



Department of Energy
 Albuquerque Operations Office
 Los Alamos Area Office
 Los Alamos, New Mexico 87544

DEC 22 1994

2000
 Permit

Mr. William Honker, Chief
 RCRA Permits Branch
 Hazardous Waste Management Division
 U.S. EPA, Region 6
 1445 Ross Ave., Suite 1200
 Dallas, Texas 75202-2733

EPA REGION VI
 HAZARDOUS WASTE DIVISION
 91 DEC 27 PM 2:35

Dear Mr. Honker:

Enclosed is the annual submittal of the "Waste Minimization and Pollution Prevention Awareness Plan" for the Los Alamos National Laboratory as required under Module VIII of the RCRA Operating Permit. Should you have any questions, please call me at (505) 665-5027 or have your staff call Court Fesmire at (505) 665-4718.

Joseph Vozella
 Assistant Area Manager
 Environment and Projects

cc w/enclosure:

Ms. Kathleen Sisneros
 New Mexico Environment Department
 1190 St. Francis Drive
 P.O. Box 26110
 Santa Fe, New Mexico 87502
 RPF, MS M707
 ER file code 1.4.2.6.3.3.16

cc w/o enclosure:

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Los Alamos

NATIONAL LABORATORY
Environmental Restoration Project
Los Alamos, New Mexico 87545
CLEAN UP LOS ALAMOS...
faster, better, cheaper!

Date: November 22, 1994
MS: M992
Phone: 505-665-4558
Refer to: EM/ER:94-J453

*Count -
Pls prepare
letter.
Ted*

Mr. Joseph C. Vozella, Chief
Environment, Safety, and Health Branch
US Department of Energy
Los Alamos Area Office, MS A316
Los Alamos, NM 87544

*Rec'd at LAAO
12/5/94 2:18 PM.
JT*

Dear Mr. Vozella:

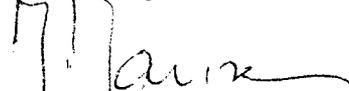
**SUBJECT: WASTE MINIMIZATION AND POLLUTION PREVENTION
AWARENESS PLAN, ACTIVITY DATA SHEET NUMBER 2107
WORK BREAKDOWN STRUCTURE NUMBER 1.4.2.6.3.3.16**

The U. S. Department of Energy and Los Alamos National Laboratory are required by the U. S. Environmental Protection Agency to submit annually by December 1 a certified waste minimization plan for the Permittee's facility operation. This requirement is in module VIII, section B.1. of the Laboratory's operating permit.

The enclosed Waste Minimization and Pollution Prevention Awareness Plan of 27 May 1994 is submitted to show that waste minimization is being pursued actively at Los Alamos National Laboratory. A signed certification statement is enclosed as well.

I would appreciate your signing the certification statement and sending both the enclosed plan and the certification form to the Environmental Protection Agency's Region 6 to meet the December 1 submittal date.

Sincerely,



J. Jansen
Environmental Restoration
Project Manager

JJ:TN:bp

Enclosures: Waste Minimization and Pollution Prevention Awareness Plan (4 copies)
Certification form

Cy (w/o enc.):

T. Baca, EM, MS J591
J. Shipley, EM, MS J591
M. Devaurs, EM/P30, MS J552
D. McInroy, EM/ER, MS M992

E. Norris, EM/ER, MS M992
RPF, MS M707 (w/enc)
CIC-10, MS A150

CERTIFICATION

I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Document Title:

Waste Minimization and Pollution Prevention Awareness Plan

Name: Allen L. Hauke for DJE Date: 12/1/94
Dennis Erickson
Division Director
Los Alamos National Laboratory

Name: J. Vozella Date: 12/21/94
Joseph Vozella, Chief
Environment, Safety, and Health Branch
DOE-Los Alamos Area Office

**WASTE MINIMIZATION AND POLLUTION PREVENTION
AWARENESS PLAN**

LOS ALAMOS NATIONAL LABORATORY

27 MAY 1994

EXECUTIVE SUMMARY

This Waste Minimization and Pollution Prevention Awareness Plan addresses the basic elements and funding requirements for the Pollution Prevention Program at Los Alamos National Laboratory.

Discussion of elements include the Process Waste Assessment methodology, recycling methodology, awareness and training methodology, waste minimization goals and the methodology to meet those goals. Discussion of funding includes Site Coordinator funding, productivity increase funding, Return on Investment funding and an implementation recharge funding mechanisms.

Important companion documentation to this plan include plans for:

- Oil recycling
- Coolant recycling
- Integrated material substitution
- Chemical exchange facility
- Revamped Pollution Prevention Awareness
- Case studies
- External recycling
- Customer service and technical assistance

These additional plans will be finished by 30 September 94.

1.0 INTRODUCTION

1.1 PURPOSE OF PLAN

The purpose of this plan is to establish the Los Alamos National Laboratory (LANL) Waste Minimization and Pollution Prevention Awareness Program. The plan discusses those activities and methods that will be employed to prevent the quantity and toxicity of waste generated at the site. This plan will be in accordance with all federal, state and Department of Energy (DOE) requirements. The Pollution Prevention Awareness Program is included with the Waste Minimization Program as permitted by DOE Order 5400.1.

This plan will be used to define the mandates and requirements for waste minimization, to define the resources and specific methodologies to implement waste minimization, and to provide a plan to accommodate the specific issues for site wide and generator specific implementation at Los Alamos National Laboratory.

1.2 SCOPE OF PROGRAM

This plan addresses these waste streams:

- RCRA hazardous chemicals
- Non-RCRA, State regulated waste
- Low Level radioactive waste
- TRU waste
- Low Level and TRU mixed waste
- Air emissions and water releases
- Sanitary waste

Particular problem areas include mixed waste based on Federal Facilities Compliance Agreement requirements for minimization of mixed waste and water releases based on NPDES requirements. These problem areas are addressed in this plan.

2.0 POLICY

2.1 POLICY STATEMENT

The Laboratory Leadership Counsel and the Pollution Prevention Program Office (PPO) are committed to minimizing the generation of waste, by giving preference to source reduction, material substitution, and environmentally sound recycling over treatment, control and disposal of such wastes. Laboratory Leadership Counsel will take appropriate action to provide adequate personnel, funding, training, and material on a continuing basis to ensure that the objectives of the Waste Minimization and Pollution Prevention Awareness Program are met. Evidence of this commitment is a written Directors Policy

(DP105) that establishes the Waste Minimization Program at LANL. DP105 as presently approved is shown in Appendix A.

2.2 STATEMENT OF MANAGEMENT COMMITMENT

Laboratory Leadership Counsel will soon implement a much more aggressive, comprehensive, and detailed Waste Minimization Policy that will provide for a specific set of actions that will require all Laboratory functions to implement Waste Minimization in a prescribed manner. This policy will include a mandated preference for source reduction over recycling and a mandated preference of pollution prevention over treatment, storage, and disposal. Adequate resources for pollution prevention will be developed through DOE line item funding and through Laboratory recharge system funding and indirect funding. The Laboratory recharge program will directly pull in implementation funds from the generators.

In addition, the Environmental Management Program Directorate (EM) and the Pollution Prevention Program Office (P³O) are committed to waste minimization. The EM mission statement is shown in Appendix B, and the (P³O) mission statement is shown in Appendix C.

3.0 ORGANIZATION AND STAFF RESPONSIBILITIES

The Pollution Prevention Program organization is shown in Appendix D and includes:

The Laboratory Director who has general oversight and implementation responsibilities and provide annual review of the program goals and performance;

The Environmental Management Office (EM) which is the Office of Primary Responsibility for Pollution Prevention (P³O) program;

The Pollution Prevention Program Office (P³O) works to provide every generating group with a base of technical knowledge in waste minimization, appropriate procedures to identify applicable problems, and appropriate procedures to identify applicable problems, and appropriate solutions in waste reduction.

The (P³O) also interfaces with generators to anticipate changes that arise from program changes, emerging technologies, changing disposal requirements, and regulatory changes. From this proactive position, the (P³O) will continue to identify waste minimization opportunities. The (P³O) charter includes oversight of administrative and technical methods for waste minimization, segregation, and education. Team members take the necessary steps to change procedures and policy, when required.

The (P³O) develops educational and training materials and teaches some of the waste management and minimization courses. This educational process includes formal classroom settings, informal briefings to generating groups and Waste Management

Coordinators, and individual sessions for solving specific problems. Team members also develop and distribute technical bulletins on waste minimization and other pertinent information. The (P³O) maintains the electronic data base required to supply the technical information needed for process changes and substitutions.

The responsibilities of the (P³O) include:

- Provide oversight and guidance for waste minimization implementation of generating functions;
- Help generators to identify potential technical and administrative solutions for waste generating problems and assist in preparation of site specific plans;
- Set waste minimization goals and track and report waste minimization data;
- Serve as the Site Waste Minimization coordinator for EM and DP;
- Obtain waste generator support and input for the program;
- Establish waste minimization goals and objectives;
- Sponsor ongoing employee awareness and training;
- Coordinate program participation by represented areas;
- Prioritize waste streams or facility areas for assessment; and
- Assist teams to conduct process waste assessments;
- Recommend and rank options for management implementation;
- Monitor performance of waste minimization options that have been implemented and evaluating performance accordance to success criteria;
- Monitor and report progress of the waste minimization program, utilizing audits and monthly reviews;
- Recommend personnel for achievement and incentive awards, and
- Facilitate technology transfer and pollution prevention awareness.

Laboratory Managers and Waste Management Coordinators. A Waste Management Coordinator will be appointed by Laboratory managers for each generating group. The Coordinator is the focal point of waste minimization and waste management within the group. Generators will be accountable for waste minimization implementation through the recharge funding mechanism.

Waste management coordinators need to know the processes and systems that generate waste within their groups. The Laboratory provides training to coordinators to enhance their ability to minimize and manage waste. Coordinators are encouraged to review their operations in detail and find specific ways to reduce waste on an ongoing basis.

4.0 GOALS

4.1 SPECIFIC GOALS

This plan sets forth the following goals. All baseline years are for FY91.

<u>WASTE CLASS</u>	<u>FY91 LEVEL</u>	<u>FY99 REDUCTION GOAL</u>
Hazardous RCRA	215,353 KG ^a	50%
Non-RCRA, State regulated waste	886,253 KG	50%
Low Level radioactive waste	5769 M ³	50%
TRU Waste	114 M ³	50%
Low Level and TRU mixed waste	301 M ³	50%
Air emissions	1200 POINTS	50%
Water releases	123 SOURCES	50%
Sanitary waste	4,800 TONS	50%
Ozone depletors	1076 KG	50%

^aIt is important to note that EPCRA chemicals are tracked with hazardous chemicals and are therefore included in the Hazardous RCRA category.

33/50 CHEMICALS

Reduction of these 33/50 chemicals will be addressed from 1991 baseline:

<u>TARGET CHEMICAL</u>	<u>FY99 REDUCTION GOAL</u>
Toluene	50%
Lead and Compounds	50%
Chlorofluorocarbons	50%
Sulfuric Acid	50%

4.2 ACTIVITY FLOW CHARTS

Flow charts for these activities are shown in Appendix G.

4.2a HAZARDOUS RCRA

1. Perform Process Waste Assessments on all major waste streams (20 per year for three years)

Perform system walkthroughs on all minor waste streams (20 per year for three years)

2. Use process data and Best Available Technology to define a Site Specific Plan for the implementation of process and administrative changes for waste minimization
3. Use special project funding to address particularly difficult and large waste streams.
4. Further develop external recycling as a cost effective and environmentally sound alternative to disposal.
5. Milestones include addressing the major processes that generate chemical waste including analytical chemistry, photographic processing, machining, explosives processing, and laser processes.

These activities are flagged in Sections 6 and 7 as requirements to meeting these goals.

4.2b EPCRA CHEMICALS

Reduction of EPCRA chemicals are addressed as part of the hazardous RCRA class of chemicals and are included in the PWA and recycling processes defined in section 4.2a.

4.2c NON-RCRA STATE REGULATED

Non-RCRA regulated wastes include oil and other non-RCRA chemicals. These chemicals will be reduced through recycling efforts and substitution where possible. Current efforts include recycling of all oils, oil contaminated water and other hydrocarbons through an external recycler.

4.2d LOW LEVEL RADIOACTIVE

1. Perform Process Waste Assessments on all major waste streams (15 per year for three years)

Perform system walkthroughs on all minor waste streams (15 per year for three years)

2. Use process data and Best Available Technology to define a Site Specific Plan for the implementation of process and administrative changes for waste minimization including segregation and substitution.
3. Use special project funding to address particularly difficult and large waste streams.
4. Use the Waste Acceptance for Non-nuclear Disposal (WAND) project to eliminate suspect waste, which is estimated at approximately 50% of the LLW stream.
5. Milestones include addressing the major processes that generate LLW waste including actinide processing, analytical chemistry, and machining.

These activities are flagged in Sections 6 and 7 as requirements to meeting these goals.

4.2e TRU

1. Perform Process Waste Assessments on the major waste streams.

2. Use process data and Best Available Technology to define a Site Specific Plan for the implementation of process and administrative changes for waste minimization including segregation and substitution.
5. Milestones include addressing the major process that generates TRU waste at TA-55.

These activities are flagged in Sections 6 and 7 as requirements to meeting these goals.

4.2f MIXED WASTES

Mixed wastes are addressed in the same way that RCRA hazardous and Low Level Wastes are in Sections 4.2a & d. In addition, because of the FFCA, mixed wastes will be addressed first. PWAs for the 40 mixed waste generators have already been initiated and will be finalized in the first part of FY95.

4.2g AIR EMISSIONS

These releases are addressed as part of the PWA process on any system with these releases as part of their mass balance.

4.2h WATER RELEASES

These releases are addressed as part of the PWA process on any system with these releases as part of their mass balance.

4.2i SANITARY WASTE

Sanitary waste is addressed by source reduction and by recycling. Source reduction will be included in the forthcoming Green Facilities Program which will include procurement of recycled materials and energy and water conservation. Recycling programs for sanitary waste at the Laboratory currently include the recycling of paper, industrial and precious metals, electrical and mechanical equipment, and office equipment. Future recycling plans include cardboard recycling through the Site Coordinator Program.

4.2j OZONE DEPLETORS

Ozone depletors at the Laboratory fall into two categories, refrigerants and cleaning solvents. Both of these waste streams will be eliminated by substitution.

4.2k 33/50 CHEMICALS

Toluene, lead, Chlorofluorocarbons, and sulfuric acid waste streams will be eliminated through recycling efforts.

4.3 TOTAL PWAs REQUIRED

We estimate that a total of 210 PWAs and walkthroughs will be required to address all of the Laboratory's waste generating processes. These 210 PWAs and walkthroughs required are estimated based on the list of waste generating groups.

4.4 PROCUREMENT OF RECYCLED MATERIALS

The Laboratory, through the purchasing department, is currently in the process of upgrading its procurement of recycled materials. The Laboratory does purchase a large amount of recycled paper goods.

4.5 NON-ROUTINE QUALITATIVE GOALS

Waste minimization considerations will be incorporated into Environmental Restoration Program site characterization and site remediation activities to minimize waste generation from these ER activities. Waste minimization methodology will be built into Decontamination and Decommissioning (D&D) procedures to ensure that environmental restoration is accomplished in a manner that provides for least amount of waste generated possible from these activities. Waste minimization will also be built into spill cleanup procedures to also ensure that the least amount of waste is generated from that activity.

4.6 ES&H ADS

ES&H ADS, as submitted to DOE, to support these planning efforts, are shown in Appendix E.

4.7 TECHNOLOGY DEVELOPMENT

The Laboratory uses Laboratory Directed Research and Development funding and DOE Return on Investment funding to develop bench, pilot and full scale technologies for waste minimization. These technologies address specific Laboratory problems and are ultimately transferable. Specific projects are discussed in Appendix F.

5.0 SITUATION ANALYSIS

5.1 CURRENT SITUATION

The Waste Minimization program at LANL is in a transition phase. Previous effort was directed towards setting up systems to support the implementation of waste minimization. This effort is complete and implementation efforts have begun. Baseline site coordinator efforts will be ongoing. The implementation phases will be funded through recharge on waste generation rates. Recharge implementation funding will be used to fund projects within the CSO that provided the recharge funds. Special project will continue under EM funding.

5.2 PROGRAM DIRECTIVES

This program is driven by the following directives:

- Resource Conservation and Recovery Act
- New Mexico State Hazardous Waste Management Regulations
- Federal Facilities Compliance Act
- Emergency Planning and Right to Know Act
- Pollution Prevention Act
- DOE Order 5400.1
- DOE Order 5820.2A
- Executive Order 12856

5.3 RELEVANT SITE DIRECTIVES AND GUIDANCE

Waste minimization is required by the following Laboratory directives and procedures:

- DP-105, Director's policy
- Federal Facilities Compliance Agreement
- 10-1 Radioactive Liquid Waste
- 10-2 Low-Level Radioactive Solid Waste
- 10-3 Chemical, Hazardous, and Mixed Waste
- 10-4 Polychlorinated Biphenyls
- 10-5 Transuranic (TRU) Solid Waste
- 10-6 Excess Government Personal Property
- 10-8 Waste Minimization

5.4 BARRIERS ANALYSIS

Potential problems exist from the lack of a multi-year, long term overall DOE implementation strategy. This problem will be partially addressed at the Laboratory by the use of recharge funding and EM special projects funding.

5.5 PLANNING ASSUMPTIONS

P³O assumes the acceptance of the recharge funding system by both the generators and their funding organizations, as well as assuming the continued support of DOE and the Laboratory.

6.0 SITE WIDE PROGRAM ELEMENTS

NARRATIVE DESCRIPTION

6.1 ORGANIZATION AND INFRASTRUCTURE

This element covers both EM and DP efforts and provides for the site coordinator activities for the EM coordinator, and includes management and oversight of implementation efforts.

Milestones: Annual report

6.2 PROGRAM DEVELOPMENT

Program development includes program leadership, strategic planning and direction, guidance and procedures, procurement of funding, including developing and operating a recharge system for implementation, and visitor support. Program management includes personnel management, Activity Datasheet System management, Work Authorization Directive management, FFCA deliverables, Tiger Team Action Plans deliverables. The scope of this work package also includes coordination of the interactions between LANL and DOE and other outside stakeholders. It includes providing performance evaluation procedures and QA, and includes providing technical support and data to other Laboratory functions. Clerical and secretarial support for the entire program are included in this work element.

Milestones: Internal Laboratory Strategic Plan
Recharge system finalized

6.3 EMPLOYEE INVOLVEMENT

This work element includes the Pollution Prevention Awareness Campaign, an employee awareness effort; writing training materials and Newsbulletin articles. This effort also includes SOP review to implement waste minimization. It also includes support of non-Laboratory education programs. This work element also includes the employee suggestion program, an annual contest that collects and judges suggestions and provides cash incentives for suggestions. Implementation of suggestions is not included in this element.

Milestones: Monthly waste coordinator meetings
Annual Incentive Award Competition

6.4 TRACKING

This work element provides for the oversight of waste generating data and trends and may include the development of a fence to fence tracking system. This element also provides for the development of a normalized waste generating baseline that takes into account off-normal generation from D&D and spills.

Milestones: Normalized data base system established

6.5 REPORTING

This work element provides for all reporting to Headquarters and Operational offices including Program Tracking System reporting requirements, and the Annual report deliverable. This element also provides support to other Laboratory reporting requirements that have a waste minimization component.

Milestones: Annual report to DOE
 Annual report to EPA and New Mexico Environment Department

6.6a REDUCTION PROGRAMS

This work element provides for the continuing development and implementation support of the Process Waste Assessment system. This includes testing and maintenance of the software model, performing walkthroughs with the generator, developing and providing Best Available Technology databases to provide the best technical solutions, developing and providing a Cost/Benefit model to provide the best economic solutions, supporting applicable funding development efforts, collating data, and writing reports.

This work element also includes using PWA data and contractor support to support the development of Site Specific Waste Minimization Plans for generators implementation efforts. This effort also includes development support of SSPs that do not require an initial PWA effort.

This work element also includes development of funding and oversight management of implementation efforts by the generators. This element also includes the initial design elements of Green Facilities programs and Environmentally Conscious Manufacturing programs and development of the funding for these programs.

This work element also includes special projects that address particular problems. These projects are described in Appendix F "Specific Research and Development Projects of Note".

Milestones: Support 70 PWAs, walkthroughs and SSP efforts per year for three years
 Support Return on Investment and Productivity Increase funded projects on major waste streams.

6.6b RECYCLING PROGRAMS

This work element includes both internal and external recycling efforts. Internal recycling includes distribution of a list of reusable chemicals to interested Laboratory personnel. External recycling includes development of technical and contractual relationships to recycle chemicals through commercial users. Actual recycling implementation costs are not included in this element.

Milestones: Expand external recycling efforts to address all major chemical waste streams

Expand internal recycling efforts to address all specific chemical waste streams

6.6c SANITARY WASTE

Sanitary waste is addressed by source reduction and by recycling. Source reduction will be included in the forthcoming Green Facilities Program which will include procurement of recycled materials and energy and water conservation. Recycling programs for sanitary waste at the Laboratory currently include the recycling of paper, industrial and precious metals, electrical and mechanical equipment, and office equipment. Future recycling plans include cardboard recycling through the Site Coordinator Program.

Milestones: Develop Recycling Program Implementation Plan
 Expand external recycling efforts on all commercially viable waste streams

6.7 TECHNICAL ASSISTANCE

This work element includes the review of all new projects by the ES&H Questionnaire Committee to ensure that waste minimization is included in the design phase of the program.

Milestones: Review every new Laboratory project that has a waste minimization potential

6.8 INFORMATION AND TECHNOLOGY EXCHANGE

This work element includes transfer and coordination of R&D needs to appropriate technical groups for further development. It also includes the transfer and coordination of technology that is developed in the PWA process and is of commercial benefit through Laboratory tech transfer organizations.

Milestones: Ongoing transfer of all technologies that are commercially viable.

6.9 PROGRAM EVALUATION

This work element includes evaluation of employee participation and overall program performance. It also provides for oversight of the generators waste minimization implementation efforts.

TABLE 6.1 Required resources for the site wide WMin/PP program for FY94-FY96

	FY94 BUDGETED \$K	FY95 ESTIMATED \$K	FY96 ESTIMATED \$K
6.1 ORGANIZATION AND INFRASTRUCTURE	100 ^a	105 ^a	110 ^a
6.2 PROGRAM DEVELOPMENT	250 ^a	262 ^a	275 ^a
6.3 EMPLOYEE INVOLVEMENT	50 ^a	52 ^a	55 ^a
6.4 TRACKING	90	95	99
6.5 REPORTING	50	52	55
6.6a REDUCTION PROGRAMS	500 ^a	525 ^a	551 ^a
6.6b RECYCLING PROGRAMS	100 ^a	350 ^a	350 ^a
6.6c SANITARY WASTE	0	0	0
6.7 TECHNICAL ASSISTANCE	50	52	55
6.8 INFORMATION AND TECHNOLOGY EXCHANGE	50	52	55
6.9 PROGRAM EVALUATION	<u>50</u>	<u>52</u>	<u>55</u>
TOTAL	1,290	1597	1660

^aTHESE ACTIVITIES ARE DIRECTLY REQUIRED TO MEET THE GOALS LISTED IN SECTION 4.

TABLE 6.2 Estimated resources for the site wide WMin/PP program for FY97-FY99

	FY97 ESTIMATED \$K	FY98 ESTIMATED \$K	FY99 ESTIMATED \$K
6.1 ORGANIZATION AND INFRASTRUCTURE	116 ^a	121 ^a	128 ^a
6.2 PROGRAM DEVELOPMENT	289 ^a	304 ^a	319 ^a
6.3 EMPLOYEE INVOLVEMENT	58 ^a	61 ^a	64 ^a
6.4 TRACKING	104	109	115
6.5 REPORTING	58	61	64
6.6a REDUCTION PROGRAMS	579 ^a	608 ^a	638 ^a
6.6b RECYCLING PROGRAMS	350 ^a	350 ^a	350 ^a
6.6c SANITARY WASTE	100	100	100
6.7 TECHNICAL ASSISTANCE	58	61	64
6.8 INFORMATION AND TECHNOLOGY EXCHANGE	58	61	64
6.9 PROGRAM EVALUATION	<u>58</u>	<u>61</u>	<u>64</u>
TOTAL	1828	1902	1980

^aTHESE ACTIVITIES ARE DIRECTLY REQUIRED TO MEET THE GOALS LISTED IN SECTION 4.

7.0 GENERATOR PROGRAM ELEMENTS

NARRATIVE DESCRIPTION

7.1 ORGANIZATION AND INFRASTRUCTURE

This work element provides for the support of the DP site coordinator.

7.2 PROGRAM DEVELOPMENT

At LANL, this work element is a site wide activity and therefore not included in generator activities.

7.3 PROGRAM PARTICIPATION

This work element provides for generator participation in information exchange activities, provides for generator effort in fence to fence tracking systems, and provides for generator input into data collection activities.

Milestones: Finalize the development of the fence to fence tracking system

7.4 FACILITY TRAINING

This work element provides for generator participation in training activities.

Milestones: Ongoing generator participation in training activities.

7.5 OPPORTUNITY ASSESSMENTS

This work element provides for the continuing implementation by the generators of the Process Waste Assessment system. This includes performing walkthroughs with the Pollution Prevention Program Office support and operating the PWA software. This element includes performing 45 PWAs per year.

Milestones: Perform 45 PWAs, walkthroughs and SSP per year for three years
Use Return on Investment and Productivity Increase funded projects on major waste streams.

7.6a REDUCTION PROGRAMS

This work element includes using PWA data and contractor support to support the development of Site Specific Waste Minimization Plans (SSP) for DP generators implementation efforts. This effort also includes development of SSPs that do not require an initial PWA effort. This element includes implementing 70 SSPs per year.

Milestones: Implement 70 SSPs per year for three years

7.6b RECYCLING PROGRAMS

This work element includes both internal and external recycling efforts. Internal recycling includes distribution of a list of reusable chemicals to interested Laboratory personnel.

External recycling includes development of technical and contractual relationships to recycle chemicals through commercial users.

Milestones: Ongoing reuse of internally recycled chemicals
Ongoing segregation of chemicals into recyclable streams.

7.6c SANITARY WASTE

Sanitary waste is addressed by source reduction and by recycling. Source reduction will be included in the forthcoming Green Facilities Program which will include procurement of recycled materials and energy and water conservation. Recycling programs for sanitary waste at the Laboratory currently include the recycling of paper, industrial and precious metals, electrical and mechanical equipment, and office equipment. Future recycling plans include cardboard recycling.

Milestones: Expand external recycling efforts on all commercially viable waste streams

7.7 DESIGN CONSIDERATIONS

At LANL, this work element is a site wide activity and therefore not included in generator activities.

7.8 PROGRAM EVALUATION

At LANL, this work element is a site wide activity and therefore not included in generator activities.

TABLE 7.1 Required resources for the generator WMin/PP program for FY94-FY96

	FY94 BUDGETED \$K	FY95 ESTIMATED \$K	FY96 ESTIMATED \$K
7.1 ORGANIZATION AND INFRASTRUCTURE	36	36	36
7.3 PROGRAM PARTICIPATION	60 ^a	60 ^a	60 ^a
7.4 FACILITY TRAINING	50	50	50
7.5 OPPORTUNITY ASSESSMENTS	407 ^a	407 ^a	407 ^a
7.6a REDUCTION PROGRAMS	407 ^a	407 ^a	407 ^a
7.6b RECYCLING PROGRAMS	0	160 ^a	160 ^a
7.6c SANITARY WASTE	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL	960 ^b	1920 ^b	1920 ^b

^aTHESE ACTIVITIES ARE DIRECTLY REQUIRED TO MEET THE GOALS LISTED IN SECTION 4.

^bTHESE BUDGETS ARE BASED ON ESTIMATES OF REVENUE RECEIVED FROM THE NEW RECHARGE SYSTEM FOR THE IMPLEMENTATION OF WASTE MINIMIZATION.

Note that these budgets do not escalate because these funds are derived from a recharge system based on generation rates and generation is expected to go down, not escalate.

TABLE 7.2 Estimated resources for the generator WMin/PP program for FY97-FY99

	FY97 ESTIMATED \$K	FY98 ESTIMATED \$K	FY99 ESTIMATED \$K
7.1 ORGANIZATION AND INFRASTRUCTURE	36	36	36
7.3 PROGRAM PARTICIPATION	60 ^a	60 ^a	60 ^a
7.4 FACILITY TRAINING	50	50	50
7.5 OPPORTUNITY ASSESSMENTS	757 ^a	757 ^a	757 ^a
7.6a REDUCTION PROGRAMS	757 ^a	757 ^a	757 ^a
7.6b RECYCLING PROGRAMS	160 ^a	160 ^a	160 ^a
7.6c SANITARY WASTE	<u>100^a</u>	<u>100^a</u>	<u>100^a</u>
TOTAL	1920 ^b	1920 ^b	1920 ^b

^aTHESE ACTIVITIES ARE DIRECTLY REQUIRED TO MEET THE GOALS LISTED IN SECTION 4.

^bTHESE BUDGETS ARE BASED ON ESTIMATES OF REVENUE RECEIVED FROM THE NEW RECHARGE SYSTEM FOR THE IMPLEMENTATION OF WASTE MINIMIZATION.

Note that these budgets do not escalate because these funds are derived from a recharge system based on generation rates and generation is expected to go down, not escalate.

1.0 PURPOSE

This policy defines the basic requirements for management to be aware of, oversee, and control the gaseous, liquid, and solid wastes at the Laboratory so as to minimize the release of radioactive, hazardous and/or mixed wastes to the environment. This policy is in accordance with Department of Energy requirements to comply with applicable federal, state, local laws and regulations, Department of Energy orders, memoranda of understanding, other agreements, and consent decrees relating to hazardous and radioactive waste management.

Discussion. This policy addresses issues of waste management and minimization. It does not address mitigating measures required for distributing, handling, and controlling radioactive and hazardous materials in the workplace. Nor does this policy establish the procedural controls necessary to manage radioactive and hazardous materials in compliance with appropriate regulatory rules and regulations. Employee, subcontractor, and public health protection concerns associated with radioactive and hazardous materials are covered in other Director's Policies.

2.0 POLICY

Operations involving Laboratory-generated radioactive, hazardous and/or mixed wastes shall be performed so as to

- protect the public, employees, and the environment;
- comply with applicable federal, state, and local regulations for environmental protection and waste disposal;
- minimize generation of waste, wherever or whenever possible;
- recycle waste that cannot be eliminated at the source wherever technically and economically feasible; and
- give prime consideration to reducing or eliminating waste over treatment, storage, and disposal of waste.

The Laboratory shall have programs for

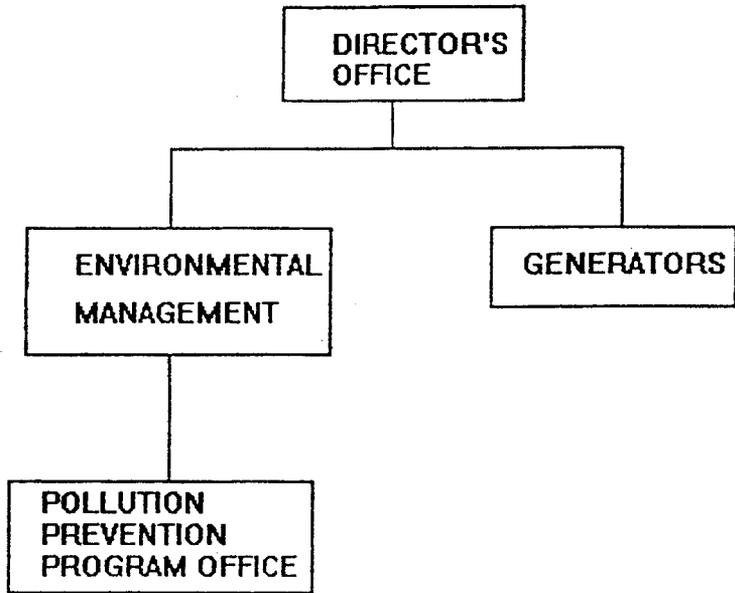
- minimizing waste by systematically eliminating or reducing generation of waste from site operations through periodic process assessments, setting applicable minimization goals, implementing site specific plans, employee awareness, tracking and reporting of waste generation rates, and evaluating program effectiveness;
- making source reduction and environmentally sound recycling integral parts of the philosophy and operation of the Laboratory;
- training personnel involved in operations that generate radioactive, hazardous and/or mixed wastes;
- collecting liquid and solid hazardous wastes and treating and/or managing them in a manner that reduces personnel exposure and toxicity and prevents the contamination of the environment;
- collecting solid and liquid radioactive wastes, applying volume-reduction techniques, and burying or storing in controlled facilities or using other compliant disposal methods;
- collecting, managing, controlling, handling, and disposing of mixed wastes;
- monitoring waste (gaseous, liquid, or solid) for the amount generated, stored, and disposed;
- generating and controlling complete records to document hazardous, radioactive, and mixed wastes from generation to disposal;
- providing decontamination services that promote recycling;

APPENDIX B "EM MISSION STATEMENT"

The Environmental Management (EM) Program Office will use business-like practices to prevent pollution, efficiently manage waste, and restore the environment. to accomplish this mission, we will develop and apply integrated , innovative environmental solutions that address government, industrial and public problems.

APPENDIX C "P³O MISSION STATEMENT"

To develop an effective and efficient overall waste minimization program. To reduce waste by source reduction and recycling by 95% by the year 2000. To integrate waste minimization into all appropriate Laboratory functions and implement a thorough and comprehensive waste minimization policy. To develop waste minimization as a core Laboratory value. To implement waste minimization through out the Laboratory in conjunction with our generator customers. To foster and develop waste minimization as a viable core competency. To develop and market waste minimization as a viable commercial competitive edge. To develop pollution prevention through a Green Facilities Program.



POLLUTION PREVENTION ORGANIZATION

U. S. DEPARTMENT OF ENERGY
 ES&H Management Plan Information System
 ACTIVITY DATA SHEET
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

ACTIVITY DATA SHEET IDENTIFICATION SECTION

1. Facility: LANL 2. Name: LOS ALAMOS NATIONAL LABORATORY
 ADS No: B94D0118 3. Title: ^{POLLUTION}~~COLLECTION~~ PREVENTION
 4. Data Sheet Status Code: PART
 5. Line Item Project ID.:
 6. Original Identifier...:
 7. Work Package Number...:
 8. Account Number.....:
 9. Work Breakdown Struc.:
 10. Reference ADS Number.:
 11. Responsible SO Code...: DP - ASSISTANT SECRETARY FOR DEFENSE PROGRAMS
 12. Resp. Contractor Code: CAU - CALIFORNIA, UNIVERSITY OF
 13. Contractor Division...: EMP
 14. Contractor Department: P30
 15. Contractor Manager...: PATRICK JOSEY 16. Phone: (505) 667-3919
 17. DOE Manager.....: JOE VOZELLA 18. Phone: (505) 665-5027

ADS CATEGORY SECTION

19. Category: () Safety & Health (X) Environmental () Other:
 21. Is activity an A-106 Plan Activity? [X] Yes [] No
 22. Functional Breakdown:

<u>FA.SA</u>	<u>Pct</u>	<u>Functional Area/Sub-Area Title</u>
PP.02	25	Education, Training & Awareness Programs
PP.06	25	Source Reduction/Reuse/Recycling - Non-Hazardous
PP.07	35	Waste Min/PP Research, Development & Demonstration
PP.08	15	Specifications Review

ADS TYPE SECTION

24. ADS Type: (X) Core () Compliance () Improvement
 25. External Drivers:

<u>P/S Typ</u>	<u>Driver Code</u>	<u>Driver Title</u>
Pri	LAW FFCA	Federal Facilities Compliance Act

U. S. DEPARTMENT OF ENERGY
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ACTIVITY DATA SHEET (continued)
LOS ALAMOS NATIONAL LABORATORY
[UNTITLED QUERY]

27. ADS DESCRIPTION SECTION

This ADS provides the auxiliary functions to (DPA-1) ADS. This ADS focuses on training, communication, and liaison activities necessary to properly implement the Process Waste Assessments (PWA), Site Specific Plans (SSP), and Volume Reduction plans. This includes interfacing with LANL generating and operating organizations, regulators, and DOE. These activities are directed towards the compliance with the 50% reduction by FY98 using FY93 as the base year.

PP.01 PROGRAM PLANNING AND DEVELOPMENT

Management support includes program leadership, strategic planning and direction, guidance and procedures, procurement of funding, including developing and operating a recharge system for implementation, and visitor support. Program management includes personnel management, Activity Datasheet System management, Work Authorization Directive management, Program Tracking System reporting requirements, Annual report deliverable, Federal Facilities Compliance Agreement (FFCA) deliverables, Tiger Team Action Plans deliverables. The scope of this work package also includes coordination of the interactions between LANL and DOE and other outside stakeholders, including serving as EM Coordinator. It includes providing performance evaluation procedures and QA, and includes providing technical support and data to other Laboratory functions. Clerical and secretarial support for the entire program are included in this work element.

PP.02 EDUCATION, TRAINING AND AWARENESS PROGRAMS

This work element includes the Pollution Prevention Awareness Campaign, and employee awareness effort; writing training materials and Newsbulletin articles. This effort also includes Standard Operating Procedure (SOP) review to implement waste minimization. It also includes support of non-Laboratory education programs. This work element also includes the employee suggestion program, an annual contest that collects and judges suggestions and provides cash incentives for suggestion. Implementation of suggestions is not included in this element.

PP.06 REFUSE AND RECYCLING, HAZARDOUS, RADIOACTIVE AND NON-HAZARDOUS

This work element includes both internal and external recycling efforts. Internal recycling includes distribution of a list of reusable chemicals to interested Laboratory personnel. External recycling includes development of technical and contractual relationships to recycle chemicals through commercial users. Approximately \$50,000 in travel will be required. Actual recycling implementation costs are not included in this element.

PP.07 WASTE MIN/PP RESEARCH, DEVELOPMENT AND DEMONSTRATION

U. S. DEPARTMENT OF ENERGY
 ES&H Management Plan Information System
 ACTIVITY DATA SHEET (continued)
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

This work element includes transfer and coordination of R&D needs to appropriate technical groups for further development. It also includes the transfer and coordination of technology that is developed in the PWA process and is of commercial benefit through Laboratory tech transfer organization.

PP.08 SPECIFICATIONS REVIEW

This work element includes the review of all new projects by the ES&H questionnaire Committee to ensure that waste minimization is included in the design phase of the program.

28. APPRAISAL SECTION

Public Safety & Health:

Site Personnel Safety & Health:

Compliance: Failure to implement this ADS will result in violation of the Federal Facilities Compliance Agreement on mixed waste, the Resource Conservation Recovery Act, the Pollution Prevention Act, and DOE Order 5400.1.

Mission Impact:

Investment Impact:

Environmental Impact: Failure to implement this ADS will result in a steady increase in waste generated at the Laboratory.

Other Factors:

ADS SCORING SECTION

29. ADS Scoring	<- Before Scoring ->	<- After Scoring ->
	<u>Csq</u> <u>L'hood</u> <u>Score</u>	<u>Csq</u> <u>L'hood</u> <u>Score</u>
Public Safety & Health		
Site Personnel Safety & Health		
Compliance		
Mission Impact		
Investment Impact		
Environmental Protection		
 NET BEFORE AND AFTER:	 0.0000	 0.0000

U. S. DEPARTMENT OF ENERGY
 ES&H Management Plan Information System
 ACTIVITY DATA SHEET (continued)
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

NET SCORE.....:	0.0000		
30. Contractor Adj:	0.0000	31. Other Score:	0.0000
Ops Office Adj:	0.0000	32. Priority...:	3
Sec Office Adj:	0.0000	33. Scored By..:	
TOTAL ADJUSTED....:	0.0000	34. Score Date.:	/ /

ADS RESOURCE DATA SECTION

36. Funding:	37. Fund Case:	38. Resource Structure Code: TE0303
(X) Program	() Decrement	39. Budget & Reporting Code: EW3100000
() Indirect	() Target	
() Outside	(X) Planning	40. Start Year: 1994
by:	() Unfunded	41. End Year:

FY	OE	CE	GPP	LIP	TOTAL	Fed FTE	Ctr FTE
1993	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1994	1,205.0	0.0	0.0	0.0	1,205.0	0.00	5.00
1995	1,370.0	0.0	0.0	0.0	1,370.0	0.00	5.00
1996	1,559.0	0.0	0.0	0.0	1,559.0	0.00	5.00
1997	1,771.0	0.0	0.0	0.0	1,771.0	0.00	5.00
1998	2,016.0	0.0	0.0	0.0	2,016.0	0.00	5.00
1999	2,293.0	0.0	0.0	0.0	2,293.0	0.00	5.00
2000	2,608.0	0.0	0.0	0.0	2,608.0	0.00	5.00
2001	0.0	0.0	0.0	0.0	0.0	0.00	5.00

Escalated? Yes No

45. Cost Estimate Notes

* Outyears have been escalated at 3.4% per year.

ADS TRACKING SECTION

47. Management Approval?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
48. Activity In-process?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
49. Design Plan Completion...:	/	/
50. Construction Start.....:	/	/
51. Construction Completion..:	/	/
52. Final Compliance Required:	/	/
53. Fiscal Year Completed....:		

U. S. DEPARTMENT OF ENERGY
ES&H Management Plan Information System
ACTIVITY DATA SHEET (continued)
LOS ALAMOS NATIONAL LABORATORY
[UNTITLED QUERY]

ADDITIONAL A-106 DATA REQUIREMENTS

54. Multiple Sites? [] Yes [X] No
55. Pollutant Category Driver: RCRA
Code: POLP
56. Compliance Status: CMPA - Compliance Agreement (Class I)
57. Progress Code: CMPL - Completed
58. Program Category: () CA - Corrective Activities () WM - Waste Management
() ER - Envir. Restoration (X) OT - Other Activities

U. S. DEPARTMENT OF ENERGY
 ES&H Management Plan Information System
 ACTIVITY DATA SHEET
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

ACTIVITY DATA SHEET IDENTIFICATION SECTION

1. Facility: LANL 2. Name: LOS ALAMOS NATIONAL LABORATORY
 ADS No: B94D0119 3. Title: POLLUTION PREVENTION
 4. Data Sheet Status Code: PART
 5. Line Item Project ID.:
 6. Original Identifier...:
 7. Work Package Number...:
 8. Account Number.....:
 9. Work Breakdown Struc.:
 10. Reference ADS Number.:
 11. Responsible SO Code...: ~~ER~~ ^{EM} - OFFICE OF ~~ENERGY RESEARCH~~ ^{ENVIRONMENTAL MANAGEMENT}
 12. Resp. Contractor Code: CAU - CALIFORNIA, UNIVERSITY OF
 13. Contractor Division...: EMP
 14. Contractor Department: P30
 15. Contractor Manager...: PATRICK JOSEY 16. Phone: (505) 667-3913
 17. DOE Manager.....: JOE VOZELLA 18. Phone: (505) 665-5017

ADS CATEGORY SECTION

19. Category: () Safety & Health (X) Environmental () Other:
 21. Is activity an A-106 Plan Activity? [X] Yes [] No
 22. Functional Breakdown:

<u>FA.SA</u>	<u>Pct</u>	<u>Functional Area/Sub-Area Title</u>
PP.02	12	Education, Training & Awareness Programs
PP.03	22	Waste Min/PP Opportunity Assessments
PP.04	22	Source Reduction - Hazardous & Radioactive
PP.05	12	Reuse & Recycling - Hazardous & Radioactive
PP.06	11	Source Reduction/Reuse/Recycling - Non-Hazardous
PP.07	11	Waste Min/PP Research, Development & Demonstration
PP.08	10	Specifications Review

ADS TYPE SECTION

24. ADS Type: (X) Core () Compliance () Improvement
 25. External Drivers:

<u>P/S Typ</u>	<u>Driver Code</u>	<u>Driver Title</u>
Pri	LAW FFCA	Federal Facilities Compliance Act

U. S. DEPARTMENT OF ENERGY
ES&H Management Plan Information System
ACTIVITY DATA SHEET (continued)
LOS ALAMOS NATIONAL LABORATORY
[UNTITLED QUERY]

27. ADS DESCRIPTION SECTION

This ADS involves the development and implementation of the Process Waste Assessments (PWA), Site Specific Plans (SSP), and Volume Reduction plans. This includes interfacing with LANL generating and operating organizations, regulators, and DOE. It also includes the training, communication, and liaison activities necessary to properly implement the Process Waste Assessments (PWA), Site Specific Plans (SSP), and Volume Reduction plans. These activities are directed towards the compliance with the 50% reduction by FY98 using FY93 as the base year.

PP.01 PROGRAM PLANNING AND DEVELOPMENT

Management support includes program leadership, strategic planning and direction, guidance and procedures, procurement of funding, including developing and operating a recharge system for implementation, and visitor support. Program management includes personnel management, Activity Datasheet System management, Work Authorization Directive management, Program Tracking System reporting requirements, Annual report deliverable, Federal Facilities Compliance Agreement (FFCA) deliverables, Tiger Team Action Plans deliverables. The scope of this work package also includes coordination of the interactions between LANL and DOE and other outside stakeholders, including serving as EM Coordinator. It includes providing performance evaluation procedures and QA, and includes providing technical support and data to other Laboratory functions. Clerical and secretarial support for the entire program are included in this work element.

PP.02 EDUCATION, TRAINING AND AWARENESS PROGRAMS

This work element includes the Pollution Prevention Awareness Campaign, and employee awareness effort; writing training materials and Newsbulletin articles. This effort also includes Standard Operating Procedure (SOP) review to implement waste minimization. It also includes support of non-Laboratory education programs. This work element also includes the employee suggestion program, an annual contest that collects and judges suggestions and provides cash incentives for suggestion. Implementation of suggestions is not included in this element.

PP.03 WASTE MIN/PP OPPORTUNITY ASSESSMENT

This work element provides for the continuing development and implementation support of the Process Waste Assessment (PWA) system. This includes testing and maintenance of the software model, performing walkthroughs with the generator, developing and providing Best Available Technology databases to provide the best technical solutions, developing and providing a Cost/Benefit model to provide the best economic solutions, supporting applicable funding development efforts, collating data, and writing reports.

U. S. DEPARTMENT OF ENERGY
ES&H Management Plan Information System
ACTIVITY DATA SHEET (continued)
LOS ALAMOS NATIONAL LABORATORY
[UNTITLED QUERY]

PP.04 SOURCE REDUCTION HAZARDOUS AND RADIOACTIVE

This work element includes using PWA data and contractor support to support the development of Site Specific Waste Minimization Plans for generators implementation efforts. This effort also includes development support of Site Specific Plans (SSPs) that do not require an initial PWA effort.

This work element also includes development of funding and oversight management of implementation efforts by the generators. This element also includes the initial design elements of Green Facilities programs and Environmentally Conscious manufacturing programs and development of the funding for these programs.

PP.05 AND PP.06 REUSE AND RECYCLING, HAZARDOUS, RADIOACTIVE AND NONHAZARDOUS

This work element includes both internal and external recycling efforts. Internal recycling includes distribution of a list of reusable chemicals to interested Laboratory personnel. External recycling includes development of technical and contractual relationships to recycle chemicals through commercial users. Approximately \$50,000 in travel will be required. Actual recycling implementation costs are not included in this element.

PP.07 WASTE MIN/PP RESEARCH, DEVELOPMENT AND DEMONSTRATION

This work element includes transfer and coordination of technology that is developed in the PWA process and is of commercial benefit through Laboratory tech transfer organizations.

PP.08 SPECIFICATIONS REVIEW

This work element includes the review of all new projects by the ES&H Questionnaire Committee to ensure that waste minimization is included in the design phase of the program.

28. APPRAISAL SECTION

Public Safety & Health:

Site Personnel Safety & Health:

Compliance: Failure to implement this ADS will result in violation of the Federal Facilities Compliance Agreement on mixed waste, the Resource Conservation Recovery Act, the Pollution Prevention Act, and DOE Order 5400.1.

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 ES&H Management Plan Information System
 ACTIVITY DATA SHEET (continued)
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

Mission Impact:

Investment Impact:

Environmental Impact: Failure to implement this ADS will result in a steady increase in waste generated at the Laboratory.

Other Factors:

ADS SCORING SECTION

29. ADS Scoring	<- Before Scoring ->	<- After Scoring ->
	<u>Csq</u> <u>L'hood</u> <u>Score</u>	<u>Csq</u> <u>L'hood</u> <u>Score</u>
Public Safety & Health		
Site Personnel Safety & Health		
Compliance		
Mission Impact		
Investment Impact		
Environmental Protection		
NET BEFORE AND AFTER:	0.0000	0.0000
NET SCORE.....:	0.0000	
30. Contractor Adj:	0.0000	31. Other Score: 0.0000
Ops Office Adj:	0.0000	32. Priority...: 3
Sec Office Adj:	0.0000	33. Scored By..:
TOTAL ADJUSTED.....:	0.0000	34. Score Date.: / /

ADS RESOURCE DATA SECTION

36. Funding:	37. Fund Case:	38. Resource Structure Code: TE0303
(X) Program	() Decrement	39. Budget & Reporting Code: EW310000
() Indirect	() Target	
() Outside	(X) Planning	40. Start Year: 1994
by:	() Unfunded	41. End Year:

U. S. DEPARTMENT OF ENERGY
 ES&H Management Plan Information System
 ACTIVITY DATA SHEET (continued)
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

FY	OE	CE	GPP	LIP	TOTAL	Fed FTE	Ctr FTE
1993	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1994	1,500.0	0.0	0.0	0.0	1,500.0	0.00	9.00
1995	1,706.0	0.0	0.0	0.0	1,706.0	0.00	9.00
1996	1,940.0	0.0	0.0	0.0	1,940.0	0.00	9.00
1997	2,206.0	0.0	0.0	0.0	2,206.0	0.00	9.00
1998	2,510.0	0.0	0.0	0.0	2,510.0	0.00	9.00
1999	2,855.0	0.0	0.0	0.0	2,855.0	0.00	9.00
2000	3,246.0	0.0	0.0	0.0	3,246.0	0.00	9.00
2001	0.0	0.0	0.0	0.0	0.0	0.00	9.00

Escalated? Yes No

45. Cost Estimate Notes

* Outyears have been escalated at 3.4% per year.

ADS TRACKING SECTION

47. Management Approval? Yes No
 48. Activity In-process? Yes No
 49. Design Plan Completion...: / /
 50. Construction Start.....: / /
 51. Construction Completion..: / /
 52. Final Compliance Required: / /
 53. Fiscal Year Completed.....

ADDITIONAL A-106 DATA REQUIREMENTS

54. Multiple Sites? Yes No
 55. Pollutant Category Driver: RCRA
 Code: POLP
 56. Compliance Status: CMPA - Compliance Agreement (Class I)
 57. Progress Code: CMPL - Completed
 58. Program Category: () CA - Corrective Activities () WM - Waste Management
 () ER - Envir. Restoration (X) OT - Other Activities

U. S. DEPARTMENT OF ENERGY
 ES&H Management Plan Information System
 ACTIVITY DATA SHEET
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

ACTIVITY DATA SHEET IDENTIFICATION SECTION

1. Facility: LANL 2. Name: LOS ALAMOS NATIONAL LABORATORY
 ADS No: B94D0120 3. Title: POLLUTION PREVENTION
 4. Data Sheet Status Code: PART
 5. Line Item Project ID.:
 6. Original Identifier...:
 7. Work Package Number...:
 8. Account Number.....:
 9. Work Breakdown Struc.:
 10. Reference ADS Number.:
 11. Responsible SO Code..: DP - ASSISTANT SECRETARY FOR DEFENSE PROGRAMS
 12. Resp. Contractor Code: CAU - CALIFORNIA, UNIVERSITY OF
 13. Contractor Division..: EMP
 14. Contractor Department: P30
 15. Contractor Manager...: PATRICK JOSEY 16. Phone: (505) 667-3919
 17. DOE Manager.....: JOE VOZELLA 18. Phone: (505) 665-5027

ADS CATEGORY SECTION

19. Category: () Safety & Health (X) Environmental () Other:
 21. Is activity an A-106 Plan Activity? [X] Yes [] No
 22. Functional Breakdown:

<u>FA.SA</u>	<u>Pct</u>	<u>Functional Area/Sub-Area</u>	<u>Title</u>
PP.03	74	Waste Min/PP	Opportunity Assessments
PP.04	13	Source Reduction	- Hazardous & Radioactive
PP.05	13	Reuse & Recycling	- Hazardous & Radioactive

ADS TYPE SECTION

24. ADS Type: (X) Core () Compliance () Improvement
 25. External Drivers:

<u>P/S</u>	<u>Typ</u>	<u>Driver Code</u>	<u>Driver Title</u>
Pri	LAW	FFCA	Federal Facilities Compliance Act

27. ADS DESCRIPTION SECTION

This ADS involves the development and implementation of the Process Waste Assessments, (PWA), Site Specific Plans (SSP), and Volume

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ACTIVITY DATA SHEET (continued)
LOS ALAMOS NATIONAL LABORATORY
[UNTITLED QUERY]

Reduction plans. This includes interfacing with LANL generating and operating organizations, regulators, and DOE. These activities are directed towards the compliance with the 50% reduction by FY98 using FY93 as the base year.

PP.01 PROGRAM PLANNING AND DEVELOPMENT

Management support includes program leadership, strategic planning and direction, guidance and procedures, procurement of funding, including developing and operating a recharge system for implementation, and visitor support. Program management includes personnel management, Activity Datasheet System management, Work Authorization Directive management, Program Tracking System reporting requirements, Annual report deliverable, Federal Facilities Compliance Agreement (FFCA) deliverables, Tiger Team Action Plans deliverables. The scope of this work package also includes coordination of the interactions between LANL and DOE and other outside stakeholders, including serving as EM Coordinator. It includes providing performance evaluation procedures and QA, and includes providing technical support and data to other Laboratory functions. Clerical and secretarial support for the entire program are included in this work element.

PP.03 WASTE MIN/PP OPPORTUNITY ASSESSMENTS

This work element provides for the continuing implementation by the generators of the Process Waste Assessment (PWA) system. This includes performing walkthroughs with the Pollution Prevention Program Office support and operating the PWA software. This element includes performing 50 PWAs per year.

PP.04 SOURCE REDUCTION HAZARDOUS AND RADIOACTIVE

This work element includes using PWA data and contractor support to support the development of Site Specific Waste Minimization Plans for DP generators implementation efforts. This effort also includes development of SSPs that do not require an initial PWA effort. This element includes writing 100 SSPs per year.

PP.05 REUSE AND RECYCLING, HAZARDOUS, RADIOACTIVE

This work element includes both internal and external recycling efforts. Internal recycling includes distribution of a list of reusable chemicals to interested Laboratory personnel. External recycling includes development of technical and contractual relationships to recycle chemicals through commercial users. Approximately \$50,000 in travel will be required. Actual recycling implementation costs are not included in this element.

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 ES&H Management Plan Information System
 ACTIVITY DATA SHEET (continued)
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

28. APPRAISAL SECTION

Public Safety & Health:

Site Personnel Safety & Health:

Compliance: Failure to implement this ADS will result in violation of the Federal Facilities Compliance Agreement on mixed waste, the Resource Conservation Recovery Act, the Pollution Prevention Act, and DOE Order 5400.1.

Mission Impact:

Investment Impact:

Environmental Impact: Failure to implement this ADS will result in a steady increase in waste generated at the Laboratory.

Other Factors:

ADS SCORING SECTION

29. ADS Scoring	<- Before Scoring ->	<- After Scoring ->
	<u>Csq</u> <u>L'hood</u> <u>Score</u>	<u>Csq</u> <u>L'hood</u> <u>Score</u>
Public Safety & Health		
Site Personnel Safety & Health		
Compliance		
Mission Impact		
Investment Impact		
Environmental Protection		
 NET BEFORE AND AFTER:	 0.0000	 0.0000
 NET SCORE.....:	 0.0000	
30. Contractor Adj:	0.0000	31. Other Score: 0.0000
Ops Office Adj:	0.0000	32. Priority...: 3
Sec Office Adj:	0.0000	33. Scored By...:
TOTAL ADJUSTED.....:	0.0000	34. Score Date.: / /

U. S. DEPARTMENT OF ENERGY
 ES&H Management Plan Information System
 ACTIVITY DATA SHEET (continued)
 LOS ALAMOS NATIONAL LABORATORY
 [UNTITLED QUERY]

ADS RESOURCE DATA SECTION

36. Funding: 37. Fund Case: 38. Resource Structure Code: TE0303
 (X) Program () Decrement 39. Budget & Reporting Code: EW3100000
 () Indirect () Target
 () Outside (X) Planning 40. Start Year: 1994
 by: () Unfunded 41. End Year:

FY	OE	CE	GPP	LIP	TOTAL	Fed FTE	Ctr FTE
1993	0.0	0.0	0.0	0.0	0.0	0.00	0.00
1994	1,900.0	0.0	0.0	0.0	1,900.0	6.00	0.00
1995	2,161.0	0.0	0.0	0.0	2,161.0	6.00	0.00
1996	2,458.0	0.0	0.0	0.0	2,458.0	6.00	0.00
1997	2,793.0	0.0	0.0	0.0	2,793.0	6.00	0.00
1998	3,179.0	0.0	0.0	0.0	3,179.0	6.00	0.00
1999	3,617.0	0.0	0.0	0.0	3,617.0	6.00	0.00
2000	4,113.0	0.0	0.0	0.0	4,113.0	6.00	0.00
2001	0.0	0.0	0.0	0.0	0.0	6.00	0.00

Escalated? Yes No

45. Cost Estimate Notes

Based on 50 PWAs/year.

* Outyears have been escalated at 3.4% per year.

ADS TRACKING SECTION

47. Management Approval? Yes No
 48. Activity In-process? Yes No
 49. Design Plan Completion...: / /
 50. Construction Start.....: / /
 51. Construction Completion...: / /
 52. Final Compliance Required: / /
 53. Fiscal Year Completed.....:

U. S. DEPARTMENT OF ENERGY
ES&H Management Plan Information System
ACTIVITY DATA SHEET (continued)
LOS ALAMOS NATIONAL LABORATORY
[UNTITLED QUERY]

ADDITIONAL A-106 DATA REQUIREMENTS

54. Multiple Sites? [] Yes [X] No

55. Pollutant Category Driver: RCRA
Code: POLP

56. Compliance Status: CMPA - Compliance Agreement (Class I)

57. Progress Code: CMPL - Completed

58. Program Category: () CA - Corrective Activities () WM - Waste Managem
() ER - Envir. Restoration (X) OT - Other Activit

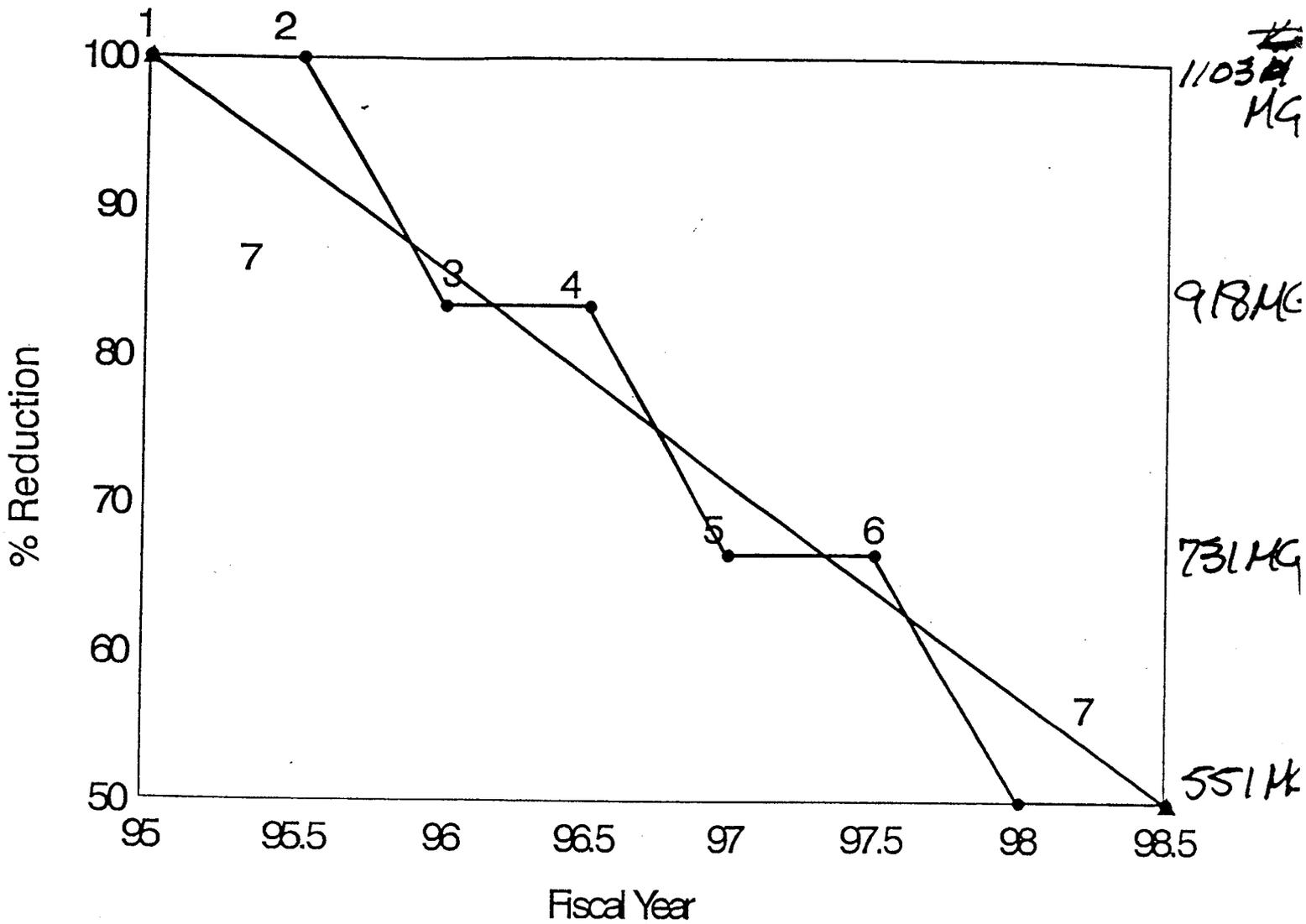
APPENDIX F
"SPECIFIC RESEARCH AND DEVELOPMENT PROJECTS OF NOTE"

R&D Projects for the Tri-Annual Pollution Prevention Plan (not including EM-352 funded projects, productivity projects, and PWA projects:

- 1) **Maintain Pollution Prevention/Environmentally Conscious Manufacturing**
Laboratory-wide database of technology development projects, operational projects, and pollution prevention needs that are the out put of the Pollution Prevention Opportunity Assessments. This information is being used primarily to cross-reference needs with operational and technical programs to solve Laboratory pollution prevention problems.
- 2) **Upgrade Process Waste Assessment system to include Cost-benefit analysis and environmental databases in order to implement Laboratory-wide environmental information system (POWERS).**
- 3) **Complete mixed waste studies through recharge programs to comply with the mixed waste FFCA.**
- 4) **Continue tech transfer and outreach programs such as NIST Manufacturing Extension Partnership National Videoconferencing Project, American Textiles Partnership, Partnership for Environmental Technologies and Education Program, Center for Hemispherical Cooperation.**
- 5) **Continue Photographic Waste Minimization efforts through Photography Waste Minimization Committee.**
- 6) **Continue work on TA-55 ATLAS program for actinide separations.**
- 7) **Develop small business projects through Environmentally Conscious manufacturing Technology Transfer and Training Initiative.**
- 8) **Complete efforts for waste reduction at electroplating facilities.**
- 9) **Continue life-cycle program on energetic materials and high explosives.**
- 10) **Expand Supercritical Fluids Test Facility to include work from the LANL Material Substitution Committee.**

APPENDIX G: ACTIVITY FLOW CHARTS

Chemical Wastes



HAZARDOUS RCRA, EPCRA CHEMICALS, NON-RCRA STATE REGULATED, AIR EMISSIONS, WATER RELEASES, AND OZONE DEPLETORS

1. Perform 45 Process Waste Assessments and 25 walkthroughs, apply Best Available Technology and develop 70 Site Specific Plans for implementation.

2. Implement first 70 SSPs.

3. Perform 45 Process Waste Assessments and 25 walkthroughs, apply Best Available Technology and develop 70 Site Specific Plans for implementation.

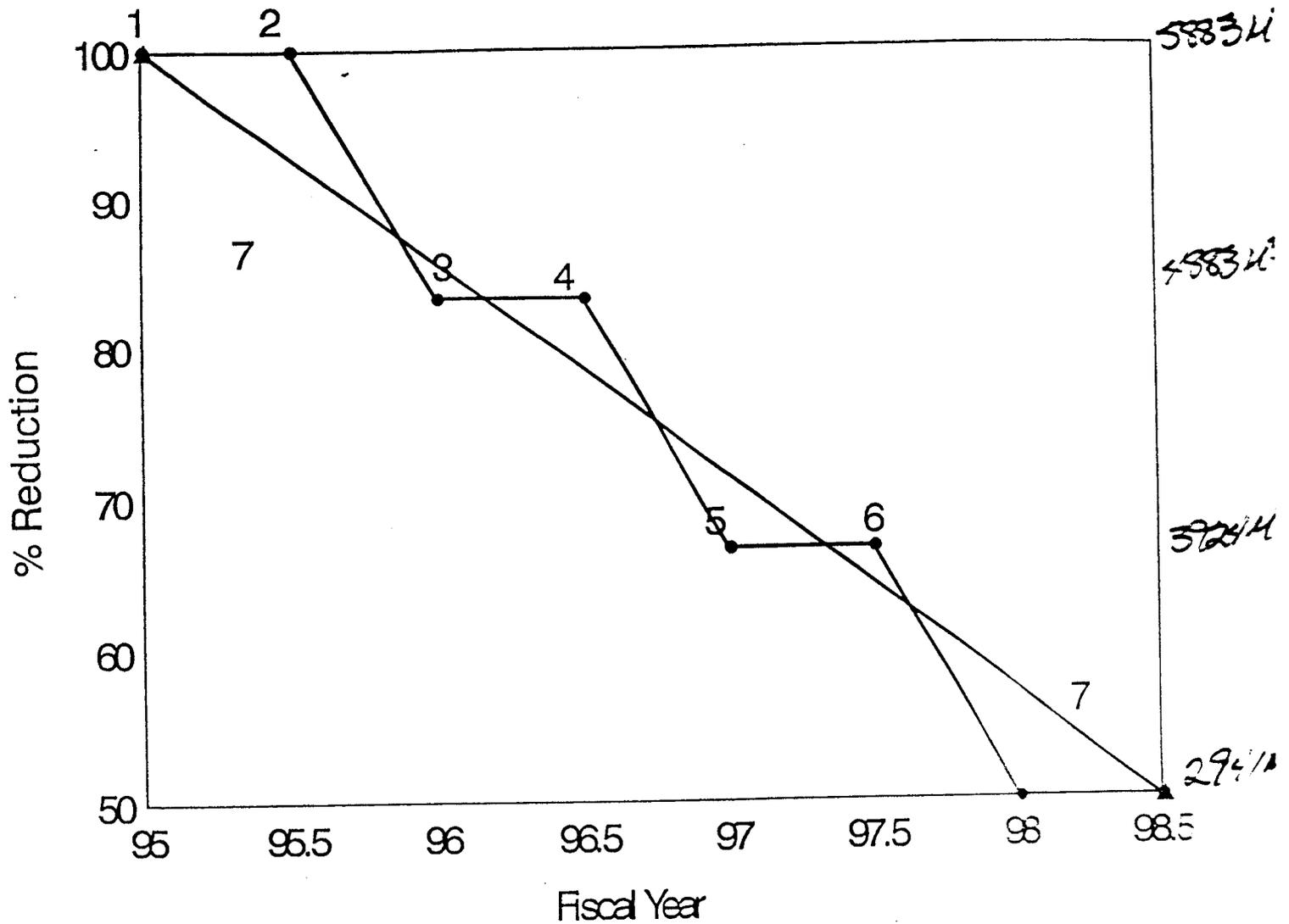
4. Implement second 70 SSPs.

5. Perform 45 Process Waste Assessments and 25 walkthroughs, apply Best Available Technology and develop 70 Site Specific Plans for implementation.

6. Implement third 70 SSPs.

7. Further develop external recycling as a cost effective and environmentally sound alternative to disposal.

Low Level Radioactive and TRU Wastes



LOW LEVEL RADIOACTIVE AND TRU

1. Perform 15 Process Waste Assessments and 10 walkthroughs, apply Best Available Technology and develop 25 Site Specific Plans for implementation.

2. Implement first 25 SSPs.

3. Perform 15 Process Waste Assessments and 10 walkthroughs, apply Best Available Technology and develop 25 Site Specific Plans for implementation.

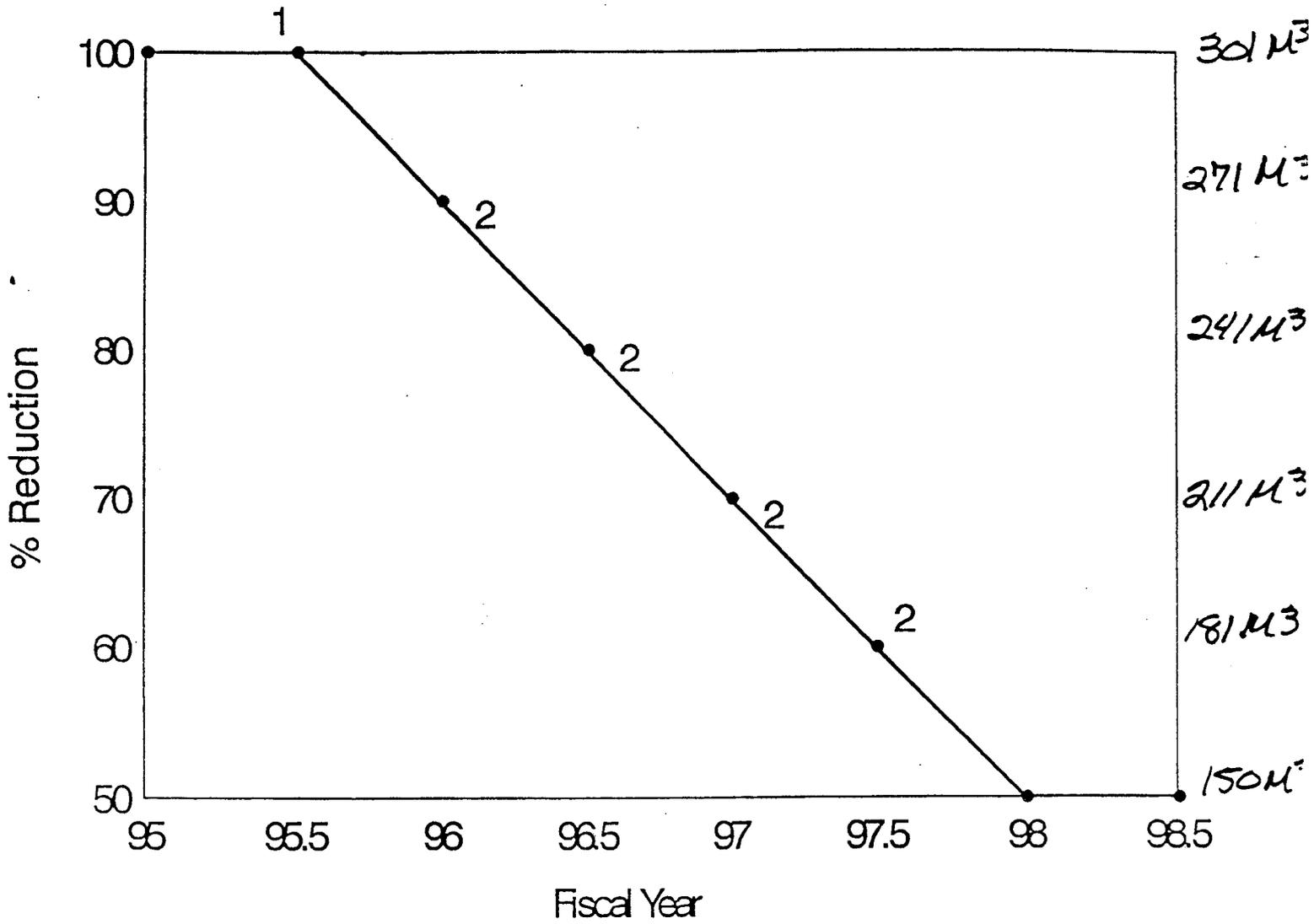
4. Implement second 25 SSPs.

5. Perform 15 Process Waste Assessments and 10 walkthroughs, apply Best Available Technology and develop 25 Site Specific Plans for implementation.

6. Implement third 25 SSPs.

7. Use the Waste Acceptance for Non-nuclear Disposal (WAND) project to eliminate suspect waste, which is estimated at approximately 50% of the LLW stream.

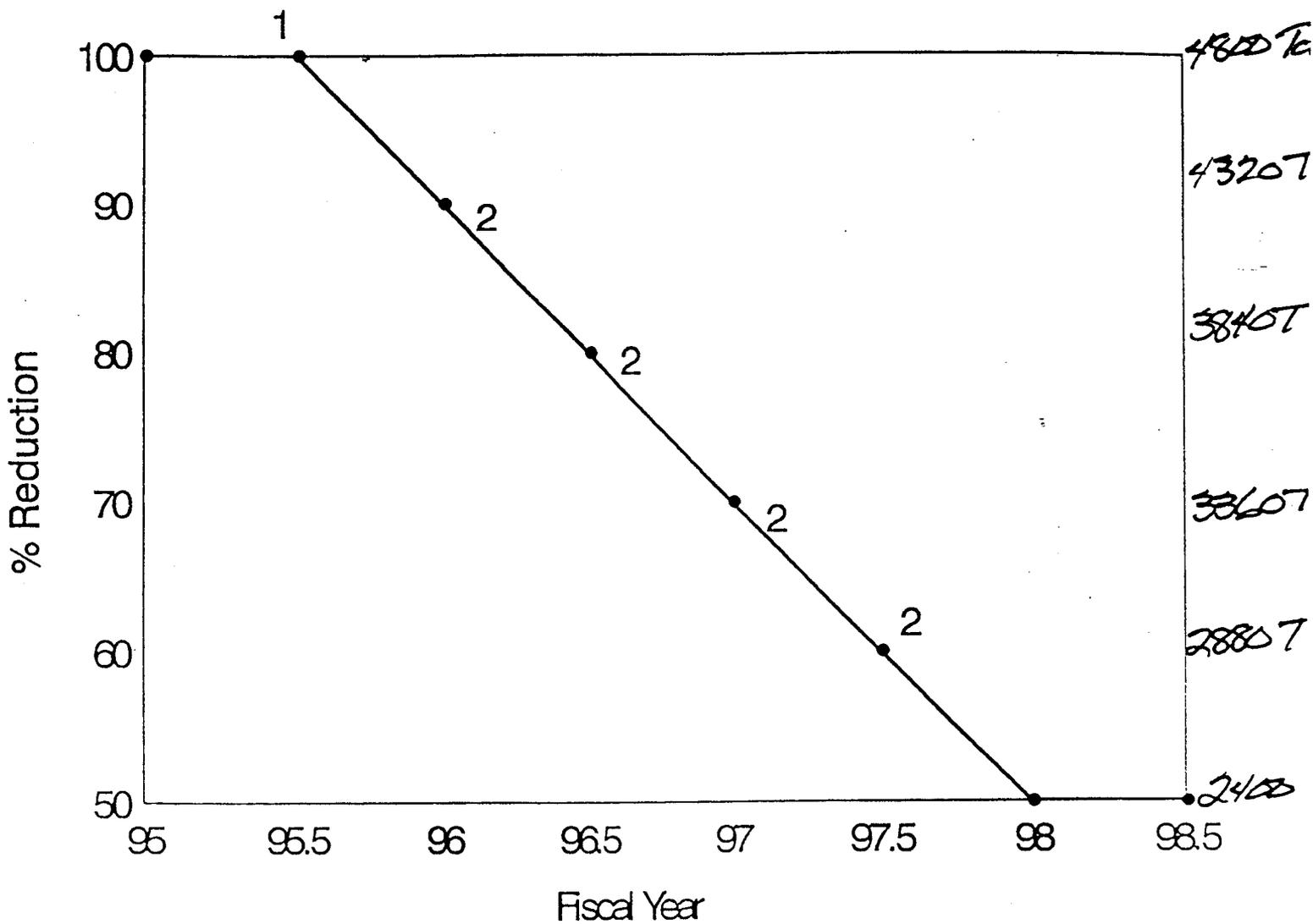
Mixed Wastes



MIXED WASTES

1. Finalize the 40 PWAs and 40 SSPs for mixed waste.
2. Implement the 40 SSPs.

Sanitary Wastes



SANITARY WASTE

1. Implement recycling programs

2. Expand recycling programs, and implement Green Facilities program