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Superfund Accelerated Cleanup Model

SUMMARY OF
REGIONAL PILOT PROJECTS

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TABLE OF CONTENTS

BACKGROUND

IN AN EFFORT TO SPEED AND MAXIMIZE CLEANUP OF the worst sites first, the Environmental Protection Agency (EPA) developed the Superfund Accelerated Cleanup Model (SACM). SACM streamlines the Superfund process so hazardous waste sites can be addressed quicker and in a more cost effective manner. EPA Regional offices developed a number of pilot projects to test the principles of SACM. Although many pilots are underway in the Regions, the pilots described here involve four areas: accelerating cleanup through early actions; integrating site assessments; using Regional Decision Teams to establish priorities; and accelerating cleanup through the use of new technology.

In addition, the Regions are developing management initiatives that will speed cleanup. Several Regions are integrating programs, rotating personnel, and developing new operating procedures in an effort to maximize resources.

Accelerating Cleanup Through Early Actions

Traditionally, Superfund cleanups were performed after long periods of site study and assessment. Once EPA determined the appropriate response action, cleanup was generally undertaken at one area of the site at a time. Under SACM, this is no longer the case. Pilot projects are initiated to consolidate steps. Early actions are being used simultaneously with site studies or to address areas of contamination typically cleaned up through long-term actions. Regions 1, 3, 5, and 10 have successfully tested pilots that use early actions to speed cleanup.

Kearsarge Metallurgical Site — Region 1

THE KEARSARGE METALLURGICAL SITE, LOCATED IN New Hampshire, is an abandoned foundry that contained waste piles, catch basins, and contaminated groundwater. To accelerate cleanup of the site, Region 1 conducted early and long-term actions simultaneously. Traditionally, the cleanup process was performed at discrete site areas, one area at a time. At the Kearsarge site, however, an early action was undertaken at one portion of the site while longer term activities took place to clean the groundwater. The later stage cleanup work began nine months earlier than usual because different site areas were cleaned up concurrently.

In evaluating the pilot, Region 1 found that cleanups occur more rapidly and at a lower cost when early actions are performed. Waste cleanup was completed 6 to 12 months faster by using early actions, resulting in a savings of $300,000 to $400,000. The construction of the groundwater pump and treat system occurred nine months earlier than originally anticipated. In addition to the resource and time savings, public confidence in EPA has been heightened because the risk to human health was quickly reduced and cleanup is more efficient.

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Accelerating Cleanup to Reduce Risk — Region 3

REGION 3 CREATED A SYSTEM THAT QUICKLY REDUCES threats to human health and the environment by selecting sites that are candidates for early actions. A team of site experts developed procedures and criteria to help managers determine whether an early action is appropriate for expediting the cleanup of a site. The checklist has been successfully used in accelerating cleanup at the following Region 3 sites: Spectron, Westinghouse-Sharon, Dixie Caverns, Delaware Sand and Gravel, North Penn Area 6, Rentokil, Maryland Sand and Gravel, Mid-Atlantic Wood Preservers, DuPont-Newport, and Boarhead Farms.

By using the criteria, managers identified sites for early actions that previously may have been cleaned up using long-term actions. Use of the checklist also expedited the integration of the removal and remedial authorities by clarifying requirements, decision points, and necessary conditions for undertaking early actions.

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Early Action Pilot (Better Brite) — Region 5

THE BETTER BRITE SITE IS LOCATED IN WISCONSIN AND consists of two former metal plating shops that contaminated the soil and groundwater in the area. Region 5 is accelerating site cleanup by using early actions to control the source of the contamination and contain the polluted groundwater plume while the remedial investigation and feasibility study are being conducted. By containing the plume, less cleanup will be required in the long-term action and risk to human health and the environment will be addressed more quickly. Region 5, EPA's Office of Public Affairs, the Wisconsin Department of Natural Resources, and the Agency for Toxic Substances and Disease Control worked together to plan the pilot, setting the groundwork for future cooperation between different agencies and authorities.

The early actions are complete. The activities undertaken addressed most of the contamination and significantly reduced the time required to clean up the Better Brite site. The improved coordination between different agencies and authorities is anticipated to reduce response time at sites in the future.

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Accelerating Cleanup Through Removal (Yakima Plating and Allied Plating) — Region 10

THE YAKIMA PLATING FACILITY CONDUCTED ELECTRO-plating operations in Yakima, Washington. Rinse water and plating solutions used in the process contaminated soil at the site. Region 10 used an early action to accelerate the cleanup of the facility.

Region 10 estimates approximately 15.5 months and $100,000 were saved by conducting an early action instead of a long-term action. By saving considerable time and resources and reducing risk to human health and the environment, the pilot satisfied the concerns of the community.

The Allied Plating site is located in Portland, Oregon, and was used for chrome plating. Wastewater used in the plating process was discharged into a surface impoundment, causing soil contamination. Region 10 accelerated site cleanup by using an early action to remove contaminated soil.

Using early actions enabled the Region to eliminate the need for the remedial design and long-term action, saving approximately 16.5 months and nearly $500,000.

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Integrated Site Assessment

When a site is discovered, EPA conducts various assessments to determine the seriousness of the problem. Historically, these assessments were performed separately, moving from one step to the next based on information found during the previous step. Under SACM, EPA began integrating the assessments in hope of saving time and resources. The pilots undertaken by Regions 1, 2, 3, 5, 8, and 9 are expected to prove effective in achieving that goal.

"Start"/SACM RDT Initiative: Accelerating the RI/FS Process — Region 1

"Start" Initiative

UNDER THE "START" INITIATIVE, REGION 1 DEVELOPED A strategy that streamlines the remedial investigation/feasibility study (RI/FS). Various EPA staff are brought in at the beginning of the RI/FS to determine the objectives for cleaning up a site and how the work should be performed. As part of the strategy, Region 1 reviewed files and conducted field investigations to prepare Data Summary Reports for nine sites. The reports are used to determine the course of the RI/FS. By providing more information sooner, this approach prevents delays during EPA's review of the workplan for a site, and eliminates the cost of additional work during cleanup that was not anticipated in the RI/FS.

Based on preliminary results of the "Start" initiative, the RI/FS scoping process is easier because site objectives are clarified. In the future, this procedure could replace or supplement parts of an expanded site inspection, and streamline the site assessment process. The "Start" initiative is continuing. Future activities will include additional site studies and identification of potential early actions at all sites.

SACM RDT Initiative

Information on the SACM RDT Initiative can be found in the Regional Decision Teams section on page 15.

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Accelerating the RI/FS Process — Region 2

REGION 2 IS ACCELERATING THE REMEDIAL INVESTIGATION/ feasibility study (RI/FS) process so it can be completed before a site is listed on the National Priorities List (NPL). This approach involves conducting NPL listing activities at the same time as site assessment, early actions, and long-term action planning. Conducting intensified site investigation and sampling before NPL listing will enable EPA to begin cleanup activities shortly after the listing process is completed. Historically, the workplan for the RI/FS was not developed until after a site was listed on the NPL.

Region 2 is testing this pilot on two sites in New York and New Jersey. The GCL Tie and Treating site in New York is an inactive sawmill and wood treating facility. Creosote, used to treat wood, contaminated soil and surface water on the site. The New Jersey site, a copper reclamation facility, has contaminated soil and ash piles. This site is being scored using the Hazard Ranking System (HRS) to determine whether it should be included on the NPL.

At the GCL site, the new approach has increased the amount of data collected and studied before the site was listed on the NPL. The intensified sampling and analysis at the beginning of the process provided enough information to fully characterize the nature and extent of contamination, eliminating the need for additional investigations. A remedy addressing the principal threats associated with the site will be selected based on the data generated during the intensified sampling. The Region anticipates that risks will be reduced more quickly and cleanup will be faster.

At the New Jersey site, the Region expects the RI/FS will be more focused, saving resources and time by reducing unnecessary sampling. Because the RI/FS is better focused, it is also expected to reduce the amount of time and resources spent on the remedial investigation, the step in the cleanup process that characterizes the site conditions.

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Integrated Site Assessment and Early Enforcement Activity — Region 3

REGION 3 IS INTEGRATING SITE ASSESSMENT AND enforcement activities to clean up a former rail switching and maintenance yard in Virginia. Contamination has been found in several areas on the site.

The Region will conduct an extent of contamination study (ECS) after the preliminary assessment/site inspection. The data gathered for the ECS will be sufficient to proceed with the remedial investigation/feasibility study (RI/FS), eliminating the separate RI/FS data gathering and analysis phase of the assessment process. Based on the findings of these studies, EPA will determine whether the site will be listed on the NPL. The ECS will result in significant time savings and faster completion of the RI/FS, leaving more resources available for other projects.

The potentially responsible party (PRP) has signed an Administrative Order on Consent, agreeing to conduct the ECS. The PRP has begun the ECS under EPA oversight. If the site is listed on the NPL, Region 3 expects that one to two years may be saved in the cleanup process by eliminating RI/FS data gathering. Use of the accelerated timetable created by the pilot at other sites will lead to more construction completions and faster risk reduction.

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Integrated Site Assessment — Region 5

IN AN EFFORT TO SPEED CLEANUP, REGION 5 HAS INTEgrated the site assessment process. Instead of conducting numerous assessments through the cleanup process, the Region is combining elements of the assessment for an early action with those of the preliminary assessment and site inspection. This integration has created a "one door" entry into the Superfund process for all sites. On-Scene Coordinators, Site Assessment Managers, and a representative from the State work together as a team to coordinate early action and long-term efforts.

Region 5 has addressed seven sites using the integrated site assessment concept. EPA expects this process to reduce risk more quickly and increase the knowledge and experience of the team, which can then be employed to accelerate future cleanup efforts. In addition, early actions will address most of the site contamination, significantly shortening the time spent in cleanup.

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Wisconsin Single Site Assessment — Region 5

IN THE WISCONSIN SINGLE SITE ASSESSMENT PILOT, Region 5 is working with the State of Wisconsin to combine the separate assessments used for early and long-term actions into one site assessment. The State of Wisconsin has assembled a team that is developing a strategy for site evaluation at several sites.

The State and Region 5 have succeeded in using the pilot at four sites. At the first site, approximately 15 months and $6,000 were saved as compared with the historical Superfund process. Approximately three months were saved at the second site, and resources spent were about equal to those spent under the traditional process. The third site had a savings of approximately 18 months and $3,000. At the fourth site, approximately 18 months and $2,000 were saved.

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RI/FS Acceleration Pilot — Region 8

REGION 8 IS CONDUCTING SEVERAL PHASES OF THE cleanup process simultaneously at the Summitville Mine site in Colorado. The site is an abandoned gold mine with cyanide and heavy metal contamination.

Under the integrated approach, EPA will collect more information about the site before it is listed on the NPL, expanding the knowledge base and reducing the amount of duplicate work performed. The intensified site investigations and sampling to collect information for both for the Hazard Ranking System (HRS) scoring and the remedial investigation/feasibility study will enable EPA to move quickly towards selecting the remedy and cleaning up the site.

The Region found that it took only two weeks to finish the HRS package using this approach instead of the traditional three to six months. In addition, Region 8 estimates that cleanup of the site will be reduced by more than one year.

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Sandy Smelters Pilot — Region 8

THE SANDY SMELTERS SITE IS AN ABANDONED MINING smelter in Utah where the soil is contaminated with heavy metals. To speed cleanup and reduce risk to residents near the site, Region 8 is combining steps in the traditional assessment phase of the cleanup process. The components of the preliminary assessment/site inspection (PA/SI), remedial investigation/feasibility study (RI/FS), and remedial design assessments, and in some cases early action assessments, will be consolidated into one process. The goal is to reduce the amount of testing significantly and also to prevent duplicate testing during the assessment process.

Region 8 successfully reduced the timeframe from the PA/SI to the RI/FS from three years to one year.

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SACM Site Assessment Pilot — Region 9

REGION 9 IS STREAMLINING THE SITE ASSESSMENT process by expanding data collection efforts at its beginning. Additional information is gathered in the early stages of the process so that it may be used for the preliminary assessment/site inspection, emergency action, early action, and long-term action.

The Region is combining several steps into the integrated assessment (IA). Consequently, the IA is a single, continuous assessment that begins with a record search and may lead to field sampling. EPA conducted all or some portion of an IA at 17 sites. Eight sites were closed out after the expanded records search, seven sites went on to field sampling, and two sites were evaluated but did not require field sampling.

For sites that require long-term actions for cleanup, the Region integrated the expanded site inspection and remedial investigation (ESI/RI) into one step. Region 9 found that an ESI/RI is much more expensive and complicated than an IA. After using this approach at one site, therefore, the Region concluded that it is more appropriate for sites that have a long-term action component. As a result, the Region has determined that the Regional Decision Team will have input in deciding whether an ESI/RI will be conducted at a given site.

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Regional Decision Teams

THE CONCEPT BEHIND THE REGIONAL DECISION TEAMS (RDTs) is to bring experienced EPA personnel together to "traffic cop" sites toward early actions, long-term actions, or both.

Members of the RDT are skilled in early and long-term actions, site assessments, enforcement, and community relations.

Region 1 created an RDT made up of a screening team to review prospective NPL sites, a core group to recommend appropriate response actions, a site-specific case team to implement cleanup actions, and a support group to provide information, recommendations, and consultations. The RDT meets periodically to discuss the work being done at sites and considers priorities from a Regional rather than a site-by-site perspective.

Region 1's RDT has reviewed more than 30 sites. Reviewing sites in this manner has stimulated creative thinking about how to address sites and has increased communication among the Region's personnel.

In Region 5's pilot, the RDT meets on a monthly basis and is developing a single process to evaluate and clean up sites efficiently and quickly. Since the beginning of the project, the RDT has reviewed close to 25 sites. In 1994, Region 5's RDT is directing funds program-wide to sites with the most significant environmental threats.

Region 6's RDT is screening sites to accelerate and integrate site assessments, combine technical requirements for sampling and analysis, and increase the use of early cleanup actions. The Region is piloting the process at the National Zinc site in Oklahoma. State representatives have played an active role, reviewing documents and facilitating meetings.

Communication and cooperation between the Region and the States has increased, leading to quicker cleanups.

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ACCELERATING CLEANUP THROUGH THE USE OF NEW TECHNOLOGY

During the 14 years the Superfund program has existed, EPA has steadily increased its knowledge and experience in cleaning up hazardous waste sites. As a result, EPA is placing more emphasis on developing and expanding the use of new cleanup technology that can quickly reduce contamination and save resources.

Demonstration Pilot (Alaskan Battery Enterprises) — Region 10

THE SUPERFUND INNOVATIVE TECHNOLOGIES Evaluation (SITE) program conducted a demonstration pilot at the Alaskan Battery Enterprise site. The site, an abandoned battery recycling and manufacturing facility located in Alaska, has soil contaminated with lead from buried battery casings and used battery acid.

The pilot used a new soil washing technology to remove the lead contamination from the soil. This overall process involved excavating and washing all contaminated site soil; backfilling excavated areas with clean, treated soil; and disposing of treated soil that did not meet cleanup goals.

The soil washing technology saved a considerable amount of time in the cleanup process, taking only 12 months instead of the predicted 22 months. The funds spent on this pilot ($1.3 million), however, exceeded the cost of simply excavating and disposing of the contaminated soil ($500,000). The funds spent by the SITE program are intended to promote the use of innovative technologies at Superfund sites and are not recoverable.

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OTHER REGIONAL INITIATIVES

Several Regions are developing initiatives that do not fall within the SACM pilot category, but will also speed cleanup and save resources. These initiatives involve changing administrative procedures so that site cleanup may be achieved more efficiently.

Cross-Program Integration

Several Regions have taken innovative approaches to achieving the cultural change associated with SACM by promoting cross-program integration. Region 5 has moved its Site Assessment Section into the Removal Branch where early actions are performed. This has proven effective in creating one program and "one door" for sites entering the cleanup process in the Region.

Region 5 has also rotated its removal and remedial authority branch chiefs to foster cross-program integration and understanding. By maximizing the combined expertise of the staff, Region 5 has effectively balanced their resources to assure a smooth flow of projects through the pipeline.

Region 8 has hired technical retirees in its removal section to screen sites as they are discovered, make initial site visits, and make recommendations to a technical workgroup. These experienced retirees have helped facilitate integrated site assessment.

Regions 5 and 10 have involved all staff in SACM through open meetings, workgroups, bulletins, and cross-program training. Other Regions also have been or are currently conducting cross-program training for Site Assessment Managers, On-Scene Coordinators, and Remedial Project Managers to promote greater coordination within the Region.

Eliminating the Backlog

Regions are making significant progress in reducing the Site Inspection Prioritization (SIP) backlog. Region 5 has developed a process for addressing the SIP backlog that will identify the

worst sites, flag environmental justice concerns, and prioritize future site work. To establish priority among the sites in every State in the Region, Region 5 set up a workgroup to establish objective criteria based on risk. The Region anticipates that the States will use the criteria to take the first cut at prioritizing backlogged sites and develop a list of the worst sites in each State to speed decision making for quick cleanup.

Operating Procedures

Many Regions have developed Region-specific SACM procedures that follow Headquarters guidance. Examples include Region 5, which developed the Regional Integrated Site Evaluation (RISE) process for screening newly discovered sites. RISE ensures that all sites enter through "one door," and that site assessment, early action, and long-term cleanup activity are integrated in a one-step screening process that addresses the worst sites first.

RISE establishes a chain of command to ensure appropriate coordination and management attention as a site moves through the Regional assessment process (site identification, planning and mobilization, site sampling, and reports).

Raymark Site

Region 1 is using both remedial and removal authorities to address the contamination at the Raymark site. At the site, which is in a residential community, a thin layer of soil deteriorated, exposing hazardous waste. The hazardous waste had

once been buried in a different location, but was transferred as "clean fill" to the inhabited area at Raymark.

To address the problem, Region 1 opened a satellite office where nearly 100 employees worked together on the site inspection, early action, and long-term actions for site cleanup. Integrating personnel fostered cooperation and increased understanding of each staff member's responsibilities and expertise.

Staff integration will be expanded in the spring of 1994 to include program managers. The management role in the satellite office will rotate between the removal and remedial authorities; the manager will serve in the position for at least six months.

CONCLUSION

Efficient, effective, and geared for results, the SACM pilots will direct more Superfund resources to cleaning up hazardous waste sites. By working to correct the worst problems first, Superfund is maximizing its protection of human health and the environment. If you have suggestions or want to know more about a pilot, call the Regional contact listed.

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