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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

MAR 01 1996

95-B Plant-007

Mr. Michael A. Wilson, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington 99336

Dear Mr. Wilson:

COMPLETION OF HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (TRI-PARTY AGREEMENT) INTERIM MILESTONE TARGET ACTION M-32-07-T06 - TRANSMITTAL OF THE B PLANT AQUEOUS WASTE REMOVAL PLAN AND ORGANIC PROGRAM SCHEDULE

Transmittal of the B Plant Aqueous Waste Removal Plan (Enclosure 1) and Organic Program Schedule (Enclosure 2) to the Washington State Department of Ecology completes the requirements of the Tri-Party Agreement interim milestone target action M-032-07-T06, which has a completion date of February 29, 1996.

The Aqueous Waste Removal Plan establishes a management strategy for storage and removal of aqueous solutions stored in B Plant dangerous waste tanks. It provides an agreement between the tank farm and laboratory interfaces required to transfer this material to a tank farm double shell tank (DST). This plan also contains a contingency plan for management of the aqueous solutions should a B Plant storage tank fail.

The Organic Program Schedule shows two separate transfers of aqueous solutions to tank farm DSTs. The first transfer addresses solutions that were generated from earlier chemical separation activities which reduced the radionuclide levels in the B Plant organic waste. This aqueous solution has been sampled and analyzed. Presently, tank farm personnel are evaluating the results of the analysis for compatibility to their requirements. It is expected that this aqueous material will be transferred to a DST in the next few weeks. The second transfer of aqueous solution, which will be used to reduce the radionuclides to levels acceptable for either disposal or interim storage outside of the B Plant canyon facility, it is scheduled to be completed by



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September 3, 1996: The activity of reducing the organic radionuclides concentration is scheduled to take place from March 1996, to June 1996, and will satisfy Tri-Party Agreement interim milestone target action M-32-07-T05.

If you have any questions, please contact Mr. David T. Evans, the B Plant Program Manager, on 373-9378.

Sincerely,


for Paul F. X. Dunigan
Tri-Party Agreement Administrator

TPD:DTE

Enclosures

cc w/encl:

Laura Russell, Ecology
D. R. Sherwood, EPA
William Burke, Confederated Tribes of
the Umatilla Indian Reservation
Donna Powauke, Nez Perce Tribe
Russell Jim, Yakama Indian Nation
E. M. Greager, WHC

cc w/o encl:

F. T. Calapristi, WHC
W. T. Dixon, WHC
B. G. Erlandson, WHC
S. E. Killoy, WHC

Aqueous Waste Removal Plan

1.0 Purpose

This plan describes the strategy for transferring B Plant aqueous waste, used to decontaminate the separable phase organic, to the Tank Farms Double Shell Tank System. The plan outlines general steps necessary in addition to work described in WHC-SD-WM-EV-108, "Organic Phase and Aqueous Phase Sampling Analysis Plan" to meet Tank Farm requirements for receipt of liquid low level waste from B Plant. This plan also includes a contingency plan to store aqueous material in the unlikely event that one of the aqueous storage tanks develops a leak. It is also the intent of this plan to coordinate all activities so they are completed in an orderly and timely fashion. This plan completes Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) interim milestone target action M-32-07-T06.

2.0 Scope

B Plant will perform chemical additions of sodium nitrite and sodium hydroxide to the aqueous phase liquid and remove the organic layer in order to meet the requirements of the Double Shell Tank System waste acceptance criteria. Samples will be taken and analyzed to assure the aqueous liquid meets the criteria as indicated in the issued compatibility assessment for this transfer.

The 222S Laboratories will provide analysis of B Plant samples for hydroxide, nitrite, separable phase organic, and others required by the compatibility assessment.

Tank Farms will evaluate the analysis results for tank compatibility and provide Tank Farm routing necessary for the waste transfer.

3.0 Facility Requirements

No special requirements are needed for B Plant to complete this plan. Facility requirements include applicable OSR's (WHC-SD-WM-SAR-013), process requirements (OSD-B-257-00041), and administrative requirements (WHC-CM-5-6). The general process areas are listed below:

- Crane work and route installation in Low Level Waste and Organic Storage cells
- Transfers involving permanent and portable equipment
- Chemical additions for waste treatment
- Backflushing samplers, sampling, and shipping samples
- Installing air supply lines for portable pump operation in Cells 24 and 25

4.0 References

WHC-SD-WM-EV-108	"Organic Phase and Aqueous Phase Sampling Analysis Plan"
WHC-SD-WM-AP-023	"B Plant Clean Out and Stabilization Plan"
WHC-SD-WM-OCD-015	"Tank Farm Waste Transfer Compatibility Program"
WHC-SD-WM-SAR-013	"B Plant Safety Analysis Report (SAR)"
WHC-CM-5-6	"B Plant Administrative Policies and Procedures"
OSD-B-257-00041	"Operating Specifications Document: Process Equipment"
TCM-B-130-00001	"B Plant Tank Calibration Manual"
WHC-IP-1182	"B Plant/WESF Conduct Of Operations"
WHC-WM-EV-053	"Double-Shell Tank Waste Analysis Plan"
DOE/RL94-55	"Hanford Analytical Services Quality Assurance Plan" (HASQAP)

5.0 Prerequisites

This section pertains to B Plant only and will be completed just prior to implementation of the plan.

- 5.1 Prior to moving any material into TK-24-1, B Plant Operations and Engineering have discussed complications which may arise and agree to proceed.

Operations

Engineering

- 5.2 Tank TK-24-1 will not be needed for scheduled Low Level Waste transfer for at least two months before moving this waste into TK-24-1.

Operations

Engineering

- 5.3 The B Plant Facility is in a condition to support this activity (e.g. Vessel Ventilation, Facility Ventilation, and Facility Steam are all available).

Operations

Engineering

6.0 Procedure

6.1 Current Aqueous Waste Removal Plan

B Plant specific procedures will be developed to perform all B Plant work associated with this Plan. These procedures will adhere to the process as described below.

The aqueous waste in TK-25-2 has been sampled and analyzed per the requirements of WHC-SD-WM-EV-108, "Organic Phase and Aqueous Phase Sampling Analysis Plan". The Waste Stream Profile Sheet will be reviewed and revised as necessary and East Tank Farm Engineering will perform a compatibility study based on the Waste Stream Profile Sheet.

The aqueous waste in TK-25-2 will be transferred to TK-24-1. The agitator in TK-25-2 will not be operated at least 24 hours prior to or during the transfer from TK-25-2 to TK-24-1. The transfer from TK-25-2 to TK-24-1 will be terminated leaving approximately 1,000 gallons of waste (and the organic layer) in TK-25-2. Next, the waste in TK-30-3 and/or TK-26-1 will be moved to TK-25-2 and allowed to settle for approximately 24 hours prior to being transferred to TK-24-1. Once again, the agitator in TK-25-2 will not be operated 24 hours prior to or during this transfer and 1,000 gallons will be left in TK-25-2. Additional transfers from TK-26-1 and TK-30-3 will be made to TK-25-2 and then to TK-24-1 as needed in the manner described above to obtain all the aqueous phase in TK-24-1 except for 1,000 gallons of waste in TK-25-2.

When TK-24-1 contains the aqueous waste, hydroxide and nitrite adjustments will be made on the waste in TK-24-1. After the adjustments, a door stop process control sample will be obtained during agitation. The sample will be analyzed for hydroxide and nitrite to meet requirements as specified in WHC-SD-WM-OCD-015, Rev. 1 and a visual observation of the sample will be made for separable phase organic. The compatibility assessment may require additional analysis which are expected to be nitrate, total organic carbon, TGA, DSC, specific gravity, and either Pu-239/240 or total Pu. All determinations are expected to be performed and reported by the 222S Laboratories within 72 hours of receiving the sample from B Plant provided the sample dose rate is less than 15 RAD. Based upon favorable results from this door stop sample and the aqueous phase analysis results according to WHC-SD-WM-EV-108, the waste will be transferred to Tank Farms as soon as possible, which is expected to be no longer than 2 weeks from obtaining the door stop sample results.

When a portable pump becomes available, an estimated depth of the organic layer in TK-25-2 will be used to pull the organic layer out of TK-25-2 and send it to TK-28-3. The TK-25-2 sampler will be backflushed and a door stop sample during agitation from TK-25-2 will confirm the organic layer has been removed from TK-25-2. An iterative process may be required to obtain desired results. If difficulties are encountered with this method, alternative methods may be employed.

The total volume of the aqueous phase waste remaining in TK-25-2 will be recorded and the waste will be transferred to TK-24-1. This waste will then be transferred to Tank Farms with the next Low Level Waste batch. Information from the previous analysis of the aqueous phase waste and the total volume of the aqueous phase waste included with the Low Level Waste will be supplied to Tank Farms as well as routine Low Level Waste analysis prior to transferring this batch to Tank Farms. Alternatively, this waste may be stored in TK-25-2 until the next batch of washes is sent to Tank Farms.

6.2 Future Aqueous Waste Removal Plan

B Plant specific procedures will be developed to perform all B Plant work associated with this Plan. These procedures will adhere to the process as described below.

The 222S Laboratories are performing process studies to yield a suitable decontamination solution to wash the organics and further reduce their activity levels. It is anticipated the wash will be performed in April or May of 1996. These washes will be performed in the same manner as the previous washes and the aqueous phase storage and sampling conditions will be as described in WHC-SD-WM-EV-108.

A list of parameters and a Waste Stream Profile Sheet for the aqueous phase resulting from the new washes will be developed. Tank Farms will generate a new waste compatibility assessment based upon the new Waste Stream Profile Sheet for acceptance of this wash solution. The list of parameters for this aqueous phase should be much shorter than the list in WHC-SD-WM-EV-108 as much more is known about the material already in the tanks.

Upon completion of the washes and sampling, the 222S laboratories will analyze the samples according to the agreed upon list and provide results in a reasonable time frame not expected to exceed 6 weeks from sample receipt. If it is acceptable to obtain process control samples (summary data report and HASQAP QA/QC), the turn around time is expected to be less than 2 weeks provided the sample dose rates are less than 15 RAD.

Tank Farms Engineering will evaluate the results of the analysis for compatibility and provide either acceptance or rejection and the reason for rejection within two weeks of receiving the results. Barring major conflicts, it is expected the waste will be transferred to Tank Farms within two weeks of receiving favorable compatibility analysis.

6.3 Aqueous Leak Contingency Plan

This plan is included to describe how B Plant will handle the unlikely event of an aqueous storage tank leak. Work associated with this plan will be performed as a Job Control System (JCS) "Priority 1" according to WHC-CM-5-6, Section 5.18, "Work Management".

The current status of the tanks utilized in this plan is as follows:

TK-25-2

Tank TK-25-2 has a working volume (80% of overflow volume) of 3,890 gallons. This tank currently holds about 2,700 gallons of waste. The extra 1,100 gallons of storage capacity will be utilized by this plan.

TK-26-1

Tank TK-26-1 has a working volume of 3,146 gallons and contains about 2,800 gallons. The extra capacity of 300 gallons will not be used by this plan.

TK-27-2

Tank TK-27-2 has a working volume of 1,600 gallons and currently contains no waste. This tank was previously used to store aqueous phase waste from 1979 to 1984 when it was emptied during organic/aqueous consolidation. This tank will be utilized by this plan because of the additional storage capacity it offers.

Response to a confirmed leak in a tank containing aqueous material will be as follows:

Leak in TK-25-2

Approximately 1,600 gallons of the aqueous material will be transferred to TK-27-2. The remaining 1,100 gallons will be transferred to TK-30-3.

Leak in TK-26-1

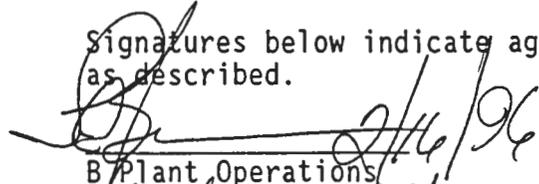
Approximately 1,600 gallons of the aqueous material will be transferred to TK-27-2 and the remaining 1,200 gallons will be transferred to TK-30-3.

Leak in TK-30-3

The 900 gallons of aqueous material will be transferred to TK-25-2.

7.0 Approvals

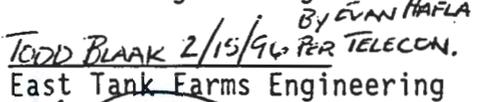
Signatures below indicate agreement to and the ability to meet the plan as described.


B Plant Operations


Charles H. Mulkey Per Telecon MFA
Tank Farms Environmental Engineering

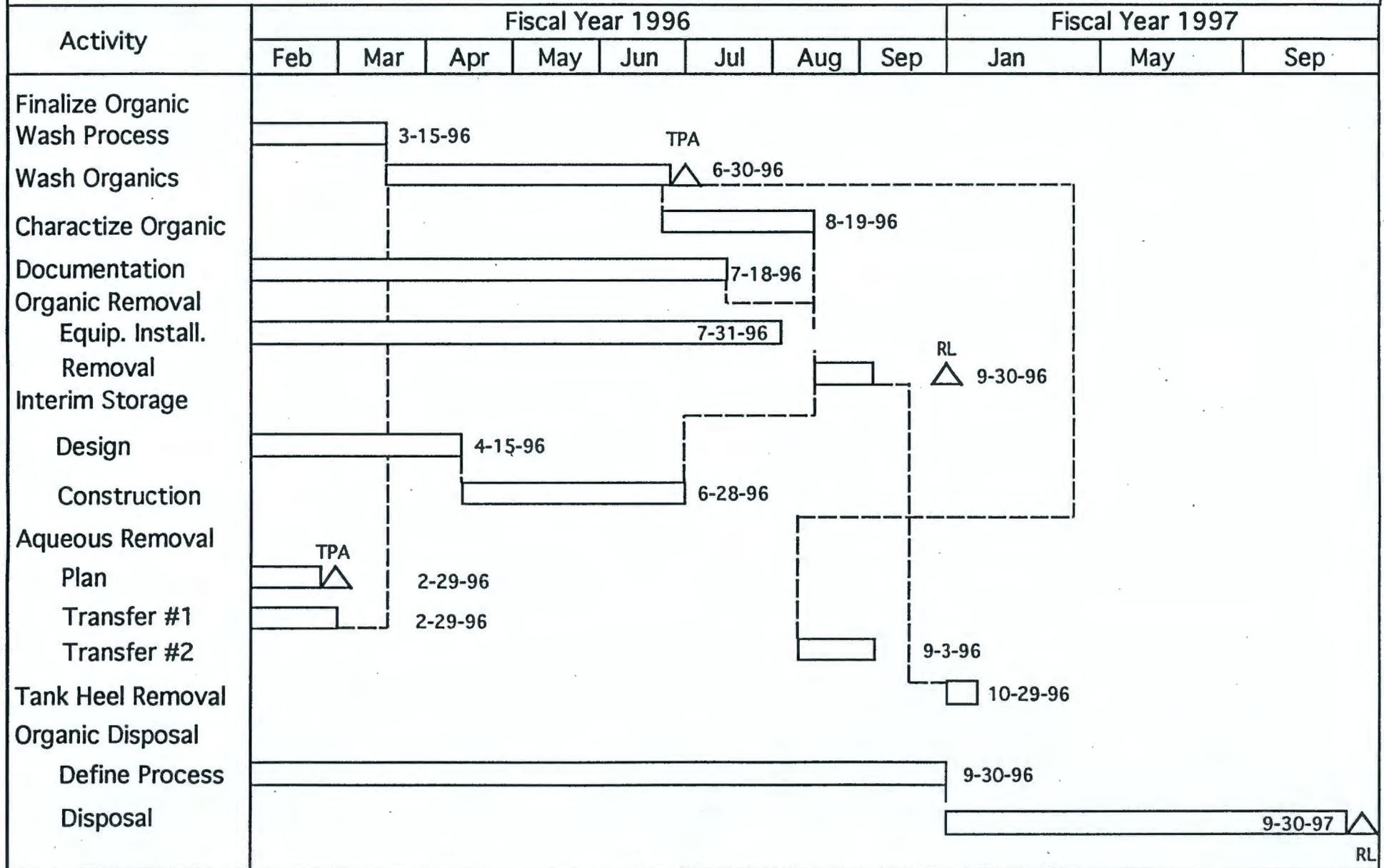

222S Operations


Euan Hafla 2/15/96
B Plant Engineering


TODD BLAAK 2/15/96 PER TELECON.
East Tank Farms Engineering


ASD FORZUM
222S Coordinator 2-16-96

Organic Program Schedule KN 302



CORRESPONDENCE DISTRIBUTION COVERSHEET

Author: P.F.X. Dunigan Addressee: M. A. Wilson Correspondence No.: Incoming:9600615

Subject: COMPLETION OF HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER
INTERIM MILESTONE TARGET ACTION M-32-07-T06 - TRANSMITTAL OF THE
B PLANT AQUEOUS WASTE REMOVAL PLAN AND SCHEDULE

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		L. D. Arnold	B2-35	X
		B. A. Austin	B2-30	X
		F. T. Calapristi	B2-35	X
		E. M. Greager	H6-20	X
		S. M. Killoy	S6-70	X
		J. C. Midgett	S6-65	X
		E. D. Robbins	S4-66	X
		A. R. Sherwood	H6-20	X
		D. W. Wilson	S6-70	X
		EDMC	H6-08	X