



ANNUAL REPORT 2014

INTRODUCTION

Mission

Environmental, Health and Safety supports the NMSU mission by promoting a safe, healthful environment in a proactive and cost effective manner that helps the University community minimize their risk.

EH&S is committed to facilitating University safety, health and environmental protection by providing and coordinating programs and services that support teaching, learning and research activities. Through these EH&S programs and our partnerships with various constituents of the campus and regulatory agencies, we prevent personal injury, recognize and control hazards, minimize risk and loss, and provide leadership in environmental stewardship.

EH&S fulfills its mission by implementing programs and services in nine major areas.

1. Education and training
2. Research and laboratory safety including radiation licensing
3. Chemical and hazardous waste management
4. Occupational safety for shops, agriculture and office work
5. Campus safety
6. Accident, incident and exposure investigations
7. Loss prevention and loss control
8. Emergency preparedness
9. Environmental compliance

VISION

NMSU will be a recognized leader by customers, regulators, and our peers in establishing an effective safety culture which holds employees at all levels accountable for environment, health, and safety performance.

Our goals are to have a workplace free of injuries and hazardous exposures, to prevent or minimize any adverse impact to the environment, to provide services of the highest quality to the NMSU system and to be recognized as leaders in the areas of environmental protection, health and safety. Responsibility for health, safety and environmental protection will be an integral requirement of all employees and students of New Mexico State University.

Department Values

Our department will be comprised of individuals committed to our mission, our vision and the highest professional practices and standards. We provide quality services to our customers by understanding their individual needs and measuring our effectiveness. We carry out our responsibilities with knowledgeable professionalism. We provide creative, reasonable and timely solutions. We empower and require accountability of our team in a supportive work environment where we can achieve our full potential.

The EH&S Team will practice their profession by following recognized scientific principles and management practices, factually informing affected parties of their findings in an honest, straightforward manner, exhibit the highest level of integrity, honesty and empathy, while never compromising the public's welfare. Our team will strive to be involved in continual education and professional development, to provide superior customer service in all areas, to perform service only in the areas of their competence, and maintain information as confidential when appropriate.

OVERVIEW OF 2014

- NMSU Animal and Range Sciences Interim Department Head, Dr. Dennis Hallford, honored with Friend of Safety Award.
- EH&S scores high in customer satisfaction. Every category showed improvement from 2013.
- EH&S facilitated 6 external regulatory compliance inspections with no penalties.
- Research support continued with expanded services such as detailed protocol reviews and focus on lab decommissioning.
- Transitioned management of employee safety training records and safety class registration functions from an internal system over to the centralized NMSU Training Central system.
- Safety training was provided to more than 4500 persons in just over 250 safety classes.
- Employee injury and illnesses continued with five year average showing a 43% reduction in cases with lost or restricted work days when compared to previous five year average!!
- Loss control program includes facility inspections, lab and shop inspections, safety equipment certifications, activity reviews, hazardous materials spill response, accident investigation and air complaint reviews.
- Remote campuses and Ag. Science Centers were serviced by EH&S to include annual room and lab inspections, and instructor led safety training and certifications.
- The total number of general room and lab inspections completed increased by 58%; this is due to a new safety inspector and a concentrated focus on main campus building inspections.
- There was a slight reduction in poor and failing lab inspections this year.
- EH&S completed certification inspections on 455 units of laboratory safety equipment, using student inspectors. The eyewash and shower inspections became the responsibility of the Fire Department in May of 2014.
- There were 166 responses to incidents primarily involving indoor air quality complaints and minor hazardous materials spills/incidents.
- Responded to 9 hazmat spill emergency calls.
- Issued validation for 1230 drivers permits, of which 250 were for utility cart use.
- Asbestos abatement project support increased as shown by number and duration of projects and state required permit under NESHAP.
- EH&S oversaw two major asbestos abatements projects; Corbett Center was completed in 309 days and Jacob's Hall/Hardman Hall, 48 days.
- Picked up, processed, and shipped 47,000 pounds of waste in 2014 compared to 55,000 pounds averaged over the previous five years. The cost per pound was 14% less than the previous year. The team managed over 3,000 waste items.
- EH&S managed multiple special waste disposal projects throughout the year to include the Chemistry Department clean out and the Aldershot Greenhouse Chemical clean out. These projects added 17,852 pounds of waste.
- The NM Radiation Control Bureau performed an unannounced inspection of the activities authorized under the Type AB Broad-Scope License and the X-Ray Certificates of Registration. No deficiencies were noted.
- NMSU Radiation Safety Manual was revised, updated and published.
- Type AB Broad-Scope Radioactive Materials License was renewed for another 5 years.
- A reciprocity agreement between NMSU and the NRC was signed to use a nuclear gauge at a federal facility in Alamogordo, NM.
- Continued support of Biosafety Program through committee application reviews, monthly training support and disposal of biohazardous wastes.
- Title V Permit was revised, updated and renewed for another 5 years.
- Completed nine reports in compliance with NMSU's Title V and NSR Air Permits including emissions inventory and testing and Federal Greenhouse Gas Management Plan.
- In the Stormwater Program, the 2013 69% achievement of measurable BMP goals was increased to 86% for 2014.
- Lead activities related to closure of former NMSU landfill.
- The City of Las Cruces performed a joint inspection with the EPA for wastewater operations. No deficiencies were noted.
- Received approval by FEMA for NMSU's Hazard Mitigation Plan as incorporated in the Dona Ana County Hazard Mitigation Plan

NMSU Animal and Range Sciences Interim Department Head Honored with Friend of Safety Award

Writer: Angela Simental

Dr. Dennis Hallford, New Mexico State University's Animal and Range Sciences interim department head, past chair of the Institutional Animal Care and Use Committee and chair of the University Radiation Safety Committee received this year's annual Friend of Safety Award for his contributions to the longstanding improvement of safety in these areas.

Katrina Doolittle, Executive Director for NMSU's Environmental Health & Safety, presented the golden globe award to Dr. Hallford. The Friend of Safety distinction and award is given to a NMSU employee who has implemented safety programs or policies that have positively and significantly impacted their department or college and resulted in improved safety culture overall.

"The safety achievements that are recognized by this award must be more than what the person is responsible for in their day-to-day work," Doolittle said. "We only recognize those who go above and beyond what is required, and do it in such a way that it persist over time. The accomplishments must be far-reaching and considered a permanent improvement in the safety program that they are responsible for creating."

Hallford received the award because of his

commitment to research oversight committees at NMSU for 30 years, adding elements of safety that did not previously exist.



"With his leadership and the support of the committee, we now have strong safety programs for all animal workers and all who use ionizing radiation at NMSU. He not only ensured compliance, he took it to the next level with the safety components of these programs," Doolittle said. "I have watched the safety culture of the workers improve in these areas of research where there are animal handling risks, potential disease and radiation hazards. Dr. Hallford kept the safety of the individual and good safe science at the forefront, and he is also responsible for the compliance improvements that are now core safety programs in both areas."

FACILITIES AND SERVICES CUSTOMER SATISFACTION SURVEY

Environmental Health & Safety was reorganized to Facilities and Services (FS) in July 2010 and has participated in FS’s customer satisfaction survey each year with positive improvements. In 2014 there were about 125 respondents to the survey. According to the survey results report, “The high level of satisfaction noted with this unit in past surveys continued with this survey, and every question showed some degree of improvement for 2014 compared to 2013”. (**Table 1**)

Table 1. Areas of improvement in the categories of Satisfied and Very Satisfied.

Area – Satisfied and Very Satisfied	2013 Result	2014 Result
EH&S team members are friendly and helpful when contacted	84%	86%
EH&S team members are knowledgeable in their areas of specialty	86%	89%
EH&S team members respond to all requests in a timely manner	73%	78%
EH&S team members provide effective training	76%	82%
EH&S website is user friendly and helpful in providing access to information that a user needs	63%	65%
EH&S consultation helped facilitate the resolution of the user’s request	74%	78%
EH&S is accessible to its customers	81%	87%
EH&S understands the needs and requirements of the user’s department	77%	79%

The results of the 2014 survey are shown in **Figure 1**.

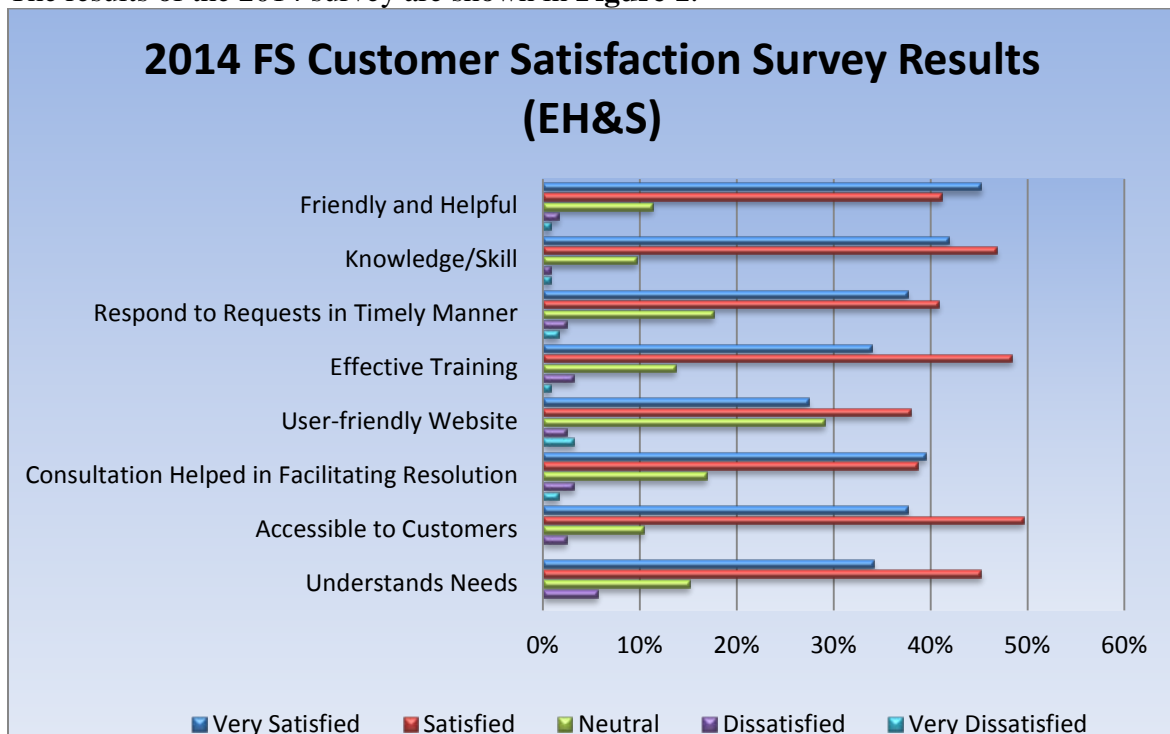
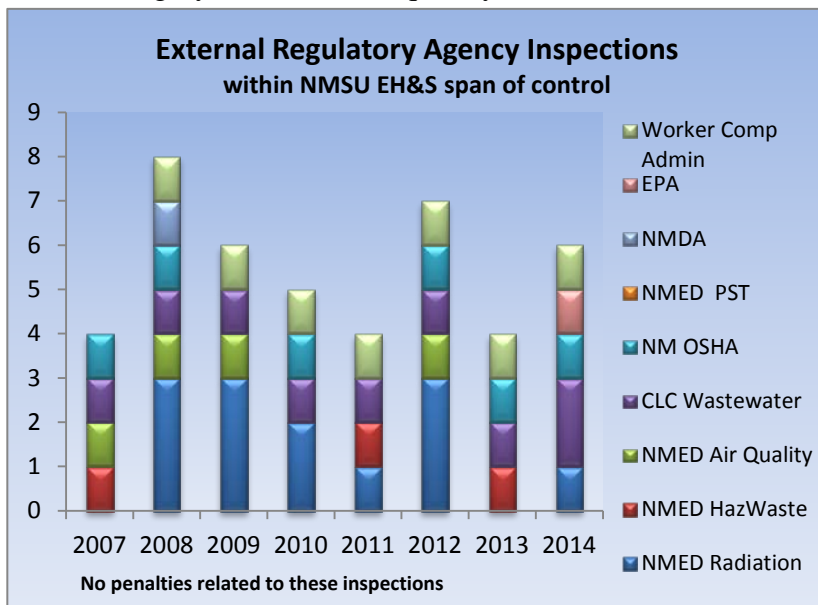


Figure 1. Customer Satisfaction Survey Results

COMPLIANCE INITIATIVES & RESEARCH SUPPORT

The realm of regulatory compliance and span of responsibility for EH&S is growing. These areas are highly visible and frequently audited. EH&S environmental program compliance



responsibilities were recently expanded and now include: Stormwater Management, Drinking Water, Solid Waste, Wastewater and Spill Prevention Controls and Countermeasures.

Every year, EH&S facilitates several regulatory compliance inspections from various State of NM and City of Las Cruces agencies (**Figure 2**). Audits by the controlling agencies may have some findings, however, quick and effective

Figure 2. External Regulatory Agency Inspections

resolutions have resulted in no penalties since 1993 for all EH&S operated programs.

In addition to providing regulatory guidance to faculty, EH&S department personnel provide protocol review, experimental plan assistance, annual inspection, training and hazardous material disposal for research; all of these services are integral to our faculty's undertaking safe and legally compliant research. We increased focus on experimental plan reviews and lab decommissioning this year. There are three faculty research oversight committees with significant EH&S implications: the Radiation Safety Committee, the Institutional Biosafety Committee, and the Animal Care and Use Committee. These committees fulfill specific federal regulatory requirements in the areas of safe use and containment of radioactive and biological materials research and animal protections at NMSU. EH&S is a regular member on two of these faculty research oversight committees.

UNIVERSITY GROWTH AND EH&S SUPPORT

Figure 3 shows a trend of increasing footprint of usable space and the challenge is maintaining a corresponding increase in safety personnel to provide safety services. Increasing safety staff for basic services and university compliance is a primary goal and focus of EH&S and Facilities and Services.

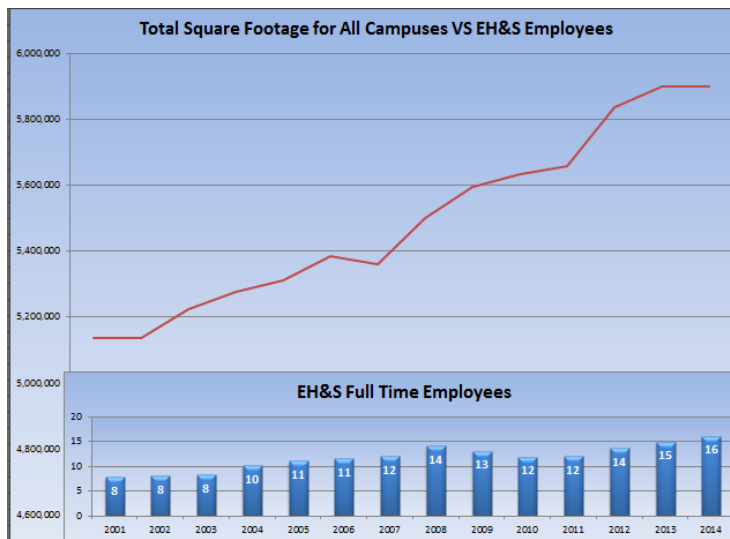


Figure 3. Square Footage and EH&S Employees

CENTRALIZED SAFETY TRAINING

In 2014, EH&S transitioned management of employee safety training records and EH&S safety class registration functions from an internal system over to the NMSU Training Central system. Over the year, more than 17,000 safety training records for active employees were imported into the system. Employees can now check their training history, view course offerings and register for EH&S safety classes using a single, centralized system.

The EH&S team delivered over 250 training classes, covering a diverse set of safety-related topics, to more than 4500 people in 2014 (**Figure 4 & Figure 5**). The number of individuals that completed a safety training class increased 1% over the last year and the trend has steadily increased since 2005.

Both on-line and instructor lead classroom training were delivered to NMSU facilities state-wide including the Las Cruces main campus, our remote campuses, community colleges, agricultural research centers and other affiliated remote facilities. The training classes are designed to meet the employee training requirements of specific state and federal regulations and reduce injuries.



Figure 4. Employee Safety Training 2005-2014

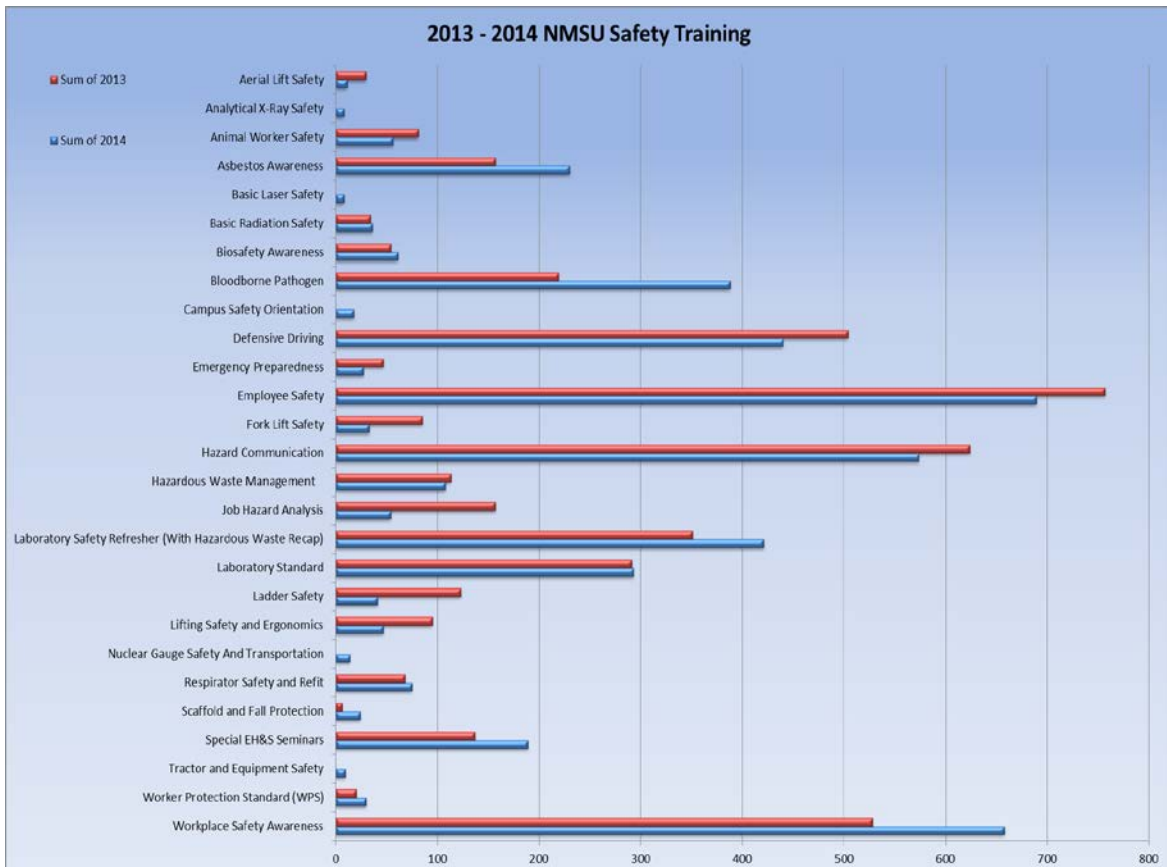


Figure 5. 2013-2014 NMSU Safety Training

Overall, we have developed strong partnerships with academic, research and operations departments through our safety training program. This is evidenced in repeated requests for the EH&S team to present special sessions on current safety issues which helps departments comply with multiple regulatory training requirements of annual refreshers.

Highlights of these special classes given in 2014 are:

- Annual Refresher of Laboratory Safety for 421 faculty, staff and students working in a lab environment.
- Annual Refresher of Workforce Safety Training for Facilities employees to include ~150 employees that received 4 hours of focused safety training.
- Annual Float Safety Training for staff participating in Homecoming parade and float inspections.
- A Lab Safety Webinar regarding the University of Minnesota Laboratory Explosion, *Evaluating the Hazards and Communicating Lessons Learned*.

EMPLOYEE INJURY & ILLNESS

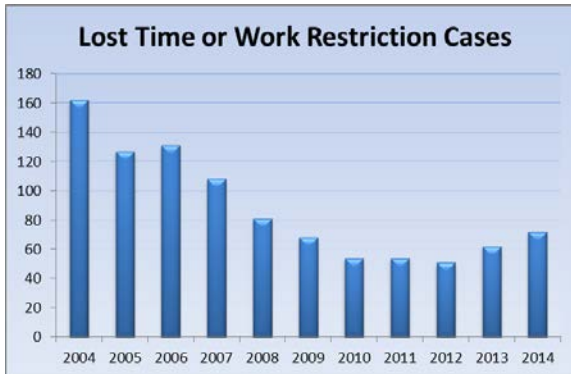


Figure 6. Cases with Lost Time or Work Restriction

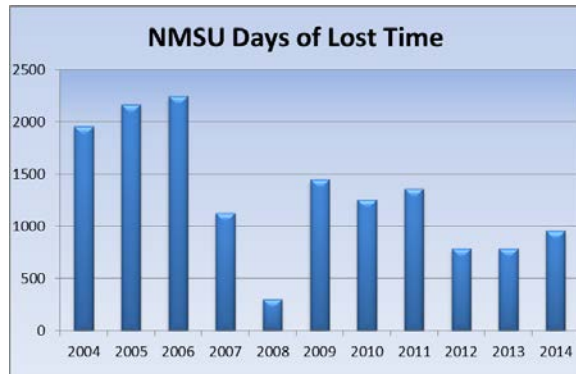


Figure 7. NMSU Days of Lost Time

Figure 6 shows a continued trend of less injury and illness cases over the current five year period compared to previous five year period; about 43% decrease in number of cases with lost or restricted work days. Also over the past three years, we have maintained a 41% reduction in lost days compared to previous five year average. (**Figure 7**, ignoring the anomaly in 2008) The OSHA severity rate is based on total number of lost work days and total hours worked, the NMSU severity rate remains 40% below prior 10 year average.

The decrease in the more severe cases (**Figure 8**) correlates with several initiatives including:

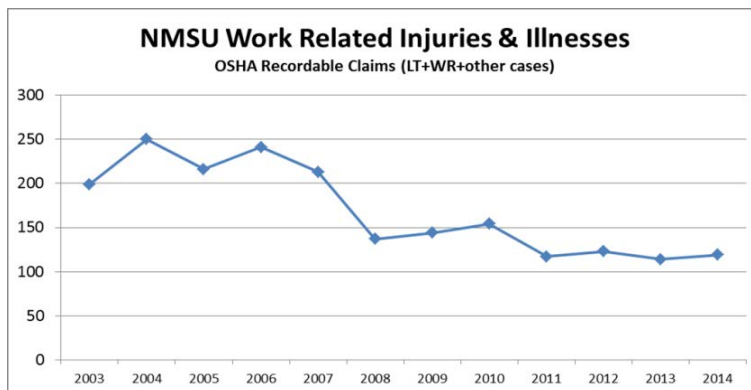


Figure 8. Work Related Injuries and Illnesses – OSHA Recordable Claims

addition of new safety inspectors, expanded training in Spanish, increased funding for building safety repairs and safety upgrades, delivery of safety training related to injury trends, increasing number of building and hazardous area inspections and a new workers compensation coordinator position that started in 2008.

The worker compensation insurance premiums are based on five years of experience and a decrease in premium is evident (**Figure 9**) and a reflection of the history of reduced injury rates. The continued reduction in workers compensation claims has a significant positive financial impact. When compared to 2010 premium expense, within four years we avoided \$1,245,000 in premium cost – that’s equivalent to the EHS budget for one year. More importantly, reduced injury ensures higher quality lives of our greatest resource.

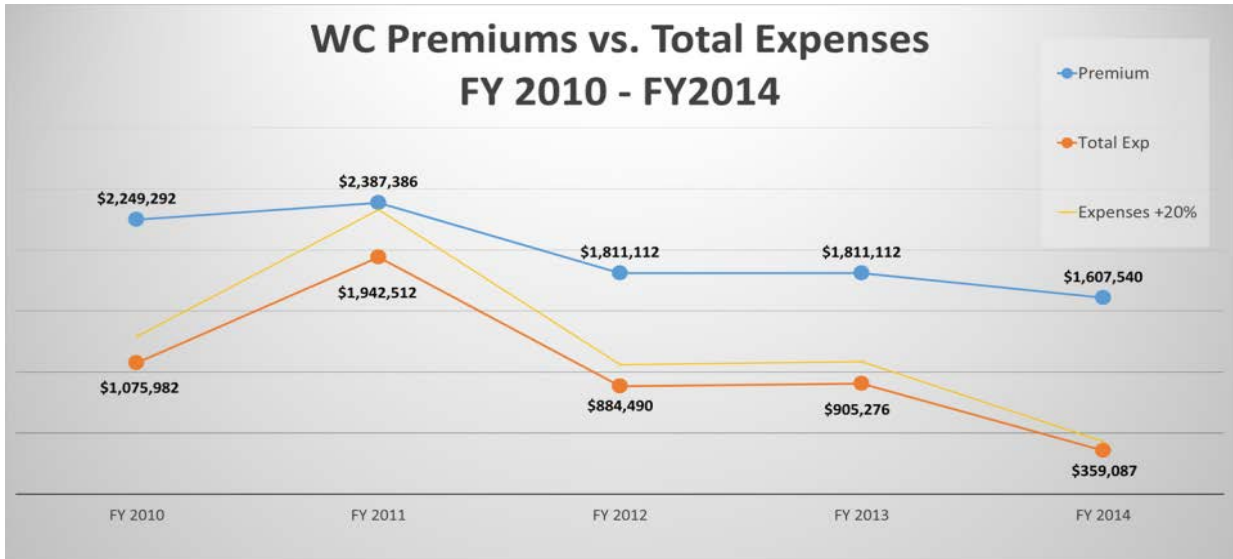


Figure 9. Worker Compensation Premium versus Total Worker Comp Claim Expense

Worker Compensation Losses FY 2010 – FY 2014

Listed below are the injury types with the highest treatment cost for FY 2010 – 2014. These six categories account for 98% of injury costs.

Injury Type	Cost	% of Total Injuries
Strain	\$2,558,565	49.51%
Contusion	\$1,186,544	22.96%
Fracture	\$978,631	18.94%
Sprain	\$167,216	3.24%
Laceration	\$101,460	1.96%
Concussion	\$43,677	.85%

Table 2. Worker Compensation Losses for Fiscal Years 2010 through 2014

LOSS PREVENTION AND LOSS CONTROL PROGRAM OVERVIEW

To minimize and reduce personnel losses from work related injury and illness EH&S provides NMSU with an aggressive, proactive loss prevention and control program. This is multi-approach safety surveillance of workers and workplace as well as after the fact injury investigation to prevent similar incidents. Over 90% of EH&S services focus on proactive inspection of hazardous work areas and ensuring safety equipment is functioning properly.

Figure 10, shown below, demonstrates the services provided by the EH&S team throughout 2014.

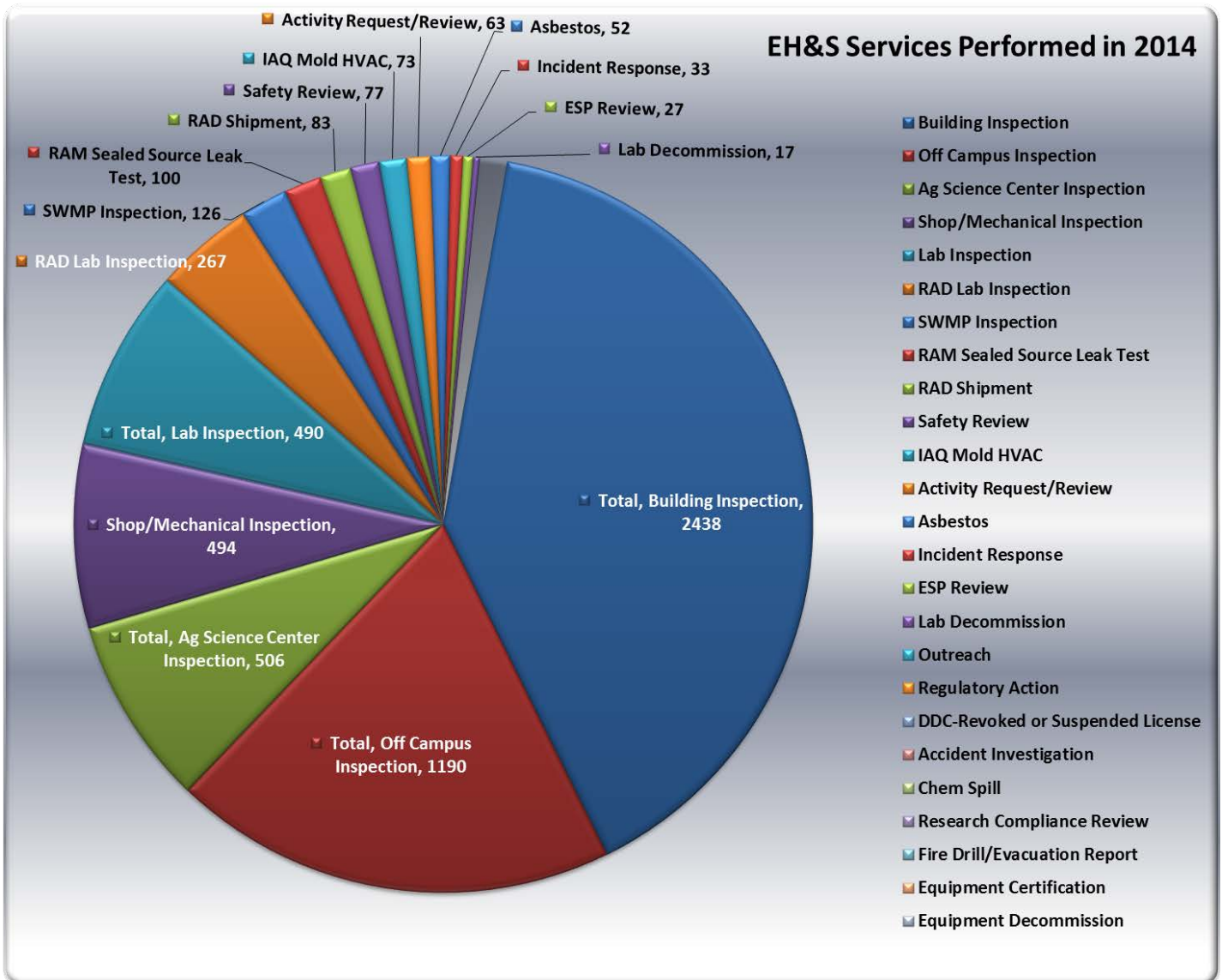


Figure 10. EH&S Services Performed in 2014

GENERAL SAFETY INSPECTIONS

LABORATORY AND BUILDING INSPECTIONS

In 2014, EH&S completed laboratory and building inspections throughout the state including the Las Cruces campus, branch campuses, agricultural science centers and other affiliated NMSU facilities. As part of the inspection process, EH&S invested approximately \$75,000 of BRR funding via an estimated 497 work orders on the Las Cruces campus. EH&S generated detailed inspection reports which identified safety concerns and dangerous conditions at each location.

The annual inspections of specific **high hazard areas** include: labs, shops, chemical storage areas, and mechanical rooms. These annual safety inspections are required by a variety of local, federal and state regulatory agencies including the State of New Mexico Loss Prevention and Control Bureau.

Throughout the years, the method of tracking these inspections has continuously evolved to the current method, as shown in **Figure 11**. In 2014, the total number of inspections increased by 58% from 2013.

This increase is attributed to the addition of a new inspector as well as a focused approach to increase building inspections. There were 16 more buildings inspected on main campus in 2014 than in 2013.

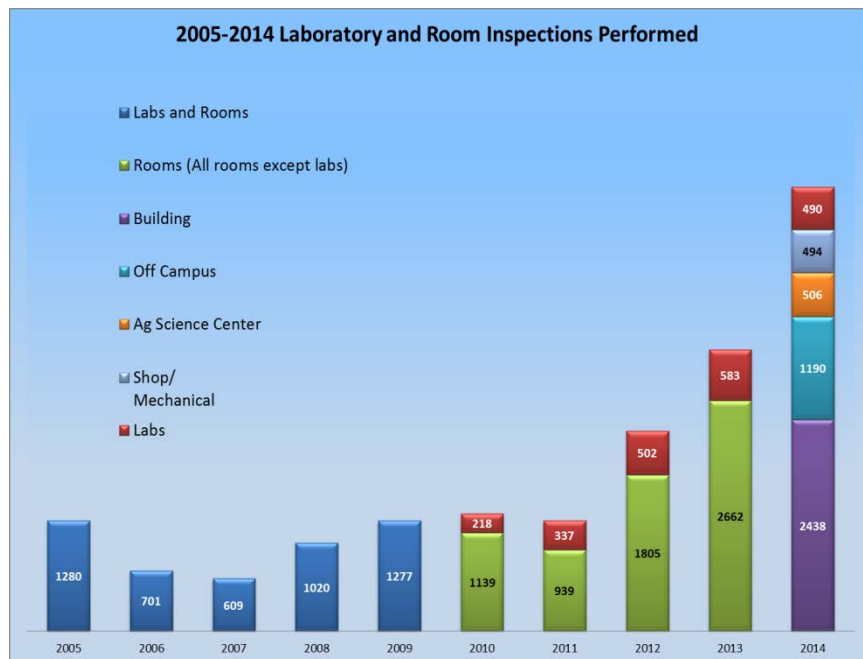


Figure 11. Laboratory and Room Inspections

There was a 16% reduction in lab inspections in 2014 from 2013. This was primarily due to three reasons:

1. A drop in the number of mandatory laboratory re-inspections needed in 2014. In 2014 fewer laboratories scored in the “Poor” or “Failing” category than in 2013.
2. Several rooms inspected as laboratory space in 2013 were discovered not be laboratory space or were in the process of being converted from laboratory space to a non-laboratory uses at the time of inspection. These areas were not inspected as laboratories in 2014.
3. Laboratories at some remote facilities were inspected as part of an overall facility inspection and not counted as separate laboratory inspections in 2014.

EQUIPMENT INSPECTIONS

Operable safety equipment is a critical component of an effective safety program. EH&S completed certification inspections on laboratory safety equipment, including eyewashes, emergency showers and exhaust hoods using student inspectors (**Figure 12**).

All safety equipment which failed the certification was retested after repairs were completed. Please note that as of May, 2014 the Fire Department took responsibility in completing safety eyewash and shower inspections.

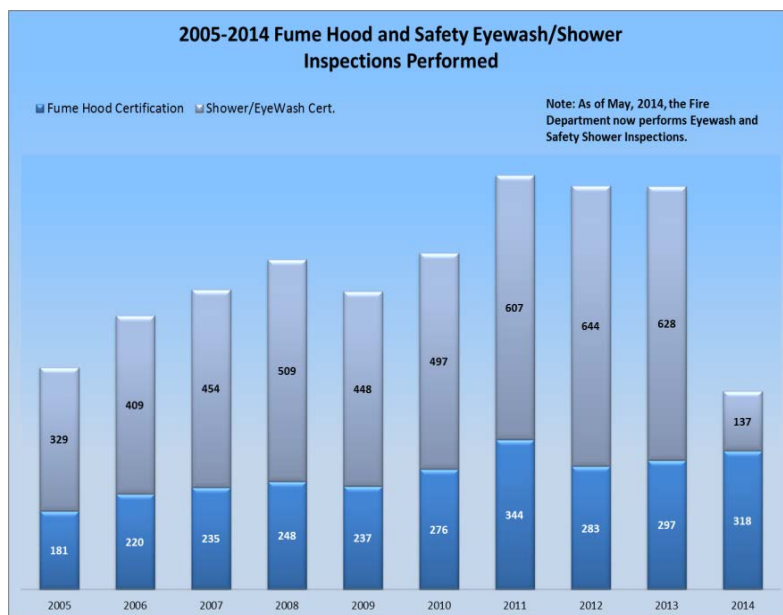


Figure 12. Equipment Inspections

SAFETY SERVICES

In addition to general safety inspection EH&S also provides many other services to minimize loss and risk. Some of the additional services are described in the following paragraphs.

INCIDENT RESPONSE AND SAFETY EVALUATIONS

There were 166 responses to incidents primarily involving indoor air quality concerns and minor hazardous materials spills and incidents, an 87% increase compared to last year (**Figure 13**).

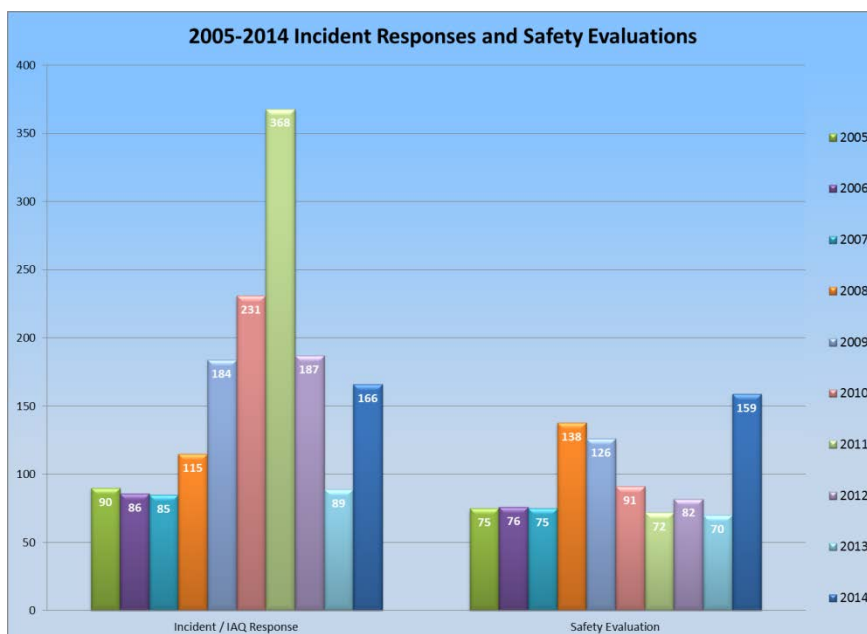


Figure 13. Incident Responses and Safety Evaluations

EH&S perform safety evaluations of various work activities, research experiments, and non-routine campus events. These evaluations are performed to ensure all regulatory requirements are met and that safe practices are in place before an activity or an experiment occurs. In 2014, EH&S performed 159 of these safety evaluations (**Figure 13**).

VEHICLE AND UTILITY CART SAFETY

As part of the NMSU Driving Policy and the State Risk Management Loss Prevention and Control, all employees must be issued either a NMSU driver's permit or a utility cart permit to be eligible to drive university owned vehicles.

EH&S provides the defensive driving course as well as completes driver history checks to ensure validity of their driver's license. EH&S performs this license validation for every new driver and for three year permit renewals. This year there were 440 people that attended the Defensive Driving Course and a total of 1230 driver's licenses were validated and permits issued (Figure 14).

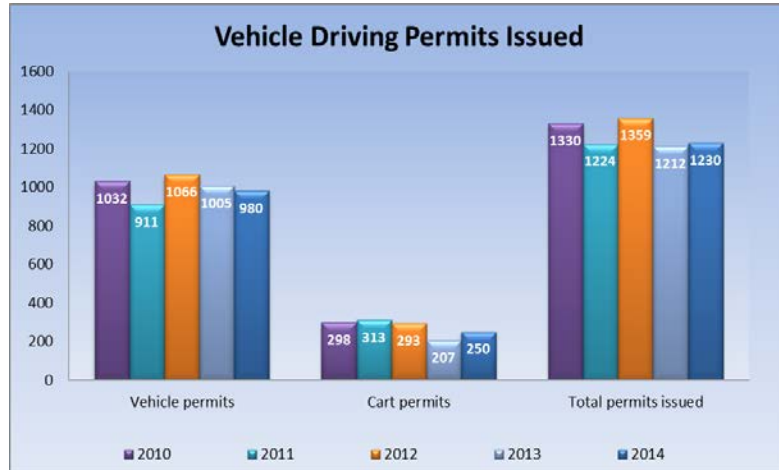


Figure 14. Driving Permits Issued

Out of the 1230 permits issued, 250 of them were for utility cart permits (Figure 14). The utility cart permit does not require the defensive driving course, but does require a license validation.

BICYCLE SAFETY



Ghost Bike



On December 5, 2014, the sign for the NMSU Bronze Bike Friendly University award was installed at the corner of Espina and North Horseshoe. NMSU was awarded the Bronze Bicycle Friendly University award in February 2013 for promoting and providing a more bicycle-friendly campus for students, staff and visitors. EH&S hosted several bike safety events this year including:

- Aggie Family Bike Event with a safety course, how to repair bikes and assist with proper helmet use.
- Set up Ghost bike as a memorial for cyclists killed or severely injured by motor vehicle.
- Safety promoting campus bicycle ride.
- NMSU bicycling community on Facebook.



SAFETY EYEWEAR

The EH&S Department provides all safety eyewear to employees that is applicable to their job function. This service is beneficial to NMSU as a mechanism to ensure safety eye protection meets the OSHA requirements for protective eyewear (OSHA 1926.102), as well as the American National Standards Institute (ANSI) standards.

In 2014 EH&S dispensed and billed to other departments a total of 92 requests for safety eyewear consisting of 29 pairs of prescription and 63 non-prescription safety eyewear (**Figure 15**). There were also 293 pairs of safety eye protection distributed to new lab personnel taking the Laboratory Standard class.



Figure 15. Safety Eyewear Purchased

SAFETY INITIATIVES AND EMERGENCY PREPAREDNESS

Since the events of 9/11, Environmental Health & Safety has coordinated Safety & Security Initiatives at the beginning of each semester to raise awareness and collaborate with other departments in emergency planning and training. The emergency preparedness events this year include:

- Distribution of NMSU Safety, Health & Security initiatives and annual refreshers.
- Update and distribution of All Hazards Emergency Operations Plan.
- Testing of department Emergency Action Plans through unannounced fire drills.
- Testing of the Emergency Notification tools and updating emergency contact lists.
- Chairing University Safety Committee and Communicable Disease Preparedness Committee
- Conducting Continuity of Operations Plan
- Establish process for CoOP and designation of essential personnel.
- Ebola Preparedness Workshop.
- Monthly collaboration with key NMSU staff on Emergency Planning Committee.
- Culture of Safety and Loss Prevention presentation for Engineering faculty and staff.
- Participated in new faculty orientation fair.
- Enhanced safety message reinforcing supervisory responsibility for safety training and protective equipment signed by the President of the University.
- NMSU participated with Dona Ana County in development of a Hazards Mitigation Plan that was approved by FEMA February 2014.



Ebola Preparedness Workshop

SPECIALTY PROGRAM MANAGEMENT

EH&S manages several specialty programs designed to meet a variety of local, state and federal worker safety and environmental protection regulations:

1. Asbestos Abatement Program
2. Hazardous Waste Program
3. Radiation Safety Program
4. Biosafety Program
5. Environmental Compliance Program

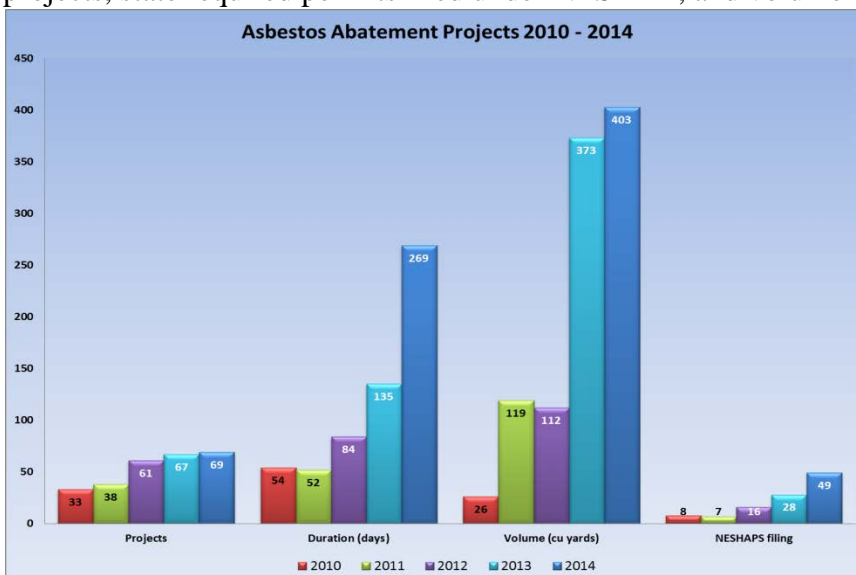
Each of these programs is discussed in more detail below.

ASBESTOS ABATEMENT PROGRAM

In 2014 EH&S continued to provide NMSU departments with timely and professional response in regard to asbestos as well as mold and lead management. EH&S established a NMSU Asbestos Management Program in 2009. The program is designed to ensure proper identification and management of asbestos containing materials in the older (pre-1981) NMSU buildings. Asbestos abatement for minor building remodels and general maintenance is sub-contracted to an outside licensed vendor with EH&S project oversight and funded by the BR&R account.

EH&S has one dedicated employee and an alternate which are both qualified annually as asbestos inspectors. EH&S responsibilities are to provide immediate initial inspections, perform surveys and monitoring to assess potential environmental hazards, and conduct Asbestos Awareness Training for campus personnel. Facilities maintenance personnel attend the annual awareness training that provides information on potential locations of asbestos, types of materials that may contain asbestos and the NMSU procedure for notification.

EH&S asbestos project support increased overall (**Figure 16**), by number and duration of projects, state required permits filed under NESHAP, and volume of waste produced in 2014.



During the year EH&S completed 69 abatement projects, 49 of which required permitting through NESHAP. Two of the larger projects overseen by EH&S this year, were the Corbett Center remodel and demolition of Jacobs Hall and partial demolition of Hardman Hall, in order to begin construction on the new Undergraduate Center.

Figure 16. Asbestos Abatement Projects

HAZARDOUS WASTE PROGRAM

The EH&S environmental compliance team picked up, researched, processed, and shipped just over 47,000 pounds of hazardous waste in 2014 compared to 55,000 pounds averaged over the previous five years (Figure 17). A trend of decreasing hazardous waste poundage is evident. A significant reason why the poundage of hazardous waste has decreased is because large poundage items like old oil filled transformers and industrial labs with higher volume work have been removed from campus.

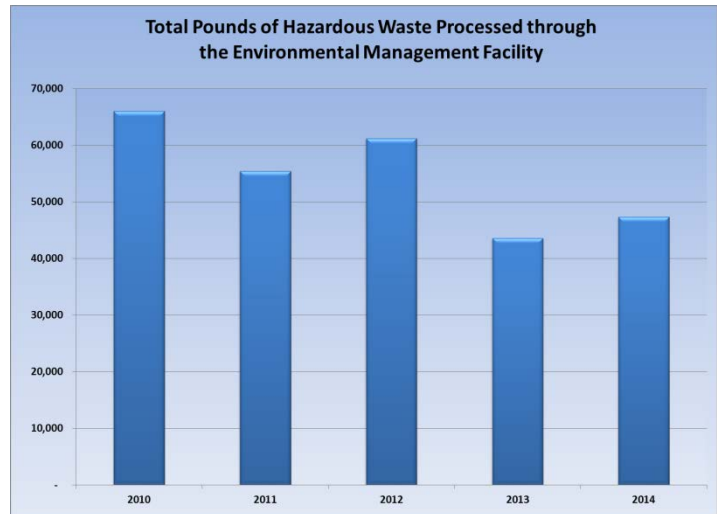


Figure 17. Total Pounds of Hazardous Waste Processed through the EMF

The team managed 3,057 different chemical items compared to 2,994 items averaged over the previous five years (Figure 18). Items of hazardous waste increased this year because lab

inspections are focusing on chemical inventory tracking. This focus has resulted in labs disposing of additional expired or excess stock chemicals than in previous years. Stock chemicals still require significant amounts of time to pick up, research, process and ship. Simply stated, an increase in items handled results in increase in staff time spent managing each container. It is approximately ten times cheaper and easier to dispose of a 1,000 pound oil filled transformer, then one pound of old diethyl ether which is potentially explosive. Most large, lower hazard, old chemical containers on campus have already been disposed. Smaller, higher hazard, lab stock chemical containers have not, and present new cost and labor challenges.



Figure 18. Total Items of Hazardous Waste Handled

Most of the non-routine waste workload resulted from large stock chemical clean outs (greater than 50 chemical items at one time) from 16 different departments/labs: ANRS (4), Chemistry, Biology, SWAT, WERC, Alethea, USDA, PES, Fly Farm, Astronomy, Fire, Agricultural Extension, and Civil Engineering. Overall, all hazardous waste items were disposed of legally and without any incident. Physically opening chemicals and pouring/mixing compatible chemicals into 55-gallon drums keeps the cost per pound for disposal low. Mixing chemicals is risky however, and requires keen attention to detail. In cumulative, the 5.0 FTE team spent 46 hours in restrictive, encapsulating protective suits and respirators while mixing chemicals on 23 different days. Overall, no adverse reactions occurred during mixing activities.



Hazardous Waste Team Mixing and Bulking Chemicals

WASTE VOLUME AND COST TRENDS

Overall, NMSU’s 47,000 pounds of routine hazardous waste was disposed of at a total cost of \$97,665. The good news is that there was a decrease in the cost per pound for routine hazardous waste disposal in 2014. The cost per pound in 2013 was \$2.39 versus \$2.06 in 2014 (~14% less). One of the contributing factors of why the disposal cost for hazardous waste decreased is because

EH&S vetted a new local vendor to recycle NMSU lead acid batteries and non-PCB ballasts. The vendor pays NMSU to recycle these materials whereas in the past, NMSU shipped them to Phoenix and paid for disposal. The team coordinates with eight different environmental services contractors for additional cost savings: Clean Harbors, Veolia, Stericycle, USA Can Recycling Warehouse, Fuels, ACT, Hudson Technologies, and NEMS. By using specialized contractors for different projects, we are often able to reduce disposal/regulatory costs by thousands of dollars. Coordinating with numerous contractors however leads to additional complexities with manifests, transportation, and billing.



Figure 19. Cost per Pound by Waste Type

Another contribution to controlling disposal cost is that EH&S bulks or co-mingles compatible hazardous waste. It is important to note that the largest waste stream by pound “bulk hazardous waste” is also the lowest cost per pound (**Figure 20**). The average cost per pound of hazardous chemical waste varies by 5 fold with bulk waste being the lowest and lab pack waste being the highest (**Figure 19**).



Figure 20. Bulk Waste Trends



Figure 21. Lab Pack Waste Trends

EH&S contains the waste cost by researching and combining similar waste types so that 60% of the chemical waste can be shipped in bulk containers for disposal. The cost of bulk waste this year was \$1.44 per pound compared to \$7.24 per pound for lab pack waste (**Figure 21**) which is shipped off without additional handling. *The savings in 2014 was \$150,000 in avoided disposal fees that is due to bulking 60% of the chemical waste versus lab packing.*

RECYCLED WASTE

Campus operations, instruction and research programs generate a wide variety of hazardous and special wastes. Although EH&S cannot control the types or volume of wastes being generated, we do strive to recycle as much as legally possible (**Figure 22**). Special contracts are established for the routine Universal Waste streams including batteries, mercury containing bulbs, and ballasts. We also recycle used oil whenever possible. Also of particular note is that a non-routine shipment of (16) refrigerant cylinders for recycling was conducted. By sending the refrigerant for recycling to a specialized contractor, NMSU avoided \$4,000 in hazardous waste disposal costs. The environmental compliance team will continue to dedicate additional effort to seek out alternate disposal solutions in a commitment to sustainability at NMSU.

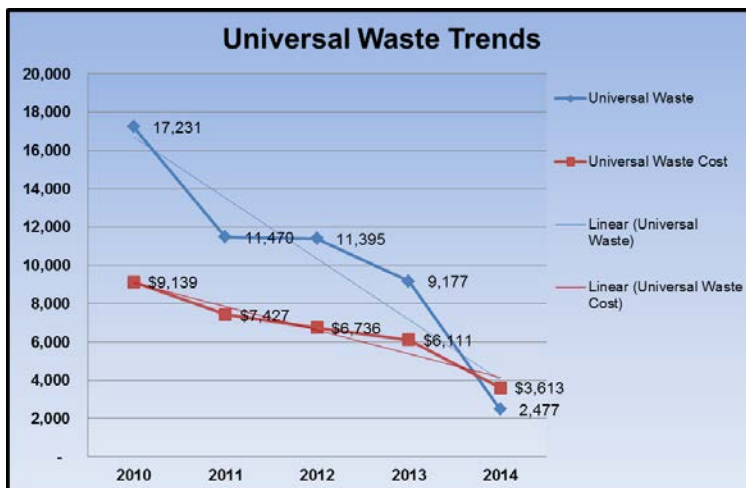


Figure 22. Universal Waste Trends

HAZARDOUS WASTE REPORTS & INSPECTIONS

Hazardous waste reports, inspections and standard operating procedures (SOPs) are essential components of a successful waste management program. Federal and State mandated reports completed and filed accurately and on time were: Tier II Chemical Inventory, Hazardous Waste Fees, PCB Log, and Biennial Hazardous Waste. There were no external regulatory inspections in 2014. The mandatory DOT “NMSU Hazardous Material Transportation Security Plan” was also updated and special training given to key staff.

HAZARDOUS WASTE SPECIAL PROJECTS

In 2014 there were a number of large, special projects managed by the EH&S team:

- Main Campus - Chemistry Department Clean Out (Figure 23).
- Main Campus - Aldershot Greenhouse Chemical Clean Out
- CEMRC - Waste Chemical Shipment
- Carlsbad Community College - Waste Chemical Shipment
- Main Campus - Chemistry Department High Hazard Shipment
- Main Campus - Multiple Departments - High Hazard Incident Response



Chemistry Department Clean Out

The above projects are not included in the previous sections or graphs. These chemicals were too numerous or hazardous to be managed through the standard hazardous waste disposal program/temporary storage building. The projects required additional man hours to schedule, manage, and complete with multiple contractors. Most of the chemicals were small in weight, but high in quantity and hazards and labpacked directly from the specific locations. The total cost for these “Special projects” was \$85,000, which is equivalent to the cost of a full year’s regular hazardous waste disposal on the main campus. Approximately \$30,000 of the cost was paid by others, remote facilities and projects.

Large special waste projects tend to be at much higher cost, for example, the Chemistry Department clean out was \$17 per pound of waste shipped compared to our average cost of \$2 per pound.

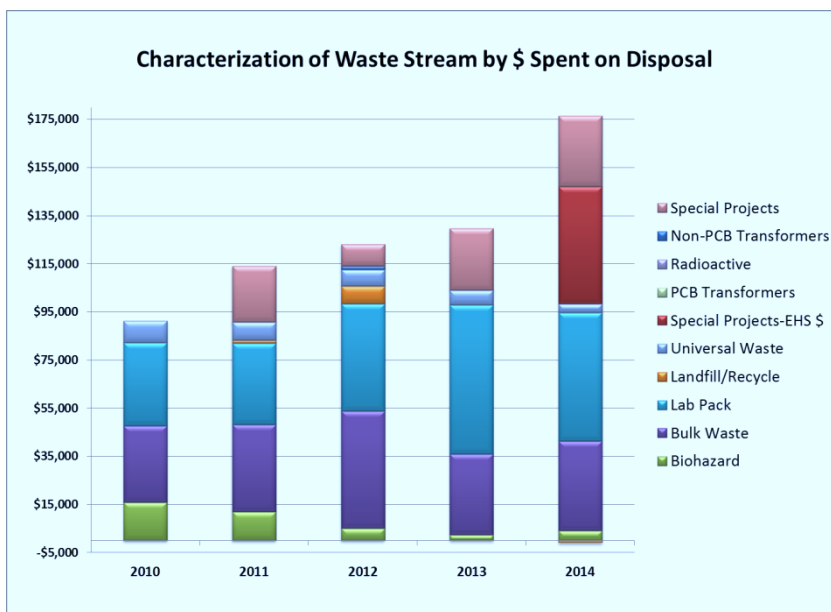


Figure 23. Amount (\$) of Special Projects

RADIATION SAFETY PROGRAM

Most radioactive materials and devices that produce ionizing radiation used in research and teaching are regulated through licenses issued to NMSU by the New Mexico Environment Department's Radiation Control Bureau (NMRCB) as authorized under the New Mexico Radiation Protection Regulations (NMAC 20.3). To help ensure compliance, the NMSU administration established the University Radiation Safety Committee (URSC) and charged it with developing university-wide radiation safety policies. The EH&S Radiation Safety Manager (RSM) and technical staff are responsible for many of the day to day administrative and technical functions required to effectively manage the radiation safety program. A detailed description of the URSC and RSM responsibilities can be found in the NMSU Radiation Safety Manual.

RADIOACTIVE MATERIAL LICENSES

The University currently holds two Radioactive Material (RAM) Licenses issued by the NMRCB.

- *Type AB Broad-Scope License* - covers Main Campus and most remote NMSU facilities.
- *CEMRC Facility-Specific License* – a separate specific license which covers the use of radioactive materials at the Carlsbad Environmental Monitoring & Research Center (CEMRC). The CEMRC is a university research facility located in Carlsbad, NM. The facility contains several radiochemistry labs and an *in-vivo* radiobioassay lab (lung and whole body counter).

Each license defines the type (specific radioisotopes), quantity, and general conditions or limitations for using radioactive materials and devices at the authorized locations listed on the license.

X-RAY DEVICE CERTIFICATES OF REGISTRATION (COR)

The University holds six CORs issued by the NMRCB.

- *Analytical X-Ray COR* – a blanket COR covering the numerous analytical x-ray devices used for teaching and research across the university. Examples of the types of devices under this COR are x-ray diffraction (XRD), x-ray fluorescence (XRF) and x-ray irradiator devices.
- *NMSU Health Center COR* - covers the medical radiography x-ray machine located in the Health Center.
- *DACC Dental Clinic COR* – covers several dental x-ray machines located in the Dental Clinic.
- *Athletics Department COR* – covers the mobile medical radiography x-ray machine used by the athletics program.
- *Human Performance, Dance and Recreation Department (HPDR) COR* – Covers the department's dual-energy x-ray absorptiometry (DXA) system.
- *CEMRC COR* – covers a XRD system located in the CEMRC facility in Carlsbad, NM.

Each x-ray CORs covers specific types of x-ray devices, identifies the location the devices can be used and includes a list of conditions or limitations for using the devices.

U.S. NUCLEAR REGULATORY COMMISSION (NRC) RECIPROCITY AGREEMENT

In 2014 the University entered into reciprocity agreement with the NRC which allows NMSU researchers to use a nuclear gauge (soil moisture gauge) at the Bureau of Reclamation's Brackish Groundwater National Desalination Research Facility in Alamogordo, NM. The NRC has exclusive jurisdiction over the use of radioactive materials or devices on most federal lands and facilities that are not under the jurisdiction of the U.S. Department of Energy (DOE) or U.S. Department of Defense (DOD).

EH&S RADIATION SAFETY SERVICES

EH&S supports the URSC and university radiation user community in many ways including:

- Records management for the NMSU Radiation Safety program
- University-wide RAM inventory tracking
- RAM licensing & x-ray registration
- Radiation Safety training
- Radiation laboratory safety inspections and contamination surveys
- Radiation laboratory decommissioning
- X-ray machine inspections
- Sealed source leak testing
- Centralized RAM shipping / receiving
- Other miscellaneous functions and services.

Summaries of common EH&S radiation safety program services are included in **Figure 24**.

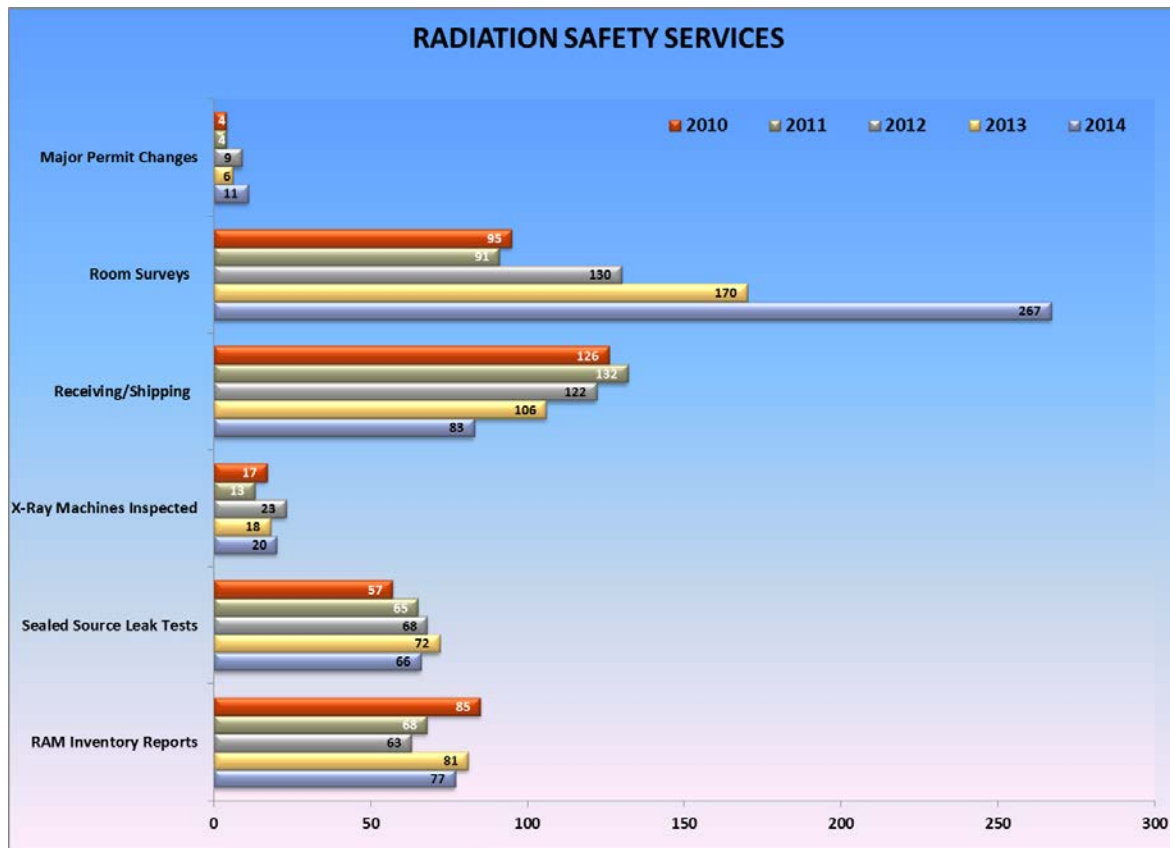


Figure 24. EH&S Radiation Safety Services

2014 RADIATION SAFETY PROGRAM HIGHLIGHTS

- NMSU Radiation Safety Manual was revised, updated and published.
- Type AB Broad-Scope Radioactive Materials license that covers activities using radioactive materials at the Las Cruces main campus and most remote NMSU facilities was renewed for another 5 years.
- A reciprocity agreement between NMSU and the NRC was signed which allows university researchers to use a nuclear gauge at a federal facility in Alamogordo, NM.
- The NMRCB performed an unannounced inspection of the activities authorized under the Type AB Broad-Scope License. No deficiencies were noted in the final inspection report.
- The NMRCB performed an unannounced inspection of the activities authorized under the X-Ray CORs for the NMSU Health Center, DACC Dental Clinic and the Athletics Department were inspected. No deficiencies were noted in the final inspection reports.
- Approximately 2000 pounds of radioactive and mixed (radioactive + RCRA hazardous) waste generated at the CEMRC was disposed (**Table 3**).

Table 3. 2014 CEMRC Radioactive & Mixed Waste Disposal Summary

Description	Quantity (pounds)
Bulk Dry Lab Wastes	520
Bulk Liquid Mixed Wastes	1590

BIOSAFETY PROGRAM

In July of 2010, the Biosafety Manager position and program responsibilities were assumed by the Research Compliance Office and a full time Biosafety Manager was hired November 2010. The decision to reorganize the position was based on the source of funding and desire to expand the position for a wider breadth of research compliance issues. EH&S works closely with the Biosafety Manager and maintains a strong role in the biosafety mission by providing the following direct support and services (**Figure 25**):

- Training equipment and facilities.
- Administrative support for monthly biosafety training including scheduling classes, web based registration, and managing training records.
- Web based Bloodborne Pathogen (BBP) training module delivers required

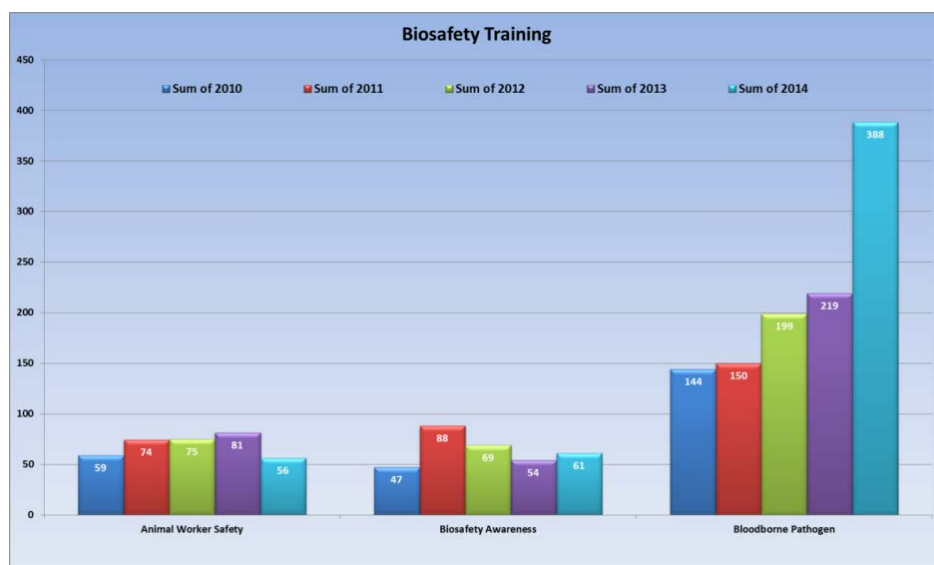


Figure 25. EH&S Biosafety Services

annual refresher training showing increased training (**Figure 25**).

- Acting as voting primary reviewer and voting member of the Institutional Biosafety Committee (IBC).
- Collaboration with Biosafety Manager on safety programs and emergency preparedness response.
- EH&S support of the Institutional Animal Care and Use Committee (IACUC) – this was requested by the Chair to ensure continued involvement of EH&S. This is critical for success of the occupational health and safety program for animal workers.
- A full exposure hazard assessment for plumbers and waste water handlers was performed in 2013, the training and immunization was implemented in 2014.

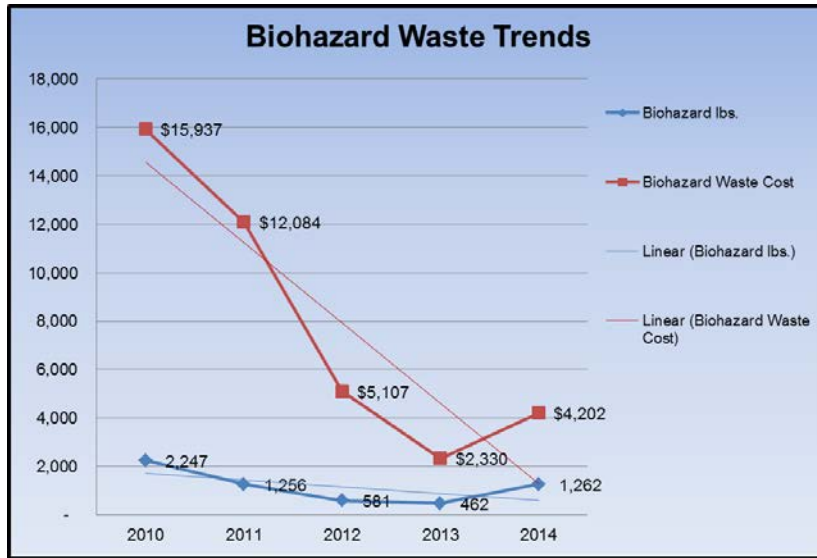


Figure 26. Biohazard Waste Trends

- EH&S handles disposal for all biohazardous waste requiring incineration. To combat the escalating cost, in 2010 EH&S **aggressively implemented education and inspection processes to successfully lower the amount of biohazardous waste generated on campus.**

- In addition, EH&S negotiated waste cost reduction through stricter

segregation and switching treatment technologies from incineration to steam sterilization. *This dual approach results in huge cost savings that will continue forward for years to come (Figure 26).*

ENVIRONMENTAL COMPLIANCE PROGRAM

TITLE V AIR PERMIT AND NSR AIR PERMIT

NMSU maintains two EPA/NMED Air Quality Permits; a Title V Air Permit and New Source Review (NSR) Air Permit. These air permits ensure NMSU is monitoring campus emissions with the goal to keep them as low as possible. EH&S completed nine detailed air reports to ensure compliance for these permits: Annual air report, (2) semi-annual air reports, air emissions inventory, turbine test protocol, turbine air emissions test results, air fees, generator location/operational log, and the Federal Greenhouse Gas (GHG) Registration/Report. These reports ensure we are documenting compliance with all environmental laws, collecting appropriate data, and identifying positive trends to build on or negative trends for correction to better protect health and the environment.

Additional special air compliance issues addressed in 2014 were:

- 5 year review and update of the Title V Permit Reapplication Binder.
- Boiler #2 was fine-tuned and a formal emissions test was conducted.
- Gas Data Tracking was conducted with the City of Las Cruces.

- New Fire Department Generator Info/Operational Log was created.
- BR&R funding was obtained to install remote monitoring of generator run times for A-Mountain and the Aggie Stadium
- Training in NMED's new Excess Emission Reporting (EER) Internet System was completed.
- Cross Training of Backup EH&S Staff for Air Quality Issues

To best ensure a successful clean air program EH&S continues to visit the Central Plant at least monthly to meet with key staff on air issues and averages a monthly conference call with Consultants to stay current on complex, changing regulations.

STORM WATER MANAGEMENT PROGRAM (SWMP)

Environmental program activities for EH&S were related to regulatory compliance of the EPA-issued MS4 (municipal separate storm sewer system) permit; each year NMSU submits an annual report (to EPA) reporting progress over the previous year, as well as outlining best management practices (BMPs) to complete during the upcoming year. Accomplishments in 2014 include the following:

- Submitted the annual update report to EPA and NMED Surface Water Quality Bureau in September, 2014.
- *Increased the 2013 69% achievement of measureable BMP goals to 86% for 2014.*
- Conducted storm water awareness training as part of the NMSU Hazards Communication training.
- Conducted in-house training allowing EH&S inspectors to perform MS4 required inspections as part of their annual safety inspections. This streamlining has minimized impacts to the operation of the inspected shops/facilities.
- All critical documents are filed on a well-managed network location.

SOLID WASTE

Regulatory compliance of NMSU's solid waste falls into two distinct categories; closure activities associated with the former NMSU landfill, and compliance of our two solid waste facilities (Aggie Recycling, and the NMSU Green Waste Compost Facility). 2014 solid waste accomplishments include:

- Involved in the evaluation and hiring of a qualified engineering design firm to complete a closure design per requirements of the 2013 Closure Post-Closure report.
- Submitted the three NMED-required annual Solid Waste Management reports on time.
- Submitted all required quarterly methane monitoring reports on time.
- Submitted two required semi-annual ground water sampling monitoring reports on time.
- Acted as the NMSU lead on regulatory agency interactions related to a relocation of the NMSU green waste compost facility.

DRINKING WATER

Because of the potential adverse health effects, providing the NMSU community with high quality drinking water is one of the most critical environmental oversight activities. In 2014 drinking water accomplishments include:

- Continued close collaboration with Facilities and Services plumbing personnel to ensure all compliance testing is performed on schedule and reported appropriately.
- EPA-required Consumer Confidence Report; this report was submitted to the NMED in March and posted to the NMSU website, per the required deadlines.
- Initiation of the EPA-required UCMR3 (Unregulated Contaminant Monitoring Rule) sampling, analyses, and reporting.

WASTEWATER

NMSU has wastewater discharge permit #82211 with the City of Las Cruces, as they receive/treat all NMSU wastewater. Complying with the discharge permit requirements comprises EH&S compliance activities in this area. 2014 accomplishments include:

- Completed four quarters of the required sampling and reporting to the City of Las Cruces on schedule. No violations were reported.
- System operations within the hydrogen sulfide limits (monitored monthly).
- City of Las Cruces conducted a formal annual inspection, as well as a joint EPA-City of Las Cruces audit of wastewater operations. There were no violations however, several issues required regular follow up with various NMSU entities and City of Las Cruces.

SPILL PREVENTION CONTROLS AND COUNTERMEASURES (SPCC)

EPA is the lead federal response agency for oil spills occurring in “inland waters” (which can include dry arroyos), and requires qualified facilities, such as NMSU, to prepare, certify, and implement an SPCC Plan. During 2014:

- EH&S completed an inventory of all fuel/oil tanks subject to the SPCC rule
- EH&S conducted required inspections in order to comply with SPCC regulatory requirements.

**THIS COMPLETES ENVIRONMENTAL HEALTH & SAFETY ANNUAL REPORT
2014**