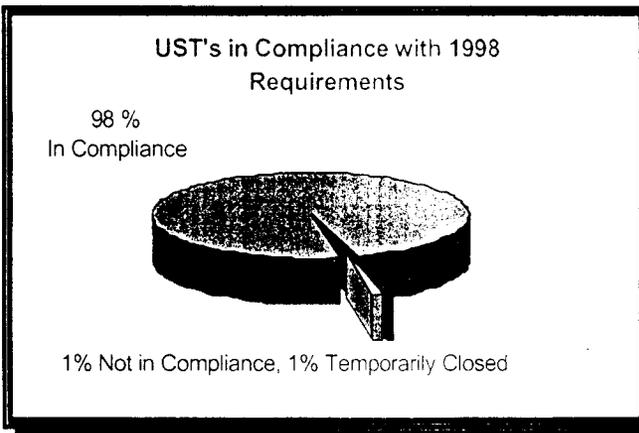
Number of Permits Issued: (Tank Registrations FY 01)	3,789
Fees Collected FY 01:	\$ 378,900.00
Number of Sites:	1,369
Percentage of Sites Inspected FY 00:	99%
Number of Facilities Issued Notices of Violations FY 00:	143
Number of Violations FY 00:	181
Penalties Assessed FY 00:	\$ 23,700.00

der to prevent additional contamination of the environment.

Environmental Trends and Future Initiatives Relating to New Mexico's Underground Storage Tank Program

There is a trend in the regulated community toward fewer but much larger tanks. The effect of this trend is reduced revenues collected through tank registration fees without a reduction in capacity or regulatory oversight. Therefore, the workload of the USTB inspectors has not been reduced.

High employee turnover among facility operators is common among retail gasoline stations. The lack of experienced on-site operators decreases the chances of identifying potential leaks from faulty systems. This results in an increased need for outreach and training by USTB staff.



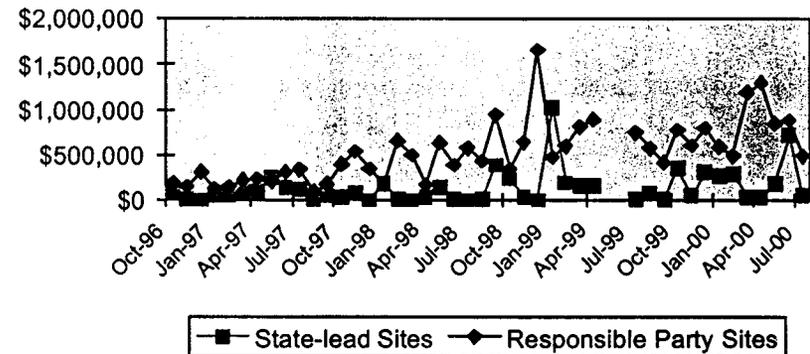
Underground Storage Tanks



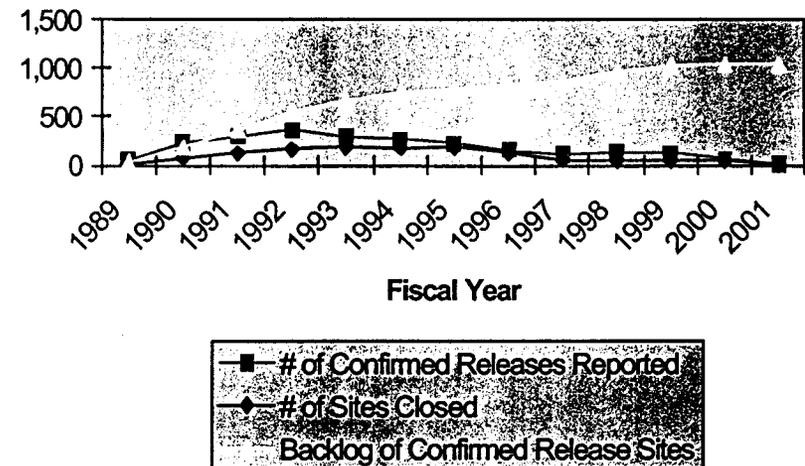
One gallon of leaked gasoline can contaminate 1 million gallons of ground water.

The Bureau will initiate additional projects including expanding cooperative agreements with existing and other tribes in order to protect New Mexico's groundwater resources, incorporate global information system to make data more accessible and working with EPA and local governments on pilot projects involving abandoned tanks (UST Fields).

Responsible Party and State-lead Workplan Approval Amounts



Underground Storage Tank Activity



WASTE ISOLATION PILOT PLANT

The Waste Isolation Pilot Plant (WIPP) is a deep-earth repository located in southeast New Mexico and developed by the U.S. Department of Energy (DOE) to dispose of defense-related transuranic (TRU) waste currently located at numerous facilities around the country. On October 27, 1999, following a long but important public participation process, the New Mexico Environment Department (NMED) issued the final hazardous waste facility permit for WIPP governing the daily operations of receipt, storage, management, and ultimate disposal of TRU mixed waste.

The NMED became one of the principal regulatory agencies for WIPP in July 1990, when the U.S. Environmental Protection Agency (EPA) granted mixed-waste regulatory authority to the NMED. Mixed waste is waste that contains both hazardous waste (as defined by the NM Hazardous Waste Act) and radioactive waste (as defined by the Atomic Energy Act).

To open WIPP, DOE needed to obtain 1) a certification from EPA that WIPP complies with radioactive waste disposal standards, as well as, 2) a hazardous waste facility permit from the NMED to store and dispose of mixed waste.

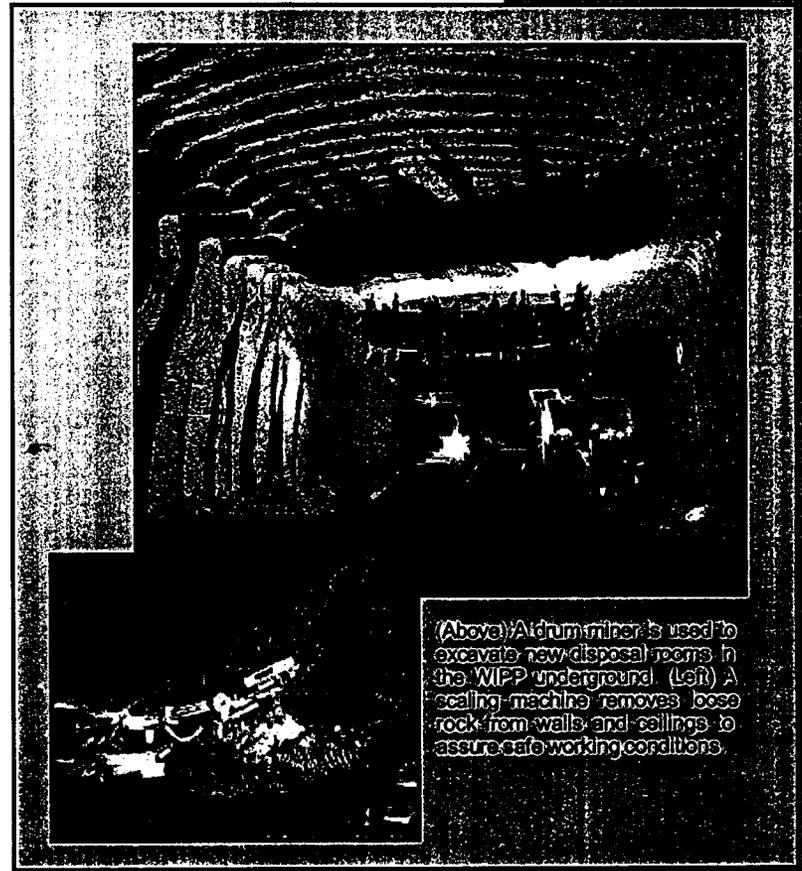
The NMED's involvement with WIPP began in 1991 with DOE's first appli-

cation for a permit to store TRU mixed waste underground for testing purposes. DOE submitted a revised permit application for mixed-waste storage and disposal to NMED in 1995, and a year later provided EPA with a compliance certification application for radioactive waste disposal. EPA issued their certification May 13, 1998 that WIPP complied with the radioactive waste disposal standards. The NMED issued the final hazardous waste facility permit for WIPP in October 1999.

During the time between EPA's certification and NMED's WIPP permit, there was a great deal of uncertainty regarding the disposal of non-mixed TRU waste. Shipment and disposal of this waste was delayed for nearly a year while a U.S. District Court Judge dealt with legal challenges to DOE's ability to dispose of TRU waste at WIPP under EPA's certification. The Judge ruled on March 22, 1999 that DOE could dispose of non-mixed TRU waste before NMED issued its permit. During this seven-month period before the WIPP permit was in place, WIPP received 39 shipments of non-mixed TRU waste from Rocky Flats Environmental Technology Site (RFETS) in Colorado, Los Alamos National Laboratory (LANL) in New Mexico, and Idaho National Engineering and Environmental Laboratory

(INEEL) in Idaho. However, once the WIPP permit was issued in October 1999, all shipments stopped while DOE worked to ensure that all permit requirements were implemented at the generator/storage sites where the waste was located.

One of the major requirements of the WIPP permit deals with the subject of



(Above) A drum miller is used to excavate new disposal rooms in the WIPP underground. (Left) A scaling machine removes loose rock from walls and ceilings to assure safe working conditions.



TRU

Transuranic (TRU) wastes are specific, long-lived, radioactive wastes, including plutonium and americium.

waste characterization where, according to hazardous waste regulations, the facility must sample and analyze the waste to ensure that everything is known to safely store and dispose of such waste. Notably, the permit insists that all waste – both mixed and non-mixed TRU waste – must be characterized.

Another major requirement of the permit compels WIPP personnel to audit the waste characterization activities at each generator/storage site to ensure correct implementation of this waste analysis plan. NMED staff has traveled to the sites where WIPP-bound wastes have originated to observe characterization activities and make sure they meet permit requirements. As of November 2000, the NMED had approved three sites (RFETS, INEEL, and Hanford, WA) for waste characterization.

The permit also requires WIPP to monitor air, groundwater and specific activities at the facility that have the potential to adversely impact human health and the environment.

The WIPP hazardous waste facility permit is effective for ten years, and includes a requirement that the NMED review it after five years to see if any modifications are necessary to keep it current with changing regulations. The regulations also allow DOE to submit proposed modifications to the permit that are more substantial and are thus subject to public comment and NMED approval prior to implementation. DOE has submitted numerous modification requests requiring comment and approval since the permit was first issued.

Several modifications were the subject of a lawsuit by DOE against the NMED. The suit was subsequently settled.

In late 2000, the DOE publicly discussed several proposed modifications that would significantly change or expand WIPP's. The first modification would propose to allow partially characterized waste to be received at WIPP, with

WIPP personnel performing required confirmation sampling and analyses prior to disposal. The second modification would propose a program for

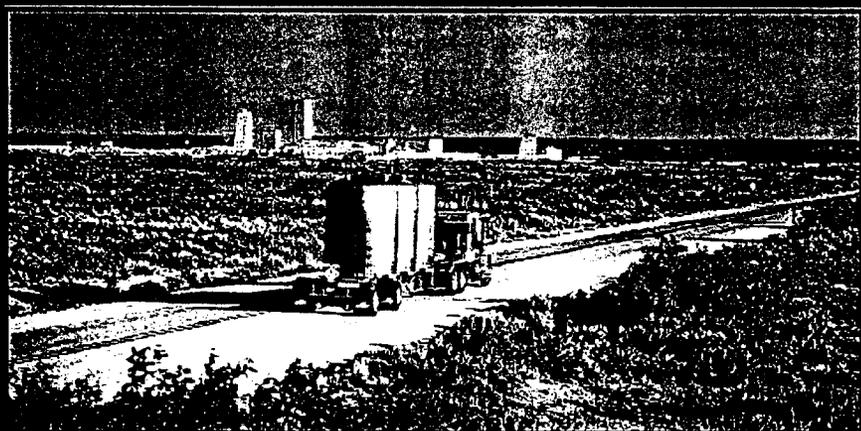
Waste Disposed at WIPP as of December 18, 2000

Originating Site	# of Shipments	Waste Containers Disposed in WIPP
National Lab (INEEL)	28	913
Hanford, WA	5	173
Los Alamos National Lab (LANL)	17	101
Rocky Flats, CO (RFETS)	75	2335

Total Waste emplaced since March 1999: 908 cubic meters (0.5% of ultimate WIPP capacity).

characterizing remote-handled (RH) TRU waste at the generator/storage sites, and would also specify the procedures used at WIPP to receive, manage, and dispose of it in the underground. RH TRU waste requires more shielding and special handling precautions to reduce exposure to workers and the public. Such modifications would most likely be subject to expanded public participation procedures under the permit modification regulations, including the opportunity for public hearings.

For further information regarding NMED's WIPP permit, please visit the NMED WIPP Information Page at <http://www.nmenv.state.nm.us/wipp/>. DOE's WIPP web site is at <http://www.wipp.carlsbad.nm.us/>.



DOE Carlsbad Field Office

A truck carrying TRUPACT-II shipping containers for hazardous and radioactive waste approaches the WIPP facility, located 26 miles east of Carlsbad, New Mexico. Each reusable TRUPACT holds up to fourteen 55-gallon drums of waste, which are removed from the TRUPACT for disposal in the WIPP underground.

WILDFIRES



Featured Topic
Wildfires

Fire in New Mexico

Heavy fuel loads in the forests, caused largely by years of fire suppression, and drought created one of the worst fire seasons New Mexico has ever seen. While 2,334 fires occurred during the year 2000 (as of mid-October) burning 459,843 acres, a few stand out for their potential and realized health and environmental effects.

The Cerro Grande Fire

The Cerro Grande Fire, which began May 4, 2000, as a prescribed burn at Bandelier National Monument, became a fire worthy of international attention as it threatened the community of Los Alamos, Los Alamos National Laboratory (LANL) and LANL's radioactive and hazardous materials and wastes.

It was almost a month before the fire was declared officially "contained." By then it had destroyed almost 50,000 acres and 250 privately owned buildings, which housed nearly 400 Los Alamos families. At the height of the fire, the towns of Los Alamos and White Rock were evacuated. On LANL property, 39 structures were destroyed, including the historic V-Site, and 8,000 of LANL's 27,000 acres burned. There was no loss of human life.

But for most, it was the threat to stored and buried waste from LANL that made this fire memorable.

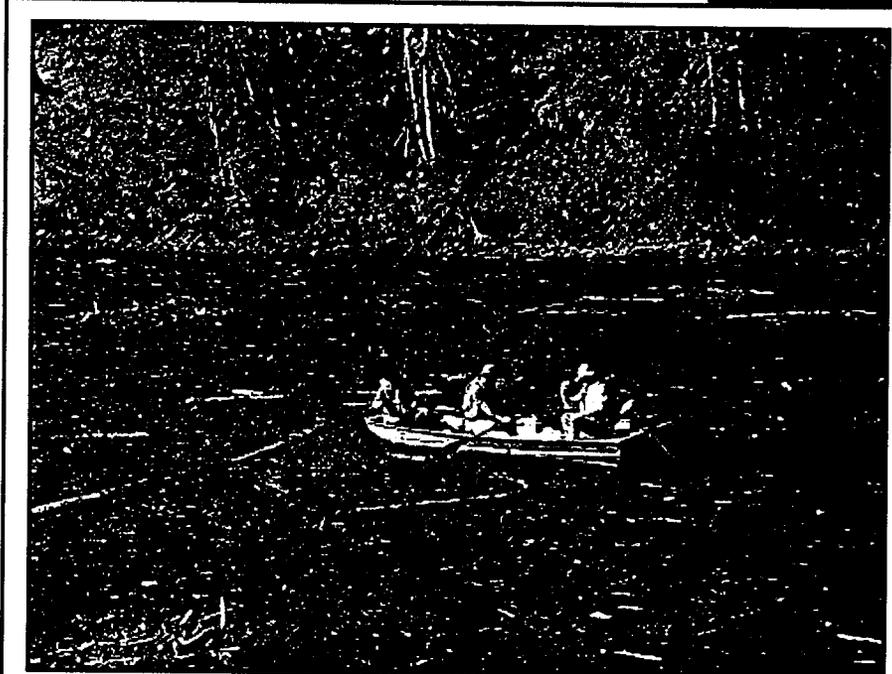
New Mexico Environment Department's Response

Once the flames broke through fire lines, the New Mexico Environment Department (NMED) moved quickly to establish its own emergency operations center, which included representatives from the New Mexico Department of Health (DOH). NMED staff also providing round-the-clock presence in the emergency operations center established by the New Mexico Department of Public Safety.

NMED scientists conducted a variety of monitoring to assess levels of contamination in the plume of smoke that extended hundreds of miles to the northeast of the fire. Radiological samples were taken of ash deposited from the smoke cloud in nearby communities, including Espanola and San Juan Pueblo. Daily samples were collected

from an existing network of air monitors that NMED maintained around LANL, and additional air monitors were deployed at key locations in Los Alamos and the surrounding communities.

NMED, LANL and U.S. Environmental Protection Agency (EPA) personnel collaborated on the development of a network of air monitors. NMED and LANL scientists worked side-by-side collecting filters from LANL's on-site air-monitoring stations and splitting samples; NMED's



Dan Davis and Seva Joseph of the SWQB and Ralph-Ford-Schmid of the DOE Oversight Bureau sample postfire water and sediment at Los Alamos Canyon Reservoir.



Radiological counts and analysis of samples did indicate some elevated levels of radioactivity. However, these levels were found to be attributable to naturally occurring radioactivity from the burning forest.

were sent to an independent laboratory for analysis.

Radiological counts and analysis of the samples did indicate some elevated levels of radioactivity. However, these levels were found to be attributable to naturally occurring radioactivity from the burning forest. These findings were supported by samples taken of smoke from the subsequent Viveash Fire in the Sangre de Cristo Mountains.

The NMED visited approximately 100 food service facilities in the region affected by the fire and monitored voluntary disposal of over 70,000 pounds of food that had been ruined as a result of power outages caused by the fire.

Town Site Cleanup

Potential exposure to hazardous materials associated with burned-out homes was a major concern. On May 13, 2000, two days after the fire swept through the community, Los Alamos County, The NMED took the lead in conducting an assessment of the town site.

Within 24 hours, NMED and a hazardous waste contractor's staff were mobilized. Crews worked from dawn to dusk for five days assessing each burned structure for hazardous materials, including household hazardous wastes such as paints, solvents and cleaners, and radioactive

materials and asbestos. Investigators discovered live ammunition at several sites. A total of 150 cubic yards of hazardous materials was removed from the burned structures. NMED contractors also ensured that materials containing asbestos from the older government houses were immobilized through encapsulation with a spray foam. These activities were funded through the state's Hazardous Waste Emergency Fund. The NMED is seeking reimbursement for these costs from FEMA.

Affects on "Legacy Waste"

Once it was clear that the waste stored at Technical Area 54 was unaffected by the fire, NMED, DOE and LANL began to assess the fire's impacts on other waste storage areas dispersed over the 43 square miles of LANL property. The possibility that so-called "legacy wastes" slated for investigation and possible cleanup might be transported off-site by floods once the rainy season began in July was a major concern.

NMED staff inspected erosion controls affecting the sites and recommended repairs or improvements where needed. Assessments were made of the most contaminated sites located in the canyon bottoms; and removal of waste was performed in some areas. Sampling programs were increased quickly to evaluate potential risks to the surrounding communities through transport of contaminants from waste

sites. Automated storm-water samplers were deployed in select canyons, and NMED staff joined LANL teams to sample runoff manually during the rainstorms.

Public Involvement

NMED staff attended numerous public forums in Santa Fe and Española to hear public concerns and to relay information as it became available regarding the sampling and assessment activities. It soon became clear that the sampling data alone could not address public concerns, so NMED staff initiated a flood risk assessment team with experts from the DOH, University of New Mexico and LANL to collectively evaluate risks to the public from the movement of contaminated sediments in storm-water runoff from the burned area.

Viveash

The Viveash fire began as a small human-caused fire in the Pecos -Las Vegas Ranger District of the Santa Fe National Forest on May 29, 2000. It grew to 2000 acres in one day. By the next day, the fire had exploded into a tempest that burned 22,000 acres. This fire was not a wind driven event, but a firestorm — creating its own wind and weather. The fire was not fully contained until June 23, 2000.

The Viveash Fire burned approximately 29,000 acres, the majority of which were United States Forest Ser-

vice (USFS) lands. Approximately 40 privately owned structures were threatened by the fire, with only 3 damaged. Several inhabited areas threatened by the fire were evacuated.

The Viveash was of particular concern to the NMED because of its potential impact on the watershed for the City of Las Vegas. The Santa Fe watershed would also have been threatened had there been a change in wind direction. Most of the fire burned in the Cow

Creek watershed which drains into the upper Pecos River.

The fire also lapped into the Gallinas watershed, the source of municipal water for the City of Las Vegas. About half of the total burned area was of high severity, which makes the soil temporarily water-repellent. There were numerous small floods immediately after the fire that carried ash and debris downstream. Shallow wells were impacted, the Pecos River was

black with ash for several days, and some ash was carried to the Las Vegas drinking water treatment system. The intake was closed so that the ash was carried on downstream. As a result of rehabilitation in the burned areas, the USFS did not expect further problems.

Cree

The Cree Fire was a human-caused fire near the Village of Ruidoso, in the Lincoln National Forest. The fire be-



NATIONAL FIRE PLAN
A COMMITMENT TO PROTECT AMERICAN HOMES

Post-Fire Rehabilitation

After a wildfire, a Burned Area Emergency Rehabilitation (BAER) team is formed to rehabilitate on a large scale, examining the entire fire and the effects of the burn on soil, watershed and other resources as it relates to threats to life and property. The BAER uses a variety of resource experts to make an initial assessment. The team then proposes rehabilitation options to minimize the effects from the fire to resources and life and property within and near the burned area. Once approved, a BAER implementation team completes mulching, revegetation and other rehabilitation activities.



Featured Topic -
Wildfires

gan May 7, 2000 and was contained on May 14. In the interim, it burned approximately 6,500 acres, the majority of which were USFS lands with some state-owned and private lands also affected. About 45 percent of the total area burned was impacted by high se-

Scott Able

The Scott Able fire was a human-caused fire in the Lincoln National Forest located near the town of Sacramento. It began May 11, 2000 and was contained seven days later.

The fire burned approximately 16,000 acres, the majority of which were USFS lands. About 30 percent of the total area burned was impacted by high severity burn. A total of 64 structures were damaged by the fire and several that were located in or along drainages

were impacted by debris flows.

Ash-laden runoff caused by rains continued to threaten to produce flooding and water quality problems downstream. As with the Cree Fire, numerous rehabilitation efforts were implemented to flood damage and to address watershed runoff and erosion.



The Viveash Fire burns in the watershed affecting Las Vegas, producing ash and smoke that loomed about 13 miles beyond Santa Fe homes.

verity burn, making soil almost water repellent and increasing concerns of runoff in pursuant rains. Numerous threatened homes were evacuated, and three structures were damaged by the fire.

The fire impacted the Eagle Creek watershed which is a tributary of the Rio Ruidoso. Rehabilitation actions included seeding, contour log felling, log and straw bale stream structures and specific measures to protect homes.

WORKING WITH TRIBES

Following Governor Johnson's signing in 1996 of a *Government-To-Government Policy Agreement* with all 22 Native American entities in the

state, the Environment Department has made concerted efforts at developing productive relations with the sovereign governments.

In 1999, the Department appointed a tribal liaison to provide a single point of contact for tribes; offer the Department's support for tribal environmental initiatives; and, to identify areas where it would be mutually beneficial for tribes and the state to work cooperatively on investigative, enforcement, monitoring and remediation activities.

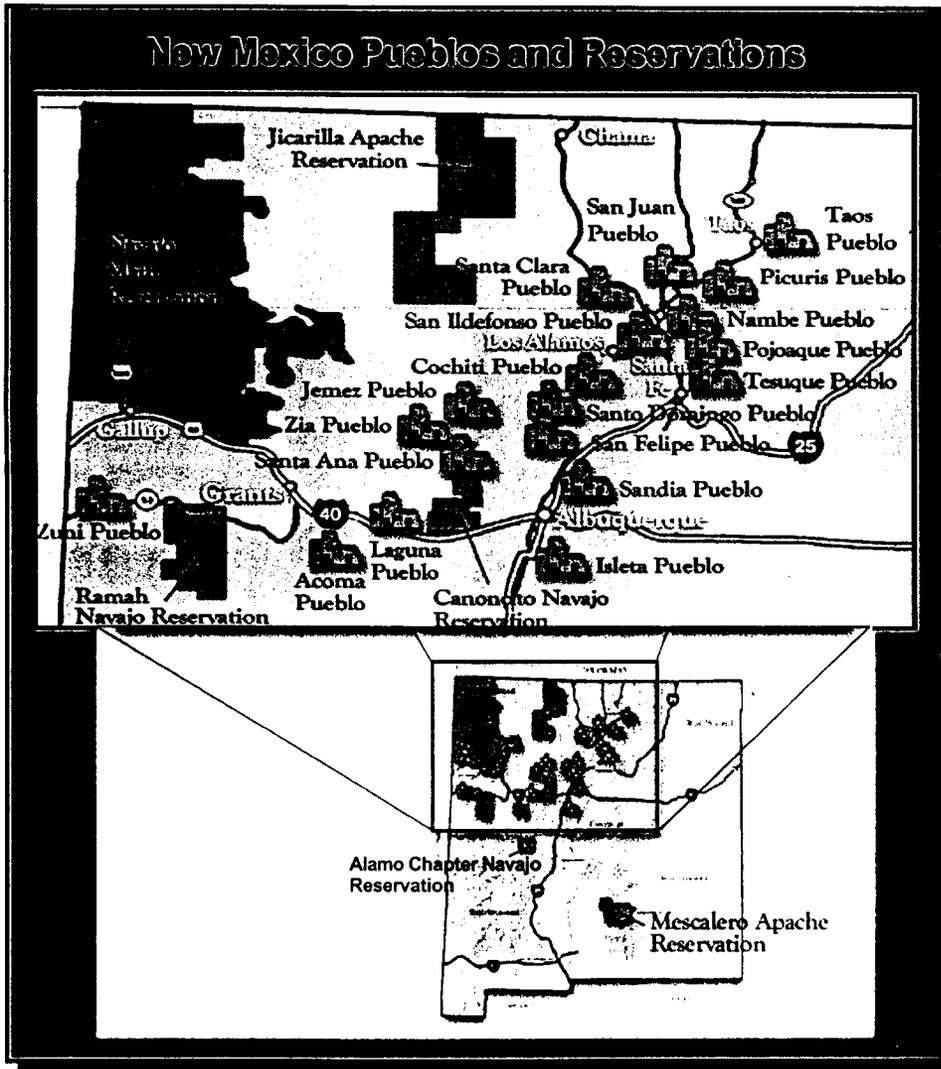
Recent efforts have resulted in generally better communications among regulatory agencies, and specific environmental cleanup and protection resulting in healthier living conditions for Native Americans and New Mexicans.

Jicarilla Apache and the Pueblo of Laguna — Both the Jicarilla Apache and the Pueblo of Laguna have developed with the NMED, shared authorities to investigate and clean up specific underground petroleum storage tanks. The Laguna Mart tanks were on private property completely surrounded by Pueblo land. The Jicarilla Apache Tribe purchased the Lodge at Chama, which had been privately owned. Both sites had paid into the Petroleum Loading Fee and were therefore eligible for the Leaking Underground Storage Tanks Funds managed by the NMED. Results to date include:

- The shutting off of all but one of the Laguna Mart tanks. The Department and Pueblo will be coordinating with



- Within New Mexico, there are:
- 19 Pueblos
 - 2 Apache Tribes
 - The Navajo Nation





State funds paid for developing a monitoring well at the now-unused underground storage tanks at the Lodge at Chama, operated by the Jicarilla Apaches. The well will be used for pulling samples of ground water at a depth of about 70 feet.

the private company and individual responsible parties to determine the extent of the contamination and perform cleanup activities.

- The Department plans to continue to monitor, with the Jicarilla Apache's Department of Natural Resources staff, the USTs at the Lodge at Chama. While some contamination was identified at the now unused USTs, natural attenuation and monitoring, rather than aggressive cleanup, is expected to be protective of health and environment.

information about state regulations and made recommendations on the development of the proposed construction and demolition debris landfill. After further testing and the development of solid waste codes, the Pueblo and High Mesa expect to open the landfill. The Pueblo may decide to accept municipal solid waste sometime in the future.

Pueblo of Nambé -- In May 2000, the federal Bureau of Indian Affairs approved the Nambé Pueblo's lease to High Mesa Environmental, L.L.C. for development and operation of a landfill designed to serve the Pueblo and the surrounding area. The NMED has provided the Pueblo

Navajo Nation -- Navajo Nation Environmental Protection Agency and NMED managers and directors convened in the Spring of 2000 to identify areas where the agencies might better work together. Results included:

- Sharing air monitoring data, reducing duplicative sampling;
- NMED support for enforcement of solid waste (trash) disposal regulations;
- Increased communication on regulation and legislation of shared interest;
- Continuing efforts on joint training, inspection and enforcement; emergency response; and jurisdiction over underground storage tanks.

Pueblo of San Juan and Jicarilla Apache Tribe -- The NMED has supported grant applications made to the federal government by the Pueblo and the Tribe. NMED has agreed to specific support in solid waste training, training of enforcement personnel and the development of general environmental education plans.

Pueblo of San Ildefonso -- Because of San Ildefonso Pueblo's unique location adjacent to Los Alamos National Lab property, unique sampling opportunities and necessities arise for both the Pueblo and the NMED's DOE Oversight Bureau. The NMED and San Ildefonso environmental department have been developing a Memorandum of Understanding (MOU) that would support cooperative environmental monitoring for radioactive contaminants and other pollutants associated with LANL and on San Ildefonso lands.

Pueblo of Santa Clara -- The NMED, Santa Clara Pueblo and the U.S. Environmental Protection Agency have been developing an MOU for remediation of a Superfund site that includes contaminated ground-water and soils. The North Railroad Avenue Plume Site is a federal Superfund site located in Rio Arriba County, New Mexico. Part of the ground-water plume is located in the City of Española on fee lands and part is located on Santa Clara Pueblo trust land. The contaminated soil is located on fee lands. The entire Site is located within the exterior boundary of the Santa Clara Pueblo. The purpose of the agreement is to coordinate the parties' review and comments on technical documents pertaining to cleanup at the site. The agreement was expected to be signed in 2001.

Pueblo of Taos -- The NMED has been cooperating with Taos Pueblo to collect data on the Rio Pueblo de Taos and the Rio Lucero to assist in development of stream standards for the Pueblo. The standards will be submitted to the U.S. EPA for approval.

The Department will continue to work with tribes, pueblos, the Navajo Nation, the All Indian Pueblo Council, National Tribal Environmental Council and others to support environmental protection and cleanup, as well as to acknowledge and respect the sovereignty of Indian Nations in New Mexico.

ABOUT THE ENVIRONMENT DEPARTMENT

NEW MEXICO ENVIRONMENT DEPARTMENT

The NMED is a state agency responsible for environmental management and protection, in accordance with the Environmental Improvement Act, §§ 74-1-1 through 74-10-100 (NMSA 1978 as amended).

The Department protects current and future generations from threats posed by an unhealthy environment and strives to bring about the most favorable environmental conditions concerning air quality, water quality, resource conservation and recovery, and environmental and occupational health and safety. The Department recognizes the connection between New Mexicans' economic and social well being and a sustainable, and often productive, environment.

The Department was created in January 1991, when Governor Bruce King asked the New Mexico State Legislature to endorse the creation of a new organization charged with statewide responsibility for protecting and preserving our environment. Both the Senate and the House unanimously



supported creating the Environment Department, elevating the environmental organization from a division with the Health and Environment Department to a cabinet-level organization.

The Department meets its environmental protection responsibilities through core processes:

- permitting and certification;
- compliance and enforcement;
- environmental corrective action (or clean-up);
- public outreach and education; and,
- administrative services (Department support).

NMED'S COMMITMENT

In meeting the goals of this Mission, the Department is committed to:

Providing clear articulation of goals, standards, and expectations in a professional manner so that employees and the public can make informed decisions and be actively involved in setting priorities;

Promoting environmental awareness through open and direct communication and sound decision-making; and,

Carrying out the mandates and initiatives of the Department in a fair and consistent manner.

SUPPORTING THE NMED

OUR GOALS

To make the mission a reality, the Department has established the following long-range goals.

Develop the statutory and regulatory framework by adopting proactive, preventive approaches that improve environmental management and protect public health and economic well being.

Improve the organizational functioning, productivity and proficiency by providing an atmosphere that promotes employee enthusiasm and motivation.

Enhance the collection, use, sharing and distribution of information by shifting measurements of effectiveness from actions to results whenever possible; implementing data and report standards; increasing computerization; developing internet and electronic commerce; and giving decision makers easy access to timely and accurate environmental information.

Improve service to the public through education and participation by governing entities, tribes, businesses, organizations, and citizens in decision-making processes.



NMED MISSION
The New Mexico Environment Department strives to provide the highest quality of life throughout the state by promoting a safe, clean, and productive environment.



Budget and Grant Management Bureau

Administrative Services Division

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Administrative Services Division

- Professional Services
- Information Technology Services
- Construction Services
- Energy Services
- Public and Grants Administration
- Planning

BUDGETS AND FUNDING

SUPPORTING THE NMED

The NMED Budget

The New Mexico Environment Department has an annual operating budget of about \$45 million for Fiscal Year 2001.

The Department's Office of Budget and Grants Management prepares and maintains the Department's annual budget requests and operating budget, and oversees the management of the

federal grants administered by the Department's programs.

The Environment Department prepares a budget request for submission to the Governor and the Legislature every September 1. Both the Governor, through the Department of Finance and Administration, and the Legislature, through its Legislative Finance Committee, review that request and prepare their own recommendations.

Differences between those recommendations are reconciled during the legislative session that begins the third Tuesday of each January and lasts for either 30 or 60 days (even-numbered years are 30-day sessions, odd-numbered years are 60 day sessions). The budget created through this process takes effect July 1.

The Department is in the process of transitioning from traditional "division-based" budgets to more program-focused budgets for greater accountability. Next year's budget (FY02) will be the first year the Environment Department will participate in performance-based budgeting. The information presented here is based on the traditional division budget.

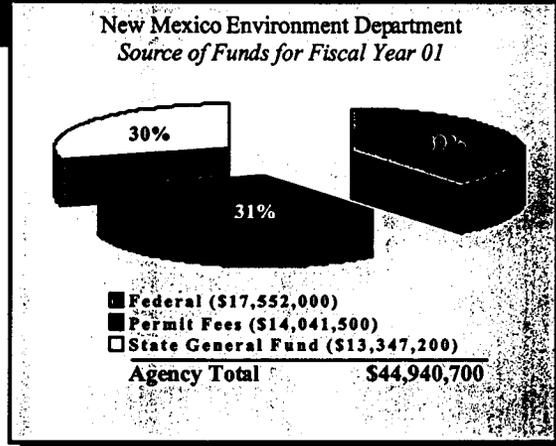
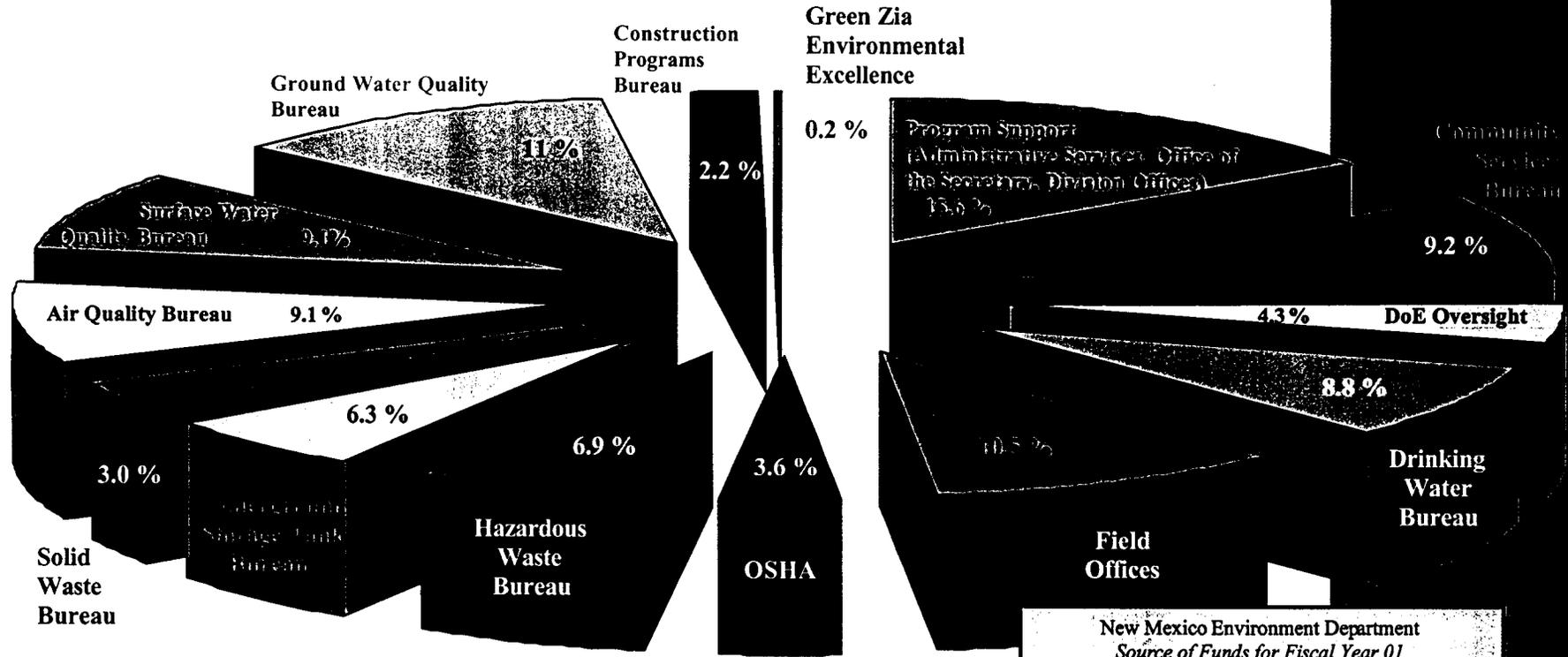
Department Funding Sources

The Department receives funding from three separate and distinct sources: federal grants; state permit fees; and the state's General Fund. Each of these funding sources contain their own restrictions on use. The Department's budget, based on the source of funds, is provided below.

Every NMED employee is responsible for fiscal stewardship; every effort is made to ensure that taxpayer dollars are spent wisely. Exercising fiscal responsibility is one of the Department's core values.

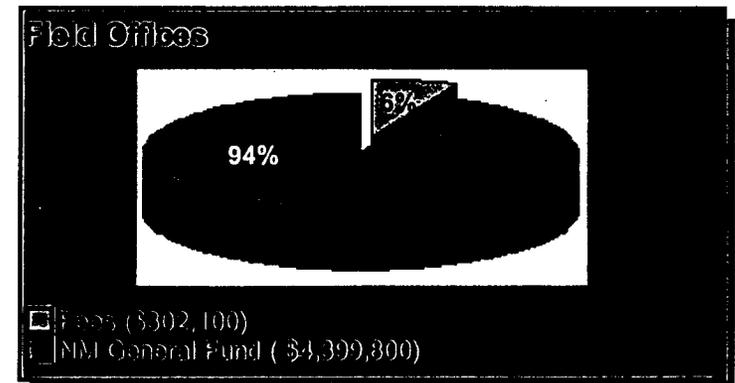
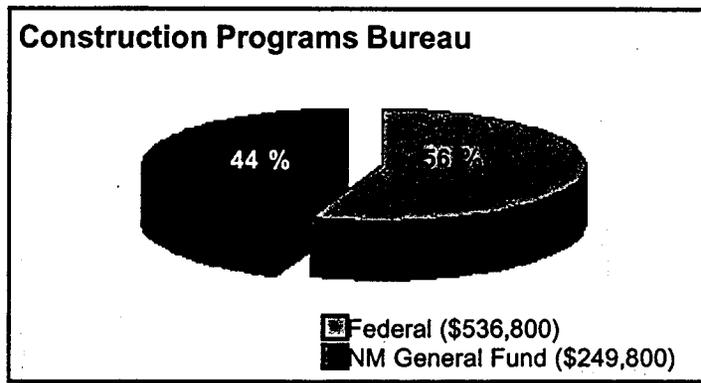
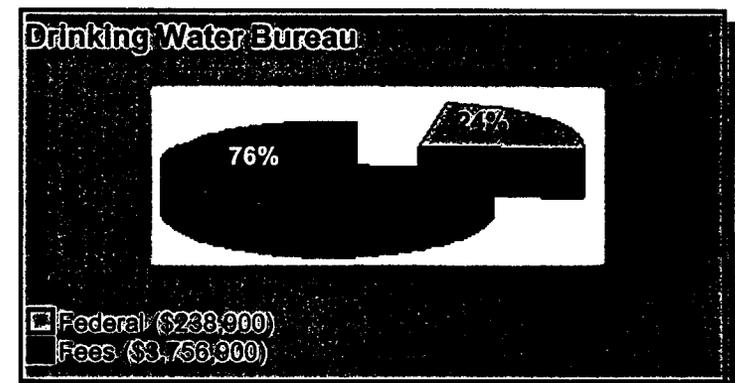
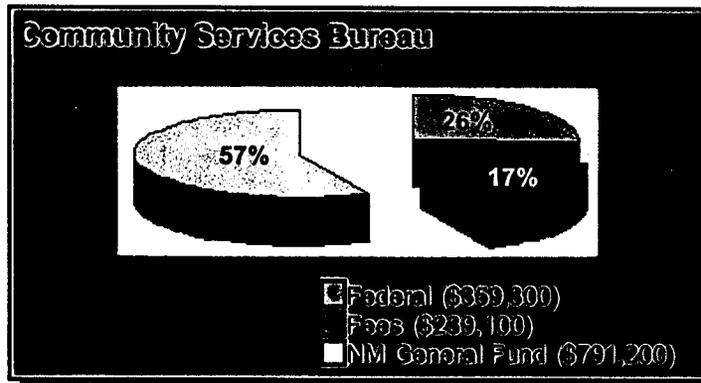
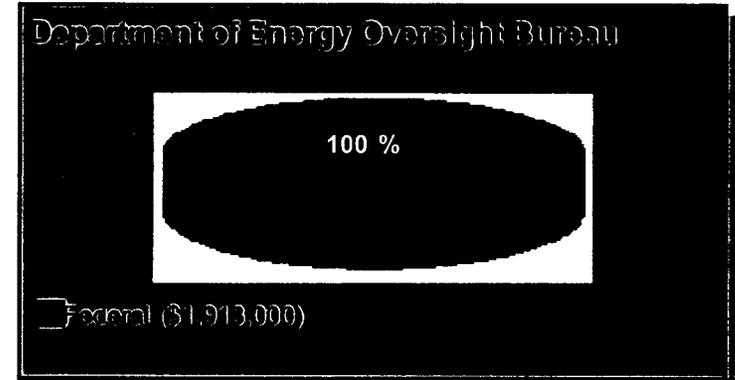
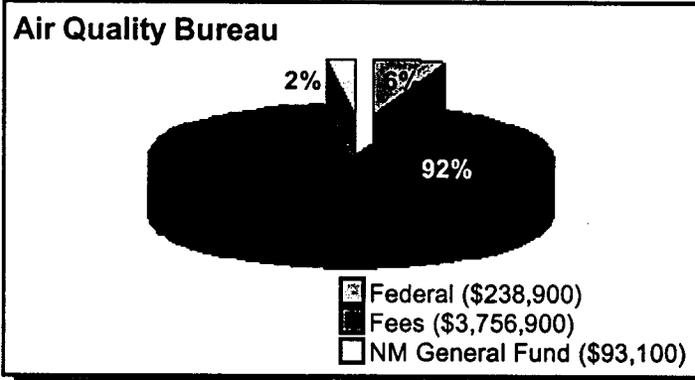
Division	Division Bureaus	FY00 Budget	FY01 Budget
Office of the Secretary	General Counsel's Office Internal Auditing Planning & Program Development Green 21a Environmental Excellence	\$1,582,000	\$2,101,200
Administrative Services	Financial Services Bureau Budget & Grants Management Information Technology Services Personnel Services Bureau Purchasing Bureau Construction Programs Bureau Library	\$5,010,200	\$3,982,900
Environmental Protection	Solid Waste Bureau Air Quality Bureau Occupational Safety & Health Bureau Underground Storage Tanks Bureau	\$10,833,600	\$11,264,700
Field Operations	Field Offices Drinking Water Bureau Community Services Bureau	\$10,792,900	\$13,177,900
Water & Waste Management	Hazardous Waste Bureau Surface Water Quality Bureau Ground Water Bureau DOE Oversight Bureau	\$12,407,600	\$14,414,000
Agency Total		\$40,626,300	\$44,940,700

Overall Program Funding Percentages Fiscal Year 01





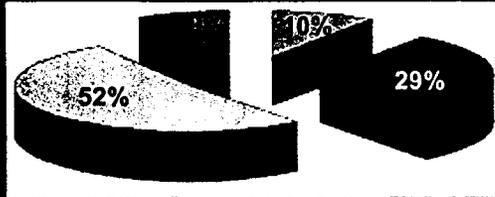
FINANCIAL DETAILS FOR F



URED BUREAUS *Fiscal Year 2001*

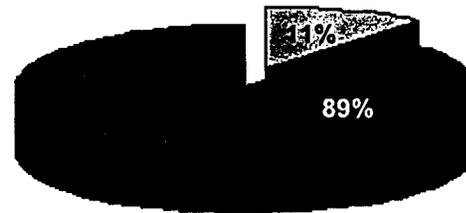


Ground Water Quality Bureau



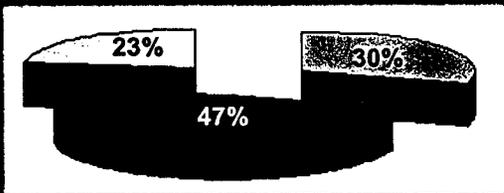
- Federal Superfund/Brownfields (\$3,101,100)
- Federal Ground Water (\$228,800)
- Fees and Other State Funds (\$271,500)
- NM General Fund (\$1,512,900)

Solid Waste Bureau



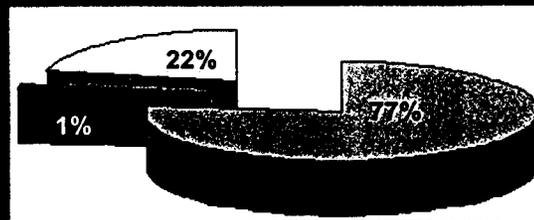
- Fees (\$151,500)
- NM General Fund (\$1,177,600)

Hazardous Waste Bureau



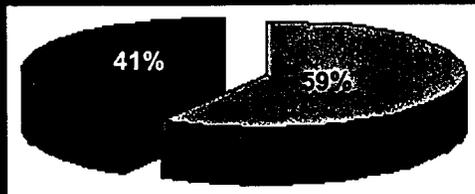
- Federal (\$983,700)
- Fees (\$1,481,700)
- NM General Fund (\$704,400)

Surface Water Quality Bureau



- Federal (\$1,442,300)
- Fees (\$52,200)
- NM General Fund (\$889,000)

Occupational Safety and Health Bureau



- Federal (\$952,100)
- NM General Fund (\$871,300)

Underground Storage Tank Bureau



- Federal (\$703,300)
- Fees (\$2,121,900)



ELECTRONIC SERVICES

SUPPORTING THE NMED

Information Technology Services Bureau

Administrative Services Division

1190 St. Francis Dr.
P.O. Box 26110
Santa Fe, NM 87502

(505) 827-0286
Fax: (505) 827-1647

The Information Technology Services (ITS) Bureau provides computer services and support for the Department.

Information Technology Initiatives
1. On-line Services — The Department has begun to make services and information available on-line to the public and regulated community. Examples of how the Department's web-based service center can make business easier:

- Submit a permit application for a new food establishment on-line using the Department's web-based service center;
- Pay underground storage tank fees on-line;
- Submit an excess air emissions report on-line;
- Check the status of all environmental permits on-line.

2. Process and Data Integration — The Department will integrate and automate common data and business processes across divisions, bureaus, and programs. Many bureaus and programs share functions; most have permitting, enforcement, and compliance processes and related data. The IDEA system will support common functions as "shared tools" so that these functions are executed in a similar fashion for all regulatory programs.

3. Outsource some services, including PC support and e-mail.

IDEA Project - An Integrated Database

The purpose of the IDEA (Integrated Database for Environmental Assurance) project is to select, customize and implement an integrated environmental data information system. Benefits to the Department include:

- The ability to manage environmental health across media (air, water, soil);
- Standardized and easier environmental reporting; and,
- Timely and reliable information to the public.

IDEA Scope & Approach — The data management system will eventually be used for all core functions (permitting, compliance, enforcement, measurements, collections, disbursements, and environmental reporting) for all programs.

The IDEA project facilitates:

- Electronic submittal of compliance reports and permit documents;
- Electronic storage, retrieval, and management for regulatory documents;
- Flow charts of regulatory tasks and deadlines; and,
- Web access to permit and compliance information.

The IDEA project was launched in September 2000.

IDEA Costs and Benefits:

- Streamlined core process and improved services;
- A holistic view of all regulated entities;
- Coordinated activities across programs;
- Timely, accurate, and easy-to-understand environmental information;
- Elimination of information duplication;
- Easy access to current data for analysis and decision making; and,
- Basing Department performance metrics on environmental outcomes.

IDEA implementation costs are estimated at \$2,700,000. The project received \$540,000 in FY01 state funds to get started. The project will require on-going support from state funds and federal grants to be completed and implemented.

www.nmenv.state.nm.us

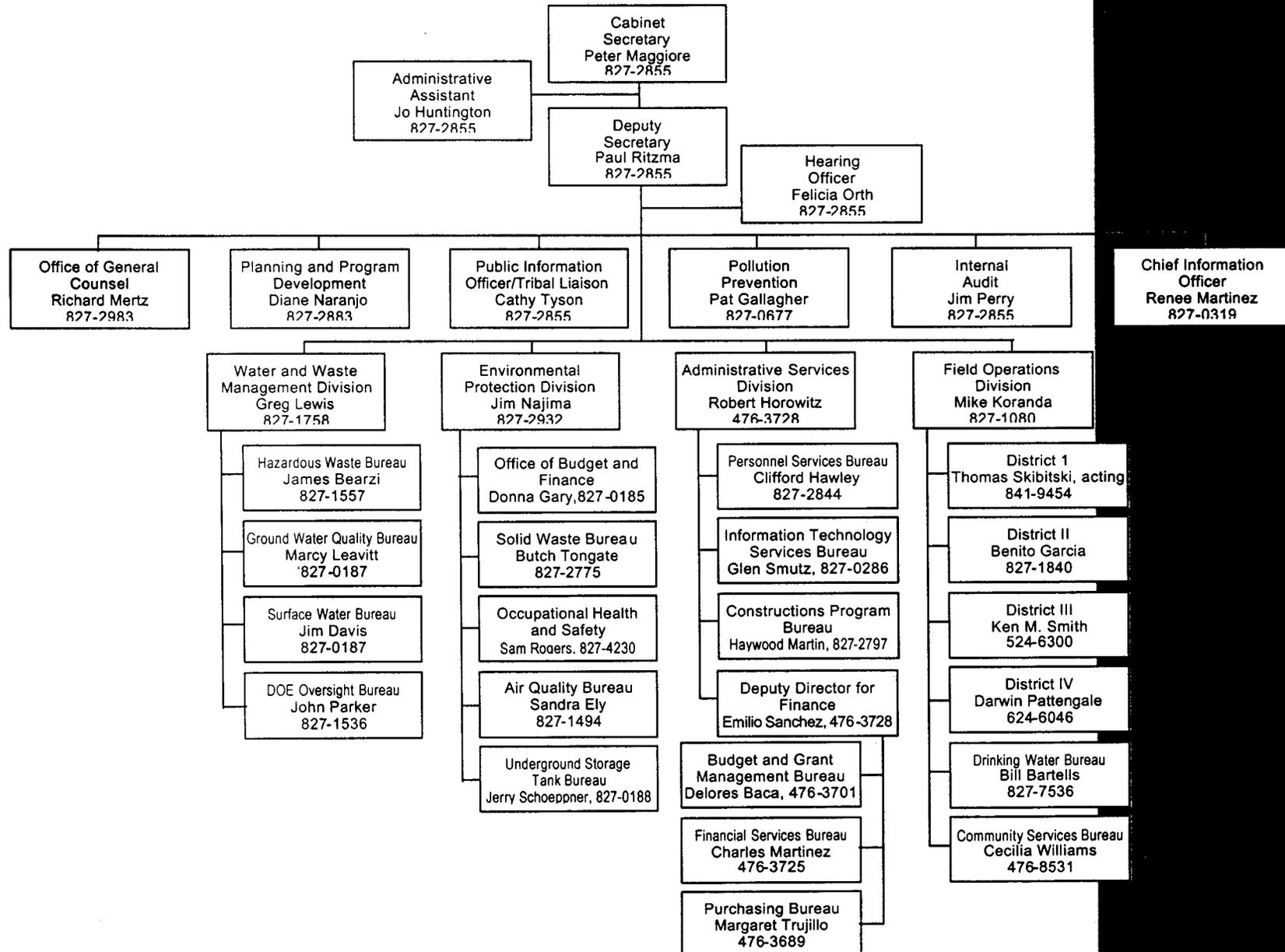
The Department web site offers valuable information about NMED Activities, including:

- environmental regulations
- hearing schedules
- board documents
- public interest projects
- statistics



The Department uses special computer equipment such as geographical information systems and map plotters to analyze and communicate environmental information.

DEPARTMENT ORGANIZATIONAL CHART





DISTRICT AND FIELD OFFICES

<p>DISTRICT I (NW) Albuquerque 4131 Montgomery Blvd., NE Albuquerque, NM 87109 Ph. # 841-9450 Fax # 884-9254 Tom Skibitski</p>	<p>DISTRICT II (NE) Santa Fe #4 Calle Medico Santa Fe, NM 87505 Ph. # 827-1840 Fax # 827-1839 Courte Voorhees</p>	<p>DISTRICT III (SW) Las Cruces 1001 North Solano Dr. Las Cruces, NM 88001 Ph. # 524-6300 Fax # 526-3891 Ken Smith</p>	<p>DISTRICT IV (SE) Roswell 1914 West Second St. Roswell, NM 88201 Ph. #624-6046 Fax #624-2023 Darwin Pattengale</p>
<p>Farmington 724 West Animas Farmington, NM 87401 Ph. # 327-9851 Fax # 326-3747</p>	<p>Espanola 705 La Joya Street Espanola, NM 87532 Ph. # 753-7256 Fax # 753-1840</p>	<p>Alamogordo 411 Tenth St. Rm. 106 Alamogordo, NM 88310 Ph. # 437-7115 Fax # 434-1813</p>	<p>Carlsbad 406 North Guadalupe Carlsbad, NM 88220 Ph. # 885-9023 Fax # 887-9283</p>
<p>Gallup 306 South Fifth Gallup, NM 87301 Ph. # 722-4160 Fax # 863-2664</p>	<p>Las Vegas 505 E. National Ave., Ste. 3 & 4 Las Vegas, NM 87701 Ph. # 425-6764 Fax # 425-6604</p>	<p>Deming Post Office Box 2867 Deming, NM 88031 Ph. # 546-7559 Fax # 546-9326</p>	<p>Clovis 100 Manana Blvd., Unit 3 Clovis, NM 88101 Ph. # 762-3728 Fax # 769-2527</p>
<p>Grants 1212 ½ Lobo Canyon Rd. Grants, NM 87020 Ph. # 287-8845 Fax # 287-3415</p>	<p>Los Alamos 475 20th Street Los Alamos, NM 87544 Ph. # 662-1430</p>	<p>Silver City 1302 E. 32nd St. Silver City, NM 88061 Ph. # 388-1934 Fax # 388-3258</p>	<p>Hobbs 726 E. Michigan, Ste. 165 Hobbs, NM 88240 Ph. # 393-4302 Fax # 393-0906</p>
<p>Los Lunas 601 Main St., Ste. 27 Los Lunas, NM 87031 Ph. # 865-9797 Fax # 865-3405</p>	<p>Raton 1243 South Second St. Raton, NM 87440 Ph. # 445-3621 Fax # 445-3376</p>		<p>Ruidoso 1216 Mechem Dr., Ste. 2 Ruidoso, NM 88345 Ph. # 258-3272 Fax # 258-4891</p>
<p>Rio Rancho 224 Unser Blvd., SE Ste. E Rio Rancho, NM 87124 Ph. # 892-4483 Fax # 892-4816</p>	<p>Taos 1215-B Gusdorf Taos, NM 87571 Ph. # 758-8808 Fax # 758-9851</p>		<p>Tucumcari 113 W. Center Tucumcari, NM 88401 Ph. # 461-1671 Fax # 461-1865</p>
<p>Socorro 214 Neel Ave., NW Socorro, NM 87801 Ph. # 835-1287 Fax # 835-3119</p>			

WHERE FROM HERE?

From the moment of birth, our every action – from breathing and eating, to building a house and driving a car – consumes resources and produces usable byproducts and wastes. It is certain that we will change our environment. How we change it will influence the quality of our lives, from aesthetics to economics to life itself.

This report provides a look at some of the efforts of NMED, and individuals, businesses, government agencies and organizations with which we partner, to protect and preserve New Mexico's environment.

As we look ahead, we are striving to better serve all New Mexicans by:

- increasing our efficiency;
- encouraging local solutions;
- training future leaders in environmental management;
- emphasizing pollution prevention;
- supporting the generation and use of "green power";
- building productive government-to-government partnerships with sovereign tribes;
- establishing a statewide environmental monitoring/surveillance network; and,
- encouraging the use of "Enlibra," an environmental doctrine for increasing the velocity of environmental progress and movement toward balance.

We encourage you, customers of the NMED, people whose health, livelihood and quality of life depend on a healthy environment, to tell us how we are doing. We also want to know what you think we should evaluate and feature in our next "State of the Environment" Report in 2002, and how you think we should be spending our time between now and then.

We cannot guarantee that all the items you raise will appear in the next report, but will consider all suggestions and try to add those with state-wide, or regional, importance.

Please send your suggestions to:

Editor
State of the Environment Report
NMED
P.O. Box 26110
Santa Fe, NM 87502

Or, Internet:
cathy_tyson@nmenv.state.nm.us



The view from Mt. Taylor. (Thanks to New Mexico Magazine for photo.)

On behalf of all of us who dedicate our careers to the protection of our environment, we thank you for being concerned about New Mexico's air, land and water. We encourage you to be involved in environmental protection at whatever level possible – from making 2-sided photocopies, to volunteering with a local organization, to writing your state and national representatives on legislation affecting our environment.

Sincerely,

Peter Maggiore

PETER MAGGIORE
SECRETARY



NEW MEXICO ENVIRONMENT DEPARTMENT
THE STATE OF THE ENVIRONMENT - 2001



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