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Formerly Utilized Sites Remedial Action Program (FUSRAP)
Contract No. DE-AC05-81OR20722

SITE PLAN FOR THE
MARYLAND DISPOSAL SITE

Maryland

April 1989



Bechtel National, Inc.

FILE COPY

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SITE PLAN FOR MARYLAND DISPOSAL SITE
MARYLAND

APRIL 1989

Prepared for

UNITED STATES DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS OFFICE
Under Contract No. DE-AC05-81OR20722

By

Bechtel National, Inc.

Oak Ridge, Tennessee

Bechtel Job No. 14501

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

S I T E P L A N

WBS: 157 SITE: Maryland Disposal Site

FOREWORD

This document is one of a series of site plans, each prepared for a specific site requiring stabilization, decontamination and/or disposal of low-level radioactive contamination under the Department of Energy Formerly Utilized Sites Remedial Action Program (FUSRAP). The objective of this Site Plan is to describe what will be done and how it will be accomplished in accordance with the project summary work breakdown structure. In addition to background information, each phase of the remedial action project activity is described including what has been accomplished in the past, as well as current and subsequent phases of the project. This is a working reference document for the Project Management Contractor and the Department of Energy. It will be reviewed and updated annually to reflect progress, changes, and new information regarding the scope of work at the site. The information in these site plans is factored into the development of the next annual budget submittal for the Program and is the basis for the FUSRAP Project Plan.

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I. INTRODUCTION

A. Management Organization and Responsibilities

The United States Government initiated FUSRAP in 1974 to identify, clean up, or otherwise control sites where low-activity radioactive contamination (exceeding current guidelines) remains from the early years of the nation's atomic energy program or from commercial operations causing conditions that Congress has mandated the Department of Energy (DOE) to remedy (Ref. 1). The objectives of FUSRAP are to:

- o Identify and assess sites formerly utilized to support early Manhattan Engineer District/Atomic Energy Commission (MED/AEC) nuclear work or other sites designated by Congress to determine whether further decontamination and/or control is needed.
- o Decontaminate and/or apply controls to these sites to permit conformance with current applicable guidelines.
- o Dispose of and/or stabilize all generated residues in a radiologically and environmentally acceptable manner.
- o Accomplish all work in accordance with appropriate land-owner agreements, local and state environmental and land-use requirements to the extent permitted by Federal law, and applicable DOE orders, regulations, standards, policies, and procedures.
- o Certify the sites for appropriate future use.

FUSRAP falls under the purview of the Assistant Secretary for Nuclear Energy. The Director of the Office of Remedial Action and Waste Technology is responsible for policy and budget issues affecting the program; the Division of Facility

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and Site Decommissioning Projects manages FUSRAP and another similar program. Technical, administrative, and financial management of FUSRAP field activities is the responsibility of the Technical Services Division (TSD) of the DOE Oak Ridge Operations (ORO) Office.

Bechtel National, Inc. (BNI), the FUSRAP Project Management Contractor (PMC), is responsible to TSD for planning and implementing FUSRAP activities. BNI analyzes site conditions and evaluates, recommends and implements the appropriate remedial actions; it also conducts environmental monitoring before, during, and after remedial action. BNI administers subcontracts, coordinates the sequence of operations, controls the relationships among subcontractors, and ensures execution and documentation of project work in accordance with DOE guidance.

Argonne National Laboratory (ANL) participates in preparing environmental compliance documentation required by the National Environmental Policy Act (NEPA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) to ensure that all feasible remedial action alternatives for a site have been evaluated and that the approach selected is most acceptable from the environmental standpoint.

B. Summary of Historical Actions and Policies

The W.R. Grace and Co., Curtis Bay Facility is a privately owned property in Baltimore, Maryland. The location of this site is illustrated in Figure I-1.

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Before SARA was enacted in 1986, FUSRAP complied with the requirements of NEPA. In the spring of 1987, however, DOE began to develop a process to ensure compliance with the requirements of CERCLA/SARA as well as NEPA. The result is the CERCLA/NEPA process which is a process to plan and manage task definition, to conduct field activities, and to prepare documents to meet the requirements of both NEPA and CERCLA/SARA.

The CERCLA/NEPA process consists of three phases. These phases include:

- o Scoping/Planning
- o Site Characterization/Remedial Investigation (SC/RI)
- o Feasibility Study -- Environmental Impact Study (FS-EIS)

Although the FS-EIS phase of the process has not yet commenced for the W. R. Grace & Co. facility, preliminary evaluations of alternatives which have been performed for remediation of this site indicate that off-site disposal of the wastes will be an alternative under consideration. The concept of an off-site disposal facility for wastes resulting from remedial actions conducted under FUSRAP in Maryland is referred to as the Maryland Disposal Site or MDS.

It is important to note that establishing an MDS depends on the Record of Decision. This site plan, as well as other reports, will be used as a reference when screening remedial action alternatives for the Maryland site.

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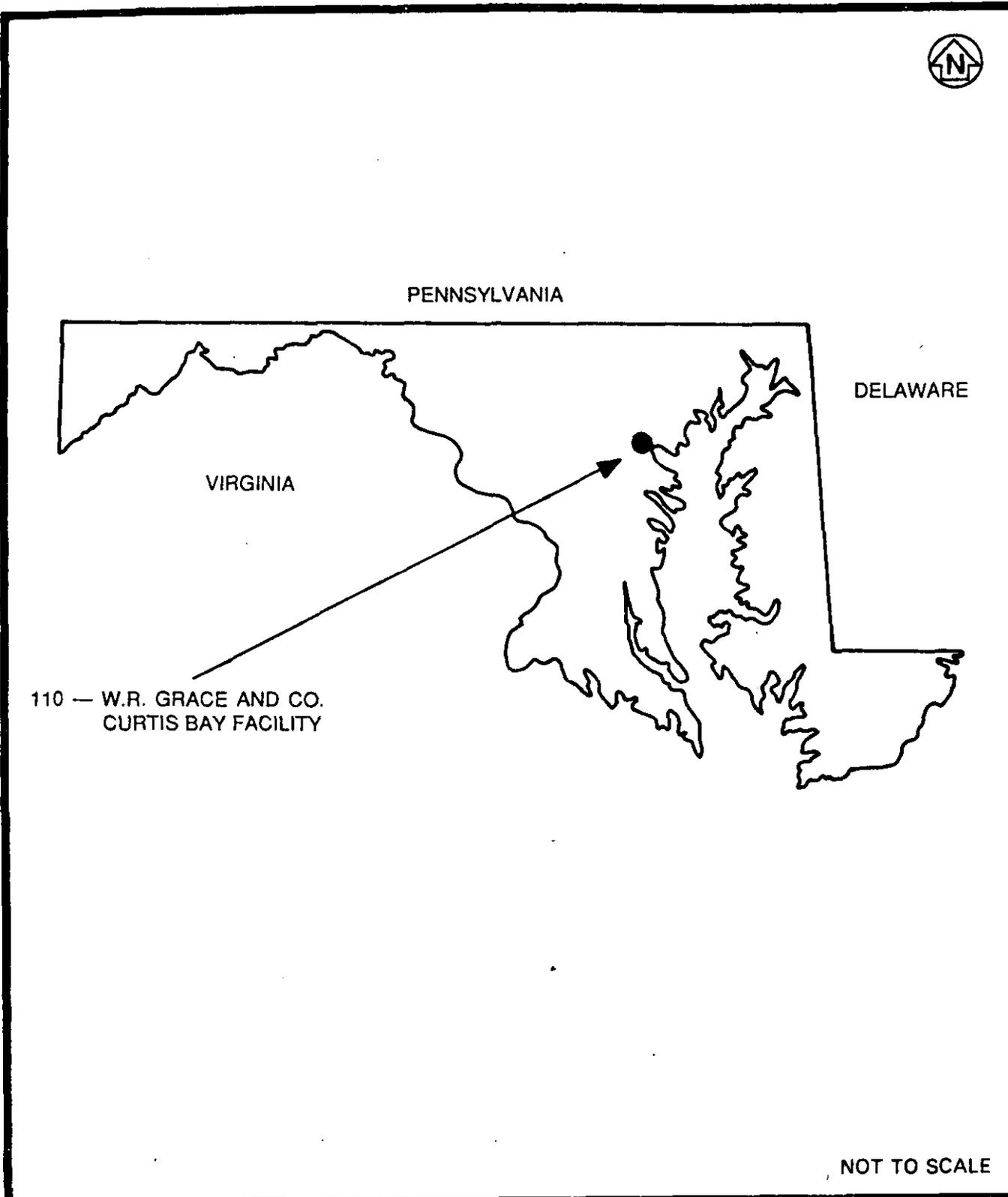


FIGURE I-1 MARYLAND REMEDIAL ACTION SITE

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II. DISPOSAL SITE DEVELOPMENT ACTIVITIES

A. Introduction

The following discussion presents the steps that would be taken to develop a FUSRAP disposal site in Maryland, should it be determined that such a site should be developed within the state.

The following plan for identifying and developing a disposal site in Maryland is based on analogous plans developed for siting and developing commercial Low Level Radioactive Waste (LLRW) disposal sites.

The documentation required to support the development of an MDS is summarized in Table II-1.

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TABLE II-1
LIST OF DOCUMENTS

<u>Document Name</u>	<u>Responsibility</u>	<u>Forecast (F) /Actual (A)</u>
<u>Phase I - Candidate Site Selection</u>		
1. Site Performance and Suitability Criteria Report	BNI	09-96 F
2. Applicable or Relevant and Appropriate Requirements (ARAR) Document	BNI	09-97 F
3. Site Screening Plan	BNI	09-97 F
4. Large Area Screening Study	BNI	09-98 F
5. Small Area Screening Study	BNI	02-99 F
<u>Phase II - Site Investigation, Environmental Evaluations, and Final Site Selection</u>		
6. Investigation Plan	BNI	06-99 F
7. Site Investigation Report (RI)	BNI	03-00 F
8. Conceptual Design Report	BNI	09-00 F
<u>Phase III - CERCLA/NEPA Documentation</u>		
9. Site Selection Report	BNI	04-00 F
10. Draft Environmental Impact Statement (FS-EIS)	ANL	04-01 F
11. Final Environmental Impact Statement (FS-EIS)	ANL	08-02 F

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TABLE II-1 (continued)

<u>Document Name</u>	<u>Responsibility</u>	<u>Forecast (F) /Actual (A)</u>
<u>Phase IV - Site Acquisition Design, Construction</u>		
12. Design Package	BNI	12-02 F
13. Operations and Closure Plan	BNI	09-04 F
<u>Phase V - Operation, Monitoring, Closure and Post-Closure</u>		
14. Environmental Monitoring Report	BNI	Annual
15. Final Disposal Report	BNI	09-07 F

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B. Phase I - Candidate Site Selection

The major steps in the site selection process are the identification of three to five suitable sites and final site selection.

A public participation program will be implemented to involve interested citizens and officials in the decision-making process.

In the initial stages of the site selection process, the qualifying conditions of the site evaluation criteria will be applied to identify large areas within the State of Maryland which are to be considered for disposal site development. This task will include large-area screening studies, and will initially focus on federal facilities located in the state of Maryland. The results of these studies will be used to identify sites for further consideration.

Following the large-area screening, preferred sites will be identified based on desirable site features. Concurrently, information will be provided to, and comments solicited from state and federal agencies as well as the general public, regarding preferred sites.

Public meetings will be held to solicit comments and suggestions. Additionally, a citizens' advisory group may be established to provide overview and input to the selection process should the need be identified. All written and oral comments received will be considered and incorporated as appropriate.

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C. Phase II - Site Characterization, Environmental Evaluations,
and Final Site Selection

Phase II activities will include site characterizations, modeling, environmental evaluations, and final site selection. Detailed characterizations of each candidate site will be conducted and each site will be modeled. The models will be the basis for assessing each site's conformance to the performance criteria.

DOE will acquire access rights to enter the selected sites for the purpose of environmental, geological, and hydrological investigations; and field sampling; and monitoring.

Each of the candidate sites will be investigated and monitored, if necessary, for environmental, hydrological, chemical, geological, and meteorological characteristics. Field data and samples will be obtained and analyzed to provide input for environmental analysis. A site characterization report discussing field investigations and monitoring will be issued.

Conceptual engineering design of the disposal facility will be performed to support the environmental evaluation activities. Design features needed throughout the life of the facility will be addressed. The design will incorporate mitigation measures considered during environmental, geological, and hydrological evaluations. A conceptual design report will be prepared and issued.

An environmental evaluation will be conducted to determine which site is best suited for the disposal of the FUSRAP wastes. A site selection report will be issued recommending the site to be developed as an MDS.

D. Phase III - CERCLA/NEPA Documentation

An EIS for the disposal site will be performed. The results of this study will be reviewed and issued. The Record of Decision will be based on EIS results and be in accordance with the federal regulations and applicable DOE Orders.

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E. Phase IV - Site Acquisition, Design, Construction

In Phase IV, the MDS will be acquired by DOE, and detailed design and construction activities will be accomplished.

DOE will acquire the site and obtain the necessary permits from federal, state, or local government agencies. Site operation and closure plans will be prepared and construction will commence. The plans will be patterned after analogous documents prepared for the development of commercial LLRW disposal sites. Based on the plans, detailed engineering designs will be developed and quality assurance assessments will be performed. Site surveillance and maintenance and environmental monitoring routines will be established.

The site will be constructed by regional subcontractors. The disposal cell will be constructed in phases with each phase designed to accommodate the material to be received the following year.

F. Phase V - Operation, Monitoring, Closure, and Post-Closure

During Phase V, FUSRAP wastes from Maryland FUSRAP sites will be moved to the MDS.

An environmental monitoring program will be maintained during the operating life of the site and for an agreed upon period thereafter. Monitoring of air, groundwater, surface water, and external gamma radiation will be conducted as required. The monitoring results will be included in an annual environmental monitoring report.

During the operating life of the site and for an agreed upon period thereafter, certain security and maintenance activities will be required (such as miscellaneous repairs, provision of utilities and supplies, equipment maintenance, snow removal, and guard service). Custody and control of site use will be continued into perpetuity.

Documentation of the disposal operations will be maintained. A final disposal report and supporting documentation will be prepared and stored in Government archives.

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Complete copies or summaries will also be placed on file at an appropriate local center, such as a public library or state or local government planning or record offices.

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III. MAJOR UNCERTAINTIES

DOE is considering land-based site selection/development strategies, but this option has no guarantee of success. While a land-based disposal facility in Maryland would be a DOE facility and not subject to Nuclear Regulatory Commission (NRC) licensing, it is planned to follow the intent of NRC positions and policies regarding LLRW sites during the siting and development of the MDS.

Public and political concern and/or opposition has a high likelihood of delaying siting and development of the MDS. The current experience of DOE's Office of Civilian Radioactive Waste Management (OCRWM) provides insight into these kinds of concerns and opposition. Even though the risks associated with spent fuel and vitrified high-level wastes to be disposed of under the OCRWM Program are not directly comparable to FUSRAP wastes, public perception will put FUSRAP wastes in the same risk category.

Major areas of concern that could affect the siting and development of a land-based Maryland disposal site include:

- o Fear by local residents that contamination will migrate from the disposal site and enter the environment.
- o Opposition by the public to transporting contaminated materials over public highways, railroads, or waterways. Large volumes of waste would aggravate this concern.
- o Opposition by residents of a particular area to siting near them.
- o If hazardous wastes exist, the facility must obtain a Part B permit pursuant to the Resource Conservation and Recovery Act (RCRA).

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IV. COST AND SCHEDULE

The Project Baseline Schedule and Site Resources Plan for FUSRAP account for the evaluation and remedy of radiological conditions at a number of privately, institutionally, and DOE-owned sites.

The estimated costs associated with the portion of work specifically addressing the MDS are listed in Figure VI-1, Baseline Site Resources Plan. The costs shown are in year-of-expenditure dollars utilizing an escalation factor of 3.8 percent, taken from ESAPP Rev.2 (ref. 2). The schedule of work, illustrated in Figure VI-2, and the text of this plan are based upon current priorities and funding limitations. Therefore, there are discrepancies between cost and schedule.

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Cost Summary by WBS
(Year of Expenditure \$ x 1000)

Maryland Disposal Site - WBS 157

	Prior Years	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total
Prior Years	0															0
A Site Selection & Access			224	290	368											881
B Site Characterization					311	2251	1298									3861
C Prelim. Engineering						250	100									350
D Site Acquisition										3305						3305
E Environmental Compliance		20						449	420							88
F Design Engineering										581	736					1316
G Site Prep. & Development												8195				8195
H Disposal Operations													4953	4804	5249	15006
I Surveil. & Maintenance												1056	1299	1349	1400	5909
J Final Report										806			49	51	122	222
SUBTOTAL	0	20	224	290	678	2502	1398	449	420	4691	736	9251	6301	6203	6771	39934
Program Allocation																15318
SITE TOTAL ESTIMATED COST	0															55252
ACTUAL EXPENDITURES																

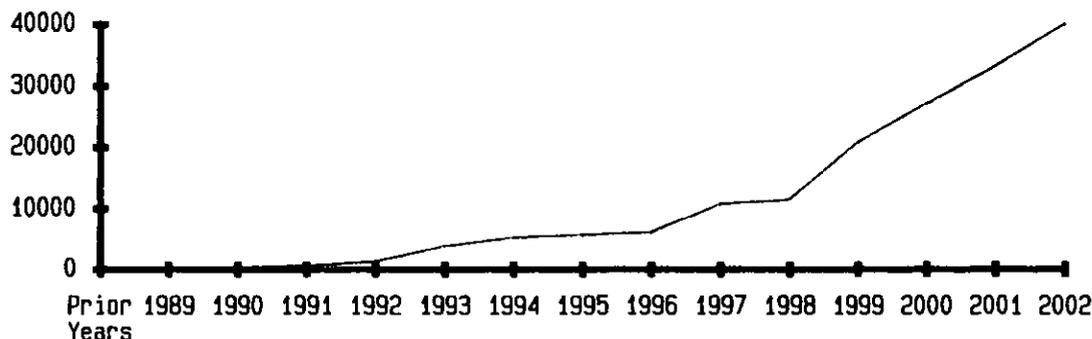
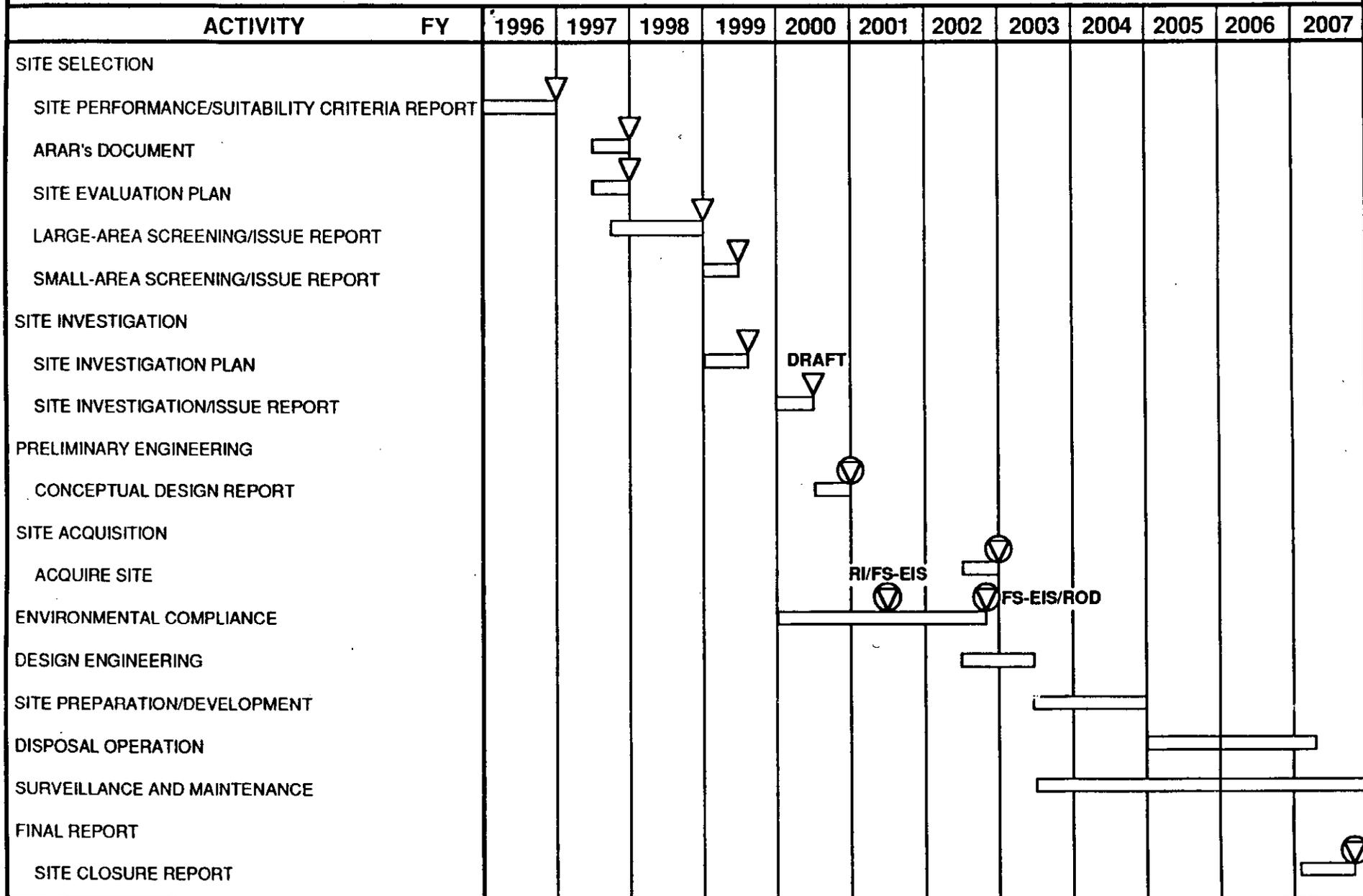


FIGURE VI-1 BASELINE SITE RESOURCES PLAN (BA)

MARYLAND DISPOSAL SITE



PLANNED
 PROGRESS
 FORECAST
 COMPLETE
 ⊙ DOE-HQ
 ▽ OR-TSD
 ◇ PMC

FIGURE VI-2 SCHEDULE

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VI. REFERENCES

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2. U.S. Department of Energy. Energy Systems Acquisition Project Plan (ESAPP), Formerly Utilized MED/AEC Sites Remedial Action Program (FUSRAP), Revision 2, September 1987.

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VII. BIBLIOGRAPHY

This section contains a list of documents published by the PMC, BNI, concerning this specific site.

No documents to date.

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