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July 29, 2004

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Mr. Jerry S. Johnson
Assistant Area Manager
Department of Energy
Albuquerque Field Office
P.O. Box 30030
Amarillo, Texas 79120

Re: U.S. Department of Energy (DOE), Pantex Plant
TCEQ Solid Waste Registration No. 30459
TCEQ Hazardous Waste Permit No. HW-50284
EPA ID No. TX4890110527
Contaminant characterization in soils - Final Independent Sites, Resource Conservation and Recovery Act (RCRA) Facility Investigation (Soil RFIR) Dated: January 2004

Dear Mr. Johnson:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the Soil RFIR referenced above that was received by the TCEQ on April 1, 2004. The Soil RFIR details the results from numerous investigations that have been conducted for the Solid Waste Management Units (SWMUs) identified in Enclosure 1 to this letter. The SWMUs in the Soil RFIR are located throughout the DOE-Pantex facility and generally are not located within industrial zones (e.g., Zone 12). Therefore, these units, (a.k.a. independent sites) are usually small miscellaneous units that were utilized by DOE Pantex to support current and past DOE Pantex operations.

The TCEQ conditionally approves the characterization for chemical contaminants in soils at eight (8) SWMUs as identified in Enclosure 2 to this letter and concurs that DOE-Pantex should seek closure/remediation under Risk Reduction Standard (RRS) No. 3 for these SWMUs. The TCEQ also identified several SWMUs where a closure decision was not requested because the unit is currently active or previously approved for closure by the TCEQ. Enclosure 2 also outlines requests for additional information for six (6) SWMUs and/or areas of concern (AOCs) that must be submitted by DOE-Pantex to determine final soil closure. As with the previous Soil RFIR, there remains uncertainties regarding the vertical extent of

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constituents. These uncertainties will be addressed through long-term monitoring of the Perched and Ogallala aquifers at locations proposed through the remedy selection process.

In addition, the Environmental Protection Agency (EPA) is also evaluating the Independent Sites Soil RFIR in accordance with the December 21, 1994 Memorandum of Agreement (MOA) between the EPA and the TCEQ. The EPA will address any concerns with the RFIR in a separate letter to DOE-Pantex. DOE-Pantex must address the comments in the EPA's letter as a condition of full closure (both soil and groundwater) for the SWMUs in the Soil RFIR. Note that the investigation of radionuclides is being addressed in a separate report (Final Pantex Plant Radiological Investigation Report, January 2004), therefore this letter does not address any radionuclide issues associated with the SWMUs in Enclosure 1.

DOE-Pantex should be aware that a full closure (soil and groundwater) approval for the SWMUs included in this report is contingent on completion of any remaining investigations, and evaluation under the requirements of the appropriate Risk Reduction Standard (RRS). DOE-Pantex must submit a final report to verify that the requirements of the Risk Reduction Standard (RRS) rule have been met, including those cleanup criteria used to achieve "full closure" under the rule. Those sites recommended in this letter for a RRS 3 closure will go forward for further evaluation of potential risk to human health in the Baseline Risk Assessment. Sites will be further evaluated in the Ecological Risk Assessment, as necessary.

Questions concerning this letter should be directed to me at (512) 239-2243. When responding by mail, please submit an original and one copy of all correspondence and reports to the Corrective Action Section at Mail Code MC-127 with an additional copy submitted to the TCEQ Region 1 Office in Amarillo. Please submit responses to this letter within 90 days of the date of this letter or an alternate approved date. The TCEQ Solid Waste Registration Number and SWMU information (e.g., Unit Description or Name) should be referenced in all submittals.

Sincerely,

Robert Musick P.G., Project Manager
Team I, Corrective Action Section
Remediation Division
Texas Commission on Environmental Quality

REM/rm

cc: Mr. Jim McWilliams, Region Project Manager, TCEQ Region 01 Office - Amarillo
Ms. Camille Hueni, Superfund Division, Texas Section (6SF-AP), USEPA Region VI

Enclosure 1: Waste Management Units Associated with Independent Sites

Enclosure 2: Comments and Clarification

Addressee: Mr. Jerry S. Johnson, Department of Energy, Albuquerque Field Office

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SWR: P.O. Box 30030, Amarillo, Texas 79120
SWR30459
Date of letter: July 29, 2004

DO NOT SEND THIS PAGE¹

bcc list (format revised 9/1/2003):

Mr. Don Boothby, Team 1 Supervisor, Corrective Action Section (MC-127)
Mr. Robert Musick, Corrective Action Section (MC-127)
Central Records (MC-199)
CAS files (MC-127)

For data entry:

WWC COMMUNICATION ID:	10557347 / 10692731
This letter is (Pick one):	Approval Conditional
LBB (02 or 04, and number to count):	02/ 01
Reply from facility needed? If so, give reply due date:	90 days (October 30, 2004)
Document Review(s) Complete? (Yes/No)	yes
WWC PROPERTY: CAS Status value changed for entire facility (Put new status or n/a) ² ?	no
WWC FEATURE UPDATES (n/a, if not applicable) ³ : Feature Name:	na
New Feature Status:	
For entry into RCRAInfo: Number of units (n/a, if not applicable):	na
Corrective Action Codes (RFI units/areas) CA- or	na
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1. Only attach bcc page to the writer's copy and CAS File copy.

2. If facility will no longer be part of workload, change IHW CA 0 Fea status to Complete or Transferred, verify there are no ongoing PM-defined Features, and verify there are no outstanding Communications that need review.

3. If unit/area will no longer be part of workload, update appropriate Status & Characteristics for that unit/area only.

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Enclosure

ENCLOSURE 1

WASTE MANAGEMENT UNITS ASSOCIATED WITH THE INDEPENDENT SITES

WASTE MANAGEMENT UNITS

Enclosure 1 - Waste Management Units Associated With Independent Sites

Description	SWMU No.	Location
FIRING SITE (FS-4)	SWMU 69 *	WEST OF BURNING GROUND AREA
FIRING SITE (FS-10)	SWMU 72 *	WEST OF BURNING GROUND AREA
FIRING SITE (FS-210)	SWMU 74 *	ZONE 5 AREA
FIRING SITE (FS-22)	SWMU 75 *	WEST OF BURNING GROUND AREA
HW PERMITTED UNIT 53	UNIT 53 *	ZONE 4 AREA
UNLINED LANDFILL AT FIRING SITE 1 (FS-1)	FS-1	WEST OF BURNING GROUND AREA
ZONE 7 LANDFILLS	SVS 6	ZONE 7 AREA
LANDFILL 12 (GROUP III)	SWMU 63	ZONE 5 AREA
LANDFILL 13 (GROUP II)	SWMU 64	ZONE 6 AREA
MAGAZINE DEMOLITION DEBRIS	SVS 7A	NEAR IN ZONE 4 AREA
MAGAZINE DEMOLITION DEBRIS	SVS 7B	ZONE 5 AREA
FS-16 SURFACE IMPOUNDMENT	SWMU 11	ZONE 5 AREA
TEMPORARY HE BURNING GROUND	SWMU 53	NEAR ZONE 7 AREA
LANDFILL NO. 7	SWMU 58	FIRE TRAINING AREA
LANDFILL 11 (UNKNOWN LOCATION)	UNASSIGNED	UNKNOWN
LANDFILL 15 (GROUP III)	SWMU 66	ZONE 8 AREA
FS-24 CONCRETE SUMP	SWMU 78	WEST OF BURNING GROUND AREA

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Enclosure 1
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Description	SWMU No.	Location
VEHICLE MAINTENANCE FACILITY BLG. 16-1	SWMU 106	EAST OF PLAYA 2 AREA
FS-10, PHOTO PROCESSING LEACHING BED	SWMU 139	WEST OF BURNING GROUNDS AREA
LANDFILL NO. 18	AOC NO. 8	WEST OF BURNING GROUND AREA
FIRING SITE-11	UNASSIGNED	WEST OF BURNING GROUND AREA
PLAYA 3 (RECENT AND HISTORIC PLAYA)	SWMU 8	BURNING GROUND AREA

* The swmu is currently active and is receiving nonhazardous wastes.

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ENCLOSURE 2

COMMENTS AND CLARIFICATION

Enclosure 2 - Comments and Clarification

I. Conditions of Approval

- A. The TCEQ agrees with the recommendations in the Soils RFIR that the investigation data for Playa 3: SWMU 8 (Recent Playa Boundary) supports closure in accordance with the Risk Reduction Standard (RRS) No. 3 criteria. A RRS No. 3 closure approval will be issued to DOE-Pantex after the groundwater investigation is complete, and the sites have been further evaluated for potential risks to human health and the environment. DOE-Pantex must submit a report to support that criteria and conditions for closure have been met as established by Rule.
- B. The TCEQ does not concur with the Soil RFIR recommendations that the following Solid Waste Management Units (SWMUs) meet the RRS No. 2 closure criteria, but concludes that RRS No. 3 is the appropriate closure:
1. Zone 7 Landfills (SVS 6);
 2. FS-16 Surface Impoundment (SWMU 11);
 3. Landfill 13 (SWMU 64);
 4. Landfill 15 (SWMU 66);

Based on the characterization of these SWMUs and the information presented in the "Clarification" portion of this enclosure, DOE-Pantex has demonstrated that these sites have been adequately characterized to establish Constituents of Potential Concerns (COPCs) and to support any remedy necessary to abate the contamination in soils. However, vertical extent of contamination has not been fully defined, creating an uncertainty that will be addressed through long-term monitoring. There are also areas of managed waste (i.e. landfills) where waste has not been removed or decontaminated, as required for RRS No. 2 closure under the Rule. These uncertainties require that DOE-Pantex demonstrate closure under RRS No. 3 for the SWMUs in this category. A RRS No. 3 closure approval will be issued to DOE-Pantex for the SWMUs once a completed groundwater investigation, a human health risk assessment, and ecological evaluation (if applicable) has been approved which address the closure criteria established by rule. If DOE-Pantex has information that would modify the closure decision reached by the TCEQ, the information should be submitted within 90 days of this letter as indicated in the TCEQ cover letter.

- C. The TCEQ has completed the technical review of the Soil RFIR and determined that the following units have no cross-media contamination (from soil to air/groundwater). Based on the Soil RFIR, the following SWMUs have met the site characterization requirements for a RRS No. 2 closure. A final closure letter will be issued to DOE-Pantex for the following SWMUs once the units have met the deed recordation requirements established by rule and any conditions of approval identified in the clarification portion of the letter:

1. Temporary HE Burning Ground (SWMU 53);
2. Landfill 12 (SWMU 63) - Approved with conditions outlined in the clarification portion of this letter; and,
3. Vehicle Maintenance Facility Building 16-1 (SWMU 106).

D. The following SWMUs were identified in the RCRA Facility Assessment (RFA) dated March 1989 that needed further evaluation to determine if environmental impacts to the environment have occurred. The origin of the unit was determined through discussions/interviews with employees during the visual site assessment of the RFA. Based on information in the Soil RFIR, the following SWMUs may not exist or cannot be located for an environmental assessment, therefore a complete environmental assessment in accordance with the RCRA requirements in the permit and compliance plan (i.e., 50084) cannot be conducted. Until data suggest that the SWMUs exists, the TCEQ will consider the following SWMU(s) as administratively closed. If data/information becomes available that suggest the SWMUs exists and the unit location is established, DOE-Pantex must notify and conduct an affected property assessment in accordance with the hazardous waste permit and compliance plan.

1. Landfill 18 (AOC No. 8) - Unknown location or existence. Please see the clarification portion of this letter.
2. FS-1 (Unassigned SWMU Number) - Unknown location or existence but thought to be located west of Burning Ground Area. Please see the clarification portion of this letter.
3. Landfill 11 (SWMU 62) - Unknown location or existence. Please see the clarification portion of this letter.

II. **No Closure Decision** - No closure decisions were established for the following SWMUs discussed in the Soil RFIR.

- A. FS 4 (SWMU 69) - Located west of the Burning Ground Area and is an active SWMU. Please see the clarification portion of this letter.
- B. FS 10 (SWMU 72) - Located west of the Burning Ground Area and is an active SWMU that was included in the Soil RFIR for information only. Please see the clarification portion of this letter.
- C. FS 21 (SWMU 74) - Located in Zone 5 Area and is an active SWMU. Please see the clarification portion of this letter.

- D. FS 22 (SWMU 75) - Located west of Burning Ground Area is an active SWMU. Please see the clarification portion of this letter.
- E. Permitted Unit 53 (HW Permit No. 50284) - Unit 53 is an authorized unit in the hazardous waste Permit. Please see the clarification portion of this letter.
- F. Landfill 7 (SWMU 58) - Please see the clarification portion of this letter.

III. **Request for Additional Information** - Information was not provided in the report to establish a regulatory closure/remediation decision. Consideration for closure will be contingent on receipt of this additional information.

- A. Magazine Demolition Debris (SVS 7a landfills)
- B. Magazine Demolition Debris (SVS 7b)
- C. FS 24 Concrete Sump (SWMU 78)
- D. FS-10, Photo Processing Leaching Bed (SWMU 139)
- E. FS 11 (Unassigned SWMU Number)
- F. Playa 3 - Historic Playa (SWMU 8)

IV. **Clarification**

A. **General Comments**

1. Statistical Method - In the Independent Site Soil RFIR, COPCs were mapped by compound class (High Explosive (HE); herbicides; metals; perchlorate; pesticides; PCBs; radionuclides; semi-volatile organic compounds, SVOCs; and volatile organic compounds, VOCs) using Arc View with a Geographical Information System, GIS. The extent of release, defined by chemicals exceeding RRS No. 1, was determined for each compound class (e.g., VOCs). Extent determinations from all classes were then combined into one data set for the area. The area-wide closure data set included all sampled data points within one "release" area, with one lateral and vertical extent boundary defined for all combined classes. As a result, the closure (or "release") data set includes a large percentage of non-detects in the sampled population defined for each discrete compound group. TCEQ estimates that the resulting closure data set is populated by 65 to 90 percent "non-detect" values, resulting in dilution of area-wide concentrations which misrepresents potential "hot spots" or source areas, and underestimates the risk to human health.

In conclusion, DOE-Pantex utilized a statistical process which may not be appropriate for determining final closure for SWMUs in accordance with the Risk

Reduction Rules (RRS) and TCEQ guidance. When DOE-Pantex used statistics on the closure data set to attain a RRS No. 2 closure, and included a large percentage of non-detect values, TCEQ scrutinized the results to determine if the closure data set met the requirements established by the TCEQ Rule and guidance. In such cases, TCEQ considered a RRS No. 2 closure only if the criterion under the Rule could be met. Otherwise, the area was recommended for a RRS No. 3 closure.

2. Twining a Sample - Replicating contamination released to environmental media can be difficult, particularly when the preferred pathway for migration to groundwater is vertical, rather than lateral, as the case at DOE-Pantex. Attempting to replicate a sample location and concentration can be further compromised depending on when or where the original location was sampled, and natural variability of the soil. For this reason, a “twin” or replicate sample cannot be considered a replacement for the original sample concentration in the closure data set. It is not appropriate to disregard the original sample simply because “twin” sample fails to reproduce the original concentration, unless some improper methodology was used or improper laboratory procedures followed.

To achieve a Risk Reduction Standard (RRS) No. 2, DOE-Pantex has removed from the closure data set the higher concentrations of constituents (exceeding the Media Specific Concentrations, MSCs) that cannot be reproduced by sampling. This screening of concentrations, which exceed action levels, is not appropriate. Environmental investigation data should be eliminated from the data set only if the data has been proven to be invalid with regard to quality or methodology. The deviation in analytical results in samples taken in close proximity to each other illustrates the heterogeneity of environmental media and the complexities of preferential pathway mechanisms in transporting contaminants through the environmental medium. In addition, closure decisions are often based on very limited data points (often one or two samples in subsurface soils below 70 feet at DOE-Pantex). In these instances, “twining” can be used to determine if a pattern (i.e. “hot spots”) can be established regarding the COPCs under investigation, but twining is not appropriate to modify the data set to attain closure under RRS No.2. Again, twining, or replicate sampling, cannot be the basis for removing RRS No. 2 exceedances from the closure data set.

3. Ecological Risk Assessment (ERA) - The Independent Sites RFIR was reviewed to support that nature and extent of chemical contaminant releases had been determined as required by rule. The ERA included in the report was not reviewed as part of this extent determination. Any ecological issues associated with the Independent Sites will be addressed by the TCEQ in separate correspondence, through the established ecological risk assessment protocol.
4. Radionuclides - The Soil RFIR does not address the extent of radionuclide releases associated with the Independent Sites. Any radionuclide releases associated with the SWMUs are being addressed by DOE-Pantex in a separate investigation report.

5. Source Areas - SWMUs and impacted environmental media established by the Soil RFIR will be carried forward for further evaluation in the Groundwater RFIR to better understand the exposure pathways associated with the areas investigated. As per discussions between TCEQ, DOE-Pantex and EPA on July 17, 2003, DOE-Pantex will develop soil source maps that will be included in the Groundwater RFIR, which will be overlain with ground water data in both the Perched and Ogallala aquifers to help focus on those areas of cross-media contamination.
6. Uncertainty Management - As with the previous final investigation reports (i.e. Burning Grounds, Zone 10, etc.), there is a significant level of uncertainty associated with the definition of vertical extent of contamination. That uncertainty will be managed through long-term groundwater

B. Specific Comments on SWMUs

1. Playa 3: SWMU 8
 - a. Playa 3 - Recent Playa
 - i) No additional investigation data was submitted as part of this Soil RFIR to supplement the Burning Ground RFI. Therefore, any issues identified in the TCEQ's comments on Playa 3 in the Burning Ground RFIR are still outstanding and have not been addressed.
 - b. Playa 3 - Historic Playa Basin
 - i) Sampling must be conducted in the historic playa basin area which is manifested as a topographic low located immediately to the south of the current Playa 3 boundary. No environmental data has been submitted as part of the Soil RFIR to delineate the impacts to this portion of Playa 3.

2. Zone 7 Landfills: SVS 6

- a. The SVS 6 landfills include 9 debris trenches that manage construction debris. The landfills are covered with an administrative cap to remove any exposure to the surface pathway.
- b. Releases to the soils were determined to meet RRS No. 2 action levels in the top 15 to 33 feet of soil (vertical extent of investigation). Three of the nine landfills appear to meet RRS No. 2 Action Levels using direct comparison (compare to RRS No. 2 MSC); and the other six landfills failed direct comparison, but passed the groundwater protection criteria (i.e., SPLP). Therefore, the source area and affected soils down to 33 feet bgs appear to meet RRS No. 2 Action Levels. The investigation was vertically defined to 33 feet bgs, but failed to delineate to RRS No. 1 action levels in all cases. Therefore, it is uncertain if the vertical extent has been fully delineated.
- c. The wastes being managed in the landfill were not characterized to determine if they met RRS No. 2 criteria (must be decontaminated or removed). Therefore, the TCEQ is recommending the SVS 6 Landfills be closed as a RRS No. 3 with deed recordation and landfill cap maintenance. SVS - 6 Landfills are not required to be included in the Baseline Risk Assessment (BLRA) for evaluation as long as the landfill caps are maintained. It should be noted that the landfills are identified in the Soil RFIR as a grouping, therefore the TCEQ evaluated the grouping under one closure decision (i.e., RRS No. 3).

3. FS-16 Surface Impoundment: SWMU 11

- a. At the vertical extent of the environmental investigation at 40 feet bgs, cadmium exceeded the RRS No. 2 action limit in two borings. The vertical extent of contamination has not been defined to satisfy the RRS No. 2 closure criteria.

4. Landfill 13: SWMU 64

- a. In general, the wastes being managed in Landfill 13 appears to have released to soils. Since the wastes has not been removed or decontaminated in accordance with the rule, SWMU 64 cannot attain a RRS No. 2 closure as requested in the Soil RFIR. No information was provided that suggests that the wastes (magazine debris) was properly decontaminated prior to demolition. The Soil RFIR failed to substantiate through inspection and demolition documentation that the wastes materials were appropriately decontaminated prior to disposal into the landfill.

- b. Utilizing direct comparison, the data suggest that several COPCs could not attain a RRS No. 2 closure. The use of statistics and “twinning” to remove numerous COPCs (approximately 56 COPCs) to attain a RRS No. 2 closure is inappropriate. Also, the surface soils are impacted such that corrective measures must occur to meet RRS No. 2, MSC Soil/Air Ingestion (SAI) Values.
- c. The extent of contamination from the wastes being managed has migrated to approximately 50 feet below ground surface (the vertical extent of investigation). To manage the uncertainties associated with the contamination and any cross-media contamination, DOE-Pantex should close the site as a RRS No. 3.

5. Landfill 15: SWMU 66

- a. In general, the wastes being managed in Landfill 15 appears to have contaminants released to soils to a depth of approximately 155 feet below ground surface. Since the wastes has not been removed and/or decontaminated in accordance with the rule, a RRS No. 2 closure has not attained. No information was provided that suggests that the wastes is protective of groundwater and surface exposure pathways.
- b. Utilizing direct comparison, the data suggest that several COPCs could not attain a RRS No. 2 closure. The use of statistics and “twinning” to screen out COPCs to attain a RRS No. 2 closure is inappropriate. Specifically, DOE-Pantex cannot utilize twinning to remove the two highest concentrations of BIS2EHP (concentrations of 9.8 m/kg and 10 m/kg in boring soil sampling from well PTX07-2M03) so SPLP can be used to attain a RRS No. 2 for BIS2EHP.
- c. The extent of contamination from the wastes being managed has migrated to approximately 155 feet below ground surface. To manage the uncertainty associated with the contamination migrating to groundwater, the SWMU should be close as a RRS No. 3.

6. Temporary HE Burning Ground: SWMU 53

- a. Twinning was used to remove cadmium and chromium from the COPC lists, but SPLP established that the COPCs were protective of groundwater. Also, no values exceeded the SAI action levels.
- b. A TCEQ letter dated January 26, 2000 for the Miscellaneous Radionuclide Investigation requested an extent determination for DMF, TATB and Perchlorate. From the report, only Perchlorate was further evaluated to determine contaminant releases. No additional data was collected for DMF

and TATB as requested, but discussions have indicated that DMF and TATB were not managed in the unit. DOE-Pantex should verify the results and send documentation on the results.

7. Landfill 12: SWMU 63

- a. Based on the investigation data, the wastes managed in Landfill 12 is primarily inert materials (brick, concrete, etc.) from demolition of magazines (a.k.a. Igloos). The Soil RFIR indicates the wastes is not hazardous and is not a threat to groundwater;
- b. All impacted soils meet RRS No. 2 when directly compared to the RRS No. 2 action levels and evaluated for protection of groundwater (SPLP evaluation).
- c. Based on the Soil RFIR, Landfill 12 was built in a trench that drains part of Zone 5 during rainfall. As a condition of a RRS No. 2 closure, DOE-Pantex must provide evidence that the drainage has been redesigned so surface water does not disturb the landfill cap, etc. Surface water drainage must be designed to shed away from the closed Landfill.

8. Vehicle Maintenance Facility Building 16-1: SWMU 106

- a. Based on the investigation data, contaminant releases to the environment do not exceed RRS No. 2.
- b. The Soil RFIR discussed discolored soil and stressed vegetation caused by used motor oil, etc. As a condition of a RRS No. 2 approval, DOE must perform interim corrective action on the affected surface soils to protect the waters of the State of Texas.

9. Landfill No. 18: AOC No. 8

- a. The Soil RFIR discusses Landfill 18. Based on the RCRA Facility Assessment (RFA), Landfill 18 was reportedly located near FS-10 (SWMU 139). Site assessments at DOE-Pantex have failed to find the landfill to conduct an investigation.

10. FS-1 Landfill: Unassigned SWMU Number

- a. The Soil RFIR discusses a landfill near the Firing Site (FS) 1 building. Based on the RCRA Facility Assessment (RFA), the landfill was reportedly located west of the Burning Ground Waste Management Area (WMA). Site assessments at DOE-Pantex have failed to identify the landfill to perform an investigation. After a review of records and aerial photographs, no

evidence was found that established the existence of the landfill near Building FS-1.

11. Landfill 11: SWMU 62

- a. The Soil RFIR discusses a landfill thought to be in Zone 4. Based on the RCRA Facility Assessment (RFA), the landfill was reportedly located near SWMU 81. The site assessments at DOE-Pantex failed to find the landfill to conduct an investigation. After a review of records and aerial photographs, no evidence was found that the landfill existed.

12. Firing Site (FS) 4: SWMU 69

- a. FS-4 is currently active and no closure decision is requested in the Soil RFIR. The SWMU was in the report to identify the relationships between the units in close proximity. The brief site description did not address environmental concerns, but concentrated on basic operations of the unit. No regulatory decision was requested.

13. FS-10: SWMU 72

- a. FS-10 is currently active and no closure decision is requested. The unit was in the report to identify the units in close proximity such as SWMUs 139, 72 and AOC No. 8. The Soil RFIR did not propose any regulatory closure for the unit, although the report discussed impacts of depleted uranium and HE as a result of operations.

14. FS-21: SWMU 74

- a. FS-21 is currently active and no closure decision is requested in the Soil RFIR. The information was in the report to identify the units in close proximity to this unit (e.g., SWMU 11). The brief site description did not address environmental concerns, but concentrated on basic operations of the unit.

15. FS-22: SWMU 75

- a. FS-22 is currently active and no closure decision is requested in the Soil RFIR. The information was in the report to identify the units in close proximity. The brief site description did not address environmental concerns, but concentrated on basic operations of the unit.

16. Permitted Unit 53 in HW Permit No. 50284

- a. Permitted Unit 53 is currently active and permitted (HW-50284) and no closure decision is requested in the Soil RFIR. Closure of this unit must follow the closure plan as established in the Permit. The brief site description did not address environmental concerns, but concentrated on basic operations of the regulated unit. No closure decision was requested.

17. Landfill 7: SWMU 58

- a. Landfill 7 is located between Zones 11 and 12 near Building 16-8. The landfill managed concrete debris and possible petroleum products. The landfill is closed and has an administrative cover with vegetation.
- b. A geophysical survey defined the meets and bounds of the landfill. Soil investigation was conducted for the site and is represented in the Fire Training Area RFI. No closure decision information was included in this RFI for review or approval.

18. Magazine Demolition Debris: SVS 7a

- a. SVS 7a consists of 12 small landfills (managing approximately 450 cubic feet of wastes) containing debris from storage magazines. Two of the landfills were investigated to determine the general COPCs and extent of contaminant releases for 12 landfills located in Zones 4 and 5. The investigation results from the two landfills (landfills 7a-1 and 7a-12) were extrapolated for closure of all 12 landfills. The RRS rules does not allow process knowledge without verification sampling be the basis of closure decisions.
- b. The Soil RFIR did not provide inspection reports, etc. to establish that the magazines managed the same materials prior to demolition. No information was provided that suggests that the magazines were emptied of stored materials and decontaminated by washing down the buildings, etc., before disposal in the landfills. DOE-Pantex must substantiate through inspection reports, demolition documentation or sampling data that the wastes being managed have been appropriately decontaminated.
- c. The investigation is appropriate for a Phase I investigation to determine the meets and bounds of the twelve landfills and the general constituents of potential concern associated with these specific magazines, but the investigation was inappropriate for a final closure decision for the twelve landfills. The TCEQ cannot approve any closure on the 12 landfills without a series of borings, etc. that would assess releases to the environment from the grouping (12 landfills). To attain closure, DOE-Pantex should consider evaluating the landfills as a WMG and assessed deeper soils and groundwater for contaminant releases.

19. Magazine Demolition Debris: SVS 7b

- a. SVS 7b consists of 44 small landfills containing debris from storage magazines. Four (4) landfills were investigated to determine the general COPCs and extent of contaminant releases for all 44 landfills located in Zone 5. The investigation results for the four landfills were extrapolated to determine closure on all 44 landfills located in Zone 5. The investigation of the four (4) landfills identified contaminant releases to soils to a depth of 8 feet bgs (limits of investigation) which is too shallow for detecting releases from the unit. Therefore, it is unknown if the vertical extent of contaminant releases were established.
- b. The Soil RFIR did not provide inspection reports, etc. to establish that the magazines managed the same materials prior to demolition. No information was provided that suggests that the magazines were emptied of stored materials and decontaminated by washing down the buildings, etc., before disposal.
- c. The investigation is appropriate for a Phase I investigation to determine the meets and bounds of the 44 landfills and the general constituents of potential concern associated with the units investigated. The TCEQ cannot approve any closure on the landfills without a series of borings, etc. that would assess contaminant releases to the environment from the grouping (44 landfills). To establish the vertical extent of contaminant releases, DOE-Pantex should evaluate the landfills and environmental media below 8 feet bgs.

20. FS 24 Concrete Sump: SWMU 78

- a. The FS 24 Concrete Sump was used to test HE components. The concrete sump system was designed for wash down water collection located outside of the building on the south side. The sump has the dimensions of 5 by 5 by 7.3 feet deep. Currently, the Firing Site is still active, therefore the portions of FS-24 seeking closure is not well defined in the Soil RFIR, but it is assumed to be only the concrete sump.
- b. Operations of FS 24 would result in metals, radionuclides, SVOCs and VOCs having the highest potential for impacting soils. The investigation appears to be limited to one boring (PTX02-0033) located about 3 feet from the sump that was drilled to 15 feet below the ground surface. The investigation established that surface impacts are limited to metals (Ba, Cu, Hg, Mn, Sr); and subsurface impacts are HE, metals that exceed the RRS No. 1 action level at 15 feet. Therefore, the vertical extent of contamination may not have been fully delineated in accordance with the rule. Also, the liquid in the sump (approximately 190 gallons) exhibited exceedances of

gross beta that exceeded radionuclide action levels. The report did not address if radionuclides were evaluated in the soil samples. Based on the investigation data, the information may be considered a Phase I investigation. Additional characterization is required for a closure decision.

21. FS-10, Photo Processing Leaching Bed: SWMU 139

- a. Two potential source areas are associated with the FS-10. The first is the original location of the gravel leaching bed removed from service in 1986; and the second is the two 50-foot long leaching lines extending east of the FS-10 used to discharge industrial wastes into the soils. The maps in the Soil Investigation Report did not identify the locations of these leaching beds/lines at a scale that would be useful to make regulatory decisions. It was unclear if the investigation addressed releases from the original leaching bed only; or both the leaching bed and the 50-foot leaching line. In either case, sampling density was inadequate to attain a RRS No. 2 closure;
- b. The investigation established a contaminant release to at least 25 feet below ground surface. At the limits of the investigation (25 feet), the vertical extent of impacts to soil had not been established for HMX and cadmium. The vertical extent of contamination was not adequately defined to meet the RRS No. 2 closure criteria as requested in the Soil RFIR.

22. FS 11: Unassigned SWMU Number

- a. Firing Site 11 was used to test-fire components. Wastes generated would be signal cables, wood, etc. The investigation consisted of sampling to approximately 5 feet bgs. Contamination was detected to 5 feet bgs, the limits of investigation that exceeded RRS No. 2 closure criteria. Because of the uncertainties and inadequate sampling, additional investigations must be performed for a closure decision.

