



**ACCELERATING CLEANUP:
FOCUS ON 2006**

**DISCUSSION DRAFT
CARLSBAD AREA OFFICE**

JUNE 1997

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Carlsbad Area Office Project Baseline Summary

Section I



Executive Summary

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**CARLSBAD AREA OFFICE
ACCELERATING CLEANUP: FOCUS ON 2006
DISCUSSION DRAFT - JUNE 1997
EXECUTIVE SUMMARY**

Operations/Field Office Overview:

This executive summary addresses the activities associated with the National Transuranic (TRU) Program managed by the Carlsbad Area Office (CAO). The CAO programmatically reports to the Assistant Secretary for Environmental Management and receives administrative support through the Albuquerque Operations Office.

The mission of the Carlsbad Area Office (CAO) is to protect human health and the environment by opening and operating the Waste Isolation Pilot Plant for safe disposal of TRU waste and by establishing an effective system for management of TRU waste from generation to disposal. It includes personnel assigned to the CAO, the Waste Isolation Pilot Plant (WIPP) site operations, and other activities associated with the National TRU Program. The CAO develops and directs implementation of the program, while the DOE Headquarters establishes policy and guidelines. The CAO assesses compliance with the program guidance, as well as the commonality of activities and assumptions among all the sites.

Since the development of the February 28, 1997, database used to develop this Discussion Draft, the opening of the WIPP facility for receipt of Contact Handled waste has been delayed from November 1997 to May 1998. This slippage is significant enough to require a change in the milestones and volumes included in the documents to be reviewed by our stakeholders. Changes have been incorporated into this Discussion Draft and its supporting Project Baseline Summaries (PBSs).

Accomplishments to date include:

- 1975 - WIPP site was selected for exploratory work
- 1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers
- 1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities
- 1982 - Underground excavation was initiated
- 1988 - Underground excavations, including panel 1, were completed and the facility was ready for disposal operations
- 1992 - Congress passed the WIPP Land Withdrawal Act
- 1993 - EPA issued final 40 CFR 191 (Radioactive Environmental Protection Standards)
- 1994 - Published the truck/rail transportation study required by congress
- 1994 - NRC re-certification of TRUPACT-II
- 1995 - Submitted revised RCRA Part B Application to New Mexico Environment Department
- 1995 - Published the Sealing System Design Report as required by Congress

- 1995 - Published the Remote Handled TRU Waste Study as required by Congress
- 1996 - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application
- 1996 - Published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road ready waste available from the TRU waste sites
- 1996 - Submitted Compliance Certification Application to EPA
- 1996 - Congress passed the WIPP Land Withdrawal Amendment Act
- 1996 - National Research Council, National Academy of Sciences published assessment of WIPP performance

Remaining Major Milestones :

- 1997 - Issue Final Disposal Supplemental Environmental Impact Statement Record of Decision
- 1998 - State of New Mexico issues the RCRA Part B Permit
- 1998 - WIPP Site Operational Readiness Declaration
- 1998 - EPA issues the Certificate of Compliance
- 1998 - Secretary of Energy decision to operate WIPP as a disposal facility
- 1998 - Begin Contact Handled waste disposal operations
- 2002 - Begin Remote Handled waste disposal operations

Baseline Cost Summary in Current (then year) Dollars in Thousands

Life cycle costs in the table below begin in FY97 and end with the active institutional control period as identified in Public Law 104-201. For the high case, this control period ends in FY2138. In the low case the active institutional control period ends in FY2204. The funding table is in escalated dollars as prescribed by EM Budget Formulation Guidance. The table does not include Program Direction and the privatization capital equipment budget authority for contact handled TRUPACT-II's (\$29.2 million in FY98) and remote handled 72-B cask (19.6 million in FY99).

High Scenario 1997-2006:	1,973,967	Post 2006:	11,139,986	Total Project Cost:	13,113,953
Low Scenario	1,600,379		76,856,021		78,456,400

SCENARIO	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
HIGH	189,590	179,619	188,049	193,608	197,136	201,470	198,489	201,690	206,425	217,891
LOW	189,590	163,061	155,966	155,966	155,966	155,966	155,966	155,966	155,966	155,966
DELTA	-	16,558	32,083	37,642	41,170	45,504	42,523	45,724	50,459	61,925

Performance Enhancement Scenarios

Office of Environmental Management Headquarters and Field managers agreed to develop and implement performance enhancement targets as the most practicable approach to achieving completion and compliance goals. The targets they adopted are:

- Reduce support costs to 30 percent
- Achieve annual productivity improvements of 3.5 percent for projects
- Achieve annual productivity improvements of 6 percent for operations

If the performance enhancement targets are achieved, the Environmental Management (EM) program can perform \$8 billion of additional work by 2006.

The impact of performance enhancements on the CAO program is as follows:

Current Year Dollars in Thousands

	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
High	179,619	188,049	193,608	197,136	201,470	198,489	201,690	206,425	217,891
EM Target	163,061	153,748	142,497	129,012	120,915	111,640	106,492	102,494	101,917
DELTA	16,558	34,301	51,111	68,124	80,555	86,849	95,198	103,931	115,974

Since the Carlsbad Area Office mission is significantly different than the Operations Offices, the performance enhancement scenarios may not be achievable. The CAO is committed to achieving substantial performance enhancements, even with these enhancements, additional funds will likely be necessary. Options are being considered by EM Headquarters to resolve this issue.

Site 2006 Status:

The status of the National TRU Program between the two funding scenarios is dramatically different. Progress towards disposal of the nation's TRU waste is enhanced in the high scenario and will meet the objectives of the National TRU Waste Management Plan, dated September 30, 1996. The low scenario impedes progress toward accomplishing the Department's objective of completing the clean-up of TRU waste sites. The following addresses the status in FY2006 for each scenario:

Waste Volume Disposed:

High Scenario: The high scenario would dispose of 42,505 cubic meters by FY 2006 (317% more waste than the low scenario). All TRU waste sites will be disposing or will have completed disposal of their TRU waste. The high scenario would also allow for the disposal of Remote Handled waste beginning in FY2002.

Low Scenario: The low scenario would dispose of 13,402 cubic meters by FY2006. TRU waste would be received from only three sites (INEEL, RFETS, and LANL). No Remote Handled waste will be disposed in the low scenario.

Regulatory Compliance:

High Scenario: The current DOE regulatory compliance commitments for TRU waste disposal will be met and the National TRU Waste Management Plan schedule will be met.

INEEL:

- All TRU Waste Shipped to WIPP by December 31, 2018
- 3,100 cubic meters of TRU waste shipped by December 31, 2002
- Running average of 2,000 cubic meters per year of TRU waste shipped after January 1, 2003

LANL:

- Complete TRU waste treatment by December 31, 2010
- Bring Pads 1, 2, and 4 into RCRA compliance by 2003

Mound:

- Relinquish Mound facility to local authorities by 2005

ORNL:

- Initiate shipment of stabilized RH TRU sludges by September 30, 2002
- Initiate shipment of processed CH and RH TRU solids by March 31, 2015
- Complete shipment of all TRU waste by September 30, 2030

RFETS:

- Newly generated Mixed - TRU waste can not be stored for longer than two years

Low Scenario: Under the low scenario, the national transuranic waste program would face substantial compliance challenges. DOE is committed to achieving the goals of the national transuranic waste program through a combination of performance enhancements and most likely additional funding.

INEEL:

- To meet requirements at the INEEL, an additional 234 shipments of 33 drums per shipment by December 2002 would be necessary

INEEL will need to make 14,389 shipments between January 2003 and September 2018 (10 treated drums per shipment) to meet the compliance completion date.

Mound:

- Mound would need to make 44 shipments prior to January 2005

ORNL:

- ORNL would need to make a total of 188 Contact Handled TRU shipments and 2,230 Remote Handled shipments beginning no later than September 30, 2002 and ending no later than September 30, 2023

RFETS:

- RFETS would require an additional 1010 shipments between 1998 and 2006 to meet the compliance completion date.

Population Risk Assessment:

Specific risk reduction is addressed in WIPP Base Operations project (CAO-1) for operations and in WIPP Transportation project (CAO-3) for transportation risk. The risk associated with the WIPP activities has to be assessed in terms of the National TRU program instead of the disposal facility. The disposal of TRU waste at WIPP has been based upon a determination of no reasonable probability of undue risk to the public or the environment for 10,000 years.

More than 60 million people are potentially at risk, because they live within a 50-mile radius of sites throughout the United States that are temporarily storing Transuranic radioactive waste. WIPP allows the disposal of this waste thus eliminating the risk to the public and the accessible environment.

High Scenario: A reduction of 94% population risk is achieved during the first 10 years. During the projected 35 year life of the facility a risk reduction of 99.8% will be achieved.

Low Scenario: The low scenario, even with performance enhancements, would provide modest risk reductions through waste consolidation and other activities.

Mortgage Reduction:

Mortgage reduction for CAO projects is addressed in section B.4.2 of each Project Baseline Summary (PBS). The reduction addressed is from the low scenario to the high scenario. No assessment has been made for the reductions to the TRU waste sites which will no longer be required to store and undertake surveillance and maintenance activities in either case.

Life Cycle Cost Estimates: The actual cost of the WIPP from FY77 through FY96 is \$1.9 billion (excluding the federal employees salaries). The 1995 life cycle cost estimate included in the FY96 Baseline Environmental Management Report (BEMR) was \$8.7 billion (in FY98 dollars), however, this estimate did not include costs for Remote Handled waste transportation, Mobile Transportation Systems, and impacts from the promulgation of 40 CFR 194 by EPA. Both the BEMR and the EM Accelerated Cleanup Plan's life span ends in FY2070, however, the WIPP life cycle extends past this period due to statutory requirements for 100 years of "Active Institutional Controls." In addition, the low scenario would require an operational period of 100

years, a five year dismantling and decommissioning period and 100 years of “Active Institutional Controls” for an end state of FY2203 versus the end state of FY2138 in the high scenario.

The following tables provide comparisons of life cycle costs (in FY98 dollars) using both the high and low scenarios:

<u>Scenario (\$ in billions)</u>	<u>FY77-FY96</u>	<u>FY97-FY2070</u>	<u>Post FY2070</u>	<u>Total</u>
Low	\$1.9	\$8.8	\$3.8	\$14.5
High	\$1.9	\$7.1		\$9.0
BEMR	\$1.9	\$6.8		\$8.7
Program Direction				
Low	Unknown	\$.5	\$.7	\$1.2
High	Unknown	\$.4	\$.1	\$.5

Mortgage Reduction Analysis: A real savings of \$6.2 billion in FY98 dollars is achievable by selecting the high scenario. This requires an increase of approximately \$40 million (over the low case of \$155 million) a year for 35 years to accomplish the National TRU Waste Management Plan (\$1.4 billion increase). The actual savings is even larger since the low scenario does not include the cost of transporting and disposing Remote Handled Waste. The CAO evaluated scope trade-offs in the low scenario to accommodate the total amount of the State Impact Assistance. However, CAO believes that further reductions to the scope included in the low scenario would totally negate the integral scope relationships, thus resulting in an imbalanced program which could not meet the established objectives. DOE is committed to achieving the goals of the national transuranic waste program through a combination of performance enhancements and most likely additional funding.

Path Forward/Site Specific Strategies:

High Scenario: The high scenario will provide enough funding to implement the program contained in the National TRU Waste Management Plan. This program will fulfill the CAO mission of an integrated TRU waste management system that assures the efficient, sustained and cost- effective disposal of TRU waste. It strategically accelerates the disposal of TRU waste so that many TRU waste sites will be completed by the end of FY 2006. The resulting benefits of the Plan include:

- Regulatory compliance, with each TRU waste site achieving compliance with current legal agreements and statutory requirements and many sites in a position to accelerate compliance activities;
- Risk reduction, by achieving accelerated TRU waste disposal;
- Mortgage reduction, by ensuring waste is shipped to the WIPP at maximum process capacities, thus enabling facilities to be closed earlier; and

- Effective WIPP utilization, by ensuring waste shipments closely match the waste handling and disposal capacities of the WIPP, resulting in the maximum possible disposal of stored and newly generated TRU waste by FY 2006.

The WIPP will continue to receive waste until FY 2033, after which the repository will be sealed and surface facilities decommissioned and active institutional controls will be initiated and maintained for 100 years.

Low Scenario: The low scenario will allow WIPP to only receive Contact Handled waste, at a restricted rate of 5 truckloads per week. At this rate, the operational life of the WIPP facility must be extended from 35 years to 100 years if the total statutory capacity is to be utilized. At the restricted rate of 5 truckloads per week, actual disposal operations would end in FY 2124. Through technology development and other efficiencies, CAO is confident the calculated 125 year operational life can be shortened to 100 years. This life cycle extension will increase the risk (aging waste containers and storage facilities) to workers, the public, and the environment at both the WIPP and the TRU waste sites. The life cycle costs of the WIPP and the waste storage sites would also increase significantly and major facility modifications will be required.

Efficiencies

High Scenario: In addition the reductions of over \$419 million already achieved from the July 1996 Draft estimate, the CAO has accepted a 3% per year for eight years target reduction in CAO-1 for operations of the WIPP site for a total of \$110 million. These efficiencies include any reductions to mission support as well as any re-engineering that may be achieved after the WIPP is open.

Low Scenario: CAO is committed to achieving performance enhancements whenever possible.

Intersite/Interstate Interactions :

WIPP will receive TRU waste from TRU waste sites located across the nation: WIPP will receive TRU waste only from INEEL, RFETS and LANL in the low scenario. The current schedule and volumes to be disposed are:

<u>TRU Waste Site</u>	<u>Corridor Opening Date</u>	<u>First Shipment Date</u>
INEEL, RFETS, LANL	1998	1998
SRS	1998	1998
Hanford	1999	1999
LLNL, NTS	1999	1999
ANL-E, Mound, SQS	1999	1999
ORNL	2001	2002

Low Scenario: 100 year operating life - Contact Handled TRU Waste Only

Years	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98 - 06	Life Cycle
INEL	158	323	323	316	329	597	486	356	268	3155	33060
LANL	237	387	399	376	387	346	357	395	282	3165	16957
RF	260	1033	1063	1033	1063	756	554	547	771	7081	14633
Others	0	0	0	0	0	0	0	0	0	0	71000
Total	654	1743	1784	1725	1780	1699	1397	1297	1322	13402	135649

High Scenario: 35 year operating life - Contact-Handled and Remote-Handled TRU Waste

CONTACT-HANDLED TRU WASTE DISPOSED

Years	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98 - 06	Life Cycle
ANL-E	0	22	52	4	0	0	0	4	0	83	87
Hanford	0	225	554	554	609	569	570	562	585	4227	23009
INEL	227	611	652	686	686	453	1572	2241	2442	9570	33147
LANL	127	374	374	1715	1600	1498	1117	1437	1498	9742	16957
LLNL	0	0	218	175	15	15	38	15	15	490	1122
Mound	0	29	74	169	4	0	0	0	0	275	275
NTS	0	0	667	0	0	0	0	0	0	667	667
ORNL	0	0	0	0	0	374	636	262	15	1288	1445
RFETS	163	659	2718	3175	3355	3108	1228	187	41	14633	14633
SQS	0	0	44	20	4	0	4	6	0	79	163
SRS	70	210	210	210	210	183	166	131	61	1450	11507
ER/D&D	0	0	0	0	0	0	0	0	0	0	66742
Total	586	2129	5563	6708	6483	6201	5332	4846	4657	42505	169754

REMOTE-HANDLED TRU WASTE DISPOSED

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98 - 06	Life Cycle
Hanford	0	0	0	0	0	0	0	0	180	180	2659
INEEL	0	0	0	0	0	0	0	0	0	0	363
LANL	0	0	0	0	44	45	40	4	4	135	230
ORNL	0	0	0	0	388	401	363	397	214	1762	1985
SQS	0	0	0	0	0	0	43	45	45	132	610
Total	0	0	0	0	432	445	446	445	441	2209	5846

Stakeholder Involvement:

The Office of Environmental Management Program is asking the public to help it formulate a long-term approach to cleaning up the weapons complex, and to help deal with issues that have often been submerged in the past. CAO is interested in stakeholder comments over the next 90 days (comment period ends September 9, 1997) on the CAO Discussion Draft, as well as the EM Discussion Draft. At the conclusion of this review period, a Draft 2006 Plan will be released in the fall. Additional comments will be requested by the public and the Initial 2006 Plan will be

finalized and issued in early 1998. EM, in a parallel effort, has asked sites to involve stakeholders in the formulation of the FY99 budget. The EM FY99 budget is being developed concurrently with the Discussion Draft. In July, EM will be holding a national feedback session to discuss the EM national FY99 budget. The options and alternatives described in the discussion draft and future iterations of the 2006 Plan will impact budget formulation and execution activities. This planning process will allow EM to develop annual budgets in the context of long term objectives. CAO's stakeholder involvement in the 2006 planning process has focused mainly on the National Governors' Association (NGA) and the TRU waste sites. The National TRU Waste Management Plan was submitted to the NGA for comments. Also, the CAO has made presentations to the Western Governors' Association and to the Southern States Energy Board on the National TRU Waste Management Plan.

When the CAO submits its Discussion Draft to DOE Headquarters, the CAO will undertake the following activities:

- Mail the plan to key stakeholders
- Announce the plan's availability through normal communications channels

Comments on issues related to the EM National Accelerated Cleanup Plan discussion draft or comments concerning cross-site or policy issues should be submitted directly to EM at the following address:

U.S. Department of Energy
Mr. Gene Schmitt
P.O. Box 44818
Washington, DC 20026-4481
Toll Free #: 1-800-736-3282
Email Address: FocusOn2006@EM.DOE.GOV (not case sensitive)

Comments on the Carlsbad Area Office Discussion Draft should be provided directly to the following:

U.S. Department of Energy
Carlsbad Area Office
Mr. Dennis Hurtt
P.O. Box 3090
Carlsbad, NM 88221-3090
(505) 234-7327

Other Opportunities:

Resolution of national stakeholder issues may result in additional opportunities to reduce cost and more efficiently transport and dispose the national TRU waste inventory.

Carlsbad Area Office Project Baseline Summary

Section II



**CAO-1
WIPP Base Operations**

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: WIPP Base Operations
A.0.2. Unique Site-Designated Project ID: CAO-1 High Scenario
A.0.3. Site(s): WIPP
A.0.4. Operations/Field Office: Carlsbad Area Office
A.0.5. DOE Project Manager: George E. Dials
A.0.6. DOE Project Manager Phone Number: 505-234-7300
A.0.7. DOE Project Manager FAX Number: 505-887-1851
A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-1: WIPP Base Operations - High Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

The purpose of the WIPP is to permanently dispose, in a safe and environmentally sound manner, Transuranic (TRU) waste generated and placed in storage as a consequence of the nation's nuclear defense, research, and production activities. The waste is currently in storage or is projected to be generated at DOE TRU waste sites around the country.

A.1.2 Definition of Scope:

The base operations project includes all activities required to maintain waste receipt and disposal operations including mining, waste handling and facility operations. Also included in this project are activities required to maintain and operate WIPP that are not directly related to waste disposal, such as maintaining compliance with federal and state laws, regulations and standards not related to radioactive waste; providing a safety and health program that includes radiation safety, industrial safety and emergency management; quality assurance; performing maintenance on 22 systems and associated subsystems and equipment; operating and monitoring facility systems on a 24 hour per day, 7 days a week basis; and maintaining the underground facilities (currently the underground facilities consist of 2,400,000 square feet of horizontal openings and 4 vertical shafts each of which is over 2,150 feet deep). In addition, this project includes the administrative services and program management activities required to achieve day-to-day and long term objectives.

The high scenario will provide enough funding to allow for the removal and emplacement of waste from most TRU waste sites by the end of FY 2006 and for WIPP to reach its planned TRU waste capacity by FY 2033. The low scenario will restrict waste shipments to a rate of 5 truckloads per week. At this rate the operational life of WIPP will expand from 35 years to 100 years, increasing the risk and life cycle costs at WIPP and the TRU waste sites.

A.1.3 Technical Approach:

The WIPP facility resides inside a 16 square mile area placed under the jurisdiction of the DOE by the Waste Isolation Pilot Plant Land Withdrawal Act (LWA). The WIPP facility is designed to accomplish three goals: 1) to receive, handle and dispose of TRU waste and TRU-mixed waste; 2) to protect the health and safety of workers, the public and the environment; and 3) to comply with applicable radiation protection standards, environmental regulations, and requirements of federal, state, and local agencies. The amount of waste to be received at WIPP is governed by the LWA which set the total volume for Contact Handled (CH) and Remote Handled (RH) waste at a maximum of 6.2 million cubic feet (175,600 cubic meters), and an activity level associated with RH waste is limited to a total of 5.1 million curies. The surface facilities at the WIPP accommodate the personnel, equipment and support services required for the receipt, preparation and transfer of the waste from the surface to the underground. Four vertical shafts connect the surface facilities to the underground. The underground waste disposal area is located in a geologic repository mine 2,150 feet below the surface in a massive formation of rock salt. The waste disposal area consists of 8 panels, each of which contains seven rooms. In the high scenario, a 35 year operating time period is estimated to mine and fill all 8 panels and the 4 access drifts. This 35 year period will start the day the first drum of waste is emplaced. At the end of the 35 year period, it is estimated that 5 years will be required for closure of the repository and dismantlement and decommissioning activities. After closure, active institutional controls for the prevention of human intrusion will be employed for a period of 100 years.

CAO-1: WIPP Base Operations - High Scenario

The National Research Council's report on the WIPP, dated October 1996, validated the project as a viable solution for the permanent, safe disposal of defense generated radioactive TRU waste.

A.1.4 Project Status in FY 2006:

Continue disposing the remaining TRU waste inventory until the WIPP waste volume capacity reaches the statutory limits in FY2033, after which the repository will be sealed and surface facilities dismantled and decommissioned. Active institutional controls will then be activated and maintained for 100 years.

A.1.5 Post 2006 Project Scope:

Continue disposing the remaining TRU waste inventory until the WIPP waste volume capacity reaches the statutory limits in FY2033, after which the repository will be sealed and surface facilities dismantled and decommissioned. Active institutional controls will then be activated and maintained for 100 years.

A.1.6 Project End State:

At the completion of the disposal phase, five years will be required to prepare the repository for permanent closure and decommissioning of the surface facilities. Monuments and markers will be built at the site to warn people of the presence of the repository. Active institutional controls over the site will be maintained for 100 years. Low risk has been assigned based upon performance assessments included in the licensing of the facility, which requires no migration of hazardous or radioactive material for 10,000 years. Following completion of the project, there will be no access to the underground. The surface area will be unrestricted for recreational and agricultural uses.

A.1.7 Safety & Health Narrative

The WIPP Safety Analysis Report (SAR) documents the safety analyses that develop and evaluate the adequacy of the WIPP CH TRU safety bases necessary to ensure the safety of workers, the public, and the environment from the hazards posed by WIPP waste handling and emplacement operations during the disposal phase and hazards associated with the dismantlement and decommissioning phase. The WIPP SAR represents a statement and commitment by the DOE that the WIPP can be operated safely and at acceptable risk. Since the original approval by DOE-EM, the WIPP SAR has been reviewed and updated: (1) annually in the Fiscal Year (FY)-92, FY-93, FY-94, and FY-95 updates; and (2) to ensure compliance with the requirements of DOE Orders 5480.21, Unreviewed Safety Questions, 5480.22, Technical Safety Requirements, 5480.23, Nuclear Safety Analysis Reports, and 5480.24, Nuclear Criticality Safety. The FY96 Annual Update was approved on March 31, 1997, in accordance with the WIPP Disposal Decision Plan, to support the April 1998 Secretary of Energy decision to operate the WIPP as a disposal facility.

A.1.8 General Narrative:

The CAO has recommended a Management Plan configuration for implementation that will guide the ten-year planning process consistent with the strategic objectives, as well as achieve the overall TRU waste management goals. The facilities and activities described in the National TRU Waste Management Plan, combined with the disposal-ready waste preparation schedules (also in the National TRU Waste Management Plan), summarize current guidance to support development of site Ten-Year plans.

CAO-1: WIPP Base Operations - High Scenario

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Disposal Phase Certification and Experimental Program	CAO-2	Regulatory activity and continuing experimental programs for continued WIPP compliance certainty
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP
WIPP TRU Waste Sites Integration and Preparation	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP
Program Direction	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

A.2 Project Baseline Summary - Cost Baseline**A.2.1 Baseline Cost Summary**

1997-2006: 1,157,679

Post 2006: 7,204,180

Total Project Cost: 8,361,859

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-1	98,921	101,574	105,952	111,737	112,845	115,314	121,739	125,275	128,805	135,517

A.2.3 Cost Baseline Narrative

The low scenario assumptions support operations of the WIPP facility, including its infrastructure, as an operational nuclear facility capable of receiving TRU waste for disposal at a rate of 5 truck loads per week. The statutory requirement to pay impact assistance to the State of New Mexico is partially funded in the low case. The high case provides adequate funding to meet the National TRU Waste Management Plan, however, it assumes funding relief in FY98. Escalation has been applied to the activities in accordance with the DOE Environmental Management guidelines. Financial History/Budget

CAO-1: WIPP Base Operations - High Scenario

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned
		Month/Year
Completion of Pre-Disposal Phase	CAO-001-001	May 1998
Begin CH Disposal Operations	CAO-001-002	May 1998
Begin RH Disposal Operations	CAO-001-003	Oct 2001
Complete Waste Emplacement in Panel 1	CAO-001-004	Aug 2001
Complete Waste Emplacement in Panel 2	CAO-001-005	Apr 2004
Complete Waste Emplacement in Panel 3	CAO-001-006	Nov 2006
Complete Waste Emplacement in Panel 4	CAO-001-007	June 2009
Complete Waste Emplacement in Panel 5	CAO-001-008	Sep 2011

A.4 Life Cycle Planned Metrics

Contact Handled TRU Waste in Cubic Meters											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98-06	Life Cycle
Quantity	586	2,129	5,563	6,708	6,483	6,201	5,332	4,846	4,657	42,505	169,754

Remote Handled TRU Waste in Cubic Meters											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98-06	Life Cycle
Quantity	-	-	-	-	432	445	446	445	441	2,209	5,846

B. Financial History/Budget

B.1 Program Element: WM

B.2 Compliance Drivers

	From Table B.2.	From Table B.1.
	Total	Calculated Total
1998 OMB	101,574	101,574
1999 Target	105,952	105,952

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	98,921	101,574	105,952

B.4 Budget Request Justification

B.4.1 Justification Based on Risk Reduction:

The high scenario represents the greatest risk reduction by eliminating any potential hazards to the public, workers and the environment by means of permanently disposing of TRU waste in a deep underground repository. The high scenario also accelerates the removal of TRU waste from most sites, so that by the end of FY 2006, 94% of the population living near these sites will no longer be subject to the potential hazards of TRU waste formerly in storage. The low scenario does not reduce risk because all sites continue to have waste remaining in FY 2006. By FY 2033, the high scenario reduces population exposure by 99.8%. Much of the reduction comes from the early removal of

CAO-1: WIPP Base Operations - High Scenario

waste from small quantity sites, which generally are located near large population centers. Therefore, early investment in waste management infrastructure capable of producing WIPP-ready TRU waste will result in significant risk reduction. The low scenario would take until FY 2098 to achieve this level of risk reduction.

B.4.2 Justification Based on Mortgage Reduction:

The high scenario was developed in recognition that the acceleration of waste processing to enable earlier and more efficient disposal will reduce the financial burden on the entire complex, because closure of TRU waste management facilities also can be accelerated. This mortgage reduction primarily results from closing sites more quickly and from savings attributable to maximizing the waste handling and disposal efficiency at the WIPP. To accomplish this, the high scenario targets waste at several sites for early disposal; thus the number of sites storing TRU waste will rapidly decrease. By the end of FY 2006, only five sites will continue to store TRU waste. Closing sites sooner reduces overall costs by reducing the time landlords and other required support activities would be required. These are generally fixed costs related to safe and secure waste storage. The 1995 Baseline Environmental Management Report (DOE, 1995d) presented two case studies in which Environmental Management activities accelerated site closure. For RFETS, accelerating site closure by 20 years led to an estimated savings of \$2.4 billion, and at the K-25 facility at ORNL, accelerating closure by 30 years led to an estimated savings of approximately \$2 billion. Closing smaller TRU waste sites would result in smaller, but still significant, savings. Maximizing the waste handling and disposal efficiency of the WIPP results in lowering its life-cycle cost. Most of the infrastructure cost that is required for safe operation does not vary with waste quantities within the same operational range. Therefore, the high scenario provides maximum benefit from WIPP expenditures by providing waste volumes from throughout the complex that match the waste handling capacity and achieve the maximum disposal utility at the WIPP. The total project life cycle savings from FY 1997 through FY 2204 (end state for the low scenario) by selecting the High Scenario is \$40.8 billion (\$3.3 billion in FY98 dollars). There is an additional cost of \$32.3 billion (\$2.4 billion in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

At the high scenario, there should be sufficient funding to carryout the requirements of the TRU Waste Management Plan and allow WIPP to achieve full capacity by FY 2033. This will allow dismantlement and decommissioning activities to be completed 65 years sooner than with the low scenario.

B.4.4 Prior Years Accomplishments:

- 1975 - WIPP site was selected for exploratory work
- 1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers
- 1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities
- 1982 - Underground excavation was initiated
- 1988 - Underground excavation completed for the operational facility
- 1992 - Congress passed the WIPP Land Withdrawal Act

CAO-1: WIPP Base Operations - High Scenario

1995 - DOE submitted a Draft Compliance Certification Application to the EPA

1995 - DOE submitted a revised RCRA permit application to the New Mexico Environment Department

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

October - DOE published the Sealing System Design Report as required by Congress

October - DOE published the Remote Handled TRU Waste Study as required by Congress

February - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application

September - DOE published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road read waste from the TRU waste sites

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

October - DOE submitted the Compliance Certification Application to EPA

September - DOE's Disposal Phase Supplemental Environmental Impact Statement Record of Decision completed

September - The first shipping site characterization program will be certified

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY97 milestones and all activities included in the remainder of the CAO projects:

March - WIPP site operational readiness will be declared

April - DOE receives RCRA permit from the state of New Mexico

April - EPA certifies the Compliance Certification Application

April - Secretary of Energy makes decision to operate WIPP as a disposal facility

April - DOE notifies State and Indian Tribes of intent to transport TRU waste

May - Contact Handled Waste disposal begins at WIPP at a rate of 5 trucks per week

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY98 milestones and all activities included in the remainder of the CAO projects:

WIPP will begin receiving waste from ORNL and Hanford.

Increase the number of waste shipments from 73 in FY 1998 to 291 in FY 1999

CAO-1: WIPP Base Operations - High Scenario

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

Increase in volume of CH waste disposed from 586cubic meters in FY 1998 to 2,129 cubic meters in FY 1999.

Initiation of Panel 2 mining.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The high scenario will provide sufficient funding to carryout the requirements of the National TRU Waste Management Plan and allow WIPP to achieve full capacity by FY 2033. The low scenario would require the operational life of the WIPP to be extended an additional 65 years (100 years total) in order to achieve full capacity resulting in increased risk (aging waste containers and storage facilities) to workers, the public, and the environment and also increasing the life cycle costs of the WIPP and the TRU waste sites. The following chart reflects the increases included in the high case necessary to meet the National TRU Waste Management Plan.

(\$000)	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Increase	7516	13505	18427	20179	21006	17457	19908	24054	34901

C. Other Project Information

C.1 Risk

The WIPP will meet or exceed several standards to safeguard the public health and safety. In 1994, the EPA codified 40 CFR 191, the Environment Standards for Management and Disposal of TRU Waste. In 1996, the EPA codified 40 CFR 194, the criteria to certify WIPP's compliance with these standards. In 1993, the President issued Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, to ensure that Federal Agencies manage their facilities to reduce the releases of toxic chemicals and pollutants to the environment. WIPP submitted a draft No-Migration Variance Petition to the EPA in May of 1995. In the draft No-Migration Variance Petition, the CAO submitted a petition demonstrating that there will be no migration of hazardous constituents from the disposal unit boundary for as long as the wastes remain hazardous. A Hazard and Operability Study team concluded proper safeguards are in place at the WIPP. Consistent with 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals, reduction of risk to workers is accomplished at the WIPP by identifying controls to prevent events that result in work injury or fatality, or exposure to radiological and nonradiological hazardous materials from happening. As required by the DOE National Environmental Policy Act Implementing Procedures, 10 CFR 1021, the WIPP has prepared a Mitigation Action Plan (MAP) to eliminate or minimize adverse environmental impacts identified in DOEs Records of Decision for the WIPP. WIPP employs a number of provisions taken to mitigate potential environmental impacts including the protection of environmental resources, avoidance of unnecessary damage to vegetation, wildlife, and soil.

C.2 Validation

Project Validated? (Y/N) Y

Date Validated: 9/23/96

Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative.

CAO-1: WIPP Base Operations - High Scenario

C.3 Project Assumptions

1. WIPP will open in May 1998
2. FY 98 funding will be increased to meet the NTWMP schedule.
3. EPA will certify every 5 years.
4. WIPP will receive only defense generated, post 1970 TRU waste.
5. CAO will provide an integrated transportation system.
6. TRU waste sites will have adequate road ready waste to meet the objectives of the NTWMP.
7. Remote Handled TRU waste will be disposed at WIPP starting in FY2002
8. WIPP will be filled to capacity (176.5 thousand cubic meters) by FY2033.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2034 - FY2038)
10. Active institutional controls will be implemented in FY2039 and last for 100 years.

C.4 Supporting Documents

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1996

National TRU Waste Management Plan, September 1996

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: WIPP Base Operations
A.0.2. Unique Site-Designated Project ID: CAO-1 Low Scenario
A.0.3. Site(s): WIPP
A.0.4. Operations/Field Office: Carlsbad Area Office
A.0.5. DOE Project Manager: George E. Dials
A.0.6. DOE Project Manager Phone Number: 505-234-7300
A.0.7. DOE Project Manager FAX Number: 505-887-1851
A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-1: WIPP Base Operations - Low Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

Predecessor: None. This project is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program.

The purpose of the WIPP is to permanently dispose, in a safe and environmentally sound manner, Transuranic (TRU) waste generated and placed in storage as a consequence of the nation's nuclear defense, research, and production activities. The waste is currently in storage or is projected to be generated at DOE TRU waste sites around the country.

A.1.2 Definition of Scope:

The base operations project includes all activities required to maintain waste receipt and disposal operations including mining, waste handling and facility operations. Also included in this project are activities required to maintain and operate WIPP that are not directly related to waste disposal, such as maintaining compliance with federal and state laws, regulations and standards not related to radioactive waste; providing a safety and health program that includes radiation safety, industrial safety and emergency management; quality assurance; performing maintenance on 22 systems and associated subsystems and equipment; operating and monitoring facility systems on a 24 hour per day, 7 days a week basis; and maintaining the underground facilities (currently the underground facilities consist of 2,400,000 square feet of horizontal openings and 4 vertical shafts each of which is over 2,150 feet deep). In addition, this project includes the administrative services and program management activities required to achieve day-to-day and long term objectives.

The high scenario will provide enough funding to allow for the removal and emplacement of waste from most TRU waste sites by the end of FY 2006 and for WIPP to reach its planned TRU waste capacity by FY 2033. The low scenario will restrict waste shipments to a rate of 5 truckloads per week. At this rate the operational life of WIPP will expand from 35 years to 100 years, increasing the risk and life cycle costs at WIPP and the TRU waste sites.

A.1.3 Technical Approach:

The WIPP facility resides inside a 16 square mile area placed under the jurisdiction of the DOE by the Waste Isolation Pilot Plant Land Withdrawal Act (LWA). The WIPP facility is designed to accomplish three goals: 1) to receive, handle and dispose of TRU waste and TRU-mixed waste; 2) to protect the health and safety of workers, the public and the environment; and 3) to comply with applicable radiation protection standards, environmental regulations, and requirements of federal, state, and local agencies. The amount of waste to be received at WIPP is governed by the LWA which set the total volume for Contact Handled (CH) and Remote Handled (RH) waste at a maximum of 6.2 million cubic feet (175,600 cubic meters), and an activity level associated with RH waste is limited to a total of 5.1 million curies. However, at the low scenario, RH waste cannot be disposed at WIPP due to funding limitations. The surface facilities at the WIPP accommodate the personnel, equipment and support services required for the receipt, preparation and transfer of the waste from the surface to the underground. Four vertical shafts connect the surface facilities to the underground. The underground waste disposal area is located in a geologic repository mine 2,150 feet below the surface in a massive formation of rock salt. The waste disposal area consists of 8 panels, each of which contains seven rooms. In the low scenario, a 100 year operating time period is estimated to mine and fill all 8 panels and the 4 access drifts. This 100 year period will start the day the first drum of waste is emplaced. At the end of the 100 year period, it is estimated that 5

CAO-1: WIPP Base Operations - Low Scenario

years will be required for closure of the repository and dismantlement and decommissioning activities. After closure, active institutional controls for the prevention of human intrusion will be employed for a period of 100 years.

The National Research Council's report on the WIPP, dated October 1996, validated the project as a viable solution for the permanent, safe disposal of defense generated radioactive TRU waste.

A.1.4 Project Status in FY 2006:

Through FY 2006, the low level scenario would dispose of 70% less waste than the high level scenario. The volume of CH-TRU waste processed at the WIPP site through FY 2006 at the low level scenario is 13402 cubic meters, as compared to the high scenario of 42,505 cubic meters. INEEL, Mound, ORNL and RFETS would not comply with regulatory requirements at the low level funding scenario.

A.1.5 Post 2006 Project Scope:

At the continuing rate of receiving 5 truck loads of waste per week, it will require extending WIPP's operational life to 100 years in order to reach its capacity. Under the high scenario, full capacity will be achieved in 35 years. The life-cycle costs at the WIPP and TRU waste sites will increase due to this extension. Following the operational phase will be a five year period of dismantlement and decommissioning followed by a 100 year period of active institutional controls.

A.1.6 Project End State:

At the completion of the disposal phase, five years will be required to prepare the repository for permanent closure and decommissioning of the surface facilities. Monuments and markers will be built at the site to warn people of the presence of the repository. Active institutional controls over the site will be maintained for 100 years. Low risk has been assigned based upon performance assessments included in the licensing of the facility, which requires no migration of hazardous or radioactive material for 10,000 years. Following completion of the project, there will be no access to the underground. The surface area will be unrestricted for recreational and agricultural uses.

A.1.7 Safety & Health Narrative

At the low level scenario, there is no population risk reduction during the first 10 year cycle. During the same period in the high scenario a 94% population risk reduction is achieved. Through FY 2033, the low scenario would result in a 3.6% risk reduction because RFETS will be able to complete TRU waste operations. The high scenario reduces population exposure by 99.8% over the same duration. The WIPP Safety Analysis Report (SAR) documents the safety analyses that develop and evaluate the adequacy of the WIPP CH TRU safety bases necessary to ensure the safety of workers, the public, and the environment from the hazards posed by WIPP waste handling and emplacement operations during the disposal phase and hazards associated with the dismantlement and decommissioning phase. The WIPP SAR represents a statement and commitment by the DOE that the WIPP can be operated safely and at acceptable risk. Since the original approval by DOE-EM, the WIPP SAR has been reviewed and updated: (1) annually in the Fiscal Year (FY)92, FY93, FY94, and FY95 updates; and (2) to ensure compliance with the requirements of DOE Orders 5480.21, Unreviewed Safety Questions, 5480.22, Technical Safety Requirements, 5480.23, Nuclear Safety Analysis Reports, and 5480.24, Nuclear Criticality Safety. The FY96 Annual Update was approved on March 31, 1997, in accordance with the WIPP Disposal Decision Plan, to support the April 1998 Secretary of Energy decision to operate the WIPP as a disposal facility.

CAO-1: WIPP Base Operations - Low Scenario

A.1.8 General Narrative:

The low scenario would increase the storage costs of all 25 DOE TRU waste sites because the lifetime of the sites would extend past those derived in the high scenario. Four of the five TRU waste sites that have definitive regulatory requirements will not comply at the low scenario. Many regulatory agreements are predicated on WIPP being open for waste receipt from the sites. Where a site has no option for shipping waste, this may lead to agreements being re-negotiated. It is not realistic to assume that current regulatory agreements will persist if actions are not taken to relieve burdens imposed by storage of TRU waste inventories

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Disposal Phase Certification and Experimental Program	CAO-2	Regulatory activity and continuing experimental programs for continued WIPP compliance certainty
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP
WIPP TRU Waste Sites Integration and Preparation	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP
Program Direction	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
X	X	X	X		X	X	X

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-1	98,921	94,058	92,447	93,310	92,666	94,308	104,282	105,367	104,751	100,616

A.2.3 Cost Baseline Narrative

The low scenario assumptions support operations of the WIPP facility, including its infrastructure, as an operational nuclear facility capable of receiving TRU waste for disposal at a rate of 5 truck loads per week. The statutory requirement to pay impact assistance to the State of New Mexico is partially funded in the low case. The high case provides adequate funding to meet the National

CAO-1: WIPP Base Operations - Low Scenario

TRU Waste Management Plan, however, it assumes funding relief in FY98. Escalation has been applied to the activities in accordance with the DOE Environmental Management guidelines.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned
		Month/Year
Completion of Pre-Disposal Phase	CAO-001-001	May 1998
Begin CH Disposal Operations	CAO-001-006	May 1998
Completion of Disposal Phase	CAO-001-002	Nov 2098
Completion of Decommissioning Phase	CAO-001-003	Nov 2103
Completion of Active Institutional Controls	CAO-001-004	Nov 2203
Begin Passive Institutional Controls	CAO-001-005	Nov 2203

A.4 Life Cycle Planned Metrics

Contact Handled TRU Waste in Cubic Meters											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98-06	Life Cycle
Quantity	654	1,743	1,784	1,725	1,780	1,699	1,397	1,297	1,322	13,402	135,649

B. Financial History/Budget

B.1 Program Element: WM

B.2 Compliance Drivers

	From Table B.2.	From Table B.1.
	Total	Calculated Total
1998 OMB	94,058	94,058
1999 Target	92,447	92,447

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	98,921	94,058	92,447

B.4 Budget Request Justification

B.4.1 Justification Based on Risk Reduction:

The low scenario does not reduce risk to the population during the first ten year cycle (all sites have waste remaining at the end of FY 2006). Through FY 2033, the low scenario would result in a 3.6% risk reduction to the population because RFETS will be able to complete TRU waste operations. The high scenario reduces population exposure by 99.8% over the same duration

B.4.2 Justification Based on Mortgage Reduction:

The low scenario does not reduce life-cycle costs, but increases them. The life cycle costs of the TRU waste sites would also be adversely impacted because of increased storage costs. These sites

CAO-1: WIPP Base Operations - Low Scenario

must maintain safe and secure storage for as long as TRU waste resides at the site. The lifetimes of those sites would extend past FY 2033 (the high scenario end of WIPP's operational life), and continue to incur storage costs for the entire period. The total project life cycle savings from FY 1997 through FY 2204 (end state for the low scenario) by selecting the High Scenario is \$40.8 billion (\$3.3 billion in FY98 dollars). There is an additional cost of \$32.3 billion (\$2.4 billion in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

The low scenario is not sufficient for WIPP to accomplish its mission in its current 35 year operational life. The operational life would have to be extended to 100 years, increasing the risk to workers, the public, and the environment and increasing the life cycle costs of the WIPP and TRU waste sites.

B.4.4 Prior Years Accomplishments:

- 1975 - WIPP site was selected for exploratory work
- 1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers
- 1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities
- 1982 - Underground excavation was initiated
- 1988 - Underground excavation completed for the operational facility
- 1992 - Congress passed the WIPP Land Withdrawal Act
- 1995 - DOE submitted a Draft Compliance Certification Application to the EPA
- 1995 - DOE submitted a revised RCRA permit application to the New Mexico Environment Department

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

- October - DOE published the Sealing System Design Report as required by Congress
- October - DOE published the Remote Handled TRU Waste Study as required by Congress
- February - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application
- September - DOE published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road ready waste from the TRU waste sites.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

- October - DOE submitted the Compliance Certification Application to EPA

CAO-1: WIPP Base Operations - Low Scenario

September- DOE's Disposal Phase Supplemental Environmental Impact Statement Record of Decision completed

September - The first shipping site characterization program will be certified

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY97 milestones and all activities included in the remainder of the CAO projects:

- March - WIPP site operational readiness will be declared
- April - DOE receives RCRA permit from the state of New Mexico
- April - EPA certifies the Compliance Certification Application
- April - Secretary of Energy makes decision to operate WIPP as a disposal facility
- April - DOE notifies State and Indian Tribes of intent to transport TRU waste
- May - Contact Handled Waste disposal begins at WIPP at a rate of 5 trucks per week

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY98 milestones and all activities included in the remainder of the CAO projects:

- High Case WIPP will begin receiving waste from ORNL and Hanford
- Low Case WIPP will continue to only receive TRU waste from INEEL, LANL, and RFETS

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

Waste emplacement rates would remain constant at 5 trucks per week.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The low scenario will not provide enough funding to implement the program contained in the National TRU Waste Management Plan. It will not permit the acceleration of the disposal of TRU waste such that waste is removed from most sites by the end of FY 2006. The low scenario would require the operational life of WIPP to be extended to 100 years with additional risks (aging waste containers and storage sites) to workers, the public, and the environment and the increase in life cycle costs at the WIPP and TRU waste sites. The following chart reflects the increases included in the high case necessary to meet the National TRU Waste Management Plan.

(\$000)	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Increase	7516	13505	18427	20179	21006	17457	19908	24054	34901

CAO-1: WIPP Base Operations - Low Scenario

C. Other Project Information**C.1 Risk**

The WIPP will meet or exceed several standards to safeguard the public health and safety. In 1994, the EPA codified 40 CFR 191, the Environment Standards for Management and Disposal of TRU Waste. In 1996, the EPA codified 40 CFR 194, the criteria to certify WIPP's compliance with these standards. In 1993, the President issued Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, to ensure that Federal Agencies manage their facilities to reduce the releases of toxic chemicals and pollutants to the environment. WIPP has submitted a draft No-Migration Variance Petition to the EPA in May of 1995. In the draft No-Migration Variance Petition, the WIPP submitted a petition demonstrating that there will be no migration of hazardous constituents from the disposal unit boundary for as long as the wastes remain hazardous. A Hazard and Operability Study team concluded proper safeguards are in place at the WIPP. Consistent with 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals, reduction of risk to workers is accomplished at the WIPP by identifying controls to prevent events that result in work injury or fatality, or exposure to radiological and nonradiological hazardous materials from happening. As required by the DOE National Environmental Policy Act Implementing Procedures, 10 CFR 1021, the WIPP has prepared a Mitigation Action Plan (MAP) to eliminate or minimize adverse environmental impacts identified in DOE's Records of Decision for the WIPP. WIPP employs a number of provisions taken to mitigate potential environmental impacts including the protection of environmental resources, avoidance of unnecessary damage to vegetation, wildlife, and soil.

C.2 ValidationProject Validated? (Y/N) Y

Date Validated: 9/23/96

Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative.

C.3 Project Assumptions

1. WIPP will open in May 1998
2. CAO will not implement the NTWMP.
3. Technology will be developed that will reduce TRU waste site volumes
4. WIPP operational life will be extended from 35 years to 100 years.
5. WIPP will receive 5 trucks of CH waste per week in FY1998.
6. Waste is initially received from only 3 sites (INEEL, RFETS, and LANL). The remaining TRU waste sites will be phased over 100 years.
7. RH waste receipt will be deferred until funding becomes available.
8. EPA will certify WIPP every 5 years.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2099 - FY2103).
10. Active institutional controls will be implemented in FY2104 and last for 100 years.

C.4 Supporting Documents

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1997

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995

**Carlsbad Area Office
Project Baseline
Summary**

Section III



**CAO-2
WIPP Disposal Phase Certification
and Experimental Program**

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: WIPP Disposal Phase Certification
and Experimental Program

A.0.2. Unique Site-Designated Project ID: CAO-2 High Scenario

A.0.3. Site(s): WIPP

A.0.4. Operations/Field Office: Carlsbad Area Office

A.0.5. DOE Project Manager: George E. Dials

A.0.6. DOE Project Manager Phone Number: 505-234-7300

A.0.7. DOE Project Manager FAX Number: 505-887-1851

A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-2: WIPP Disposal Phase Certification and Experimental Program - High Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

Predecessor Project: None.

This program is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program. The purpose of the WIPP Disposal Phase Certification and Experimental Program is to support the overall objectives of the Waste Isolation Pilot Plant (WIPP) and the national transuranic (TRU) radioactive waste management system. Providing support to the operations of the national TRU system, including the WIPP, will be a major component of the activities during the disposal phase. To maintain certification for operating WIPP, the DOE will: (1) monitor and verify predicted disposal system performance; and (2) perform calculations no less frequently than once in accordance with the requirements of 40CFR194.4 and Section 8(f) of the Land Withdrawal Act (LWA).

The DOE plans to begin disposal operations at the WIPP following receipt of certification by the EPA. At the High Scenario budget level, the disposal phase is expected to last for 35 years, and will include certification activities no less than once every five years. The WIPP Disposal Phase Certification and Experimental Program contains the experimental program to be conducted during the initial 5-year certification period. It also forms the basis for longer-term activities to be carried out throughout the 35-year disposal phase.

This program includes all of the M & O's, Scientific Advisor's and supporting laboratories experimental, compliance, and performance assessment work in support of certification and operational performance improvement for the WIPP site and the national TRU system; and establishing a focused international nuclear waste disposal research development program. The DOE will conduct experimental activities to: (1) support WIPP operations, by maintaining compliance certification and enhancing WIPP and national TRU system operations; and (2) support future waste management needs, by establishing a focused international nuclear waste disposal research and development program and by enhancing proactive response to emerging DOE TRU waste management needs. This program is intended to provide the framework to maintain the WIPP as an international leader in nuclear waste management research and development activities during the disposal phase.

A.1.2 Definition of Scope:

Once the WIPP has been shown to be in compliance with regulatory requirements, the disposal phase gives an opportunity to affirm the compliance status of the WIPP, enhance the operations of the WIPP and the national TRU system, and contribute to the resolution of national nuclear waste management technical needs. The scope of the WIPP Disposal Phase Certification and Experimental Program is designed to achieve two main objectives.

1. Support WIPP and national TRU system operations. Experimental activities supporting WIPP operations will be designed to:

Maintain compliance certification. This will be accomplished by monitoring and verifying performance of the system's sensitive parameters, evaluating the information, and performing certification calculations at five-year intervals in accordance with the requirements of 40 CFR 194.4 and the WIPP Land Withdrawal Act (LWA).

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Enhance operations. This will be accomplished through focused efforts to refine knowledge and develop new methods and procedures which will reduce worker exposure to radiation and other hazards, enhance operational efficiency, reduce design and operational complexity of the WIPP and the national TRU system, and reduce costs. These goals are inter-related (for example, reducing complexity of operations is likely to reduce worker exposure to hazards and also reduce costs).

2. Support future waste management needs. Experimental activities supporting future waste management needs will be designed to accomplish two goals:

Establish a focused international nuclear waste disposal research and development program by continuing and implementing applicable joint programs with other nations and other programs. This will be accomplished through the implementation of focused experimental activities to address Objective 1 in cooperation with other national and international waste management programs and efforts. Through synergistic activities with other nations and other programs, the DOE will gain access to relevant information from other programs, will provide information to other programs, and will share costs.

Enhancing proactive response to emerging DOE TRU waste management needs. This will be accomplished by providing guidance and support to generators of TRU waste, particularly in the area of waste characterization. The CAO, as the national TRU program leader, will develop and provide technical information for the DOE's use in formulating radioactive waste management policies.

A.1.3 Technical Approach:

The technical approach used by the WIPP Disposal Phase Certification and Experimental Program will include: Disposal Phase Chemistry Program-This activity provides the technical base for 1) PA calculations to certify the WIPP, 2) improving WIPP operations, and 3) reducing the cost of potential chemical-backfills & waste characterization requirements. Disposal Room Chemistry emphasizes providing the experimental and modeling basis for decisions that will improve overall systems operations and lower costs in the areas of chemical-backfill effectiveness and emplacement processes, improving WIPP operator safety and ALARA related to waste handling and chemical backfills. Actinide Source Term & Chemical Transport emphasizes providing the experimental and modeling basis for decisions that will improve overall systems operations and lower costs in the areas of chemical-backfill effectiveness, predicting performance of specific waste streams, and reducing waste characterization requirements. Sealing Systems & Rock Mechanics-Repository sealing & rock mechanics technologies prevent shafts, drifts, panel entryways & boreholes from becoming preferential pathways for escape of regulated constituents & is the basis for predicting encapsulation of the waste. Disposal phase seals and rock mechanics activities focus on refining seals design and construction technologies and quantifying the behavior of the DRZ. This work directly supports reducing material and construction uncertainties related to certification. It also enhances system operations by reducing seal system complexity. Design refinement includes acquiring additional data on seal material properties, reevaluation of construction methodologies, and optimization of selected components. Hydrology & Transport-This activity is responsible for conducting testing and experimental activities involving hydrology/transport needed to support certification and the disposal phase experimental program. Correlation of Physical Hydrology & Geochemistry work is required to develop an internally consistent interpretation of physical hydrology measurements and geochemical measurements. Culebra Transport Studies are needed to strengthen the conceptual and mechanistic understanding of physical and chemical transport in Culebra. Regulatory Compliance- Compliance with the regulation and establishing conditions of continued compliance with 40 CFR Part 194 is essential. Effective, consistent, and timely internal

CAO-2: WIPP Disposal Phase Certification and Experimental Program - High Scenario

and external communications are critical for the success of the project. Documentation supporting this communication is necessary for maintenance of a compliant disposal phase program. Prompt, consistent, and accurate communication with the regulator is not only a good practice but required under the regulations. Tracking and reporting of compliance commitments and certification conditions will be required on a continuing basis to address the five year certification process of 40 CFR 194.15. Performance Assessment-This activity provides the Performance Assessment (PA) Calculations support for the certification application to include, Elicitation of PA information, Database Management, Documentation, PA Methodology, Sensitivity Analysis, and PA Code Maintenance. The credibility of PA for the 5year certification depends on the traceability of PA parameters to data obtained from project scientific activities. The Monte Carlo approach chosen for the WIPP PA requires a complete data base for all PA models. The results of the PA analyses are to be compared to the EPA regulatory requirements, which will be a significant part of the 5yr certification. Successful and efficient execution of the PA analyses requires a careful and traceable calculational design. Without sensitivity analyses, the sensitivity of system performance to experimental data, seal design, and new conceptual models cannot be determined. Computer software used and analyses performed in the 5-year certification must conform to QA specifications. Confirmatory Chemistry Program-This activity provides complimentary, empirical studies of gas generation, dissolved actinide concentration, and colloidal concentrations from experiments that use real CH-TRU wastes. Experiments with real waste are underway at Argonne National Laboratory-West (ANL-W) to provide confirmatory data for the models and information developed in the Disposal Phase Chemistry Program and experiments with real waste are underway at Los Alamos National Laboratory (LANL) to provide confirmatory data for the models and information developed in the Disposal Phase Chemistry Program. Confirmatory Technologies-WIPP-developed technologies are applied to international and national sealing demonstrations to gain access to seal performance data & experience in construction technologies. Design simplicity & reduced uncertainty results at WIPP. Preliminary designs have been developed for WIPP shaft seals. International Nuclear Waste Management Programs-Actively participate in the international waste-management community to share current WIPP knowledge and to further increase our knowledge through cooperative technical projects. In some areas the WIPP project is a clear leader within the international community, and can provide a real service at the international scale, by communicating its expertise in these areas. In other areas the WIPP project can benefit directly from cooperative work (teaming) with other national programs. By participating actively in the international waste-management community, the WIPP will reduce its own risks of having significant issues arise and develop without the project being aware of this process. International Tunnel Experiment-A tunnel sealing experiment is being conducted in Canada's Underground Res. Lab (URL) to evaluate. & demonstrate clay & concrete sealing technologies. This initiative funds the US portion of the costs incurred in conducting this test.

A.1.4 Project Status in FY 2006:

The WIPP Disposal Phase Certification & Experimental Program will have completed the first five (5) year certification by FY2003. The Complimentary Cumulative Distribution Function (CCDF) calculations and the Performance Input for the first five (5) year certification will be completed in FY2003.

A.1.5 Post 2006 Project Scope:

The WIPP Disposal Phase Certification & Experimental Program will complete the Complimentary Cumulative Distribution Function (CCDF) calculations and the Performance Input for the five (5) year certification in of FY2008, FY2013, FY2018, FY2023, FY2028, FY2033, and 2038.

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A.1.6 Project End State:

The WIPP Disposal Phase Certification and Experimental Program end state will occur in FY2033. The final Complimentary Cumulative Distribution Function (CCDF) calculations and the final Performance Input for the last five (5) year certification will be completed following dismantling and decommissioning (D&D) in FY2038 and the final certification will be submitted to the regulator in FY2038.

A.1.7 Safety & Health Narrative

See CAO-1

A.1.8 General Narrative:

The WIPP Disposal Phase Certification and Experimental Program is required to meet the requirements of the WIPP Land Withdrawal Act (LWA) of 1992 (public Law 102-579) as amended and the requirements of Title 40 of the Code of Federal Regulations (40 CFR) parts 191 and 194. The program is based on the need to verify performance of the system's sensitive parameters, evaluate the information, and perform certification calculations at five-year intervals as in accordance with the requirements of 40 CFR 194.4 and the WIPP LWA. The disposal phase is expected to last for 35 years, and will include certification activities no less than every five years, extending through D&D in 2038.

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP
WIPP TRU Waste Sites Integration and Preparation	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP
Program Direction	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

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A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-2	42,528	38,678	36,466	35,640	35,615	34,685	27,447	25,572	25,615	28,531

A.2.3 Cost Baseline Narrative

The Cost Baseline for the WIPP Disposal Phase Certification and Experimental Program is based on the requirements in the WIPP Land Withdrawal Act (LWA) and the requirements of Title 40 of the Code of Federal Regulations parts 191 and 194. The program is based on the need to verify performance of the system's sensitive parameters, evaluate the information, and perform certification calculations at five-year intervals or. Escalation has been applied to the activities in accordance with DOE Environmental Management guidelines.

The five-year certification activities will include experimental activities in Chemistry, Hydrology and Transport, and Sealing Systems and Rock Mechanics. The experimental activities will collect additional data to verify and evaluate the system's sensitive parameters. This information will be used by the Compliance and Performance Assessment (PA) groups to perform the certification calculations. In addition, the activities will focus efforts to refine knowledge and develop new methods and procedures which will reduce worker exposure to radiation and other hazards, enhance operational efficiency, reduce design and operational complexity of the WIPP and the national TRU system, and reduce costs. The five-year certification intervals include increased activities and costs during the years the PA calculations are being performed and during the EPA review. The PA efforts for certification include maintaining and upgrading codes and the parameter database to support the five-year certification, PA Methodology will be continually updated, and sensitivity analyses will be performed to support new information during the disposal phase. The compliance effort facilitates communication with external organizations.

The WIPP Disposal Phase Certification and Experimental Program end state will occur by the end of FY2033. The final Complimentary Cumulative Distribution Function (CCDF) calculations and the final Performance Input for the last five (5) year certification will be completed in FY2032 and the final application will be submitted to the regulator in FY2038. Escalation has been applied to the activities in accordance with the DOE Environmental management guidelines.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Month/Year
Completion of Pre-Disposal Phase	CAO-001-001	May 1998
Completion of Disposal Phase	CAO-001-002	Sep 2033
Completion of Decommissioning Phase	CAO-001-003	Sep 2038
Completion of Active Institutional Controls	CAO-001-004	Sep 2138
Begin Passive Institutional Controls	CAO-001-005	Sep 2138

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Milestone Name	Field Milestone Code	Month/Year
Complete Actinide Source Term Test Program (STTP)	CAO-001-006	Aug 2000
Complete TRU Waste Lab Experiments	CAO-001-007	Jan 2001
Compliance Certification Application	CAO-001-008	Apr 2003
Compliance Certification Application	CAO-001-009	Apr 2008

B. Financial History/Budget**B.1 Program Element: WM****B.2 Compliance Drivers**

	From Table B.2. Total	From Table B.1. Calculated Total
1998 OMB	38,678	38,678
1999 Target	36,466	36,466

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	42,528	38,678	36,466

B.4 Budget Request Justification***B.4.1 Justification Based on Risk Reduction:***

The high scenario represents the greatest risk reduction by eliminating hazards to the public, workers and the environment by means of permanently disposing of TRU waste in a deep underground repository. The high scenario also accelerates the removal of TRU waste from most sites so that by the end of FY06, 94% of the population living near these sites will no longer be subject to the potential hazards of TRU waste formerly in storage. By FY33, the high scenario reduces exposure by 99.8%. Much of the reduction comes from the early removal of waste from small quantity sites, which generally are located near large population centers. Therefore, early investment in waste management infrastructure capable of producing WIPP ready TRU waste will result in significant risk reduction.

B.4.2 Justification Based on Mortgage Reduction:

The high scenario was developed in recognition that the acceleration of waste processing to enable earlier and more efficient disposal will reduce the financial burden on the entire complex, because closure of TRU waste management facilities also can be accelerated. Implementing the high scenario requires a substantial initial financial investment to construct the necessary waste management infrastructure, but will reduce the life-cycle cost for disposal of TRU waste in the DOE complex. This mortgage reduction primarily results from closing sites more quickly and from savings attributable to maximizing the waste handling and disposal efficiency at the WIPP. To

CAO-2: WIPP Disposal Phase Certification and Experimental Program - High Scenario

accomplish this, the high scenario targets waste at several sites for early disposal; thus the number of sites storing TRU waste will rapidly decrease. By the end of FY06, only five sites will continue to store TRU waste. Closing sites sooner reduces overall costs by reducing the time landlords and other required support activities would be required. These are generally fixed costs related to safe and secure waste storage. The 1995 Baseline Environmental Management Report (DOE, 1995d) presented two case studies in which environmental management activities accelerated site-closure. For RFETS, accelerating site closure by 20 years led to an estimated savings of \$2.4 billion, and at the K-25 facility at ORNL, accelerating closure by 30 years led to an estimated savings of approximately \$2 billion. Closing small TRU waste sites would result in smaller, but significant, savings. Maximizing the waste handling and disposal efficiency of the WIPP results in lowering the life-cycle cost. The disposal costs at the WIPP are fixed for throughput rates from one to seventeen CH-TRU waste shipments or one to ten RH-TRU waste shipments per week. Also, most of the infrastructure cost that is required for safe operation does not vary with waste quantities within the same operational range. Therefore, the high scenario provides maximum benefit from WIPP expenditures by providing waste volumes from throughout the complex that match the waste handling capacity and achieve the maximum disposal utility at the WIPP. The total project life cycle savings from FY 1997 through FY 2204 (end state for the low scenario) by selecting the High Scenario is \$13.8 billion (\$1.5 billion in FY98 dollars). There is an additional cost of \$10.0 billion (\$761 million in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

Beyond FY06, when much of the TRU waste in storage has been disposed, the DOE will refocus its resources to ensure that: the inventory of TRU waste remaining in storage has been characterized and disposed; characterization and disposal capacity exists for TRU waste as it is generated; facilities that no longer have significant roles are decontaminated and decommissioned; and contaminated lands have been isolated or restored as required. Over the longer term, implementation of the high scenario will result in a viable complex-wide waste processing infrastructure. As TRU waste is retrieved and processed by the sites, facilities become available for other site programs or missions. In addition, in these outyears, the disposal capacity of the WIPP will be underutilized. TRU waste that comes into the waste management system via environmental restoration actions, decontamination and decommissioning of facilities, or other Departmental activities will be amenable to treatment and packaging for disposal. Thus, in the long term, DOE will be able to redirect its current TRU waste management resources to focus on activities that prepare additional TRU waste for disposal in the WIPP.

B.4.4 Prior Years Accomplishments:

- 1975 - WIPP site was selected for exploratory work
- 1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers
- 1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities
- 1982 - Underground excavation was initiated
- 1988 - Underground excavation completed for the operational facility
- 1992 - Congress passed the WIPP Land Withdrawal Act

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1995 - DOE submitted a Draft Compliance Certification Application to the EPA

1995 - DOE submitted a revised RCRA permit application to the New Mexico Environment Department

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

October - DOE published the Sealing System Design Report as required by Congress.

October - DOE published the Remote Handled TRU Waste Study as required by Congress.

February - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application.

September - DOE published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road ready waste from the TRU waste sites.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

October - DOE submitted the Compliance Certification Application to EPA

September - DOE's Disposal Phase Supplemental Environmental Impact Statement Record of Decision completed

September - The first shipping site characterization program will be certified

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY97 milestones and all activities included in the remainder of the CAO projects:

March - WIPP site operational readiness will be declared

April - DOE receives RCRA permit from the state of New Mexico

April - EPA certifies the Compliance Certification Application.

April - Secretary of Energy makes decision to operate WIPP as a disposal facility.

April - DOE notifies State and Indian Tribes of intent to transport TRU waste.

May - Contact Handled Waste disposal begins at WIPP at a rate of 5 trucks per week.

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY98 milestones and all activities included in the remainder of the CAO projects:

WIPP will begin receiving waste from ORNL and Hanford.

Increase the number of waste shipments from 73 in FY 1998 to 291 in FY 1999

CAO-2: WIPP Disposal Phase Certification and Experimental Program - High Scenario

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

The changes to the WIPP Disposal Phase Certification and Experimental Program from the current year (FY1998) to Budget Year (FY1999) include: Field and analyses of initial Disposal Phase Experimental Plan activities; and Onset of shaft seal construction technologies and design simplification activities.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The impact of the difference between the high and low scenarios is that the disposal phase will last for 35 years instead of the 100 years of operation. This will result in a lower life cycle cost for the project.

C. Other Project Information

C.1 Risk

See risk evaluation in CAO-1 and CAO-3

C.2 Validation

Project Validated? (Y/N)	Y
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Date Validated:	9/23/96
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Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

C.3 Project Assumptions

1. WIPP will open in May 1998
2. FY 98 funding will be increased to meet the NTWMP schedule.
3. EPA will certify every 5 years.
4. WIPP will receive only defense generated, post 1970 TRU waste.
5. CAO will provide an integrated transportation system.
6. TRU waste sites will have adequate road ready waste to meet the objectives of the NTWMP.
7. Remote Handled TRU waste will be disposed at WIPP starting in FY2002
8. WIPP will be filled to capacity (176.5 thousand cubic meters) by FY2033.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2034 - FY2038)
10. Active institutional controls will be implemented in FY2039 and last for 100 years.

C.4 Supporting Documents

WIPP Land Withdrawal Act, 1992

Systems Prioritization Method - Iteration 2, 3/95

Draft Compliance Certification Application, 3/95

National TRU Waste Management Plan, 9/96

Compliance Certification Application, 10/96

The Waste Isolation Pilot Plant - A Potential Solution For The Disposal Of Transuranic Waste, National Academy of Science, 10/96

Disposal Phase Experimental Program Plan, 1/97

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: WIPP Disposal Phase Certification
and Experimental Program

A.0.2. Unique Site-Designated Project ID: CAO-2 Low Scenario

A.0.3. Site(s): WIPP

A.0.4. Operations/Field Office: Carlsbad Area Office

A.0.5. DOE Project Manager: George E. Dials

A.0.6. DOE Project Manager Phone Number: 505-234-7300

A.0.7. DOE Project Manager FAX Number: 505-887-1851

A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-2: WIPP Disposal Phase Certification and Experimental Program - Low Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

Predecessor Project: None. This program is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program.

The purpose of the WIPP Disposal Phase Certification and Experimental Program is to support the overall objectives of the Waste Isolation Pilot Plant (WIPP) and the national transuranic (TRU) radioactive waste management system. Providing support to the operations of the national TRU system, including the WIPP, will be a major component of the activities during the disposal phase. To maintain certification for operating WIPP, the DOE will: (1) monitor and verify predicted disposal system performance; and (2) perform calculations no less frequently than once in accordance with the requirements of 40CFR194.4 and Section 8(f) of the Land Withdrawal Act (LWA).

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This program includes all of the M & O's, Scientific Advisor's and supporting laboratories experimental, compliance, and performance assessment work in support of certification and operational performance improvement for the WIPP site and the national TRU system; and establishing a focused international nuclear waste disposal research development program. The DOE will conduct experimental activities to: (1) support WIPP operations, by maintaining compliance certification and enhancing WIPP and national TRU system operations; and (2) support future waste management needs, by establishing a focused international nuclear waste disposal research and development program and by enhancing proactive response to emerging DOE TRU waste management needs. This program is intended to provide the framework to maintain the WIPP as an international leader in nuclear waste management research and development activities during the disposal phase.

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Establish a focused international nuclear waste disposal research and development program by continuing and implementing applicable joint programs with other nations and other programs. This will be accomplished through the implementation of focused experimental activities to address Objective 1 in cooperation with other national and international waste management programs and efforts. Through synergistic activities with other nations and other programs, the DOE will gain access to relevant information from other programs, will provide information to other programs, and will share costs.

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CAO-2: WIPP Disposal Phase Certification and Experimental Program - Low Scenario

certification and the disposal phase experimental program. Correlation of Physical Hydrology & Geochemistry work is required to develop an internally consistent interpretation of physical hydrology measurements and geochemical measurements. Culebra Transport Studies are needed to strengthen the conceptual and mechanistic understanding of physical and chemical transport in Culebra. Regulatory Compliance- Compliance with the regulation and establishing conditions of continued compliance with 40 CFR Part 194 is essential. Effective, consistent, and timely internal and external communications are critical for the success of the project. Documentation supporting this communication is necessary for maintenance of a compliant disposal phase program. Prompt, consistent, and accurate communication with the regulator is not only a good practice but required under the regulations. Tracking and reporting of compliance commitments and certification conditions will be required on a continuing basis to address the five year certification process of 40 CFR 194.15. Performance Assessment-This activity provides the Performance Assessment (PA) Calculations support for the certification application to include, Elicitation of PA information, Database Management, Documentation, PA Methodology, Sensitivity Analysis, and PA Code Maintenance. The credibility of PA for the 5year certification depends on the traceability of PA parameters to data obtained from project scientific activities. The Monte Carlo approach chosen for the WIPP PA requires a complete data base for all PA models. The results of the PA analyses are to be compared to the EPA regulatory requirements, which will be a significant part of the 5yr certification. Successful and efficient execution of the PA analyses requires a careful and traceable calculational design. Without sensitivity analyses, the sensitivity of system performance to experimental data, seal design, and new conceptual models cannot be determined. Computer software used and analyses performed in the 5-year certification must conform to QA specifications. Confirmatory Chemistry Program-This activity provides complimentary, empirical studies of gas generation, dissolved actinide concentration, and colloidal concentrations from experiments that use real CH-TRU wastes. Experiments with real waste are underway at Argonne National Laboratory-West (ANL-W) to provide confirmatory data for the models and information developed in the Disposal Phase Chemistry Program and experiments with real waste are underway at Los Alamos National Laboratory (LANL) to provide confirmatory data for the models and information developed in the Disposal Phase Chemistry Program. Confirmatory Technologies-WIPP-developed technologies are applied to international and national sealing demonstrations to gain access to seal performance data & experience in construction technologies. Design simplicity & reduced uncertainty results at WIPP. Preliminary designs have been developed for WIPP shaft seals. International Nuclear Waste Management Programs-Actively participate in the international waste-management community to share current WIPP knowledge and to further increase our knowledge through cooperative technical projects. In some areas the WIPP project is a clear leader within the international community, and can provide a real service at the international scale, by communicating its expertise in these areas. In other areas the WIPP project can benefit directly from cooperative work (teaming) with other national programs. By participating actively in the international waste-management community, the WIPP will reduce its own risks of having significant issues arise and develop without the project being aware of this process. International Tunnel Experiment-A tunnel sealing experiment is being conducted in Canada's Underground Res. Lab (URL) to evaluate. & demonstrate clay & concrete sealing technologies. This initiative funds the US portion of the costs incurred in conducting this test.

A.1.4 Project Status in FY 2006:

The WIPP Disposal Phase Certification & Experimental Program will have completed the first five (5) year certification by FY2003. The Complimentary Cumulative Distribution Function (CCDF) calculations and the Performance Input for the first five (5) year certification will be completed in FY2003.

CAO-2: WIPP Disposal Phase Certification and Experimental Program - Low Scenario

A.1.5 Post 2006 Project Scope:

The WIPP Disposal Phase Certification & Experimental Program will continue to submit Complimentary Cumulative Distribution Function (CCDF) calculations and the Performance Input for each of the five (5) year certification periods. The certification will be required during the 100 year disposal phase and through dismantlement and decommissioning of the site.

A.1.6 Project End State:

The WIPP Disposal Phase Certification and Experimental Program end state will occur after 100 years of disposal operations and D&D of the site, with the submission of a final certification in FY2103.

A.1.7 Safety & Health Narrative

See CAO-1

A.1.8 General Narrative:

The WIPP Disposal Phase Certification and Experimental Program is required to meet the requirements of the WIPP Land Withdrawal Act (LWA) of 1992 (public Law 102-579) as amended and the requirements of Title 40 of the Code of Federal Regulations (40 CFR) parts 191 and 194. The program is based on the need to verify performance of the system's sensitive parameters, evaluate the information, and perform certification calculations at five-year intervals or as directed by the EPA as in accordance with the requirements of 40 CFR 194.4 and the WIPP LWA. The disposal phase is expected to last for 100 years, and will include certification activities no less than every five years. A final certification will be completed after the sealing system has been installed in FY 2103.

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP
WIPP TRU Waste Sites Integration and Preparation	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP
Program Direction	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

CAO-2: WIPP Disposal Phase Certification and Experimental Program - Low Scenario

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-2	42,528	38,678	36,466	35,640	35,615	34,685	27,447	25,572	25,615	28,531

A.2.3 Cost Baseline Narrative

The Cost Baseline for the WIPP Disposal Phase Certification and Experimental Program is based on the requirements in the WIPP Land Withdrawal Act (LWA) and the requirements of Title 40 of the Code of Federal Regulations parts 191 and 194. The program is based on the need to verify performance of the system's sensitive parameters, evaluate the information, and perform certification calculations at five-year intervals. Escalation has been applied to the activities in accordance with DOE Environmental Management guidelines.

The five-year certification activities will include experimental activities in Chemistry, Hydrology and Transport, and Sealing Systems and Rock Mechanics. The experimental activities will collect additional data to verify and evaluate the system's sensitive parameters. This information will be used by the Compliance and Performance Assessment (PA) groups to perform the certificate calculations. In addition, the activities will focus efforts to refine knowledge and develop new methods and procedures which will reduce worker exposure to radiation and other hazards, enhance operational efficiency, reduce design and operational complexity of the WIPP and the national TRU system, and reduce costs. The five-year certification intervals include increased activities and costs during the years the PA calculations and certification documentation are being performed and during the EPA review. The PA efforts for certification include maintaining and upgrading codes and the parameter database to support the five-year certification, PA Methodology will be continually updated, and sensitivity analyses will be performed to support new information during the disposal phase. The compliance effort facilitates communication with external organizations.

The WIPP Disposal Phase Certification and Experimental Program end state will occur in FY2103. The final Complimentary Cumulative Distribution Function (CCDF) calculations and the final Performance Input will be submitted for the final five (5) year certification in FY2103. Escalation has been applied to the activities in accordance with the DOE Environmental management guidelines.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned
		Month/Year
Completion of Pre-Disposal Phase	CAO-001-001	May 1998
Completion of Disposal Phase	CAO-001-002	May 2098
Completion of Decommissioning Phase	CAO-001-003	Nov 2103

CAO-2: WIPP Disposal Phase Certification and Experimental Program - Low Scenario

Completion of Active Institutional Controls	CAO-001-004	Nov 2203
Begin Passive Institutional Controls	CAO-001-005	Nov 2203
Complete Actinide Source Term Test Program (STTP)	CAO-001-006	Aug 2000
Complete TRU Waste Lab Experiments	CAO-001-007	Jan 2001
Compliance Certification Application	CAO-001-008	May 2003
Compliance Certification Application	CAO-001-009	May 2008
Compliance Certification Application	CAO-001-010	May 2013

B. Financial History/Budget**B.1 Program Element: WM****B.2 Compliance Drivers**

	From Table B.2. Total	From Table B.1. Calculated Total
1998 OMB	38,678	38,678
1999 Target	36,466	36,466

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	42,528	38,678	36,466

B.4 Budget Request Justification**B.4.1 Justification Based on Risk Reduction:**

The low scenario does not reduce risk to the population during the first ten-year cycle (all sites have waste remaining at the end of FY2006). Through FY2033, the low scenario would result in a 3.6% risk reduction to the population because RFETS will be able to complete TRU waste operations. The high scenario reduces population exposure by 99.8% over the same duration.

B.4.2 Justification Based on Mortgage Reduction:

Mortgage reduction is addressed in CAO-1. The low scenario does not reduce life-cycle costs but increases them.

The low case for the WIPP program will extend the life cycle by 65 years resulting in an increased overall cost of \$13.8B for the WIPP Disposal Phase Certification and Experimental Programs. The total project life cycle savings from FY 1997 through FY 2204 (end state for the low scenario) by selecting the High Scenario is \$13.8 billion (\$1.5 billion in FY98 dollars). There is an additional cost of \$10.0 billion (\$761 million in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

CAO-2: WIPP Disposal Phase Certification and Experimental Program - Low Scenario

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

The low case funding is insufficient to appropriately manage the TRU program and continues this under managed activity for an additional 65 years. The WIPP Disposal Phase Certification Program will be required to perform additional certification activities for the 100 years of disposal operations and a final certification after the site has been closed.

B.4.4 Prior Years Accomplishments:

1975 - WIPP site was selected for exploratory work

1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers

1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities

1982 - Underground excavation was initiated

1988 - Underground excavation completed for the operational facility

1992 - Congress passed the WIPP Land Withdrawal Act

1995 - DOE submitted a Draft Compliance Certification Application to the EPA

1995 - DOE submitted a revised RCRA permit application to the New Mexico Environment Department

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

October - DOE published the Sealing System Design Report as required by Congress.

October - DOE published the Remote Handled TRU Waste Study as required by Congress.

February - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application.

September - DOE published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road ready waste from the TRU waste sites.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

October - DOE submitted the Compliance Certification Application to EPA

September - DOE's Disposal Phase Supplemental Environmental Impact Statement Record of Decision completed

September - The first shipping site characterization program will be certified

CAO-2: WIPP Disposal Phase Certification and Experimental Program - Low Scenario

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY97 milestones and all activities included in the remainder of the CAO projects:

- March - WIPP site operational readiness will be declared
- April - DOE receives RCRA permit from the state of New Mexico
- April - EPA certifies the Compliance Certification Application.
- April - Secretary of Energy makes decision to operate WIPP as a disposal facility.
- April - DOE notifies State and Indian Tribes of intent to transport TRU waste.
- May - Contact Handled Waste disposal begins at WIPP at a rate of 5 trucks per week.

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY98 milestones and all activities included in the remainder of the CAO projects.

- High Case WIPP will begin receiving waste from ORNL and Hanford.
- Low Case WIPP will only continue to receive TRU waste from INEEL, LANL, and RFETS.

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

The changes to the WIPP Disposal Phase Certification and Experimental Program from the current year (FY1998) to Budget Year (FY1999) include: Field and analyses of initial Disposal Phase Experimental Plan activities; and initiation of shaft seal construction technologies and design simplification activities.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The impact of the difference between the high scenario and the low scenario is the disposal phase will last for 100 years instead of the 35 years of operation. This will require additional certification activities which will increase the overall cost of the project.

C. Other Project Information

C.1 Risk

See risk evaluation in CAO-1 and CAO-3

C.2 Validation

Project Validated? (Y/N)	Y
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Date Validated:	9/23/96
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Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

CAO-2: WIPP Disposal Phase Certification and Experimental Program - Low Scenario

C.3 Project Assumptions

1. WIPP will open in May 1998
2. CAO will not implement the NTWMP.
3. Technology will be developed that will reduce TRU waste site volumes
4. WIPP operational life will be extended from 35 years to 100 years.
5. WIPP will receive 5 trucks of CH waste per week in FY1998.
6. Waste is initially received from only 3 sites (INEEL, RFETS, and LANL). The remaining TRU waste sites will be phased over 100 years.
7. RH waste receipt will be deferred until funding becomes available.
8. EPA will certify WIPP every 5 years.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2099 - FY2103).
10. Active institutional controls will be implemented in FY2104 and last for 100 years.

C.4 Supporting Documents

WIPP Land Withdrawal Act, 1992

Systems Prioritization Method - Iteration 2, 3/95

Draft Compliance Certification Application, 3/95

National TRU Waste Management Plan, 9/96

Compliance Certification Application, 10/96

The Waste Isolation Pilot Plant - A Potential Solution For The Disposal Of Transuranic Waste,
National Academy of Science, 10/96

Disposal Phase Experimental Program Plan, 1/97

Carlsbad Area Office Project Baseline Summary

Section IV



**CAO-3
WIPP Transportation**

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title:	WIPP Transportation
A.0.2. Unique Site-Designated Project ID:	CAO-3 High Scenario
A.0.3. Site(s):	WIPP
A.0.4. Operations/Field Office:	Carlsbad Area Office
A.0.5. DOE Project Manager:	George E. Dials
A.0.6. DOE Project Manager Phone Number:	505-234-7300
A.0.7. DOE Project Manager FAX Number:	505-887-1851
A.0.8. DOE Project Manager e-mail Address (Internet Format):	dialsg@wipp.carlsbad.nm.us

CAO-3: WIPP Transportation - High Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

Predecessor: None. This project is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program.

The purpose of the Carlsbad Area Office (CAO) Transportation project is to provide the interfaces necessary for safely and efficiently transporting Transuranic (TRU) waste from TRU waste sites that exist across the nation to the Waste Isolation Pilot Plant (WIPP). A discussion of transportation is included in this document to illustrate the level of controls and regulations maintained for the transportation segment of the WIPP program. This provides baseline information on transportation packaging, transportation fleet, and number of waste shipments. It also provides crucial information on transportation needs related to emergency response and transportation risk.

A.1.2 Definition of Scope:

This project includes all transportation activities required to meet the National TRU Waste Management Plan (DOE/NTP-96-1204, Revision 0) (NTWMP). These activities include: Emergency Response training; establishing and opening transportation corridors; Contact-Handled (CH) and Remote-Handled (RH) TRU waste packaging initiatives; carrier services; and stakeholder interfaces related to transportation. TRU waste resulting from the Nation's nuclear defense, research, and production activities has been generated and stored at various sites. Primary locations where TRU waste is currently stored are: Idaho National Engineering and Environmental Laboratory (INEEL), Los Alamos National Laboratory (LANL), Rocky Flats Environmental Technology Site (RFETS), Oak Ridge National Laboratory (ORNL), Savannah River Site (SRS), Hanford Reservation (Hanford), Nevada Test Site (NTS), Lawrence Livermore National Laboratory (LLNL), and Mound Plant (Mound). Other sites have small quantities of TRU waste that will be disposed at WIPP. The TRU waste sites scheduled to initially ship CH TRU waste to WIPP in FY98, are INEEL, LANL, RFETS, and SRS. Using the shipment schedules in the NTWMP, Hanford, LLNL and NTS will begin shipping waste to WIPP in FY99 while ORNL will begin shipments in FY2001. At this time, the WIPP facility will be at a full throughput rate of 17 CH shipments per week. In FY2002, CAO will begin receiving shipments of RH from ORNL at a rate of two (2) shipments per week and work to five (5) shipments per week.

CAO must open and maintain transportation corridors across the United States between each TRU waste site and the WIPP site. Currently, one corridor from INEEL, RFETS, and LANL will be opened in FY98. Activities required to open other corridors will require approximately two (2) years prior to shipment campaigns beginning at the sites. The phasing of corridors correspond with site shipping schedules and eliminates the need for corridor maintenance thus reducing TRU waste complex costs.

A.1.3 Technical Approach:

The high scenario has WIPP beginning waste receipt operations in May 1998 for CH TRU waste and FY2002 for RH TRU waste. WIPP is scheduled to begin CH TRU waste receipt with five truck sets (consisting of a truck, trailer, and three TRUPACT-IIs) are in service. Starting in mid-FY98, truck sets are added until the fleet size reaches 20 truck sets during FY2000. The WIPP CH TRU waste handling capacity starts at 73 shipments per year in FY98 and increases to 848 shipments per year starting in FY2001. RH TRU waste is received at a rate of 471 shipments per year beginning in FY2002 using 15 truck sets (i.e., one truck, trailer, and RH cask). Previous planning called for

CAO-3: WIPP Transportation - High Scenario

maintaining open transportation corridors with minimal waste transportation traffic. Regardless of the expected traffic, the corridors would incur ongoing costs such as emergency response training and institutional payments to state governments. Designating waste work-off campaigns for some sites allows for idle corridors to be closed thus avoiding associated costs. For example, the shipping corridors from LLNL and NTS will open in FY99 to ship all stored waste, after which time the corridors will be closed. Thereafter, dedicated waste shipments would occur intermittently, or the corridor could be opened periodically to work off newly generated waste.

A.1.4 Project Status in FY 2006:

The TRU Waste Management Plan configuration identifies site-specific waste processing rates that are coordinated with an optimal shipping fleet to complement the WIPP's waste handling and disposal capacities. By using the NTWMP configuration, approximately 42,505 cubic meters of CH TRU and 2209 cubic meters of RH-TRU waste will be processed by the sites and shipped to the WIPP for disposal. Shipments of CH-TRU waste to WIPP through FY2006 closely match the waste handling and disposal capabilities of WIPP. During this time, WIPP can accept 6,318 shipments of CH TRU waste and 6,149 shipments will be made. Through FY2006, 93% of the WIPP's CH-TRU waste handling capacity is utilized. By the end of FY2006, all sites except Hanford, INEEL, and SRS have completely disposed of all CH-TRU waste at WIPP. CH TRU waste handling capacity utilization slightly decreases after FY2006 but then remains constant until FY2016 when INEEL completes shipping TRU waste to WIPP. Shipments of RH-TRU waste begin in FY2002 at 471 shipments per year. The disposal rate continues at near capacity until mid-FY2007 when ORNL has shipped all of its stored RH TRU waste inventory. From FY2002 through FY2006, the WIPP can accept approximately 2,500 RH TRU waste shipments and 2,468 shipments are made resulting in an 82% utilization of RH TRU waste handling capacity. RH TRU waste handling capacity utilization decreases slightly in FY2007 to approximately 200 to 300 shipments per year through FY2024. Hanford and LANL continue to ship newly generated RH TRU waste.

A.1.5 Post 2006 Project Scope:

CH-TRU waste handling capacity utilization slightly decreases after FY2006 but then remains steady until FY2016 when INEEL completes shipping to the WIPP. From FY2016, only those sites still generating TRU waste continue to ship to the WIPP. RH-TRU waste handling capacity utilization decreases in mid-FY2007, ranging from 200 to 300 shipments per year, until FY2024, when only Hanford and LANL continue to ship newly generated waste. The high case results in the disposal of 103,012 cubic meters of CH-TRU waste and 5,846 cubic meters of RH TRU waste over the 35-year disposal period. These disposal volumes result in a 61% CH-TRU utilization and an 83% RH-TRU utilization of the WIPP waste volume capacity statutory limits. After FY2016 it appears as though disposal capacity at WIPP is underutilized, however, these projections do not yet account for waste that is expected to occur from Department of Energy environmental restoration (ER) projects, facility decontamination and decommissioning (D&D) activities, or future waste streams. These TRU waste streams will complete the remaining 66,742 cubic meters of WIPP capacity by FY2033. CH-TRU waste disposal from these sources can be accommodated beginning in mid-FY2016 when INEEL completes shipping. RH-TRU waste disposal from these sources can begin in mid-FY2007.

A.1.6 Project End State:

This project ends after the last shipment is completed in FY2033. At that time, the truck sets will be decommissioned, all routes and corridors closed, and institutional payments to the states will end.

CAO-3: WIPP Transportation - High Scenario

A.1.7 Safety & Health Narrative

Risk, in terms of populations living within the proximity of stored TRU waste inventories, is reduced by removing waste from the accessible environment and disposing it at WIPP. A fundamental component of the high scenario is the maximized rate at which waste is retrieved from storage, processed, and shipped for disposal. This is accomplished by focusing on easily processed waste types and sites having relatively small inventories in storage. By the end of FY2006, only Hanford, INEEL, and SRS maintain CH TRU waste in storage. RH TRU waste remains at Hanford INEEL, ORNL, and Battelle-Columbus Laboratory. The Draft Waste Management Programmatic Environmental Impact Statement (DOE, 1995c) reports the approximate population within 50 miles of each TRU waste sites to be 60.9 million (1990 census). By removing TRU waste from most TRU waste sites by the end of FY2006, 94% of this population will no longer be exposed to potential hazards associated with stored TRU waste.

A.1.8 General Narrative:

The WIPP program is statutorily directed by the WIPP Land Withdrawal Amendment Act of 1996 (Public Law 104-201). EPA has been designated as the regulator, the state of New Mexico regulates the RCRA permit, and independent oversight is undertaken by the Environmental Evaluation Group (EEG) and the National Academy of Sciences. The Sandia National Laboratories has performed as the WIPP program Scientific Advisor. 40 CFR 194 establishes the specific criteria which must be met prior to EPA's approval of the Compliance Certification Application which was submitted to EPA in October 1996. The WIPP Disposal Decision Plan (Rev. 4) identifies major milestones which must be completed in order to start disposal operations.

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations.
WIPP Disposal Phase Certification and Experimental Program	CAO-2	Regulatory activity and continuing experimental programs for continued WIPP compliance certainty
WIPP TRU Waste Sites Integration and Preparation	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP.
Program Direction	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

CAO-3: WIPP Transportation - High Scenario

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: 259,907

Post 2006: 1,320,903

Total Project Cost: 1,580,810

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-2	42,528	38,678	36,466	35,640	35,615	34,685	27,447	25,572	25,615	28,531

A.2.3 Cost Baseline Narrative

The low scenario assumptions support operations of the WIPP facility, including its infrastructure, as an operational nuclear facility capable of receiving TRU waste for disposal at a rate of 5 truck loads per week. The statutory requirement to pay impact assistance to the State of New Mexico is partially funded in the low case. The High Case provides adequate funding to meet the National TRU Waste Management Plan, however, it assumes funding relief in FY98. Escalation has been applied to the activities in accordance with the DOE Environmental management guidelines.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned Month/Year
First INEEL CH shipment to WIPP		May 1998
First RFETS CH shipment to WIPP		May 1998
First LANL CH shipment to WIPP		May 1998
First SRS CH shipment to WIPP		May 1998
First ORNL CH shipment to WIPP		Oct 2002
First Hanford CH shipment to WIPP		May 1999
First LLNL CH shipment to WIPP		Oct 1999
First NTS CH shipment to WIPP		Oct 1999
Last LLNL CH shipment to WIPP		Sep 2033
Last NTS CH shipment to WIPP		Dec 2001
First ORNL RH shipment to WIPP		Oct 2001
First LANL RH shipment to WIPP		Oct 2001
First ANL-E CH shipment to WIPP		May 1999
First Mound CH shipment to WIPP		May 1999
First SQS CH shipment to WIPP		May 1999
First SQS RH shipment to WIPP		Oct 2003
Last ANL-E CH shipment to WIPP		Dec 2020
Last SQS CH shipment to WIPP		Dec 2021
Last Mound CH shipment to WIPP		Dec 2001
First Hanford RH shipment to WIPP		Jan 2006
Last RFETS CH shipment to WIPP		Dec 2005

CAO-3: WIPP Transportation - High Scenario

Milestone Name	Field Milestone Code	Planned Month/Year
Last ORNL CH shipment to WIPP		Dec 2022
Last LANL RH shipment to WIPP		Sep 2033
Last INEEL CH shipment to WIPP		Dec 2015
Begin shipments of ER and D&D waste		Oct 2016
Last SRS CH & RH shipment to WIPP		Sep 2022
Last LANL CH shipment to WIPP		Sep 2033
Last Hanford CH shipment to WIPP		Mar 2030
Last ORNL RH shipment to WIPP		Dec 2021

A.4 Life Cycle Planned Metrics

Contact Handled TRU Waste in Cubic Meters											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98-06	Life Cycle
Quantity	586	2,129	5,563	6,708	6,483	6,201	5,332	4,846	4,657	42,505	169,754

Remote Handled TRU Waste in Cubic Meters											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98-06	Life Cycle
Quantity	-	-	-	-	432	445	446	445	441	2,209	5,846

B. Financial History/Budget

B.1 Program Element: WM

B.2 Compliance Drivers

	From Table B.2.	From Table B.1.
	Total	Calculated Total
1998 OMB	15,496	15,496
1999 Target	23,734	23,734

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	17,462	15,469	23,734

B.4 Budget Request Justification

B.4.1 Justification Based on Risk Reduction:

The maintenance of a sound, economically feasible, and nationally accepted transportation system for transporting TRU waste to WIPP is paramount to the successful completion of the TRU waste complex mission. This project is intended to fund the requirements for opening and maintaining transportation corridors including institutional payments to states and Native American Tribes for access across state and tribal boundaries. This project also includes those costs for shipping TRU waste from the TRU waste sites to the WIPP repository.

Maintaining and shipping waste from TRU waste sites, based on the milestones in this project, will reduce populations potentially exposed to TRU waste from a natural or man-made catastrophe. Currently, approximately 60.9 million people are exposed to potential TRU waste hazards. By

CAO-3: WIPP Transportation - High Scenario

removing and disposing all of the TRU waste from most of the TRU waste sites and greatly reducing the volume at others, this population base will be reduced to less than 3.7 million people by FY2006 thus achieving a 94% reduction in risk to the population.

B.4.2 Justification Based on Mortgage Reduction:

This project based on the NTWMP is expected to yield the maximum benefit toward reducing the mortgage associated with TRU waste. While expenditures will be higher initially to support the NTWMP, it will decrease the financial burden associated with maintain long-term storage of TRU waste more quickly. Maintaining long-term storage prolongs the inevitable needs for disposal of TRU waste in an approved repository. The total project life cycle savings from FY 1997 through FY 2204 (end state for the low scenario) by selecting the High Scenario is \$3.4 billion (\$46 million in FY98 dollars). There is an additional cost of \$2.8 billion (\$237 million in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

The end state for the TRU waste complex is to have 100% of the TRU waste disposed by FY2033 and includes currently stored, newly generated, ER, and D&D TRU waste. This project identifies the transportation needs for DOE to accomplish this mission. Without support for this project, the entire end state could be gravely compromised.

B.4.4 Prior Years Accomplishments:

CAO has tractors, drivers, trainers and 15 certified TRUPACT-II's to support five shipments per week. CAO has also funded the necessary development of a transportation packaging that will be used for transporting packages from the INEEL Advanced Mixed Waste Treatment Facility which are expected to be heavier than other packages. The prototype is complete and the appropriate documents were submitted to the Nuclear Regulatory Commission (NRC). NRC is responsible for issuing a certification of compliance (C of C) for all packaging in the United States used to transport radioactive materials. CAO also funded and has submitted the appropriate documentation to NRC for obtaining a C of C for the 72B Cask that will be used for transporting RH TRU waste to WIPP. CAO has opened and is currently maintaining the transportation corridor from INEEL, RFETS, and LANL. This will be the first corridor used for transporting TRU waste to WIPP for disposal.

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

For a TRU waste site to ship waste to WIPP, it must first be certified that it has a quality assurance program which meets the CAO Quality Assurance Program Document (QAPD). This assures CAO and the associated stakeholders the waste coming to WIPP will meet the requirements in the WIPP Waste Acceptance Criteria (WAC) and that shipments will meet the NRC requirements for transportation. Prior to being certified, each site must submit a Quality Assurance Project Plan (QAPjP) explaining how it will meet the waste certification criteria in the CAO Quality Assurance Program Plan (QAPP). CAO must certify each site's QAPjP before it can qualify for a site certification audit under the guidelines of the QAPD. These funds are included in CAO-4 and CAO-5. To date CAO has certified QAPjPs from INEEL, and LANL. CAO has developed the HALF-PACK prototype that will be used for demonstration purposes to meet the NRC packaging requirements.

CAO-3: WIPP Transportation - High Scenario

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

In FY97, CAO will approve the remaining INEEL, LANL, and RFETS QAPjPs. CAO will certify, through rigorous audits, that LANL has met the requirements for shipping TRU waste to WIPP. CAO will release a Request for Proposal to privatize the transportation system for TRU waste shipments to WIPP (for more information, see privatization projects CAO-006). With the funding and schedule in this project, CAO will maintain the Northwestern route. CAO will have mobile TRU waste systems available for the TRU waste sites during FY98.

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

WIPP will begin disposal operations in FY98 with the first shipment of CH TRU waste delivered in May 1998. Prior to disposal operations, CAO will certify that INEEL and RFETS have met the shipping requirements for TRU waste to WIPP. CAO will begin to ramp-up the transportation fleet thus allowing for more waste to be delivered and disposed. CAO will open the southern corridor and certify SRS for TRU waste shipments to WIPP. CAO is expected to let the privatization contract for transportation and begin preparation for the receipt of more shipments from INEEL, RFETS, LANL, and SRS beginning in FY99. CAO will have mobile TRU waste systems available for the TRU waste sites during FY98.

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

In FY99, CAO will ramp-up the transportation fleet through the privatization contract and phase-in more shipments. It is expected WIPP will be receiving 10 to 12 shipments per week by the end of FY99. The SRS corridor will be operational and CAO will begin extending the corridor from ORNL to the southern route. CAO will also begin extending the corridor from INEEL to Hanford.

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

Change reflection phases ramp-up of shipments and opening of additional corridors.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The proposed budget supports only one corridor and 5 truck loads per week in the low scenario.

The following funding is required to meet the TRU Waste Management Plan:

<u>(\$000)</u>	<u>FY98</u>	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>
Increase	4,703	14,885	15,365	16,561	19,406	19,965	20,559	21,176	21,812

C. Other Project Information

C.1 Risk

The continued storage of TRU waste at TRU waste facilities poses concerns to the safety of the public, workers, and the environment. Some metal drums used to store TRU waste have exceeded their useful life expectancy and are beginning to show signs of deterioration. CAO will begin transporting TRU waste across the nation in approved NRC Type B containers in May 1998. Waste

CAO-3: WIPP Transportation - High Scenario

will be loaded at the sites using site-constructed facilities or by mobile loading units provided to the sites by CAO. Waste is then transported along approved routes or escorted by local officials to an approved transportation route. Emergency and medical teams have been trained as first responders along each approved route should there be an incident involving one of the TRUPACT-IIs shipping TRU waste to the WIPP. All shipments are tracked via satellite link and each driving team is in constant contact with the central monitoring room located at the WIPP facility. Transporting waste from sites and disposing it in WIPP prior to the need to repackage waste will eliminate all concerns of contamination to the environment. Utilizing the first responders, trained by CAO, minimizes impact to the environment should an incident occur along a transportation route. Impact of storing TRU waste at sites indefinitely could create environmental needs yet to be determined. As packages containing TRU waste exceed their life expectancy, the possibility of leaks created by corrosion become more evident. To eliminate the possibility of corrosion, waste is transferred from the old drum to a new drum creating additional waste and increasing the possibility of environmental contamination by airborne radionuclides or spills.

C.2 Validation

Project Validated? (Y/N) | Y

Date Validated: | 9/23/96

Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

C.3 Project Assumptions

1. WIPP will open in May 1998
2. FY 98 funding will be increased to meet the NTWMP schedule.
3. EPA will certify every 5 years.
4. WIPP will receive only defense generated, post 1970 TRU waste.
5. CAO will provide an integrated transportation system.
6. TRU waste sites will have adequate road ready waste to meet the objectives of the NTWMP.
7. Remote Handled TRU waste will be disposed at WIPP starting in FY2002
8. WIPP will be filled to capacity (176.5 thousand cubic meters) by FY2033.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2034 - FY2038)
10. Active institutional controls will be implemented in FY2039 and last for 100 years.

C.4 Supporting Documents

National TRU Waste Management Plan, September 1996

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1997

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995

Transuranic Materials Transportation Guide, April 1996

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: WIPP Transportation
A.0.2. Unique Site-Designated Project ID: CAO-3 Low Scenario
A.0.3. Site(s): WIPP
A.0.4. Operations/Field Office: Carlsbad Area Office
A.0.5. DOE Project Manager: George E. Dials
A.0.6. DOE Project Manager Phone Number: 505-234-7300
A.0.7. DOE Project Manager FAX Number: 505-887-1851
A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-3: WIPP Transportation - Low Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

Predecessor: None. This project is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program.

The purpose of the Carlsbad Area Office (CAO) Transportation project is to provide the interfaces necessary for safely and efficiently transporting Transuranic (TRU) waste from TRU waste sites that exist across the nation to the Waste Isolation Pilot Plant (WIPP). A discussion of transportation is included in this document to illustrate the level of controls and regulations maintained for the transportation segment of the WIPP program. This provides baseline information on transportation packaging, transportation fleet, and number of waste shipments. It also provides crucial information on transportation needs related to emergency response and transportation risk.

A.1.2 Definition of Scope:

This project includes all activities required to meet the President of the United States budget submission to the United States Congress relating to the transportation of TRU waste to WIPP. These activities include: Emergency Response training; establishing and opening transportation corridors; Contact-Handled (CH) and Remote-Handled (RH) TRU waste packaging initiatives; carrier services; and stakeholder interfaces related to transportation. TRU waste resulting from the Nation's nuclear defense, research, and production activities has been generated and stored at various sites. Primary locations where TRU waste is currently stored are: Idaho National Engineering and Environmental Laboratory (INEEL), Los Alamos National Laboratory (LANL), Rocky Flats Environmental Technology Site (RFETS), Oak Ridge National Laboratory (ORNL), Savannah River Site (SRS), Hanford Reservation (Hanford), Nevada Test Site (NTS), Lawrence Livermore National Laboratory (LLNL), and Mound Plant (Mound). Other sites have small quantities of TRU waste that will be disposed at WIPP. The TRU waste sites scheduled to initially ship CH TRU waste to WIPP in FY98, are INEEL, LANL, and RFETS. Using the proposed funding profiles from the Office of Management and Budget (OMB) the shipment of TRU waste to WIPP will continue for at least 100 years. Throughout the 100 year operating life, WIPP will not receive more than five (5) CH shipments per week.

CAO must open and maintain transportation corridors between each TRU waste site and the WIPP site. One corridor from INEEL, RFETS, and LANL will be opened in FY98. Activities required to open other corridors will require approximately two (2) years prior to shipment campaigns beginning at the sites. The phasing of corridors correspond with site shipping schedules and eliminates the need for corridor maintenance thus reducing TRU waste complex costs.

A.1.3 Technical Approach:

The low scenario allows waste receipt operations to begin in May 1998 for CH TRU waste and never receiving RH TRU waste. WIPP is scheduled to receive CH TRU waste in May 1998, at which time five operational truck sets (consisting of a truck, trailer, and three TRUPACT-IIs) are in service and maintained at this level for the 100 year project life. The WIPP CH TRU waste handling capacity starts at 79 shipments per year in FY98 and increases to approximately 231 shipments per year starting in FY99. RH TRU waste is never received at WIPP. Previous planning called for maintaining open transportation corridors with minimal waste transportation traffic. Regardless of the expected traffic, the corridors would incur ongoing costs such as emergency response training and institutional payments to state governments. Designating waste work-off

CAO-3: WIPP Transportation - Low Scenario

campaigns for some sites allows for idle corridors to be closed thus avoiding associated costs. For example, the shipping corridors from LLNL and NTS will eventually open to ship stored waste for a number of years, after which the corridors will be closed. Thereafter, dedicated waste shipments would occur intermittently. CAO will only be able to maintain select corridors thus working off the waste at select sites and then moving to the next series of sites.

A.1.4 Project Status in FY 2006:

The low scenario identifies site-specific waste processing rates that are coordinated with a shipping fleet equal to five shipments per week. By using the low scenario, approximately 13,402 cubic meters of CH TRU will be disposed by the end of FY 2006 and zero cubic meters of RH TRU waste will be processed by the sites and shipped to the WIPP for disposal. Shipments of CH TRU waste to WIPP through FY 2006 is severely lacking and does not closely relate to the waste handling and disposal capabilities of WIPP. During this time, WIPP can accept 6,318 shipments of CH TRU waste but only 2,081 shipments are made. Through FY 2006, approximately 33% of WIPP's CH TRU waste handling capacity is used. By the end of FY 2006, no sites have completely disposed of their CH TRU waste at WIPP. CH TRU waste handling capacity remains constant throughout the 100 year project life but is grossly underutilized due to the limitations of the transportation system.

A.1.5 Post 2006 Project Scope:

Post 2006 Project Scope: CH TRU waste handling capacity remains constant throughout the 100 year project life but is grossly underutilized due to the limitations of the transportation system. The low scenario results in the disposal of 44,871 cubic meters of CH-TRU waste over the originally planned 35-year disposal period. These disposal volumes result in less than a 46% CH TRU utilization and 0% RH TRU utilization of the WIPP waste volume capacity statutory limits. At these disposal rates, waste that is expected to occur from Department of Energy environmental restoration (ER) projects, facility decontamination and decommissioning (D&D) activities, or future waste streams originally thought to begin shipping campaigns for disposal in FY2016 can begin shipping campaigns for disposal in FY2081. These TRU waste streams will fill approximately 32,637 cubic meters of the remaining 72,588 cubic meters of WIPP capacity by FY2098. Leaving approximately 39,951 cubic meters of the legislated volume unused. The volumetric calculations may be adjusted slightly if technology development efficiencies can be realized in the out-years beginning about FY2043.

A.1.6 Project End State:

This project ends after the last shipment is completed in FY2098. At that time, the truck sets will be decommissioned, all routes and corridors closed, and institutional payments to the states will end.

A.1.7 Safety & Health Narrative

Risk, in terms of populations living within the proximity of stored TRU waste inventories, is unchanged because of the length for which waste is to remain at each site. Consequently, the health and safety to the workers is increased due to the requirement to repackage waste because of finite shelf lives for storage containers. A fundamental flaw of the low scenario is the minimized rate at which waste is retrieved from storage, processed, and shipped for disposal. By the end of FY2006, all TRU waste sites across the United States will be required to maintain long-term storage capabilities. The Draft Waste Management Programmatic Environmental Impact Statement (DOE, 1995c) reports the approximate population within 50 miles of each TRU waste sites to be 60.9 million (1990 census). The extended longevity of WIPP and the lack of moving TRU waste from

CAO-3: WIPP Transportation - Low Scenario

TRU waste sites for disposal due to the lack of adequate funding causes this population to remain in danger of potential radiation exposures caused by accidental releases for most of the 100 year repository life.

A.1.8 General Narrative:

The WIPP program is statutorily directed by the WIPP Land Withdrawal Amendment Act of 1996 (Public Law 104-201). EPA has been designated as the regulator, the state of New Mexico regulates the RCRA permit, and independent oversight is undertaken by the Environmental Evaluation Group (EEG) and the National Academy of Sciences. The Sandia National Laboratories has performed as the WIPP program Scientific Advisor. 40 CFR 194 establishes the specific criteria which must be met prior to EPA's approval of the Compliance Certification Application which was submitted to EPA in October 1996. The WIPP Disposal Decision Plan (Rev. 4) identifies major milestones which must be completed in order to start disposal operations.

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations
WIPP Disposal Phase Certification and Experimental Program	CAO-2	Regulatory activity and continuing experimental programs for continued WIPP compliance certainty
WIPP TRU Waste Sites Integration and Preparation	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP
Program Direction	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-3	17,462	15,469	23,734	24,382	25,828	28,989	29,654	30,539	31,453	32,397

CAO-3: WIPP Transportation - Low Scenario

A.2.3 Cost Baseline Narrative

The low scenario assumptions support operations of the WIPP facility, including its infrastructure, as an operational nuclear facility capable of receiving TRU waste for disposal at a rate of 5 truck loads per week. The statutory requirement to pay impact assistance to the State of New Mexico is partially funded in the low case. The High Case provides adequate funding to meet the National TRU Waste Management Plan, however, it assumes funding relief in FY98. Escalation has been applied to the activities in accordance with the DOE Environmental Management guidelines.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned
		Month/Year
First INEEL CH shipment to WIPP		May 1998
First RFETS CH shipment to WIPP		May 1998
First LANL CH shipment to WIPP		May 1998
Begin shipments of ER and D&D waste		Oct 2078
Last CH shipment to WIPP		Sep 2098

A.4 Life Cycle Planned Metrics

Contact Handled TRU Waste in Cubic Meters											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	FY98-06	Life Cycle
Quantity	654	1,743	1,784	1,725	1,780	1,699	1,397	1,297	1,322	13,402	135,649

B. Financial History/Budget

B.1 Program Element: WM

B.2 Compliance Drivers

	From Table B.2.	From Table B.1.
	Total	Calculated Total
1998 OMB	10,766	10,766
1999 Target	8,849	8,849

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	17,462	10,766	8,849

B.4 Budget Request Justification

B.4.1 Justification Based on Risk Reduction:

The maintenance of a sound, economically feasible, and nationally accepted transportation system for transporting TRU waste to WIPP is paramount to the attempt at completing the TRU waste complex mission. This project is intended to fund the requirements for opening and maintaining transportation corridors for a 100 year WIPP operational period including institutional payments to states and Native American Tribes for access across state and tribal boundaries. This project also includes those costs for shipping TRU waste from the TRU waste sites to the WIPP repository.

CAO-3: WIPP Transportation - Low Scenario

At the low scenario, this project will not reduce the potential exposure to the population from TRU waste by natural or man-made catastrophes at TRU waste sites based on the previous milestones. Currently, approximately 60.9 million people are exposed to potential TRU waste hazards. The rate by which TRU waste is removed and disposed from the TRU waste sites has no effect on risk reduction to the general public in the near term.

B.4.2 Justification Based on Mortgage Reduction:

This project, based on the low scenario, will not lend itself to reducing the mortgage associated with TRU waste. In fact, the mortgage increases due to the increased need for long term storage and extended transportation lifecycle. While expenditures will be slightly lower initially, it will increase the financial burden associated with maintaining long-term storage of TRU waste. Maintaining long-term storage prolongs the inevitable needs for disposal of TRU waste in an approved repository.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

The end state for the TRU waste complex is to have 100% of the TRU waste disposed by FY2033 and includes currently stored, newly generated, ER, and D&D TRU waste. This project identifies the transportation needs for DOE to accomplish approximately one-third of this mission. The total project life cycle savings from FY 1997 through FY 2204 (end state for the low scenario) by selecting the High Scenario is \$3.4 billion (\$46 million in FY98 dollars). There is an additional cost of \$2.8 billion (\$237 million in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

B.4.4 Prior Years Accomplishments:

CAO has tractors, drivers, trainers and 15 certified TRUPACT-IIs to support a maximum of five shipments per week. CAO has also funded the necessary development of a transportation packaging that will be used for transporting packages from the INEEL Advanced Mixed Waste Treatment Facility which are expected to be heavier than other packages. The prototype is complete and the appropriate documents were submitted to the Nuclear Regulatory Commission (NRC). NRC is responsible for issuing a certification of compliance (C of C) for all packaging in the United States used to transport radioactive materials. CAO also funded and has submitted the appropriate documentation to NRC for obtaining a C of C for the 72B Cask that will be used for transporting RH TRU waste to WIPP. CAO has opened and is currently maintaining the transportation corridor from INEEL, RFETS, and LANL. This will be the first corridor used for transporting TRU waste to WIPP for disposal.

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

For a TRU waste site to ship waste to WIPP, it must first be certified that it has a quality assurance program which meets the CAO Quality Assurance Program Document (QAPD). This assures CAO and the associated stakeholders the waste coming to WIPP will meet the requirements in the WIPP Waste Acceptance Criteria (WAC) and that shipments will meet the NRC requirements for transportation. Prior to being certified, each site must submit a Quality Assurance Project Plan (QAPjP) explaining how it will meet the waste certification criteria in the CAO Quality Assurance Program Plan (QAPP). CAO must certify each site's QAPjP before it can qualify for a site certification audit under the guidelines of the QAPD. These funds are included in CAO-4 and CAO-

CAO-3: WIPP Transportation - Low Scenario

5. To date CAO has certified QAPjPs from INEEL, and LANL. CAO developed the HALF-PACK prototype that will be used for demonstration purposes to meet the NRC packaging requirements.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

In FY97, CAO will approve the remaining INEEL, LANL, and RFETS QAPjPs. CAO will certify, through rigorous audits, that LANL has met the requirements for shipping TRU waste to WIPP. CAO will release a Request for Proposal to privatize the transportation system for TRU waste shipments to WIPP (for more information, see privatization projects CAO-006). With the funding and schedule in this project, CAO will maintain the Northwestern route. CAO will have mobile TRU waste systems available for the TRU waste sites during FY98.

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

WIPP will begin disposal operations in with the first shipment of CH TRU waste delivered in May 1998. Prior to disposal operations, CAO will certify that INEEL and RFETS has met the shipping requirements for TRU waste to WIPP. By the end of FY98 CAO will maintain the current transportation fleet at five truck sets. CAO will not open the southern corridor or any other corridor until the removal of TRU waste from INEEL, RFETS, and LANL is close to completion. CAO is expected to let the privatization contract for transportation.

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

In FY99, CAO will maintain the current fleet size and corridor.

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

N/A

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The ten-year plan (high scenario) would meet the TRU Waste Management Plan objectives. The low scenario does not meet any compliance agreements, increases total life-cycle cost, and never disposes of RH waste.

An increase to the low scenario is needed as follows:

(\$000)	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Increase	4,703	14,885	15,365	15,651	19,406	19,965	20,559	21,176	21,812

C. Other Project Information**C.1 Risk**

The continued storage of TRU waste at TRU waste facilities poses concerns to the safety of the public, workers, and the environment. Some metal drums used to store TRU waste have exceeded their useful life expectancy and are beginning to show signs of deterioration. CAO will begin transporting TRU waste across the nation in approved NRC Type B containers in May 1998. Waste will be loaded at the sites using site-constructed facilities or by mobile loading units provided to the sites by CAO. Waste is then transported along approved routes or escorted by local officials to an

CAO-3: WIPP Transportation - Low Scenario

approved transportation route. Emergency and medical teams have been trained as first responders along each approved route should there be an incident involving one of the TRUPACT-IIs shipping TRU waste to the WIPP. All shipments are tracked via satellite link and each driving team is in constant contact with the central monitoring room located at the WIPP facility. Transporting waste from sites and disposing it in WIPP prior to the need to repackage waste will eliminate all concerns of contamination to the environment. Utilizing the first responders, trained by CAO, minimizes impact to the environment should an incident occur along a transportation route. Impact of storing TRU waste at sites indefinitely could create environmental needs yet to be determined. As packages containing TRU waste exceed their life expectancy, the possibility of leaks created by corrosion become more evident. To eliminate the possibility of corrosion, waste is transferred from the old drum to a new drum creating additional waste and increasing the possibility of environmental contamination by airborne radionuclides or spills.

C.2 Validation

Project Validated? (Y/N)	Y
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Date Validated:	9/23/96
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Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

C.3 Project Assumptions

1. WIPP will open in May 1998
2. CAO will not implement the NTWMP.
3. Technology will be developed that will reduce TRU waste site volumes
4. WIPP operational life will be extended from 35 years to 100 years.
5. WIPP will receive 5 trucks of CH waste per week in FY1998.
6. Waste is initially received from only 3 sites (INEEL, RFETS, and LANL). The remaining TRU waste sites will be phased over 100 years.
7. RH waste receipt will be deferred until funding becomes available.
8. EPA will certify WIPP every 5 years.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2099 - FY2103).
10. Active institutional controls will be implemented in FY2104 and last for 100 years.

C.4 Supporting Documents

National TRU Waste Management Plan, September 1996

Transuranic Materials Transportation Guide, April 1996

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1997

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995

Carlsbad Area Office Project Baseline Summary

Section V



CAO-4 WIPP TRU Waste Sites Integration and Preparation

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: WIPP TRU Waste Sites
Integration and Preparation

A.0.2. Unique Site-Designated Project ID: CAO-4 High Scenario

A.0.3. Site(s): WIPP

A.0.4. Operations/Field Office: Carlsbad Area Office

A.0.5. DOE Project Manager: George E. Dials

A.0.6. DOE Project Manager Phone Number: 505-234-7300

A.0.7. DOE Project Manager FAX Number: 505-887-1851

A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-4: WIPP TRU Waste Sites Integration and Preparation - High Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative

A.1.1 Purpose of Project:

Predecessor Project: None. This program is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program.

This project includes ongoing TRU integration activities and programs which are directed by the CAO federal workforce in project CAO-5.

A.1.2 Definition of Scope:

The CAO is the lead office for the management, planning, and integration of the transuranic (TRU) waste program. The activities in this project include:

1. Integration and infrastructure activities required to prepare the DOE TRU waste complex for waste shipments to WIPP
 - waste characterization certification
 - site's quality assurance project plan (QAPjP)
2. Integrated activities to improve the envelope of performance for transportation system and treated TRU waste acceptance
 - matrix depletion studies
 - performance demonstration activities
3. Support to Secretarial commitments to the community
 - Carlsbad Environmental Monitoring and Research Center (CEMRC)
 - Department of Defense (DoD) Advanced Training Facility
4. Expert support from oversight groups such as the Environmental Evaluation Group (EEG), the National Academy of Sciences (NAS), and the Bureau of Land Management.

A.1.3 Technical Approach:

The Carlsbad Area staff directs contracting activities in support of their mission activities. The following contractors provide expert support:

1. Carlsbad Technical Support Contractor (eight contractors under one contract: Advanced Sciences, Inc.; Roy F. Weston, Inc.; Jacobs Engineering Group Inc.; Lamb Associates, Inc.; NFT, Inc.; Rogers & Associates Engineering Corporation; RE/SPEC Inc.; and Science Application International Corporation.
 - Leads: System Integration; Waste Acceptance Criteria development; Waste Integration Development; Quality Assurance; Regulatory oversight; and E&SH oversight.
 - Supports: Experimental program management; corridor emergency response activities; transportation management; long term regulatory management and program planning

CAO-4: WIPP TRU Waste Sites Integration and Preparation - High Scenario

2. Sandia National Laboratories
 - Leads in TRU waste integration and maximization studies
3. Generator Sites
 - Leads in Characterization standards development for performance measures of waste stream knowledge
 - Supports TRU Waste integration studies

A.1.4 Project Status in FY 2006:

Continuing support to the management of the TRU Waste Program.

A.1.5 Post 2006 Project Scope:

Continuing support to the management of the TRU Waste Program. In the High case scenario, the operational phase for disposal is scheduled to be completed in FY2033. Five years will be required for dismantling and decommissioning followed by 100 years of active institutional controls.

A.1.6 Project End State:

In the high case scenario, the TRU Waste management activities for both CH and RH TRU waste are projected to be completed by FY 2038. Starting in FY2039 a reduced Federal staff and technical contractor support will maintain the Active Institutional Controls associated with the land and records of the WIPP.

A.1.7 Safety & Health Narrative

S&H activities are addressed in CAO-1

A.1.8 General Narrative:

The WIPP program is statutorily directed by the WIPP Land Withdrawal Amendment Act of 1996 (Public Law 104-201). EPA has been designated as the regulator, the state of New Mexico regulates the RCRA permit, and independent oversight is undertaken by the Environmental Evaluation Group (EEG) and the National Academy of Sciences. The Sandia National Laboratories has performed as the WIPP program Scientific Advisor. 40 CFR 194 establishes the specific criteria which must be met prior to EPA's approval of the Compliance Certification Application which was submitted to EPA in October 1996. The WIPP Disposal Decision Plan (Rev. 4) identifies major milestones which must be completed in order to start disposal operations.

CAO-4: WIPP TRU Waste Sites Integration and Preparation - High Scenario

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations
WIPP Disposal Phase Certification and Experimental Program	CAO-2	Regulatory activity and continuing experimental programs for continued WIPP compliance certainty
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP
Program Direction	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-4	30,679	23,898	21,897	21,849	22,848	22,482	19,649	20,304	20,552	21,446

A.2.3 Cost Baseline Narrative

Assumption is that support will be required through FY2038 which is the completion of the dismantling and decommissioning phase, then a Federal staff of approximately 10 FTE's will be required to meet the active institutional controls requirements on land management, security management, and public relations (augmented by Technical Support Contractor) as specified in final agreements during closure of the site. Approved EM escalation factors were applied to all years.

Projected costs after FY2070 through the active institutional control period of FY2138 are an additional \$202M. The total Life Cycle cost from FY97 is \$1.3B. The low case life cycle cost is \$8.7B. Funding the high case will result in a cost reduction from the low case of \$7.4B. Escalation has been applied to the activities in accordance with the DOE Environmental management guidelines.

CAO-4: WIPP TRU Waste Sites Integration and Preparation - High Scenario

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned
		Month/Year
Completion of Pre-Disposal Phase	CAO-001-001	May 1998
Completion of Disposal Phase	CAO-001-002	May 2033
Completion of Decommissioning Phase	CAO-001-003	May 2038
Completion of Active Institutional Controls	CAO-001-004	May 2138
Begin Passive Institutional Controls	CAO-001-005	May 2138

B. Financial History/Budget

B.1 Program Element: WM

B.2 Compliance Drivers

	From Table B.2.	From Table B.1.
	Total	Calculated Total
1998 OMB	23,898	23,898
1999 Target	21,897	21,897

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	30,679	23,898	21,897

B.4 Budget Request Justification

B.4.1 Justification Based on Risk Reduction:

Risk reduction is addressed in CAO-1 and CAO-3. All activities associated with the TRU Waste Program are interrelated and share the same risk reduction justification. At the high case funding, the CAO should have sufficient funding to meet all requirements specified in the National TRU Waste Management Plan. This includes: development of transportation and disposal capabilities for Contact Handled (CH) and Remote Handled (RH) TRU waste; audits and surveillance of all TRU waste sites destined to dispose TRU waste at the WIPP, maintenance of performance standards for TRU waste sites, and maintenance of the TRU Waste Baseline Inventory Report and the WIPP Waste Information System.

B.4.2 Justification Based on Mortgage Reduction:

Mortgage reduction is addressed in CAO Site Baseline Summary. All activities associated with the TRU Waste Program are interrelated and share the same mortgage reduction justification.

The low case scenario projected costs after FY2070 (last year of data collected in the TYP) through the active institutional control period of FY 2138 are an additional \$202M in the high case. The total high case life cycle cost from FY97 is \$1.3B. The low case life cycle cost is \$8.7B. Funding the high case will result in a cost reduction from the low case of \$7.4B.

CAO-4: WIPP TRU Waste Sites Integration and Preparation - High Scenario

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

These activities are totally integral to the overall WIPP program. Without this project the mission would fail. The regulator would have sufficient grounds to stop any disposal activities.

B.4.4 Prior Years Accomplishments:

- 1975 - WIPP site was selected for exploratory work
- 1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers
- 1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities
- 1982 - Underground excavation was initiated
- 1988 - Underground excavation completed for the operational facility
- 1992 - Congress passed the WIPP Land Withdrawal Act
- 1995 - DOE submitted a Draft Compliance Certification Application to the EPA
- 1995 - DOE submitted a revised RCRA permit application to the New Mexico Environment Department.

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

- October - DOE published the Sealing System Design Report as required by Congress
- October - DOE published the Remote Handled TRU Waste Study as required by Congress
- February - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application
- September - DOE published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road ready waste from the TRU waste sites.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

- October - DOE submitted the Compliance Certification Application to EPA
- September - DOE's Disposal Phase Supplemental Environmental Impact Statement Record of Decision completed
- September - The first shipping site characterization program will be certified.

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY97 milestones and all activities included in the remainder of the CAO projects:

- March - WIPP site operational readiness will be declared
- April - DOE receives RCRA permit from the state of New Mexico
- April - EPA certifies the Compliance Certification Application
- April - Secretary of Energy makes decision to operate WIPP as a disposal facility
- April - DOE notifies State and Indian Tribes of intent to transport TRU waste
- May - Contact Handled Waste disposal begins at WIPP at a rate of 5 trucks per week.

CAO-4: WIPP TRU Waste Sites Integration and Preparation - High Scenario

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY98 milestones and all activities included in the remainder of the CAO projects:

High Case WIPP will begin receiving waste from Hanford, LLNL, and NTS

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

The activities will be directed to disposal operations from the FY98 corridor and extended and expanded to the new corridors to be opened in FY99.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The High Scenario provides for adequate technical and integration support as well as stakeholder programs for the Carlsbad Area Office through the program years. The Low Scenario is insufficient to meet the Area Office's needs. It only supports one corridor, three sites, and a limit of 5 truck loads per week.

Increased funding above the Low Scenario is requested to maintain the National TRU Waste Management Plan as follows:

(\$000)	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Increase	4,339	3,693	3,850	4,430	5,092	5,101	5,257	5,229	5,212

C. Other Project Information

C.1 Risk

See risk evaluation in CAO-1

C.2 Validation

Project Validated? (Y/N) | Y

Date Validated: 9/23/96

Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

C.3 Project Assumptions

1. WIPP will open in May 1998
2. FY 98 funding will be increased to meet the NTWMP schedule.
3. EPA will certify every 5 years.
4. WIPP will receive only defense generated, post 1970 TRU waste.
5. CAO will provide an integrated transportation system.
6. TRU waste sites will have adequate road ready waste to meet the objectives of the NTWMP.
7. Remote Handled TRU waste will be disposed at WIPP starting in FY2002
8. WIPP will be filled to capacity (176.5 thousand cubic meters) by FY2033.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2034 - FY2038)
10. Active institutional controls will be implemented in FY2039 and last for 100 years.

CAO-4: WIPP TRU Waste Sites Integration and Preparation - High Scenario

C.4 Supporting Documents

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1997

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: WIPP TRU Waste Sites
Integration and Preparation

A.0.2. Unique Site-Designated Project ID: CAO-4 Low Scenario

A.0.3. Site(s): WIPP

A.0.4. Operations/Field Office: Carlsbad Area Office

A.0.5. DOE Project Manager: George E. Dials

A.0.6. DOE Project Manager Phone Number: 505-234-7300

A.0.7. DOE Project Manager FAX Number: 505-887-1851

A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-4: WIPP TRU Waste Sites Integration and Preparation - Low Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative

A.1.1 Purpose of Project:

Predecessor Project: None. This program is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program.

This project includes ongoing TRU integration activities and programs which are directed by the CAO federal workforce in project CAO-5.

A.1.2 Definition of Scope:

The CAO is the lead office for the management, planning, and integration of the transuranic (TRU) waste program. The activities in this project include:

1. Integration and infrastructure activities required to prepare the DOE TRU waste complex for waste shipments to WIPP
 - waste characterization certification
 - site's quality assurance project plan (QAPjP)
2. Integrated activities to improve the envelope of performance for transportation system and treated TRU waste acceptance
 - matrix depletion studies
 - performance demonstration activities
3. Support to Secretarial commitments to the community
 - Carlsbad Environmental Monitoring and Research Center (CEMRC)
 - Department of Defense (DoD) Advanced Training Facility
4. Expert support from oversight groups such as the Environmental Evaluation Group (EEG), the National Academy of Sciences (NAS), and the Bureau of Land Management.

A.1.3 Technical Approach:

The Carlsbad Area staff directs contracting activities in support of their mission activities. The following contractors provide expert support:

1. Carlsbad Technical Support Contractor (eight contractors under one contract: Advanced Sciences, Inc.; Roy F. Weston, Inc.; Jacobs Engineering Group Inc.; Lamb Associates, Inc.; NFT, Inc.; Rogers & Associates Engineering Corporation; RE/SPEC Inc.; and Science Application International Corporation.
 - Leads: System Integration; Waste Acceptance Criteria development; Waste Integration Development; Quality Assurance; Regulatory oversight; and E&SH oversight.
 - Supports: Experimental program management; corridor emergency response activities; transportation management; long term regulatory management and program planning

CAO-4: WIPP TRU Waste Sites Integration and Preparation - Low Scenario

- 2. Sandia National Laboratories
 - Leads in TRU waste integration and maximization studies
- 3. Generator Sites
 - Leads in Characterization standards development for performance measures of waste stream knowledge
 - Supports TRU Waste integration studies

A.1.4 Project Status in FY 2006:

Continuing support to the management of the single corridor and three TRU waste site's programs (INEEL, LANL, RFETS).

A.1.5 Post 2006 Project Scope:

Continuing support to the management of the single corridor and three TRU waste site's programs. Phased development of additional corridors and sites will be undertaken over the next 90 years as funding becomes available and the current corridor sites have completed disposal of the TRU waste. No RH Waste will be received. In the low case scenario, the operational phase for disposal is scheduled to be completed in FY2098. Five years will be required for dismantling and decommissioning followed by 100 years of active institutional controls.

A.1.6 Project End State:

In the low case scenario, the TRU Waste management activities are projected to be completed by FY 2098. Starting in FY 2103 a reduced Federal staff and technical contractor support will maintain the active institutional controls associated with the land and records of the WIPP.

A.1.7 Safety & Health Narrative

S&H activities are addressed in CAO-1

A.1.8 General Narrative:

The WIPP program is statutorily directed by the WIPP Land Withdrawal Amendment Act of 1996 (Public Law 104-201). EPA has been designated as the regulator, the state of New Mexico regulates the RCRA permit, and independent oversight is undertaken by the Environmental Evaluation Group and the National Academy of Sciences. The Sandia National Laboratories is the WIPP program Scientific Advisor. 40 CFR 194 establishes the specific criteria which must be met prior to EPA's approval of the Compliance Certification Application which was submitted to EPA in October 1996. The WIPP Disposal Decision Plan (Rev. 4) identifies major milestones which must be completed in order to start disposal operations.

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations.
WIPP Disposal Phase Certification	CAO-2	Regulatory activity and continuing experimental programs for

CAO-4: WIPP TRU Waste Sites Integration and Preparation - Low Scenario

Project Name	Unique Site-Designated Project ID	Relation to this Project
and Experimental Program		continued WIPP compliance certainty
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP.
Program Direction	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support..
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-4	30,679	19,559	18,204	17,999	18,418	17,390	14,548	15,047	15,323	16,234

A.2.3 Cost Baseline Narrative

The low scenario assumption is that support will be required through FY2103 which will be the completion of the dismantling and decommissioning phase, then a Federal staff of approximately 10 FTE's will be required to meet the active institutional controls requirements on land management, security management, and public relations (augmented by Technical Support Contractor) as specified in final agreements during closure of the site.

The low case scenario projected costs after FY2070 (last year included in the TYP) through the Active Institutional Control period of FY2203 are an additional \$5.5B. The low case life cycle cost is \$8.7B. The high case total Life Cycle cost from FY97 is \$1.3B. Funding the low case will result in a cost increase from the high case of \$7.4B in escalated dollars. Escalation has been applied to the activities in accordance with the DOE Environmental Management guidelines.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned Month/Year
Completion of Pre-Disposal Phase	CAO-001	May 1998
Completion of Disposal Phase	CAO-002	May 2098

CAO-4: WIPP TRU Waste Sites Integration and Preparation - Low Scenario

Completion of Decommissioning Phase	CAO-003	Nov 2102
Completion of Active Institutional Controls	CAO-004	Nov 2202
Begin Passive Institutional Controls	CAO-005	Nov 2202

B. Financial History/Budget**B.1 Program Element: WM****B.2 Compliance Drivers**

	From Table B.2. Total	From Table B.1. Calculated Total
1998 OMB	19,559	19,559
1999 Target	18,204	18,204

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	30,679	19,959	18,204

B.4 Budget Request Justification***B.4.1 Justification Based on Risk Reduction:***

Risk reduction is addressed in CAO-1 and CAO-3. All activities associated with the TRU Waste Program are interrelated and share the same risk reduction justification. At the low case funding, the CAO will not have sufficient funding to meet all requirements specified in the National TRU Waste Management Plan. Limited funding is provided for: development of transportation and disposal capabilities for Remote Handled (RH) waste; audits and surveillance of TRU waste sites destined to dispose TRU waste at the WIPP under a long term phased approach, maintenance of performance standards for only the TRU waste sites projected to dispose waste at WIPP during each phase, and maintenance of the TRU Waste Baseline Inventory Report and the WIPP Waste Information System.

There would be no risk reduction to the TRU Waste sites that have RH waste since funding is not available to transport and operate the disposal activities in the low scenario.

B.4.2 Justification Based on Mortgage Reduction:

Mortgage reduction is addressed in CAO Site Baseline Summary. All activities associated with the TRU Waste Program are interrelated and share the same mortgage reduction justification.

The total project life cycle savings from FY 1997 through FY 2204 (end state for the low scenario) by selecting the High Scenario is \$7.4 billion (\$736 million in FY98 dollars). There is an additional cost of \$5.5 billion (\$419 million in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

These activities are totally integral to the overall WIPP program. Without this project the mission would fail. The regulator would have sufficient grounds to stop any disposal activities.

CAO-4: WIPP TRU Waste Sites Integration and Preparation - Low Scenario

B.4.4 Prior Years Accomplishments:

- 1975 - WIPP site was selected for exploratory work
- 1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers
- 1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities
- 1982 - Underground excavation was initiated
- 1988 - Underground excavation completed for the operational facility
- 1992 - Congress passed the WIPP Land Withdrawal Act
- 1995 - DOE submitted a Draft Compliance Certification Application to the EPA
- 1995 - DOE submitted a revised RCRA permit application to the New Mexico Environment Department.

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

- October - DOE published the Sealing System Design Report as required by Congress
- October - DOE published the Remote Handled TRU Waste Study as required by Congress
- February - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application
- September - DOE published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road ready waste from the TRU waste sites.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

- October - DOE submitted the Compliance Certification Application to EPA
- September - DOE's Disposal Phase Supplemental Environmental Impact Statement Record of Decision completed
- September - The first shipping site characterization program will be certified

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY97 milestones and all activities included in the remainder of the CAO projects:

- March - WIPP site operational readiness will be declared
- April - DOE receives RCRA permit from the state of New Mexico
- April - EPA certifies the Compliance Certification Application
- April - Secretary of Energy makes decision to operate WIPP as a disposal facility
- April - DOE notifies State and Indian Tribes of intent to transport TRU waste
- May - Contact Handled Waste disposal begins at WIPP at a rate of 2 trucks per week

CAO-4: WIPP TRU Waste Sites Integration and Preparation - Low Scenario

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY98 milestones and all activities included in the remainder of the CAO projects:

WIPP will continue receiving waste from INEEL, LANL, and RFETS

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

The activities will be directed to disposal operations from the single corridor operations.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The low scenario provides for adequate technical and integration support as well as stakeholder programs for the Carlsbad Area Office through the program years for only one corridor and three TRU waste sites. The high scenario is sufficient to meet the Carlsbad Area Office's needs as specified in the TRU Waste Management Plan.

Increase funding above the low scenario is requested to maintain the National TRU Wastes Management Plan as follows:

(\$000)	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Increase	4339	3693	3850	4430	5092	5101	5257	5229	5212

C. Other Project Information

C.1 Risk

See risk evaluation in CAO-1 and CAO-3.

C.2 Validation

Project Validated? (Y/N) Y

Date Validated: 9/23/96

Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

C.3 Project Assumptions

1. WIPP will open in May 1998
2. CAO will not implement the NTWMP.
3. Technology will be developed that will reduce TRU waste site volumes
4. WIPP operational life will be extended from 35 years to 100 years.
5. WIPP will receive 5 trucks of CH waste per week in FY1998.
6. Waste is initially received from only 3 sites (INEEL, RFETS, and LANL). The remaining TRU waste sites will be phased over 100 years.
7. RH waste receipt will be deferred until funding becomes available.
8. EPA will certify WIPP every 5 years.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2099 - FY2103).
10. Active institutional controls will be implemented in FY2104 and last for 100 years..

CAO-4: WIPP TRU Waste Sites Integration and Preparation - Low Scenario

C.4 Supporting Documents

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1997

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995

Carlsbad Area Office Project Baseline Summary

Section VI



**CAO-5
Program Direction**

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: Program Direction
A.0.2. Unique Site-Designated Project ID: CAO-5 High Scenario
A.0.3. Site(s): WIPP
A.0.4. Operations/Field Office: Carlsbad Area Office
A.0.5. DOE Project Manager: George E. Dials
A.0.6. DOE Project Manager Phone Number: 505-234-7300
A.0.7. DOE Project Manager FAX Number: 505-887-1851
A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-5: Program Direction - High Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

Predecessor Project: None. This project includes ongoing Federal management and oversight for Waste Management (WM) activities at the Carlsbad Area Office (CAO).

This project is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program.

A.1.2 Definition of Scope:

The CAO is the lead office for the management, planning, and integration of the transuranic (TRU) waste program nationally. CAO's responsibilities are to:

1. Direct and manage the Waste Isolation Pilot Plant (WIPP) and the National TRU Program.
2. Manage waste characterization for TRU waste, system integration and engineering alternatives planning, and national laboratories activities in support of the WIPP program long-term compliance.
3. Direct technical and management functions to ensure WIPP facility readiness.
4. Direct experimental, operational, and long-term compliance programs.
5. Implement best management practices using Total Quality Management initiatives.
6. Manage program support in areas of quality assurance (QA), environment, safety, and health (ES&H), packaging and transportation, emergency response, budget integration, scheduling, testing and performance assessment.

A.1.3 Technical Approach:

The Federal workforce manages the activities necessary to achieve the mission of the WIPP program which is to protect human health and environment by opening and operating the Waste Isolation Pilot Plant for safe disposal of transuranic waste and by establishing an effective system for management of transuranic waste from generation to disposal.

The CAO has direct programmatic reporting lines to the Assistant Secretary for Environmental Management, DOE-Headquarters and is administratively supported by the Albuquerque Operations Office for contracting, financial accounting, facility management and human resources.

The CAO organization includes:

- CAO Manager with direct support for Legal Counsel, NEPA and Public Affairs
- Assistant Manager (AM) for the Office of Program Support and Assurance including the administrative activities, contracts, budget, programming, and assurance
- Assistant Manager (AM) for the Office of Regulatory Compliance including compliance activities, and the experimental programs
- Assistant Manager (AM) for the Office of National TRU Waste Operations including the National TRU Program activities and the WIPP site operations

CAO-5: Program Direction - High Scenario

A.1.4 Project Status in FY 2006:

Continuing management of the TRU Waste Program.

A.1.5 Post 2006 Project Scope:

Continuing management of the TRU Waste Program. The operational phase is scheduled to be completed in FY2033. Five years will be required for dismantling and decommissioning followed by 100 years of active institutional controls.

A.1.6 Project End State:

TRU waste management activities are projected to continue through the FY2070 period. Starting in FY2039 the staff will be reduced to 10 FTEs and will support the active institutional controls associated with the land and records of the WIPP. Re-direction will occur as new technologies occur, however, generation of TRU waste is projected to be a continuous activity and management of disposal activities will be an ongoing process.

All CAO projects are integral to the completion of the mission. There is a total dependence among all CAO projects.

A.1.7 Safety & Health Narrative

S&H activities are addressed in CAO-1

A.1.8 General Narrative:

The WIPP program is statutorily directed by the WIPP Land Withdrawal Amendment Act of 1996 (Public Law 104-201). EPA has been designated as the regulator, the state of New Mexico regulates the RCRA permit, and independent oversight is undertaken by the Environmental Evaluation Group and the National Academy of Sciences. The Sandia National Laboratories is the WIPP program Scientific Advisor. 40 CFR 194 establishes the specific criteria which must be met prior to EPA's approval of the Compliance Certification Application which was submitted to EPA in October 1996. The WIPP Disposal Decision Plan (Rev. 4) identifies major milestones which must be completed in order to start disposal operations.

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations
WIPP Disposal Phase Certification and Experimental Program	CAO-2	Regulatory activity and continuing experimental programs for continued WIPP compliance certainty
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP .
WIPP TRU Waste Sites Integration and Preparation	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP..
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

CAO-5: Program Direction - High Scenario

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-5	6,202	7,171	6,861	7,046	7,243	7,446	7,662	7,884	8,113	8,348

A.2.3 Cost Baseline Narrative

Assumption is that 63 FTEs will be required through FY2038 for completion of the dismantling and decommissioning phase, then a staff of approximately 10 FTE's will be required to meet the active institutional controls requirements on land management, security management, and public relations as specified in final agreements during closure of the site. Near term changes from FY97 to FY99 are related to the relocation of Federal staff from sharing the M&O rented facility to a GSA built Federal Building in late 1997. The GSA charge rates are burdened heavily during the first ten years then reduces by half in FY2008. Escalation rates were applied in accordance with EM guidance levels.

Projected costs after FY2070 through the Active Institutional Control period of FY2138 are an additional \$1.3B. Escalation has been applied to the activities in accordance with the DOE Environmental Management guidelines.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned Month/Year
Completion of Pre-Disposal Phase	CAO-001-001	May 1998
Completion of Disposal Phase	CAO-001-002	May 2033
Completion of Decommissioning Phase	CAO-001-003	May 2038
Completion of Active Institutional Controls	CAO-001-004	May 2138
Begin Passive Institutional Controls	CAO-001-005	May 2138

CAO-5: Program Direction - High Scenario

B. Financial History/Budget**B.1 Program Element: WM****B.2 Compliance Drivers**

	From Table B.2.	From Table B.1.
	Total	Calculated Total
1998 OMB	7,844	7,844
1999 Target	7,853	7,853

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	6,202	7,844	7,853

B.4 Budget Request Justification***B.4.1 Justification Based on Risk Reduction:***

Risk reduction is addressed in CAO-1 and CAO-3. All activities associated with the TRU Waste Program are interrelated and share the same risk reduction justification. At the high case funding, the CAO should have sufficient funding to meet all requirements for travel, civilian pay, and facility rental and maintenance.

At the low case level 11 FTEs will not be funded.

B.4.2 Justification Based on Mortgage Reduction:

Mortgage reduction is addressed in the Site Baseline Summary. All activities associated with the TRU Waste Program are interrelated and share the same mortgage reduction justification.

At the high case funding, the CAO should have sufficient funding to meet all requirements for travel, civilian pay, and facility rental and maintenance.

At the low case funding, the CAO will not have sufficient funding for management oversight required to meet continuing requirements for certification, TRU waste management, and WIPP site management.

The low case for the WIPP program will extend the life cycle by 65 years resulting in an increased overall cost of \$24 Billion (Escalated dollars) for program direction costs. The total project life cycle savings from FY 1997 through FY 2204 (end state in low scenario) by selecting the high scenario is \$20.6B (\$704 million in FY98 dollars). There is an additional cost of 1.6B (\$493 million in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

At the high case funding, the CAO should have sufficient funding to meet all requirements for travel, civilian pay, and facility rental and maintenance.

The Federal workforce is required to integrate: disposal activities at the WIPP; transportation activities from TRU waste sites and small quality sites; compliance activities to RCRA, 40 CFR 194, and all permitting requirements for the WIPP; and program planning and management activities.

CAO-5: Program Direction - High Scenario

B.4.4 Prior Years Accomplishments:

- 1975 - WIPP site was selected for exploratory work
- 1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers
- 1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities
- 1982 - Underground excavation was initiated
- 1988 - Underground excavation completed for the operational facility
- 1992 - Congress passed the WIPP Land Withdrawal Act
- 1995 - DOE submitted a Draft Compliance Certification Application to the EPA
- 1995 - DOE submitted a revised RCRA permit application to the New Mexico Environment Department.

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

- October - DOE published the Sealing System Design Report as required by Congress
- October - DOE published the Remote Handled TRU Waste Study as required by Congress
- February - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application
- September - DOE published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road ready waste from the TRU waste sites.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

- October - DOE submitted the Compliance Certification Application to EPA
- September - DOE's Disposal Phase Supplemental Environmental Impact Statement Record of Decision completed
- September - The first shipping site characterization program will be certified

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY97 milestones and all activities included in the remainder of the CAO projects:

- March - WIPP site operational readiness will be declared
- April - DOE receives RCRA permit from the state of New Mexico
- April - EPA certifies the Compliance Certification Application
- April - Secretary of Energy makes decision to operate WIPP as a disposal facility
- April - DOE notifies State and Indian Tribes of intent to transport TRU waste
- May - Contact Handled Waste disposal begins at WIPP at a rate of 5 trucks per week

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY98 milestones and all activities included in the remainder of the CAO projects:

- High Case WIPP will begin receiving waste from Hanford, LLNL, and NTS

CAO-5: Program Direction - High Scenario

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

The planned 63 FTEs will not change from year to year. The only change in program is the relocation of the CAO office from the M&O rental space to a newly built Federal building. Funding in FY97 provides for the necessary furnishing and communication systems. FY98 provides for three quarters year rent payment to GSA. The only changes between FY98 and FY99 is the full year payment to the GSA and approved escalation rates.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The High Scenario provides for adequate staffing of the Carlsbad Area Office through the program years. The Low Scenario is insufficient to meet the Carlsbad Area Office's needs. Since the GSA building charges are fixed and not adjustable for budget changes, the only alternative is to cut federal staff by 11 positions. This reduction has not been identified by job positions since any cut to the already minimum staffing would not be advised. The CAO staffing needs are not proportional to available funding in any one year. The Low Scenario would limit the throughput at WIPP but would not reduce the statutory and regulatory requirements nor the administrative controls which the CAO performs for the complete TRU complex.

Increase in funding above the Low Scenario is requested to maintain the current staffing of 63 FTEs (11 FTEs in the High case and 52 FTEs in the Low case) as follows:

(\$000)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Increase	992	1,019	1,047	1,077	1,108	1,140	1,173	1,207

C. Other Project Information

C.1 Risk

See risk evaluation in CAO-1 and CAO-3

C.2 Validation

Project Validated? (Y/N)	Y
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Date Validated:	9/23/96
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Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

C.3 Project Assumptions

1. WIPP will open in May 1998
2. FY 98 funding will be increased to meet the NTWMP schedule.
3. EPA will certify every 5 years.
4. WIPP will receive only defense generated, post 1970 TRU waste.
5. CAO will provide an integrated transportation system.
6. TRU waste sites will have adequate road ready waste to meet the objectives of the NTWMP.
7. Remote Handled TRU waste will be disposed at WIPP starting in FY2002
8. WIPP will be filled to capacity (176.5 thousand cubic meters) by FY2033.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2034 - FY2038)
10. Active institutional controls will be implemented in FY2039 and last for 100 years.

CAO-5: Program Direction - High Scenario

C.4 Supporting Documents

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1997

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: Program Direction
A.0.2. Unique Site-Designated Project ID: CAO-5 Low Scenario
A.0.3. Site(s): WIPP
A.0.4. Operations/Field Office: Carlsbad Area Office
A.0.5. DOE Project Manager: George E. Dials
A.0.6. DOE Project Manager Phone Number: 505-234-7300
A.0.7. DOE Project Manager FAX Number: 505-887-1851
A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-5: Program Direction - Low Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

Predecessor Project: None. This project includes ongoing Federal management and oversight for Waste Management (WM) activities at the Carlsbad Area Office (CAO).

This project is an integral part of the WIPP program and it is not possible to separate this project from the overall objectives of the WIPP program.

A.1.2 Definition of Scope:

The CAO is the lead office for the management, planning, and integration of the transuranic (TRU) waste program nationally. CAO's responsibilities are to:

1. Direct and manage the Waste Isolation Pilot Plant (WIPP) and the National TRU Program.
2. Manage waste characterization for TRU waste, system integration and engineering alternatives planning, and national laboratories activities in support of the WIPP program long-term compliance.
3. Direct technical and management functions to ensure WIPP facility readiness.
4. Direct experimental, operational, and long-term compliance programs.
5. Implement best management practices using Total Quality Management initiatives.
6. Manage program support in areas of quality assurance (QA), environment, safety, and health (ES&H), packaging and transportation, emergency response, budget integration, scheduling, testing and performance assessment.

A.1.3 Technical Approach:

The Federal workforce manages the activities necessary to achieve the mission of the WIPP program which is to protect human health and environment by opening and operating the Waste Isolation Pilot Plant for safe disposal of transuranic waste and by establishing an effective system for management of transuranic waste from generation to disposal.

The CAO has direct programmatic reporting lines to the Assistant Secretary for Environmental Management, DOE-Headquarters and is administratively supported by the Albuquerque Operations Office for contracting, financial accounting, facility management and human resources.

The CAO organization includes:

- CAO Manager with direct support for Legal Counsel, NEPA and Public Affairs
- Assistant Manager (AM) for the Office of Program Support and Assurance including the administrative activities, contracts, budget, programming, and assurance
- Assistant Manager (AM) for the Office of Regulatory Compliance including compliance activities, and the experimental programs
- Assistant Manager (AM) for the Office of National TRU Waste Operations including the National TRU Program activities and the WIPP site operations

CAO-5: Program Direction - Low Scenario

A.1.4 Project Status in FY 2006:

Continuing management of the TRU Waste Program.

A.1.5 Post 2006 Project Scope:

Continuing management of the TRU Waste Program. The operational phase is scheduled to be completed in FY2098 at the low case level. Five years will be required for dismantling and decommissioning followed by 100 years of active institutional controls.

A.1.6 Project End State:

TRU waste management activities are projected to continue through the FY2070 period. Starting in FY2108 the staff will be reduced to 10 FTEs and will support the active institutional controls associated with the land and records of the WIPP. Re-direction will occur as new technologies occur, however, generation of TRU waste is projected to be a continuous activity and management of disposal activities will be an ongoing process.

All CAO projects are integral to the completion of the mission. There is a total dependence among all CAO projects.

A.1.7 Safety & Health Narrative

S&H activities are addressed in CAO-1

A.1.8 General Narrative:

The WIPP program is statutorily directed by the WIPP Land Withdrawal Amendment Act of 1996 (Public Law 104-201). EPA has been designated as the regulator, the state of New Mexico regulates the RCRA permit, and independent oversight is undertaken by the Environmental Evaluation Group and the National Academy of Science. The Sandia National Laboratories is the WIPP program Scientific Advisor. 40 CFR 194 establishes the specific criteria which must be met prior to EPA's approval of the Compliance Certification Application which was submitted to EPA in October 1996. The WIPP Disposal Decision Plan (Rev. 4) identifies major milestones which must be completed in order to start disposal operations.

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations
WIPP Disposal Phase Certification and Experimental Program	CAO-2	Regulatory activity and continuing experimental programs for continued WIPP compliance certainty
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP
WIPP TRU Waste Sites Integration and Preparation	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP
WIPP TRU Waste Transportation Privatization	CAO-6	Privatization Projects

CAO-5: Program Direction - Low Scenario

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-5	6,202	7,171	6,861	7,046	7,243	7,446	7,662	7,884	8,113	8,348

A.2.3 Cost Baseline Narrative

The Low Scenario provides for 52 FTEs through FY2103 (a reduction of 11 FTEs from the FY98 level) for disposal phase completion and dismantling and decommissioning, then a staff of approximately 10 FTE's will be required to meet the active institutional controls requirements on land management, security management, and public relations as specified in final agreements during closure of the site. Near term changes from FY97 to FY99 are related to the relocation of Federal staff from sharing the M&O rented facility to a GSA Federal Building in late 1997. The GSA charge rates are burdened heavily during the first ten years then reduces by half in FY2008. Escalation rates were applied in accordance with EM guidance levels.

The low case projected costs after FY2070 through the Active Institutional Control period ending in FY2203 are an additional \$22.3B. The low case total project life cycle cost is \$24B. The total life cycle cost at the High Scenario is \$3.3B. Therefore a total of \$20.6 billion can be saved if WIPP is fully funded and completes its mission in the 35 year period instead of the 100 year period funded in the low case.

Escalation has been applied to the activities in accordance with the DOE Environmental Management guidelines.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned Month/Year
Completion of Pre-Disposal Phase	CAO-001-001	May 1998
Completion of Disposal Phase	CAO-001-002	May 2098
Completion of Decommissioning Phase	CAO-001-003	Nov 2103
Completion of Active Institutional Controls	CAO-001-004	Nov 2203
Begin Passive Institutional Controls	CAO-001-005	Nov 2203

CAO-5: Program Direction - Low Scenario

B. Financial History/Budget**B.1 Program Element: WM****B.2 Compliance Drivers**

	From Table B.2.	From Table B.1.
	Total	Calculated Total
1998 OMB	7,171	7,171
1999 Target	6,861	6,861

B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM	6,202	7,171	6,861

B.4 Budget Request Justification***B.4.1 Justification Based on Risk Reduction:***

Risk reduction is addressed in CAO-1 and CAO-3. All activities associated with the TRU Waste Program are interrelated and share the same risk reduction justification. At the high case funding, the CAO should have sufficient funding to meet all requirements for travel, civilian pay, and facility rental and maintenance.

At the low case level 11 FTEs will not be funded.

B.4.2 Justification Based on Mortgage Reduction:

Mortgage reduction is addressed in the Site Baseline Summary. All activities associated with the TRU Waste Program are interrelated and share the same mortgage reduction justification.

At the high case funding, the CAO should have sufficient funding to meet all requirements for travel, civilian pay, and facility rental and maintenance.

At the low case funding, the CAO will not have sufficient funding for management oversight required to meet continuing requirements for certification, TRU waste management, and WIPP site management.

The low case for the WIPP program will extend the life cycle by 65 years resulting in an increased overall cost of \$24 Billion (Escalated dollars) for program direction costs. The total project life cycle savings from FY 1997 through FY 2204 (end state in low scenario) by selecting the high scenario is \$20.6B (\$704 million in FY98 dollars). There is an additional cost of 1.6B (\$493 million in FY98 dollars) after FY 2070 in the project low case. It should also be noted that the low case does not provide for the disposal of Remote Handled waste.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

At the high case funding, the CAO should have sufficient funding to meet all requirements for travel, civilian pay, and facility rental and maintenance.

CAO-5: Program Direction - Low Scenario

The Federal workforce is required to integrate: disposal activities at the WIPP; transportation activities from generator sites and small quality sites; compliance activities to RCRA, 40 CFR 194, and all permitting requirements for the WIPP; and program planning and management activities.

At the low case funding, the CAO will not have sufficient funding to meet continuing requirements for re-certification, TRU waste management, and WIPP site management.

The low case funding is insufficient to appropriately manage the TRU program and continues this understaffed activity for an additional 65 years.

B.4.4 Prior Years Accomplishments:

- 1975 - WIPP site was selected for exploratory work
- 1978 - Environmental Evaluation Group was established to provide the state of New Mexico oversight powers
- 1979 - Congress authorized the WIPP for the research and development of safe methods of disposal of radioactive waste generated by defense facilities
- 1982 - Underground excavation was initiated
- 1988 - Underground excavation completed for the operational facility
- 1992 - Congress passed the WIPP Land Withdrawal Act
- 1995 - DOE submitted a Draft Compliance Certification Application to the EPA
- 1995 - DOE submitted a revised RCRA permit application to the New Mexico Environment Department.

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

- October - DOE published the Sealing System Design Report as required by Congress
- October - DOE published the Remote Handled TRU Waste Study as required by Congress
- February - EPA issued 40 CFR 194 which specifies the criteria to be met in the WIPP Compliance Certification Application
- September - DOE published the TRU Waste Management Plan which establishes the optimum program for disposal based upon the WIPP site's throughput capacity, transportation system capacity, and road ready waste from the TRU waste sites.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

- October - DOE submitted the Compliance Certification Application to EPA
- September - DOE's Disposal Phase Supplemental Environmental Impact Statement Record of Decision completed
- September - The first shipping site characterization program will be certified

B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY97 milestones and all activities included in the remainder of the CAO projects:

- March - WIPP site operational readiness will be declared
- April - DOE receives RCRA permit from the state of New Mexico
- April - EPA certifies the Compliance Certification Application
- April - Secretary of Energy makes decision to operate WIPP as a disposal facility

CAO-5: Program Direction - Low Scenario

April - DOE notifies State and Indian Tribes of intent to transport TRU waste

May - Contact Handled Waste disposal begins at WIPP at a rate of 5 trucks per week

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

The following milestones are contingent upon completion of all FY98 milestones and all activities included in the remainder of the CAO projects:

High Case WIPP will begin receiving waste from Hanford, LLNL, and NTS

Low Case WIPP will only receive TRU waste from INEEL, LANL, and RFETS.

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

The planned 63 FTEs in the high case will not change from year to year. The only change in program is the relocation of the CAO office from the M&O rental space to a newly built Federal building. Funding in FY97 provides for the necessary furnishing and communication systems. FY98 provides for three quarters year rent payment to GSA. The only changes between FY98 and FY99 is the full year payment to the GSA and approved escalation rates

The Low case causes a reduction of 11 FTEs from FY98 to FY99 and also deletes all incentive awards and limits overtime.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

The High Scenario provides for adequate staffing of the Carlsbad Area Office through the program years. The Low Scenario is insufficient to meet the Carlsbad Area Office's needs. Since the GSA building charges are fixed and not adjustable for budget changes, the only alternative is to cut federal staff by 11 positions. This reduction has not been identified by job positions since any cut to the already minimum staffing would not be advised. The CAO staffing needs are not proportional to available funding in any one year. The Low Scenario would limit the throughput at WIPP but would not reduce the statutory and regulatory requirements nor the administrative controls which the CAO performs for the complete TRU complex.

An Increase in funding above the Low Scenario is requested to maintain the current staffing of 63 FTEs (11 FTEs in the High case and 52 FTEs in the Low case) as follows:

(\$000)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
Increase	992	1,019	1,047	1,077	1,108	1,140	1,173	1,207

C. Other Project Information

C.1 Risk

See risk evaluation in CAO-1 and CAO-3

C.2 Validation

Project Validated? (Y/N) | Y

Date Validated: | 9/23/96

Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

CAO-5: Program Direction - Low Scenario

C.3 Project Assumptions

1. WIPP will open in May 1998
2. CAO will not implement the NTWMP.
3. Technology will be developed that will reduce TRU waste site volumes
4. WIPP operational life will be extended from 35 years to 100 years.
5. WIPP will receive 5 trucks of CH waste per week in FY1998.
6. Waste is initially received from only 3 sites (INEEL, RFETS, and LANL). The remaining TRU waste sites will be phased over 100 years.
7. RH waste receipt will be deferred until funding becomes available.
8. EPA will certify WIPP every 5 years.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2099 - FY2103).
10. Active institutional controls will be implemented in FY2104 and last for 100 years.

C.4 Supporting Documents

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1997

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995

Carlsbad Area Office Project Baseline Summary

Section VII



CAO-6 WIPP TRU Waste Transportation Privatization

A.0. - Project Baseline Summary - Project Identification/Header Information

A.0.1. Project Title: WIPP TRU Waste
Transportation Privatization

A.0.2. Unique Site-Designated Project ID: CAO-6 High Scenario

A.0.3. Site(s): WIPP

A.0.4. Operations/Field Office: Carlsbad Area Office

A.0.5. DOE Project Manager: George E. Dials

A.0.6. DOE Project Manager Phone Number: 505-234-7300

A.0.7. DOE Project Manager FAX Number: 505-887-1851

A.0.8. DOE Project Manager e-mail Address (Internet Format): dialsg@wipp.carlsbad.nm.us

CAO-6: WIPP TRU Waste Transportation Privatization - High Scenario

A.1 Project Baseline Summary - Technical Scope and Project Narrative***A.1.1 Purpose of Project:***

The purpose of this project is to describe the effort for privatizing a dedicated transuranic (TRU) waste transportation system for Contact-Handled (CH) and Remote-Handled (RH) TRU waste. This project only includes the capital equipment costs funded through the Office of Management and Budget (OMB) Privatization program. All costs associated with operating, executing, and maintaining the TRU waste transportation system are reported in Project CAO-3. The funds identified in this project are reported in the President's budget but are not included within the Department of Energy, Office of Waste Management targets.

A.1.2 Definition of Scope:

The methodology used for developing the scope of activities for privatizing a dedicated TRU waste transportation system was defined by OMB. These guidelines allow for OMB to fund the initiation of projects with private vendors including any required capital equipment. OMB allocations provide the DOE with "Budget Authority (BA)" the first year contracts are awarded. With the award of a contract and the BA from OMB, the vendor awarded the privatization contract can begin work. Because the OMB money is not intended to fully fund the projects, vendors will be required to fund the project start-up and re-coop their operating investment through the products they produce or services they render. After one year from receiving the BA from OMB and a contract is awarded, DOE will begin reimbursing the vendor for their initial capital outlay. This reimbursement will be amortized over a five year period and include escalation. Throughout this process, DOE does not purchase or have claim to ownership for any of the equipment or facilities. In the case of the TRU waste transportation system, the vendor will be responsible for all the transportation activities to meet the full throughput of the Waste Isolation Pilot Plant (WIPP). This includes purchasing and/or obtaining: 1) all additional NRC certified TRUPACT-IIs and HALFPACKs, 2) all certified and equipped tractors, 3) hiring and training drivers, and 4) any equipment maintenance. All equipment currently owned by DOE will be supplied to the vendor as Government Furnished Equipment (GFE). The GFE will be used until additional resources can be obtained to help offset initial vendor expenditures.

A.1.3 Technical Approach:

CAO will release a Request for Proposal in FY1997 for all activities related to transporting TRU waste from the TRU waste sites across the nation to WIPP. At that time, the vendor will be responsible for all TRU waste shipping requirements. DOE will schedule shipments from the TRU waste sites and coordinate with the vendor for shipping services. DOE will pay for only those service rendered.

A.1.4 Project Status in FY 2006:

By FY2006, the vendor will be required to be at full operational status having a dedicated transportation fleet capable of delivering 17 shipments per week of CH TRU waste to WIPP and employing 15 RH TRU waste truck sets (one each tractor, trailer, and RH cask). The vendor will be required to maintain this fleet size through the operational life of WIPP regardless of Project Baseline Summary Case (35 year life cycle or 100 year life cycle).

CAO-6: WIPP TRU Waste Transportation Privatization - High Scenario

A.1.5 Post 2006 Project Scope:

Maintain dedicated transportation services through the operational life of WIPP.

A.1.6 Project End State:

After reaching the end of the WIPP operational life, the vendor will have the opportunity to use the formerly dedicated transportation resources for other waste shipments.

A.1.7 Safety & Health Narrative

Combining this project and Project CAO-3 will reduce risk, in terms of populations living within the proximity of stored TRU waste inventories. Risk is reduced by removing waste from the accessible environment and disposing it at WIPP. A fundamental component of the high case scenario is the maximized rate at which waste is retrieved from storage, processed, and shipped for disposal. This is accomplished by focusing on easily processed waste types and on sites having relatively small inventories in storage. By the end of FY2006, only Hanford, INEL, and SRS maintain CH TRU waste in storage. RH TRU waste remains at Hanford INEL, ORNL, and Battelle-Columbus Laboratory. The Draft Waste Management Programmatic Environmental Impact Statement (DOE, 1995c) reports the approximate population within 50 miles of each TRU waste sites to be 60.9 million (1990 census). By removing TRU waste from most TRU waste sites by the end of FY2006 using the high case scenario, 94% of this population will no longer be exposed to potential hazards associated with stored TRU waste.

Using the low case scenario, there is no risk reduction.

A.1.8 General Narrative:

A.1.9 Related Projects at the Same Site or Operations/Field Office

Project Name	Unique Site-Designated Project ID	Relation to this Project
WIPP Base Operations	CAO-1	Primary support to all WIPP facility operations
WIPP Disposal Phase Certification and Experimental Program	CAO-2	Regulatory activity and continuing experimental programs for continued WIPP compliance certainty
WIPP Transportation	CAO-3	Safe transportation of TRU waste from TRU waste sites to WIPP
WIPP TRU Waste Sites Integration and Preparation Program Direction	CAO-4	Continued TRU waste sites communication and preparation for waste acceptance at the WIPP
	CAO-5	Federal management of the National TRU Waste Program and governmental infrastructural support..

A.1.10 Operations/Field Offices with Activities Related to this Project

Operations/Field Office Name	Unique Site-Designated Project ID	Relation to this Project
ALL site TRU Waste Projects		All TRU programs are dependent upon disposal availability at WIPP

CAO-6: WIPP TRU Waste Transportation Privatization - High Scenario

A.1.11 Drivers

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
x	x	x	x		x	x	x

A.2 Project Baseline Summary - Cost Baseline

A.2.1 Baseline Cost Summary

1997-2006: Post 2006: Total Project Cost:

A.2.2 Baseline Costs - Current (then year) \$'s in Thousands

Project	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
CAO-6		29,200	19,605							

A.2.3 Cost Baseline Narrative

All funding associated with this project is for reimbursing the successful vendor's initial capital equipment expenditures associated with obtaining the transportation packaging for TRU waste. DOE is not purchasing transportation packages with this money. Once the privatization contract is let, DOE does not, will not, or ever own equipment used to transport TRU waste. This includes tractors, trailers, and TRU waste packaging. The TRUPACT-IIs, HALFPACKs, RH Casks, tractors, and trailers will belong to the private vendor. DOE will only maintain the Certification of Compliance from the Nuclear Regulator Commission. DOE will only purchase transportation services not equipment. For all other costs associated with this project, see Project CAO-3.

A.3 Schedule Baseline/Milestones

Milestone Name	Field Milestone Code	Planned Month/Year
M & O Transportation Contract terminates		Sep 1997
CAST contract in place		Oct 1997
CAST contract terminates		Mar 1998
Privatized Carrier Contracts in place through the life of WIPP		Oct 1997
WIPP operational phase ends - carrier contracts terminate		Sep 2033 or Sep 2098

B. Financial History/Budget

B.1 Program Element: WM

B.2 Compliance Drivers

	From Table B.2. Total	From Table B.1. Calculated Total
1998 OMB	29,200	29,200
1999 Target	19,605	19,605

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B.3 Budget by State

State	1997 Appropriation	1998 IRB	1999 Target
NM		29,200	19,605

B.4 Budget Request Justification***B.4.1 Justification Based on Risk Reduction:***

Maintaining and shipping waste from TRU waste sites based on the milestones in this project and those in Project CAO-3 will reduce potential exposure of TRU waste from a natural or manmade catastrophe. Currently, approximately 60.9 million people are exposed to potentially TRU waste hazards. By removing and disposing all of the TRU waste from most of the TRU waste sites and greatly reducing the volume at others, this population base will be reduced to less than 3.7 million people by FY2006 thus achieving a 94% reduction in risk to the population.

No risk reduction will be realized if the low case scenario is implemented.

B.4.2 Justification Based on Mortgage Reduction:

The maintenance of a sound, economically feasible, and nationally accepted transportation system for transporting TRU waste to WIPP is paramount to the successful completion of the TRU waste complex mission. This project in conjunction with project CAO-3 is intended to fund the requirements for privatizing the TRU waste transportation system.

No mortgage reduction will be realized if the low case scenario is implemented.

B.4.3 Justification Based on Progress Toward Accomplishment of End State:

The transition toward a fully privatized system has begun and should be in place by the middle of FY98. Government contracting methods are being used to place contracts for the transportation services required to meet the full throughput rates at WIPP. Shipments are planned to begin in May 1998. Upon reaching the closing of WIPP the need for further waste transport will end, thus the associated contracts will terminate.

B.4.4 Prior Years Accomplishments:

This privatization effort is being initiated in FY97 with transition activities beginning in mid-FY97 and continuing through FY98. Prior activities have involved maintaining current contracts and planning toward TRU waste management options and Ten Year Plan requirements.

B.4.5 1996 Accomplishments (to supplement milestones and performance measures):

Prior activities have involved maintaining current contracts and planning toward TRU waste management options and Ten Year Plan requirements.

B.4.6 1997 Planned Accomplishments (to supplement milestones and performance measures):

A Request For Proposal for a privatized carrier contract is being prepared and will be awarded Mid-FY98.

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B.4.7 1998 Planned Accomplishments (to supplement milestones and performance measures):

During FY98, the vendor awarded the contract for CH transportation will complete activities required to meet the qualification standards identified in the privatization contract and will begin transportation activities in FY98. During the transition period, CAO will ship waste using the current private carrier contractor.

B.4.8 1999 Planned Accomplishments (to supplement milestones and performance measures):

During FY99, the privatized transportation contractor will be in place with approximately 291 CH-TRU shipments being made to the WIPP.

B.4.9 Changes from Current Year (FY 1998) to Budget Year (FY 1999):

During FY97, transportation support will be provided to the WIPP by the existing system under the WIPP M&O contractor. A transition to the new privatized contract will be taking place in FY98. During FY98, the private contractor will be implementing qualification requirements in preparation for contract performance. Transportation transition activities during FY98 will be managed directly by the Carlsbad Area Office.

B.4.10 Impacts of Differences Between Ten-Year Plan Estimate and Proposed Budget for FY 1999:

C. Other Project Information

C.1 Risk

See CAO-3 for Risk narrative

C.2 Validation

Project Validated? (Y/N)	Y
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Date Validated:	9/23/96
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Validation Method: Public Law 104-201 and DOE Strategic Alignment Initiative

C.3 Project Assumptions

1. WIPP will open in May 1998
2. FY 98 funding will be increased to meet the NTWMP schedule.
3. EPA will certify every 5 years.
4. WIPP will receive only defense generated, post 1970 TRU waste.
5. CAO will provide an integrated transportation system.
6. TRU waste sites will have adequate road ready waste to meet the objectives of the NTWMP.
7. Remote Handled TRU waste will be disposed at WIPP starting in FY2002
8. WIPP will be filled to capacity (176.5 thousand cubic meters) by FY2033.
9. All WIPP dismantlement and decommissioning will take 5 years (FY2034 - FY2038)
10. Active institutional controls will be implemented in FY2039 and last for 100 years.

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C.4 Supporting Documents

National TRU Waste Management Plan, September 1996

Transuranic Materials Transportation Guide, April 1996

Carlsbad Area Office Strategic Plan, October 1995

WIPP Disposal Decision Plan, Rev. 4, May, 1997

WIPP Compliance Certification Application, October 1996

Public Law 104-201, Land Withdrawal Amendment Act, September 23, 1996

Resource Conservation and Recovery Act, Part B Permit Application, May 1995