

Streamlining Actions For Operable Unit (OU) 9 - Original Process Waste Lines

1. Elimination of the OU 9 Interim Measure/Interim Remedial Action (IM/IRA) as defined by the Interagency Agreement (IAG).

The rationale for this is that the contaminants from the lines at OU 9 should be primarily metals and radionuclides (based on process knowledge), which do not readily move with ground water flow and are expected to be primarily above the water table. These contaminants cannot be destroyed like organic constituents and in situ stabilization would still leave the long-term threat of public or plant worker exposure. This is particularly true of the radionuclides. Any in situ treatment would leave the contaminants in areas that could have high traffic and/or dispersion in future uses of plant facilities.

Source removal is the best option for dealing with these materials since in situ treatment would not be effective or practical. Although there are some ex situ treatments that allow some fraction of the soils to be returned to the unit, some fraction will have to be permanently removed and stabilized since the primary contaminants cannot be destroyed. Source removal, combined with volume reduction, would reduce long-term human health impacts as well as contaminant migration. Currently, there are a number of IM/IRA type activities in progress that could deal with source removal, thereby, eliminating the need for a separate IM/IRA. These activities include the Industrial Area IM/IRA and the Environmental Restoration Accelerated Cleanup Project.

2. Elimination of the OU 9 Phase II RCRA [Resource Conservation & Recovery Act] Facility Investigation/Remedial Investigation (RFI/RI)

There is no longer an advantage to the second phase of RFI/RI work since the Phase I RFI/RI has been developed to include three internal phases of field investigation. The three internal phases of the work plan will be documented in the technical memoranda. The submittal of technical memoranda allows for regulatory agency feedback and provides sufficient investigative activities to evaluate the nature and extent of contamination, especially if a more aggressive approach is taken in the implementation of the first technical memorandum. Elimination of the Phase II RFI/RI would remove more than three years from the critical path schedule as defined in the IAG.

If the Phase II RFI/RI field work is eliminated, a more aggressive approach in the earlier field investigations would be necessary. The evaluation of the extent of the contamination can be done sooner in the field investigation since the potential source will be fairly well defined once the tanks and pipelines are field located. In particular, for the pipeline investigation, the extent of the contamination should initially be investigated axially along the length of the pipe, because there is likely to be a preferential flow in the fill material surrounding the pipes. Also, vertical migration is limited due to clay layers below the Rocky Flats Alluvium. If field data is gathered along the length of the pipelines earlier in the investigation, then later stages of the investigation can focus on lateral extent while, at the same time, identifying areas for source removal. In some areas, only information on axial and vertical extent will be necessary since other OUs are already collecting information that would define the lateral extent of contamination.

3. Streamlined Approach to The Pipeline Investigation

The original purpose of the test pits in the OU 9 RFI/RI Work Plan was to identify the source of contamination by examining the outside of the pipeline, opening the pipes, and taking samples. The major drawbacks are that this approach assumes that the pipe only leaked in certain locations, worker safety would be compromised due the hazardous nature of digging test pits, and no information on axial extent of the contamination would

3. Streamlined Approach to The Pipeline Investigation (continued)

be gathered. By incorporating additional field investigation tools into the field investigation, more complete information could be gathered in less time, with less effort and with less work safety issues and health risks than test pits alone. The focus of the investigation in the initial stage would be more on soil contamination rather than integrity of the pipe at key points. This would be done primarily by the use of additional "geoprobe" sampling around test pit locations and along the length of the pipe.

The streamlined investigation for OU 9 would continue to utilize the Observational Approach to make decisions in the field. A decision tree would be developed that would direct the path of field operations and provide the baseline for field changes. The use of the Observational Approach will require increased communication with the regulatory agencies since the path and progress of the field investigation would be subject to change as information is gathered in the field.

The first stage of the investigation under Technical Memorandum No. 1 Volume IIA would consist of two primary parts: location of the pipelines and sampling to determine the source and, in a limited manner, the extent of the contamination. In the initial stage of the pipeline investigation, efforts would focus on locating the lines using a tool kit that would include video cameras, pressure testing, electromagnetic techniques, ground penetrating radar, radiation probes, etc. As the investigation proceeded, the option of refining the pipeline location effort could be modified as necessary.

The second stage of the investigation under Technical Memorandum No. 1 Volume IIA would utilize the test pit locations defined in the OU 9 RFI/RI Work Plan as focal points. Approximately 200 test pit locations have been identified and this number could increase depending on the contamination found during field work in the first stage efforts. Rather than veer too far away from the original OU 9 Work Plan, the test pits would be used as loci for alternative investigative techniques. The use of test pits would be primarily controlled by safety factors and practicality. Alternatives to test pits would be utilized under the following conditions:

- A. Depth of the test pit requires shoring or creates hazardous conditions to workers.
- B. The test pit is too close to utilities.
- C. Materials in test pit could cause an exposure problem.
- D. Test pit would go below water table.
- E. Test pit is close to building foundation.
- F. Test pit location would compromise plant security.
- G. Test pit, in other ways, hampers plant safety or security.
- H. Test pit is located in an area where more data can be collected using alternative sampling techniques such as "geoprobos" with less effort. In particular, areas with surficial features that would have to be reconstructed.

Alternatives to test pits could include the utilization of geoprobes, discrete sampling, additional boreholes, hand augers, field analysis, and possibly robotics. By utilizing more pervasive, less costly sampling techniques, more information on the extent of the contamination could be determined. The use of Geographical Information System software will also help guide field work efforts.

4. Early Actions

There are two areas where early actions should be pursued. The first is removal of some of the outdoor inactive tanks. This would include some of the above ground tanks and underground tanks that are in concrete vaults. One advantage is that this might allow access to some areas previously inaccessible because of the location of the tanks. It could also allow some areas to be partially removed from further investigation.

The other area that should be pursued for early action is some of the pipeline areas. This could be tied in with the Observational Approach where, if certain criteria are met, surrounding soil and pipelines could be removed as part of the source removal process. Consideration would need to be given to whether the removal of the material could cause fresh fill material to be recontaminated. Of particular interest would be areas where the extent of the contamination is limited and its removal could reduce further investigation and remediation efforts. These areas would probably be outside of the Protected Area. Field sampling may be utilized to determine the extent of excavation for source removal. These activities would be dependent on whether the systems would be in place for removing, handling, and either storing or treating the materials removed.

5. Review

In order to accelerate the overall review schedule, it would be more expedient to compress some of the individual review activities. One way to do this is to make some of the review activities concurrent. Specifically, the initial EG&G Rocky Flats, Inc. review would be performed only by key Remediation Project Management personnel so that it could be turned around quickly, then additional EG&G Rocky Flats personnel including support groups such as Environmental Quality Support, Environmental Operations Management, and Sample Management could review the document at the same time as the Rocky Flats Field Office (RFFO). Comments would be incorporated into the document and then sent to the regulatory agencies. While the regulatory agencies reviewed the document the first time, EG&G Rocky Flats and RFFO would verify that their comments were adequately addressed and any additional corrections would be incorporated with the regulatory agency comments. Prior approval of this review process from the regulatory agencies might be needed, since the document could be revised after the first regulatory agency review without their concurrence. The schedule could be accelerated even more by making all of the reviews concurrent. Another schedule accelerator would be to set a reasonable duration for review in the transmittal letters and not to accept any comments after that duration has been expended.

6. Agency Workshop

The Department of Energy/RFFO should consider a workshop forum with the Environmental Protection Agency and the Colorado Department of Health to get early buy in on the OU 9 pipeline investigation, early action activities, and an alternative review structure. This work shop need only last up to one day and could be just half a day. Up front concurrence would greatly speed up the review process and it would also help ensure that there are no last minute scope changes as well as help keep the regulatory agencies informed.

OU 9 Tank Status Spreadsheet

Tank Number	Building Number	IHSS	No. of Tanks	RCRA		90 Day Storage Status
				Interim Status	Active	
T-1	122	121	1			Removed
T-2	441	121, 122	1			Abandoned
T-3	441 (429)	121, 122	2			Abandoned
T-4	447	121	3		X	Spill Control
T-5	444	121	2	X	X	
T-6	444	121	2		X	Spill Control
T-7 *	559 (528)	159	2		X	X
T-8	771 (728)	121, 126	2		X	Plenum Deluge (Cleaned/Painted)
T-9	776 (730)	132	2		X	Plenum Deluge (Cleaned/Painted)**
T-10	776 (730)	132	2			Abandoned
T-11	707 (731)	121	2		X	Secondary Containment for a RCRA Permitted Tank
T-12	Invalid Tank Location					
T-13	774	215	1			Abandoned
T-14	774	124	1			Abandoned
T-15	774	121, 146	2			Removed
T-16	774	121, 124, 125	2			Abandoned
T-17	774	146	4			Removed
T-18	778	121	1			Abandoned
T-19	779	121	2		X	Plenum Deluge
T-20	779	121	2			Abandoned
T-21	886 (828)	121	1			Abandoned
T-22	886 (828)	121	2			Abandoned
T-23	865	121	1			Abandoned
T-24	881 (887)	121	7	X	X	
T-25	883	121	2	X	X	
T-26	883	121	3	X	X	
T-27	886	121	1			Removed
T-28	889	121	2		X	Spill Control
T-29	774	121	1			Abandoned
T-30	707 (731)	121	1		X	Secondary Containment for a RCRA Permitted Tank
T-31	Invalid Tank Location					
T-32	881 (887)	121	1		X	Secondary Containment for a RCRA Permitted Tank
T-33	Invalid Tank Location					
T-34	Invalid Tank Location					
T-35	Invalid Tank Location					
T-36	771C	121	1			Abandoned
T-37	771C	121	1			Abandoned
T-38	779	121	1		X	X
T-39	881	121	4			Removed
T-40	889	121	2			Abandoned, Proposed Tank Number
Total			67			

* Efforts are underway to close the T-7 tanks out of 90 day status.

** Information concerning whether T-9 was cleaned and painted is sketchy

OU 9 Active Tank Status Spreadsheet

Tank Number	Building Number	IHSS	RCRA			90 Day Storage Status
			No. of Tanks	Interim Status	Active	
T-4	447	121	3		X	Spill Control
T-5	444	121	2	X	X	
T-6	444	121	2		X	Spill Control
T-7 *	559 (528)	159	2		X	X
T-8	771 (728)	121, 126	2		X	Plenum Deluge (Cleaned/Painted)
T-9	776 (730)	132	2		X	Plenum Deluge (Cleaned/Painted)**
T-11	707 (731)	121	2		X	Secondary Containment for a RCRA Permitted Tank
T-19	779	121	2		X	Plenum Deluge
T-24	881 (887)	121	7	X	X	
T-25	883	121	2	X	X	
T-26	883	121	3	X	X	
T-28	889	121	2		X	Spill Control
T-30	707 (731)	121	1		X	Secondary Containment for a RCRA Permitted Tank
T-32	881 (887)	121	1		X	Secondary Containment for a RCRA Permitted Tank
T-38	779	121	1		X	X
Total			34			

* Efforts are underway to close the T-7 tanks out of 90 day status.

** Information concerning whether T-9 was cleaned and painted is sketchy

OU 9 RCRA Interim Status Tanks

Tank Number	Building Number	IHSS	No. of Tanks	RCRA Interim Status	Active	90 Day Storage
T-5	444		121	2	X	X
T-24	881 (887)		121	7	X	X
T-25	883		121	2	X	X
T-26	883		121	3	X	X
Total				14		

Tanks in Use for Secondary Containment for RCRA Tanks

T-11	707 (731)		121	2		X
T-30	707 (731)		121	1		X
T-32	881 (887)		121	1		X
Total				4		

OU 9 90 Day Transuranic Waste Tanks

Tank Number	Building Number	IHSS	No. of Tanks	RCRA Interim Status	Active	90 Day Storage
T-7 *	559 (528)		159	2		X
T-38	779		121	1		X
Total				3		

* Efforts are underway to close the T-7 tanks out of 90 day status.

OU 9 Spill Control Tanks

Tank Number	Building Number	IHSS	No. of Tanks	RCRA Interim Status	Active	90 Day Storage
T-4	447		121	3		X
T-6	444		121	2		X
T-28	889		121	2		X
Total				7		

OU 9 Plenum Deluge Tanks

Tank Number	Building Number	IHSS	RCRA		90 Day Storage
			No. of Tanks	Interim Status Active	
T-8	771 (728)	121, 126	2	X	Plenum Deluge (Cleansed/Painted)
T-9	776 (730)	132	2	X	Plenum Deluge (Cleansed/Painted)**
T-19	779	121	2	X	Plenum Deluge
Total			6		

** Information concerning whether T-9 was cleansed and painted is sketchy