Rec'd w/LTR DTD 9501130275 950111
YMP/JP 92-20C

U.S. DEPARTMENT OF ENERGY

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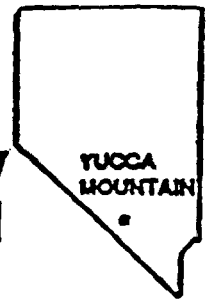

YUCCA MOUNTAIN
SITE CHARACTERIZATION
PROJECT

INFORMATION COPY

CONSOLIDATED SAMPLING IN THE RAMPS, MTL DRIFTS, AND ALCOVES

NOTICE OF OPEN CHANGE DOCUMENTS			
THIS DOCUMENT IS IMPACTED BY THE LISTED CHANGE DOCUMENT AND CANNOT BE USED WITHOUT THEM			
CHANGE DOCUMENT NUMBER	POSTED BY	DATE	STATUS
ECR 94/411	SAB	9/22/94	OPEN

FIRST SUBMITTAL

JP 92-20C

AUGUST 1994

UNITED STATES DEPARTMENT OF ENERGY

Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WBS: 1.2.7.3
QA: N/A

MAY 18 1993

YUCCA MOUNTAIN SITE OFFICE
FIELD OPERATIONS CENTER

Job Package: 92-20C
Date: May 18, 1993
Job Title: Consolidated Sampling in the Starter Tunnel

Robert F. Pritchett, REECo, Las Vegas, NV
William C. Kopatich, RSN, Las Vegas, NV
Julie A. Canepa, LANL, Los Alamos, NM
Larry R. Hayes, USGS, Las Vegas, NV
Michael D. Voegele, SAIC, Las Vegas, NV

JOB PACKAGE (JP) AUTHORIZATION

This is your authorization to proceed with JP 92-20C in accordance with the enclosed JP and the following requirements:

1. This Job Package (JP) describes consolidated sampling activities conducted in the Exploratory Studies Facility (ESF) north ramp starter tunnel by U.S. Geological Survey (USGS) and Los Alamos National Laboratory (LANL) principal investigators (PIs).

   This JP is established to support consolidated sampling activities in the ESF north ramp starter tunnel only. Four principal site characterization activities will be conducted:

   (a) Chloride & Chlorine-26 Measurement of Percolation of Yucca Mountain (LANL).

   (b) Fracture of Mineralogy (LANL).

   (c) History of Mineralogic and Geochemical Alteration of Yucca Mountain (LANL) and.

   (d) Mineral Distribution Between Host Rock and Accessible Environmental (LANL).

2. The participants involved are Los Alamos National Laboratory (LANL), Reynolds Electrical and Engineering Company, Inc. (REECo), Raytheon Services of Nevada (RSN), U.S. Geological (USGS), and Science Application International Corporation (SAIC).

3. The specific work requirements of the participants are as indicated below:

   (a) The Los Alamos National Laboratory (LANL) Test Coordination Office (TCO) will coordinate test in support of participants and Yucca Mountain Site Characterization Project Office (YMPO), providing regular written reports on test progress, data collection, and data submittals. LANL PIs and TCO staff may also collect samples for activities as indicated in specific sections as referenced in Job Package.

   (b) Reynolds Electrical and Engineering Company, Inc. (REECo) will provide labor, materials and equipment, and has the responsibility of ensuring a safe working site.

   (c) Raytheon Services Nevada (RSN) will provide labor, materials, and equipment (including use of a laser) to survey sample locations.

   (d) U. S. Geological Survey (USGS) geologic personnel will normally collect (or direct collection of) samples under their "Common Sampling" role.

   (e) T&MSS/Sample Management Facility (SMF) staff will provide a mechanism to receive samples on a 24 hour basis and will provide sample handling support as requested.

4. The field change control threshold for cost is 10% of the total budget for the activity.

5. All field personnel must be aware and knowledgeable of the Field Operating Instruction (FOI) system and must comply with applicable FOIs for those activities performed.

6. Field personnel head count must be reported to the Ranch Control, Field Operations Center by 8:30 a.m. each day or by half an hour after the beginning of each shift. The daily progress reports will be provided to the Field Operations Center by 8:30 a.m. each day following the day of activity.

7. All personnel working at the job site shall have completed the required General Employee Training (GET) and Safety Training. Those personnel wishing to visit the job site shall have completed the GET or shall be escorted by an individual that has completed GET. All personnel will adhere to the requirements as stipulated in the YMP Safety and Health Plan, current revision.

8. A YMP Field Operations Permit 93-01 is included. A copy of the permit must be posted in a conspicuous place at the work site as well as a copy of the JP being made available.

9. The TCO will coordinate with the Field Test Coordinator (FTC) to report JP related problems to the Site Manager (SM) or the Field Operations Center (FOC) on an as necessary basis.

If you have any questions pertaining to the JP Authorization Letter or the JP itself, please contact me at 295-5914.

Winfred A. Wilson

Winfred A. Wilson
Site Manager

YMP:WAW-93/126

Enclosures:
1. Notice to Proceed
2. JP 92-20C
3. Field Operations Permit

cc w/encls:
R. W. Craig, USGS, Las Vegas, NV
R. D. Oliver, LANL, Las Vegas, NV
N. Z. Elkins, LANL, Las Vegas, NV
T. M. Leonard, REECo, Mercury, NV
J. A. Catozzi, REECo, Mercury, NV
Lee Watson, RSN, Mercury, NV
S. C. Smith, SAIC, Las Vegas, NV
R. R. Schneider, SAIC/YMPS, Mercury, NV
D. R. Williams, YMP, NV
R. C. McDonald, M&O/TRW, Mercury, NV

cc w/o encls:
L. D. Foust, M&O/TRW, Las Vegas, NV
W. B. Simecka, YMP, Las Vegas, NV
J. R. Dyer, YMP, NV
W. R. Dixon, YMP, NV
W. A. Girdley, YMP, NV

YUCCA MOUNTAIN SITE OFFICE
FIELD OPERATIONS PERMIT

Y-AD-167
12/90

Permit Number 93-011
Job Package Number 92-20C
Date Approved 5/17/93

Sponsoring Field Agency(ies): USGS/USBR and LANL PIs; LANL Test Coordination Office; RSN for survey support; and T&MSS for sample handling support.

Field Activity/Operation: (*brief description*) Consolidated Sampling in the Starter Tunnel: conduct sample collection (and surveying) in support of hydrologic, mineralogic, and chlorine-36 analyses.

Field Points of Contact:		Telephone #	Radio Net
DOE Site Supervisor	Arch Girdley	295-7927/	14
Construction/Drilling, etc.	Joe Catozzi	794-7304/	14
Test Coordination	Ken Dye	295-6180/	14
LANL Coordinator	Ron Oliver	794-7095/	
USGS Coordinator	Debra Edwards	794-7089/	
Site Safety Coordinator	Glen Milligan	295-5801/	14

Are radioactive or hazardous materials involved? ☐ Yes ☒ No

If Yes, explain:

Permit approved by TOD: (*if required*) not required Date:

The following guidelines apply to this work:

X (1) Provisions of YMP-FOIs except as may be described below.
X (2) All materials that are being transported off the NTS must be processed through the YMSO-FOC (5-5915).
X (3) Quality assurance standards will be in accordance with the Project's APQ/QMP procedures.
X (4) Upon completion of job package/field activity the YMSO-FOC will be notified.
X (5) Safety and health coordination responsibilities assigned.
X (6) Environmental compliance responsibilities assigned.
X (7) All hazardous waste packaged in appropriate containers and reported to the YMSO-FOC.
X (8) Personnel field safety training completed.
X (9) Head counts and personnel location are to be reported to YMSO-FOC each day before 0830 hours.
X (10) Daily progress reports provided to YMSO-FOC by 1530 hours each day.
X (11) YMSO-FOC to notify OCC upon completion of activity.
X (12) All accidents are to be reported to the YMSO-FOC as soon as possible.
X (13) Agency representative briefed.
__ (14) Comments/remarks

Debra Edwards / Ronald Oliver
Agency Representative Signature (if required)
Debra Edwards (USGS) Ronald Oliver (LANL)

Permit Issued By
Ralph Schneider, Operations Officer

cc: TEST OPERATIONS DIVISIONS, NV
OCC-CP-1, M/S 210
NEVADA TEST SITE OFFICE, MS 701
YUCCA MOUNTAIN SITE OFFICE, M/S 717

Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 38608
Las Vegas, NV 89193-8608

WBS 1.2.3
QA: N/A

MAY 13 1993

Winfred A. Wilson, Site Manager, YMP, Mercury, NV, M/S 717

NOTICE TO PROCEED ON JOB PACKAGE (JP) 92-20C "CONSOLIDATED SAMPLING IN THE STARTER TUNNEL" (SCP: N/A)

This notice to proceed, and the enclosed JP is your authorization to commence field work in accordance with the documents contained or referenced in this JP. You may not exceed your assigned thresholds in this area.

The JP coordinator for this activity is Ronald Oliver of Los Alamos National Laboratory. If you have any questions, please contact either Jay Mukherjee at 794-7894 or Ronald D. Oliver at 794-7095.

Carl P. Gertz
Project Manager

PCB:JM-4203

Enclosure:
JP 92-20C

cc w/o encl:
R. D. Oliver, LANL, Las Vegas, NV
K. J. Dye, LANL, Las Vegas, NV
A. J. Mitchell, LANL, Las Vegas, NV
Debra Edwards, USGS, Las Vegas, NV
Steve Beason, USGS, Denver, CO
M. S. Whitfield, USGS, Denver, CO
W. C. Kopatich, RSN, Las Vegas, NV
L. E. Watson, RSN, Las Vegas, NV
H. W. Booth, RSN, Las Vegas, NV
J. E. Ferguson, RSN, Las Vegas, NV
B. R. Gardella, REECo, Las Vegas, NV
T. M. Leonard, REECo, Las Vegas, NV
Marilyn Kamna, SAIC, Las Vegas, NV
John Doyle, SAIC, Las Vegas, NV
R. C. McDonald, M&O/TRW, Las Vegas, NV
D. R. Williams, YMP, NV
W. A. Wilson, YMP, Mercury, NV, M/S 717
Jay Mukherjee, YMP, NV

YMP-057-RO
8/19/91

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE APPROVAL

1. Job Number JP 92-20C

2. Job Title Consolidated Sampling in the Starter Tunnel

3. Summary of Scope ESF samples taken for hydrologic, mineralogic, geochemical, and chlorine-36 analyses

4. Responsibilities: Name Ron Oliver Responsibility JPC

5. Participants USGS Organization/Individual _____ Responsibility _____

6. Milestones:
   - Early Start April 27, 1993
   - Late Start May 10, 1993
   - Early Finish August 13, 1993
   - Late Finish September 1, 1993

7. Project Package Total Cost $63k

8. WBS (3rd Level) 1.2.3.3.1.2.3, 1.2.3.2.1.1.2, 1.2.3.3.1.2.2, 1.2.3.2.1.1.1

9. TPO Concurrence
   - L. Hayes 5/4/93
   - J. Canepa 5/4/93
   - R. Pritchett 5/4/93
   - W. Kopatich 5/4/93

10. YMPO Approvals:

PCB	Date	Responsible Division Director	Date
5/5/93	5/5/93	5/4/93	5/4/93
N/A		N/A	
Division Director	Date	Division Director	Date
Site Manager	Date	Director, QA	Date
5/6/93	5/6/93	5/4/93	5/4/93

YMPO - Project Manager
For Carl Gertz

5/6/93
Date

YMP-057-R2
09/06/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM

JP No. 92-20C

SECTION 1.

Job Package Scope and Objectives

Consolidated Sampling in the Ramps, MTL Drifts, and Aloves.

See Appendix section A.1.a.

Initial Coordinator: Ronald Oliver (Name) LANL (Org.)

Affected Organization Scope Information (required if box is checked)

Affected Organization/WBS		Scope[1]	PACS Summary or Lowest Level Account No.	Contact[2]
M&O non-A/E Activities WBS(s):		N/A		
M&O A/E Activities WBS(s):		N/A		
RSN WBS(s):	X	See Appendix A Attachments 2 & 3	See Appendix A Attachments 2 & 3	See Appendix A
REECo WBS(s):	X	See Appendix A Attachment 2 & 3	See Appendix A Attachment 2 & 3	See Appendix A
T&MSS WBS(s):		N/A		
USGS WBS(s):	X	See Appendix A Attachments 2 & 3	See Appendix A Attachments 2 & 3	See Appendix A
LANL WBS(s):		N/A		
SNL WBS(s):		N/A		

NOTE: Affected Organizations are obligated to follow YMP and NTS controls in the field in addition to the JP (e.g., safety, security, environmental, training, emergency, administrative requirements).

1. Enter scope or NA; if NA, WBS, PACS, or other information is not required.
2. Change in contact does not require revision.

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

SECTION 1.

Scope and Objectives (continued)

N/A

Affected Organization Scope Information (continued) (Affected Organizations may use as overflow from previous page)

Affected Organization/WBS	Scope	Contact
WBS(s):		
WBS(s):		
WBS(s):		
WBS(s):		
WBS(s):		
WBS(s):		
WBS(s):		
WBS(s):		

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

SECTION 1.

ADDITIONAL SCOPE INFORMATION[1]

Appendix A Contains additional detail that is considered pertinent to this work but that is not required by YAP-5.6Q, Rev. 0

Appendix A was initiated and developed under AP-5.21Q, R3 as provided by in AP-5.21Q, R4. The job Package Summary Form was added to reformat the Job Package to comply with the note in YAP-5.6, R0, section 2.0 as recommended by YMQAD.

1. To be used if more detail is required for Section 1.

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

SECTION 2. REQUIRED INPUT

Required Input	Yes	No	Date Received	Attach to JP: Y, N	Notes
Study Plan Reference	X			Y	See Appendix A, p4
Land Access Permit (Note 1)		X			
Environmental Permit		X			
Tracer Permit		X			
Air Quality (Specific) Permit		X			
Water Discharge Permit		X			
Hazardous Material Permit		X			
Waterwell Permit Waiver		X			
FOIs (S&H et al.)		X			
QA Program Applicability: (Note 2)	X			N	Use Attachment 8.4 of AP-5210
Other Permits:		X			
[1] PI Input	X			Y	See Appendix A, p4
PI Input					
PI Input					
PI Input					
Test Planning Package	X			Y	See Appendix A, p2
Test Interference Evaluation	X			Y	Completed for TPP 92-14
Waste Isolation Evaluation	X			Y	Completed for TPP 92-14
[3] Work Program		X			
Verification Plan		X			
Interfaces		X			
Special Reporting		X			
Special Documentation		X			
Open Prerequisite Control		X			
Administrative Hold Points		X			
[3] Drawings		X	See Section 4		
[3] Specifications		X	See Section 5		
Procedures	X		See Section 6	Y	See Appendix A., 4-5
[2] Schedule and Milestones From the Following Affected Organizations:					
	X				See Appendix A, Attachment 3
Existing PACS Cost & Schedule Information	X			Y	See Appendix A, Attachment 2&3

Note 1: Be consistent with YAP-30.2 for all permits
Note 2: Use Attachment 8.4

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

SECTION 2. REQUIRED INPUT (continued)

Required Input	Yes	No	Date Received	Attach to JP: Y, N	Notes
A/E Design/Support Cost:					
A/E Design/Support Cost Threshold Requiring Procedural Revision: _____					
Construction Cost:	X			Y	See Appendix A, Attachment 2
Construction Cost Threshold Requiring Procedural Revision: _____					
Total Cost:	X			Y	See Appendix A, Attachment 2

1. Show name of PI originally assigned.
2. Job Package is not revised when schedule changes.
3. Consult with SM/AMEFO during planning; consider subsequent SM/AMEFO interfaces, phased releases, etc.

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

SECTION 3. SPECIAL REPORTING/DOCUMENTATION/HOLD POINTS/OPEN PREREQUISITE CONTROL

The following authorities require the special items identified below.

OPC

See Appendix A, section B.1.

Other: N/A

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09/06/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

JP No. 92-20C

SECTION 4. REQUIRED INPUT: *DRAWINGS*

No.	Title	Date Verified
	N/A	

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

SECTION 5. REQUIRED INPUT: *SPECIFICATIONS*

No.	Title	Date Verified
	N/A	

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YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

JP No. 92-20C

SECTION 6. REQUIRED INPUT: *PROCEDURES*

Procedures unique to this JP, and procedures requiring revision control record for licensing.			Date Verified
Affected Organization	No.	Title	
		See Appendix A, p 4-5	

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09/06/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
JOB PACKAGE SUMMARY FORM
CONTINUATION PAGE

JP No. 92-20C

Note: This form is only required when special interfaces occur beyond those spelled out by work scopes and attachments (e.g., who calls whom, who does what when perched water is encountered; similar details when PI wants grab samples of cuttings, or who notifies PI that a certain geologic strata has been reached).

SECTION 7. JOB PACKAGE INTERFACES BETWEEN ACTIVITIES

Record any interfaces required by the Job Package on this form.

Affected Organization A: N/A	Affected Organization B: N/A
Activity: Must be completed prior to:	Activity: Must be completed prior to:
Affected Organization A: N/A	Affected Organization B: N/A
Activity: Must be completed prior to:	Activity: Must be completed prior to:
Affected Organization A: N/A	Affected Organization B: N/A
Activity: Must be completed prior to:	Activity: Must be completed prior to:
Affected Organization A: N/A	Affected Organization B: N/A
Activity: Must be completed prior to:	Activity: Must be completed prior to:

JOB PACKAGE 92-20C
CONSOLIDATED SAMPLING IN THE RAMPS, MTL DRIFTS, AND ALCOVES

A. JOB PACKAGE SCOPE

1. SCOPE OF WORK

a. General Scope Description

This job package (JP) describes consolidated sampling activities conducted in the Exploratory Studies Facility (ESF) by U.S. Geological Survey (USGS), Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), and Sandia National Laboratories (SNL) principal investigators (PIs).

This JP is established to support consolidated sampling and support activities in the ESF ramps, MTL drifts, and alcoves only. Ten principal site characterization activities will be conducted:

Chloride & Chlorine-36 Measurements of Percolation at Yucca Mountain (LANL)
This activity involves measurements of chlorine-36, chloride and bromide made at various locations in order to determine the residence time of water in the unsaturated-zone tuffs based on the chlorine-36/chlorine ratio of meteoric chloride. Samples from various locations throughout the ESF will be collected, packaged, and labeled for laboratory analysis. Because of the requirement to extract sufficient meteoric chloride to analyze each sample for chlorine-36 and to provide for the potential for replicate analyses of a given sample, large samples will be needed from each sampling location.

Fracture Mineralogy (LANL)
Fracture mineralogy studies will be conducted to determine the mineralogic variability in fractures and faults throughout the ESF. Information obtained will be used in determining mineralogy along potential transport pathways for both sorption and hydrologic calculations, to assess health hazard potential of fibrous zeolites, and to establish limits on the time and condition of fracture mineral deposition.

History of Mineralogic and Geochemical Alteration of Yucca Mountain (LANL)
This activity will include petrologic analysis of mineralogic alteration features in the ESF north ramp starter tunnel walls, ceiling, and floor. Any mineralogic alteration features encountered in the ESF wall rock may be sampled and studied as part of this activity. If natural gels (semi liquids) are found in the ESF, they will also be sampled.

Mineral Distributions Between Host Rock and Accessible Environment (LANL)
This activity will provide a three-dimensional description of the distribution and abundances of minerals along potential flow paths between a potential repository and the accessible environment. Quantitative mineralogy and geochemical data will be collected; data evaluation will progress as the ESF workings are extended.

Biological Sorption and Transport (LANL) This activity will provide a determination of the effects of microorganisms on the transport of radionuclides to the accessible environment. This activity will utilize selected geologic samples from the ESF north ramp and alcoves to determine the quantity, types and metabolic activities of microorganisms present in these tuff units.

Engineered Barrier System Field Tests (LLNL) This activity is to obtain samples for laboratory testing of rock-water interactions at high temperatures. In situ gas and water samples are also needed. These samples may be collected by LLNL or provided by other organizations (e.g. hydrochemistry, perched water programs). The rock types to be studied include the lithophysal Topopah Spring tuff at the contact between the Tiva Canyon and Topopah Spring units, the welded Topopah Spring, the Basal Vitrophyre of the Topopah Spring, and the top of the zeolitic Tuff in the Calico Hills unit.

Natural Resource Assessments of Yucca Mountain, Nye County, Nevada (USGS) The purpose of this activity is to conduct a geochemical sampling program to evaluate the potential for precious, and strategic metals, energy resources, and industrial mineral resources in the vicinity of Yucca Mountain.

Characterization of Yucca Mountain Quaternary Regional Hydrology (USGS) The purpose of this activity is to determine the ages, distribution, origin, and paleohydrologic significance of calcite and opaline silica deposits along faults and fractures in the vicinity of Yucca Mountain.

Characterization of the Percolation in the Unsaturated-Zone Surface-Based Study (USGS) The purpose of the matrix hydrologic properties test is to develop a comprehensive data base on matrix flux properties in the unsaturated-zone tuffs at Yucca Mountain. This activity includes collecting bulk and/or core samples from the ESF. Bulk samples may be collected from exposed areas in the ESF or from rubble created during drill-and-blast mining operations. Core samples may be obtained either from boreholes drilled for other tests (drilled for other PIs) or from boreholes drilled specifically for the collection of core samples for matrix properties testing. The bulk samples and core samples will be packaged, labeled, and sent to a laboratory for various analyses.

Aqueous - Phase Chemical Investigations Unsaturated Zone Hydrochemistry (USGS) This activity will provide samples for chemical and isotopic analyses including inorganic cations and anions, organic compounds and stable isotopes.

Tests (Thermal & Mechanical) Using Samples Obtained from the Exploratory Studies Facility (SNL) The laboratory geoengineering properties test will provide bulk, thermal and mechanical properties data for evaluations of opening stability and related design and performance studies and/or modeling. Data from the laboratory test will also support analyses of the geomechanical and thermomechanical field tests planned in the ESF. For this test, the ESF activities consist of the collection, packaging, and labeling of the selected bulk samples or core taken from the ramps, drifts, or shafts.

b. SPECIFIC REFERENCES TO SCOPING DOCUMENTS

Reference: Letter, Boak to Foust, "Starter Tunnel Waste Isolation and Test Interference Controls Applied to Same Tests in Exploratory Studies Facility North Ramp Alcove #1," TWS-EES-13-LV-08-93-34, dated August 23, 1993.

Reference: Memorandum, Mitchell to Oliver, "Response to Request for Revisions to Consolidated Sampling Tests Corresponding to Exploratory Studies Facility and Design Package 2A Excavation Interval and Alcove #1," TWS-EES-13-LV-08-93-35, dated August 24, 1993.

The functional requirements basis for activities in this JP are provided by the "Exploratory Studies Facility Design Requirements," YMP/CM-0019, 7/2/92, Sections B-2.2.1, B-2.2.2, B-2.2.14, B-2.2.15, B-2.2.16, B-2.2.17, B-2.2.18, B-2.2.22, and B-2.2.42. In addition, requirements for underground test support are provided in Section 1.2.6.8. The following supplement this scoping document and establish test requirements for this activity.

Test Requirements - TPP 92-14 (Consolidated Sampling in the Exploratory Studies Facility), Rev. 1 or current revision. The activity is based on study plans listed in TPP 92-14.

The following study plans are controlled Yucca Mountain Site Characterization Project (YMP) documents that describe plans for consolidated sampling activities which will be implemented in the ESF 8.3.4.2.4.4, "Engineered Barrier System Field Tests," 8.3.1.2.2.2, "Water Movement Tests," 8.3.1.3.2.1, "Mineralogy, Petrology, and Chemistry Transport Pathways," 8.3.1.3.2.2, "History of Mineralogic and Geochemical Alteration of YM," 8.3.1.9.2.1, "Natural Resource Assessments of Yucca Mountain, Nye County, Nevada," and 8.3.1.5.2.1, "Characterization of Yucca Mountain Quaternary Regional Hydrology," 8.3.1.3.4.2, "Biological Sorption and Transport," 8.3.1.2.2.3, "Characterization of the Percolation in the Unsaturated-Zone Surface-Based Study," 8.3.1.15.1.8.4, "In-Situ Design Verification," 8.3.1.15.1.1, "Laboratory Thermal Properties," 8.3.1.15.1.2, "Laboratory Thermal Expansion Testing," 8.3.1.15.1.3, "Laboratory Determination of Mechanical Properties of Intact Rock," 8.3.1.15.1.4, "Laboratory Determination of Mechanical Properties of Fractures, and 8.3.1.2.2.7.2, "Aqueous-Phase Chemical Investigations Unsaturated Zone Hydrochemistry."

Specifications - Current version of Design Package 2C drawings.

Procedures - Current versions of the following procedures guide sample collection for PI collected samples:

Procedure Number	Procedure
LANL-EES-DP-101	Sample/Specimen Collection, Identification, and Control for Mineralogy-Petrology Studies
LANL-YMP-QP-03.5	Documenting Scientific Investigations
USGS	NWM-USGS-GP-27

USGS	USGS-HP-260
LLNL	(TBD)
SNL	All samples will be collected by USGS/USBR geologic mappers under their "common sampling" role
USGS/USBR	NWM-USGS-GP-32

In addition, the current version of YAP-SII.4Q, "Submission and Documentation of Non-Core and Non-Cuttings Samples to the Sample Management Facility for Site Characterization," shall be used to document collection and ensure traceability of all underground samples taken from the ESF.

Quality Requirements - The following quality assurance grading reports (QAGR) associated with the testing activities have been approved:

Participant	QAGR	WBS	Subject
LANL	1	1.2.3.2	Geology (Mineralogy, Petrology & Pathways)
LANL	10	1.2.3.3.1	Geohydrology
LLNL	TBD	1.2.3.12.4	TBD
LLNL	TBD	1.2.3.12.5	TBD
USGS	G1233123	1.2.3.3.1.2.3	Characterization of Percolation in the Unsaturated Zone–Surface-Based Study
USGS	G123721	1.2.3.7.2.1	Natural Resource Assessment of Yucca Mountain, Nye County, Nevada
USGS	G12362321	1.2.3.6.2.2.1	Characterization of the Yucca Mountain Quaternary Regional Hydrology
USGS	G1233121		Characterization of Structural Features in the Site Area
USGS	G1233127		Hydrochemical Characterization of the Unsaturated Zone
SNL	007	1.2.3.2.7.1.1	Laboratory Thermal Properties
SNL	006	1.2.3.2.7.1.2	Laboratory Thermal Expansion Testing
SNL	023	1.2.3.2.7.1.3	Laboratory Determination of Mechanical Properties of Intact Rock
SNL	024	1.2.3.2.7.1.4	Laboratory Determination of Mechanical Properties of fractures
SNL	001	1.2.4.2.1.1.4	In Situ Design Verification
SNL	053	1.2.4.6.2	Sealing Testing

c. SPECIFIC SCOPE DEFINITION BY PARTICIPANT

PIs from organizations listed above will collect samples for their test activities under approved sample collection procedures or their equivalent. USGS/USBR

geologic personnel will normally collect (or direct collection of) samples under their "Common Sampling" role.

The ESF Test Coordination Office (TCO) will coordinate tests in support of participants and Yucca Mountain Site Characterization Office (YMSCO), providing regular written reports on test progress and data collection.

Reynolds Electrical and Engineering Company, Inc. (REECo) will provide labor, materials, and equipment to support mechanical removal of samples, and has the responsibility of ensuring a safe working site.

Raytheon Services Nevada (RSN) will provide test support, labor, material, and equipment to survey sample collection locations and any boreholes, and will supply engineering support as specified by the TCO.

Technical and Management Support Services (T&MSS) will provide sample handling, packaging, and shipping support for any samples or core.

T&MSS/Johnson Control World Services, Inc. (JCI) will photograph any sample locations.

Related Job Packages - current versions of JP 92-20 (ESF North Portal Pad and Facilities), JP 94-16 (ESF North Ramp Station 0+60 to 28+15.5), JP 92-20B (Perched-Water Testing in the Ramps, MTL Drifts, and Alcoves), JP 92-20A (Geologic Mapping of the Ramps, MTL Drifts, and Alcoves), and JP 92-20D (Construction Monitoring in the Ramps, MTL Drifts, and Alcoves).

d. WORK BREAKDOWN STRUCTURE DEFINITION BY PARTICIPANT

"The Yucca Mountain Project Work Breakdown Structure Index and Dictionary Annex II to the Project Management Plan," YMP/CC-0001, defines work scope associated with implementation of this activity by participants. This work scope includes both support for planning and field implementation, and work conducted by the PIs.

Attachments 1 and 2 provide detail on appropriate WBS elements, financial guidance for planning and scheduling accounts, and general guidance for summary accounts.

e. FINAL GUIDANCE FOR PLANNING AND SCHEDULING ACCOUNTS

See Attachments 1, 2, and 3 for final guidance for planning and scheduling accounts.

f. GENERAL GUIDANCE FOR SUMMARY ACCOUNTS

See Attachments 1 and 2 for general guidance for summary accounts.

g. DEFINITION OF SCOPE COMPLETION

The scope of this JP will be completed when construction of the ESF north ramp, MTL drifts, and test alcoves is complete, when PIs have identified and collected samples, and when samples have been shipped to the SMF for storage. The individual PIs will notify the ESF TCO Field Test Representative (FTR) in writing that the field portion of the activity is complete and will provide the status of associated milestones and commitments.

B. SPECIAL CONDITIONS

1. SPECIAL PROJECT OFFICE CONDITIONS

a. CHANGE CONTROL

Change control is initiated through YAP-3.4Q, or if applicable, AP-3.3Q.

b. REPORTING/DOCUMENTATION REQUIREMENTS

The TCO will coordinate with the YMSCO Assistant Manager for Scientific Programs (AMSP) Field Test Coordinator (FTC) to report JP related problems to the Site Manager (SM) or the Field Operations Center (FOC) on an as necessary basis. The ESF TCO FTR will provide regular reports to the FTC and AMSP, addressing test progress, including participant data collection and submittals (some test activities will provide data directly to the CRWMS M&O ESF Designer). PIs, REECo, and RSN shall provide necessary information to support TCO reporting requirements.

c. RECORD TURNOVER PACKAGE REQUIREMENTS

Records shall be submitted within 60 days of completion of the activity as defined under Section A.1.g. Records shall be submitted to the Document Records Center (DRC) under tracking number indicated in Sampling Plan 92-20C. Records may be submitted to other files if an information copy of the submittal (including table of contents) is provided to the DRC file listed in the sampling plan; these records may require submission accordingly to a different time frame than the 60 days for DRC submission.

The JPRC will coordinate and monitor the development of the JP DRC records package. The DRC records package shall contain documents that demonstrate compliance with YMP procedures and are necessary to establish compliance with test requirements. The completed DRC records package for this test will, at a minimum, contain (or reference) the following:

Item	Submitted By
1. field change requests for the JP;	TCO
2. work plan and applicable revisions;	TCO
3. nonconformance reports, if applicable;	NCR Coordinator
4. TCO weekly and monthly reports;	TCO
5. sampling plan and revisions;	TGO
6. survey data, notes, and plots;	RSN
7. as builts, and any verification information, if required;	RSN
8. use of TFM in construction, including total volumes of chemical tracers used in drilling; volumes of water used in construction, concentrations of lithium bromide used to tag construction water, and use of ground support materials;	REECo
9. use of TFM in testing, including tracer concentrations for chemical tracer gas as it is injected into and removed from long boreholes;	USGS
10. sample collection reports and sample transmittal forms;	SAIC/DS&SM
11. photo mission forms and photo transmittal records;	SAIC/JCI
12. any records required to document traceability of core;	SAIC/DS&SM
13. test configuration and installation information; and	USGS
14. request for construction exclusion area and release to Constructor.	TCO

The records identified in this section are the full responsibility of the organizations identified above. The TCO will monitor submission of records and will elevate problem areas, as necessary, to the organization's management.

d. SUMMARY OF OPEN PREREQUISITES

TBDs exist for a number of sample collection activities as identified in TPP 92-14. Samples shall not be collected for an activity until the TBDs for that activity are resolved.

e. SIGNIFICANT INTERFACES

No significant interfaces exist which would, if not identified, result in a serious safety hazard, a significant degradation of quality, or a significant cost or schedule impact.

f. ADMINISTRATIVE HOLD POINTS

No administrative hold points are applicable.

2. SPECIAL FIELD CONDITIONS

a. SAFETY TRAINING REQUIREMENTS

Reference: Letter, Canepa to Wilson, "Use of ESF testing PSAR as source of safety analyses," TWS-EES-13-02-93-104, dated February 8, 1993.

Personnel requiring access to the Yucca Mountain site must be escorted by an individual that has completed required General Employee Training (GET) and safety training. All participants are responsible for the safety of their personnel and will adhere to standard Project safety plans, procedures and practices. Training and safety provisions for underground and Tunnel Boring Machine (TBM) access are described in the current version of Work Plan (WP) 92-20C. Personnel requiring access underground shall have received General Underground Training (GUT) and TBM modular training as required or be escorted by an individual with the required training. Access underground for scientific program personnel shall be coordinated through the TCO. All personnel will comply with ESF underground access requirements as specified by the "ESF Access Control" procedure.

b. FIELD ORIENTATION REQUIREMENTS

All personnel will comply with ESF underground access requirements.

c. RESOURCE ALLOCATIONS

Common use resources are available through the Logistics Coordinator, R. Schneider at 5-5975.

d. POINTS OF CONTACT (ACTIVITY SPECIFIC)

ATL (Scientific Programs)	J. Nesbit	4-7930
FOC Visitor Control	L. Camp	5-5915
ESF PE/JPC	R. Oliver	4-7095
ESF TCO FTR	R. Kovach	5-6180
JPRC	A. Mitchell	4-7156
LANL ESF Test Representative	A. Mitchell	4-7156
LANL Mineralogy/Gels PI	S. Levy	505-667-9504
ESF TCO Safety Coordinator	J. Berry	5-3647
ESF TCO Manager	N. Elkins	4-7097
LLNL PI	W. Lin	510-422-7162
LLNL PI	A. Meike	510-422-3735
LLNL Test Representative	J. Blink	4-7157
Construction Manager	M. Renegar	5-3699
NCR Coordinator	F. Lofftus	4-7190
REECo Construction Dept. Manager	T. Leonard	5-5983
REECo Project Manager	D. Hembree	5-5903
RSN Survey Engineer	L. Watson	5-5804
SNL Air Quality PI	J. Grant	5-6867

SNL Mechanical Properties PI	R. Price	505-848-0850
SNL On-site Representative	J. Grant	5-6867
SNL Operations Manager	M. Brady	4-5139
SNL Seals PI	J.R. Finley	505-848-0776
SNL Test Representative	J. Grant	5-6867
SNL Thermal Properties PI	C. Chocas	505-848-0806
SNL TPO	L. Shephard	505-848-0795
T&MSS/SAIC Photo Coordinator	D. Unglesbee	5-5921
USGS Field Testing Coordinator	D. Soeder	5-5996
USGS Geochemistry PI	Z. Peterman	(303) 236-7883
USGS Calcite Silica PI	J. Whelan	(303) 236-7671
USGS Hydrochemistry PI	M. Chornack	(303) 236-5180
USGS Matrix Properties PI	A. Flint	5-5805
USGS Testing Coordinator	D. Edwards	4-7088
USGS/USBR Mapping PI	S. Beason	(303) 236-4177 (or 5-5353)
USGS/USBR Mapping Project Geologist	B. Augustine	5-5353
YMP-AMSP FTC	W. Girdley	5-7927
Kiewit/PB	J. Morris	5-5119

e. SPECIAL INSTRUCTIONS

1. Test organizations will provide all non-standard sample packaging materials, transportation containers, and any associated equipment.

2. The constructor will supply samples of tracers, fluids, and materials used in the vicinity of the testing location (such as fibercrete, grout, and traced construction water) as requested by PIs and coordinated through the TCO.

3. All sample collection in the ESF requires an approved collection procedure or scientific notebook.

4. All PIs who collect ESF samples, whether participating directly in this JP or not, shall coordinate underground access and sample collection support (including surveying and photography) with the ESF FTR.

f. SUMMARY OF OPEN PREREQUISITES

No open prerequisites have been identified.

g. INTERFACES

No significant internal or external interfaces that are unique to field implementation are identified.

h. ADMINISTRATIVE (NON-TECHNICAL) HOLD POINTS

No administrative hold points have been identified.

i. WORK ACCEPTANCE AND TURNOVER

The PI, ESF TCO Representative, and YMP-AMSP FTC are responsible for accepting the work as completed.

j. FIELD CHANGE CONTROL BOARD (FCCB)

The FCCB will convene on the order of the SM. The SM or designee is the chair of the FCCB.

C. COST/SCHEDULE SUMMARY

1. SCHEDULE

a. COST AND SCHEDULE PLANNING BASIS

The planning basis for the activity is described in Attachments 1, 2, and 3, and excludes participant efforts expended on:

1) study plans/site investigation plans
2) quality assurance
3) technical procedure development
4) data processing

The working schedule is expressly limited to test planning and job package document and record development for Yucca Mountain site field activities. Task dates and estimated duration are based on review of JP 92-20 and JP 94-16 schedules and current construction strategies. These tasks, dates, and duration are subject to change.

b. YMSCO MILESTONES

No Level 1 or 2 long-range plan milestones are associated with this activity.

2. BUDGET

a. PARTICIPANT FIELD BUDGET PROJECTIONS

	FY 1995
LANL:	$ 35K
LLNL:	$ 55K
REECo:	$ 5K
RSN:	$ 5K
SNL:	$ 50K
USGS/USBR:	$170K
Matrix Support:	$ 71K

See attachments 1 and 2 for further detail.

b. P&S ACCOUNT BUDGET

See Attachments 1, 2, and 3 for detail. Field implementation cost estimates are subject to revision based on construction methodologies and assessments of the construction facility. "Funding Work" figures represent total monthly distributed budget dollars, by summary account, for the scheduled period performance.

c. TOTAL BUDGET

The total budget for this activity in FY 1995 is estimated to be $391K.

Consolidated Sampling Cost Planning Basis

JP 92-20C (Rev. 1)

Starter Tunnel & Alcove #1

ID	DESCRIPTION	START DATE	P&S ACCOUNT NUMBER	SUMMARY ACCOUNT NUMBER	FUNDING WORK ($K)	FUNDING SUMMARY ($K)	ALCOVE #1 COST EST.	NORTH RAMP COST EST.	FY 94 TBM RAMP COST EST.
18	FIELD TEST IMPLEMENTATION - CONSOLIDATED SAMPLING								
22	Test Implementation - Discrete								
23	USGS/USBR Test Implementation	20-SEP-93	OG32212	OG32212D94	792	1200			
25	Alcove #1	28-SEP-93	OG32212	OG32212D93			5		
26	North Ramp Extension (Contingency)	08-NOV-93	OG32212	OG32212D94				10	
27	North Ramp & Main	28-JUL-93	OG32212	OG32212D94					10
28	RSN Field Survey & Processing	20-SEP-93	RS3522	RS3522P94	100	152			
30	Alcove #1	28-SEP-93	RS614	RS614P92			5		
31	North Ramp Extension (Contingency)	08-NOV-93	RS3522	RS3522P94				10	
31	North Ramp & Main	28-JUL-93	RN32212	RS3221277					10
33	REECo Test Construction & Procurement	20-SEP-93	OR644	OR644L4	323	490			
35	Alcove #1	28-SEP-93	OR602	OR602L3			2		
36	North Ramp Extension (Contingency)	08-NOV-93	OR644	OR644L4				3	
37	North Ramp & Main	28-JUL-93	OR32212	OR3221277					10
38	JC Photography & Process	20-SEP-93	OT761	OT761EL	92	140			
40	Alcove #1	28-SEP-93	OP3522	OP355L94			2		
41	North Ramp Extension (Contingency)	08-NOV-93	OT761	OT761EL				4	
42	North Ramp & Main	28-JUL-93	OJ32212	OJ3221277					4
44	History of Mineralogic & Geochemical Alteration	20-SEP-93	OA32112	OA32112CA4	0	0	1	1	2
45	Chloride & Chlorine-36 Measurements	20-SEP-93	OA33122	OA33122MO4	0	0	1	1	2
46	Fracture Mineralogy Studies	20-SEP-93	OA32111	OA32111BA2	224	339	2	1	2
47	Mineral Distribution Between Host Rock & Environment	20-SEP-93	OA 32111	OA32111BA2			1	1	2
43	Test Implementation - Matrix Support Elements								
44	Los Alamos TCO Coordination & Planning	20-SEP-93	OA31	OA310BL4	325	493	3	5	3
45	Los Alamos TCO (Project Engineering)	20-SEP-93	OA616	OA616AL4	660	1000	3	5	3
46	T&MSS Direct Support Services (Photo Support)	20-SEP-93	OT3522	OT3522EL	331	501	2	4	4
47	CRWMS M&O Networking & Baseline Planning	20-SEP-93	TR921	TR921CA1	1393	2110	3	4	2
				TOTALS		6425	30	49	54
	ADMINISTRATIVE USE ONLY						GRAND TOTAL		133

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Consolidated Sampling Co. . lanning Basis

JP 92-20C (Rev. 2)

Ramps, MTL Drifts & Alcoves

ID	DESCRIPTION	START DATE	FY 94 SUMMARY ACCOUNT NUMBER	FY 94 FUNDING SUMMARY ($K)	NORTH RAMP FY 94 COST EST.	RAMPS & ALCOVES FY 95 COST EST.	RAMPS & MTL DRIFTS FY 96 COST EST	RAMPS & MTL DRIFTS FY 97 COST EST.	ESTIMATED TOTAL COST ($K)
I1	FIELD TEST IMPLEMENTATION - CONSOLIDATED SAMPLING								
I2	Test Implementation - Discrete								
I3	SNL	8-Aug-94	SEE COST PLANNING BASIS REFERENCE FOR SUMMARY ACCOUNTS	2988					145
I8	Ramps & Main	8-Aug-94			5	50	45	45	
I9	LLNL	8-Aug-94		600					80
I14	Ramps & Main	8-Aug-94			5	55	10	10	
I15	LANL	8-Aug-94		1134					130
I20	Ramps & Main	8-Aug-94			5	35	45	45	
I21	USGS	8-Aug-94		2031					520
I26	Ramps & Main	8-Aug-94			30	170	160	160	
I27	Test Implementation - Matrix Support								
I28	Los Alamos TCO Test Management & Planning	8-Aug-94	OA397BL4	443	10	30	30	30	100
I29	Los Alamos TCO ESP Test Management	8-Aug-94	OA616AL4	363	5	75	75	75	230
I30	T&MSS Sample Management Facility	8-Aug-94	OT351EL	3212	50	50	50	50	200
I31	REECo Construction Test Support	8-Aug-94	OR644L4R	123	3	35	35	35	108
I32	RSN ESP Survey Support	8-Aug-94	RS614P94	152	3	287	287	287	864
I33	JC Photographic Services	8-Aug-94	OP3522L94	70	1	13	13	13	40
I34	CRWMS M&O Project Control	8-Aug-94	TR921CA1	800	3	3	3	3	12
			TOTALS	11916	120	803	753	753	2429
			ADMINISTRATIVE USE ONLY		ESTIMATED TOTAL			2429	2429

JP 92-20C, APPENDIX A
CONSOLIDATED SAMPLING IN THE
RAMPS, MTL DRIFTS, AND ALCOVES

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JP 92-20C (Rev. 2)

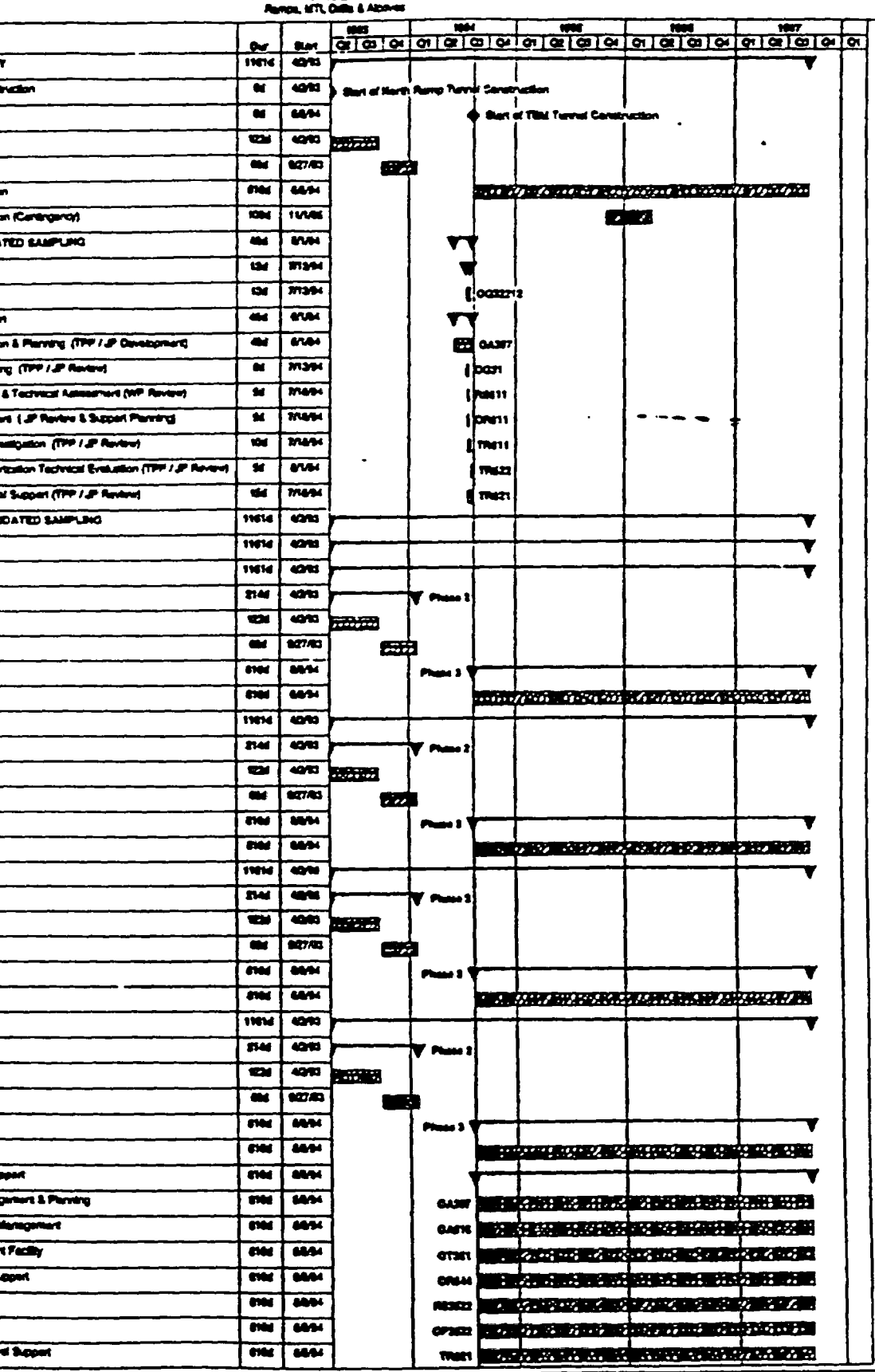
Cost Planning Basis Reference

DESCRIPTION	START DATE	FY 94 SUMMARY ACCOUNT NUMBER	FY 94 FUNDING SUMMARY ($K)	NORTH RAMP FY 94 COST EST.	RAMPS & ALCOVES FY 95 COST EST.	RAMPS & MTL DRIFTS FY 96 COST EST.	RAMPS & MTL DRIFTS FY 97 COST EST.	ESTIMATED TOTAL COST ($K)
SNL								
Density and Porosity Characterization	8-Aug-94	OS32711D01	258	0	5	5	5	15
Volumetric Heat Capacity Characterization	8-Aug-94	OS32711D11	220	0	5	5	5	15
Thermal Conductivity Characterization	8-Aug-94	OS32711D21	241	0	5	5	5	15
Thermal Expansion Characterization	8-Aug-94	OS32712D94	182	0	5	5	5	15
Compressive Mechanical Properties of Intact Rock	8-Aug-94	OS32713D03	470	0	5	5	5	15
Effects of Variable Environmental Conditions of Mechanical Props.	8-Aug-94	OS32713D55	35	0	5	5	5	15
Mechanical Properties of Fractures at Baseline Experiment Conds.	8-Aug-94	OS32714D03	590	0	5	5	5	15
Effects of Variable Environmental Conditions on Fractures	8-Aug-94	OS32714D03	590	0	5	5	5	15
Air Quality and Ventilation Experiment	8-Aug-94	OS42114D39	402	5	10	5	5	25
LLNL								
Man-made Materials	8-Aug-94	OL3C4LDM	300	5	50	5	5	65
Repository Horizon Rock-Water Interaction	8-Aug-94	OL3C4LDM	300	0	5	5	5	15
LANL								
Chloride and Chlorine-36 Measurements of Percolation at YM	8-Aug-94	OA33122M30	205	0	5	5	5	15
		OA33122MB3	240	0	5	5	5	15
Petrologic Stratigraphy of the Topopah Spring Member	8-Aug-94	OA32111B40	0	0	0	5	5	10
Mineral Distribution Between Host Rock and Accessible Environment	8-Aug-94	OA32111BAF	249	0	5	5	5	15
Precutre Mineralogy Studies	8-Aug-94	OA32111B35	0	0	0	5	5	10
		OA32111BB2	182	0	5	5	5	15
		OA32111B60	53	0	0	5	5	10
Mistroy of Mineralogy and Geochemcial Alteration of YM	8-Aug-94	OA32112CA2	205	0	5	5	5	15
Biological Sorption and Transport	8-Aug-94	OA34122DA2	0	5	10	5	5	25
USGS								
Matrix Hydrology Properties Testing	8-Aug-94	OG33123A94	330	0	10	5	5	20
Studies of Calcite and Opaline Silica Vein Deposits	8-Aug-94	OG36221F94	325	0	5	5	5	15
Geochemical Assessment of Yucca Mountain	8-Aug-94	OG3721A94	225	0	10	5	5	20
Underground Geologic Mapping	8-Aug-94	OG32212D94	719	20	100	100	100	320
Hydrochemistry Tests in the ESF	8-Aug-94	OG33124M94	332	10	30	30	30	100
Perched Water Testing in the ESF	8-Aug-94	OG33124G94	100	0	15	15	15	45
							ESTIMATED TOTAL	875

Consolidated Sampling Schedule Planning Basis

JP 92-20C
Ramps, MTL Drifts & Alcoves

ID	Task Name	Dur	Start
C1	JP 92-20 CONSTRUCTION ACTIVITY	1161d	4/2/93
C2	Start of North Ramp Tunnel Construction	0d	4/2/93
C3	Start of TBM Tunnel Construction	0d	6/6/94
C4	Starter Tunnel Construction	122d	4/2/93
C5	Alcove #1 Construction	68d	8/27/93
C6	Ramps & Main Tunnel Construction	810d	6/6/94
C7	North Ramp Extension Construction (Contingency)	109d	11/1/95
P1	TEST PREPARATION - CONSOLIDATED SAMPLING	48d	6/1/94
P2	Test Preparation - Discrete	13d	7/13/94
P3	USGS/USSR Test Planning	13d	7/13/94
P4	Test Preparation - Matrix Support	48d	6/1/94
P5	Lab Alaska TCO Coordination & Planning (TPP / JP Development)	48d	6/1/94
P6	USGS Coordination & Planning (TPP / JP Review)	8d	7/13/94
P7	RSN Coordination, Planning, & Technical Assessment (WP Review)	5d	7/18/94
P8	REECo ESF Test Management (JP Review & Support Planning)	5d	7/18/94
P9	CRWMS M&O Technical Investigation (TPP / JP Review)	10d	7/18/94
P10	CRWMS M&O Site Characterization Technical Evaluation (TPP / JP Review)	5d	6/1/94
P11	CRWMS M&O Project Control Support (TPP / JP Review)	15d	7/18/94
E	TEST IMPLEMENTATION - CONSOLIDATED SAMPLING	1161d	4/2/93
E	Test Implementation - Discrete	1161d	4/2/93
E	SNL	1161d	4/2/93
E	Phase 2	214d	4/2/93
E	Starter Tunnel	122d	4/2/93
E	Alcove #1	68d	8/27/93
E	Phase 3	810d	6/6/94
E	Ramps & Main	810d	6/6/94
E	LLNL	1161d	4/2/93
E	Phase 2	214d	4/2/93
E	Starter Tunnel	122d	4/2/93
E	Alcove #1	68d	8/27/93
E	Phase 3	810d	6/6/94
E	Ramps & Main	810d	6/6/94
E	LANL	1161d	4/2/93
E	Phase 2	214d	4/2/93
E	Starter Tunnel	122d	4/2/93
E	Alcove #1	68d	8/27/93
E	Phase 3	810d	6/6/94
E	Ramps & Main	810d	6/6/94
E	USGS	1161d	4/2/93
E	Phase 2	214d	4/2/93
E	Starter Tunnel	122d	4/2/93
E	Alcove #1	68d	8/27/93
E	Phase 3	810d	6/6/94
E	Ramps & Main	810d	6/6/94
E	Test Implementation - Matrix Support	810d	6/6/94
E	Lab Alaska TCO Test Management & Planning	810d	6/6/94
E	Lab Alaska TCO ESF Test Management	810d	6/6/94
E	TIMES Sample Management Facility	810d	6/6/94
E	REECo Construction Test Support	810d	6/6/94
E	RSN ESF Survey Support	810d	6/6/94
E	JC Photographic Services	810d	6/6/94
E	CRWMS M&O Project Control Support	810d	6/6/94



Project: Consolidated Sampling
Date: 6/6/94
Revision #1

Task | Progress | Milestone | Summary

Checked By:
Approved By:

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