

MAYWOOD SITE AT A GLANCE

[Reference Sections in Brackets]

Background

- Site includes Maywood Interim Storage Site (MISS) and 84 vicinity properties (VPs) [2.1]
- 1916-59 Site used to extract radioactive thorium for commercial products thorium spread via Lodi Brook flooding and from use of wastes as mulch and backfill [2.1]
- 1954 AEC licensed Maywood Chemical Works to process/manufacture radioactive materials under Atomic Energy Act of 1954 [2.1]
- 1959–Present Stepan Company took over facility to manufacture chemical pharmaceuticals
- 1961 AEC issued radioactive materials license to Stepan [2.1]
- 1983 Site added to NPL
- 1984 Congress assigned cleanup responsibility to DOE (FUSRAP)
- 1984—Present Several VPs remediated; storage pile constructed at site for interim storage; removal of pile under way [2.1]

Waste Volume and Primary Radioactive Contaminants

- Volume: 374,400 yd³
- Primary contaminant is thorium [3.1]

Major Environmental Restoration Activities to Date

- 1984-86 25 VPs remediated; storage pile constructed at MISS for interim storage of waste from cleanup
- 1986-88 Stepan removed some contamination from offsite property and buried it in 3 pits on Stepan property [3.1]
- 1993-94 Dispute between DOE and EPA on soil cleanup criteria; resolved March 1994 [3.1]
- 1995 DOE began pile removal; half of pile has been sent to Envirocare of Utah for disposal [3.1]
- 1996 DOE began cleanup of residential vicinity properties; 5 properties remediated to date

Regulatory Drivers and Other Requirements

- Atomic Energy Act of 1954; CERCLA (SARA)/NEPA; NESHAPs; NPDES; Safe Drinking Water Act; Clean Water Act; Clean Air Act
- DOE Orders; DOE ER Strategic Plan
- Executive Orders 12580 and 11988 (40 CFR 6.302b); state and local regulations

Key Regulators and Other Stakeholders

- EPA Region II
- New Jersey Department of Environmental Protection (NJDEP)
- Tri-Borough and County Thorium Coalition
- Concerned Citizens of Maywood
- Environmental Management Advisory Board (EMAB)

Key Issues

- Remedy selection for commercial/industrial properties
- Schedule for record of decision (ROD) EPA wants to resume ROD process; DOE favors deferring ROD until after National Stakeholder
 process
- State endorsement of cleanup criteria
- Cost-effectiveness of treatment and community concern that DOE will proceed with onsite treatment options against community wishes [7.1]

Risk

Scc Tables 4.1 and 4.2

Environmental Restoration Strategy

- Evaluation of cleanup and disposal options still in progress will include evaluation of treatment and will incorporate stakeholder input and EMAB guiding principles [5.2]
- Interim actions continue with removal of the pile and cleanup of residential VPs; activities being addressed as CERCLA removal actions
- Establishment of citizens' task force to provide recommendations on cleanup options/activities --- group will represent all stakeholders

Contacts

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- Congressmen R. Torricelli and M. Roukema
- Senators Bill Bradley and Frank Lautenberg
- T. Murphy Mayor of Maywood; P. Toronto Mayor of Lodi; R. LoCasio Mayor, Township of Rochelle Park
- M. Guarino Chairman, Tri-Borough and County Thorium Coalition
- C. Parodi President, Concerned Citizens of Maywood
- T. Richards -- Chairman, Maywood's Environmental Legislative Action Committee (advisory group to Mayor and Council)



Management Action Process Document for the Maywood, New Jersey, FUSRAP Site



May 1996

U.S. Department of Energy

Formerly Utilized Sites Remedial Action Program (FUSRAP)

MANAGEMENT ACTION PROCESS (MAP) DOCUMENT

FOR THE MAYWOOD, NEW JERSEY, FUSRAP SITE

MANAGEMENT ACTION PROCESS (MAP) DOCUMENT FOR THE MAYWOOD, NEW JERSEY, FUSRAP SITE

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ACRONYMS

AEA	Atomic Energy Act
AEC	Atomic Energy Commission
ANL	Argonne National Laboratory
ARAR	applicable or relevant and appropriate requirement
BNI	Bechtel National, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy-Headquarters
DOE-OR	U.S. Department of Energy-Oak Ridge Operations
EE/CA	engineering evaluation/cost analysis
EMAB	Environmental Management Advisory Board
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
FFA	Federal Facilities Agreement
FSRD	Former Sites Restoration Division
FS/PP	Feasibility Study/Proposed Plan
FUSRAP	Formerly Utilized Sites Remedial Action Program
FY	Fiscal Year
MAP	Management Action Process
MED	Manhattan Engineer District
MISS	Maywood Interim Storage Site
NEPA	National Environmental Policy Act
NJDEP	New Jersey Department of Environmental Protection
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
ORAU	Oak Ridge Associated Universities
ORISE	Oak Ridge Institute for Science and Education
ORNL	Oak Ridge National Laboratory
PDCC	Project Document Control Center
PF	Pathway Factor
RCRA	Resource Conservation and Recovery Act
RDS	Risk Data Sheet
RF	Receptor Factor
ROD	Record of Decision
SAIC	Science Applications International Corporation
SHF	Source Hazard Factor
S/RID	Standards/Requirements Identification Document
UMTRA	Uranium Mill Tailings Remedial Action
WBS	work breakdown structure

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1. INTRODUCTION

The Formerly Utilized Sites Remedial Action Program (FUSRAP) was established in 1974 by the U.S. Atomic Energy Commission (AEC) under authorities granted by the Atomic Energy Act of 1954, as amended. FUSRAP encompasses 46 sites in 14 states and is funded through the U.S. Department of Energy (DOE) Oak Ridge Operations Office. Its mission is to identify, investigate, and clean up or control 1) sites where residual radioactivity exceeding current guidelines remains from the early years of the nation's atomic energy program, or 2) other sites assigned to DOE by Congress. The Maywood Site was assigned to DOE by Congress in 1984 and is being cleaned up under FUSRAP.

1.1 PURPOSE OF MAP

The Management Action Process (MAP) document serves as a record of interaction among the FUSRAP team of community, regulators, other stakeholders, and DOE. The MAP document is not a decision document, nor is MAP a new process. Instead, MAP is a tool to facilitate decision making and stakeholder involvement.

This MAP document is intended for use as a tool by all stakeholders at the Maywood Site. The MAP will concisely identify the environmental assessment and cleanup that has occurred to date and will provide the status of current and planned activities for the Maywood Site. DOE will also use the MAP document to develop a comprehensive strategy for cleanup, waste management, and subsequent land use. Similar documents have been prepared for all other FUSRAP sites.

1.2 MAP DOCUMENT ORGANIZATION

The organization of the MAP document for the Maywood Site is presented in Table 1.1.

1.3 OBJECTIVES

FUSRAP is a part of DOE's environmental restoration (ER) program, the primary mission of which is to determine the risks posed by inactive and surplus facilities and to protect human health and the environment from unacceptable risks. Cleaning up sites and facilities in the most cost-effective and

Chapter	Title	Description	
1	Introduction	Purpose and organization of the MAP document; FUSRAP	
		objectives and strategies	
2	Site Description and	Operational history; environmental setting; site facilities,	
	Comprehensive Planning	equipment, and infrastructure; and projected future site use	
3	Status of Maywood Site	Status of activities	
	Activities		
4	Relative Ranking	Relative risk from contaminants to the public, workers, and	
		the environment	
5	Strategy	Key assumptions and process for formulating strategy	
6	Master Schedule	Presents master schedule and compliance milestones.	
7	Issues and Initiatives	Identifies issues affecting project performance and	
}		describes initiatives to address these issues.	
Appendix A	Fiscal Year Funding	Cost baseline for activities.	
	Requirements/Costs		
Appendix B	Deliverables	List of documents	
Appendix C	Decision Document	Abstracts of decision documents	
	Summaries		
Appendix D	Conceptual Site Model	Models depicting contaminant sources and transport	
4	Data Summaries	mechanisms, exposure routes and pathways, and receptors.	
Appendix E	Project Controls	Responsibility matrices, change control thresholds, and	
		reporting requirements	
Appendix F	Property List for	Lists site and vicinity properties	
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Table 1.1 Organization of MAP Document

responsible manner possible and optimizing opportunities for future beneficial reuse are objectives of the program. These objectives are accomplished by adhering to the ER Program core values:

- Ensure protection of worker and public health and safety and protection of the environment
- Serve as a model steward of natural and cultural resources
- Comply with federal, state, and local statutes
- Prudently use taxpayers' money in achieving tangible results
- Focus on customer satisfaction and collaborative decision making
- Demonstrate a commitment to excellence

FUSRAP and other DOE cleanup programs are driven by eight program priorities [listed in order of emphasis (DOE 1995)], which are used to determine budget priorities and to plan and sequence work activities:

- **Reduce offsite contamination** that may pose risk to the public and the environment.
- Prevent contaminant migration through timely identification, reporting, assessment, application of best technologies, and safe storage.
- **Remediate non-DOE sites and facilities** formerly used by DOE and its contractors (the majority of these sites are included in FUSRAP and Uranium Mill Tailings Remedial Action Program [UMTRA]).
- **Reduce onsite contamination** that may pose a risk to the public and the environment during future use of the site.
- **Cost-effectively maintain the essential infrastructure** by responsibly investing in site safety, security, utilities, maintenance, support services, and other activities to reduce or eliminate conditions that create the need for unnecessary expenditures.
- Make prudent business decisions such as investing in capital projects that upgrade efficiency.
- Release facilities and land for beneficial use and involve the public in land and facility decisions.
- **Reduce uncertainty through characterization** to allow more accurate determination of relative risk, scope, cost, and schedule for site remediation activities.

The major objectives of FUSRAP, which are in accordance with the mission and priorities of DOE's nationwide cleanup program, are to

- Find and evaluate sites that supported Manhattan Engineer District (MED) or AEC nuclear work (or evaluate sites assigned by Congress) and determine whether they need cleanup and/or control.
- Clean up or maintain these sites so that they meet current guidelines.
- Dispose of or stabilize radioactive material in a way that is safe for the public and the environment.
- Perform all work in compliance with appropriate federal, state, and local laws and regulations.
- Certify the sites for appropriate future use.

Strategic goals of the FUSRAP program are as follows:

- Address immediate risk concerns and prevent increases in relative risk at all sites.
- Complete 50 percent of current FUSRAP sites (23 of 46) by end of 1996.
- Reach agreement with regulators and stakeholders on site-wide cleanup approach for the larger sites by end of FY 1999.
- Complete an aggressive interim action program at large sites by end of FY 2000.
- Complete cleanup at small sites by end of FY 2008.
- Complete cleanup of all sites and related vicinity properties by end of FY 2016.

Key assumptions on which the cleanup strategy for the Maywood Site is based are:

- Highest priority will be given to residential vicinity property (Phase I) cleanups.
- The storage pile at MISS is to be completely shipped offsite by the end of calendar year 1996.
- Pile and Phase I remedial actions are being conducted using CERCLA removal authority.
- When the final remedy is selected, it will be documented in a Record of Decision (ROD).
- Negotiations are being conducted with EPA on the schedule for issuing a site-wide ROD.
- Phase I cleanup is expected to proceed through calendar year 1998 dependent upon Congressional funding.
- Governmental/commercial vicinity property (Phase II) cleanups are to begin following Phase I remedial action.
- Phase I remedial action will use cleanup criteria of 5 picocuries (above normal background levels) of radioactive material per gram (pCi/g) of soil regardless of depth.
- Phase II remedial action will use cleanup criteria of 5 pCi/g for the first 6 in. of soil and 15 pCi/g at depths greater than 6 in.
- Risk analyses may be coordinated with the U.S. Environmental Protection Agency (EPA) to save old-growth trees, to avoid highly intrusive cleanups (e.g., under large commercial structures), and to address inaccessible soils (e.g., under roads).
- If treatment proves viable, it may be applied to some Phase I and Phase II soils to reduce volume.

The ultimate objective of the FUSRAP program is to remediate all contaminated sites in a safe, costeffective, and timely manner and to optimize opportunities for beneficial reuse. Subsidiary objectives established to accomplish this overall goal are linked to the Environmental Restoration Strategic Plan (DOE 1995) and reflect health and safety, regulatory, technical, and operational performance goals.

A key component of the cleanup decision-making process at FUSRAP sites is input from the Environmental Management Advisory Board (EMAB). EMAB was established in 1992 as a board of advisors to assist the Assistant Secretary of the Office of Environmental Management on various program issues. EMAB established several committees, including the FUSRAP Committee. It was established by DOE to provide guiding principles under which the program should operate. These principles are to be developed using current scientific knowledge and extensive stakeholder input and will promote consistent and cost-effective remedies for FUSRAP sites. EMAB includes representatives of state and local governments, environmental and citizen groups, labor organizations, federal agencies, and the scientific and academic communities. National and local meetings provide a forum for public input to EMAB.

Currently, several stakeholder groups are active at the Maywood Site. The Concerned Citizens of Maywood (CCM) were established in 1985 and have by and large opposed most DOE plans and activities at the site. The Environmental Legislative Action Committee (ELAC) was established by the mayor of Maywood in 1990 but had limited activity during the time that the CCM was the official borough advisory group. When CCM advisory status ended in 1994, ELAC began a more active role and has become an advisory group to the mayor and council on issues related to the Maywood Site. In addition to standing membership, a member of the borough council is appointed as official council liaison and attends ELAC meetings. The Tri-Borough and County Thorium Coalition was formed in July 1992 by Bergen County officials and municipal mayors. With \$50,000 in funding from DOE, the Coalition hired Teledyne Isotopes as a consultant to review documents and to help them understand technical information about work at the Maywood Site. The chairperson of the Thorium Coalition is Mark Guarino, Health Services Department Director for Bergen County. Other membership includes the mayors of Maywood, Lodi, and Rochelle Park (or their designees), and the County Executive (or designee).

A new task force representing citizen groups and other stakeholders is being formed to provide advice on issues centering on current cleanup activities and to assist in future cleanup decisions. ELAC and the Tri-Borough and County Thorium Coalition have agreed to participate, and CCM will be invited as members as well.

1.4 PROJECT TEAM

The Maywood Site project organization is outlined in Figure 1.1. The MAP project team is identified in Table 1.2.

1.5 ORGANIZATIONAL INTERFACES

Table 1.3 outlines the organizational interfaces among levels of DOE organization, core and technical members of the MAP project team, regulatory agencies, and stakeholder groups; it summarizes the relationships of these interfaces for the Maywood Site.

The remedy selection process will include working with the newly formed task force outlined in Section 1.3 and with community groups such as ELAC and the Tri-Borough and County Thorium Coalition to identify an alternative agreeable to the community and DOE.

1.6 MAP PROGRESS, ACCOMPLISHMENTS, AND STRATEGY

Table 1.4 identifies efforts at Maywood to promote stakeholder input in remedy selection and decision making and summarizes progress toward consensus through the EMAB/National Stakeholder Summit process and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) community relations activities.

On May 2-3, 1995, more than 60 FUSRAP stakeholders from communities throughout the United States convened in Washington, D.C., to attend the first annual FUSRAP National Stakeholder Summit. Participants discussed issues affecting cleanup at FUSRAP sites and identified funding, cleanup criteria, risk management, remedy selection, and community acceptance as major issues. The EMAB FUSRAP Committee used the issues and information from the National Stakeholder Summit to develop guiding principles. The next National Stakeholder Summit, at which FUSRAP stakeholders will review draft EMAB principles, is scheduled for 1996.



Figure 1.1 Maywood Site Organization Chart

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DOE HEADQUARTERS				
Organization	Name	Title		
Office of Environmental Management	A. Alm	Assistant Secretary		
Office of Environmental Restoration	J. Owendoff Deputy Assistant Secretary			
Office of Eastern Area Programs	J. Fiore Director			
Division of Offsite Programs	A Johnson	FUSRAP Program Manager		
CORE TEAM MEMBERS -	OAK RIDGE, TE	NNESSEE		
Role/Responsibility	Name	Title	Organization	
Director, Oak Ridge Operations	J. Hall	Manager	DOE ORO	
FUSRAP Project Manager	L.K. Price	Director	DOE FSRD	
Site Manager, Maywood Site	S. Cange	Site Manager	DOE FSRD	
CONTR	ACTORS	• · · · · · · · · · · · · · · · · · · ·		
Role/Responsibility	Organization			
Project Management Contractor	Bechtel National, I	nc. (BNI)		
Environmental Studies Contractor	Science Application	ns International Cor	poration (SAIC)	
Designation, Verification, and Technical Support	Oak Ridge Nationa	I Laboratory (ORN)	L)	
Verification and Technical Support	Oak Ridge Institute	for Science and Ed	lucation (ORISE)	
Technical Support	Argonne National I	Laboratory (ANL)		
Radiological Sampling and Analysis; Chemical Sampling	ThermoNUtech	······································		
Chemical Analysis	R.F. Weston, Inc.			
KEY REGULATORS AND	OTHER STAKEH	OLDERS	·····	
Agency/Organization	Primary Contacts		Telephone	
EPA Region II	A. Carpenter		(212) 637-4433	
New Jersey Department of Environmental Protection	N. Marton		(609) 633-1495	
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IIS House of Popresentatives	M Roukema		(202) 224-4744	
0.3. House of Representatives	R Torricelli		(202) 225-5061	
New Jersey State Senate	R Baer	<u> </u>	(201) 343-3333	
	L. Koscoe		(201)712-1221	
New Jersey State Assembly	L. Weinberg		(201) 928-0100	
	C. Zisa		(201) 996-8040	
	P. Roma		(201) 265-0680	
	R. M. Heck		(201) 777-6344	
Environmental Legislative Action Committee	T. Richards		(201) 368-0240	
Tri-Borough and County Thorium Coalition	M. Guarino		(201) 599-6108	
Concerned Citizens of Maywood	C. Parodi	······································	(201) 843-6966	
Bergen County				
County Executive	W. Schuber		(201) 646-3630	
Board of Freeholders Chairperson	R. Mola		(201) 646-2500	
Borough of Maywood			(201) 845-2900	
Mayor	T. Murphy			
Borough of Lodi			(201) 365-4005	
Mayor	P. Toronto		1	
Borough Manager	J. Dominic			
Township of Rochelle Park			(201) 587-7729	
Mayor	R. LoCasio			
Township Administrator	J. Manzella		l	

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Organization	Role/Responsibility
DOE-HQ, Office of Environmental Restoration (EM-40), within Office of Environmental Management	Oversight responsibility for attaining FUSRAP goals (implemented through Office of Eastern Area Programs and designated Program Manager in Division of Off-Site Programs, who establish overall program direction, policies, milestones, and budget).
DOE Oak Ridge Operations Office, Former Sites Restoration Division (FSRD)	Responsibility for accomplishing FUSRAP mission; day-to-day technical, administrative, and financial management of FUSRAP activities; oversight and management of BNI and SAIC contracts. Director is FUSRAP Program Manager, who has primary responsibility, accountability, and authority to direct and manage FUSRAP in accordance with the project charter and the Project Plan.
Bechtel National, Inc. (BNI)	Project Management Contractor. Manages field activities and construction required for remedial action; administers subcontracts; coordinates sequence of operations; executes response actions as required; defines/implements quality assurance procedures, environmental compliance activities, and safety programs to meet DOE requirements; ensures completion of remedial action in accordance with DOE goals.
Science Applications International Corporation (SAIC)	Environmental Studies Contractor. Responsible for planning, managing, and executing the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process, integrating National Environmental Policy Act (NEPA) values, and meeting Resource Conservation and Recovery Act (RCRA) requirements. Provides technical support to DOE to plan site investigations, evaluate cleanup alternatives, conduct hazard assessments, and coordinate laboratory treatability studies and treatment strategy.
Oak Ridge National Laboratory (ORNL)	Technical support to DOE-HQ and FSRD including radiological scoping, designation, characterization, and verification services; conducts environmental audits of FUSRAP site activities.
Oak Ridge Institute for Science and Education (ORISE)	Technical support to DOE-HQ including independent verification activities.
Argonne National Laboratory (ANL)	Technical support to DOE-HQ and FSRD including technical review of analyses and documents and assistance to the FUSRAP self-assessment program.
DOE Waste Management Program	Oversees management of wastes generated during remediation projects, including notification of projected needs for waste treatment, storage, and disposal.
DOE Technology Development Program.	Ensures use of safest, fastest, most cost-effective cleanup technologies.
EPA Region II	Regulatory oversight of cleanup at FUSRAP sites under CERCLA.
NJDEP	Key state regulatory agency with coordination of remedial action at the New Jersey FUSRAP sites.
Tri-Borough and County Thorium Coalition, Environmental Legislative Action Committee	Locally formed stakeholder groups consisting of local government and other stakeholder representatives. Established to identify key community concerns and make recommendations for addressing FUSRAP waste.
Property Owners	Key stakeholders representing residential, commercial, and municipal properties.

 Table 1.3 Organizational Interfaces

Table 1.4 Review of Stakeholder Involvement History and MAP Progress

Fiscal Year	Activities Completed/Accomplishments		
1984	 Congress directed DOE to add the Maywood Site to its responsibilities for cleanup DOE representatives met with Maywood officials to obtain background information about the site and about community concerns 		
	 DOE project representatives met with affected property owners and Maywood mayor and council to discuss planned removal actions 		
	 Memorandum of understanding executed between DOE and Borough of Maywood listing agreements concerning locations to be cleaned up, establishment and monitoring of MISS, and efforts to find permanent disposal cell in New Jersey (none was found). Cleanup of vicinity properties began; contaminated soils brought to MISS for storage 		
1985	 Cleanup of vicinity properties continued; 25 properties remediated Borough filed suit to invalidate transfer of MISS property from Stepan to DOE Town meeting held by Congressman Robert Torricelli regarding Maywood Site NJDEP hearing held to take comment on state permit for construction and establishment of MISS Concerned Citizens of Maywood (CCM) formed 		
1988	 Borough suit (filed in 1985) to invalidate transfer of MISS property from Stepan to DOE resolved in DOE's favor CCM granted official status as advisory group to mayor and council DOE representatives met with Maywood Borough Council to propose removal actions on selected Lodi and Maywood vicinity properties; council expressed opposition to accepting contaminated soil from outside Maywood and stated concern that materials from outside Maywood would fill MISS to capacity, leaving no room for materials excavated from Maywood properties. 		
1989	 Mayors of Maywood, Rochelle Park and Lodi began planning a cooperative effort to work with state and federal agencies to find a permanent solution for the thorium problem Federal Facilities Agreement negotiations under way with EPA Region 11 Subcontracts prepared for removal actions on selected vicinity properties; cleanup actions were cancelled because of local political opposition to bringing material into Maywood from other municipalities 		
1990	 Public scoping meeting held at Maywood; response made to public comments EPA and NJDEP approve Maywood scoping/planning documents ATSDR, in cooperation with NJDEP, conducted a health assessment of the area, documenting presence of radiological material above background levels at properties adjacent to MISS and citing need for a more thorough health study 		
1991	 DOE and EPA sign Federal Facility Agreement (FFA) Time-critical removal action performed on residence in Lodi (kitchen had been built with thorium-contaminated scrap materials from the former processing plant) Contaminated materials from time-critical removal action brought to MISS for storage despite strong community opposition and picketing to prevent delivery of materials to MISS 		

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Table 1.4 Review of Stakeholder Involvement History and MAP Progress (Continued)

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1992	•	Public information center opened
	•	CCM provided information about a Kerr-McGee Site in West Chicago, Illinois, to support
		belief that DOE should accelerate cleanup of the Maywood Site; media compared Maywood
		Site to Kerr-McGee because both sites have radioactive waste that has been classified as 11(e)2
		by-product material. Borough strongly recommended that DOE enter into contract with out-of-
		state facility licensed to accept contaminated material from Maywood
	-	EBA drafts of Remedial Investigation report and Baseline Risk Assessment for Maywood
	•	Er A draits of Remediat investigation report and Dasenne Risk Assessment for Maywood
		completed
	•	First drafts of Feasibility Study and Proposed Plan completed
	•	ATSDR review of earlier assessment concluded Maywood Site posed no heightened health risks
		under current conditions
	•	Borough petitioned ATSDR for health assessment to determine whether health risks to residents
		were greater in the MISS area than in areas farther from the site; based on EPA request for
		health consultation, ATSDR denied Borough petition for health assessment
	•	Bergen County officials and municipal mayors formed the Tri-Borough and County Thorium
		Coalition. With \$50,000 in funding from DOE, the Coalition hired Teledyne Isotopes as a
		consultant to review documents and to help them understand technical information about work
	·	at the Maywood Site
1003		Remedial Investigation report completed and issued to public
1775		Realing Rick Assessment completed and issued to public
		Describility Study (ES)/Dronged Blan (DD) submitted to EDA for final review: dispute on cleanun
	•	reasioning Study (rS)/Hoposed Fian (FT) submitted to ETA for final review, dispute on cleanup
		ATTORN I while a sector is and station on heightered health risks resulted from the
	•	ATSDR health consultation report issued, stating no heightened health risks resulted from the
		site under normal conditions
	-	CCM awarded \$25,000 EPA Technical Assistance Grant, which the group has used to hire
		Radioactive Waste Management Associates, of New York City, to help them understand
		information developed during the Superfund cleanup process.
1994	•	EPA/DOE dispute over cleanup criteria resolved
	•	Issued public draft Engineering Evaluation/Cost Analysis for pile removal at Maywood
	•	Issued final Engineering Evaluation/Cost Analysis for pile removal at Maywood with response
		to public comments as appendix
	•	CCM status as official advisory group to mayor and council revoked
	•	DOE entered into agreement with out-of-state licensed disposal facility to dispose of material
		from Maywood Site
1995	•	FUSRAP National Summit conducted
		Pile removal began
		Issued public draft Engineering Evaluation/Cost Analysis for Maywood residential property
Ì	-	(Dhase I VD) cleanung
		Issued final Engineering Evaluation/Cost Analysis for Phase I VP cleanups with response to
	•	rublic comments as appendix
	1_	public comments as appendix
	•	issued Maywood residential properties remedial design to ETA and NoDER
	•	Completed remediation at rive vicinity properties
1996	•	Pile removal and cleanup of Phase I VPS continued
	•	EMAB meeting held in New Jersey
	•	Discussions held with local officials and community groups regarding the formation of new task
L	\downarrow	torce
Ongoing	•	Meetings with ELAC, Thorium Coalition, and Mayor held prior to pile and vicinity property
Stakeholder		work
Involvement	•	Kitchen table meetings held individually with vicinity property residents prior to start of work on
		their properties
1	•	Workshops held to discuss Remedial Investigation, Feasibility Study, Baseline Risk Assessment,
		cleanup criteria, treatment, and other topics
	•	Public comment solicited and responded to for each cleanup action
		Newsletters issued at least three times per year
		Regular responses made to visits to the information center and calls to FUSRAP 1-800 number
1	1	Regular responses made to tisks to the information content and cans to restart r. over humber

2. SITE DESCRIPTION AND COMPREHENSIVE PLANNING

The Maywood Site is located in New Jersey in the boroughs of Maywood and Lodi and in the Township of Rochelle Park. The general location within New Jersey, site location within Maywood, and a site map are shown in Figure 2.1. A detailed listing of properties is provided in Appendix F.

2.1 OPERATIONAL HISTORY

The operational history of the Maywood Site is summarized in Table 2.1.

2.2 ENVIRONMENTAL SETTING

A summary of the Maywood environmental setting, including location, geology, hydrogeology, ecological resources, environmental factors, climate, and meteorology is presented in Table 2.2. Figure 2.2 shows wetlands at the site as designated by NJDEP; Figure 2.3 shows the 100-year flood zone near the Maywood Site.

2.3 CURRENT LAND USE

The site consists of residential, commercial, and governmental properties. DOE owns an 11.7-acre portion of the former Maywood Chemical Works property. DOE uses this property, known as the Maywood Interim Storage Site (MISS), as an interim storage/staging area for contaminated soils removed from vicinity properties. Proposed zoning for MISS following cleanup is for high-rise residential development. MISS is adjacent to the former Maywood Chemical Works property, which is now occupied by Stepan Company, a chemical pharmaceutical manufacturer.

Land use in the vicinity of MISS is a mixture of residential, commercial, and industrial. Figure 2.4 shows current land uses near the Maywood Site.

2.4 LOCAL AND REGIONAL FACTORS INFLUENCING CLEANUP STRATEGY

Local and regional factors influencing cleanup strategy are summarized in Table 2.3. These factors are considered when a cleanup strategy is proposed.

2.5 FACILITIES, EQUIPMENT, AND INFRASTRUCTURE

The facilities, equipment, and infrastructure for the Maywood Site are presented in Table 2.4. Figure 2.5 shows the basic infrastructure of the Maywood Site.

2.6 FUTURE USES FOR LAND, FACILITIES, AND EQUIPMENT

Future use of the property now occupied by the DOE-owned soil storage area has not been decided. Current zoning of the storage site is for industrial uses, but high-rise residential zoning has been proposed. Future use of residential and commercial/industrial properties that compose the Maywood Site is expected to remain as it is today. Table 2.5 shows the status of lands at the Maywood Site.





Period	Activity	Previous/Current		
		Owners		
1916 to	Maywood Chemical Works extracted radioactive thorium and rare earth	Maywood Chemical		
1959	elements from monazite sand for use in commercial products. I norium	WORKS		
	wastes spread via former Lodi Brook onto properties where commercial			
	buildings and residential houses were later built. Some wastes were used			
1022	on nearby properties as multin and fill.	Moursead Chaminal		
1932	NJ Route 17 built across Maywood Chemical works disposal area.	Works		
1954	Maywood Chemical Works granted license to possess, process,	Maywood Chemical		
	manufacture, and distribute radioactive materials under auspices of the	Works		
	Atomic Energy Act (AEA) of 1954.			
1959 -	Stepan Company occupies former Maywood Chemical Works facility to	Stepan Company		
present	manufacture chemical pharmaceuticals.			
1961	AEC issued radioactive materials license to Stepan.	Stepan Company		
1963	Stepan began consolidating thorium process wastes.	Stepan Company		
1966 -	Stepan removed contaminated material from property west of	Stepan Company		
1968	State Route 17 and buried it in three pits on Stepan property.			
1968	Based on AEC survey, property west of State Route 17 certified for use	Stepan Company		
	with no radiological restrictions under guidelines in effect at that time;			
	sold to private citizen; later sold to Ballod Associates.			
1980	Radioactive materials above newer, stricter guidelines, found on Ballod	Stepan Company		
	property, and north and south of the Stepan and Ballod properties; several			
residential vicinity properties identified as contaminated and requiring				
	remediation.			
1983	Maywood Site added to EPA National Priorities List (NPL).	Stepan Company		
1984	DOE was authorized under the 1984 Energy and Water Development	DOE/FUSRAP		
	Appropriations Act (Public Law 98-50) to conduct a decontamination			
	research and development project at Maywood in order to clean up the			
	radioactive materials. DOE assigned the site to FUSRAP and negotiated			
	with Stepan to acquire 11.7-acres (MISS) for storage of soils excavated at			
	vicinity properties.			
1985	DOE obtained ownership of MISS property.	DOE/FUSRAP		
1984 -	Several vicinity properties remediated; storage pile created at MISS;	DOE/FUSRAP		
present	removal of MISS pile initiated in October 1994; MISS also used as			
	staging area for contaminated soils removed from vicinity properties.			
Cleanup	nistory following DOE involvement may be found in Table 3.1; Stakeholder i	nvolvement history and		
MAP pro	gress may be found in Table 1.4.			

Table 2.1 Operational History of Maywood Site

^{*} Other vicinity properties at the Maywood Site are owned by private citizens, commercial businesses, and municipalities

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Table 2.2 Environmental Setting

Location	Bergen County in the Boroughs of Maywood and Lodi and the Township
	of Rochelle Park.
Properties	Site includes 11.7-acre DOE-owned Maywood Interim Storage Site
•	(MISS), which is used as an interim storage/ staging area for materials
	from vicinity properties. Site also includes adjacent 18-acre property
	occupied by active chemical plant, and more than 80 residential,
	commercial, and governmental vicinity properties.
Site Topography	Generally level, with minor relief, sloping gently to the west; elevations
	range from 45 to 75 ft above MSL.
Soil Condition	Soil in the area is classified as urban fill. It is composed of more than
	50 percent sand particles and varying amounts of silt and clay.
Subsurface Geology	A section of unconsolidated clastic materials overlies bedrock, which
	consists primarily of interlayered, fine-grained sandstones and siltstones.
Aquifer	Primary groundwater aquifer is the Brunswick Formation; groundwater
	occurs in interconnecting fractures and joints. Additional void space
	occurs in the sandstone and conglomerate beds where cementing material
	is lacking
Groundwater Flow,	Groundwater system consists of a series of alternating tabular aquifers
Discharge, and Recharge	and aquitards at depths up to 400 ft. In some areas, the top portion of
	bedrock is highly weathered and contributes to groundwater flow.
Surface Water	Drainage poor in area. Site properties drain into Saddle River via
	Westerly and Lodi Brooks. With the exception of a few vicinity
	properties at south end of Lodi Brook, site is not in 100-year floodplain.
Erosion	53.1 tons/yr
Aquatic habitats	Plants, animals, birds, and invertebrates
Surface Vegetation	Trees, shrubs, grasses, garden vegetables
Wildlife	Birds, mammals, other vertebrate fauna, invertebrates
Floodplains/Wetlands	Present within scope of remediation. Assessments have been performed
	in accordance with DOE regulations; cleanup activities in protected
	geographic areas are coordinated with appropriate land use regulators
Threatened/Endangered	Applicable consultations have been addressed. No threatened or
Species	endangered species are expected to be affected by remedial activities.
Farmlands	No farmland preservation programs apply
Type of Climate	Humid
Seasonal Averages	Annual temp. 54.2° F; Avg. Jan. low: 31.3°F; Avg. July high: 76.8°F
Average Snowfall	30 in
Average Precipitation	42.3 in.; 120 days/yr; August high: 4.3 in.
Avg. Wind Speed/Direction	8.7 to 12 mph; From SW

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Figure 2.2 Wetlands Designated by NJDEP in Maywood Site Area



Figure 2.3 100-Year Flood Zones in the Maywood Area



Figure 2.4 Current Land Use in the Maywood Site Area

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Demographic Factors	Demographic factors that have been considered
	include:
	• 1994 estimated Maywood population: 9,770
	• 1994 estimated Lodi population: 22.602
	• 1992 estimated Rochelle Park population: 5,749
	• 1992 Bergen County population: 832 383
	• Maywood Site is near highly urbanized
	New York/Newark Metropolitan area
	• Maywood Site area includes mixture of residential.
	commercial and industrial land uses
Historical Archaeological Cultural Factors	Stage IA historical and archaeological study
mistorical, menacorogical, cultural ractors	completed Further documentation of Building 76 on
	MISS has been undertaken as requested by New
	Jersev State Historic Preservation Office
Environmental Factors	• No endangered species is known to inhabit
Environmental Lactors	Maywood Site
	• No critical habitat has been identified
	• Some Maywood Site vicinity properties fall within
	the 100-year flood zone. However, proposed
	actions have been evaluated, and no floodplains are
	expected to be adversely affected by cleanup
	activities at the Maywood Site
	• Wetlands designated by NIDEP exist at the
	Maywood Site. However, proposed actions have
	been evaluated, and no wetlands are expected to be
	adversely affected by cleanup activities at the
	Maywood Site
Other Factors	• long-term safety
	• effectiveness of available technology over time
	 long-term monitoring
	• short-term risks
	• onsite disposal requirements
	• transportation and offsite disposal requirements
	• impacts/risk to communities along transportation
	routes to permanent disposal facility
	• community impacts and benefits of site cleanup
	• total cost of cleanup to taxpayers

Table 2.3 Local And Regional Factors Influencing Cleanup Strategy

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Buildings	Construction trailer, storage shed for equipment occupying less than one acre on the site; "Building 76," a structure of approximately 750 ft ² is used to store remediated soil from vicinity property as well as personal protective equipment and other equipment
Storage Pile	Interim storage pile occupying approximately one acre at the site (as of 4/96)
Utilities	Electric, water, gas, sewer, phone
R/R Access	Yes
Waterways	No
Major Roads	NJ State Route 17 adjacent to site; I-80 ~1 mile from site; NJ turnpike ~1 mile from site
Security	Chain-link fence around MISS, 24-hour surveillance provided by Stepan Company
Water Runoff Controls	Erosion and soil control measures employed
Decontamination Pad	Yes

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Table 2.4 Facilities, Equipment, and Infrastructure at the Maywood Site



Figure 2.5 Infrastructure at MISS

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Table 2.5 Status of Lands

	Private	Lands	DOE Lands						
Fiscal	Total to Be	Total	Total	DOE Land	Land	Remediated	Not Ready		
Year	Addressed	Completed	Owned by	to Be	That Has	and Available	to Be		
	(acres)	and	DOE	Retained	Been	for Release	Released		
		Released	(acres)		Released				
Pre-FY95	~120	~20	11.5	TBD	0	0	11.5		
FY 1995	~100		11.5	TBD	0	0	11.5		
FY 1996	~100	~12	11.5	TBD	0	0	11.5		
FY 1997	~88	~10	11.5	TBD	0	0	11.5		
FY 1998	~78	~10	11.5	TBD	0	0	11.5		
FY 1999	~68	~6	11.5	TBD	0	0	11.5		
FY 2000	~62	~6	11.5	TBD	0	0	11.5		
FY 2001	~56	~6	11.5	TBD	0	0	11.5		
FY 2002	~50	~6	11.5	TBD	0	· 0	11.5		
FY 2003	~44	~6	11.5	TBD	0	0	11.5		
FY 2004	~38	~6	11.5	TBD	0	0	11.5		
FY 2005	~32	~6	11.5	TBD	0	0	11.5		
FY 2006	~26	~6	11.5	TBD	0	0	11.5		
FY 2007	~20	~6	11.5	TBD	0	0	11.5		
FY 2008	~14	~6	11.5	TBD	0	0	11.5		
FY 2009	~8	~8	11.5	TBD	0	11.5 (pending	0		
						no long-term			
						control needs)			

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3. STATUS OF MAYWOOD SITE ACTIVITIES

3.1 CURRENT STATUS

3.1.1 Site Cleanup Activity Summary

Characterization and cleanup activities at the Maywood Site are summarized in Table 3.1.

3.1.2 Environmental Condition of Properties

Table 3.2 lists radionuclides of concern as well as their associated quantities and concentrations at the Maywood Site. Figure 3.1 shows the areal extent of radionuclides in soil; Figure 3.2 identifies the locations of Maywood Site vicinity properties.

3.2 REGULATORY REQUIREMENTS

CERCLA is the principal law under which inactive DOE sites are cleaned up. For NPL sites such as the Maywood Site, CERCLA mandates the completion of a Remedial Investigation/Feasibility Study, selection of a cleanup option with stakeholder participation, documentation of the selected cleanup option in a Record of Decision, and completion of a remedial action. Removal actions can be conducted under the engineering evaluation/cost analysis (EF/CA) process (a mini-Feasibility Study) as long as the action is consistent with the sitewide remedy. FUSRAP cleanup activities incorporate NEPA values, which address protection of the environment during federal actions such as cleanup.

Although DOE is the lead agency for remedial action at the Maywood Site, DOE is bound by a Federal Facility Agreement (FFA) with the U.S. EPA. This agreement outlines the responsibilities and interactions between the two agencies including milestones for performance of cleanup activities. DOE activities are subject to oversight by EPA Region II and are coordinated with appropriate state agencies, including NJDEP. DOE also provides for participation of federal and state legislators, local and county officials, and the general public in the decision-making process regarding options for cleanup and waste disposal. One way this is accomplished is by providing fact sheets and information sessions to educate the public on cleanup work. Another important tool for including stakeholders in the decision-making process is that of allowing public comment periods for all decision documents. After comments are received, they are considered, addressed, and incorporated into the final decision documents.

FUSRAP uses real estate instruments, either in the form of a "right-of-entry" or a "license," when performing work on property not owned by DOE. A real estate right-of-entry is used when performing surveys and sampling activities. A real estate license, which allows for more intrusive activities, is used when contamination is present and remedial action is necessary. The purpose for a real estate instrument is to ensure that property ownership is verified before DOE performs any activities.

The regulatory history of the Maywood Site, including regulatory agreements, permits, and other drivers and the current status in the CERCLA process, is summarized in Table 3.3. A list of regulatory requirements is provided in Table 3.4.

Date	Activity
1984	• Congress assigned responsibility for cleanup of the Maywood Site to DOE, which in turn assigned the site to FUSRAP.
1984-	• DOE cleaned up 25 residential properties in Maywood, Rochelle Park, and Lodi and part of one
1985	commercial property in Rochelle Park (Ballod property). Material transferred to MISS for storage.
	• Cleanup of additional properties ceased when an ordinance was passed to preclude the transfer of
	additional material to Maywood from other municipalities. A approximately 35,000 yd ³ of conteminated material from these properties was stared at MISS
1095	• Approximately 35,000 yd of contaminated material from these properties was stored at MISS.
190J-	• DOE initiated environmental monitoring program at the site to help ensure the health and safety of the program soil air and groupdwater are monitored to
present	determine whether any contamination is moving off the site. Monitoring devices or sampling stations
	are located in the places where they are most likely to detect any contaminant migration.
1991	• FFA between DOE and EPA signed. FFA ensures site is thoroughly investigated and remedied to
	protect the health and welfare of the public and the environment, establishes procedural framework for
	site cleanup in accordance with applicable laws and guidance, ensures all work done by DOE would be
	consistent with requirements, and facilitates cooperation and information exchange between DOE/EPA.
1993	• RI completed to define type and extent of contamination, under DOE's responsibility, present at site.
	• Baseline Risk Assessment completed. The assessment identified potential means by which people and
	threat to human health and the environment if the site was not cleaned up. The results of the assessment
	provided a basis for cleanup
1993-	• Dispute between DOE and EPA regarding cleanup criteria for the soil. DOE maintained criteria should
1994	conform to existing national standards, (5 pCi/g above normal background levels for top 6 in. of soil; 15
	pCi/g below 6 in.). EPA contended a set of Maywood-specific cleanup guidelines should be
	formulated. Dispute resolved in March 1994; DOE agreed to develop site-specific criteria, with
	guidelines set at 5 pCi/g for residential properties, regardless of depth. Criteria for industrial and
	commercial properties were maintained at 5 pCi/g for surface soil and 15 pCi/g for subsurface, with a
	goal of 5 pCi/g if reasonably achievable.
1994	• EE/CA for MISS pile removal issued for public comment • Final EE/CA for MISS nile removal issued with remonser to public comments as appendix
	• DOE signed Action Memorandum to begin nile removal
1995	• DOE began MISS pile removal: half of pile has been sent for permanent disposal at a licensed disposal
	facility as of winter 1995
	• EE/CA for Phase I property remediation issued for public comment
	• Final EE/CA for Phase I property remediation issued with responses to public comments as appendix
	• DOE signed Action Memorandum to begin Phase I property remediation
	DOE began Phase 1 property remediation
1996	• Pile removal continues; remaining portion expected to be shipped by the end of 1996
	• Phase I property remediation continues; 5 of the 31 properties remediated to date; Phase I remediation
	expected to take approximately 3-4 years based on annual funding from Congress

Table 3.1 Cleanup Activity Summary for the Maywood Site

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Table 3.2 Materials of Concern at	the	Maywood	Site
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Site/Property	Waste Volume (yd ³)	Waste Type	Primary Constituents	Avg./Max Concentration (pCi/g)	Origin of Waste	Affected Media	Location of Waste
MISS Pile Material	18,400	11e(2)	Thorium-232, Radium-226, Uranium-238	18.1 / 50 2.4 / 4.9 17 / 54	Vicinity property cleanups	Soil	MISS pile
Maywood Site In Situ Material	356,000 (est.)* [†]	11e(2)	Thorium-232, Radium-226, Uranium-238	22.8 / 2500 5.5 / 447 13.1 / 624.7	Processing activities at Maywood Chemical Works	Soil	MISS, vicinity properties
Maywood Site Total Material	374,400 (est.) ^{*†}	1e(2)	Thorium-232, Radium-226, Uranium-238	N/A N/A N/A	Vicinity property cleanups and processing activities at Maywood Chemical Works	Soil	MISS, vicinity properties

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Volume as of 4/96 Includes estimated volumes for all vicinity properties t



FIGURE 3.1 AREAS OF KNOWN CONTAMINATION

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Figure 3.2 Locations of Vicinity Properties

Table 3.3 Regulatory History of the Maywood Site

1916	٠	Maywood Chemical Works operations begin
1959	٠	Stepan Company acquires Maywood Chemical Works
1980	٠	Radioactive contamination is discovered on land formerly owned by Stepan
1983	٠	EPA places site on NPL
1984	٠	Congress authorizes DOE to initiate research and development project
1985	٠	DOE obtains portion of Stepan property for interim storage of contamination from the
		cleanup of vicinity properties
	•	environmental surveillance program initiated
	٠	state National Pollutant Discharge Elimination System (NPDES) permit obtained for
		construction of storage pile
	•	Borough of Maywood sues DOE and Stepan to void property transfer; case resolved in
		DOE's favor in 1988
1986	٠	MOU signed between DOE and Borough of Maywood
1987	•	Surveys and characterization activities conducted
1991	•	Federal Facility Agreement between EPA and DOE signed
1992	•	Remedial Investigation Report issued to public
1993	٠	Baseline Risk Assessment issued to public
	•	Cleanup criteria dispute begins between DOE and EPA
1994	٠	DOE/EPA dispute on cleanup criteria resolved
	•	EE/CA for removal of pile issued to public; Action Memorandum signed
	•	Historic preservation and floodplains/wetlands studies completed
1995	•	EE/CA for cleanup of Phase 1 vicinity properties issued to public; Action Memorandum
		signed

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Table 3.4 Requirements Potentially Applicable to the Maywood Site Cleanup

Potential Requirement	Description	Determination	Comments
FEDERAL REQUIREMENT	S		
Atomic Energy Act of 1954 (AEA), as amended (42 USC 2011-2297G-4)	Establishes authority for licensing and regulating radioactive materials.	Applicable or relevant and appropriate	Establishes DOE's authority and responsibilities for managing radioactive materials.
Radiation Protection for Occupational Workers (10 CFR Part 835)	Specifies occupational radiation protection standards and program requirements for DOE and contractor operations; includes basic dose limits of 5000 mrem/year for radiation workers and 100 mrem/year for the public, and derived air concentration limits for radionuclides in air; requires all radiation exposure to be reduced ALARA.	Applicable or relevant ar.d appropriate	The proposed action will comply with these requirements.
Clean Air Act, as amended; National Primary and Secondary Ambient Air Quality Standards (42 USC 7401-7671, 40 CFR 50)	Establishes National Primary and Secondary Ambient Air Quality Standards for certain pollutants, including total particulate matter.	Applicable or relevant and appropriate	Excavation equipment exhaust and fugitive dust could potentially contribute to air quality deterioration.
Ambient Air Quality Surveillance (40 CFR 58, 58 FR 8452)	Requires enhanced monitoring of ozone and its precursors. States must include photo-chemical assessment monitoring in State Implementation Plans for serious to extreme ozone non-attainment areas.	Applicable or relevant and appropriate	New Jersey is classified as a severe ozone non-attainment area.
National EmissionEmissions of radionuclides from any DOE facility to ambient air shall not exceed levels that would result in an effective dose equivalent of 10 mrem/year.7671, 40 CFR 61)		Applicable or relevant and appropriate	These requirements are considered pertinent for the protection of the public during implementation of the proposed action.
Floodplain Management (Executive Order 11988, 40 CFR 6.302(b))	Federal agencies must avoid, to the maximum extent possible, any adverse impacts associated with direct and indirect development of a floodplain.	Applicable or relevant and appropriate	Portions of several properties affected by proposed action are in 100-year floodplain. Mitigative measures would be taken to minimize potential impacts.

Potential Requirement	Description	Determination	Comments						
Federal Water Pollution Control Act, Clean Water Act (33 USC 1251-1387): Water Quality Standards (40 CFR 131), National Pollutant Discharge Elimination System (40 CFR 122-125)	Establishes water quality standards for surface waters and pretreatment standards for waste waters released to publicly owned treatment works (POTWs).	Applicable or relevant and appropriate	Any wastewater or stormwater resulting from the proposed action will be collected, tested, and treated, if necessary, prior to release, in accordance with the NPDES requirements.						
Occupational Safety and Health Act, General Industry Standards (29 USC 651-678, 29 CFR 1910) and Safety and Health Standards (29 CFR 1926)	Specifies health and safety standards for hazardous waste operations, including limits for exposure to noise, ionizing radiation and certain hazardous materials, including radionuclides. Establishes requirements for worker training, development of emergency response and safety and health plans, and the type of safety equipment and procedures to be followed for hazardous waste site operations.	Applicable or relevant and appropriate	Since these requirements are part of an employee protection law rather than an environmental protection law, with which CERCLA response actions should comply, they are not subject to the ARAR process. However, they constitute requirements for worker protection with which the proposed action will comply.						
Resource Conservation and Recovery Act (RCRA) (40 CFR 260-268)	Sets standards for management of hazardous waste, including generation, transportation, record-keeping, manifesting, treatment, and disposal.	Not a requirement	No RCRA-regulated hazardous waste is expected to be generated by the proposed action.						
Toxic Substances Control Act (15 USC 2601 et seq., 40 CFR 761)	ices Control Regulates polychlorinated biphenyl (PCB) cleanup and disposal.		No PCBs or other TSCA-regulated waste is expected to be generated by the proposed action.						
Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings (42 USC 2022, 40 CFR 192)	Establishes requirements for control of residual radioactive material at uranium and thorium processing or depository sites, and during site restoration. Specifies concentration limits for Ra- 226 or Ra-228 in soil, limits for gamma radiatior. exposure and radon decay product concentrations in habitable structures, and annual dose limits from planned releases to the environment.	Not a requirement	Since the site is not a designated mill tailings site, these requirements are not strictly applicable. They could be considered relevant and appropriate because of the similar nature of contaminants and site conditions; however, equivalent requirements are specified under DOE Order 5400.5 (and proposed rule 10 CFR 834), with which the proposed action will comply.						

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Potential Requirement	Description	Determination	Comments					
Hazardous Materials Transportation Act, as amended by the Hazardous Materials Transportation Uniform Safety Act (49 USC 1801-1819, 49 CFR 171-174, 177)	Establishes the requirements for transportation of hazardous (including radioactive) materials, including classification, packaging, labeling, marking, shipping and placarding requirements.	Not a requirement	Potentially applicable to transportation of radioactive materials off-site; however, it is anticipated that all wastes generated during the proposed removal action will contain radioactivity concentrations below 2000 pCi/g, the threshold subject to classification as radioactive material under these transportation regulations.					
Radiation Protection of the Public and the Environment (DOE Order 5400.5)	Establishes requirements for DOE facilities and operations for control of radiation exposure to the public. Radiation exposure to any member of the public from DOE operations may not exceed 100 mrem/year effective dose equivalent above background for continuous exposure or 500 mrem/year in any single year; further, all radiation exposures must be reduced to levels as low as reasonably achievable (ALARA). Concentrations of radionuclides in air in uncontrolled areas may not exceed specified Derived Concentration Guides. Specifies concentration limits for Ra-226, Ra-228, Th-230, and Th-232 in soil.	To be considered	Although not yet promulgated standards, the DOE Order requirements were developed for protection of the public and the environment, and are mandatory requirements for DOE activities; these requirements will be codified in a formal rule at 10 CFR 834 (proposed 3/23/93, 58 FR 16268), which would be applicable upon final promulgation. The proposed action will comply with these requirements.					
Radioactive Waste Management (DOE Order 5820.2A)	Specifies requirements for managing DOE radioactive waste.	To be considered	Although not promulgated standards, these requirements constitute requirements for protection of the public with which the proposed action will comply.					
Environmental Protection, Safety, and Health Protection Standards (DOE Order 5480.4)	Establishes requirements for the application of mandatory environmental protection, safety, and health (ES&H) standards applicable to all DOE and DOE contractor operations.	To be considered	Although not promulgated standards, these requirements are derived from such standards and constitute requirements for protection of the public with which the proposed action will comply.					
National Historic Preservation Act, as amended (16 USC 470, 40 CFR 6.301(b), 36 CFR 800)	Order 3480.4)DOE contractor operations.al Historic ration Act, as ed (16 USC 470, 40 .301(b), 36 CFR 800)The effect of any federally assisted undertaking must be taken into account for and district, site, building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places.		No such properties known to exist in the area affected by proposed action, so no adverse impacts to such propertie are expected; however, if these resources were affected, requirement would be applicable.					

Potential Requirement	Description	Determination	Comments						
Archeological and Historical Preservation Act (16 USC 469, 40 CFR 6.301(c))	Prehistorical, historical, and archeological data that might be destroyed as a result of a federal, federally assisted, or federally licensed activity or program must be preserved.	Not a requirement	No adverse impacts to such data are expected to result from the proposed action; however, if these data were affected, the requirements would be applicable.						
Historic Sites, Buildings, Objects, and Antiquities Act (16 USC 461-469, 40 CFR 6.301(a))	Requires federal agencies to consider the existence and location of landmarks on the National Registry of Natural Landmarks to avoid undesirable impacts on each landmark.	Not a requirement	No such resources known to exist in the area affected by the proposed action, so no adverse impacts to such resources are expected; however, if these resources were affected, the requirement would be applicable.						
Fish and Wildlife Coordination Act (16 USC 661-668, 40 CFR 6.302(g), 50 CFR 27)	Requires consultation when federal department or agency proposes or authorizes any modification of any stream or other water body, and adequate provision for protection of fish and wildlife resources. Lists actions prohibitec in areas belonging to National Wildlife Refuge System.	Not a requirement	The proposed action does not require modification of any stream or other water body. Site is not in the National Wildlife Refuge System.						
Endangered Species Act (16 USC 1531-1544, 50 CFR 17.402, 40 CFR 6.302(h))	Federal agencies must ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify any critical habitat.	Not a requirement	No critical habitat exists in the affected area, and no adverse impacts on threatened or endangered species are expected to result from the proposed action.						
Clean Water Act, Dredge or Fill Requirements (33 USC 1251-1387, 40 CFR 230- 231, 33 CFR 320-330)	Requires permits for discharge of dredged or fill material into waters of the United States, including wetlands.	Not a requirement	No jurisdictional wetlands are present in the area affected by the proposed action.						
Protection of Wetlands (Executive Order 11990, 40 CFR 6.302(a))	Federal agencies must avoid, to the maximum extent possible, any adverse impacts associated with the destruction or loss of wetlands and the support of new construction in wetlands if a practicable alternative exists.	Not a requirement	No jurisdictional wetlands are present in the area affected by the proposed action.						
Wildemess Act (16 USC 1131: 50 CFR 35.1)	Administers federally owned wilderness areas to avoid impacts.	Not a requirement	No wilderness area exists on-site or adjacent to the area affected by the proposed action.						



Table 3.4 Requirements Potentially Applicable to the Maywood Site Cleanup (continued)

		· · · · ·					
Potential Requirement	Description	Determination	Comments				
National Wildlife Refuge System (16 USC 668, 50 CFR 27)	Restricts activities within a National Wildlife Refuge		No National Wildlife Refuge area exists on-site or adjacent to the area affected by the proposed action.				
Scenic Rivers Act (16 USC 1271, 40 CFR 6.302(e))	Prohibits adverse impacts on a scenic river.	Not a requirement	No scenic river exists on-site or adjacent to the area affected by the proposed action.				
Coastal Zone Management Act (16 USC 1451)	Requires that activities within coastal zone be conducted in accordance with state-approved management program.	Not a requirement	Affected area is not located in the coastal zone.				
STATE REQUIREMENTS							
New Jersey Hazardous Materials Transportation Regulations (NJAC Title 7)	Establishes requirements for transporting hazardous materials. Materials regulated by the Atomic Energy Act and hazardous chemicals may not be transported through the state of New Jersey without prior written approval by all authorities having jurisdiction in such matters and by NJDEP.		Applicable to transportation of radioactive materials off-site. The State of New Jersey has not officially adopted the Federal Hazardous Materials Transportation Regulations, although for the most part the Federal regulations have been incorporated into the New Jersey regulations.				
New Jersey Spill Prevention Regulations (NJAC 7:1E)	Prohibits the discharge of petroleum and other hazardous substances to land and water.	Applicable or relevant and appropriate	No discharge of petroleum or hazardous materials is planned for the proposed removal action. Any accidental spillage would be mitigated in accordance with these requirements.				
New Jersey Surface Water Quality Standards (NJAC 7:9B)	Establishes numerical criteria for the control of toxic pollutants in surface waters.	Applicable or relevant and appropriate	The proposed removal action would be conducted to prevent adverse impacts to surface water quality.				
New Jersey Soil Erosion and Sediment Control Statute (NJSA 4:29-39)Requires soil erosion and sediment control measures whenever more than 5000 ft² of land surface is disturbed. Administered by local soil conservation districts of the state Dept. of Agriculture.		Applicable or relevant and appropriate	All excavation and construction activities under the proposed removal action would be conducted using appropriate erosion and sedimentation controls.				
New Jersey Air Pollution Control Regulations (NJAC 7:27)	Establishes limitations on air pollution sources, including limitations on smoke emissions from combustion of fuel by vehicles, earth-moving equipment, and mobile generators.	Applicable or relevant and appropriate	All vehicles and equipment used during the proposed removal action would meet these requirements. No permanent air pollution sources would be associated with this action.				

Table 3.4 Requirements Potentially Applicable to the Maywood Site Cleanup (continued)

Potential Requirement	Description	Determination	Comments
New Jersey Stream Encroachment Permit Program (NJAC 7:7a-7.6)	Requires permits for construction, installation, or alteration of any structure or permanent fill along, in, or across the channel or floodplain of any stream.	Applicable or relevant and appropriate	The proposed removal action may require the placement of fill in streams or floodplains.
New Jersey Water Supply Allocation Permits (NJAC 7:19-1.1)	Requires obtainment of permit for diversion of surface water or groundwater in excess of 100,000 gallons/day, except for emergency or short-term diversions.	Applicable or relevant and appropriate	The proposed removal action potentially may include diversion of surface waters addressed by this requirement.
New Jersey Uniform Construction Code Regulations (NJAC 5:23)	Requires construction permit for the construction, enlargement, alteration or demolition of a building or structure. Includes requirements for asbestos, fire, and radon.	Applicable or relevant and appropriate	The proposed removal action would be expected to require underpinning of some buildings or structures during excavation activities.
New Jersey Road Impact Regulations (NJAC 16:41- 5.1, 7.1)	Requires a permit from the NJDOT: to install, convert, or relocate drainage facilities across state property or along the side of a state highway; and for the use of a state highway right-of-way.	Applicable or relevant and appropriate	The proposed removal action would require the use of state highway right-of-way covered under this regulation.
New Jersey Noise Control Regulations (NJAC 7:29-1)	Establishes noise level limitations for industrial and commercial operations.	Applicable or relevant and appropriate	The proposed removal action would be conducted in compliance with all noise limitations.
Hazardous Discharge Site Remediation Act, Laws of 1993, Chap. 112, as amended by Laws of 1993, Chap. 139 (S-1070)	Legislation that upon enactment was immediately amended by S-1070 to include the remediation cleanup standards of S-1070. The Act requires persons who perform remediation activities to establish and maintain a remediation funding source in the amount necessary to pay for cleanups. Persons within the Act's scope are required to remediate to the cleanup standards to be developed under S-1070.	Potentially relevant and appropriate	Cleanup standards for human carcinogens in soil, groundwater, and surface waters are to be based on a 1 in 1,000,000 cancer risk. These standards are more stringent than the 10^{-4} to 10^{-6} risk range established by EPA for CERCLA sites.
New Jersey Pollutant Discharge Regulations (NJAC 7:14A)	Establishes controls and permitting requirements for discharge of pollutants to surface or ground waters.	Not a requ:rement	No discharges to surface or ground waters are planned for the proposed removal action, and controls will be implemented to prevent discharges of contaminated stormwater. Source, byproduct, and special nuclear material regulated under the AEA are not regulated by this program.

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Table 3.4 Requirements Potentially Applicable to the Maywood Site Cleanup (continued)

Potential Requirement	Description	Determination	Comments						
New Jersey Groundwater Quality Standards (NJAC 7:9-6.1)	Establishes numerical criteria for the control of toxic pollutants in groundwater. State criteria for radionuclides are equivalent to federal SDWA criteria.	Not a requirement	The proposed removal action includes excavation of surface and near-surface soils. No impact to groundwater is anticipated. Any remediation of groundwater at the Maywood site would be addressed under the comprehensive RI/FS program.						
New Jersey Drinking Water Quality Standards (NJAC 7:10-1)	Establishes numerical criteria for control of contaminants in drinking water. State criteria for radionuclides are equivalent to federal SDWA criteria.	Not a requirement	The proposed removal action would not impact drinking water quality.						
New Jersey Stormwater Pollution Prevention Regulations (NJAC 7:14A- 3.1)	Establishes requirements for permits to discharge of stormwater associated with industrial activities to storm sewers and other outlets that drain to receiving surface water.	Not a requirement	The proposed removal action would be conducted to minimize any stormwater discharge. The area disturbed during the excavation activities would be below the threshold for these requirements. However, the proposed removal activities would comply with the terms of the New Jersey General Permit for Construction Activities.						
New Jersey Freshwater Wetlands Permit Program (NJAC 7:7A-11.1)	Requires permit to engage in any regulated activity in and around freshwater wetlands and associated transition areas. (Operates in lieu of the U.S. Army CoE program.)	Not a requirement	No jurisdictional wetlands are present in the area affected by the proposed action and no wetlands impacts would be anticipated.						
New Jersey Well Permit & Well Closure Regulations (NJAC 58:4A-4.1)	Establishes requirements for the drilling and closure of water wells and the licensing of water well drillers.	Not a requirement	No drilling or closure of water wells is included in the proposed removal action.						

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3.3 WASTE MANAGEMENT ACTIVITIES

FUSRAP operations are governed by federal and state statutes; regulations (including DOE orders) of federal, state, and applicable local regulatory agencies; and court decisions interpreting these laws and regulations. DOE Orders 5820.2A, "Radioactive Waste Management," and 5400.3, "Hazardous and Radioactive Mixed Waste Program," provide the foundation for radioactive, hazardous, and mixed waste management activities under FUSRAP. Hazardous and mixed wastes generated by FUSRAP are managed in accordance with Resource Conservation and Recovery Act (RCRA) and EPA implementing regulations.

Waste at the Maywood Site is classified under the Atomic Energy Act as 11(e)2 material. There is no known hazardous waste as defined by RCRA at the site. An inventory identifying quantity, location, and the status of the material at the Maywood Site is provided in Table 3.2.

3.4 OTHER ACTIVITIES

DOE is committed to a program of public participation in the remedial action process for the Maywood Site. FUSRAP maintains an ongoing community relations program as part of the CERCLA remedial action process (BNI 1995b). The program includes

- interviewing community members to identify concerns and information needs,
- briefing local officials and media,
- working with citizen interest groups,
- issuing news releases,
- maintaining information repositories, and
- holding public meetings and hearings.

All interim cleanup actions at the Maywood Site have allowed for a public comment period. DOE also held numerous information sessions and public meetings to provide an opportunity for residents of communities surrounding the site to participate in environmental cleanup decisions. A formal community relations plan for the Maywood Site is maintained and regularly updated. A public information center is located in Maywood. The center houses the administrative record for the site as well as other information resources and serves as a meeting place for stakeholder workshops. The administrative record is also housed at the Maywood Public Library. Addresses and phone numbers for the information center and library may be found in Appendixes B and C.

EMAB, established to set boundaries for remedy selection and decision making, is discussed in detail in Section 1.3. Other stakeholder groups are also discussed in Section 1.3. A task force representing these stakeholder groups and other citizen groups is being formed to assist in future cleanup decisions.

4. RELATIVE RANKING

A number of separate evaluations have been performed for the Maywood Site, including:

- DOE-HQ Relative Ranking Evaluation
- DOE Risk Data Sheet Evaluation
- Assessment driven by regulatory requirements of CERCLA including the Baseline Risk Assessment and draft Feasibility Study alternatives assessment

4.1 DOE-HQ RELATIVE RANKING

The Environmental Management (EM)-40 relative ranking process ranks the Maywood Site to describe the conditions under which the public and site workers could be exposed. The ranking assesses four different media: groundwater, surface water/sediments, soil, and facility conditions. The ranking considers the significance and concentration of the source (Source Hazard Factor), the existence or potential for a contaminant migration/exposure pathway (Pathway Factor), and the potential for receptors, such as people or the environment, to have access to the contaminated media (Receptor Factor).

The DOE relative ranking for the Maywood Site is summarized in Table 4.1. The table also contains the basis for each ranking category by describing the Source Hazard Factor (SHF), Pathway Factor (PF) and Receptor Factor (RF).

4.2 RISK DATA SHEET EVALUATION

The Risk Data Sheet (RDS) evaluation process provides information to the EM program that assists in budget development decisions. It does this by providing the data that allow management assessment of the possible effects of various budget levels on a given site's or program's ability to manage activities in comparison with those of other EM programs.

The site is evaluated in seven categories:

- Public Safety and Health
- Site Personnel Safety and Health
- Environmental Impact
- Compliance with laws, regulations and agreements
- Mission Impact to stated goals and mission of DOE
- Mortgage Reduction, i.e., reducing long-term DOE (taxpayer) financial liabilities
- Social/Cultural/Economic Impacts in the affected community/state

Within each category, the site is evaluated in terms of the conditions associated with the site/activity prior to spending a fiscal year's budget ("Before" conditions), the conditions associated with undertaking the budgeted activity ("During" conditions), and the conditions that remain after completing the budgeted activity ("After" conditions). The RDS ratings in each category are defined as either high, medium or low.

The RDS ratings for the Maywood Site are provided in Table 4? Detailed explanations of the basis for each rating are provided in the EM Risk Data Sheet database; a summary of the rating rationale is also provided in Table 4.2

4-1

Media	Source		Ranking Basis
	Ranking		
Groundwater	Medium	SHF:	Very low concentrations of radionuclides and low concentrations of
	4	1	chemical analytes exist in groundwater at the site.
		PF:	Groundwater moves slowly at the site.
		RF:	There is limited potential for public or site worker access to the
	1		groundwater. (Groundwater is not the source for the area's
			drinking water.)
Surface Water/Sediment	Low	SHF:	Radium and thorium are present in sediments at the site.
		PF:	Sediments could migrate if site controls are not maintained as they
			currently are.
		RF:	Receptors could have access to sediments if administrative controls
			are not maintained as they currently are.
Soil	High	SHF:	Radium, thorium and uranium are present in surface soils.
		PF:	Contaminated soil is accessible to personnel performing facility
	1		improvement/maintenance; however, site controls are used to
(1	minimize exposure.
		RF:	Site worker contact with contaminated soils is possible if controls
			are not maintained as they currently are.
Facility	High	SHF:	Radiation exposure at the facility is possible if access controls are
			not maintained as they currently are.
		PF:	Site worker presence in areas of exposure is possible if controls are
	1	{	not maintained as they currently are.
		RF:	Site worker exposure exists but is minimized by
	1		administrative/engineering controls.
OVERALL RELATIVE	HIGH		
RANKING:			•

Table 4.1 EM-40 Relative Ranking for the Maywood Site

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Table 4.2 KDS Katings and Rationale for the Maywood Sit	2 RDS Ratings and Rationale for the May	ywood Site
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Category	Rating Period	RDS Rating	Rationale
Public Safety & Health	Before	High	The site has the potential for public exposures greater than 15-100 mR/yr if funding for cleanup/maintenance/monitoring is eliminated.
	During	Medium	There is a small possibility of below-guideline public exposure during cleanup activities.
	After	Low	There is very low likelihood of public exposure or injury from residual contamination following cleanup.
Site Personnel Safety & Health	Before	High	Non-DOE, onsite workers could receive radiation exposures in excess of 1000 mR/yr if site cleanup/maintenance/monitoring were discontinued.
	During	Medium	There is a likelihood of moderate site worker injury (greater than a first aid case, but less than 3 months' disability) during the course of remedial action.
	After	Low	After remedial action, onsite chance of injury or radiation exposure is very low.
Environmental Impact	Before	High	There is a significant possibility of the redistribution of contaminated soils/debris if site cleanup/maintenance/monitoring activities are discontinued.
	During	Medium	There is a small possibility of localized, <u>onsite</u> contaminant movement resulting from storm water redistribution of contamination, small fuel spills, etc. during cleanup.
	After	Low	Following remedial action, the possibility of environmental releases from residual contamination has either been eliminated or is very small.
Compliance*	Before	High	Work on the Maywood Site is being performed in accordance with a federal facility agreement (FFA); lack of program funding for this work would result in noncompliance with the FFA.
	After	Low	Completing budgeted work in accordance with approved FFA schedules and requirements would permit compliance with the terms of the FFA.
Mission Impact*	Before	High	Not undertaking the funded work would directly affect fundamental DOE missions such as ER and protection of environmental safety and health (ES&H).
	After	Low	Undertaking the planned, budgeted work would allow DOE to meet its ER and ES&H missions.
Mortgage Reduction*	Before	High	Not undertaking the planned work would result in an increase in the total cleanup cost of the Maywood Site as a result of continued program support requirements and escalation during the time cleanup work is unfunded.
	After	Low	Expenditure of the planned budget would avoid an increase in the site's total estimated cost resulting from added program support costs for the year(s) that the project is unfunded.
Social/Cultural/ Economic	Before	High	Not undertaking the work as budgeted and planned would be expected to result in organized public outcry and unfavorable media attention.
· · ·	During	High	During the execution of the cleanup work, periodic public outcry from a limited number of stakeholders is possible.
	After	Low	Following cleanup, it is expected that any further social, cultural, or economic impact would be very low.

* Compliance, Mission Impact, and Mortgage Reduction are not evaluated in the "During" category

The ratings indicate that, based on these management criteria for assessing the site in order to assign funding priority, the Maywood Site currently ranks high. In all cases, the residual risk following the completion of the funded activities is low, indicating a significant net benefit associated with funding the activity.

4.3 CERCLA-BASED RISK ASSESSMENT SUMMARY

A Baseline Risk Assessment was prepared to evaluate risk to human health and the environment from the radioactive and chemical contaminants at the site in the absence of remedial action. The Baseline Risk Assessment is consistent with CERCLA, assuming that institutional controls and other protective measures currently in place are no longer maintained. This document includes risk associated with both current and hypothetical future land uses without cleanup and provides the basis for determining the need for remedial action at the site.

Predicted cancer risks to hypothetical individuals from chemical and radiological constituents were compared to the EPA target risk range of 1 cancer per 10,000 exposed individuals to 1 cancer per 1,000,000 exposed individuals (1×10^{-4} to 1×10^{-6}). Risk associated with the current use of the Maywood properties generally falls within the EPA target risk range for most scenarios. However, there are some scenarios that exceed the risk range. The highest risk was projected for hypothetical future residential use of the most contaminated commercial properties at the site.

The projected risk estimates are based upon accepted EPA methodology. However, there is uncertainty associated with each step of the risk assessment process. The conservative assumptions used in the Baseline Risk Assessment tend to overestimate potential risks. The projected risks at the Maywood Site indicate a need for remedial action at the site; however, actual risks are expected to be lower than estimated in the assessment.

5. STRATEGY

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FUSRAP cleanups currently focus on two key elements: prioritizing sites by relative risk and expediting cleanup of non-DOE-owned sites and vicinity properties. Emphasis on these elements allows DOE to channel available resources in a manner that most efficiently and cost-effectively accomplishes the overall objective of protection of human health and the environment.

5.1 KEY ASSUMPTIONS

Key assumptions on which the cleanup strategy for the Maywood Site is based are:

- Highest priority will be given to Phase I cleanups.
- The storage pile at MISS is to be completely shipped offsite by the end of calendar year 1996.
- Pile and Phase I remedial actions are being conducted using CERCLA removal authority.
- When the final remedy is selected, it will be documented in a Record of Decision.
- Negotiations are being conducted with EPA on the schedule for issuing a site-wide Record of Decision.
- Phase I cleanup is expected to proceed through calendar year 1998 dependent upon Congressional funding.
- Phase II cleanups are to begin following Phase I remedial action.
- Phase I remedial action will use cleanup criteria of 5 pCi/g (above normal background levels) of soil . regardless of depth.
- Phase II remedial action will use cleanup criteria of 5 pCi/g for the first 6 in. of soil and 15 pCi/g at depths greater than 6 in.
- Risk analyses may be coordinated with EPA to save old-growth trees, to avoid highly intrusive cleanups (e.g., under large commercial structures), and to address inaccessible soils (e.g., under roads).
- If treatment proves viable, it may be applied to some Phase 1 and Phase II soils to reduce volume.

Additional information on which the cleanup strategy for the Maywood Site is based is discussed in Section 1.3.

5.2 REMEDY SELECTION STRATEGY

The remedy selection process will include working with a newly established task force to identify an alternative agreeable to DOE and the community. Evaluation of cleanup and disposal options for the site is still in progress and will incorporate stakeholder input and EMAB guiding principles. The decision-making process for the site will culminate in the signing of a Record of Decision, which will be issued pending resolution of a schedule between DOE and EPA.

Interim cleanup actions for the Maywood Site involve removal of contaminated materials from portions of the site before selection of a comprehensive remedy for site cleanup. Interim removal actions have been and, based on funding, will continue to be conducted until FY 1999, during which time treatability studies and the National Stakeholder process will continue. Interim actions are being used to expedite cleanup of portions of the site before the Record of Decision is issued and the final remedy can be implemented.

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Interim actions for the Maywood Site include

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- 25 properties were remediated prior to 1991 signing of the FFA
- Since FFA signing, 37 properties are being addressed as Phase I CERCLA removal actions under an Action Memorandum
- Removal of the MISS storage pile is being addressed as a CERCLA removal action under an Action Memorandum

5.3 PROGRAM MANAGEMENT STRATEGY

The Maywood Site includes MISS and all designated vicinity properties. All radioactive waste material at the site is classified as 11(e)2 by-product waste and includes soil and some building debris. The management strategy treats MISS and the designated vicinity properties as a single site rather than as individual sites (so that, for example, only one Feasibility Study and only one Record of Decision will be issued). However, each property will be released individually as it is cleaned up.

5.4 REGULATORY ACTIVITIES

Cleanup actions conducted by DOE at the Maywood Site are being coordinated with EPA Region II and the State of New Jersey under CERCLA. Obtaining permits typically required under the Clean Air Act, Clean Water Act, worland protection legislation, and other federal and state environmental laws and statutes are not expected to be impediments to site cleanup because of the exemption granted to DOE under CERCLA section 121(e). DOE nevertheless recognizes and adheres to substantive requirements set forth in such legislation.

5.5 PROJECT SUPPORT ACTIVITY STRATEGY

FUSRAP has developed a Standards/Requirements Identification Document (S/RID) using a selection process that resulted in the identification and development of a set of standards/requirements that maintains protection of the safety and health of workers, the public, and the environment; provides a balance between costs and benefits; and is reasonable, tailored to the work to be performed, and defensible. The S/RID meets an objective laid out in the Secretary of Energy's August 3, 1995, "Roll Out," in which she identified in an "Honor Roll" certain initiatives that were expected to reduce DOE expenditures. One was that the "use of commercial standards for non-nuclear facilities will save millions throughout the DOE complex."

In the development of the S/RID, DOE directives deemed non-applicable and those deemed applicable but duplicative of other federal requirements were not selected for inclusion. Instead, the substantive value of the applicable yet duplicative DOE directives will be maintained through direct recognition and adherence to the federal requirements and through the use of commercial codes, standards, and best management practices. The applicability of common codes and standards for FUSRAP matches other agency processes for similar work.

The selection process recognized the important variations in the hazards, work, and other circumstances for FUSRAP and, therefore, provided a systematic and disciplined application of the graded approach. The FUSRAP S/RID contains the requirements necessary for the conduct of an effective program and sufficient for protection of human health and the environment, and it represents efficient use of financial resources.

No impediments to site remediation are anticipated; S/RID implementation is expected to actually facilitate progress.

5.6 PERFORMANCE MEASURES

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FUSRAP 1996 performance measures are summarized in Table 5.1.

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Table 5.1 FUSRAP FY 1996 Performance Measures

WBS No.	Release Site	Subproject or Interim Action Name	Planned Completion Date	Number Committed to Headquarters					
		Assessments		3					
1.4.11.1.03	New Brunswick Site	New Brunswick Site	June 1996						
1.4.11.1.04	Ventron	Ventron	May 1996						
1.4.11.1.04	B&T Metals	B&T Metals	June 1996						
		Interim Actions	Interim Actions						
1.4.11.1.03	Wayne	Pile Removal Phase A	September 1996						
1.4.11.1.03	Maywood	Pile Removal Phase C	September 1996						
1.4.11.1.02	Linde	Decon Building 31	January 1996						
		Decon Building 14	September 1996						
		Demolish Building 38	September 1996						
	,	Remedial Actions		2					
1.4.11.1.03	New Brunswick Site	New Brunswick Site	August 1996						
1.4.11.1.04	B&T Metals	B&T Metals	September 1996						
1.4.11.1.04	Baker Brothers	Baker Brothers	December 1995						
		Decommissioning		0					
None									
		Vicinity Properties		15					
1.4.11.1.01	Latty Avenue Properties	Rykoff-Sexton (Property 6L)	December 1995	Completed					
		• Quaker State (Property 3L)	December 1995	Completed					
1.4.11.1.01	St. Louis Airport Site (SLAPS)	21 Frost Avenue	August 1996						
	Vicinity Properties	22 Frost Avenue	August 1996						
		23 Frost Avenue	August 1996						
		24 Frost Avenue	July 1996						
		26 Frost Avenue	August 1996						
		27 Frost Avenue	July 1996						
		• 30 Frost Avenue	July 1996						
		• 47 Hazelwood Avenue	September 1996						
		• 48 Hazelwood Avenue	September 1996						
1.4.11.1.01	St. Louis Downtown Site (SLDS)	Site Owners D&D	September 1996						
1.4.11.1.03	Maywood	• 90 Avenue C	Fall 1995	Completed					
		• 79 Avenue B	Fall 1995	Completed					
		• 113 Avenue E	Fall 1995	Completed					
		• 112 Avenue E	Fall 1995	Completed					
		• 108 Avenue E	Fall 1995 Summer 1006	Completed					
		TE Redstone Lane Z Propose Court	Summer 1096						
		If Long Valley	Summer 1996						
	1	18 Long Valley	Summer 1996						
		• 20 Long Valley	Summer 1996						
		20 Long Valley 22 Long Valley	Summer 1996						
		22 Long Valley 24 Long Valley	Summer 1996						
		26 Long Valley	Summer 1996						
1411103	Middlesex Sampling Plant	Remediate Ditch	September 1996						
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6. MASTER SCHEDULE

6.1 MASTER ER SCHEDULE

The master schedule for environmental compliance and restoration activities planned for the Maywood Site is provided in Table 6.1. A Proposed Plan will be issued for public comment, and a Record of Decision will be signed before beginning site-wide cleanup. The schedule is To Be Determined, pending discussion with EPA. Remedial design and remedial action, consistent with the National Contingency Plan, will begin following issuance of the Record of Decision. Specific dates beyond 1996 are taken from budget approval documents such as the Activity Data Sheets submitted to Congress; these dates should not be considered as firmly established because funding is allocated on a yearly basis by congressional action.

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					SITE V	VIDE	CLE/	N-UP		EME	DIAL	ACTI	DNS							

A Proposed Plan will be issued for public comment and a Record of Decision will be signed before beginning site-wide cleanup. The schedule is To Be Determined pending discussion with EPA.

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	Project Start	018EP90	Early Bar	MAP3 Sheet 1 of 1	
i	Project Finish	31AUQ16	Progress Bar	MAYWOOD SITE	
	Data Data	018EP96	Critical Activity		
	Plot Data	21MAY06		FUSRAP PROGRAM	
	Primavers System	ne, inc.			



Table 6.1 Maywood Site Projected Cleanup Schedule

7. ISSUES AND INITIATIVES

7.1 ISSUES AFFECTING PROJECT PERFORMANCE

Several issues related to cleanup of the Maywood Site have the potential to impede progress and drive costs upward. Key issues affecting project performance are summarized in Table 7.1.

Issues affecting cleanup performance include

- Current and future risk management options
- Community and regulator acceptance of cost-effective, protective remedies
- Future land use
- Role of commercial disposal facilities

Socioeconomic factors that may affect site remediation and risk management strategies include effects on land use, perceived health risks, effects on property values, and other concerns expressed in community interviews and public meetings.

Program issues affecting project performance include

- Remedy selection at large sites
- Fostering productive stakeholder involvement
- Integrating cost-effective soil treatment technologies
- Role of commercial disposal facilities
- Cost-saving initiatives

Key issues for the Maywood Site include

- Schedule for issuing site-wide ROD
- Remedy selection for Phase II properties
- Endorsement of cleanup criteria from state
- Role of treatment for current interim actions

7.2 INITIATIVES IMPLEMENTED TO IMPROVE PROJECT PERFORMANCE

Initiatives implemented to improve project performance are as follows:

Compliance Agreement Flexibility

• Pending EPA concurrence, supplemental limits may be applied at some properties throughout Phase I and Phase II remediation. Any use of supplemental limits will provide adequate protection, giving due consideration to health and safety, the environment, costs, and public policy considerations. Any cost savings from the application of supplemental limits will be used to expedite cleanup of the Maywood Site.

Implementation of Innovative Technology

• An onsite gamma spectroscopy system has been implemented so the activity concentration of radionuclides in soils can be determined within 24 hours. The previous method required

interpolating isotopic activity concentration from total radiation readings from field instruments. The previous method was difficult because with typical field instruments Maywood cleanup criteria are virtually indistinguishable from background radiation levels.

- An in-situ gamma spectroscopy system is being planned to further alleviate the problem of distinguishing cleanup criteria from background levels. The system uses a portable instrument, which after being placed in a contaminated area returns isotopic activity readings in ten minutes or less. This eliminates the need for collection of samples, speeds up field work, and reduces overexcavation.
- FUSRAP is evaluating waste minimization techniques, such as soil washing or sorting for the Maywood Site. These techniques may be implemented for Phase I and II remediation as well as pile removal if they prove more cost-effective than complete disposal.
- 3-D visualization modeling, which shows the features of the site in three dimensions, is being performed on soil data from the Maywood Site as a means of analyzing and communicating site conditions. The 3-D products represent concentration distribution where volumes of radionuclides and chemicals within defined concentration ranges can be calculated. The products visually show the complex relationship between the water table, geology, and contaminants at the site. The 3-D figures also show the co-occurrence and relationship of different radionuclides.

Progress Communication

- A new stakeholder task force is being formed to work with DOE on addressing issues during cleanup actions. Membership would likely include local property owners, representatives of local oversight groups, representatives of the academic community, local real estate professionals, and state and federal regulator representatives. The group is designed to communicate community questions and concerns to DOE and its contractors and to submit recommendations to DOE.
- The stakeholder involvement strategy for the Maywood Site includes, but is not limited to
 - Maywood task force will communicate community concerns to DOE
 - Distribution of information through a local DOE Public Information Center
 - An information repository that includes the administrative record file (all official site documentation)
 - Community interviews, information sessions, and workshops as needed
 - Letters and telephone conversations responding to inquiries from and concerns of community members
 - One-on-one meetings at the homes or offices of property owners
 - Fact sheets to support technical documents
 - EMAB guiding principles will be issued and incorporated into cleanup strategy
 - A minimum of a 30-day public comment period on the proposed cleanup plan and on plans that support interim cleanup actions
 - A public meeting on the proposed site-wide remedy
 - A responsiveness summary, providing responses to public concerns, attached to the plans and to the final Record of Decision
 - Public notice and fact sheets after a final remedy is selected



Table 7.1 Issues Affecting Project Performance

Issue	Program Impacts	Major Parties Involved in Resolution	Action(s) Planned for Resolution	Date of Next Action(s)
Technical Issues			L.,	<u></u>
• Cleanup criteria are virtually indistinguishable from background radiation levels with typical field radiation instruments	Overexcavation, leading to increased transportation and disposal costs	DOE	Onsite gamma spectroscopy system to provide one-day turnaround of soil samples	Ongoing through Phase I remediation
Some soils are inaccessible	Residual radioactivity will not be remediated in areas that are inaccessible (e.g., under roadways, major drain lines, major commercial buildings, etc.)	DOE, EPA	Pending EPA approval, supplemental standards may be applied. DOE negotiations with EPA will resume. Also, institutional controls are being evaluated.	Ongoing through remediation
 Potential relevance of specific New Jersey public laws as ARARs; NJDEP has developed stricter cleanup standards than agreed upon by EPA and DOE. 	 Of Public Law S-1070, DOE believes that only the Hazardous Discharge Site Remediation Act portion is an ARAR Implementation of NJDEP cleanup standards could hinder DOE ability to release sites with no radiological restrictions Increased costs 	DOE, NJDEP	DOE is continuing negotiations with NJDEP. DOE has asked NJDEP to accept cleanup standards established by EPA and DOE.	Ongoing until resolution
Stakeholder-Related Issues				
• Schedule for issuing ROD (DOE supports deferring process until after National Stakeholder process fulfills role and a technical basis is developed to support remedy selection)	 Proceeding with ROD process would not allow for National Stakeholder process to provide input on remedy selection Decision not implementable until current actions complete and funds available Treatment as preferred option cannot currently be technically supported; community would likely challenge 	DOE, EPA	DOE is continuing negotiations with EPA	Ongoing until resolution
• Community concern that present removal activities prior to issuance of ROD are illegal	• Dissemination of misinformation through local media	DOE-FSRD, Municipalities, Citizen groups	• Continued project interaction with local municipalities and citizen groups to clarify that current actions are legal	Ongoing
• Community concern that DOE will proceed with onsite treatment options for contaminated materials against community wishes	 Increased transportation cost Possible increased disposal cost 	DOE, Stakeholders	 Open communication between DOE and community members Possible offsite treatment of soils 	Ongoing until resolution

Maywood MAP, 5/21/96

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APPENDIX A: FISCAL YEAR FUNDING REQUIREMENTS/COSTS

The cost baseline for the Maywood Site is provided in Table A.1.

Maywood MAP, 5/21/96

Table A.1 Maywood Site Cost Baseline

Activity	Phase	FY 89-95 (\$1,000)	FY96 (\$1,000)	FY97 (\$1,000)	FY98 (\$1,000)	FY99 (\$1,000)	FY2000- Complete (\$1,000)
High Relative I	Ranking						
Maywood	Assessment		890	582	813		
Site	Remediation		15,049	15,354	15,188		
Subtotal	Assessment		890	582	813	200	666
	Remediation		15,049	15,354	15,188	18,049	273,728
Medium Relati	ve Ranking - No	ne					
Low Relative F	anking - None					<u></u>	
Program Management				lr	ncluded Above	;	
Other	None						
Total			15,939	15,936	16,001	18,249	274,394

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APPENDIX B: DELIVERABLES

A listing of major documents developed for the Maywood Site is provided in Table B.1. These documents may be found in the Administrative Record at the DOE Public Information Center or at the Maywood Public Library.

DOE Public Information Center Maywood Site 55 West Pleasant Avenue Maywood, NJ 07607 (201) 843-7466

Maywood Public Library Diane Rhodes, Director 459 Maywood Avenue Maywood, NJ 07607 (201) 845-2915

The documents may also be requested through the FUSRAP toll-free number: 1-800-253-9759.

Title	Date	Document No.	Point of
			Contact
MISS Annual Environmental Monitoring Reports			BNI
1984	3/85	DOE/OR/20722-60	
1985	5/86	DOE/OR/20722-96	
1986	6/87	DOE/OR/20722-148	
1987	4/88	DOE/OR/20722-195	
1988	4/89	DOE/OR/20722-216	
1989	5/90	DOE/OR/20722-267	
1990	9/91	DOE/OR/21949-287	
1991	9/92	DOE/OR/20722-344	
1992	5/93	DOE/OR/20722-364	
Environmental Surveillance Reports			
1993	6/94	DOE/OR/20722-373	
1994		unnumbered	
Community Relations Plan for Proposed Remedial Action	11/95	DOE/OR/21949-193.2	BNI
at the Maywood Site, Maywood, New Jersey	,		
Project Operations Plan for the Soil Washing Test Project	9/95	unnumbered	
of Wayne and Maywood Soils at the K-25 Site			
Engineering Evaluation/Cost Analysis for the Cleanup of	9/95		
Residential and Municipal Vicinity Properties at the			ĺ
Maywood Site, Bergen County, New Jersey			
Action Memorandum for Maywood Vicinity Properties	9/95		
Remedial Design/Remedial Action Implementation Plan	8/95	DOE/OR/21949-390	BN1
for the Maywood Vicinity Properties			
Engineering Evaluation/Cost Analysis for the Maywood	9/94		
Site Storage Pile, Maywood, New Jersey			
Results of Radon and Gamma Radiation Measurements at	8/94	DOE/OR/21949-385	BNI
19 Commercial and Governmental Properties of the			
Maywood Site, Maywood, New Jersey		ļ	}
Stage IA Archaeological and Historical Study Report	7/94		
"DOE Acceptance of EPA's Proposed Cleanup Levels"	4/94		
LaGrone to Muszynski			
Plan for Radon and Gamma Radiation Measurements at	3/94	DOF/OR/21949-372	BNI
the Commercial Properties of the Maywood Site			
Health and Safety Plan for the Remedial	11/93	DOF/OR/20722-193.4	BNI
Investigation/Feasibility Study-Environmental Impact			
Statement for the Maywood Site			
Field Sampling Plan for the Remedial	11/93	DOF/OR/20722-193 3	BNI
Investigation/Feasibility Study-Environmental Impact			Ditt
Statement for the Maywood Interim Storage Site			
Field Sampling Plan for the Remedial	11/93	DOF/OR/20722-193.6	BNI
Investigation/Feasibility Study-Environmental Impact	11/25	DOD:01020722 195.0	DIVI
Statement for the Maywood Site	[
Quality Assurance Project Plan for the Remedial	11/93	DOF/OR/20722-193.5	BNI
Investigation/Feasibility Study-Environmental Impact	11/25	0001020722-175.5	DIVI
Statement for the Maywood Site	1	1	
Post-Remedial Action Report for the Time Critical	3/03	DOF/OR/21040-252	BNI
Removal Action at 90 Avenue C in Lodi	5,75		
Removal Action at 70 Avenue C In Loui,	3/02	DOE/OR/21050.002	}
1 Dasenne Kisk Assessment for the Maywood Site	כלוכן	DOD/01/21930-003	1

Table B.1 Major Documents for the Maywood Site

Title	Date	Document No.	Point of
			Contact
Remedial Investigation Report for the Maywood Site	12/92	DOE/OR/21949-337	BNI
Work Plan-Implementation Plan for the Maywood Site	11/92	DOE/OR/20722-193.1	ANL
Characterization Report for the Interim Storage Pile at the	10/91	DOE/OR/21949-296	BNI
Maywood Interim Storage Site			
Environmental Monitoring Plan for MISS	11/91	DOE/OR/21949-310	BNI
Radiological Characterization Reports, Lodi, NJ	11/88 -		BNI
• 2 Branca Court	9/89	DOE/OR/20722-233	1
• 4 Branca Court		DOE/OR/20722-232	
• 6 Branca Court		DOE/OR/20722-234	
• 7 Branca Court		DOE/OR/20722-167	1
• 11 Branca Court		DOE/OR/20722-168	
• 4 through 10 Hancock St.		DOE/OR/20722-237	
• 14 Long Valley Rd.		DOE/OR/20722-256	
• 16 Long Valley Rd.		DOE/OR/20722-169	
• 18 Long Valley Rd.		DOE/OR/20722-170	
• 20 Long Valley Rd.		DOE/OR/20722-171	
• 22 Long Valley Rd.		DOE/OR/20722-172	
• 24 Long Valley Rd.		DOE/OR/20722-236	
• 26 Long Valley Rd.		DOE/OR/20722-173	1
• 11 Redstone Lane		DOE/OR/20722-174	
• 17 Redstone Ln.		DOE/OR/20722-235	
• 19 Redstone Ln.		DOE/OR/20722-248	1
• 60 Trudy Dr.		DOE/OR/20722-243	
• 106 Columbia Ln.		DOE/OR/20722-244]
• 160 and 174 Essex St.		DOE/OR/20722-251	
 Firemen's Memorial Park 		DOE/OR/20722-250	
• 99 Garibaldi Ave.		DOE/OR/20722-246	
• 80 Hancock St.		DOE/OR/20722-253	
• 100 Hancock St.		DOE/OR/20722-254	
• 80 Industrial St.		DOE/OR/20722-252	
 John F. Kennedy Park 		DOE/OR/20722-255	
Lodi Fire Station No. 2		DOE/OR/20722-249	
• 72 Sidney St.		DOE/OR/20722-245	
Lodi Municipal Park		DOE/OR/20722-175	
Certification Docket for the Remedial Action Performed at	12/88		BNI
Properties in Maywood, Rochelle Park, and Lodi, NJ, in			ļ
1984 and 1985			
Characterization Plan for the Vicinity Properties in Lodi	12/87	DOE/OR/20722-120	BNI
Characterization Plan for the Stepan Co. Plant Site	9/87	DOE/OR/20722-134	BNI
Radiological and Limited Chemical Characterization	7/87	DOE/OR/20722-155	BNI
Report for the SUNOCO Station Property]
Characterization Report for MISS	6/87	DOE/OR/20722-139	BNI
Characterization Report for the New Jersey Vehicle	6/87	DOE/OR/20722-153	BNI
Inspection Station Property			
Characterization Report for the Sears Property	5/87	DOE/OR/20722-140	BNI

Table B.1 Major Documents for the Maywood Site (Continued)

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Title	Date	Document No.	Point of
			Contact
Results of Independent Radiological Verification Surveys			ORNL
461 Latham St., Maywood	8/86		
467 Latham St., Maywood	8/86		
460 Davison St., Maywood	8/86		
459 Davison St., Maywood	8/86		
464 Davison St., Maywood	8/86		
468 Davison St., Maywood	8/86		
58 Trudy Dr., Lodi	12/86		
59 Trudy Dr., Lodi	12/86]]
61 Trudy Dr., Lodi	12/86		
59 Ave. C, Lodi	12/86		
459 Latham St., Maywood	12/86		
454 Davison St., Maywood	12/86		
467 Latham St., Maywood	9/81		
468 Davison St., Maywood	9/81		
461 Latham St., Maywood	8/86		
Post-Remedial Action Reports for:			BNI
• The Residential Properties on Davison and Latham	2/86	DOE/OR/20722-77	
Streets			
Lodi Residential Properties - 1985	8/86	DOE/OR/20722-89	
• The Residential Properties on Grove Avenue and	3/86	DOE/OR/20722-83	
Parkway			
• The Ballod and Associates Property	10/86	DOE/OR/20722-82	
Site Plan for Maywoul	9/86	DOE/OR/20722-113	BNI
Characterization Plan for Sears and Adjacent Properties	7/86	DOF/UR/20722-81	BNI
Rev 1	//00	00020722-01	Bra
Characterization Plan for MISS	5/86	DOE/OR/20722-93	BNI
Remedial Action Work Plan for the Maywood Site, Rev. 2	3/86	ORO-850	BNI
Engineering Evaluation of Disposal Alternatives for	3/86	DOF/OR/20722-79	BNI
Radioactive Waste from Remedial Actions in and around	5,00		
Maywood NI			
Designation letters and reports for all vicinity properties	1983	<u> </u>	<u> </u>
Designation feders and reports for an viennity properties	through		
	1985		
Radiological Characterization Reports Maywood NI			BNI
DeSaussure Property		DOF/OR/20722-157	
• Gulf Station Property		DOE/OR/20722-156	
• L80 Property (Easthound ROW)		DOF/OR/20722-178	
Post Remedial Action Report for Ballod Associates	11/85	DOE/OR/20722-82	BNI
Property	11/65	DOL/010/20/22-02	
Perert on Drilling and Wall Installations at MISS	10/85	DOE/OB/20722 75	
Report on Drining and wen instantions at MISS	10/65	DOE/OR/20722-75	
Radiological and Limited Chemical Characterization		DOE/OR/20/22-132	BINI
Report for the Hunter-Douglas Property		DOE (OD /00000 164	
Radiological Characterization Report for the Federal		DOE/OR/20/22-154	BNI
Express Property		BAB/AB (64666 64	
Survey Plan for the Radiological Characterization of the	8/85	DOE/OR/20722-81	BNI
Sears and Scanel Properties,			
Survey Plan for the Radiological Characterization of the	12/84	DOE/OR/20722-50	BNI
Ballod and Associates Property			

Table B.1 Major Documents for the Maywood Site (Continued)

Title	Date	Document No.	Point of Contact
Survey Plan for the Radiological Characterization of Residential Properties (Lodi, NJ)	11/84	DOE/OR/20722-49	BNI
Environmental Monitoring Plan for the Maywood Site	9/84	DOE/OR/20722-25	BNI
Radiological Survey Report for the Residential Property:	9/84		BNI
• 80 Park Way		DOE/OR/20722-31	1
• 86 Park Way		DOE/OR/20722-32	
• 90 Park Way		DOE/OR/20722-33	
• 10 Grove Avenue		DOE/OR/20722-34	
• 14 Grove Avenue		DOE/OR/20722-35	
• 18 Grove Avenue		DOE/OR/20722-36	
• 22 Grove Avenue		DOE/OR/20722-37	
• 26 Grove Avenue		DOE/OR/20722-38	
• 30 Grove Avenue		DOE/OR/20722-39	
• 34 Grove Avenue		DOE/OR/20722-40	
• 38 Grove Avenue		DOE/OR/20722-41	
• 42 Grove Avenue		DOE/OR/20722-42	
• 46 Grove Avenue		DOE/OR/20722-43	
• 50 Grove Avenue		DOE/OR/20722-44	
• 54 Grove Avenue		DOE/OR/20722-45	
• 123 Avenue F		DOE/OR/20722-64	
• 3 Hancock Street		DOE/OR/20722-65	
• 64 Trudy Drive		DOE/OR/20722-66	
• 121 Avenue F		DOE/OR/20722-67	
• 56 Trudy Drive		DOE/OR/20722-68	
• 4 Hancock Street		DOE/OR/20722-69	ĺ

Table B.1 Major Documents for the Maywood Site (Continued)

APPENDIX C: DECISION DOCUMENT SUMMARIES

The schedule for signing the final Record of Decision for the Maywood Site is pending DOE/EPA resolution. Decision documents to date include Action Memoranda on interim actions and Engineering Evaluations/Cost Analyses. Summaries of decision documents for the Maywood Site are found in Table C.1. These documents may be found in the Administrative Record at the DOE Public Information Center or at the Maywood Public Library.

DOE Public Information Center Maywood Site 55 West Pleasant Avenue Maywood, NJ 07607 (201) 843-7466

Maywood Public Library Diane Rhodes, Director 459 Maywood Avenue Maywood, NJ 07607 (201) 845-2915

The documents may also be requested through the FUSRAP toll-free number: 1-800-253-9759.

Document Name	Date	Summary
Engineering Evaluation/Cost	9/94	Chosen alternative is for complete removal and offsite
Analysis for the Maywood Site		disposal
Storage Pile, Maywood, New		
Jersey; and Action		
Memorandum		
Engineering Evaluation/Cost	9/95	Chosen alternative is for cleanup to 5 pCi/g with offsite
Analysis for the Cleanup of		disposal
Residential and Municipal		
Vicinity Properties at the		
Maywood Site, Bergen County,		
New Jersey; and Action		
Memorandum		
"CERCLA Time-Critical	1991	Used for CERCLA time-critical removal action at
Removal Action"		90 Avenue C in Lodi, New Jersey
NEPA Action Description	1984 -	Used for initial 25 residential properties and portion of one
Memorandum	1985	commercial property remediated at the Maywood Site

Table C.1 Decision Document Summaries

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APPENDIX D: CONCEPTUAL MODEL DATA SUMMARIES

D.1 CONTAMINANTS OF CONCERN

The primary radionuclides of concern at the Maywood Site are thorium, radium, and uranium.

D.2 POTENTIAL CONTAMINANT RELEASE AND TRANSPORT

The process of contaminant migration involves a source (e.g., burial pits), a method of release (e.g., erosion), and a transport medium (e.g., surface runoff) from the point of release to the point of exposure.

The primary sources of contamination identified were (1) burial pits 1, 2, and 3 at Stepan, and (2) former retention ponds on the MISS, Sears Distribution Center, and Ballod properties. Potential migration pathways from these former ponds include surface water runoff, air emission, and leaching into the groundwater system. The MISS storage pile is not considered a major source of contamination because it contains low concentrations of radionuclides and is completely covered. However, the pile is a potential source for surface runoff, air emissions, or groundwater contamination should the cover or bottom liner be damaged or removed. During planned pile removal activities, engineering controls are in place to prevent contaminant migration.

Most of the radionuclides of concern at the Maywood Site are in soils that are still in the ground. Therefore, the primary release mechanisms are from erosion, gaseous and airborne particulate emission, and rain percolation through the soils and subsequent leaching to groundwater. Environmental measurements indicate that contaminants are not migrating into the air or water.

Figures D.1 through D.4 provide models of these sources and release mechanisms

D.3 POTENTIAL RECEPTORS AND EXPOSURE ROUTES

The potential receptors for contaminants at the Maywood Site include employees, residents, and transients. The principal exposure routes would be inhalation, ingestion, dermal contact, and external gamma irradiation.



(Residential future land use is considered only for light commercial/properties; MISS, Stepan, and heavy industrial or commercial properties are assumed to remain in current land use.)

92-155M/020293

Figure D-1. Conceptual Site Model of Exposure Pathways for Radiological Contaminants at MISS, Stepan, and Commercial/Government Properties

D-2



Figure D-2. Conceptual Site Model of Exposure Pathways for Radiological Contaminants at Residential Properties

92-155M/020293



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Figure D-3. Conceptual Site Model of Exposure Pathways for Radiologically Contaminated Soil at Municipal Parks

92-155M/020293



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Figure D-4. Conceptual Site Model of Exposure Pathways for Chemically Contaminated Soil and Sediments at MISS, Stepan, and Commercial/Government Properties

92-155M/020293

APPENDIX E: PROJECT CONTROLS

The FUSRAP Project Controls department provides cost and schedule support, including budgeting, monitoring, variance analysis, and trend analysis. Project controls are implemented to provide detailed planning for cost, schedule, and technical performance to maximize efforts toward achievement of project goals. Project controls are implemented for FUSRAP as a whole because there are 46 sites in 14 states for which costs and schedules must be tracked and controlled. Bechtel National, Inc. (BNI) has established and DOE has validated a system that conforms to the criteria for cost and schedule control systems developed by the U.S. Department of Defense. This system provides a basis for assessing the quality of the cost and schedule controls used by the project participants; aids in ensuring effective planning, management, and control of project work; and provides a quick and effective means of measuring cost, schedule, and technical performance. This cost and schedule control system uses a work breakdown structure (WBS) to divide FUSRAP into distinct sites and then into discrete work packages that can be effectively managed. The WBS also provides the framework for integrating budget requirements with schedule and technical performance. Finally, it establishes the management analysis and reporting structure to permit data presentation to various levels of management.

A Project Document Control Center (PDCC) is maintained in the BNI office in Oak Ridge, Tennessee, to collect, register, distribute, and retain all project documents. Each document related to the Maywood Site is coded with the site's WBS number to associate the document with the site. Subject codes are also assigned from predetermined categories that can be used to organize the documents. The PDCC system provides for rapid identification and retrieval of all project documents by allowing documents to be searched/sorted by WBS number, subject code, author, recipient, transmittal date, a unique identification number, or any combination of the above.

All relevant information obtained during the Remedial Investigation/Feasibility Study process for the Maywood Site is retained by PDCC: aerial photographs, topographic maps, reports on features of the site and surrounding area, correspondence involving the site, findings of previous surveys, and analytical data obtained during site characterization. Types of characterization data on file include radiological and chemical data based on analyses of soil, groundwater, and surface water; borehole logging data; air sampling data; and information about geological and soil properties. Well construction data and field notebooks and documentation (e.g., chain-of-custody forms) are also on file in PDCC.
APPENDIX F: PROPERTY LIST FOR MAYWOOD SITE

A listing of properties at the Maywood Site is provided in Table F.1.

VP TYPE	NUMBER	STREET	ALIAS	CITY	CLOSE DATE
Commercial	1	Ballod property		Rochelle Park	
Commercial	113	Essex Street	National Community Bank	Maywood	1
Commercial	160/17	Essex Street	National Community Bank	Lodi	1
Commercial	170	Gregg Street	Bergen Cable	Lodi	
Commercial		Hackensack and Lodi Railroad		Maywood	1
Commercial	100	Hancock Street	Heather Hill	Lodi	1
Commercial	80	Hancock Street	Airco Medical	Lodi	1
Commercial	80	Industrial Road	Flint Ink	Lodi	1
Commercial	149-15	Maywood Avenue	Sears Distribution Center	Maywood	,
Commercial	205	Maywood Avenue	Myron Manufacturing	Maywood	1
Commercial		NY, Susquehanna & Western Railroad (Western ROW)		Maywood	1 1
Commercial	137	Rt. 17 North	Uniform Fashions, Federal Express	Maywood	1
Commercial	167	Rt. 17 North	Sunoco Station	Maywood	1 ,
Commercial	200	Rt. 17 North	Sears Small Truck Repair	Maywood	1
Commercial	239	Rt. 17 North	Gulf Station	Maywood	1
Commercial	85-99	Rt. 17 North	Hunter Douglas, SWS Realty Associates	Maywood	1
Commercial		Rt. 17 South and Essex	Joseph Muscarelle Associates	Maywood	1
Commercial		Scanel property	· · · · · · · · · · · · · · · · · · ·	Maywood	1
Commercial	72	Sidney Street	Schenk Chevrolet	Lodi	
Commercial		Stepan Company property		Maywood, Rochelle Park	1
Commercial	23	West Howcroft Avenue	DeSaussure Equipment Co.	Maywood	1
Governmental		Fire Station No.2		Lodi	
Governmental		Fireman's Memorial Park		Lodi	1
Governmental		I-80 Eastbound & Westbound Rights-of-Way		Lodi	1
Governmental		JFK Municipal Park		Lodi	1
Governmental		Lodi Municipal Park	Jet Age Park, Redstone Park	Lodi	1
Governmental		New Jersey State Route 17		Maywood, Rochelle Park	1
Governmental	~	NJ Vehicle Inspection Station		Lodi	
Residential	79	Avenue B	1	Lodi	1995
Residential	59	Avenue C	Parcel 26-59	Lodi	1985
Residential	90	Avenue C		Lodi	1995
Residential	108	Avenue E		Lodi	1995
Residential	112	Avenue E		Lodi	1995
Residential	113	Avenue E		Lodi	1995
Residential	121	Avenue F	Parcel 24-121	Lodi	1985

Table F.1 Property Listing for the Maywood Site

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Table F.1 Property Listing for the Maywood Site (Continued)

VP TYPE	NUMBER	STREET	ALIAS	CITY	CLOSE DATE
Residential	123	Avenue F	Parcel 25-123	Lodi	1985
Residential	11	Branca Court		Lodi	1
Residentia	2	Branca Court		Lodi	
Residentia	4	Branca Court		Lodi	
Residentia	6	Branca Court		Lodi	11
Residential	7	Branca Court		Lodi	
Residential	200	Brookdale Street		Maywood	
Residential	106	Columbia Lane		Lodi	1
Residential	454	Davison Street	Parce 1	Maywood	1984
Residential	459	Davison Street	Parcel 2	Maywood	1984
Residential	460	Davison Street	Parcel 3	Maywood	1984
Residential	464	Davison Street	Parcel 4	Maywood	1984
Residential	468	Davison Street	Parcel 5	Maywood	1984
Residential	99	Garibaldi Avenue		Lodi	
Residential	10	Grove Avenue	Parcel 10-10	Rochelle Park	1984
Residential	22	Grove Avenue	Parcel 11-12	Rochelle Park	1984
Residential	26	Grove Avenue	Parcel 12-26	Rochelle Park	1984
Residential	30	Grove Avenue	Parcel 13-30	Rochelle Park	1984
Residential	34	Grove Avenue	Parcel 14-34	Rochelle Park	1984
Residential	38	Grove Avenue	Parcel 15-38	Rochelle Park	1985
Residential	42	Grove Avenue	Parcel 16-42	Rochelle Park	1984
Residential	10	Hancock Street		Lodi	1
Residential	3	Hancock Street	Parcel 23-3	Lodi	1985
Residential	4	Hancock Street		Lodi	
Residential	5	Hancock Street		Lodi	T
Residential	6	Hancock Street		Lodi	
Residential	7	Hancock Street		Lodi	
Residential	8	Hancock Street		Lodi	
Residential	459	Latham Street	Parcel 6	Maywood	1984
Residential	461	Latham Street	Parcel 7	Maywood	1984
Residential	467	Latham Street	Parcel 8	Maywood	1984
Residential	14	Long Valley Road		Lodi	1
Residential	16	Long Valley Road		Lodi	1
Residential	18	Long Valley Road		Lodi	
Residential	20	Long Valley Road		Lodi	
Residential	22	Long Valley Road		Lodi	1
Residential	24	Long Valley Road		Lodi	

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Table F.1 Property Listing for the Maywood Site (Continued)

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VP TYPE	NUMBER	STREET	ALIAS	CITY	CLOSE DATE
Residential	26	Long Valley Road		Lodi	
Residential	86	Park Way	Parcel 17-86	Rochelle Park	1984
Residential	90	Park Way	Parcel 19-90	Rochelle Park	1984
Residential	11	Redstone Lane		Lodi	
Residential	17	Redstone Lane		Lodi	
Residential	58	Trudy Drive	Parcel 19-58	Lodi	1985
Residential	59	Trudy Drive	Parcel 20-59	Lodi	1985
Residential	60	Trudy Drive		Lodi	
Residential	61	Trudy Drive	Parcel 21-61	Lodi	1985
Residential	62	Trudy Drive		Lodi	
Residential	64	Trudy Drive	Parcel 22-64	Lodi	1985
Residential	136	W. Central Avenue		Maywood	

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