



# COLORADO

## Department of Public Health & Environment

**2016 Annual Report to the Colorado General Assembly:**

**Status of the Hazardous Waste Control Program  
In Colorado**

Submitted to the Colorado General Assembly  
by the Hazardous Materials and Waste Management Division  
Colorado Department of Public Health and Environment  
February 1, 2017



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# **2016 Annual Report to the Colorado General Assembly: Status of the Hazardous Waste Control Program In Colorado**

## **INTRODUCTION**

Colorado's Hazardous Waste Control Program is responsible for ensuring compliance with laws and regulations pertaining to the management of hazardous waste. The authority for this program is in the Colorado Hazardous Waste Act, 25-15-101 et seq., C.R.S., and the federal Resource Conservation and Recovery Act (RCRA). The U.S. Environmental Protection Agency (EPA) has authorized Colorado to implement the federal program requirements, and by doing so, the authority to implement requirements for the management of hazardous waste in Colorado rests primarily with the state. EPA authorized Colorado for the base hazardous waste regulatory program in November 1984. In July 1989, federal authorization was granted to Colorado for significant additions to the base program, including authority for hazardous waste corrective action, which provided authority to investigate and clean up releases of hazardous waste constituents into the soil, surface water or ground water at hazardous waste facilities.

Primary elements of the Hazardous Waste Control Program (the program) include compliance assistance, compliance monitoring and enforcement, corrective action, permitting and information management. Each of these program elements is discussed in the following sections. In addition, this report includes sections discussing ongoing program authorization by EPA and the status of program funding.

As of December 2016, the Hazardous Waste Control Program regulates seven active and permitted treatment, storage and/or disposal facilities (TSDs), and 15 closed TSDs with hazardous waste remaining buried on-site, which need post-closure monitoring and/or maintenance. In addition, the program regulates about 143 large quantity generators, about 421 small quantity generators, about 70 transporters and at least 3,700 conditionally exempt small quantity generators of hazardous waste. The true number of conditionally exempt small quantity generators is not known, because most are not required to provide any notification to the state. Those that are known come to the attention of regulators through voluntary notifications, complaint inspections and a requirement that conditionally exempt generators of four particular waste types submit a notification. Finally, the program regulates about 403 facilities at which corrective action (remediation of environmental contamination) is required.

SB 00-177 requires an annual report to the General Assembly to be submitted on Feb. 1 of each year describing the status of the Hazardous Waste Control Program and the efforts of the Colorado Department of Public Health and Environment to carry out its statutory responsibilities at the lowest possible cost without jeopardizing the intent of the statute.

## ACCOMPLISHMENTS

The Colorado Department of Public Health and Environment's Hazardous Materials and Waste Management Division (the division) continues to look for ways to improve the Hazardous Waste Control Program. Each of our program elements tracks performance through a series of metrics, some of which are reported in the following sections.

### Compliance Assistance

A goal of the Hazardous Waste Control Program is for all regulated facilities to be in compliance with state law and regulations. The traditional inspection and enforcement program serves as one primary mechanism for reaching that goal. However, compliance assistance is another important method for obtaining and maintaining compliance. The General Assembly recognized the value and importance of compliance assistance in that one of the expectations set out in SB 00-177, at Section 25-15-301.5(2)(g), C.R.S., is for the department to "establish a preference for compliance assistance with at least 10 percent of the annual budget amount being allocated to compliance assistance efforts." In FY 2016, the program met that requirement with 12.6 percent of staff time devoted to compliance assistance.

The program has developed and continues to invest in a broad range of compliance assistance services to help the regulated community manage hazardous waste appropriately. These compliance assistance services include the following activities:

- A part-time customer assistance and technical assistance phone line (303-692-3320);
- A wide range of hazardous waste guidance documents and compliance bulletins;
- An extensive, useful and informative Website — [www.colorado.gov/pacific/cdphe/hm](http://www.colorado.gov/pacific/cdphe/hm)
- Compliance assistance site visits through the Generator Assistance Program (GAP);
- Quarterly hazardous waste management training sessions provided to industry by our staff; and
- Hazardous waste training requested by industry groups and others.

The program staff continues to develop additional services as more effective compliance tools are identified. For instance, we put considerable effort into developing useful and easily searched information on our website. Besides the normal access to regulations, guidance documents and policies, the website now offers up-to-date information on household hazardous waste, hazardous chemicals used around the home, data mapping capabilities that show where hazardous waste facilities are located in Colorado, compliance information about facilities, and information on upcoming hazardous waste trainings being offered by program staff. During FY 2016, the Hazardous Waste Management webpage received 7,848 hits.

In addition, in FY 2016, the division provided 8 compliance-assistance training sessions to industry around the state and reached over 500 people. The training sessions

covered a variety of topics, and focused on hazardous waste and related environmental regulations. These trainings included presentations by program and local agency staff, as well as members of the regulated community.

Program inspectors routinely incorporate compliance assistance and pollution prevention into the compliance inspections performed each year. Inspectors provided guidance documents to facilities as well as person-to-person advice and consultation on 113 of the 263 inspections performed this year. Additionally, in FY 2016, the program conducted 19 site visits (discussed later under the Generator Assistance Program) that had compliance assistance as the single major focus.

The division maintains a system of guidance information for regulated parties through both print and electronic media. This system includes an automated technical assistance telephone line for common waste management questions and a technical assistance phone line staffed four hours/day during business hours to provide information on more complex or detailed regulatory guidance. Through the technical assistance phone line, division technical assistance staff responded directly to 1,521 calls and 364 emails during FY 2016.

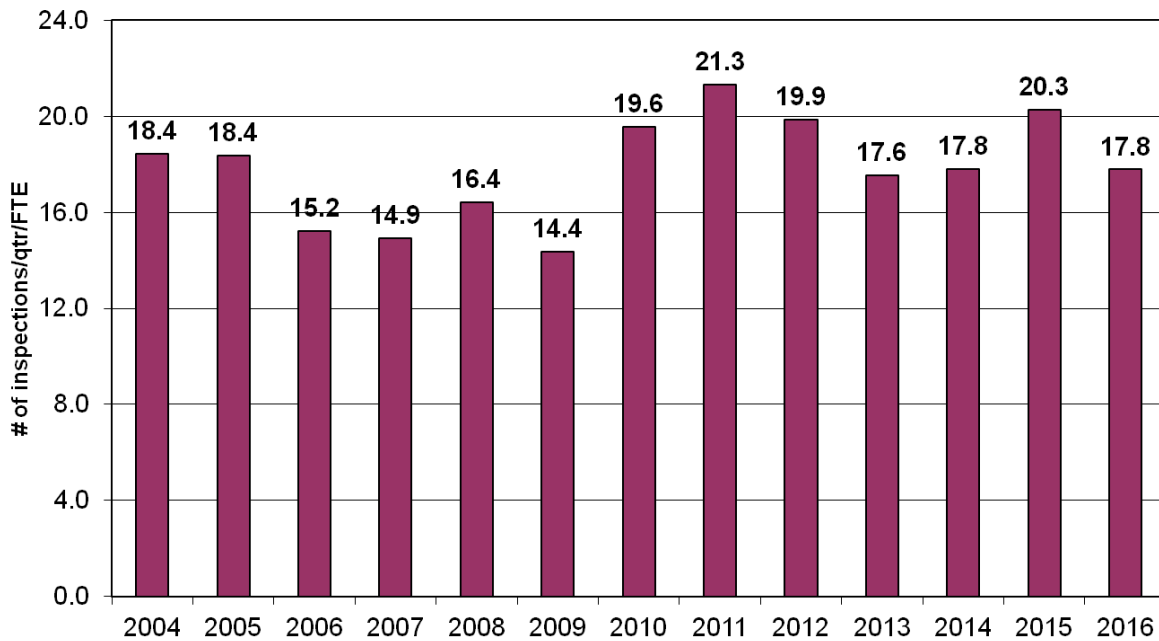
Compliance assistance staff found, through feedback at the trainings they conducted, that the help they provided on hospital wastes, pharmaceutical wastes, universal wastes, generator requirements and hazardous waste identification was timely and helpful in FY2016.

### **Compliance Monitoring and Enforcement**

Efficiency and effectiveness are very important in compliance monitoring (inspections) and enforcement. Efficiency allows adequate coverage of the regulated universe — completing compliance assessments and deterring non-compliance. Efficiency measures include work output per employee and timeliness of inspection and enforcement activities. Effectiveness ensures that inspection and enforcement activities protect public health and the environment. Effectiveness measures include improving compliance rates within the regulated community.

An example of staff efficiency is presented in Figure 1. This graph illustrates the consistent high level of staff performance on inspections in recent years. This graph presents the average number of inspections performed by each inspector each calendar quarter. The performance plans for each inspector define the number of completed inspections needed to achieve an outstanding, satisfactory or unsatisfactory performance rating. To perform at a sustainable level, experienced inspectors should be expected to conduct 15 inspections per calendar quarter and 18 per quarter for an outstanding rating in this aspect of their job duties. New inspectors are expected to gradually reach these levels as they gain experience. This level of effort prevents staff burn-out, but also allows the program to adequately inspect the regulated universe.

**FIGURE 1**  
**Inspector Efficiency**



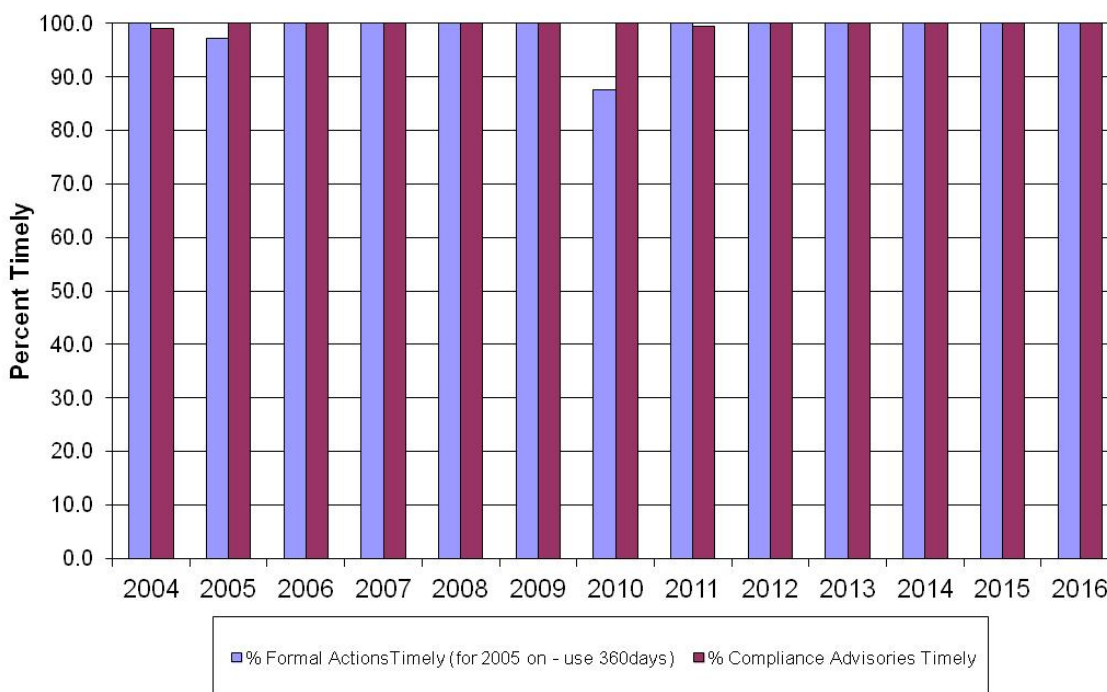
It should be noted that every inspection carries administrative responsibilities, such as report preparation, tracking return-to-compliance activities and accomplishments at the facility, and data entry, all of which are also being performed on time and effectively.<sup>1</sup>

The high number of inspections continues to result in the issuance of formal and informal enforcement actions. As illustrated in Figure 2, the timeliness of both formal enforcement actions (compliance orders) and informal actions (compliance advisories), as measured against standards established by EPA and adopted by the Colorado program, has been maintained at the highest level.

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<sup>1</sup> As judged by EPA in its oversight role and recorded in its 1999 - 2015 End-of-Year Reports reviewing Colorado's Hazardous Waste Program.

**FIGURE 2**  
**Enforcement Timeliness**

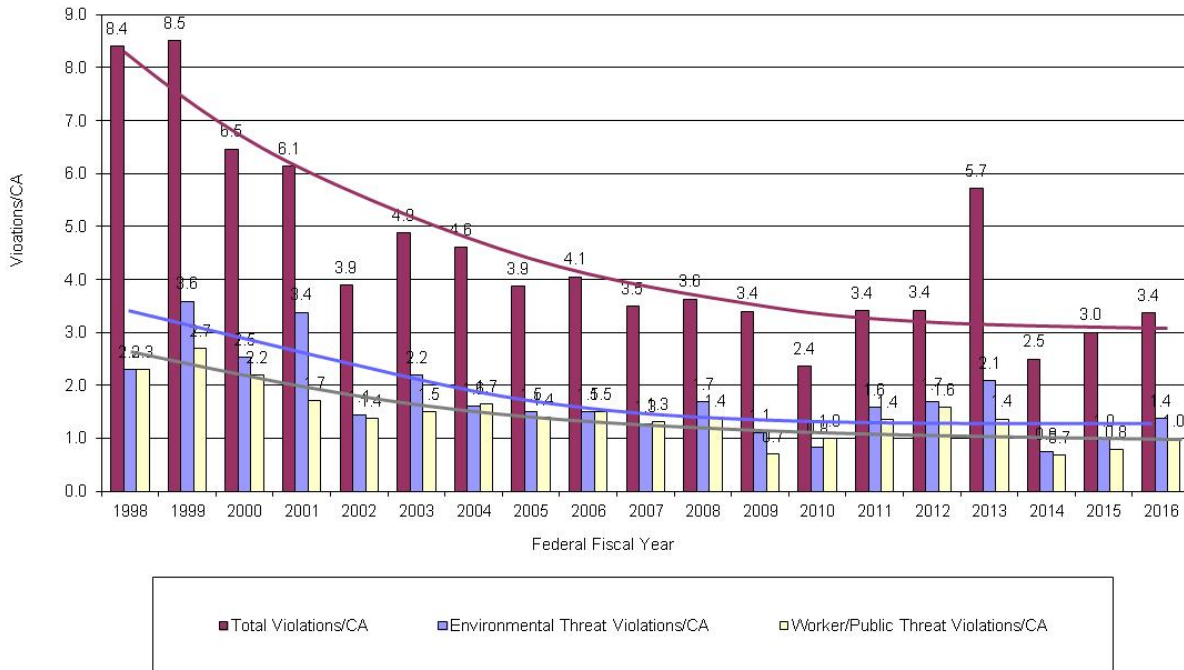


In FY 2016, 263 inspections were conducted. These inspections included 17 at facilities that treat, store or dispose (TSDs) of hazardous waste; 60 of the 143 large quantity generators (LQGs) of hazardous waste, 42 of the approximately 421 small quantity generators (SQGs), and 79 inspections resulting from citizen complaints.

The compliance monitoring and enforcement program also can show that it is effective. SB 00-177 requires that the program’s inspections “focus on major violations of regulations that pose an immediate and significant threat to human health and the environment.” To accomplish this requirement, an annually updated inspection priority system has been developed and is being used to schedule inspections for the 143 large quantity generators of hazardous waste. Figure 3 shows that this prioritized emphasis on Colorado’s LQGs is having a demonstrable effect. The taller maroon bars on Figure 3 show that, for those LQG facilities where violations are discovered, the total number of violations has steadily decreased over the last decade. We are finding fewer problems at these important facilities. In addition, Figure 3 (the shorter blue and yellow bars) and Figure 4 demonstrate that violations of regulatory requirements that have a direct relationship to environmental impacts and/or worker and public health impacts also have declined.

**FIGURE 3**

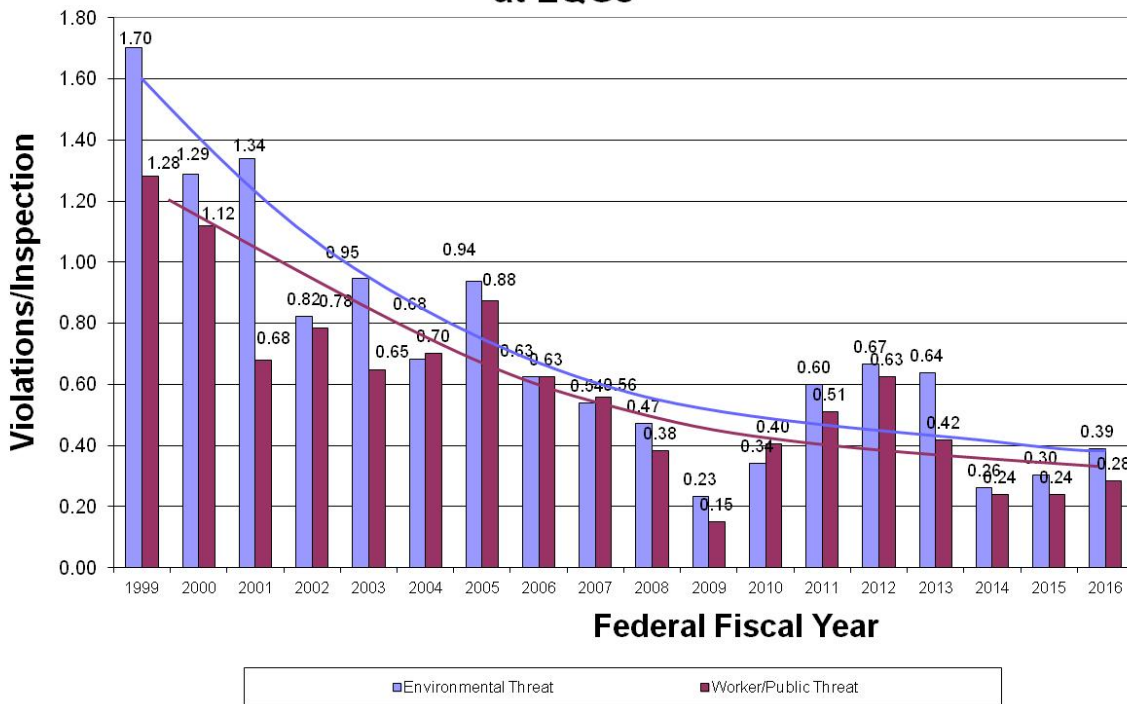
**LQGs - # of Violations Per Compliance Advisory**



**FIGURE 4**

**Environmental Threat Violations and  
Public/Worker Health Threat  
Violations per Inspection**

**at LQGs**





For a long time, we could not show a similar improvement in compliance rates for the approximately 421 small quantity generators (SQGs) of hazardous waste in Colorado. We believed the reason was that trying to hold this large universe of facilities in compliance with no more than a 20 percent per year inspection rate could not be effective. There are simply too many facilities to be effectively regulated in an inspection/enforcement mode with a small inspector staff. To solve this problem, we implemented a self-certification program for SQGs.

2016 represents the tenth year of mandatory SQG self-certification and the eighth year of mandatory dry cleaner self-certification. Figure 5 shows that, in 2016, 434 SQGs and 152 dry cleaners were asked to self-certify. In 2013, we added a self-certification program for all long-term care facilities in Colorado. This program is aimed at ensuring that the waste pharmaceuticals generated by these facilities are properly managed and dispositioned.

Each year the division performs a statistically significant number of random follow-up inspections of the self-certified facilities to ensure data accuracy and to learn what regulations continue to be misunderstood or wrongly implemented by the regulated community.

**FIGURE 5**  
**Self-Certification Program**

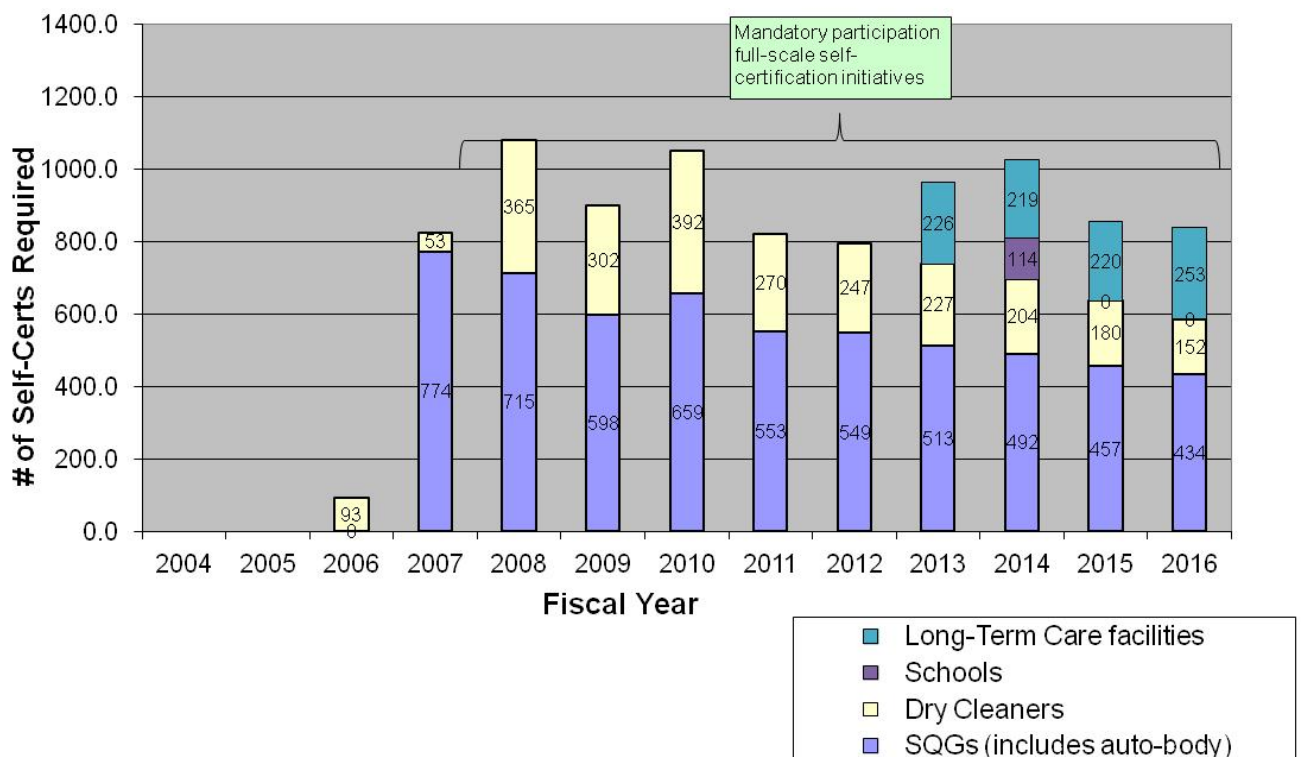
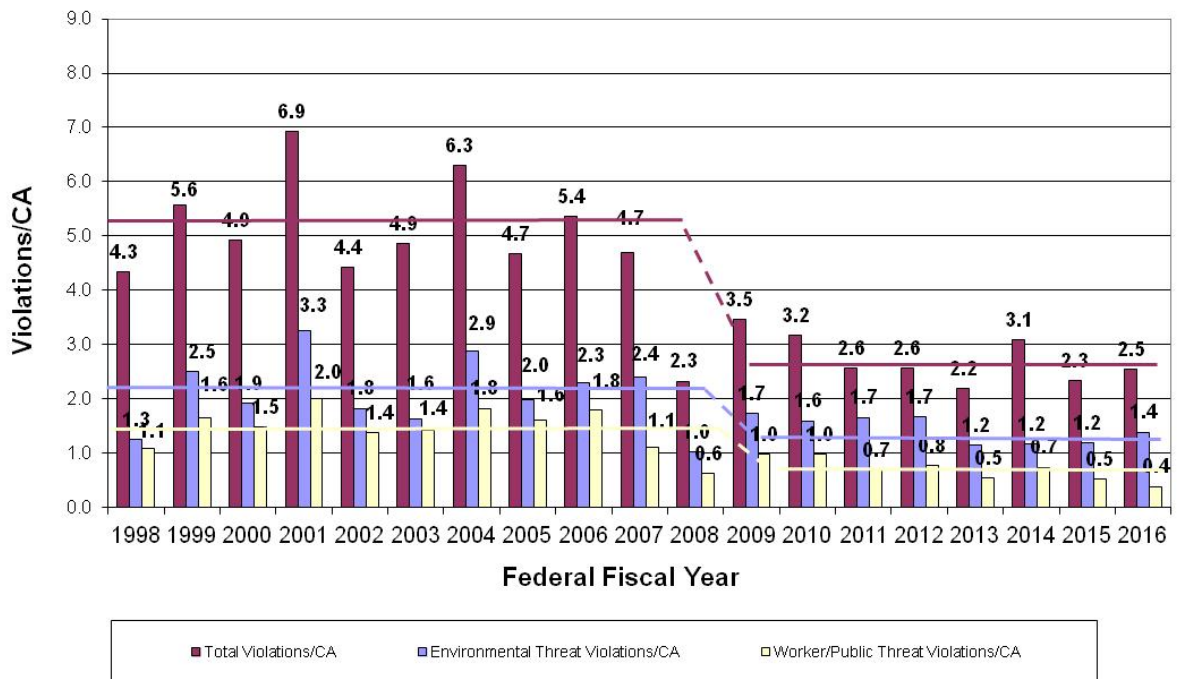


Figure 6, below, provides the same information for SQGs that is presented for LQGs in Figure 3. Figure 6 demonstrates that the self-certification program has had a measureable effect on the number of violations at SQGs. When Figures 5 and 6 are compared, it is clear that, beginning in 2008, the first year that random follow-up

inspections were performed by our staff, fewer violations were discovered at SQGs — in fact, about half as many as in previous years.

**FIGURE 6**

**SQGs - # of Violations per Compliance Advisory**



We can measure the improving compliance rates at SQGs in other ways as well. Within our self-certification compliance data, we can compare compliance rates over time for each individual regulatory requirement. To summarize this data, here are two important compliance improvements attributable to our self-certification program:

1. In 2008 there were 10 regulatory requirements where non-compliance exceeded 10 percent. By 2011, just three years later, no regulatory requirement had a non-compliance rate exceeding 10 percent.
2. In 2008, only 31 percent of facilities were found to be in complete compliance (no violations). In 2009 and 2010, that number had increased to 53 percent and 62 percent respectively. By 2011, this level had increased to an impressive 84 percent.

As a side-note: The self-certification process is entirely Internet-based and electronic for those facilities that want to self-certify electronically. This feature is a time saver for them, and allows us to directly download their submittals into our database.

The advantages of the self-certification program are that: 1) we get 100 percent coverage of those groups that are required to participate rather than the approximately 20 percent coverage we get through traditional inspections; 2) each facility in that group gets “re-trained” and re-acquainted with the regulatory requirements each time they certify their compliance (and lack of familiarity with the

regulations has been a major problem); 3) we can target compliance assistance to problem areas; and 4) compliance rates improve.

It should also be noted that, although we believe self-certification will allow us to better regulate all of our facilities, it has required a significant investment of our very limited resources. We have assigned two FTE to the self-certification projects. This allocation is equivalent to a 43 percent reduction in the number of inspectors working in the traditional enforcement mode, but we believe this reassignment is actually a better expenditure of resources because it is measurably improving compliance rates within the regulated community.

In addition to the self-certification program, the division has continued the generator assistance program, or GAP. This program is aimed at small businesses, although any business may participate. GAP offers businesses an on-site evaluation of their hazardous waste management practices and suggests ways to improve and/or come into compliance. In addition, GAP offers assistance with waste minimization and pollution prevention strategies. Any findings of non-compliance during a GAP site visit are given enforcement amnesty so long as the violations do not cause an immediate danger to human health or the environment, and the facility expeditiously corrects the problems. The division performed 19 GAP compliance assistance site visits in 2016. The program has its own website: [www.colorado.gov/cs/Satellite/CDPHE-HM/CBON/1251623315173](http://www.colorado.gov/cs/Satellite/CDPHE-HM/CBON/1251623315173).

## **Corrective Action**

Corrective action, which is the environmental remediation and clean-up portion of the Hazardous Waste Program, continues to be a substantial part of the program's workload. The corrective action staff oversees the remediation and cleanup of more than 400 individual facilities ranging in size from large facilities such as Fort Carson and Lockheed-Martin to very small facilities like neighborhood dry cleaners and plating shops. The program is tightly managed and has performed significantly better than the national average.

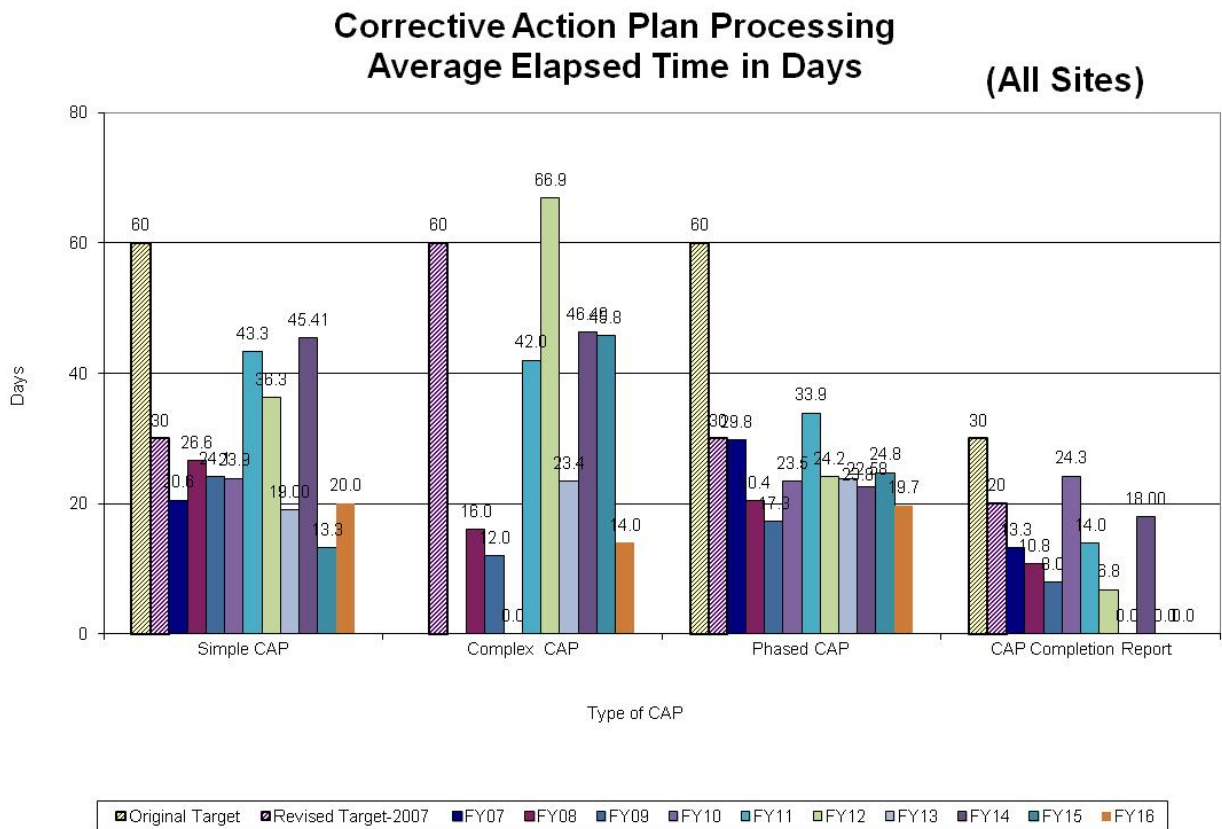
The corrective action program makes extensive use of corrective action plans (CAPs), a regulatory mechanism for initiating corrective action at facilities where it is needed without the need for extensive enforcement. Without CAPs, oversight of environmental clean-up activities would require either a hazardous waste permit or a compliance order. Both of these processes are lengthy and resource-intensive for facilities that only need to conduct clean-up activities. A facility may submit a CAP which, once approved, is enforceable as either a permit or an order. Using the CAP approach is voluntary for the facility, but it can be implemented much more quickly than either of the other mechanisms and requires fewer facility and program resources. A popular mechanism among industries that are regulated by the department, it has streamlined the program substantially.

Guidelines have been put in place for level of effort and total elapsed time associated with reviewing documents submitted under corrective action plans. These guidelines have been useful to both managers and staff in assessing our efficiency, and the program has been successful in meeting its targets. Figure 7 shows the average total elapsed time (from document submittal by a facility to division review and feedback

to a facility) as compared to the target levels for various document types. This graph presents the average number of days that elapse between when our staff receives a document from a regulated facility and when we return correspondence to the facility approving, disapproving or approving the document with conditions. Figure 8 shows similar information for the actual review time (actual hours spent by division staff reviewing each document). Figure 8 presents the average number of hours that our staff charge to regulated facilities for each type of document. Figure 7 is meant to measure our timeliness, while Figure 8 measures our efficiency and efforts to keep the cost to regulated entities for our work as low as possible.

The FY 2016 data on Figures 7 and 8 show that program staff continue to perform with high efficiency — both compared to the targets in each category, and when compared to past years. In fact, on both of these graphs, we have presented revised targets for FY 2007 and beyond. Most of these revised targets are substantially less than the original targets and are more challenging to meet.

**FIGURE 7**



**FIGURE 8**

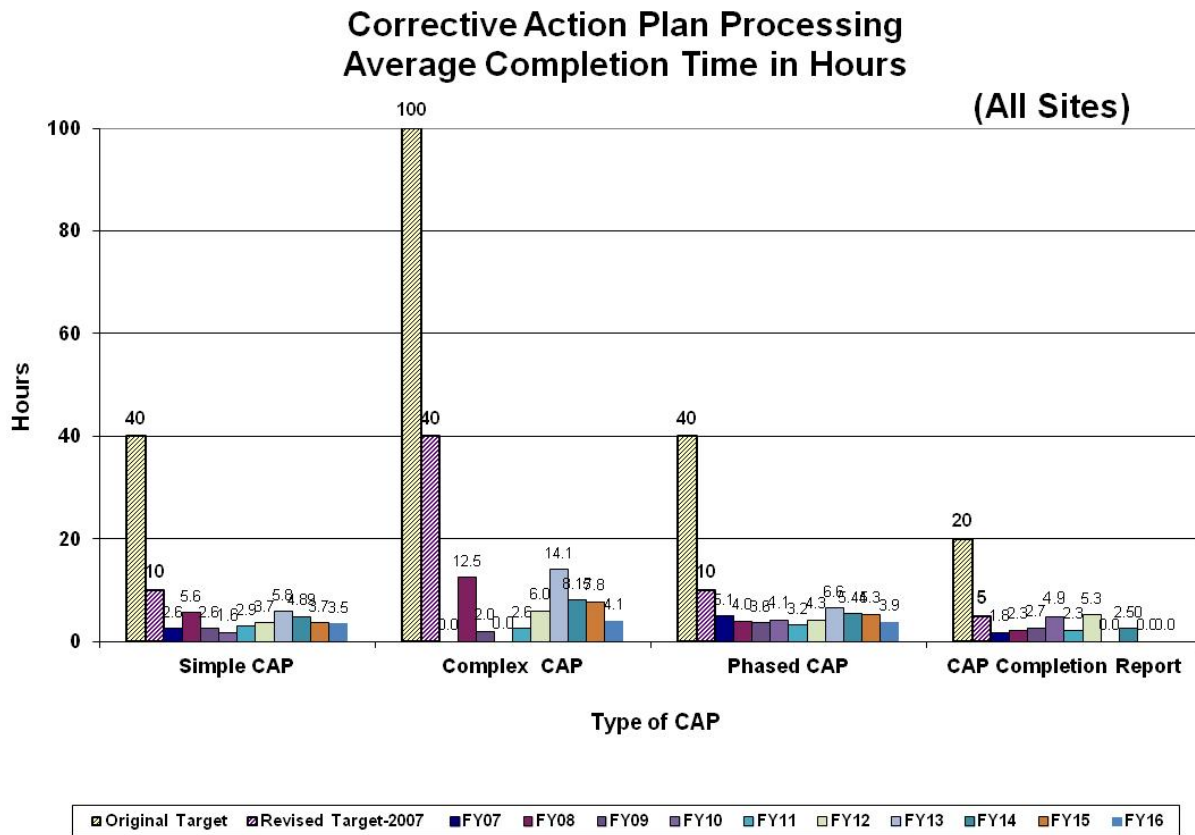
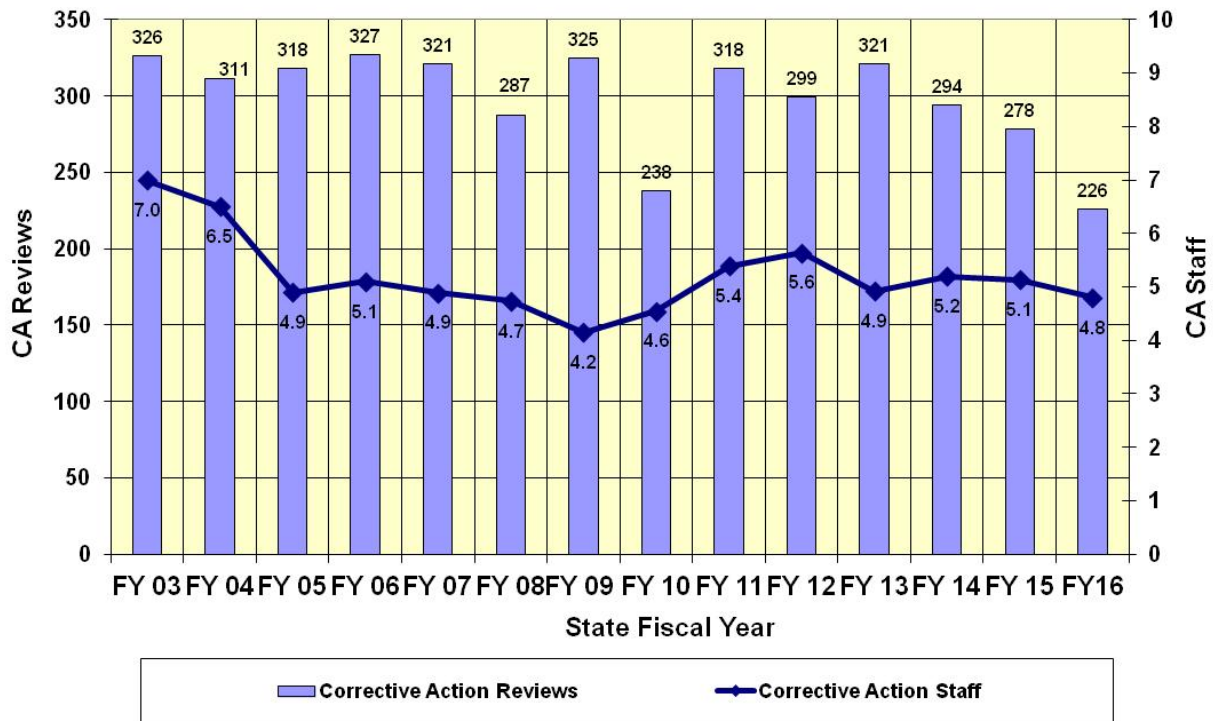


Figure 9 compares the number of corrective action reviews completed with the number of corrective action staff, and Figure 10 shows the number of plan or report approvals per FTE over several years. When Figures 7 through 10 are considered together, the information demonstrates that staff efficiency continues to be very high. The workload has been fairly constant, and independent of economic trends. And, many of the facilities still doing corrective action are the complicated and technically demanding cases — the easy ones are done.

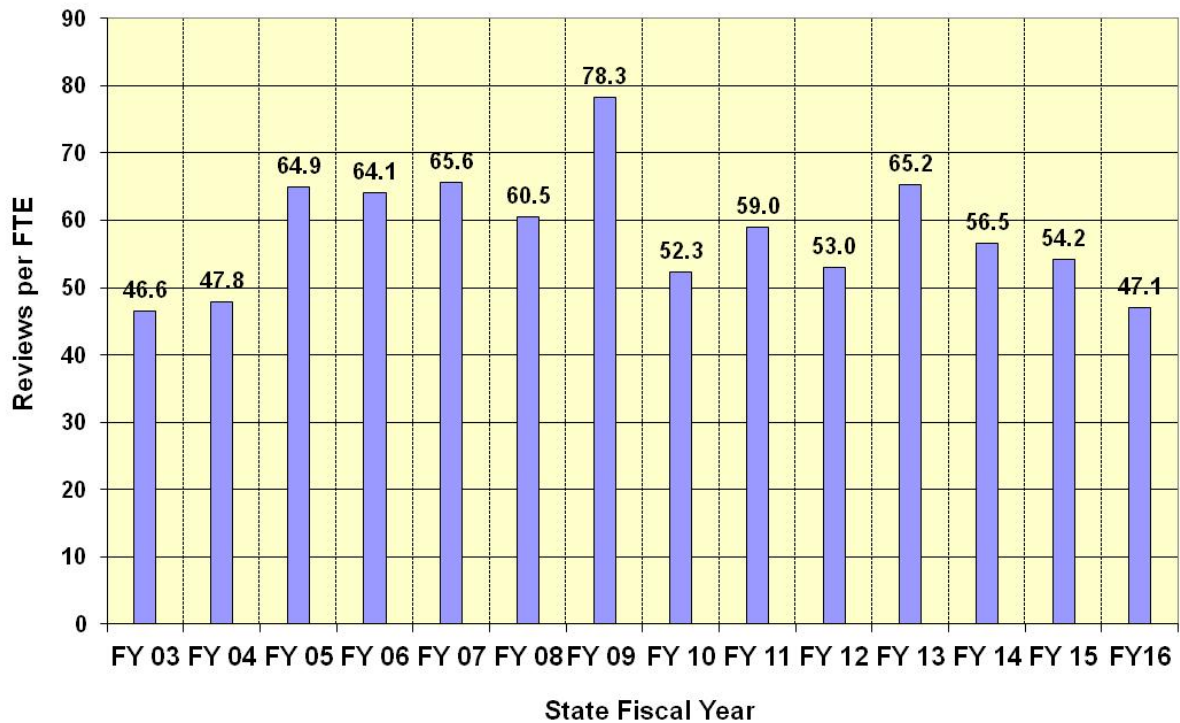
**FIGURE 9**

**Corrective Action Reviews and Staff Levels**



**FIGURE 10**

**Corrective Action Reviews per FTE**



A significant factor in the time it takes staff to review a clean-up document is the overall quality of the document that is submitted for review. Document quality has improved in recent years due to several factors. The first improvement is the regulated community's use of the department's Corrective Action Guidance Document, which presents clear corrective action goals, expectations and strategies that focus on flexibility and environmental results. One of the most-often used elements of this guidance is a description of a process whereby risk-based methods allow for the reclassification of contaminated media from a hazardous waste to a solid waste, thereby reducing disposal costs and promoting more thorough cleanups. The second improvement involves early and more frequent communication between program staff and the regulated community, resulting in the resolution of difficult issues before they have the opportunity to become obstacles to completing necessary work. Improved communication promotes trust, and a collaborative approach to cleaning up sites. Striving for common objectives leads to the development of work plans that are more easily approved.

One of the expectations expressed by the General Assembly in SB 00-177, as part of streamlining the corrective action process, was that the Hazardous Waste Control Program should use enforceable institutional controls and consider such controls in determining clean-up standards. A serious concern for the program at the time was lack of any authority to enforce institutional controls. That problem was resolved with the passage of Senate Bill 01-145. This bill created an environmental covenant, which provides a mechanism for property owners to establish certain restrictions or conditions for their properties, and for those restrictions or conditions to be enforceable by the Colorado Department of Public Health and Environment. Since then, the Hazardous Materials and Waste Management Division has begun to approve long-term clean-up plans that rely on environmental covenants to manage risks associated with residual contamination, thereby avoiding the difficulty and expense of remediating sites down to unrestricted-use levels. To date, accomplishments include:

- A registry of sites has been created as required by the statute. Currently, there are 146 sites on the registry, with 48 of those being hazardous waste sites. Several others are in process and will be added soon.
- The Colorado Attorney General's Office has developed model covenant language.
- The Hazardous Materials and Waste Management Division's Geographic Information System (GIS)-based map Web page has been implemented; the sites with covenants have been included, with a link to the actual covenant document. This tool allows the public to have access to the information.
- After meeting with several local governments to discuss communication and implementation issues, the Hazardous Materials and Waste Management Division has drafted and made available to the public a guidance document on what covenants are, the opportunities they offer, what is needed to create a covenant, and the tracking and notification responsibilities of the state and local governments. This guidance document, along with other covenant related support documents, is available on the division's Web site.
- Program staff and staff from the Attorney General's Office (AGO) have developed a policy describing when the covenant should be finalized within the clean-up process so that remedies cannot be compromised through subsequent property transactions.

- In 2008, via passage of SB08-037, the environmental use restriction was added to the statute as a second mechanism to ensure long-term control of residual risks. Federal facilities throughout Colorado were unwilling to enter into environmental covenants because the federal government feared the covenants represented interest in real property. Rather than litigate the issue, Colorado worked with the federal entities to develop the environmental use restriction as a mechanism that federal entities could agree to, thereby accomplishing long-term control of contaminated sites equivalent to that afforded by environmental covenants.

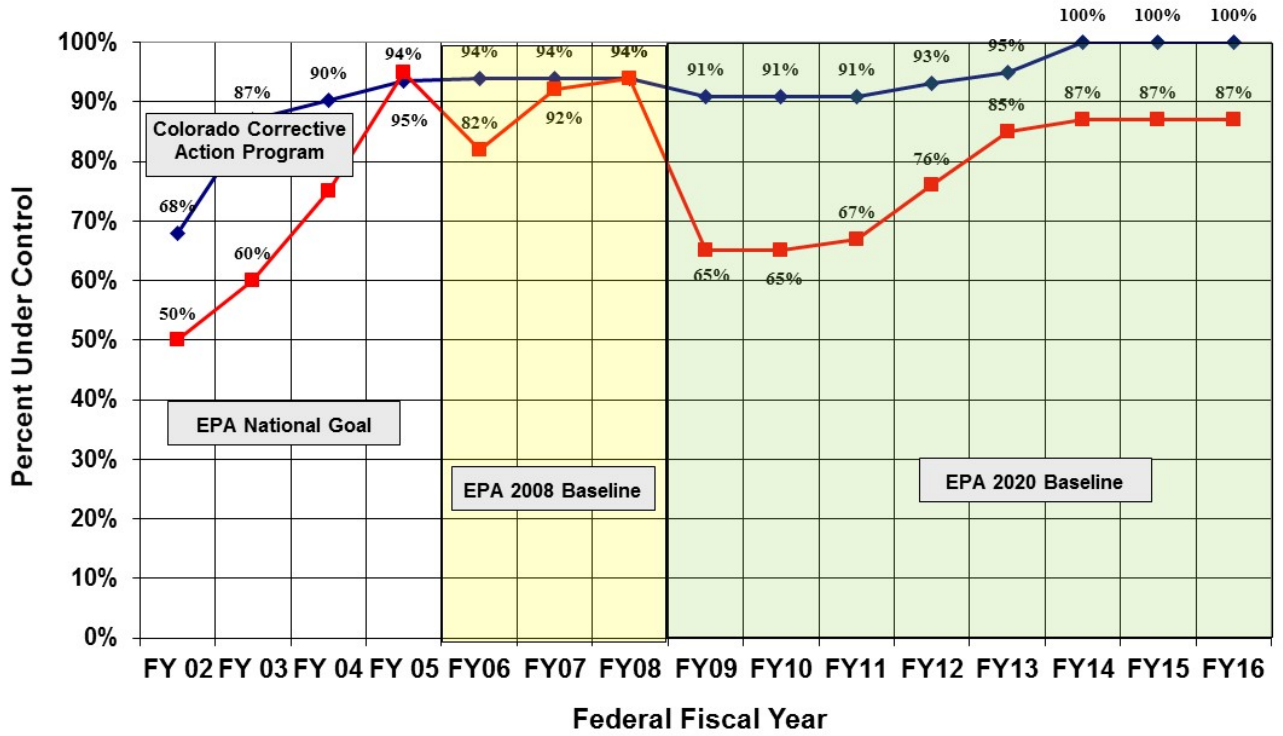
The Hazardous Waste Control Program also continues to be a leading contributor to national efforts to streamline the corrective action process through active participation in the Interstate Technology and Regulatory Cooperation Work Group (ITRC). State regulators lead this national organization to streamline regulatory approval processes for applying innovative technologies to environmental cleanup.

To measure corrective action effectiveness, the U.S. Environmental Protection Agency established two national environmental indicators in 1999. These indicators measure the hazardous waste corrective action program's progress on risk containment at contaminated facilities. This approach was established as part of the Government Performance Results Act (GPRA), and measures "Human Exposures Under Control," and "Ground Water Releases Under Control" at a defined group of high-priority facilities around the country. Colorado currently has 44 of these high-priority facilities. Figures 11 and 12 show the department's efforts and progress. Because these indicators are useful for showing risk mitigation at our sites, our program will continue to measure progress on these indicators. It is noteworthy that there were only 31 facilities in the tracking group from FY 2000 through FY 2005. EPA added two facilities in FY 2006, bringing Colorado's total to 33 facilities. In FY 2009, EPA added another 11 facilities, bringing Colorado's total to 44 facilities. EPA's addition of facilities in Colorado and around the nation accounts for the dip in EPA's national goals in FY 2006 and FY 2009.



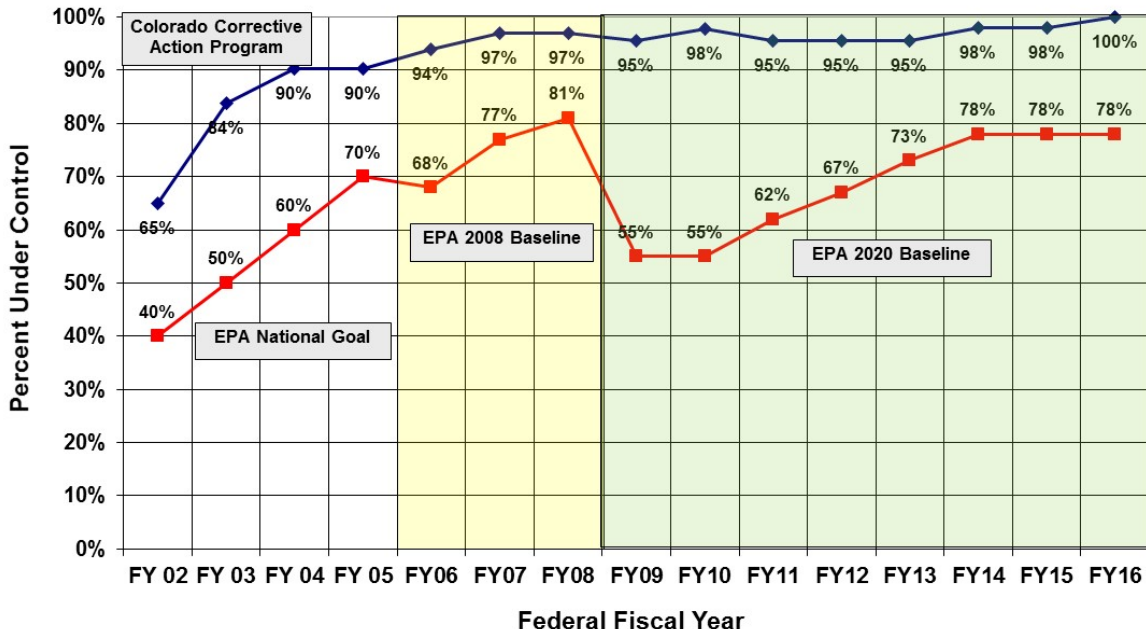
FIGURE 11

### Human Exposures Under Control - CA725



**FIGURE 12**

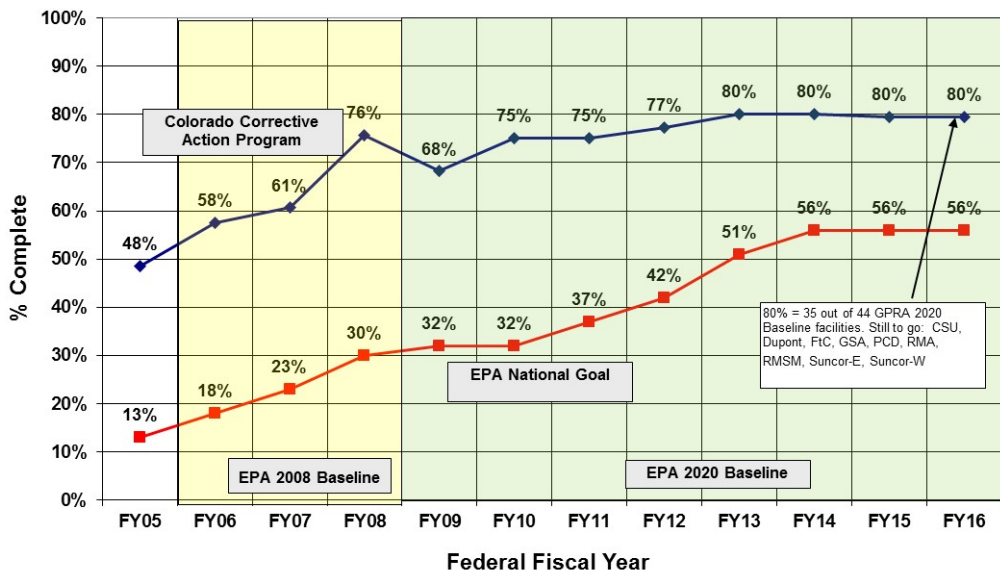
**Ground Water Releases Under Control - CA750**



Beginning in FY 2006, EPA established an additional GPR indicator to measure progress toward completing cleanups: The percentage of high priority sites where the final remedy has been completely constructed. As shown in Figure 13, our corrective action program is running well ahead, and is projected to remain well ahead, of the national targets for this measure because of the good work by staff and management over the last few years.

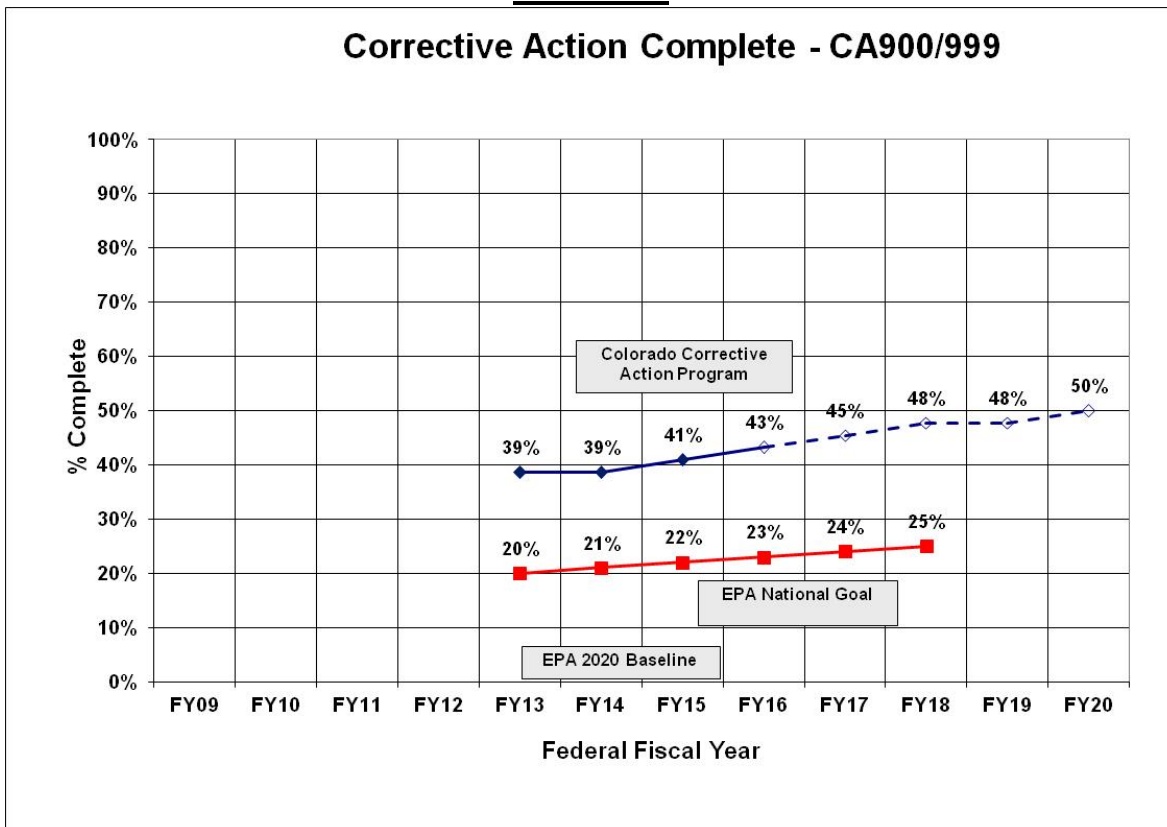
**FIGURE 13**

**Remedy Constructed - CA550**



Beginning in FY2013, EPA established a fourth GPR A indicator to measure further progress towards completing cleanups: The percentage of high-priority sites where the final remedy and all cleanup has been completed across the entire facility. Progress on this indicator shows on Figure 14. Again, we are well ahead of EPA’s national goal.

**FIGURE 14**



Figures 11 through 14 already include projected information for FY 2016 showing that we expect to remain ahead of EPA’s target, particularly for the new CA550 indicator.

## Permitting

Facilities that manage hazardous wastes in a manner that requires permitting by the Colorado Hazardous Waste Program are referred to as treatment, storage or disposal facilities (TSDs). At present, there are 22 of these facilities in Colorado - seven are active and required to have an operating permit, the remaining 15 require a post-closure permit or equivalent enforceable document. Colorado has operating permits in place for all seven of operating facilities (100 percent) and for 49 of the 50 individual sites on those facilities (98 percent) — see Table 1 below. The only unpermitted unit is at the Pueblo Chemical Depot, and comprises the 94 chemical weapons storage igloos (considered a single “unit”). We do not plan to permit these igloos, but rather to regulate them under a compliance order until they are emptied and closed by the Army under its Chemical Demilitarization Program no later than 2021.

The other 15 TSD facilities in Colorado are no longer actively managing hazardous waste, but have left waste or contamination in the ground. These facilities require post-closure care or monitoring controls. For those facilities that do not require

permits for any other aspects of the facility, the “post-closure compliance order” is a more efficient approach than a post-closure permit. As of FY2016, Colorado has post-closure controls in place at all of the units at these facilities — see Table 1. The Rockwool facility in Pueblo achieved post-closure controls in place this year with the issuance of a restrictive notice for the property. This facility has no viable owner or operator. We have been inspecting and sampling this facility for many years to ensure it remains protective of the public and the environment.

**TABLE 1**

<b>Table 1 - Permit Status for Colorado TSDs Needing Controls</b>			
<b>TSD and Unit Categories</b>	<b>Post-Closure Controls</b>	<b>Operating Permits</b>	<b>Totals<sup>1</sup></b>
Facility Level measures for Baseline Universe:			
TSDs	15	7	22
TSDs with all units controlled at start of 2016	14	7	21
TSDs with all units controlled in 2016	1	0	1
TSDs with all units controlled at end of 2016	15	7	22
Facility Level Percentage	<b>100%</b>	<b>100%</b>	<b>100%</b>
Unit Level measures for Baseline Universe:			
Units	25	50	75
Units with controls in place at start of 2016	24	49	73
Units with controls placed during 2016	1	0	1
Units with controls in place at end of 2016	25	49	74
Unit Level Percentage	<b>100%</b>	<b>98%</b>	<b>99%</b>

<sup>1</sup> Total numbers may differ from the sum of the 3 columns because some facilities have more than one type of unit.

Several program staff are assigned to one project that requires extensive hazardous waste permitting — the Chemical Demilitarization facility at the Pueblo Chemical Depot for the destruction of the chemical weapons stored there. This is a very significant project for the program and will remain so for about the next 7 years. Significantly, construction began on this project in FY 2008 and the final construction permit for the facility was issued by HMWMD in early FY 2009. The facility completed construction in 2016, and has moved into test-out operations, which involves treatment of a number of mustard munitions to demonstrate that facility can operate effectively in compliance with the regulations. Over 8400 hazardous waste mustard munitions were treated and destroyed at the facility in 2016. Further permitting under a Part B operating permit will be needed before the facility can commence full-scale operations — expected to begin in -CY 2017.

The program continued its participation in the national Interstate Technology and Regulatory Council (ITRC). This group supports an initiative to streamline the permitting process to reduce regulatory barriers associated with innovative technologies. The approval of these technologies typically involves some version of a permitting process.

## Information Management

The division continues to make a substantial effort to improve data evaluation and turn it into useful information. Some of the data presentations in this report are a continuing part of that effort. Internally, the division has been able to develop a data management system that has enabled effective tracking of all inspections and any related enforcement actions; and to retrieve reports that provide managers with an up-to-date overview of cases. This information allows the division to use program resources more effectively to accomplish the highest priority activities.

The division also is able to track how much time and effort is spent on different aspects of work. Improvements in the billing system allow tracking of staff time spent on review of a specific document. This capability improves managers' ability to identify areas that are consuming significant amounts of time, and facilitates decision-making about appropriate improvements. It also improves the division's accountability to those paying fees by better identifying how the money they pay is used.

Data management is an important issue for EPA in the national hazardous waste program. Because most states are authorized to implement most of the hazardous waste program, EPA's management of national data is very complex. Colorado has advanced beyond many states in its ability to manage such information and, as such, Colorado was invited to participate on the National Design Team for EPA's national hazardous waste data system (RCRAInfo). Program staff has been participating on two national workgroups associated with this effort.

Of note, in FY 2014, we embarked on a significant data system and database upgrade. This upgrade will move us to a Visual Basic interface with an underlying SQL database. This project enables us to migrate our data to current platforms and leave behind old FoxPro platforms no longer supported by the department or by industry. This upgrade will cost the Hazardous Waste Program about \$240,000, of which \$200,000 will have to come from fee-funded accounts. This data system and database upgrade is now about 90% complete. System start-up is expected during 2017.

## Maintaining Authorization

One of the key values held by the regulated community, and one of the legislative directives from SB 00-177, was that Colorado "maintains program authorization by the federal government." When EPA authorizes a state for the hazardous waste program, it carefully reviews two aspects of the state program: 1) the state's statutory authorities, funding and staffing, both quantitatively and qualitatively; and 2) the state's regulations. Once the state is authorized, EPA monitors the state program to ensure it is being implemented in a manner that satisfies federal program requirements.

As mentioned early in this report, Colorado was authorized for the base hazardous waste regulatory program in November 1984. In July 1989, federal authorization was granted to Colorado for significant additions to the base program. One major element of that added authority was hazardous waste corrective action, which provided authority to investigate and clean up releases of hazardous waste constituents into

the soil, surface water or ground water at hazardous waste facilities. The basis for EPA's program authorization was adequate statutory authorities (CRS 25-15-101, et seq), adequate funding provided by federal EPA funds and by fees paid by the regulated community, and adequate numbers of staff with adequate expertise.

The other aspect of authorization is EPA approval of our regulations. Currently, the Hazardous Waste Control Program has adopted 100 percent of the necessary EPA regulations; however, EPA has only authorized us for about 91 percent of the regulations. We have no control over the time it takes EPA to review and approve our regulations. However, it does not affect how we implement the program because we implement state regulations even when EPA has not authorized us for equivalency with federal regulations.

### Program Funding

Funding for the Colorado Hazardous Waste Control Program comes from cash fees and an annual EPA grant. The program receives no Colorado General Fund money. Currently, fee revenues fund about 70 percent of program costs, and the EPA grant covers the remaining 30 percent.

Because the EPA grant has remained essentially flat for more than 15 years, the fees have had to be increased several times to cover increasing program costs. Since the passage of SB00-177, the Colorado Solid and Hazardous Waste Commission has increased the fees three times — in February 2003, May 2006 and again in May 2009. The fees also have been decreased twice — in 2011 and 2012. At the beginning of state FY 2015, with the exception of one fee type, the decreased fees were moved back to the fee levels established in 2009. This fee level is projected to be adequate until about October 1, 2018 — the beginning of FY 2019.

**FIGURE 15**

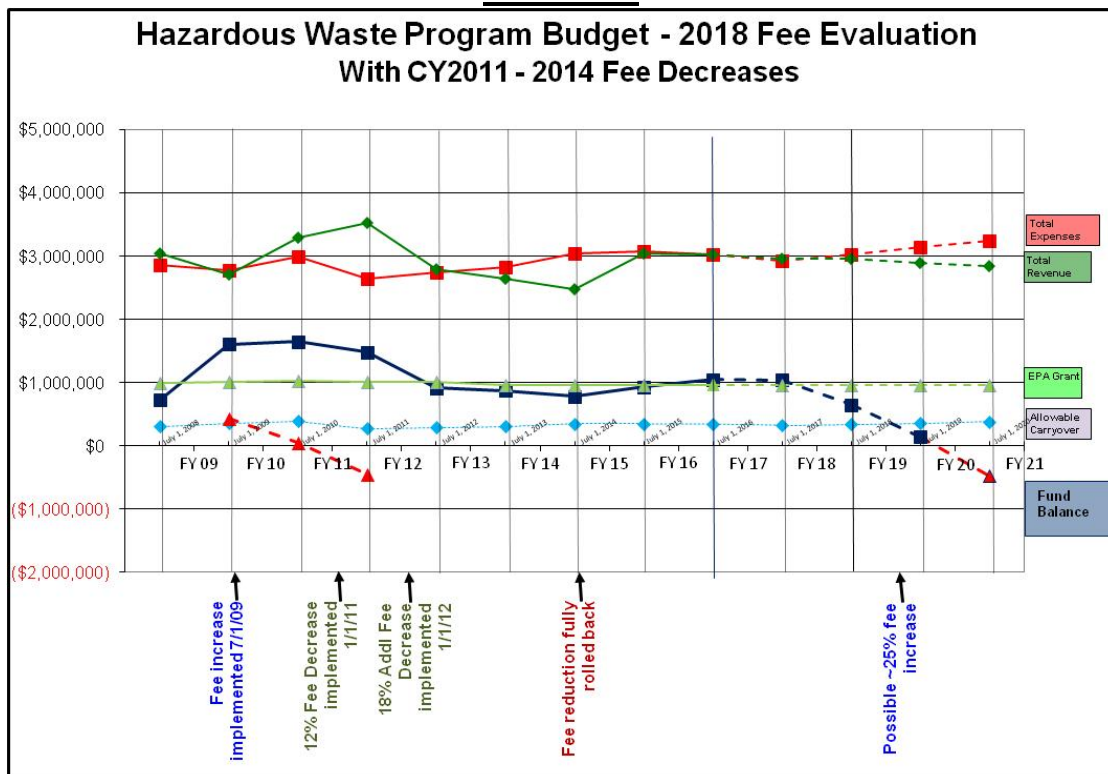
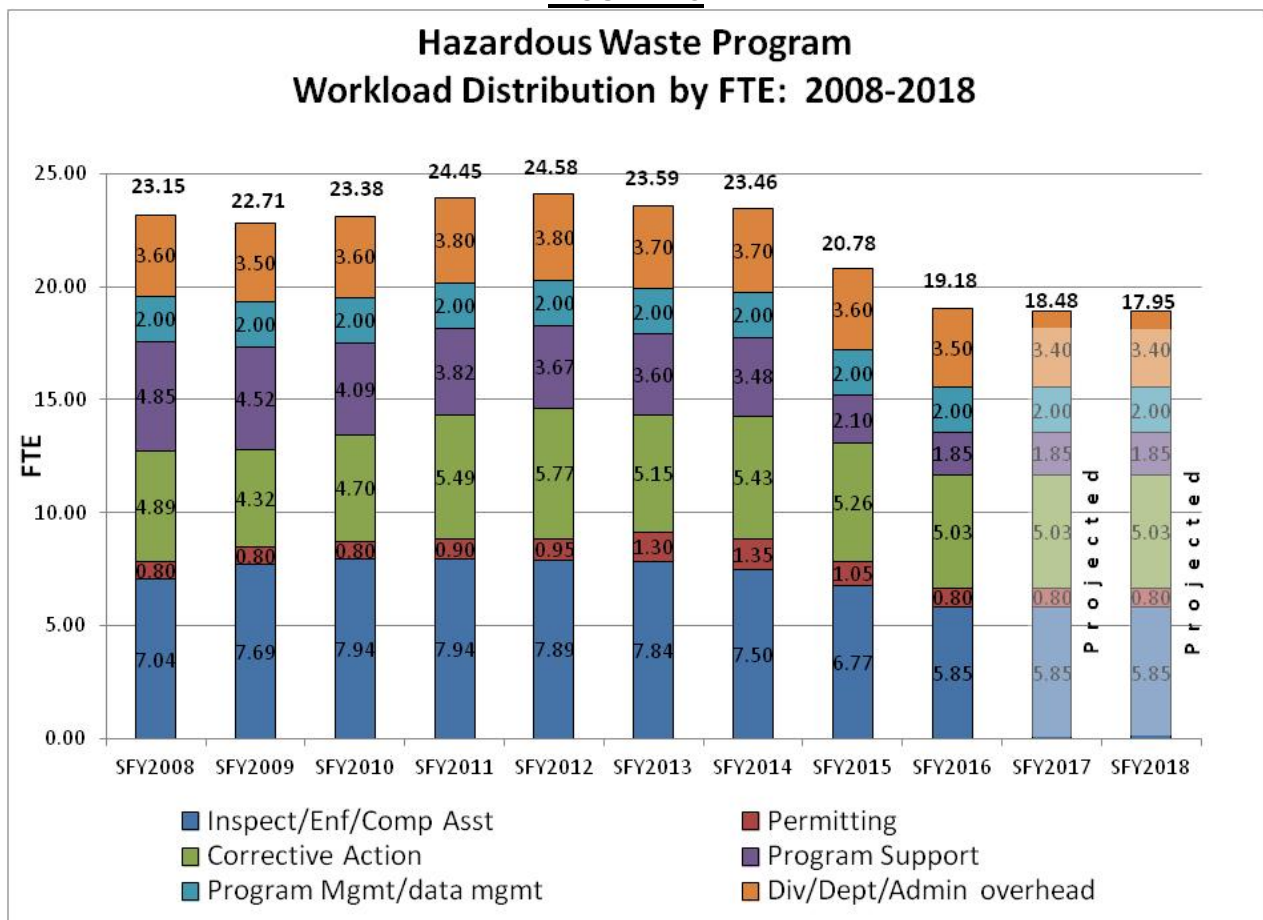


Figure 15, above, tracks the revenue, expenditures and fund balance for the Hazardous Waste Program. The key data lines on Figure 15 are the fee revenue (forest green line near the top), total expenses (top red line) and the cash balance (dark blue line) in the Hazardous Waste Service Fund. The 2009 fee increase and the 2011 and 2012 fee decreases are indicated across the bottom of Figure 15. Also indicated across the bottom is the roll-back of the fee decreases at the beginning of 2015. In addition, this graph shows that, if our projections are correct, we will have to raise fees again at the beginning of FY2019.

This figure shows that the program is striving to balance revenues and expenditures and bring the fund balance to allowable levels during an unpredictable economic period that has made revenue and cost projections very difficult.

It is important to note that staff salaries are the biggest single expense item for the Program. Therefore, managing staffing levels is an important part of managing the Program budget. The Hazardous Waste Program is a mature program. As such, we have seen our workload level off and in some areas begin to decline. Therefore, over the past year, we have begun to take advantages of staff departures to manage our staff numbers down. We will continue to manage our staffing downwards - resulting in significant monetary savings. This has allowed us to push off the next projected fee increase by more than two years without compromising program effectiveness. Figure 16, below, illustrates how our staffing decreased through FY2016. We expect now that staffing will remain relatively constant for the next several years.

**FIGURE 16**



## SB 00-177 Summary of Requirements

The division's successes in maintaining efficiency are clearly presented in this report. Significant improvement has occurred and is continuing to occur in an effort to further improve efficiency and reduce costs.

The following table presents a summary of the requirements of SB 00-177 and the program's efforts and activities to comply with each requirement. This table is intended to augment, but not replace, the presentation of information earlier in this report.

SB 00-177 Statutory Requirement Referenced section of the Colorado Revised Statutes (CRS)	Hazardous Waste Program Response
25-15-301.5(1)(a) Maintain authorization from EPA.	The program has adopted 100 percent of the federal regulations or the equivalent requirements and is now 91 percent authorized by EPA, and has promulgated additional "optional" EPA rules. For the last several years, EPA has rated all aspects of the program very highly in its annual review. There is no concern at this point with maintaining program authorization from EPA.
25-15-301.5(1)(b) Promote community ethic to reduce or eliminate waste problems.	The program has worked hard on three fronts to accomplish this requirement: 1) our inspectors frequently work with hazardous waste generators to reduce their waste generation through process improvements, waste minimization, and better waste characterization; 2) the program places a high priority on investigating citizen complaints; and 3) the program makes itself available through the technical assistance telephone line and technical trainings provided around the state.
25-15-301.5(1)(c) Is credible and accountable to industry and the public	The program endeavors to maintain credibility and accountability through 1) a high-volume, high-efficiency prioritized inspection program that maintains compliance and a level playing field; and 2) a high-efficiency corrective action program that meets or exceeds its commitments to the regulated community.
25-15-301.5(1)(d) Is innovative and cost-effective	This report presents the program's progress and accomplishments in becoming cost-effective and efficient. It also presents our commitment to, and implementation of, innovative approaches.
25-15-301.5(1)(e) Protects the environmental quality of life for impacted residents per the regulations	Our success in this requirement can be ascertained by considering our success in all of the other aspects of the program.
25-15-301.5(2)(a) Develop, implement and continuously improve policies and procedures for statutory responsibilities at lowest possible costs.	After SB 00-177 passed, the program set up numerous performance goals. This report presents our success in meeting those goals. In some cases, the program has performed so well against the original metrics that they have been revised to push for continued improvement.
25-15-301.5(2)(b) Establish cost-effective level-of-effort guidelines for performing inspections that focus on major violations of regulatory	The program has included goals in each inspector's performance plan for the number of inspections expected and for the timeliness of



SB 00-177 Statutory Requirement Referenced section of the Colorado Revised Statutes (CRS)	Hazardous Waste Program Response
requirements that pose risk to human health and the environment.	administrative duties associated with each inspection. These goals have been modified upwards several times over the last few years as inspector experience and efficiency improved. This report shows the program's progress on violations associated with risks to human health and the environment.
25-15-301.5(2)(c)(I) Streamline the corrective action process through cost-effective level-of-effort guidelines for site investigations and remediation that focus on result-based outcomes and performance-based oversight by the department.	After SB 00-177 passed, the program set up numerous performance guidelines in the corrective action program. This report presents our success in meeting those goals. Part of the success in meeting these guidelines is the transition to performance-based corrective action. Cleanup targets — not numbers of samples, now define most of our cleanups.
25-15-301.5(2)(c)(II) Streamline the corrective action process through cost-effective level-of-effort guidelines for reviewing site investigation reports and corrective action plans.	See above response to 25-15-301.5(2)(c)(I)
25-15-301.5(2)(c)(III) Streamline the corrective action process through the use of enforceable institutional controls.	This requirement was significantly enhanced when the General Assembly passed SB 01-145, which established environmental covenants. Since passage of this bill, which the program helped draft, the program has utilized environmental covenants that enforce the institutional controls to protect human health and the environment in every remedy where they are included.
25-15-301.5(2)(c)(IV) Streamline the corrective action process through realistic clean-up standards that address actual risk to human health and the environment on a site-specific basis and account for institutional controls.	The program has developed generic soil clean-up standards for the more common contaminants and exposure scenarios, thereby relieving parties performing cleanups the expense of having to hire a risk assessor to perform this work for them. We have updated these tables several times. The equations used to calculate the standards are on the department's website for interactive use so individuals may calculate clean-up levels themselves. The department allows the use of risk-based soil cleanup numbers developed by other states or the EPA. Facilities have always had other options: 1) the flexibility to calculate site-specific cleanup standards of their own if they so choose, which factor in specific conditions and documented exposure assumptions; 2) using an environmental covenant to allow greater levels of contamination to remain behind following cleanup, achieving similar levels of protection through property use controls; or 3) seeking waivers to established state ground water standards through the Water Quality Control Commission, to allow increased levels of contamination to be left at a site. The program is now considering use of alternate concentration limits (ACLs) for ground water contamination at contaminated sites that meet certain criteria.

SB 00-177 Statutory Requirement Referenced section of the Colorado Revised Statutes (CRS)	Hazardous Waste Program Response
25-15-301.5(2)(d) Establish cost-effective level-of-effort guidelines for enforcement activities.	The program has significantly improved the efficiency and cost-effectiveness of enforcement activities over the last several years and we operate under timeliness guidelines established in the program's Enforcement Response Policy. However, because of the importance of quality workmanship in enforcement actions, and because each action is very site- and violation-dependent, the program has not established firm level-of-effort guidelines. To meet our timeliness goals, though, the level of staff effort on any given enforcement action must remain at or below certain metrics.
25-15-301.5(2)(e) Establish schedules for timely completion of department activities including submittal reviews, inspections, inspection reports, and corrective action activities.	The program has established and is routinely meeting and exceeding the timeliness guidelines that have been established for these activities and other activities.
25-15-301.5(2)(f) Establish a prioritization methodology for completing activities that focuses on actual risk to human health and the environment.	The body of this report explains how priority schemes are used in setting inspection schedules. For corrective action, this report also presents results for the Government Performance and Results Act (GPRA) high priority clean-ups.
25-15-301.5(2)(g) Establish a preference for compliance assistance with at least 10 percent of the annual budget amount being allocated to compliance assistance efforts.	Earlier in this report, we present the percentage of staff time and budget that is spent on compliance assistance activities (12.6 percent in FY 2016). We also discuss all of the innovative compliance assistance work being done by the program.
25-15-301.5(2)(h) Establish a preference for alternative dispute resolution mechanisms.	The department already has established this preference. In recent years, the program has not had many disputes.
25-15-301.5(2)(i) Establish a mechanism that continually values and provides incentives for further improvements in the program's policies and procedures.	The department and division have vital rewards and recognition programs whereby process improvements or innovative ideas can be, and will be, rewarded.
25-15-301.5(3) Submit an annual report to the General Assembly by February 1 <sup>st</sup> of each year.	This report is the 17th annual installment of the program's efforts to meet this requirement.

## CONCLUSIONS

As discussed in this report, the Hazardous Materials and Waste Management Division has implemented and is maintaining significant improvements to the Hazardous Waste Control Program to satisfy the expectations set out by SB 00-177 (Section 25-15-301.5, C.R.S). This report explains how each of these statutory expectations has been met:

- 1) Maintaining program authorization by the federal government (EPA);
- 2) Maintaining a program that is credible and accountable;
- 3) Maintaining a program that is innovative and cost-effective;
- 4) Developing level-of-effort guidelines for inspections, enforcement and corrective action;
- 5) Streamlining the corrective action process;
- 6) Prioritizing activities based on risk; and

7) Emphasizing compliance assistance efforts.

Efforts undertaken by the Hazardous Waste Control Program, have significantly improved both the efficiency and effectiveness of the program. Major program accomplishments include:

- Continuing our emphasis on innovative compliance assistance projects;
- Maintaining high inspection efficiency and corrective action efficiency;
- Maintaining high timeliness of enforcement actions;
- Developing and meeting level-of-effort and total-time guidelines for reviewing corrective action submittals; and
- Exceeding national goals set by the U.S. Environmental Protection Agency for corrective action, permitting, inspections and enforcement.

Further efforts will continue in order to improve the Hazardous Waste Control Program. The generator fees authorized by SB 00-177, and adjusted by the Colorado Hazardous Waste Commission upward in 2003, 2006, 2009 and 2014 and downward in 2010 and 2012, have stabilized revenue to the program. When combined with already implemented efficiency improvements, these fees should provide adequate funding for the program through FY 2018. Another fee increase will be necessary on or about October 1, 2018, the beginning of FY 2019.