94-0004762

Department of Energy

Washington, DC 20585

AUG 2 2 1994

The Honorable John Conway
Chairman
Defense Nuclear Facilities Safety Board
Suite 700
625 Indiana Avenue, NW
Washington, D. C. 20004

Dear Mr. Chairman:

Enclosed is a copy of the quarterly report for Defense Nuclear Facilities Safety Board (Board) Recommendation 93-5. The quarterly report is provided according to Commitment 1.10 of the associated Implementation Plan.

Four commitments are behind schedule. These are detailed in the enclosed report. The most serious of these is deployment of the rotary mode sampling truck. We estimate startup of rotary mode sampling in early September and are making an effort to mitigate the effects of this delay.

Thank you for your continued interest in the Tank Waste Characterization Program. If you or the Board members have any questions, please contact me. My staff contacts for this program are James Antizzo (301-903-7180) and Kenneth Lang (301-903-7453).

Sincerely,

Thomas P. Grumbly
Assistant Secretary for
Environmental Management

Enclosure

Recommendation 93-5

Quarterly Report

Second Quarter 1994

EXECUTIVE SUMMARY

The Implementation Plan for Resolution of Defense Nuclear Facilities Safety Board Recommendation 93-5 was accepted by the Board on March 25, 1994. Between December 1993, (when the plan was submitted to U.S. Department of Energy-Headquarters) and June 30, 1994, there have been 51 commitments. Of these, 33 have been submitted to U.S. Department of Energy, Richland Operations Office on or ahead of schedule, and 14 have been submitted late. Four are past due and Westinghouse Hanford Company (WHC) continues to work overtime to minimize future schedule slips.

Even given the four missed activities, there have been significant improvements and changes in the Characterization Program since March 1994. WHC has completed changes in management of the Characterization Program, bringing in experienced senior technical/programmatic managers. Dedicated operational personnel have increased to over 100. The Characterization Program has improved the access of characterization data and involved the customer organizations who use the characterization data. Alternate sampling methods have been developed to balance continued difficulties in obtaining necessary recovery of samples, especially the first segment. Sampling and analysis has restarted. Three Data Quality Objective documents have been issued since March 31, 1994. Currently, the first 20 data packages are being evaluated to provide statistical variability information. Also, tank content estimates based on historical data (flow sheets, transfers, and old analytical information) have been completed for two of the four quadrants, covering 109 of the 177 tanks. The Tank Characterization Report format and content was finalized with the Washington State Department of Ecology.

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QUARTERLY REPORT ON DEFENSE NUCLEAR FACILITIES SAFETY BOARD RECOMMENDATION 93-05 FOR THE PERIOD ENDING APRIL 1 - JUNE 30, 1994

1.0 INTRODUCTION

1.1 PURPOSE

This quarterly report provides a status of the activities underway at the Hanford Site for characterizing waste in both single and double-shell tanks, as requested by the Defense Nuclear Facilities Safety Board (DNFSB) in their Recommendation 93-5 (July 1993). In January 1994, a DNFSB *Implementation Plan* (Reference 1) responding to Recommendation 93-5 was prepared and sent to the U.S. Department of Energy (DOE) for transmittal to the DNFSB. The plan was accepted by the DNFSB on March 25, 1994. All activities in the DNFSB *Implementation Plan* are planned, underway or completed, and the status of each is described in Section 2.0 of this report.

1.2 QUARTERLY HIGHLIGHTS

The following samples were taken this quarter:

- Vapor: 241-C-103 (2 sampling events), 241-BY-103, 241-BY-104, 241-BY-105, 241-BY-106, 241-BY-111, 241-C-107, 241-C-109, 241-C-111, and 241-C-112.
- Supernate: 241-AN-107, 241-S-110, 241-AY-102, 241-AP-108, 241-T-112.
- Auger: 241-SY-103 (3 sampling events), 241-BX-101 (2 sampling events).
- Push Mode Core: 241-C-108, 241-C-111.

In preparation for sampling, tank riser inspections and preparation (asbestos gasket removed) were completed for the following tanks: tanks 241-BY-103, 241-BY-104, 241-BY-105, 241-BY-106, 241-BY-111, 241-C-107, 241-C-109, 241-C-111, and 241-C-112.

Significant anomalies have occurred during the sampling operations on tank 241-C-111. Unusually low recoveries, obstacles within the tanks, and temporary delays in the extrusion process for lack of a current procedure are three of considerable interest. Each anomaly has been met with corrective action to provide continuity in the process. The authors of the Tank Characterization Plan (TCP) were able to revise the sampling requirements on a real-time basis to accommodate changing issues associated with tank 241-C-111.

During the retrieval of one supernate sample in tank 241-AN-107, it was observed that the wire, which broke during the last attempt to sample the tank (May 4, 1994), was caught in the revised sampler. Work was halted until management reviewed the situation. Both samples were

recovered and a total of five samples were sent to the 222-S Laboratory. The revised sampling system uses a larger cable (nylon coated aircraft cable) to ensure that the cable is not broken during the sampling process in the future.

Two operators have been certified for rotary mode core sampling (RMCS) operations, which satisfies the certification requirements for the first RMCS crew.

The push mode sample from 241-C-108 riser number 3 was extruded at the 222-S Laboratory. The maximum amount of sample that could have been recovered from the 6.5 in. push is about 5.5 in. The amount that was actually recovered was approximately 1 in., about the same that was recovered from two of the samples from tank 241-C-111. The tank 241-C-108 push mode package has been suspended pending resolution and action plan for correcting poor recovery.

Construction was completed on the 222-S Laboratory hot cell expansion project. Westinghouse Hanford Company (WHC) has declared readiness for operations. The DOE-RL Operational Assessment is underway.

Tank characterization support activities continue within the 222-S Laboratory. Safety screening data for cores from 241-C-111 were reported within the 45 day schedule from receipt of the last core sample. The results did not exceed levels defined by the Safety Screening Data Quality Objectives (DQOs). Evaporator 242-A support also continues at the 222-S Laboratory with receipt of five sets of protocol slurry samples.

The 325 Laboratories are in a pause mode as of April 21, 1994, because of contamination control problems both with personnel as well as the facility. A tentative start date of August 15, 1994, is projected. Contingency planning by the 222-S Laboratory was immediately initiated to allow continuation of all sampling activities. Analytical Services Planning and Integration developed an analytical schedule to compensate for the pause in sampling support from the 325 Laboratory. The schedule indicates that the 222-S Laboratory can provide sufficient support to the Tank Waste Remediation Services (TWRS) sampling activity through mid August, 1994.

Through a series of meetings among WHC, DOE-RL, Washington State Department of Ecology (Ecology), and Los Alamos Technical Associates (LATA), consensus was reached on the format and content of Tank Characterization Reports (TCRs). Several draft reports in the consensus format were reviewed to ensure they would meet user needs. It was agreed that a TCR user's guide should also be developed to provide background, general tank information, and details about sampling and analytic approaches. A draft user's guide was written and reviewed.

Los Alamos Technical Associates delivered to WHC the final TCRs for double-shell tanks 241-AP-103, 241-AP-105, and 241-AP-106.

Tank Characterization Plans (TCPs) for the following tanks were signed and released during the third quarter Fiscal Year 1994: 241-AN-107, 241-AY-102, 241-BY-105, 241-BY-106, 241-BX-108, 241-T-112, 241-C-106, 241-C-108, and 241-SY-103.

The following tank data was loaded into the electronic Tank Characterization Database (TCD) during April, May, and June 1994: Complete data packages from 241-AP-103, 241-AW-102, and 241-AW-106 were loaded. Packages from 325 laboratory for 241-S-104, 241-T-104, 241-T-105, 241-T-111, 241-C-110, 241-B-202, 241-BX-107 and 241-T-107 were loaded, completing the loading of these tanks. The 222-S Laboratory data package for tanks 241-B-202 and 241-SY-101 was loaded.

The DQO for resolving organics in fuel rich tanks was issued on April 29, 1994. The Flammable Gas DQO was released on May 13, 1994. This completes the WHC submittal for DNFSB Commitment 2.1, Safety Issue DQOs, and has WHC back on schedule for Commitment 1.21. (Reference 8)

The draft Fiscal Year 1995 Tank Waste Analysis Plan has been signed off by WHC and forwarded by RL, to the U.S. Environmental Protection Agency (EPA) and Ecology. (Reference 20)

The Historical Tank Contents Estimate (HTCE) Reports for 109 tanks in the northeast and southwest quadrants of the Hanford site tank farms have been completed. These reports compile and reconcile all available historical information on the contents of the waste tanks, and provide an estimate of the current contents. (Reference 7)

Signal to noise measurements on sodium nitrate pellets are continuing to be performed in 305 Building to evaluate the performance of the new raman spectroscopy probes received from Savannah River. The measurements that have been made to date indicate a significant reduction in the interference caused by the silicon raman response of the fiber but the improvement in overall signal to noise is minimal. Additional testing is required to fully quantitate the effects. A new 500 mWatt laser is being prepared in the 305 Laboratory. The frequency is doubled, which should increase the power being delivered to the sample by three times. In addition, the efficiency is much greater and therefore should not contribute to the temperature instability factors noticed in the current system.

1.3 REPORT FORMAT

The quarterly report reports the progress of activities initiated in response to the DNFSB Recommendation 93-5 and is arranged in the same order as the DNFSB *Implementation Plan* (DOE 1994). To report progress, each of the seven parts are identified, followed by paragraphs explaining the scope of work on each part or subpart of the plan. Subheadings for each task activity report the following items of progress.

- Progress During Reporting Period
- Planned Work for Subsequent Months
- Issues.

In addition to the information that is provided in these categories, two tables have been prepared listing the DNFSB commitments for first, second, and third quarter FY-94 (Table 1) and the forth quarter FY-94 (Table 2). Included in the tables is shading to indicate which commitments are complete, as well as highlighted areas to identify which commitments are outstanding or have been completed ahead of schedule. Note that activities in this quarter were identified as "near term initiatives" in Section 2.0 of Reference 1.

Table 1. CHARACTERIZATION PROGRAM
DNFSB Commitments - thru June 30, 1994

TYPE	#	TITLE OF MDS	DUE DATE	STATUS (WHC to DOE)	DOE Approved
DNFSB	3.1	Init. Construction of 2nd/3rd Rotary Mode trucks	11/30/93	Complete on 11/1/93	11/1/93
DNFSB	1.21	Ferrocyanide Safety Issue DQO Report	12/15/93	Complete on 12/31/93	
DNFSB	1.21	C-103 Dip Sample DQO	12/16/93	Complete on 8/31/93	6/30/94
DNFSB	1.21	C-106 High Heat DQO Final Report	12/20/93	Complete on 1/20/94	
DNFSB	1.21	Vapor Rotary Core DQO Final Draft Report	1/20/94	Complete on 2/14/94	
DNFSB	2.2	Safety Screening Module DQO Report	1/31/94	Complete on 2/23/94	
DNFSB	1.13	Char. Functions/Reqmts in detailed Functional Anal	1/31/94	Complete on 1/20/94	6/1/94
DNFSB	1.21	C-103 Vapor DQO Draft Report	1/31/94	Complete on 1/31/94	
DNFSB	1.21	Organic Safety Issue DQO Report (PNL)	1/31/94	Complete on 4/29/94	
DNFSB	1.7	Streamline DQO Process	1/31/94	Complete on 12/31/93	5/27/94
DNFSB	3.2	Review Char. Field Procedures Using DOE COps	1/31/94	Complete on 2/28/94	6/30/94
DNFSB	4.1	Issue Approved Broad-based Envir. Assessment	1/31/94	Complete on 2/28/94	2/28/94
DNFSB	4.2	DOE-RL to Submit a request for DOA to DOE-HQ	1/31/94	Complete on 1/10/94	
DNFSB	5.9	Plan to Upgrade INEL Lab	1/31/94	Complete on 1/31/94	6/28/94
DNFSB	6.3	Initial On-Line Capability (LABCORE-1)	1/31/94	Complete on 1/31/94	6/23/94
DNFSB	6.4	Demonstrate Offsite Access to TCD/Input 3 HLW	1/31/94	Complete on 1/28/94	
DNFSB	6.6	Eval. 12 Validated Data Reports for Safety	1/31/94	Complete on 1/29/94	6/30/94
DNFSB	1.8	Release TWRS Characterization QA Plan	2/28/94	Complete on 2/28/94	5/26/94
DNFSB	1.1	Enhance WHC Char. Program Mgmt Staff	2/28/94	Complete on 2/28/94	6/27/94
DNFSB	1.21	Waste Compatibility DQO Report	2/28/94	Complete on 3/4/94	
DNFSB	1.22	Update FY94 Field Schedule to Incorp. New Techn's	2/28/94	Complete on 2/3/94	6/27/94
DNFSB	3.3	Complete Qualifcation of First Push-mode Crew	2/28/94	Complete on 1/26/94	6/30/94
DNFSB	3.5	Complete Training & Qual Reqmts for Sampling Cog	2/28/94	Complete on 2/24/94	6/27/94
DNFSB	5.11	Dev. Min/Max Lab Capacity Strategy	2/28/94	Complete on 2/28/94	6/30/94
DNFSB	1.21	In-tank Generic Vapor DQO Final	3/03/94	Complete on 3/7/94	
DNFSB	5.10	Plan to Upgrade LANL Lab	3/29/94	Complete on 3/28/94	6/30/94
DNFSB	1.2	Reduce Number of Mgmt Layers in WHC TWRS	3/31/94	Complete on 3/24/94	6/30/94
DNFSB	1.6	Define Responsibilities of Key WHC Managers/Char.	3/31/94	Complete on 3/31/94	
DNFSB	3.4	Redeploy PM Core Sampling	3/31/94	Complete on 3/31/94	6/30/94
DNFSB	3.6	Restore Rotary Mode Sampling	3/31/94	Behind	
DNFSB	3.7	Complete Qual of First Rotary Mode Crews	3/31/94	Complete on 4/18/94	6/30/94
DNFSB	5.3	Letter Assessing New Extruder	3/31/94	Complete on 3/28/94	6/30/94
DNFSB	5.5	Issue Results of Sampler Exchange Phase II	3/31/94	Complete on 3/31/94	6/30/94
DNFSB	1.10	Issue Quarterly Progress Reports (DNFSB/DOE)	4/29/94	Complete on 5/3/94	5/10/94
DNFSB	1.21	Hydrogen Generating DQO Final Report	4/29/94	Complete on 5/13/94	
DNFSB	1.4	Improve WHC Char Technical Staff Competencies	4/29/94	Complete on 4/29/94	
DNFSB	2.1	DQOs for all 6 Safety Issues	4/29/94	Complete on 5/13/94	

TABLE1.XLS

Table 1. CHARACTERIZATION PROGRAM
DNFSB Commitments - thru June 30, 1994

TYPE	#	TITLE OF MDS	DUE DATE	STATUS (WHC to DOE)	DOE Approved
DNFSB	3.9	Detailed Plans for Acquiring/Training Add'l Crews	4/29/94	Complete on 4/29/94	6/30/94
DNFSB	4.3	Delegation of Authority for RL/Safety & Env'l	4/29/94	Behind	
DNFSB	6.1	Prepare a Customer Needs Analysis	4/29/94	Complete on 5/2/94	6/23/94
DNFSB	1.12	Mgmt Staff Complete Systems Engineering Training	5/31/94	Complete on 2/15/94	5/25/94
DNFSB	1.3	Improve RL Oversight	5/31/94	Complete on 5/27/94	
DNFSB	1.9	Plan for Blind Samples	5/31/94	Complete on 5/24/94	6/15/94
DNFSB	6.2	Issue a Data Mgmt Improvement Plan	5/31/94	Complete on 5/26/94	5/26/94
DNFSB	1.11	Field Schedule for Sampling All Activ's FY95-6	6/30/94	Behind	
DNFSB	1.14	Char Portion of Initial Sys Eng Analysis Results	6/30/94	Complete on 6/30/94	6/30/94
DNFSB	1.17	Historical Tank Content Estimate Reports/NE/SW	6/30/94	Complete on 6/28/94	6/30/94
DNFSB	3.10	Qual of 2 Additional Crews/Push & Rotary Trucks	6/30/94	Behind	
DNFSB	3.15	EEA for In Situ Moisture Monitoring	6/30/94	Complete on 6/28/94	6/30/94
DNFSB	3.17	Review Procedures w/Outside Drilling Experts	6/30/94	Complete on 6/30/94	
DNFSB	5.6	Evaluate Lab Staff Training	6/30/94	Complete on 6/30/94	

Table 2. CHARACTERIZATION PROGRAM
DNFSB Commitments - July 1 - Sept. 30, 1994

TYPE	#	TITLE OF MDS	DUE DATE	STATUS (WHC to DOE)	DOE Approved
DNFSB	1.10	Issue Quarterly Progress Reports (DNFSB/DOE)	7/25/94	On schedule	
DNFSB	1.21	Pretreatment DQO Draft Report	8/22/94	On schedule	
DNFSB	1.20	TWRS Risk Acceptance Criteria	8/31/94	Behind 1 + months	
DNFSB	3.19	Eng'g Eval. of Installing New Risers in SSTs	8/31/94	On schedule	
DNFSB	5.7	Dev. & Implement Training for Laboratory Staff	8/31/94	Complete on 6/30/94	7/13/94
DNFSB	1.21	HLW Immobilization DQO Draft Report	9/06/94	On schedule	
DNFSB	1.21	LLW Immobilization DQO Draft Report	9/21/94	On schedule	
DNFSB	1.16	Historical Tank Layering Models	9/30/94	On schedule	
DNFSB	3.11	Additional Rotary Mode Core Systems (DOE-RL)	9/30/94	Behind 4-5 months	
DNFSB	5.1	Install Core Scanning in Hot Cell	9/30/94	Behind 1 month	
DNFSB	5.4	Cyanide Speciation Tech Transfer (PNL)	9/30/94	Stop work	
DNFSB	5.8	Procure & Receive 2 PAS-1 Casks (DOE-RL)	9/30/94	On schedule	
DNFSB	6.5	Data Loading of 20 Tanks into TCD	9/30/94	On schedule	

1.4 BACKGROUND

The present contents of the 149 single-shell tanks and the 28 double-shell tanks at the Hanford Site represent a diverse chemical processing and waste management history. Waste from three primary reprocessing flow sheets, a variety of materials recovery operations, and numerous waste management oriented operations have led to both chemically and physically heterogeneous waste. This diversity in the stored waste, coupled with an incomplete record of tank waste operations and transfers, creates a complex challenge for waste characterization.

DNFSB Recommendation 93-5 strongly criticized the overall direction and timeliness of the TWRS Characterization Program. Consequently, the DNFSB made the following recommendations.

- The Characterization Program should undergo a comprehensive reexamination and restructuring to accelerate schedules, strengthen technical management, and expedite analyses.

- The Characterization Program should be integrated into the TWRS systems engineering effort.

The DNFSB Recommendation 93-5 also addressed simplifying tank access protocols and strengthening the management and conduct of sampling.

2.0 DEFENSE NUCLEAR FACILITIES SAFETY BOARD IMPLEMENTATION PLAN TASK ACTIVITIES

The DNFSB *Implementation Plan* (DOE 1994) addresses each task activity established in response to the DNFSB Recommendation 93-5. In this report, each part of the recommendation is categorized into one of seven areas and then progress of Hanford Site activities relating to that part is described.

2.1 Strengthen Technical Management

A large number of specific management issues were identified. These were divided into three general areas:

2.1.1 Improve Program Management

Identified were numerous past management problems that affected quality and quantity of sampling.

2.1.2 Integrate Characterization and System Engineering Efforts

TWRS has initiated a systems engineering approach to develop and manage the TWRS Characterization Program needs, which will be included in this approach.

2.1.3 Provide Sound Technical Focus

TWRS is establishing the technical basis upon which the program will make safety related, and other programmatic (retrieval, pretreatment and disposal) decisions. The use of the EPA's DQO Process, historical analysis for tank grouping, and use of the sampling priority list will be used to establish the foundation for establishing a sound technical basis for sampling and analyses.

Progress During Reporting Period. WHC has issued a plan outlining steps to improve the WHC Characterization Program staff (Reference 2). This plan addressed the technical qualifications needed, key staff areas, and whether additional staff was needed and what training of staff was planned. All of the previous WHC Characterization Program managers were replaced by May 1994 plus one additional position was created and filled in May to supplement the staff. A process engineering functional organization with strong chemical engineering and process design expertise has been formed to improve the overall technical strength in TWRS. Over 60 technical staff with chemical processing background have been assembled.

Commitment 1.9, "Plan for Blind Samples," was issued on May 24, 1994. (Reference 3). This plan covers both PNL and WHC laboratories and will eventually be applied to INEL laboratory.

Commitment 1.11 of the *Implementation Plan* addresses issuing a field schedule for sampling that indicates all sampling activities for FY 1995 and 1996. The sampling schedule was not completed on schedule. Efforts are underway to perform a formal decision process to determine the best prioritization for the tanks to be sampled. Once this prioritization is performed, the schedule will be generated. (Reference 4)

Commitment 1.13 of the *Implementation Plan* required the Characterization Program's functions and requirements be included in the detailed functional analysis report, to a project functional level. (Reference 5) Characterization functions, interfaces, and requirements were prepared and incorporated into the TWRS Systems Engineering effort and appear in the *TWRS Systems Engineering Work in Progress* document. The initial effort was completed on January 17, 1994. An updated Characterization portion of Initial Systems Engineering Analysis Results (Commitment 1.14), was completed and submitted on June 30, 1994. Further work continues to develop requirements, interfaces, and architecture to support the Characterization Program at lower levels of the systems engineering architecture and to interface with other functions to ensure that characterization interfaces are identified.

On June 30, 1994, WHC issued the Hanford Tank Contents Estimates for 109 tanks in the northeast and southwest quadrants. These reports provide the best available estimate of waste composition. (Commitment 1.17, Reference 7). This information will support future characterization efforts by supplementing sampling and analysis data. DQO developers will use the reports to determine which data is available using the historical data and those requiring additional analyses. For many programs, the use of historical data will reduce the number of requests for new sampling and analysis.

The draft Fiscal Year 1995 Tank Waste Analysis Plan has been signed off by WHC and forwarded by RL, to the EPA and Ecology. (Reference 20)

Commitment 1.21 of the *Implementation Plan* required completed, published documents, establishing DQOs for ten TWRS activities. The following DQOs were completed during this reporting period: (References 8, 21, 22, 23, and 24).

Subject	Original Due Date	Document Released
Organic Safety Issue	01-31-94	04-29-94
Hydrogen Generating		
a. Crust Burn		Originally issued: 12-29/93/Revised 04-27-94
b. Core	04-29-94	05-13-94

WHC is working on additional DQO documents (pretreatment, disposal, and retrieval).

A task group was identified in June 1994, including external experts, DOE, WHC, and Pacific National Laboratories (PNL) senior staff, to perform specific critiques on all but the one-time use (C-103 Vapor and Dip Sample) DQOs. This review is approximately one-third complete. Specific changes are being recommended and implemented. The Ferrocyanide, Organic and Safety Screening documents are all in the process of being revised to address the task group, and DNFSB staff comments.

Planned Work For Subsequent Months. The fourth quarter commitments, associated with enhancing DQO reports, are outlined in Table 2. More detail of the upcoming commitments can be found in the *Implementation Plan*. In addition, DOE and WHC are evaluating the basic logic process for safety and disposal DQOs. External and internal stakeholders are to meet in August and September in a workshop to discuss what, when, and how characterization should be performed. The prime emphasis is to look beyond core sampling to multiple approaches to characterize the waste.

Issues The statistical basis for the DQOs continues to be a weak area. WHC, PNL, and Los Alamos National Laboratory (LANL) staff are gathering the necessary data to strengthen the statistical portion of the DQOs. Recent effort has focused on using the data from the 23 tanks that were previously sampled. This is effective when the data of interest now was measured between 1987-1993 in sufficient amounts to provide data. Current data indicate a substantial number of samples (50 to 200 samples/tank) may be needed to provide high accuracy for some elements of interest, if only sampling is relied upon. Additional work is also planned to refine the layering and grouping models.

One key area of continued concern is riser availability to allow additional samples. The installation of thermocouples in tanks 241-B-103, 241-BX-102, 241-BY-103, 241-BY-108, 241-C-111, 241-T-107, 241-TY-101, 241-TY-103, 241-TY-104, 241-U-106, 241-U-107, and 241-U-111 has been delayed as a result until the tanks are either sampled or when it is determined adequate risers exist to allow thermocouple installation prior to sampling. Installing a thermocouple would eliminate a riser from being sampled.

Specific approval requirements on DQOs and TCPs by DOE and Ecology have not been defined (which organization and when). Sampling events or subsequent analyses have not been delayed, however, because all parties agree that it is important to move forward while administrative issues are resolved.

In the systems engineering area, program elements are still not to the level in the systems engineering work to be able to show specific characterization needs. However, this is progressing on the schedule that was anticipated. Key decisions that must be made before DQOs can be adequately prepared in such areas as retrieval have been identified. Timing of the resolution of these decisions may impact when quality DQOs can be produced for the retrieval/disposal elements.

2.2 Accelerate Safety Related Characterization

There are two major data requirements in the near-term. The first involves confirming which tanks are safe, conditionally safe, and unsafe. Establishing which tanks fall into which group is based on the criteria established in a 1993 policy statement sent to the DNFSB entitled Strategy for Safety Issue Resolution. The second major safety data requirement is to screen all the non-Watch List tanks to establish which, if any, should be added to the list.

Progress During Reporting Period. Accelerating safety related characterization has continued to be concentrated in the effort to establish a technical basis for sampling and analysis. In addition, Watch List tanks have been given top priority for auger, vapor, push, and rotary sampling. The selected means of determining sampling and analytical requirements is through the DQO process. All six of the safety issues now have DQOs as established in the *Implementation Plan* (Commitment 2.1). Those issued this quarter were the Organic Safety Issue DQO and two DQOs related to flammable gas (core and crust burn). (References 8, 21, 22, 23, and 24).

The DQOs have been extensively reviewed by the DNFSB and select members of the Tank Characterization Advisory Panel, as well as by Ecology and DOE. Lessons learned during these review processes, as well as comments from the end users of the DQOs (the Tank Characterization Plan authors), are being incorporated into subsequent updates of the DQOs.

Planned Work For Subsequent Months. The Safety Issue and Ferrocyanide DQOs will be updated to incorporate internal and external review committee comments. In addition, the overall logic and strategy for what data is due when is being re-evaluated (see Section 2.1, "Planned Work"). If an alternate approach should be selected by stakeholders, the DQOs will require a significant revision.

Issues. Most safety issue DQOs need to be updated to improve accuracy and precision requirements and to address the number of samples needed. There is a potential that there will be inadequate risers if a high degree of accuracy from samples and laboratory analysis is needed. Some tanks have 1 to 3 risers (mostly at the edge of the tank). A study is almost complete on adding additional risers as one option. Another option is to re-evaluate both the technical and sampling approaches.

2.3 Improve The Quality And Quantity Of Sampling

Acceleration of sampling will be achieved by (1) acquiring more sampling equipment; (2) training more crews; (3) cross-training crews to work on push mode or rotary mode sampling trucks; (4) auger sampling; (5) grab sampling and vapor sampling; (6) working multiple shifts instead of one and (7) phasing sampling to meet programmatic needs.

2.3.1 Adequate Sampling Equipment and Staff

An adequate number of trained staff must be provided to operate existing and new equipment to meet accelerated sampling schedules.

2.3.2 Meeting Flammable Gas and Vapor Sampling Requirements

Information on tank dome space vapors will be required prior to in-tank sampling to check for flammability for all rotary core sampling. For flammable gas Unreviewed Safety Questions (USQ) tanks, continuous head space gas monitoring for some period of time is required to determine if a flammability problem exists.

2.3.3 Issues And Contingency Plans

Adequate sampling capacity is necessary to achieve the aggressive sampling schedule slated for the next three years. The following issues have the potential for impeding this sampling schedule.

- Push mode inadequate sample recovery
- Timely deployment of the first rotary mode sampling truck
- Timely deployment of the second and third rotary mode trucks
- Hiring, training, and qualification of staff
- Transfer of tank access authorization from DOE-HQ to DOE-RL
- Unsuitable physical properties data from existing sampling systems
- Adequate laboratories to receive samples.

2.3.4 Push Mode Sample Recovery

The push mode core sampling core recovery has been an issue, especially for top segments and shallow (less than one segment) tanks.

2.3.5 Timely Deployment Of First Rotary Mode Sampling Truck

The first rotary mode core sampling truck was scheduled to be deployed March 31, 1994.

2.3.6 Timely Completion Of Second And Third Rotary Mode Sampling Trucks

Two additional rotary mode core sampling systems are scheduled to be deployed by the end of FY 1994. These trucks are about four to five months behind schedule. These systems were started November 1993.

2.3.7 Hiring, Training And Qualification Of Staff

TWRS Operations has committed to provide the identified dedicated crews and required support on a priority basis to use equipment to the maximum practical level.

2.3.8 Technology Development

Current sampling and analytical procedures are not suitable for obtaining some physical property data. Therefore, in situ techniques will be evaluated to improve the reliability of this data. Other technology improvements to the sampling systems and laboratory processes will also be pursued.

Progress During Reporting Period. Commitment 3.4 of the *Implementation Plan* addresses re-deployment of the push mode core sampling system. A great deal of effort was expended to bring the push mode system back online. Internal and external drilling experts were consulted on ways to improve sample recovery, completing Commitment 3.17. (Reference 15) Various sampling bits were designed and evaluated to determine performance against existing bits. Part of the effort was also spent on determining effects of sampler internal diameter and coatings on sample recovery. The truck was redeployed on March 31, 1994. However, the first two tank sampling (3 risers) attempts all resulted in poor recovery. Currently, the use of the push mode truck is in a WHC self-imposed hold. The rotary truck is being used in push mode to perform a test plan. WHC performed a sampler drop test to see if there equipment problems. Also performed was a head space test to determine the effects of the head space below the piston and constant insertion rate tests to determine the effects of varying feed rates. Upon completion of the test plan, required changes will be made before deploying the push mode truck to the field.

Commitment 3.6 of the *Implementation Plan* addresses restoring rotary mode sampling capability. The truck is about four months behind schedule. (References 9 and 10) The WHC Operational Readiness Review is expected to be complete about July 11, 1994, with the DOE review to follow immediately. Field deployment is expected August 3, 1994. Additional WHC management attention has been focused on the startup preparations to expedite problem identification and resolution. Schedule status meetings are held four times a week. A senior WHC manager has been assigned to direct startup preparations on a daily basis. After the first rotary truck is operational, this manager will assume responsibility for the second and third truck preparations.

Commitment 3.7 of the *Implementation Plan* addresses qualification of rotary mode and vapor, grab, and auger sampling crews. The vapor, grab, and auger crews were available in February 1994. The qualification of the rotary mode crew was delayed by the unavailability of approved procedures to qualify against in the February/March time-period. The

procedures had been delayed because of hardware problems with the rotary truck. The rotary mode crew was qualified on April 18, 1994. (Reference 11)

A new test site for the rotary mode sampling truck was selected and set up in the 200 West area. The DOE readiness review demonstration and future operational testing of trucks 3 and 4 will be performed on that site.

Commitment 3.9, a detailed plan for acquiring and training additional crews was issued on April 29, 1994. (Reference 12)

Commitment 3.10 of the *Implementation Plan* addresses the qualification of a second crew for the rotary truck. The second rotary crew will be qualified by August 31, 1994. This delay was brought about because of the four month delay in the truck deployment. (Reference 13)

Commitment 3.15, the "Engineering Evaluation of Alternatives for In Situ Moisture Monitoring," was issued on June 28, 1994. (Reference 14)

Work on Commitment 3.19, a study on new riser installation, is progressing. Although samples can be taken from either 4 in. or 12 in. risers, a 12 in. riser was selected because the rotary exhauster and other programs (e.g., liquid observation wells and light duty utility arms) require this size. One installation alternative appears very promising and a plan has been prepared to test it on an old buried foundation of a surplus facility. A draft of this report has been reviewed by WHC and DOE staff and is ahead of schedule.

In May 1994, the decision was made to build a 20 in. auger to support single-segment tanks and first segment of multi segment tanks. A prototype was built and tested in June. Now all tanks with less than 25 in. of waste will be augered (or supernate sampled, if very soft). Also, the surface of tanks to be push mode sampled may also be augered.

Development of laboratory and in situ procedures to measure relevant physical properties has continued as planned during this quarter and FY 1995 activities are being planned. Signal to noise measurements on sodium nitrate pellets are continuing to be performed in 305 Building to evaluate the performance of the new raman spectroscopy probes received from Savannah River. The measurements that have been made to date indicate a significant reduction in the interference caused by the silicon raman response of the fiber but the improvement in overall signal to noise is minimal. Additional testing is required to fully quantitate the effects. A new 500 mWatt laser is being prepared in the 305 Laboratory. The frequency is doubled which should increase the power being delivered to the sample by three times. In addition, the efficiency is much greater and therefore should not contribute to the temperature instability factors noticed in the current system.

Planned Work For Subsequent Months. The fourth quarter commitments, associated with improving the quality and quantity of sampling, are

outlined in Table 2. A detailed sampling schedule for forth quarter events are outlined in the Integrated Sampling Schedule 3.4. More detail of the upcoming commitments can be found in the *Implementation Plan*.

Issues. The lateness of the re-start of the first rotary truck (Commitment 3.6) has a potential of deferring ten cores planned to be taken in FY 1994 into FY 1995. The focus continues to be on getting this truck through the operational review as soon as possible. WHC review is anticipated to be complete July 11, 1994, with DOE-RL review completing 10 working days later. The truck will be deployed to tank 241-C-106 as soon as approval is granted. The unavailability of the rotary truck has also delayed certification of a second rotary crew. It is extremely unlikely that much of the schedule lost can be recovered in FY 1994. The current date for a second rotary crew is August 31, 1994. (References 9 and 10).

The two new rotary truck systems are not anticipated to be ready for field sampling until second quarter 1995. Delays were experienced with getting delivery of the Longyear drill motors. They are physically onsite now and Kaiser Engineers Hanford are evaluating ways to expedite the schedule. The additional exhauster systems are also behind schedule.

The push mode truck had core recovery issues in the first two tanks (241-C-111 and 241-C-108). Different bit designs are being tested and problems with premature shear pin failure have been identified and addressed. Detailed reviews indicated that shallow tanks (less than 25 in. waste) and top segments provided the most difficulty. As a result, a new 20 in. auger has been developed and tested and necessary changes to shipping and laboratory procedures are underway for late July/early August deployment. This system will be used on all tanks with less than 25 in. of waste and for obtaining first segments in tanks to be push mode sampled.

Development of direct bit temperature monitoring capability (Commitment 3.16) is behind schedule because of unanticipated difficulties in adapting the Sandia National Laboratory concept to the rotary truck design and operation. To address the schedule slippage, direct interaction of Sandia with rotary truck operations personnel was increased to provide more specific design requirements to the technology developers.

Development and deployment of a cone penetrometer system (Commitment 3.13) is being carried out by WHC with joint EM-30 and EM-50 funding. A response to a request for proposal from a commercial firm for FY 1995 currently is being evaluated. However, cone penetrometer work is likely to be adversely affected by several funding problems. Capital funds within the Characterization Program have been redirected to the higher priority rotary trucks. Anticipated FY-94 EM-50 capital funding also has been redirected. Also, only one bid was received and it was substantially more than had been expected. Consequently, planned

commitments have been pushed into FY 1995, and EM-50 funding levels are in doubt. A phased approach to procurement has been adopted to accommodate these funding changes, but the uncertainty of sufficient capital funding in early FY 1995 will make the May 1995 Commitment 3.13 date difficult to meet. The technical approach and schedule of the cone penetrometer work is under active review to identify alternative approaches.

2.4 Streamline Tank Access

To access USQ tanks for sampling activities, an adequate safety and environmental basis must be developed. This process for tank access will be streamlined and shortened without compromising the necessary rigor.

Progress During Reporting Period. There is only one activity left (Commitment 4.3, delegation of authority to DOE-RL). Although this has received extensive review, it is still not issued. No characterization work is impacted by this activity at this time.

Planned Work For Subsequent Months. The delegation of authority is the only remaining item. It is expected to be issued within the coming quarter.

Issues. Authorization from DOE-HQ to DOE-RL is two months behind schedule. Staff continue to work to define the details supporting the specific authorization.

2.5 Improve The Quality And Quantity Of Analyses

Key areas of interest include (1) core sampling rates and laboratory capacity; (2) laboratory capacity and readiness of offsite laboratories; (3) shipping cask availability; and (4) laboratory sample exchange/evaluation (SEE) and TWRS blind sample plan programs.

Progress During Reporting Period. Commitments 5.6 and 5.7 of the *Implementation Plan*, "Evaluate Laboratory Staff Training" and "Issue Training Schedule" were completed. The evaluation showed that the training programs of both laboratories are either in compliance with all training requirements or contain elements to bring the laboratories into compliance. (Reference 16)

Upgrades continue at the Idaho National Engineering Laboratory (INEL) (Commitment 5.9) and are on schedule for startup in October 1994. Upgrades to the LANL (Commitment 5.10) for production support were stopped in April 1994, as they are not needed for the analytical development work that is planned to be performed there.

The DOE-7A milliliter Grout Sample Package (known as the 'Warthog') was transferred in June 1994 from the Grout program to the Characterization Program and is ready for use. Procurement and transfer of custody of twenty DOE-7A LANL 12B-65 Fiberboard Boxes with Lead Shielded Inner

Packaging from LANL are approximately 45 days ahead of the committed date of September 30, 1994. These containers will be used for offsite shipments of selected extruded tank farm samples. Development of additional Type A packaging is underway and on schedule.

Work continues on Commitment 5.8, procuring and Nuclear Regulatory Commission (NRC) certificate revision for the PAS-1 Type B shipping casks. These casks will be used for offsite shipments of extruded tank farm core samples. The procurement of the casks and related services is being conducted through the requisitions for (1) fabrication of two PAS-1 casks; (2) services for the design of a shielded sample carrier system and the revision of the PAS-1 NRC Certificate of Compliance; and (3) fabrication of shielded carrier systems. Delivery of the two PAS-1 Type B casks is approximately 60 days ahead of the committed date of September 30, 1994. Amendment of the safety analysis report for packaging (SARP) was issued to the NRC on July 1, 30 days ahead of schedule. NRC revision of the PAS-1 Certification of Compliance (based on approval of the SARP amendment by the NRC) is anticipated to be on schedule for a January 31, 1995 completion. The contract to fabricate the shielded sample carriers has been awarded, and delivery of the carriers is expected by mid-October, over 90 days ahead of schedule.

Planned Work For Subsequent Months. The forth quarter commitments, associated with improving the quality and quantity of analyses, are outlined in Table 2. More detail of the upcoming commitments can be found in the *Implementation Plan*.

Issues Completion of projected laboratory capacity and utilization is dependent upon finalization of DQOs and associated TCPs for waste disposal and regulatory compliance as well as finalization of TWRS projected sampling and characterization needs. There are uncertainties regarding the minimum/maximum strategy and utilization of offsite laboratories. However, the most realistic projections are that one offsite laboratory would be sufficient for analytical work. WHC has recommended that the second laboratory be used for analytical development work. Currently, the DOE is considering the WHC recommendation.

The 325 Facility went into an operational pause on April 21, 1994 to address contamination control issues. To date, two separate startup plans have been prepared and submitted to RL for review and returned with additional comments. Startup criteria has been drafted by PNL and submitted to RL for review and concurrence. Revision of a formal startup plan is proceeding against the draft startup criteria. To date, the 222-S Laboratory has been able to accommodate all analyses requested by the Characterization Program during the 325 Laboratory pause. By mid-August 1994, significant impacts may occur to the Characterization Program if the 325 Laboratory is not operational.

The startup of the new 222-S Laboratory Hot Cell addition is also behind schedule. Startup of the new 222-S Laboratory Hot Cell addition is

required for the extrusion of rotary mode samples, if the 325 Laboratory is not available.

Additional work has been identified by the 222-S Laboratories to receive the new 20 in. auger sampler and are currently being addressed by the 222-S Laboratory staff. The 325 Laboratory will be able to accept the 20 in. augers, once the laboratory is operational.

2.6 Improve Data Management

Without access to useable data in a timely manner, other improvements discussed earlier will have little value.

The ultimate goal of the Characterization Program is to provide the necessary analytical information to its data users (e.g., TWRS program elements, DOE, Ecology). Easy access to this data in a form the users can understand is essential.

Progress During Reporting Period. Surveys were sent out to potential users to gather input for Commitments 6.1 and 6.2. A data user evaluation, issued on April 29, 1994, aided in meeting Commitment 6.1, "Prepare Customer Needs Analysis." This report was issued on May 2, 1994. (Reference 17) Commitment 6.2, "Issue Data Management Improvement Plan," was completed on May 26, 1994. (References 18 and 19)

Planned Work For Subsequent Months. Specific DNFSB 93-5 Commitments, associated with improving data management, are now complete. WHC is implementing the improvements identified in the characterization Data Management Improvement Plan.

Issues. None

2.7 Change Control

The 93-5 *Implementation Plan* is based on certain assumptions, which were used to develop commitment dates. If out year significant funding, staffing levels, or mission changes occur, the original date for commitments may require modification. Any anticipated significant changes in completion dates and department commitments will be promptly brought to the attention of the DNFSB prior to passing the completion date. These changes will be formally discussed in the quarterly progress reports, including appropriate corrective action, and (where appropriate) submitted to the DNFSB as a revision to the *Implementation Plan*.

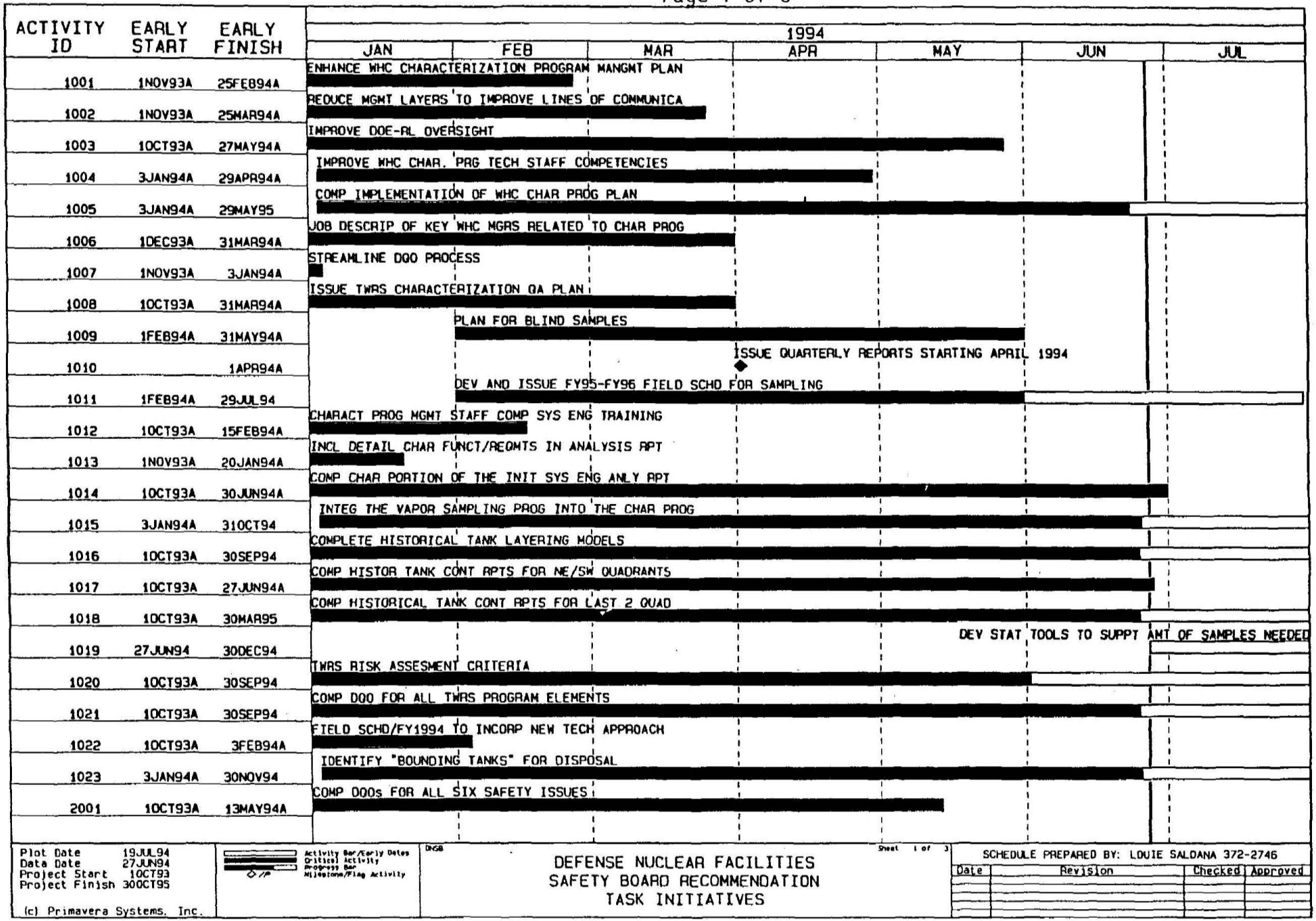
Progress During Reporting Period. No activities in quarter statused.

Planned Work For Subsequent Months. No activities scheduled; however, the use of one or two offsite laboratories may be an item to be considered, dependent on the outcome of the DOE assessment. In addition, the alternate logic for meeting safety and disposal needs may

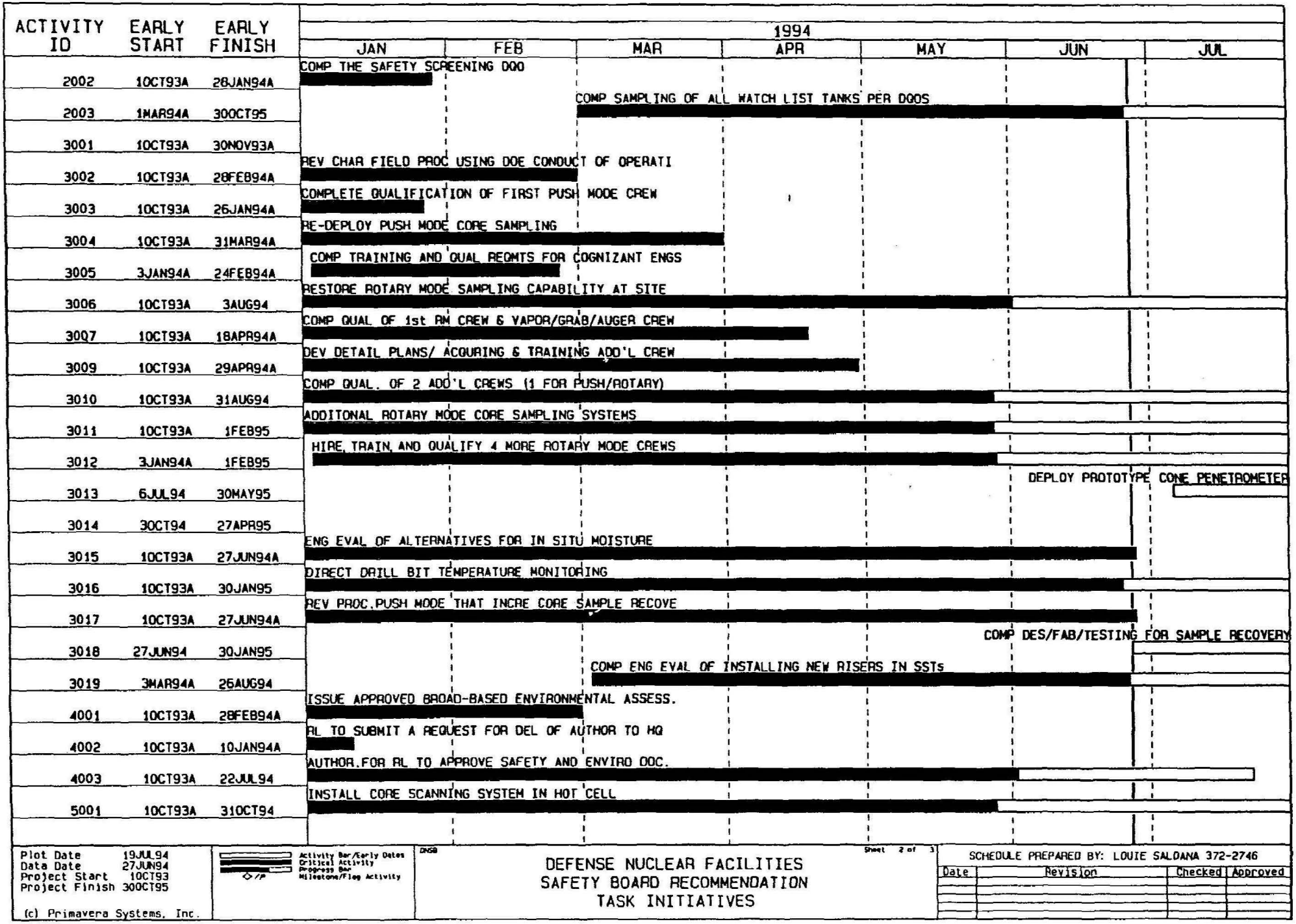
result in significant changes to the existing DQOs, especially for safety and disposal issues. As was mentioned in Section 2.1, stakeholders are being contacted for meetings in August and September to determine if there are better alternatives to both the data needs (amount, technique, and timing) than has been specified in the DQOs issued in the last six months. These changes may or may not affect the overall *93-5 Implementation Plan*.

Issues. If the rotary and push mode truck schedules are not improved via productivity gains, over four months will be lost in the original schedule. However, until all major DQOs are completed and/or potentially modified by the strategy review addressed above, the actual impact to the overall schedule cannot be addressed.

Attachment



Schedule 3.1


ACTIVITY ID
EARLY START
EARLY FINISH
1994
JAN
FEB
MAR
APR
MAY
JUN
JUL
2002 10CT93A 28JAN94A COMP THE SAFETY SCREENING DQO
2003 1MAR94A 30OCT95 COMP SAMPLING OF ALL WATCH LIST TANKS PER DQOS
3001 10CT93A 30NOV93A
3002 10CT93A 28FEB94A REV CHAR FIELD PROC USING DOE CONDUCT OF OPERATI
3003 10CT93A 26JAN94A COMPLETE QUALIFICATION OF FIRST PUSH MODE CREW
3004 10CT93A 31MAR94A RE-DEPLOY PUSH MODE CORE SAMPLING
3005 3JAN94A 24FEB94A COMP TRAINING AND QUAL REQMTS FOR COGNIZANT ENGS
3006 10CT93A 3AUG94 RESTORE ROTARY MODE SAMPLING CAPABILITY AT SITE
3007 10CT93A 18APR94A COMP QUAL OF 1st RM CREW & VAPOR/GRAB/AUGER CREW
3009 10CT93A 29APR94A DEV DETAIL PLANS/ ACQUIRING & TRAINING ADD'L CREW
3010 10CT93A 31AUG94 COMP QUAL. OF 2 ADD'L CREWS (1 FOR PUSH/ROTARY)
3011 10CT93A 1FEB95 ADDITONAL ROTARY MODE CORE SAMPLING SYSTEMS
3012 3JAN94A 1FEB95 HIRE, TRAIN, AND QUALIFY 4 MORE ROTARY MODE CREWS
3013 6JUL94 30MAY95 DEPLOY PROTOTYPE CONE PENETROMETER
3014 30CT94 27APR95
3015 10CT93A 27JUN94A ENG EVAL OF ALTERNATIVES FOR IN SITU MOISTURE
3016 10CT93A 30JAN95 DIRECT DRILL BIT TEMPERATURE MONITORING
3017 10CT93A 27JUN94A REV PROC.PUSH MODE THAT INCRE CORE SAMPLE RECOVE
3018 27JUN94 30JAN95 COMP DES/FAB/TESTING FOR SAMPLE RECOVERY
3019 3MAR94A 26AUG94 COMP ENG EVAL OF INSTALLING NEW RISERS IN SSTs
4001 10CT93A 28FEB94A ISSUE APPROVED BROAD-BASED ENVIRONMENTAL ASSESS.
4002 10CT93A 10JAN94A RL TO SUBMIT A REQUEST FOR DEL OF AUTHOR TO HQ
4003 10CT93A 22JUL94 AUTHOR.FOR RL TO APPROVE SAFETY AND ENVIRO DOC.
5001 10CT93A 31OCT94 INSTALL CORE SCANNING SYSTEM IN HOT CELL
Plot Date 19JUL94
Data Date 27JUN94
Project Start 10CT93
Project Finish 30OCT95
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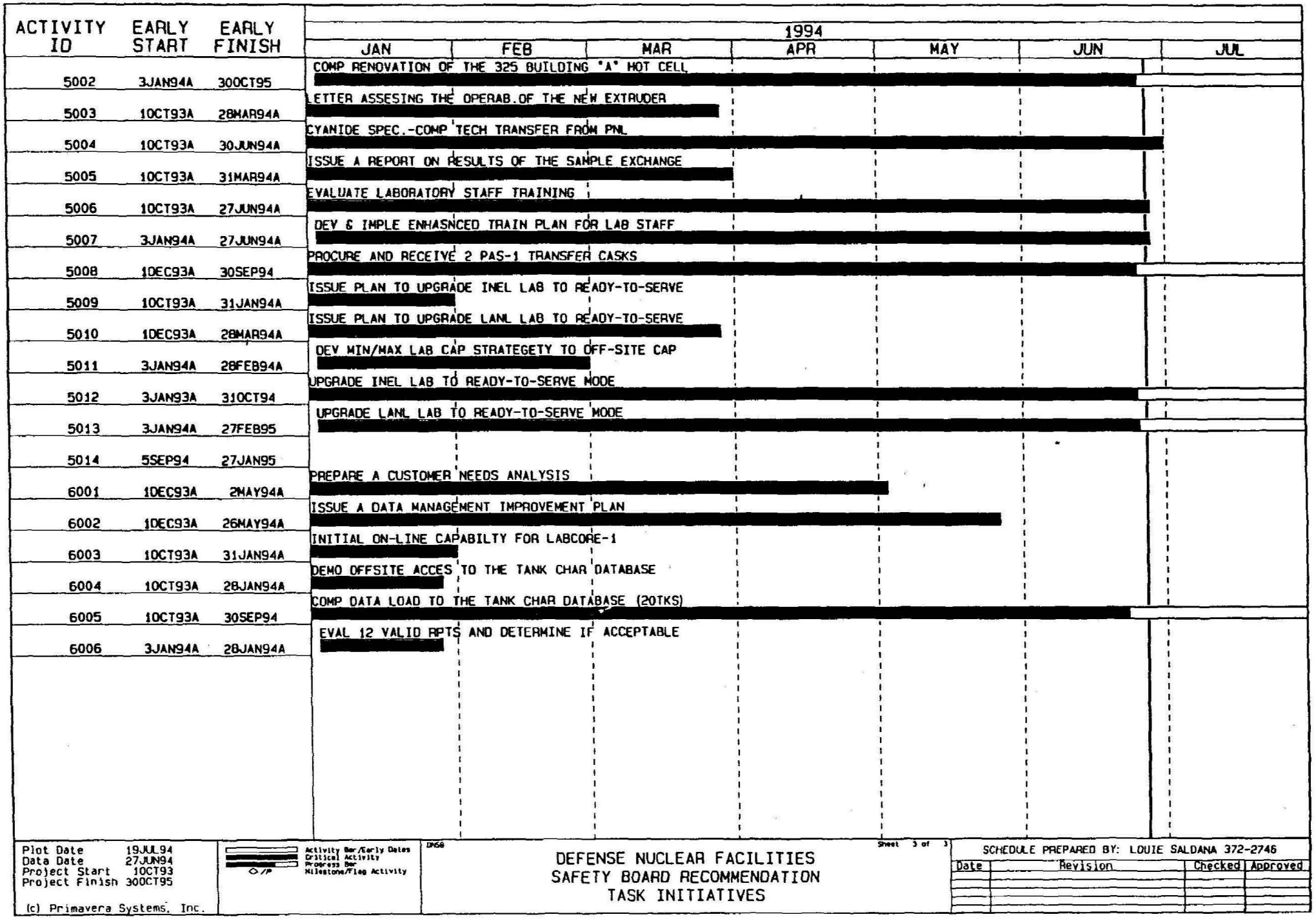
Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity
DNSB
Sheet 2 of 3
DEFENSE NUCLEAR FACILITIES
SAFETY BOARD RECOMMENDATION
TASK INITIATIVES
SCHEDULE PREPARED BY: LOUIE SALDANA 372-2746
Date
Revision
Checked
Approved

Schedule 3.1

Attachment



Schedule 3.1

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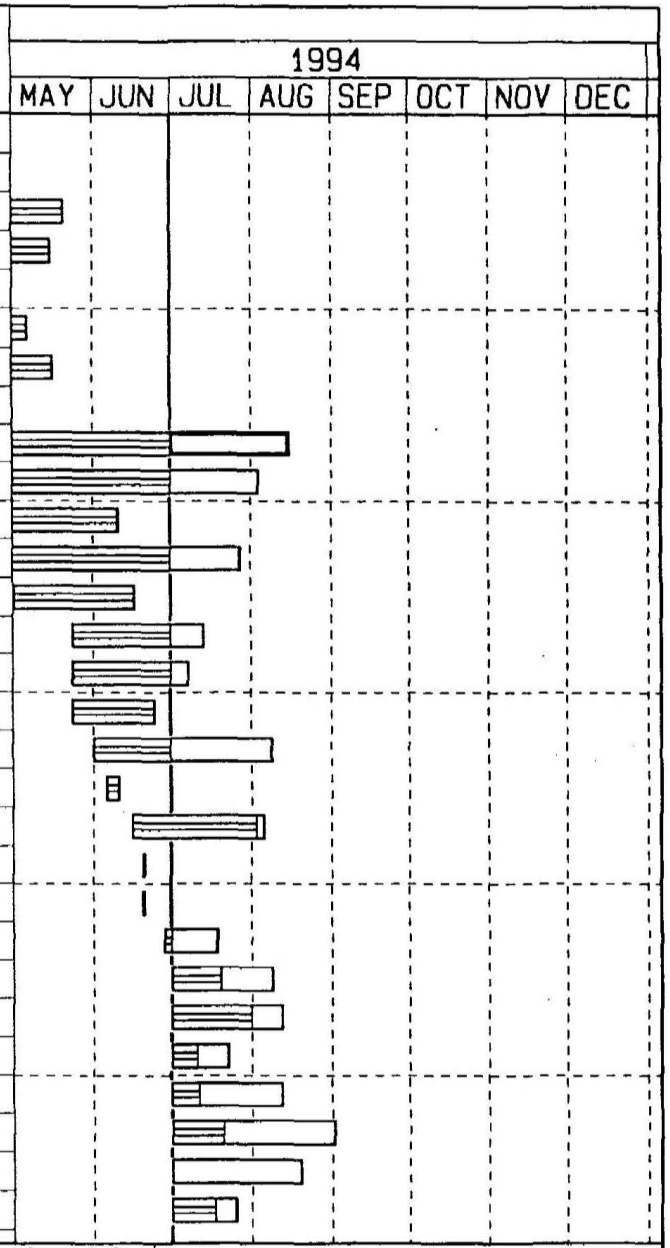
PS11095	Complete TCP C-108		24FEB94A	20APR94A
RS02095	Complete TCP C-106		24FEB94A	20MAY94A
GS52095	Complete TCP AY-102		2MAR94A	15MAY94A
GS54095	Complete TCP S-110		2MAR94A	13APR94A
AS01095	Complete TCP SY-103		3MAR94A	6MAY94A
AS03095	Complete TCP BX-101		8MAR94A	16MAY94A
GS55095	Complete TCP AN-107		14MAR94A	8APR94A
GS21095	Complete TCP AN-102 (RCRA)		15MAR94A	15AUG94
AS08095	Complete TCP BX-105		12APR94A	3AUG94
GS02095	Complete TCP BY-105	(SUSPENDED)	20APR94A	10JUN94A
PS08095	Complete TCP C-104		20APR94A	27JUL94
AS07095	Complete TCP BX-108		1MAY94A	16JUN94A
GS14095	Complete TCP S-102		24MAY94A	13JUL94
GS18095	Complete TCP T-102		24MAY94A	7JUL94
GS53095	Complete TCP T-112		24MAY94A	24JUN94A
RS03095	Complete TCP BY-104		1JUN94A	8AUG94
GS15095	Complete TCP BY-106	(SUSPENDED)	6JUN94A	10JUN94A
GS33095	Complete TCP BX-106		16JUN94A	5AUG94
GS07095	Complete TCP T-107	(CANCELLED)	20JUN94A	20JUN94A
GS10095	Complete TCP T-104	(CANCELLED)	20JUN94A	20JUN94A
PS02095	Complete TCP SY-103		28JUN94A	18JUL94
AS05095	Complete TCP B-102		1JUL94A	8AUG94
AS06095	Complete TCP AX-104		1JUL94A	12AUG94
AS09095	Complete TCP TX-118		1JUL94A	22JUL94
AS10095	Complete TCP AX-102		1JUL94A	12AUG94
AS11095	Complete TCP A-104		1JUL94A	1SEP94
AS99095	Complete TCP C-102		1JUL94A	19AUG94
GS08095	Complete TCP U-107		1JUL94A	25JUL94



Plot Date 7JUL94
Data Date 1JUL94
Project Start 10CT93
Project Finish 10JUL96

(c) Primavera Systems, Inc

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

CHA1

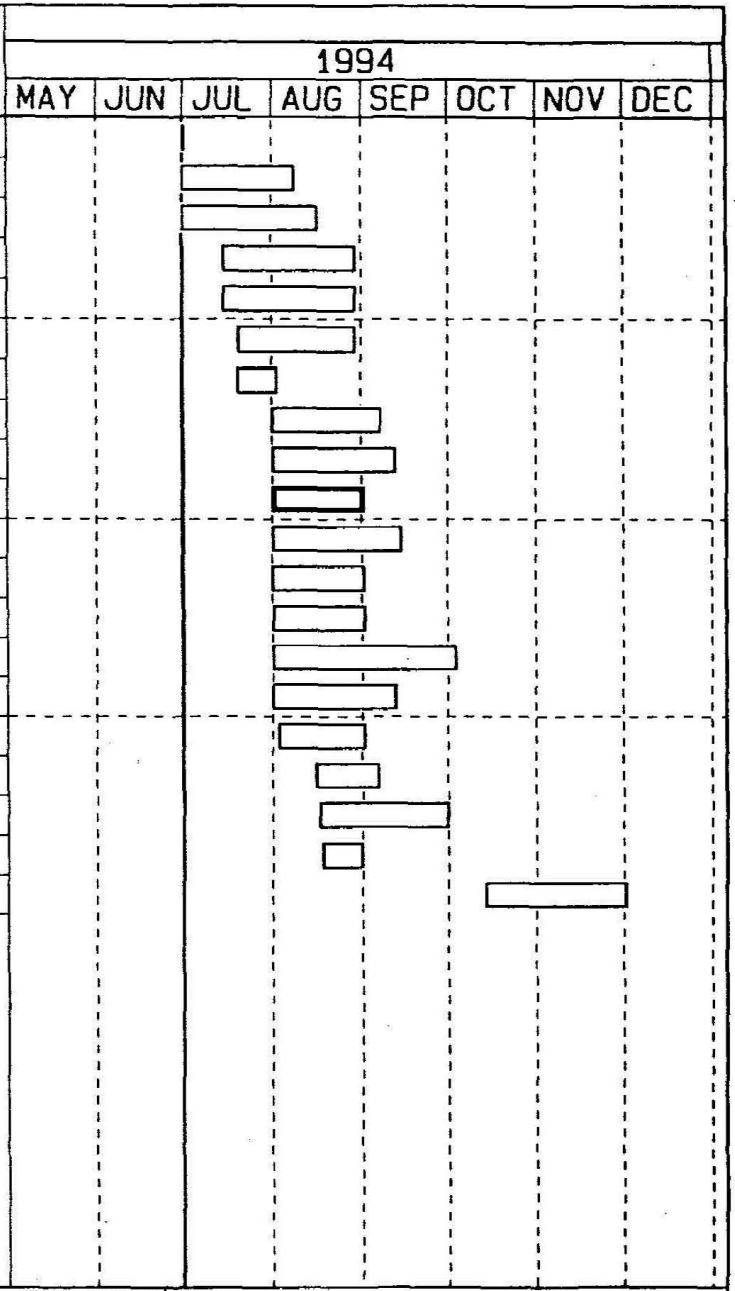
Sheet 1 of 2

TANK FARMS OPERATIONS
PREL DRAFT REBASELINE SCHED
TCP Schedule C. Haller\R. Schreiber

DA Healey 372-3698 for D. Hamilton 373-0259

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH
GS41095	Complete TCP BY-103 (HOLD)	1JUL94A	1JUL94A
PS05095	Complete TCP C-103	1JUL94A	8AUG94
PS25095	Complete TCP C-105	1JUL94A	16AUG94
PS06095	Complete TCP AY-102	15JUL94	29AUG94
PS20095	Complete TCP AN-107	15JUL94	29AUG94
GS06095	Complete TCP AZ-102 (RCRA)	20JUL94	29AUG94
GS09095	Complete TCP U-106	20JUL94	2AUG94
AS12095	Complete TCP U-107	1AUG94	7SEP94
GS44095	Complete TCP AY-101 (RCRA)	1AUG94	12SEP94
GS87095	Complete TCP AN-107 (RCRA)	1AUG94	1SEP94
PS21095	Complete TCP BX-102	1AUG94	14SEP94
PS22095	Complete TCP T-101	1AUG94	1SEP94
PS24095	Complete TCP AY-101	1AUG94	1SEP94
RS01095	Complete TCP BY-105	1AUG94	30CT94
RS04095	Complete TCP BY-106	1AUG94	12SEP94
AS04095	Complete TCP AW-101	3AUG94	1SEP94
GS05095	Complete TCP AW-104 (RCRA)	16AUG94	6SEP94
RS05095	Complete TCP U-111	17AUG94	30SEP94
GS24095	Complete TCP T-111	18AUG94	31AUG94
RS06095	Complete TCP U-106	14OCT94	1DEC94



Plot Date 7JUL94
Data Date 1JUL94
Project Start 10CT93
Project Finish 10JUL96

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Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

CHA1

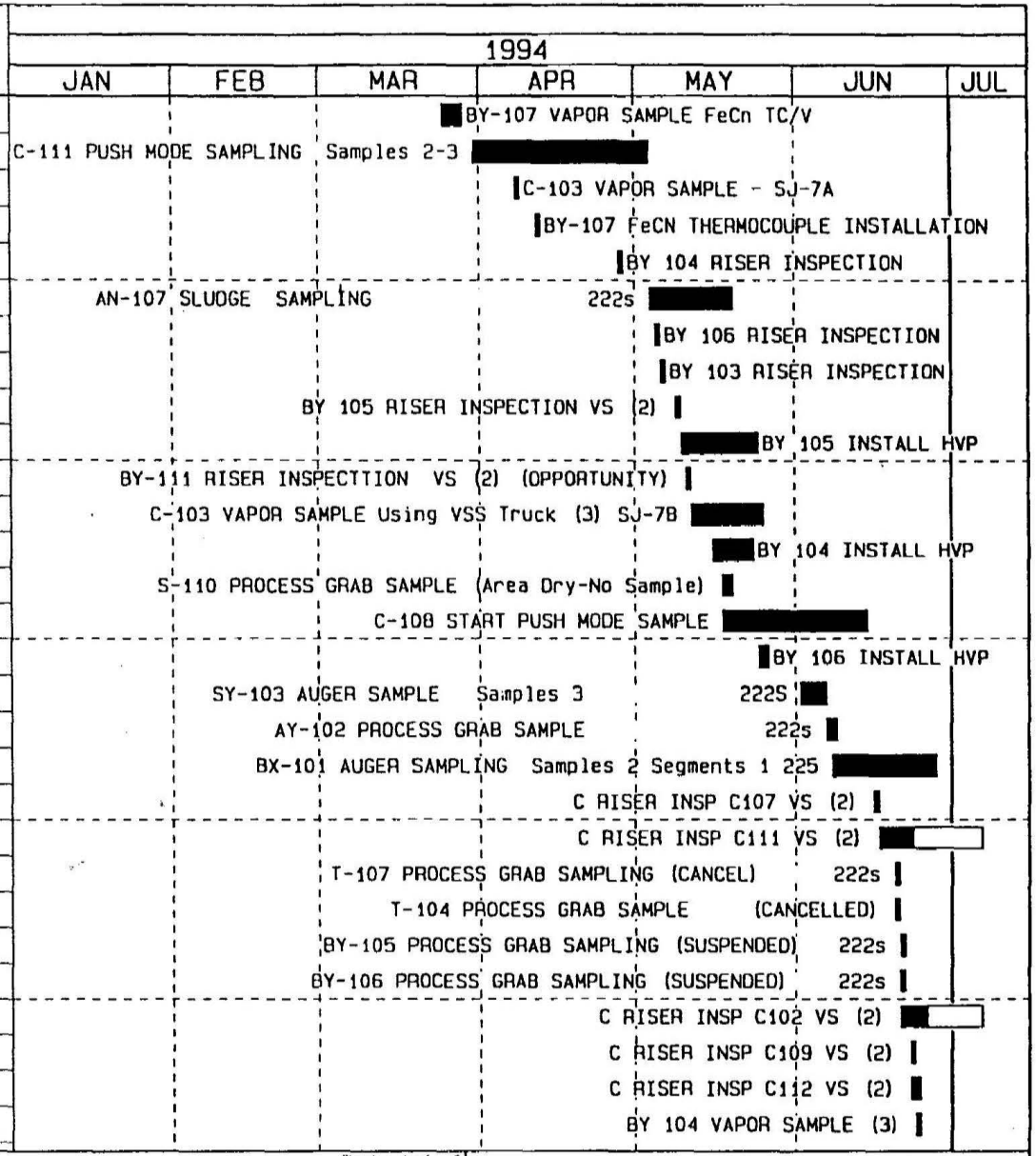
Sheet 2 of 2

TANK FARMS OPERATIONS
PREL DRAFT REBASELINE SCHED
TCP Schedule C. Haller\R. Schreiber

DA Healey 372-3698 for D. Hamilton 373-0259

Date	Revision	Checked	Approved

ACTIVITY ID	EARLY START	EARLY FINISH	REM DUR	JCS
VS97-4	25MAR94A	28MAR94A	0	2E-94-0203
PS01-4	31MAR94A	3MAY94A	0	2E-92-1256
VS47-4	8APR94A	8APR94A	0	2E-93-0447
TC05-4	12APR94A	12APR94A	0	2E-93-1396
VSE2-3	28APR94A	28APR94A	0	2E-93-0203
GS55-4	4MAY94A	19MAY94A	0	2E-94-0066
VSE5-3	5MAY94A	5MAY94A	0	2E-94-0203
VSE3-3	6MAY94A	6MAY94A	0	2E-94-0203
VSE4-3	9MAY94A	9MAY94A	0	2E-93-0276
HP11-4	10MAY94A	24MAY94A	0	2E-93-0276
VS52-3	11MAY94A	11MAY94A	0	2E-94-0203
VS0H-4	12MAY94A	25MAY94A	0	2E-94-0562
HP13-4	16MAY94A	23MAY94A	0	2E-93-0276
GS54-4	18MAY94A	19MAY94A	0	2W-94-0348
PS11-4	18MAY94A	14JUN94A	0	2E-92-1257
HP14-4	25MAY94A	26MAY94A	0	2E-93-0276
AS01-4	2JUN94A	6JUN94A	0	2W-93-1125
GS52-4	7JUN94A	8JUN94A	0	2E-94-0065
AS03-4	8JUN94A	27JUN94A	0	2E-93-2241
VS30-B	16JUN94A	16JUN94A	0	2E-93-2006
VS30-A	17JUN94A	6JUL94	2	2E-93-2006
GS07-4	20JUN94A	20JUN94A	0	
GS10-4	20JUN94A	20JUN94A	0	
GS02-4	21JUN94A	21JUN94A	0	2E-94-0835
GS15-4	21JUN94A	21JUN94A	0	2E-94-0684
VS30-3	21JUN94A	6JUL94	2	2E-93-2006
VS30-6	23JUN94A	23JUN94A	0	2E-93-2006
VS30-9	23JUN94A	24JUN94A	0	2E-93-2006
VSE2-5	24JUN94A	24JUN94A	0	2E-93-0276



Plot Date 14JUL94
Data Date 1JUL94
Project Start 10OCT93
Project Finish 10JUL96

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

CHA1

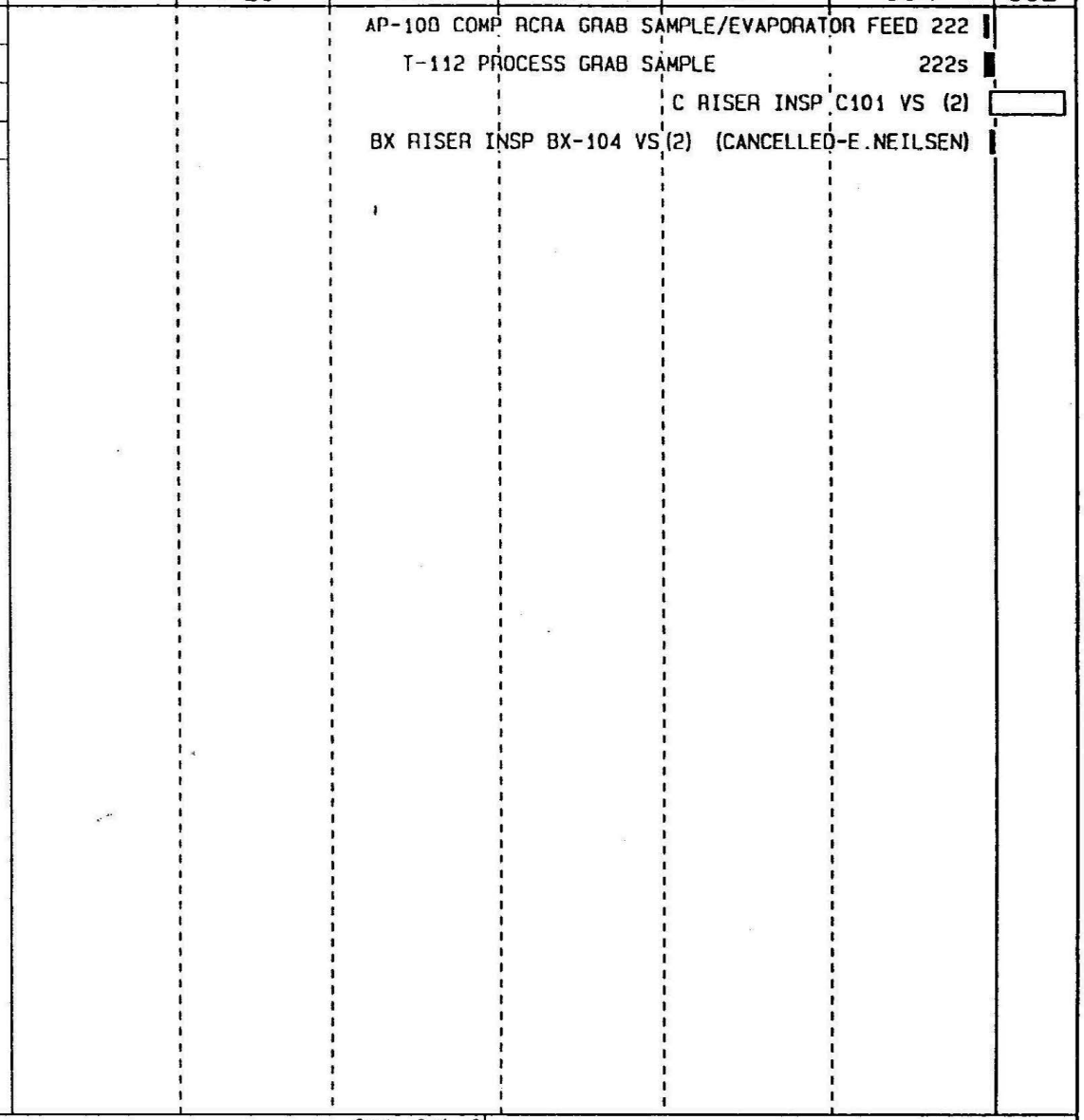
Sheet 1 of 2

TANK FARM OPERATIONS
INTEGRATED SAMPLING SCHEDULE
30 JUNE 1994

Developed by D.Healey for D. Hamilton

Date	Revision	Checked	Approved

ACTIVITY ID	EARLY START	EARLY FINISH	REM DUR	JCS
GS51-4	29JUN94A	29JUN94A	0	2E-94-0064
GS53-4	29JUN94A	30JUN94A	0	2W-94-0670
VS30-2	30JUN94A	13JUL94	5	2E-93-2006
VS03-5	30JUN94A	30JUN94A	0	2E-94-0567



Plot Date 14JUL94
Data Date 1JUL94
Project Start 10CT93
Project Finish 10JUL96

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

CHAI

Sheet 2 of 2

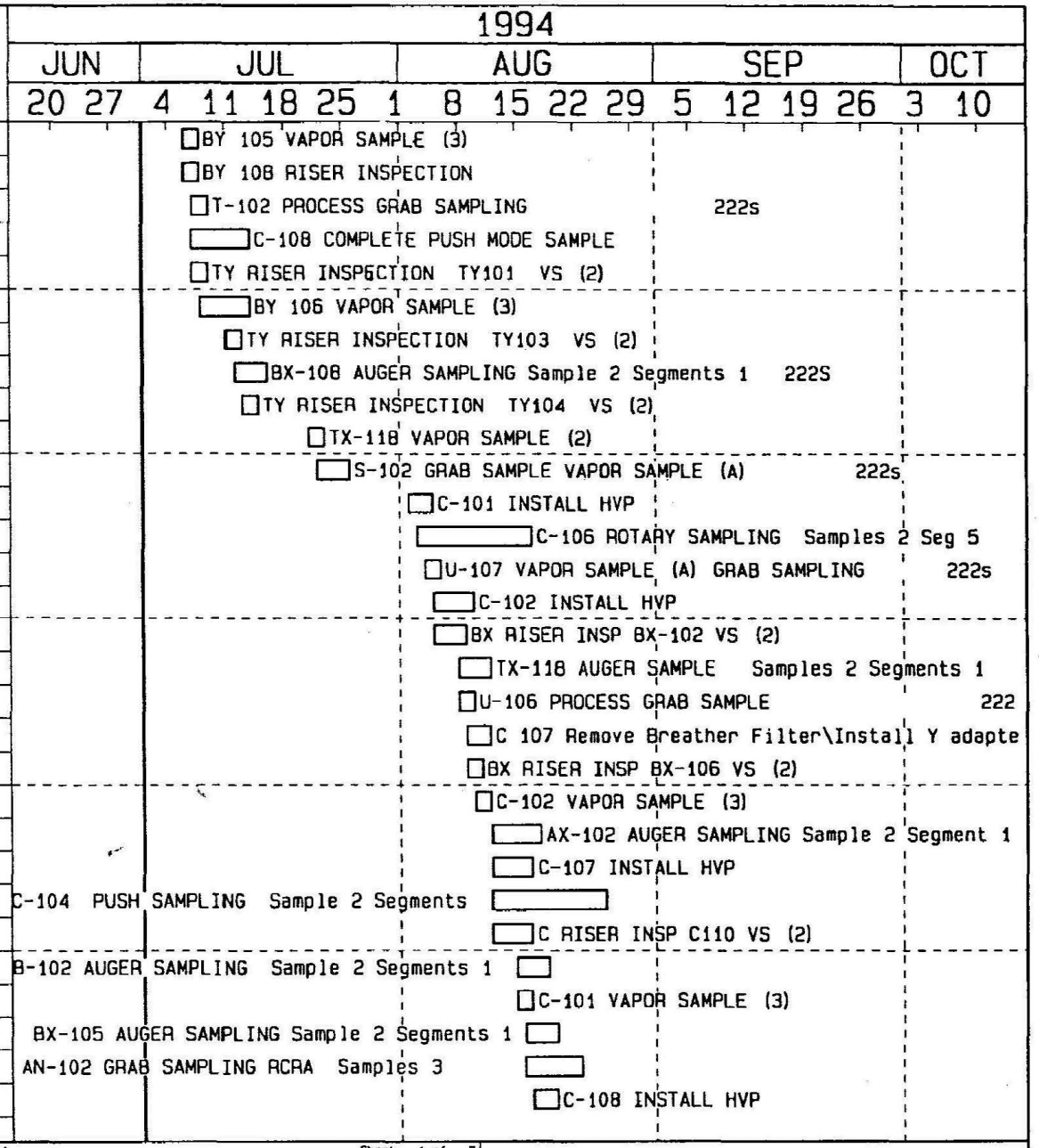
TANK FARM OPERATIONS
INTEGRATED SAMPLING SCHEDULE
30 JUNE 1994

Developed by D.Healey for D. Hamilton

Date	Revision	Checked	Approved

3.1 Upcoming Sampling Schedule for 4th Quarter Activities
July 1 - September 31, 1994

ACTIVITY ID	EARLY START	EARLY FINISH	REM DUR.	JCS
VSE4-5	6JUL94	7JUL94	2	2E-93-0276
VSE6-3	6JUL94	7JUL94	2	2E-94-0203
GS18-4	7JUL94	8JUL94	2	2W-94-0513
PS11-5	7JUL94	13JUL94	5	2E-92-1257
VS82-4	7JUL94	8JUL94	2	2W-94-0504
VSE5-5	8JUL94	13JUL94	4	2E-93-0276
VS82-5	11JUL94	12JUL94	2	2W-94-0504
AS07-4	12JUL94	15JUL94	4	2E-94-0571
VS82-6	13JUL94	14JUL94	2	2W-94-0504
VS67-4	21JUL94	22JUL94	2	2W-94-0506
GS14-4	22JUL94	25JUL94	2	2W-94-0674
HP08-4	2AUG94	4AUG94	3	2E-94-0659
RS02-4	3AUG94	16AUG94	10	2E-93-2200
GS08-4	4AUG94	5AUG94	2	2W-94-0755
HP08-5	5AUG94	9AUG94	3	2E-94-0659
VSD3-4	5AUG94	8AUG94	2	2E-94-0567
AS09-4	8AUG94	11AUG94	4	2W-94-0621
GS09-4	8AUG94	9AUG94	2	2W-94-0754
VS29-4	9AUG94	11AUG94	3	2E-94-0367
VSD3-6	9AUG94	10AUG94	2	2E-94-0567
VS02-4	10AUG94	11AUG94	2	2E-94-0660
AS10-4	12AUG94	17AUG94	4	2E-94-0701
HP08-6	12AUG94	16AUG94	3	2E-94-0659
PS08-4	12AUG94	25AUG94	10	2E-92-1810
VS30-7	12AUG94	16AUG94	3	2E-93-2006
AS05-4	15AUG94	18AUG94	4	2E-93-2242
VS02-3	15AUG94	16AUG94	2	2E-94-0660
AS08-4	16AUG94	19AUG94	4	2E-94-0570
GS21-4	16AUG94	22AUG94	5	2E-94-0671
HP08-8	17AUG94	19AUG94	3	2E-94-0659



Plot Date 13JUL94
Data Date 1JUL94
Project Start 10CT93
Project Finish 10JUL96

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

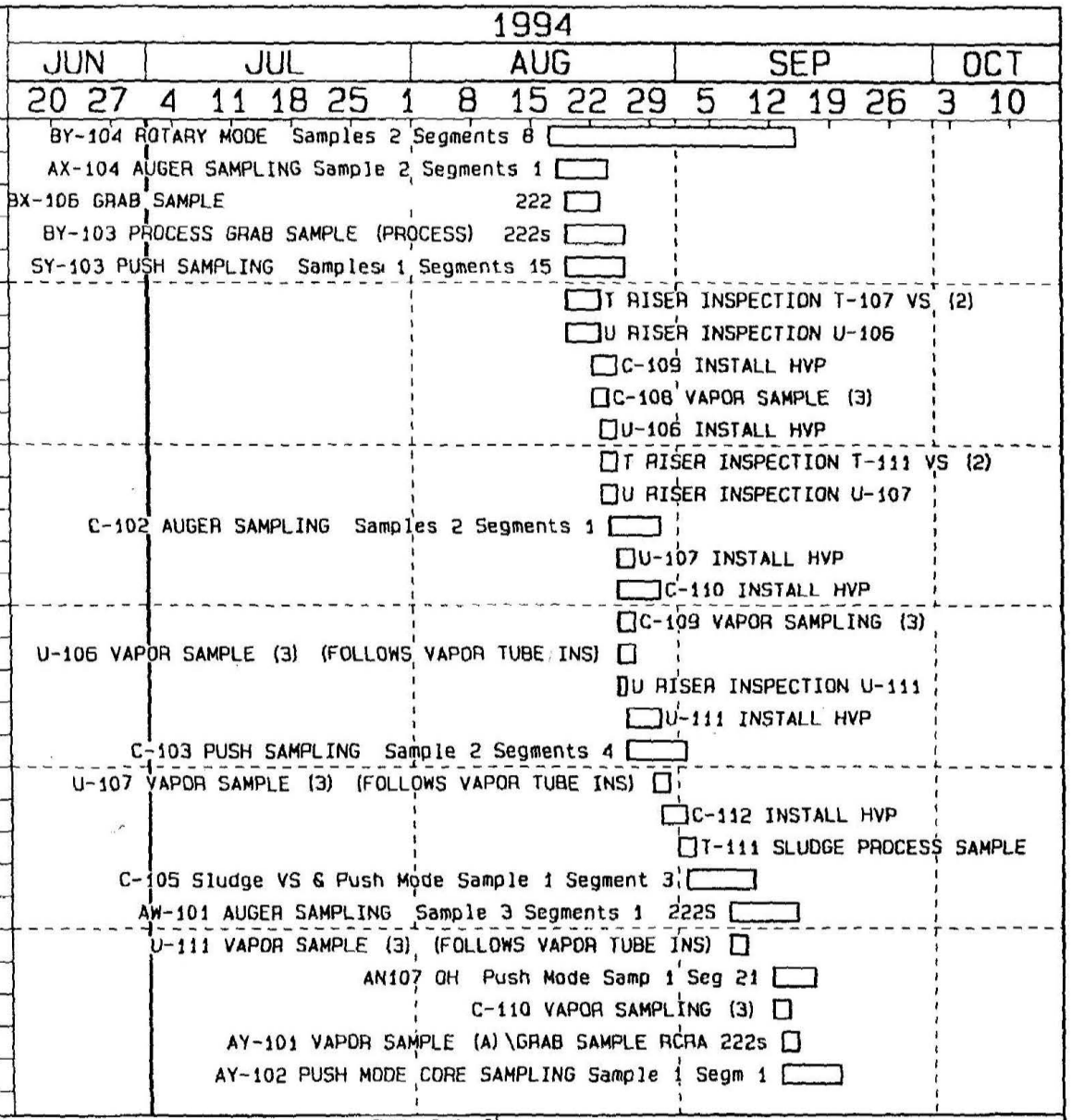
CHA1 Sheet 1 of 3

TANK FARM OPERATIONS
INTEGRATED SAMPLING SCHEDULE
1 JULY 1994 - 30 SEP 1994

Developed by D.Healey for D. Hamilton

Date	Revision	Checked	Approved

ACTIVITY ID	EARLY START	EARLY FINISH	REM DUR	JCS
RS03-4	17AUG94	14SEP94	20	2E-94-0807
AS06-4	18AUG94	23AUG94	4	2E-94-0702
GS33-4	19AUG94	22AUG94	2	2E-94-0850
GS41-4	19AUG94	25AUG94	5	2E-94-0762
PS02-4	19AUG94	25AUG94	5	2W-94-0183
VS33-4	19AUG94	22AUG94	2	2W-94-0503
VSC3-4	19AUG94	22AUG94	2	2W-94-0505
HP08-9	22AUG94	24AUG94	3	2E-94-0659
VS02-6	22AUG94	23AUG94	2	2E-94-0660
HP03-5	23AUG94	24AUG94	2	2W-94-0514
VS33-5	23AUG94	24AUG94	2	2W-94-0503
VSC3-5	23AUG94	24AUG94	2	2W-94-0505
AS99-4	24AUG94	29AUG94	4	2E-93-2194
HP03-6	25AUG94	26AUG94	2	2W-94-0514
HP08-A	25AUG94	29AUG94	3	2E-94-0659
VS02-7	25AUG94	26AUG94	2	2E-94-0660
VS89-3	25AUG94	26AUG94	2	2W-94-0515
VSC3-6	25AUG94	25AUG94	1	2W-94-0505
HP03-4	26AUG94	29AUG94	2	2W-94-0514
PS05-4	26AUG94	1SEP94	5	2E-93-0451
VS89-4	29AUG94	30AUG94	2	2W-94-0515
HP08-B	30AUG94	1SEP94	3	2E-94-0659
GS24-4	1SEP94	2SEP94	2	
PS25-4	2SEP94	9SEP94	5	2E-92-1509
AS04-4	7SEP94	14SEP94	6	2E-94-0906
VS89-5	7SEP94	8SEP94	2	2W-94-0515
PS20-4	12SEP94	16SEP94	5	2E-94-0450
VS02-8	12SEP94	13SEP94	2	2E-94-0660
GS44-4	13SEP94	14SEP94	2	2E-94-0952
PS06-4	13SEP94	19SEP94	5	



Plot Date 13JUL94
Data Date 1JUL94
Project Start 10CT93
Project Finish 10JUL96

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

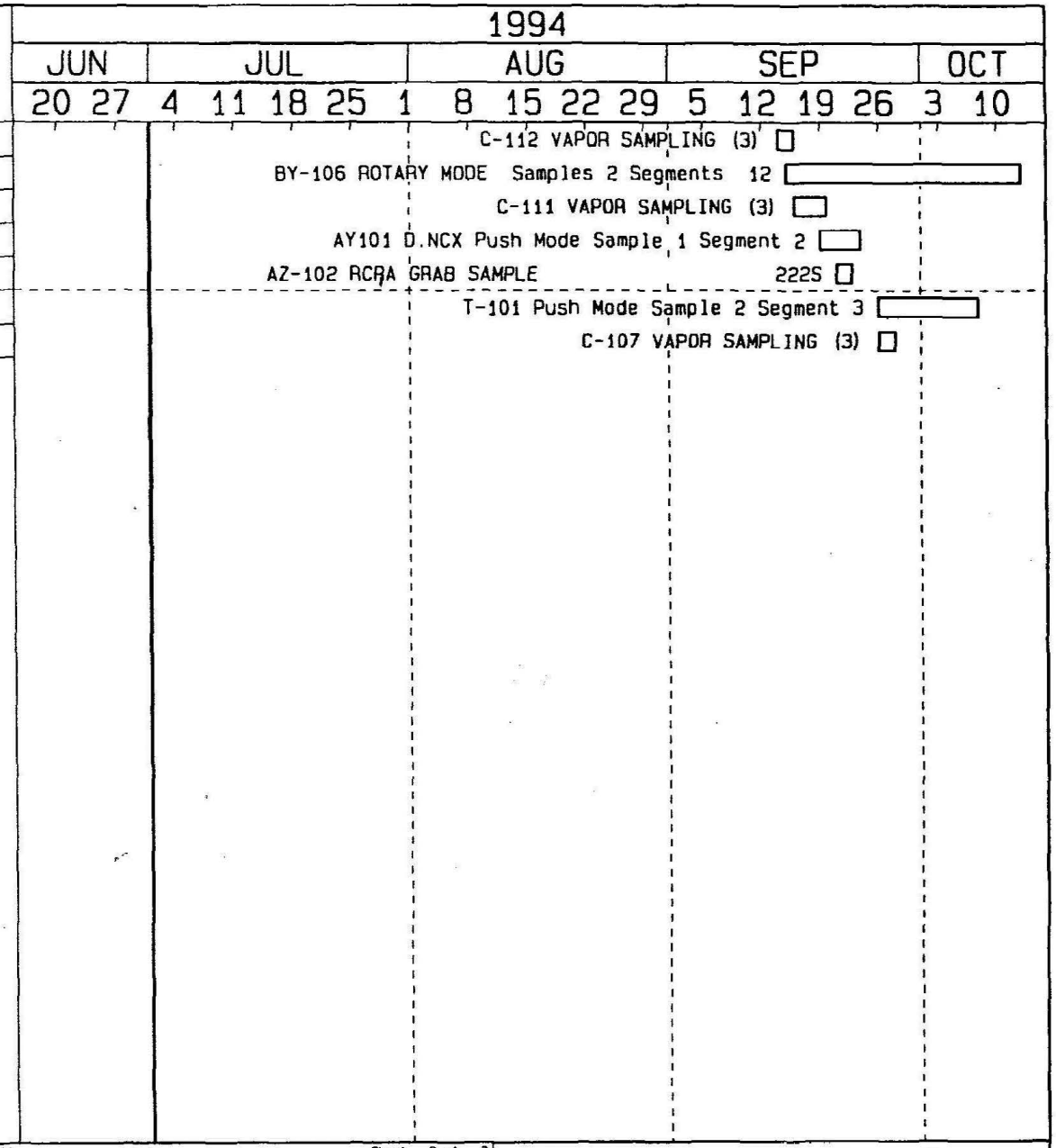
CHA1 Sheet 2 of 3

TANK FARM OPERATIONS
INTEGRATED SAMPLING SCHEDULE
1 JULY 1994 - 30 SEP 1994

Developed by D.Healey for D. Hamilton

Date	Revision	Checked	Approved

ACTIVITY ID	EARLY START	EARLY FINISH	REM DUR	JCS
VS02-9	14SEP94	15SEP94	2	2E-94-0660
RS04-4	15SEP94	120CT94	20	2E-94-0808
VS02-A	16SEP94	19SEP94	2	2E-94-0660
PS24-4	19SEP94	23SEP94	5	
GS06-4	21SEP94	22SEP94	2	2E-94-0763
PS22-4	26SEP94	70CT94	10	2W-92-1265
VS02-5	26SEP94	27SEP94	2	2E-94-0660



Plot Date 13JUL94
Data Date 1JUL94
Project Start 10CT93
Project Finish 10JUL96

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

CHA1 Sheet 3 of 3

TANK FARM OPERATIONS
INTEGRATED SAMPLING SCHEDULE
1 JULY 1994 - 30 SEP 1994

Developed by D.Healey for D. Hamilton

Date	Revision	Checked	Approved

DATA QUALITY OBJECTIVES STATUS REPORT
TWRS CHARACTERIZATION PROGRAM

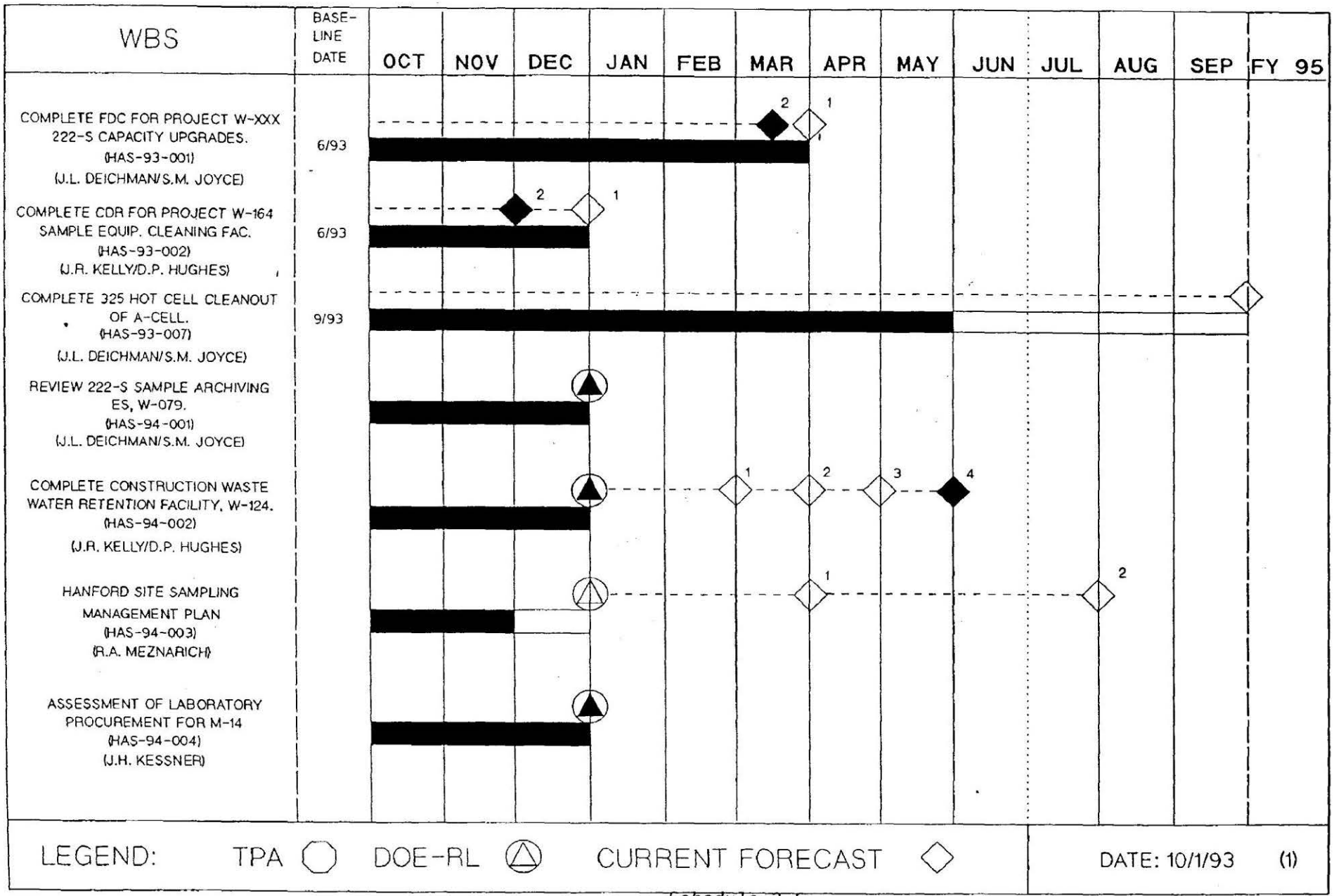
TYPE	DOCUMENT NUMBER	DOCUMENT TITLE	DUE DATE/STATUS/ TRANSMITTAL NUMBER
Ferrocyanide	WHC-SD-WM-DQO-007	Data Requirements for the Ferrocyanide Safety Issue Developed through the Data Quality Objectives Process	Due 6/30/94 Original issued 12/31/93, WHC-EP-0728 CCRN 9361056
C-106 High Heat	WHC-EP-0723	Tank 241-C-106 Sampling Data Requirements Developed Through the DQO Process	1/20/94 Complete-Issued CCRN 9450464
Safety Screening	WHC-SD-WM-SD-012	Tank Safety Screening Data Quality Objectives (Steps 1 - 5)	Due 7/15/94 as SD Document, Original Issued 2/23/94 CCRN 9451671
Vapor Rotary Mode	WHC-SD-WM-SP-003	Rotary Core Vapor Sampling Data Quality Objective	2/25/94 Complete-Issued CCRN 9451694
Waste Compatibility	WHC-SD-WM-DQO-001	Data Quality Objective for Waste Compatibility Program	3/4/94 Complete-Issued CCRN 9451694
C-103 Vapor	WHC-EP-0774	Tank 241-C-103 Vapor and Gas Sampling Data Quality Objectives	2/28/94 Complete-Issued CCRN 9451694
In-Tank Generic Vapor	WHC-SD-WM-DQO-002	Data Quality Objectives for Generic In-Tank Health and Safety Vapor Issue Resolution	3/7/94 Complete-Issued CCRN 9451694
Crust Burn Flammable Gas	WHC-SD-WM-DQO-003	Data Requirements Required Through the Data Quality Objectives Process for the Crust Burn Issue Associated with Flammable Gas Tanks	4/27/94 Rev.1 Complete-Issued CCRN 9453471
Core DST Flammable Gas	WHC-SD-WM-DQO-004	Flammable Gas Safety Program: Data Requirements for the Flammable Gas Safety Issue Developed through the Data Quality Objectives (DQO) Process	5/13/94 Complete-Issued CCRN 9453471

Gas Monitoring			Anticipated completion 7/31/94
Organics	WHC-SD-WM-DQO-006	Data Quality Objective to Support Resolution of the Organic Fuel Rich Tank Safety Issue	4/29/94 Complete-Issued CCRN 9453093
C-103 Dip Sample	PNL-8871 UC-510	Organic Layer Sampling for SST 241-C-103 Background, and Data Quality Objectives, and Analytical Plan	8/93 Complete-Issued Rev. 1 now out for comment
Retrieval	WHC-SD-WM-DQO-008	Characterization Data Needs for Development of Retrieval Equipment and Processes for SSTs and DSTs, Developed through the DQO Process	A preliminary document, WHC-SD-WM-RD-039, is being rewritten.
DST Waste Analysis Plan (WAP)	WHC-SD-WM-DQO-013	Double Shell Tank Waste Analysis Plan Data Quality Objective	Draft DQO will be available for comment on 7/11/94
Evaporator Operations			242-A Evaporator DQO being developed. To be integrated with LERF and C-018H ETF. Draft due: 8/94
Pretreatment	WHC-SD-WM-DQO-011	Pretreatment Interim Data Quality Objectives	A Preliminary DQO is drafted to permit sampling input. Formal DQO Due 8/22/94
HLW Immobilization			Due 9/06/94 Currently working with Pretreatment DQO process.
Process Control			
Waste Disposal (Drums, Equip.)			
Historical Data Acquisition Model Verification			
LLW Immobilization			Due 9/21/94 Currently working with Pretreatment DQO process.

Attachment

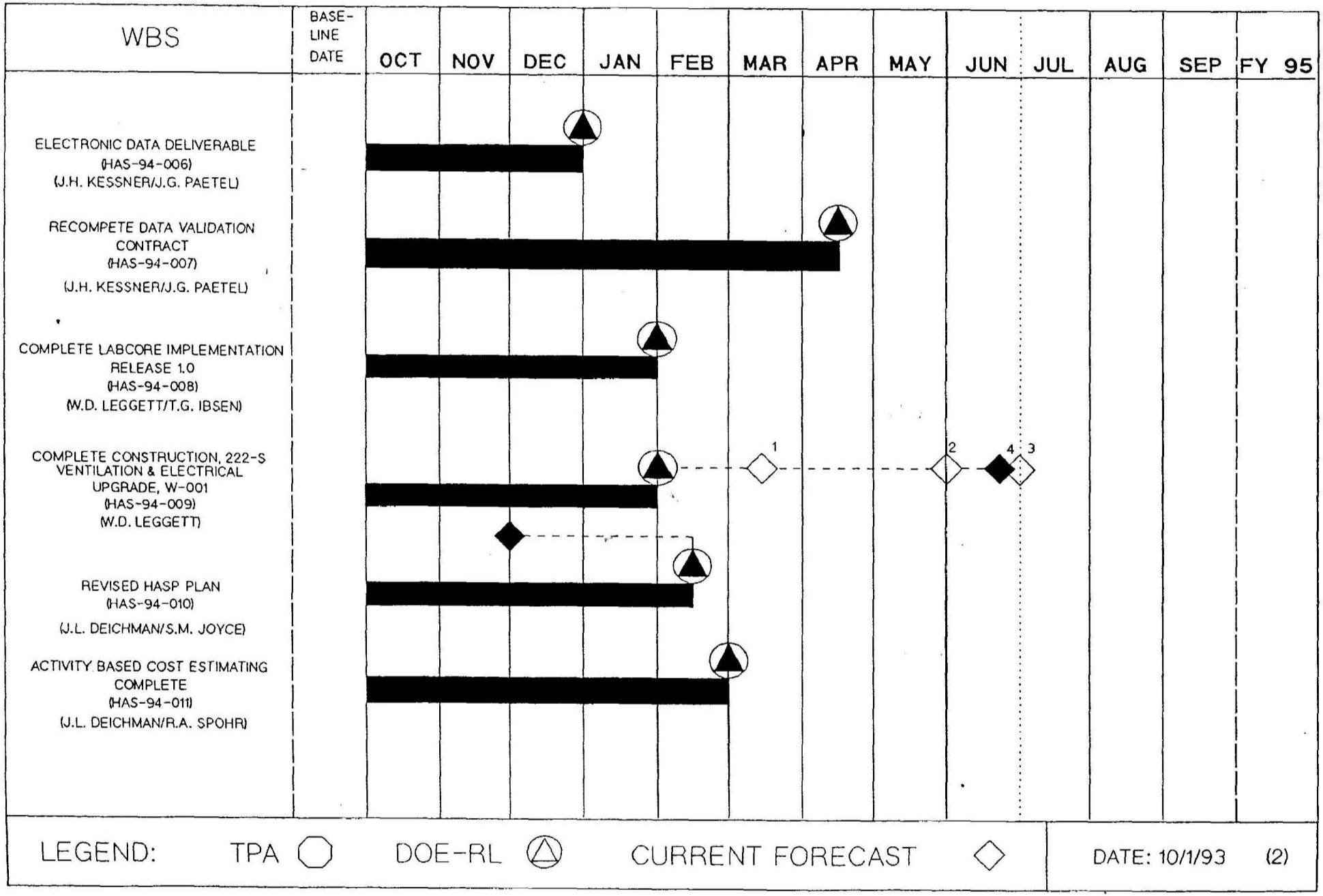
ANALYTICAL SERVICES FY 94 MILESTONE SCHEDULE

LEVEL 1



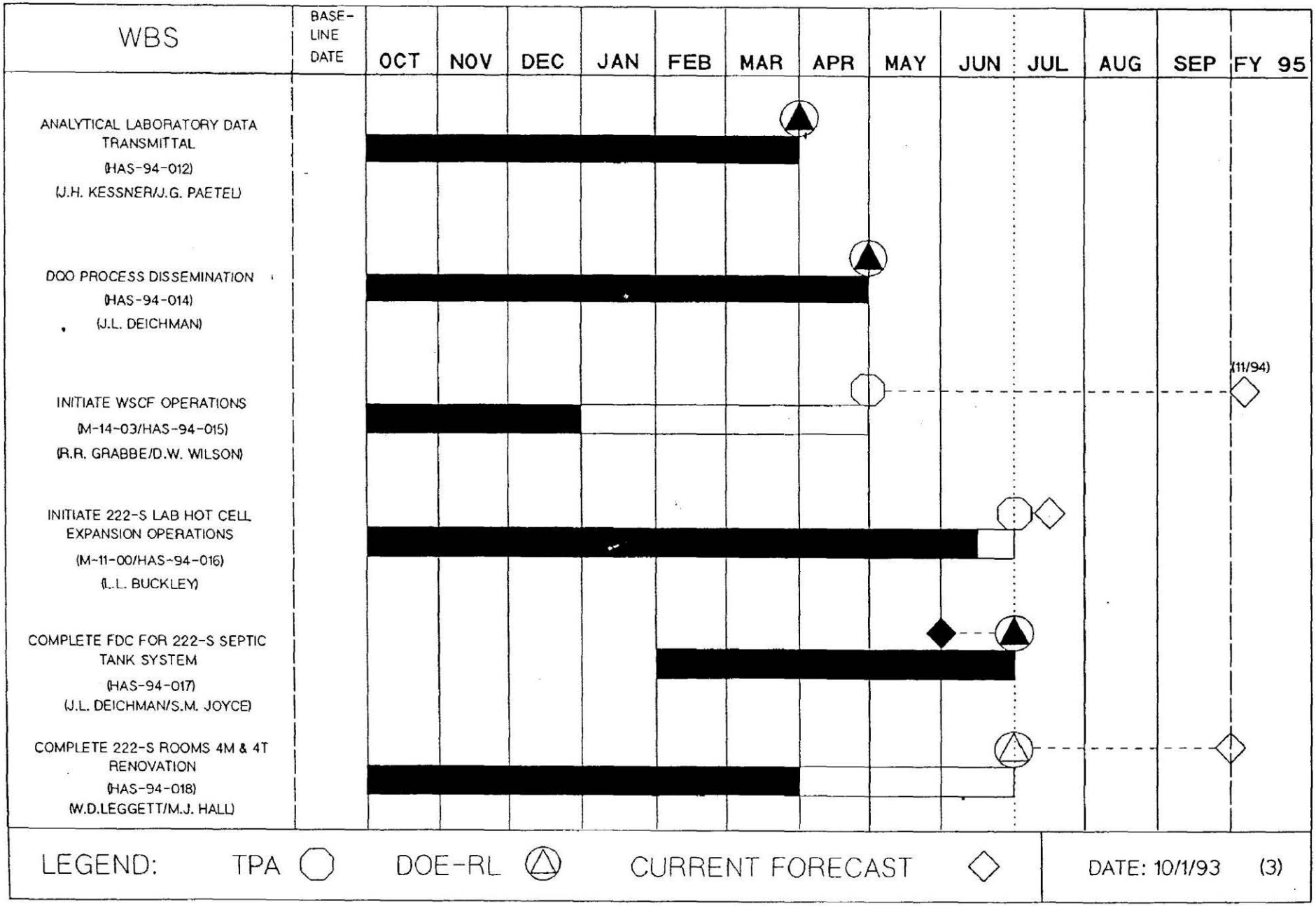
ANALYTICAL SERVICES FY 94 MILESTONE SCHEDULE

LEVEL 1



ANALYTICAL SERVICES FY 94 MILESTONE SCHEDULE

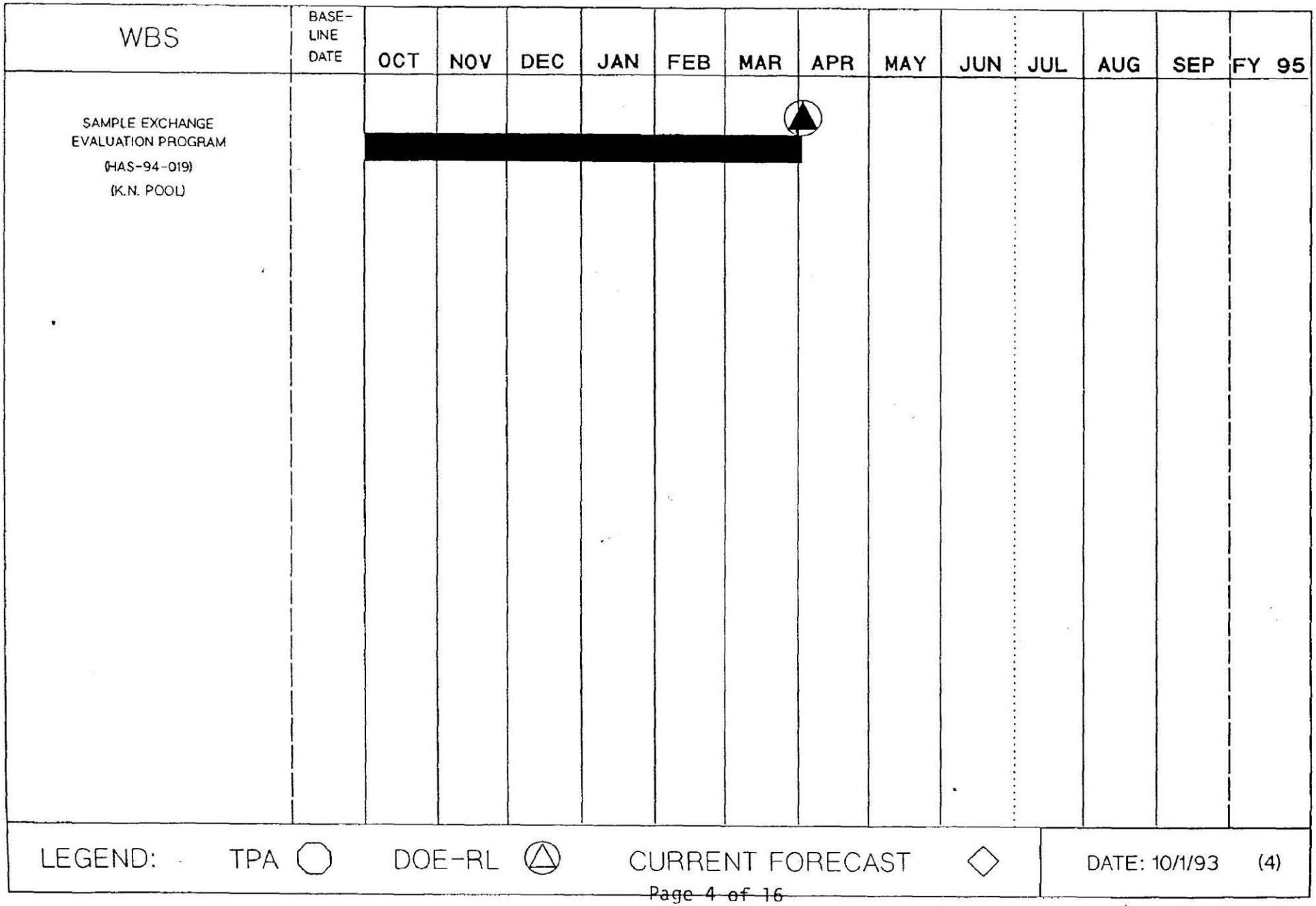
LEVEL 1



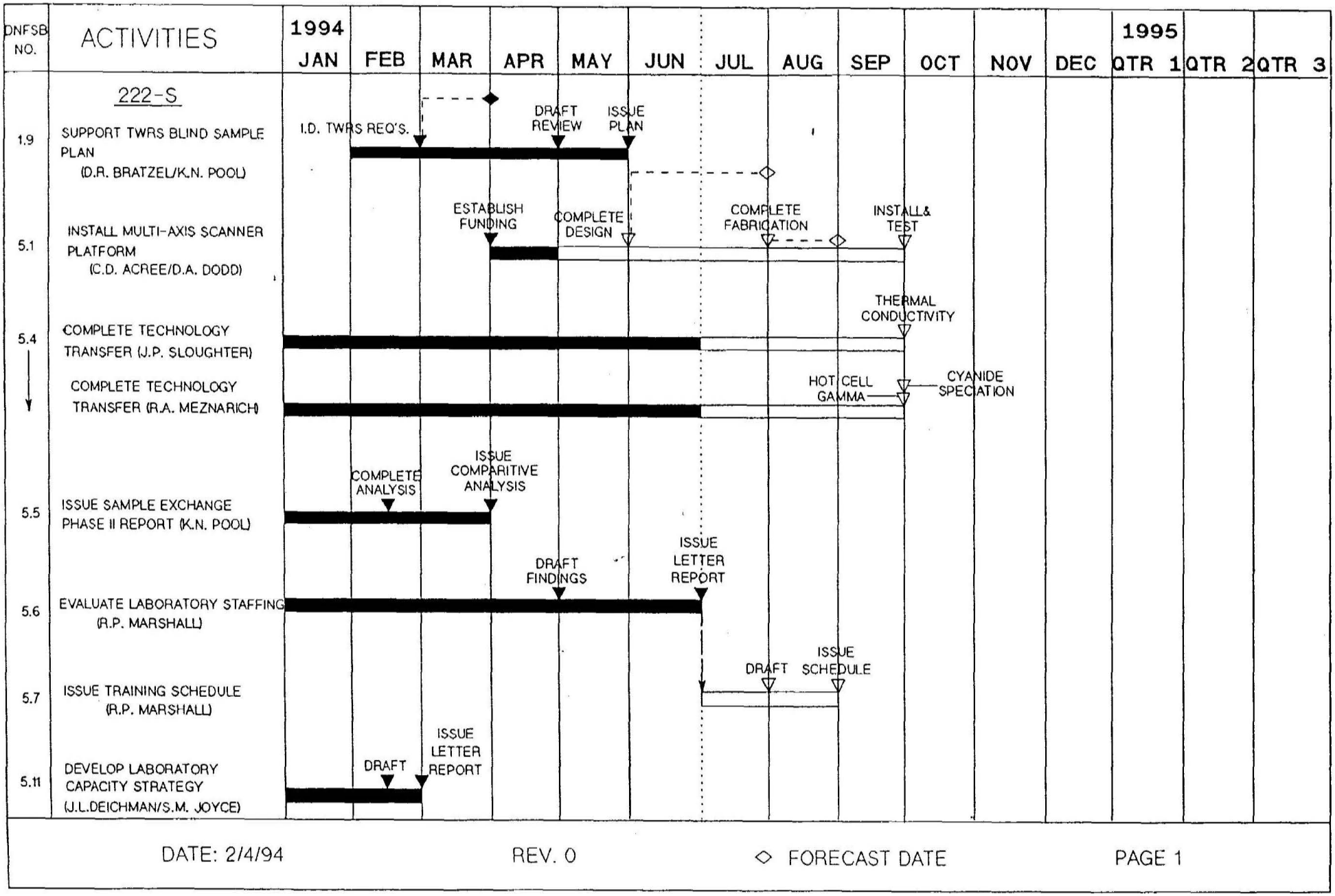
Attachment

ANALYTICAL SERVICES FY 94 MILESTONE SCHEDULE

LEVEL 1



LABORATORY SUPPORT FOR DNFSB



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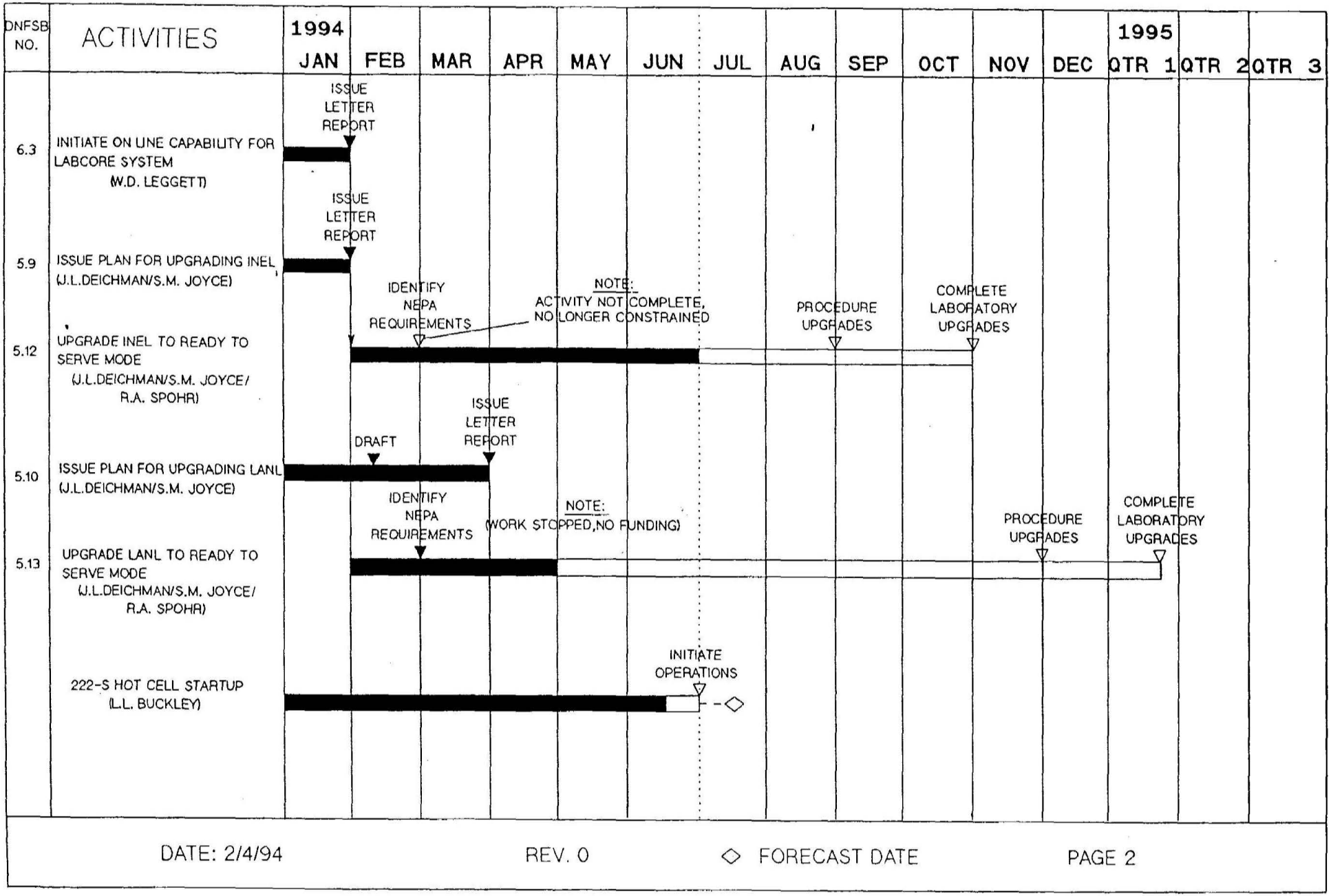
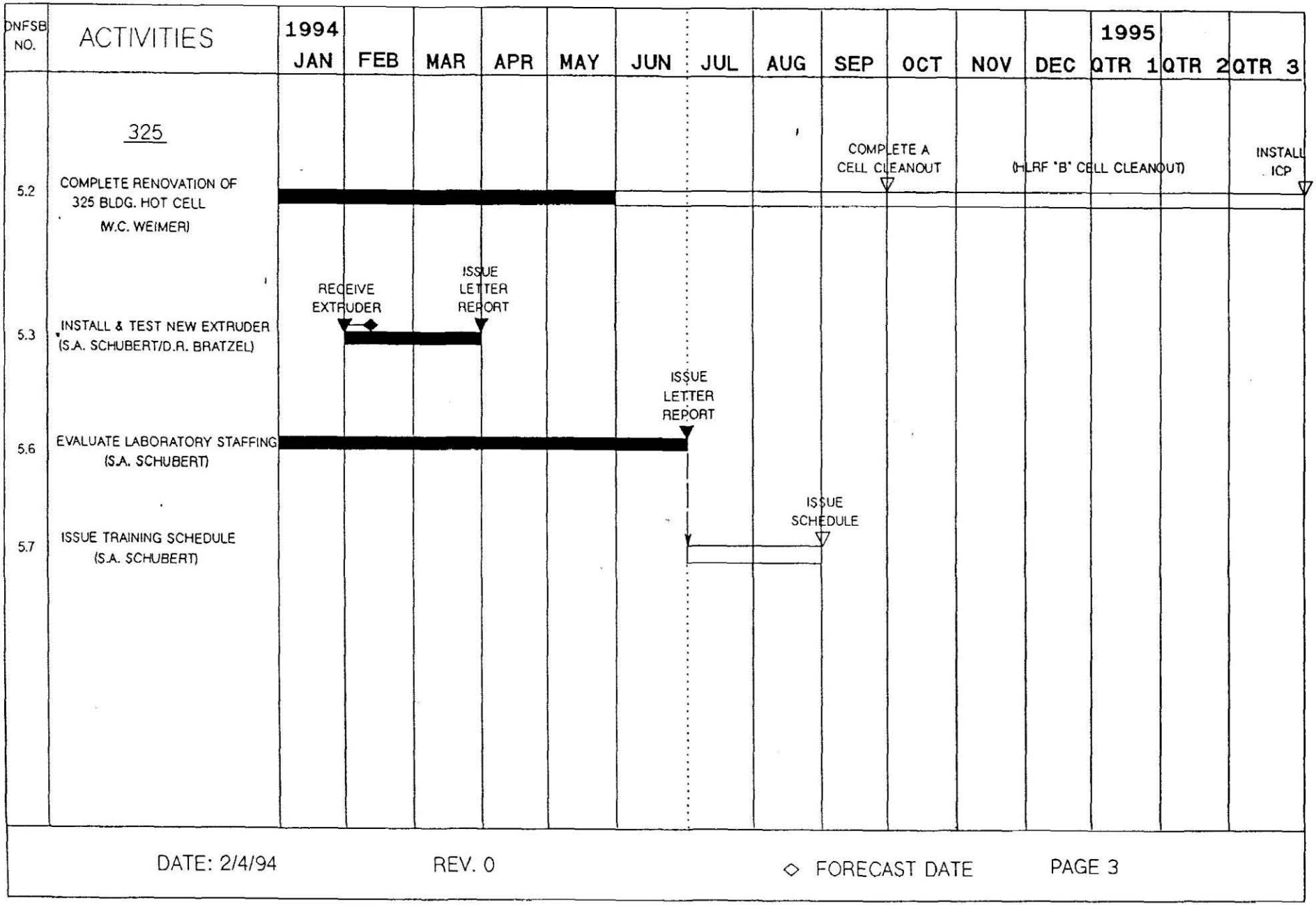


LABORATORY SUPPORT FOR DNFSB

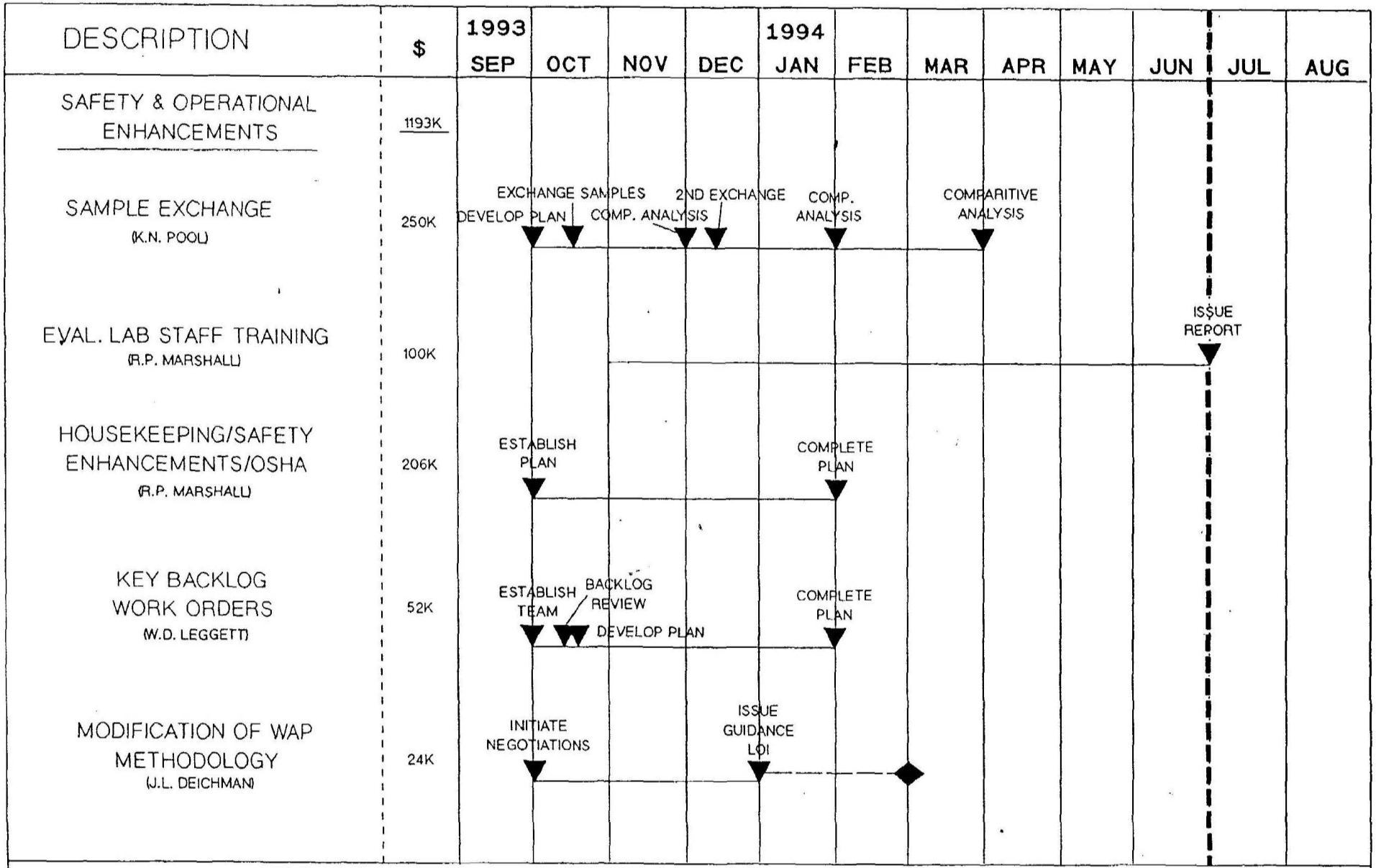


222-S PREPARATIONS TO SUPPORT TWRS RE-START

Attachment

REV. 1

1N4C32, LABORATORY CONTINUITY OF SERVICE



222-S PREPARATIONS TO SUPPORT TWRS RE-START

Attachment

REV. 1

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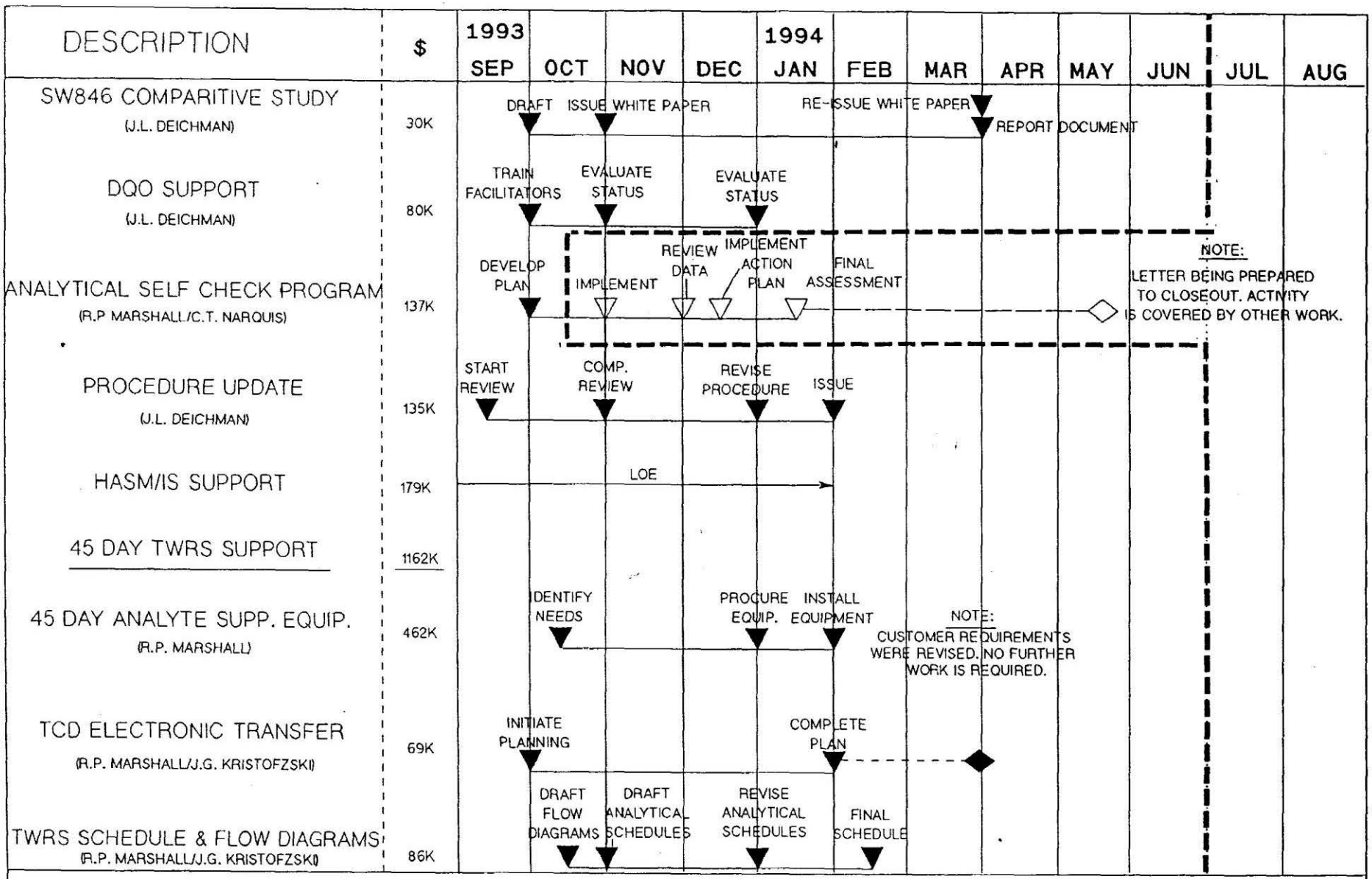

DATE: 12/7/93

PAGE 2

222-S PREPARATIONS TO SUPPORT TWRS RE-START

REV. 1

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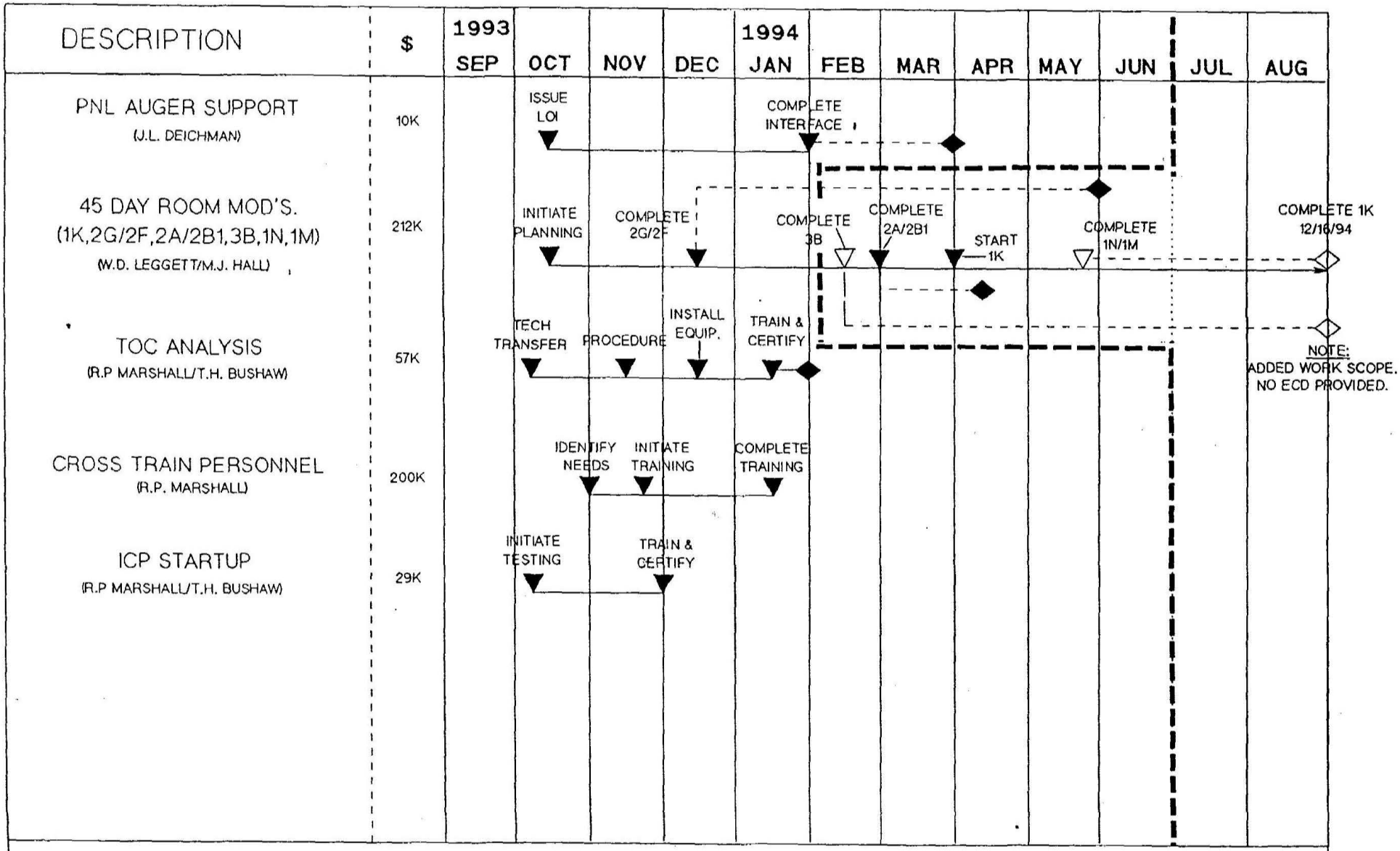

222-S PREPARATIONS TO SUPPORT TWRS RE-START

REV. 1

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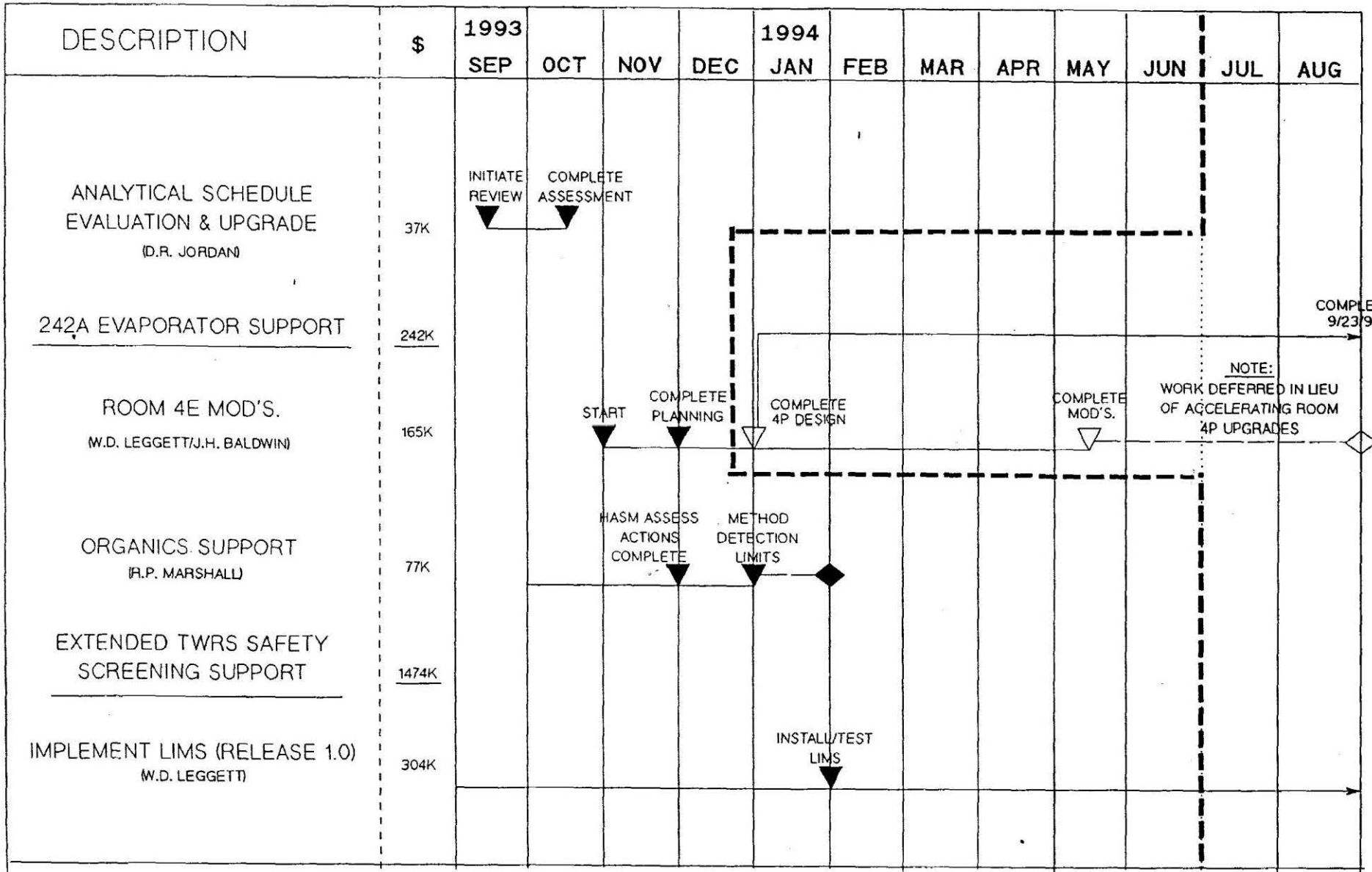
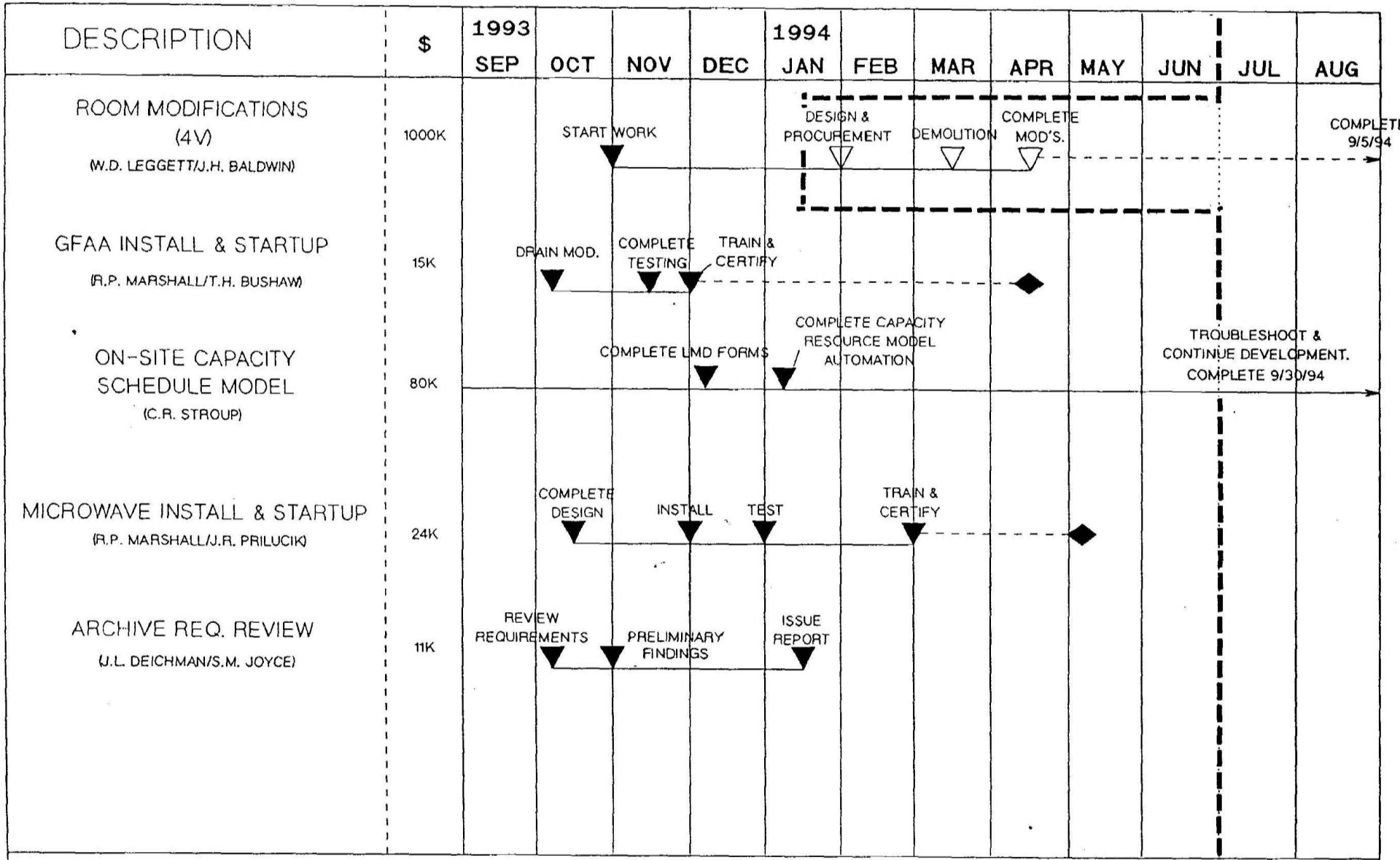


222-S PREPARATIONS TO SUPPORT TWRS RE-START

1N4C32, LABORATORY CONTINUITY OF SERVICE



DATE: 12/7/93

PAGE 5

325 PREPARATIONS TO SUPPORT TWRS RE-START

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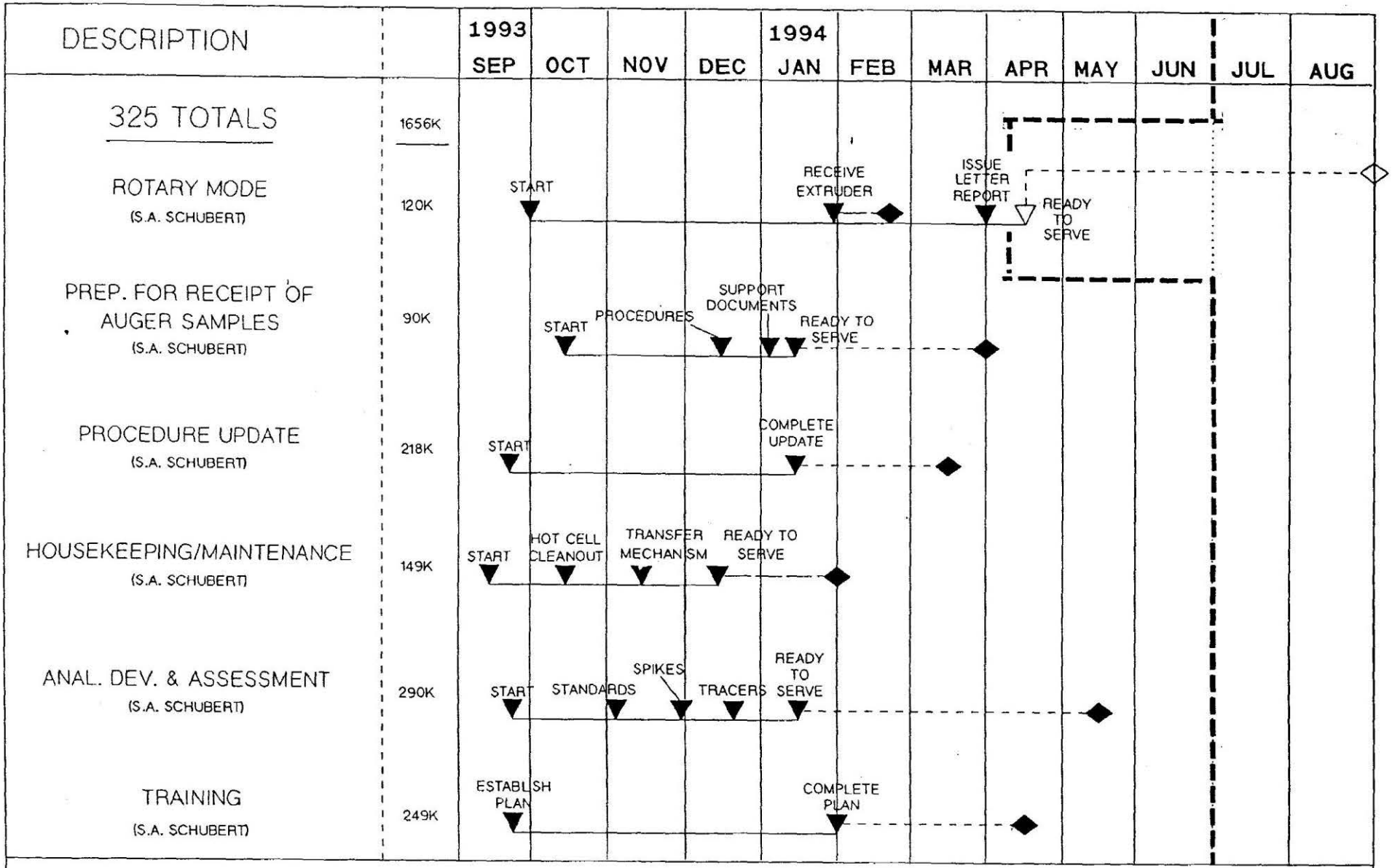

325 PREPARATIONS TO SUPPORT TWRS RE-START

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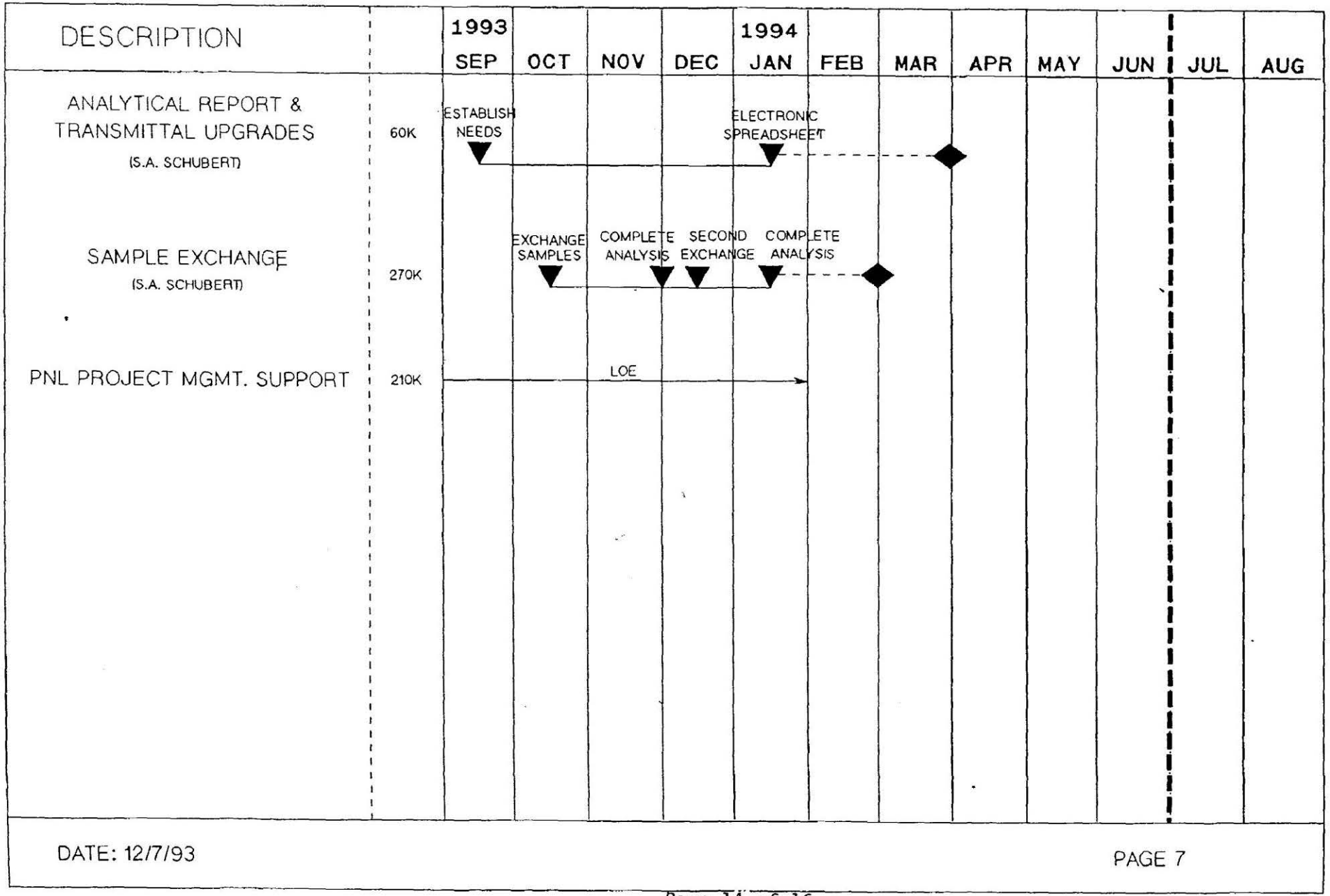

DATE: 12/7/93

PAGE 7

SST AND DST Tank Analysis

Date: 06/24/94		222-S Laboratory						Analytical Chemistry Laboratory						AS				Current Status
Tank	TOTAL AEU	EXTRUSION & SAMPLE PREP		ANALYSIS		REPORT PREP		EXTRUSION & SAMPLE PREP		ANALYSIS		REPORT PREP		VALIDATION		RELEASE		
		% SCH	% COM	% SCH	% COM	% SCH	% COM	% SCH	% COM	% SCH	% COM	% SCH	% COM	% SCH	% COM	% SCH	% COM	
AP-108	0.8	0	99	0	98	0	75	0	60	0	60	0	5	0	0	0	0	AOS
C-111	0.2	0	79	0	30	0	6	-	-	-	-	-	-	0	0	0	0	
Slurry (1-5)	0.6	70	93	4	78	0	0	-	-	-	-	-	-	-	-	-	-	50DA
C-108	0.3	0	10	0	0	0	0											On Hold
SY-103	0.2	100	100	25	46	0	0											14DA
BX-101	0.2	20	12	0	0	0	0											1DB

Legend: (1) Not Statused (2) Not Funded (D)-Days (B)-Behind (A)-Ahead (OS)-On Schedule (AOS) Ahead of schedule

ACCOMPLISHMENTS:

- Extruded one auger sample from BX-101.
- Completed sample preparation for SY-103 augers.

ISSUES:

- Sampling events for C-111, C-108 and AP-108 not complete.
- 325 Lab in temp. radiological operations pause; 222-S can handle TWRS sample load through June - July period.
- Push mode sampling on hold pending resolution of low recoveries.

CURRENT PLANNED TANK RECEIPT

TANK	LAB	AEU	PLANNED DATE	TCP AVAIL.
T-112	222-S	0.2	06/29/94	Yes
BX-108	222-S	0.2	07/08/94	Yes
T-102	222-S	0.2	07/12/94	No
AN-107	222-S	2.0	07/19/94	No

TOTAL FYTD TANK AEU PRODUCTION

222-S	2.36
325	0.23
Total	2.59

WEEKLY TANK AEU PRODUCTION

222-S	0.17
325	0.0
TOTAL	0.17

Prepared by
C. L. Thomas 06/29/94

Attachment

Date: 06/24/94

HANFORD LABORATORIES ANALYTICAL COMMITMENTS

Lab	Tank Number	Date Sampled *	Date Rec'vd *	Safety Screen deliverable due date	Safety Screen deliverable comp. date	Lab data deliverable due date (TCP / TWAP)	Lab data deliverable comp. date	Data package valid. due date	Data package valid. comp. date	Data package release due date	Data Package release comp. date
	AP-108	≡03/21/94	✲								
	C-111	04/22/94	04/22/94	Complete	Complete	10/19/94		11/18/94		11/24/94	
W	Slurry1-5	06/08/94	06/09/94			09/27/94		10/23/94		11/02/94	
H	AN-107	05/13/94	05/17/94			09/03/94					
C	C-108	≡06/01/94	✲								
	SY-103	06/08/94	06/10/94			07/20/94 10/24/94					
2	AY-102	06/07/94	06/08/94			08/07/94					
2	BX-101	06/21/94	06/22/94	08/06/94		08/06/94					
2											
S											
P	AP-108	03/21/94	03/28/94								
N											
L											
3											
2											
5											

* Date is based on last sample taken from tank

✲ Clock not started; Last sample not received

≡ Some samples have been taken

Not required

4.0 REFERENCES

(1) "Recommendation 93-5 Implementation Plan," U.S. Department of Energy, Richland Operations Office, DOE/RL 94-0001, January 1994.

(2) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "DNFSB Commitment 1.4, 'Improve WHC Characterization Program Technical Staff Competencies'," 9452946, dated April 29, 1994.

(3) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Defense Nuclear Facilities Safety Board Milestones Commitment 1.9 of the Reference, 'Plan for Blind Samples'," 9453277, dated May 24, 1994.

(4) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Status of Defense Nuclear Facilities Safety Board Milestone Commitment 1.11," 9454582, dated June 30, 1994.

(5) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Recommendation 93-5 Implementation Plan Commitment 1.13," 9452971, dated April 28, 1994.

(6) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Defense Nuclear Facilities Safety Board Recommendation 93-5 Implementation Plan Commitment 1.14," 9454338, dated June 30, 1994.

(7) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Recommendation 93-5 Implementation Plan Commitment 1.17," 9454559, dated June 29, 1994.

(8) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Data Quality Objective to Support Resolution of the Organic Fuel Rich Tank Safety Issue (Defense Nuclear Facilities Safety Board Commitments 1.21 and 2.1)," 9453093, dated May 4, 1994.

(9) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Status of Defense Nuclear Facilities Safety Board Milestone Commitment 3.6, 'Restore Rotary-Mode Sampling Capability at the Hanford Site'," 9453054, dated April 29, 1994.

(10) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Current Status of Defense Nuclear Facilities Safety Board Milestone Commitment 3.6 "Restore Rotary-Mode Sampling Capability at the Hanford Site"," 9454146, dated June 14, 1994.

(11) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Defense Nuclear Facilities Safety Board Milestone Commitment 3.7," 9452771, dated April 18, 1994.

(12) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Defense Nuclear Facilities Safety Board 93-5 Commitment 3.9, 'Develop Detailed Plans for Acquiring and Training Additional Crews for Sampling Trucks'," 9453007, dated April 29, 1994.

(13) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Status of Defense Nuclear Facilities Safety Board Milestone Commitment 3.10," 9454579, dated June 30, 1994.

(14) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Milestone Defense Nuclear Facilities Safety Board Milestone 3.15 Completion," 9454521, dated June 27, 1994.

(15) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Defense Nuclear Facilities Safety Board Milestone Commitment 3.17," 9454581, dated June 30, 1994.

(16) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Defense Nuclear Facilities Safety Board Recommendation 93-5 Implementation Plan Commitments 5.6: 'Evaluate Laboratory Staff Training' and 5.7: 'Issue Training Schedule'," 9454589, dated June 30, 1994.

(17) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Customer Needs Analysis, Defense Nuclear Facilities Safety Board Commitment 6.1," 9453038, dated April 29, 1994.

(18) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Characterization Data Management Process Improvement Work Plan, Defense Nuclear Facilities Safety Board Commitment 6.2," 9453673, dated May 26, 1994.

(19) Document, D. J. McCain, "Characterization Data Management Process Improvement Plan," WHC-SD-WM-WP-276, Rev. 0, dated May 26, 1994. (Commitment 6.2)

(20) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Hanford Federal Facility Agreement and Consent Order Milestone M-44-01A and Transmittal to the U.S. Environmental Protection Agency and the Washington State Department of Energy," 9453607, dated May 24, 1994.

(21) Letter, C. DeFigh-Price, WHC, to J. M. Clark, RL, "Completion of Defense Nuclear Facilities Safety Board Commitment 2.1, Status of Commitment 1.21," 9453471, dated May 16, 1994.

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