



U.S. Department of Energy
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NOV 26 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Robert S. (Stu) Dinwiddie, Manager
New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
RCRA Permits Management Program
2044 Galisteo Street
P.O. Box 26110
Santa Fe, NM 87505-2100

Dear Mr. Dinwiddie:

Enclosed are two copies of the Department Of Energy/Sandia National Laboratories response to the NMED Request for Supplemental Information (RSI) for the OU 1334, Central Coyote Test Area, RCRA Facility Investigation Work Plan.

If you have any questions, please contact John Gould at (505) 845-6089, or Mark Jackson at (505) 845-6288.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Zamorski".

Michael J. Zamorski
Acting Area Manager

Enclosures



S. Dinwiddie

(2)

NOV 26 1997

cc w/enclosure:

S. Arp, AL, ERD

J. Parker, NMED-OB

R. Kennett, NMED-OB

D. Neleigh, EPA, Region 6 (2 copies via certified mail)

cc w/o enclosure:

B. Oms, KAO-AIP

W. Cox, SNL, MS 1147

D. Fate, SNL, MS 1148

C. Aas, SNL, MS 1148

B. Garcia, NMED

S. Kruse, NMED

INTRODUCTION

This document responds to a Request for Supplemental Information (RSI) received in a letter from the State of New Mexico Environment Department Oversight Bureau (NMED-OB) to the U. S. Department of Energy (Zamorski, August 26, 1997) documenting the review of the Central Coyote Test Area (OU-1334) RFI Work Plan.

This response document first addresses the general NMED-OB comments and then the specific site technical comments in the same numerical order as the RSI. The NMED-OB comments are repeated in **bold** by comment number. The DOE/SNL response is written in normal font style on a separate line under "Response". Responses to general comments begin below. Additional supporting information is included at the end of this document.

GENERAL COMMENTS

1. **Page 4-7, Section 4.1.3.4: SNL states "limited confirmatory sampling may be initiated to demonstrate that a SWMU is eligible for an administrative NFA."**

If evidence for a site is insufficient to support an administrative NFA proposal, a site investigation (and release assessment) is generally required. If the investigation indicates that concentrations of hazardous constituents are at acceptably low levels as determined by regulators, then the site may be proposed for NFA. Site investigation and release assessment sampling may, however, indicate the need for further investigation within an RFI. Therefore, investigators should not assume *a priori* that limited sampling will demonstrate that a SWMU is eligible for NFA.

Response: DOE/SNL acknowledges the comment.

2. **Several maps in the work plan are not to scale or are drawn at only approximate scale. Correctly scaled maps should be provided in the work plan.**

Response: The site maps in the Work Plan were not produced on a surveyed base map because this capability did not exist at the time the Work Plan was published. Detailed surveys of each site will be performed following RFI sampling to show actual sample locations and any other newly discovered features or physical changes. This information will be input into the Geographical Information System and updated and correctly scaled maps will be provided with each No Further Action (NFA) proposal when it is submitted to NMED-OB.

3. **Local background sample fractions should be collected for each site and analyzed in the laboratory for gross α , gross β , and gamma spectrum, regardless of field screening.**

Response: On those sites still remaining to be sampled, background sample fractions will also be collected and analyzed for gross alpha and gross beta (both for order of magnitude screening only) as well as gamma spectroscopy. Sample locations and number of samples will remain the same as indicated in the Work Plan.

4. **For all seven sites, the individual contingency sampling plans may not be adequate.**

Response: DOE/SNL acknowledges this comment. Contingency sampling plans were included in the Work Plan to cover the general scenario where contamination is discovered during the investigation. They were not intended to be all inclusive. Specific details regarding additional

sample locations, number of samples, sample depths, and analytes would be decided in conjunction with NMED-OB personnel based on the preliminary site sampling results.

5. **Page 5-5, Section 5.1.3: SNL states "Because of the limited precipitation, low permeability surface soil, limited mobility of the potential contaminants, and low infiltration rates (SNL/NM February 1994), groundwater is not considered a primary pathway and will not be investigated unless a hazardous source is identified."**

The ER sites are located adjacent to the Manzanita Mountains. Surface soils at the site are generally coarse-grained, and therefore, may exhibit relatively high permeabilities and infiltration rates. In addition, some potential contaminants at this site, such as VOCs, can exhibit considerable mobility. For a given ER site, decisions regarding the investigation of ground water will depend on historical site information and the results of investigations and/or sampling.

Response: Decisions regarding possible ground water investigations and sampling will be made if the preliminary site sampling results indicate that both a source and pathway were present in such a way as to create a potential for ground water contamination.

6. **The schedule submitted in the NOD response contains too much detail. It attempts to predict each individual SWMU's progress throughout the RFI, VCM, and NFA process. For some SWMUs, a Corrective Measures Study (CMS) may be required, in which case a large portion of the schedule for that SWMU would no longer be valid. SNL should submit a revised project schedule which details only the RFI schedule.**

Response: Since the RFI Work Plan submission in October 1994, several sites have been investigated and NFA proposals for Sites 11, 21, 57B, 70, and 88B have been submitted. For the remaining sites, the schedule has changed in response to budgetary and other constraints. A revised RFI schedule for this ADS is attached to this response (Attachment 1).

SPECIFIC TECHNICAL COMMENTS

ER Site 9, Burial Site/Open Dump

1. **Page 5-7, Section 5.1.4: SNL states "Level III analyses will be performed on all samples to support a baseline risk assessment if initial sampling shows COC concentrations above action levels or background concentrations."**

Detections of any contaminants above background generally warrant further field investigation (including sampling) until the severity of the problem is demonstrated to the satisfaction of the regulatory agencies. The use of action levels to support an NFA determination is not appropriate, unless a site has been fully characterized.

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If detected, volatile organic compounds (VOCs), or other anthropogenic COCs are also included in

the risk assessments. The risk assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

2. **Page 5-7, Section 5.1.4: SNL states "If a hazardous source is identified, additional data may be required to characterize the underlying soil media...."**

The waste piles can be sampled for TCLP metals and organics for the purpose of waste characterization. However, samples of soil beneath the waste piles must be analyzed for total metals and organics to investigate potential releases of hazardous wastes or hazardous waste constituents to the underlying media.

Response: During the initial phase of RFI sampling, trenches were cut through three debris mounds to expose the vertical mound profile and any buried materials. Samples were collected either from the middle of the mound or near exposed debris in the trench, and just beneath the contact of the mound with original grade (usually visible as a distinct horizon). Soil samples collected just under the mound/grade surface were analyzed for Resource Conservation and Recovery Act (RCRA) metals plus beryllium, HE, and semivolatile organic compounds (SVOCs). The analytical results are being reviewed and will be presented in the NFA when it is submitted in 1998.

Following the Voluntary Corrective Measure (VCM) to excavate the buried bunker at Mound 1, samples will be collected under the mound, spaced no farther than 25 feet apart. Samples will be analyzed for VOCs, SVOCs, HE, RCRA metals plus beryllium, gross alpha and gross beta (both for order-of-magnitude screening only), as well as gamma spectroscopy. An additional sediment sample will be collected in the arroyo closer to Mound 2. This sample will be analyzed for VOCs, SVOCs, HE, RCRA metals plus beryllium, and gamma spectroscopy. All samples will be field-screened for VOCs and beta-gamma radioactivity as per DOE/SNL standard operating procedures.

Field investigations and the trenching indicate that Mound 2 is just a pile of debris at the end of Mound 1, and Mound 3 is a terrace deposit as explained in Response 6 below. These two mounds will not require additional sampling.

3. **Page 5-9, Section 5.1.6.3: SNL states "The background concentrations and activities will be compared to metal and radionuclide concentrations in soil and sediment at ER Site 9 to assess if a release has occurred to the environment."**

Only 12 local background samples, to be collected at six locations, are proposed. Characterization data should be compared to approved sitewide background concentrations to determine whether contamination is present.

Response: Site characterization and site-specific background concentration data will be compared with NMED-OB approved background concentration data to determine whether contamination is present at ER Site 9.

4. **Page 5-12, Section 5.1.6.3, Debris Mounds 2 and 3: SNL states "The debris exposed in mounds 2 and 3 appears to be principally nonhazardous solid wastes and will not be sampled."**

SNL shall determine if these wastes are hazardous as per 20 NMAC 4.1 40 CFR 262.11.

Response: DOE/SNL will determine if wastes are hazardous as per 20 NMAC 4.1 40 CFR 262.11.

5. **SNL should provide information on the origin of the "shallow crater-like feature" northeast of Debris Mound 1. Sample results, if any, should also be provided.**

Response: During the Surface Radiation Voluntary Corrective Measures (VCM), this feature was investigated and surveyed, and it was identified as a burial pit for radioactively contaminated debris. The debris was excavated and disposed of properly in October 1996. Details of the pit excavation and results of one gamma spectroscopy soil sample analysis from the pit bottom are presented in the Final Report, Survey and Removal of Radioactive Surface Contamination at Environmental Restoration Sites (SNL/NM 1997). Additional subsurface samples will be collected from the pit using a Geoprobe during the Mound 1 excavation. Samples will be analyzed for HE, RCRA metals plus beryllium, gross alpha and gross beta (both for order-of-magnitude screening only), as well as gamma spectroscopy. All analytical results will be summarized in the NFA proposal when it is submitted in 1998.

6. **According to Figure 5-5, Debris Mounds 2 and 3 extend to distances of 100 feet or more. One sample to be collected beneath each mound is not enough to investigate a potential release to the environment. Additional samples should be collected beneath each mound, spaced no more than 25 feet apart.**

Wastes within the area defined as Debris Mound 3 appear to actually occur as discrete piles. Although a maximum spacing of 25 feet was recommended above, site conditions should influence the selection of judgmental sampling locations for this specific debris mound.

Site history is not well known; therefore, samples collected beneath the mounds should also be analyzed for volatile organics (VOCs), gross α , gross β , and gamma spectrum. During a visit to the site, it was noted that numerous rusty containers and aerosol cans, a 55-gallon empty drum which originally contained methyl alcohol, and pieces of fiberboard (asbestos?) are present at Debris Mound 2. Data derived from field screening techniques (such as for VOCs) by themselves are not acceptable for site characterization purposes.

The sample located furthest downstream in the arroyo (Figure 5-5, locations denoted by triangles) should be moved close to Debris Mound 2 (just downstream of it), or alternatively, another sample should be collected.

Response: Figure 5-5 is not detailed enough to measure debris mound dimensions (see response to General Comment 2 above). During preliminary RFI sampling, trenches were excavated through Mounds 2 and 3. Mound 2 was found to consist of a pile of debris in the arroyo at the southern end of Mound 1 with no evidence of any buried debris at this location. Similarly, the trench in Mound 3 did not show evidence of buried debris or soil disturbance at all. Faint horizontal bedding observed in the trench sidewalls implies that Mound 3 is a terrace deposit on the south side of the arroyo channel. This terrace deposit was used as a convenient dumping spot because of its flat surface. No additional sampling is planned for Mounds 2 and 3.

Following the VCM to excavate the buried bunker at Mound 1, samples will be collected under the mound, spaced no farther than 25 feet apart. Samples will be analyzed for VOCs, SVOCs, HE, RCRA metals plus beryllium, gross alpha and gross beta (both for order-of-magnitude screening only), as well as gamma spectroscopy. An additional sediment sample will be collected in the arroyo closer to Mound 2. This sample will be analyzed for VOCs, SVOCs, HE,

RCRA metals plus beryllium, and gamma spectroscopy. All samples will be field-screened for VOCs and beta-gamma radioactivity as per DOE/SNL standard operating procedures.

7. **Page 5-12, Debris Mound 1: SNL states "Characterization of Debris Mound 1 includes debris sampling to determine if the mound contains regulated hazardous waste and soil sampling beneath the mound to determine the extent of waste migration if a hazardous source is identified."**

It is unclear if soil beneath Debris Mound 1 will actually be sampled. Sampling must be conducted beneath Debris Mound 1, even if TCLP tests demonstrate that the "average" mound debris is not a hazardous waste for the purpose of its removal and disposal.

According to Figure 5-5, Debris Mound 1 extends to a maximum distance of about 200 feet. The nine samples to be collected from the bottom of the three trenches are not enough to investigate a potential release to the environment. Additional samples should be collected beneath Debris Mound 1, spaced no more than 25 feet apart.

Each sample collected beneath the mound should also be analyzed for VOCs, gross α , gross β , and gamma spectrum. Field screening data by themselves are not acceptable for site characterization purposes, but can be useful for selecting specific sample locations.

Response: Discreet samples of both the debris material and soil were collected for analysis from each of the three trenches just below the debris and just below the original grade surface. The analytical results are being reviewed and will be submitted with the NFA proposal when it is submitted in 1998. Additional samples will be collected following the VCM to excavate the mound as previously indicated in Response 6.

8. **Page 5-12, Debris Mound 1, Debris Sampling: It is unclear if "three grab samples collected from the entire vertical profile at each trench location" refers to the collection of composite samples. SNL must provide clarification.**

Response: Discreet samples were collected at three locations in each of the three trenches at approximately the middle of the mound. Composite samples of the entire vertical profile of the mound were not collected. The analytical results are being reviewed and will be submitted in the NFA proposal when it is submitted in 1998.

9. **Page 5-14, Table 5-2: The arroyo channel sediments should also be sampled for VOCs, gross α , gross β , and gamma spectrum.**

Response: As stated in Response 6 above; an additional sediment sample will be collected in the arroyo near Mound 2 and analyzed for VOCs, SVOCs, HE, RCRA metals plus beryllium, gross alpha, gross beta, and gamma spectroscopy. Additional samples for VOCs, gross alpha, and gross beta (both for order-of-magnitude screening only) will be collected at the arroyo sediment sample locations. All samples will be field-screened for VOCs and beta-gamma radioactivity as per DOE/SNL standard operating procedures.

10. **Page 5-5, Section 5.1.3: SNL states "The depth to groundwater at the site is approximately 138 feet bgl, according to a December 1991 measurement at the Schoolhouse well located approximately 1 mi west of ER Site 9 (IT May 1994a)."**

For this geologic environment, the Schoolhouse well is located too far away for the purpose of estimating depth to ground water at ER Site 9. In addition, given that bedrock crops out within a few hundred feet east of the site, ground water at Site 9 may occur at depths much shallower than 138 feet.

Response: DOE/SNL acknowledges that groundwater may be present along the bedrock-alluvium contact at Site 9, and it would be at a more shallow depth than the 138 feet below grade observed in the Schoolhouse well located approximately 1,900 feet east of Site 9. Subsequent documents will reflect this change.

ER Site 11, Explosive Burial Mounds

1. **Page 5-22, Section 5.2.4: SNL states "Level III analyses will be performed on all samples to support a baseline risk assessment if initial sampling shows COC concentrations above action levels or background concentrations."**

See comment #1, ER Site 9.

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If detected, VOCs, or other anthropogenic COCs are also included in the risk assessments. The risk assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

2. **Page 5-24, Section 5.2.6.3: SNL states "The background concentrations and activities will be compared to metal and radionuclide COCs in soil within and adjacent to the fenced areas at ER Site 11 to determine if COCs have been released to the environment."**

Only 10 local background samples, to be collected at five locations, are proposed. See comment #3, ER Site 9.

Response: Site characterization and site-specific background concentration data will be compared with NMED-OB approved background data to determine whether contamination is present at ER Site 11.

3. **Page 5-24, Section 5.2.6.3: SNL states " Surface and near-surface soil samples will be collected to determine if the surface depressions may have released potential COCs to the environment by any potential burn tests."**

Site history is not well known. Therefore, samples collected in the bottoms of the depressions should also be analyzed for VOCs, gross α , gross β , and gamma spectrum. Data derived from field screening techniques by themselves are not acceptable for site characterization purposes.

Response: RFI sampling and the VCM to excavate and screen the debris mounds have been completed at Site 11. All samples were field-screened with a photoionization detector (PID) and

a pancake probe, and no indications of contamination were observed. Soil samples were collected from the surface depressions and analyzed for HE, RCRA metals plus beryllium, and SVOCs. One sample was also analyzed by gamma spectroscopy. The laboratory analytical results did not indicate any evidence of a release of any kind. Following a DOE/SNL review of all the gamma spectroscopy sample data, the site was de-listed as a Radioactive Materials Management Area in September 1996. Full site investigation, VCM report, and analytical results are presented in the Site 11 NFA Proposal, submitted in October 1997 to NMED.

4. **Page 5-27, Section 5.2.6.3: In reference to Former Debris Mounds, SNL states "Two judgmental soil sample locations will be selected equidistant along the longest axis..."**

According to Figure 5-6, Debris mounds 2, 3, 4, 1, and 5 extend to distances of about 50, 60, 75, and 100 feet, respectively. Two samples to be collected from the bottom of each mound are not enough to investigate a potential release to the environment. Additional samples should be collected beneath each debris mound, spaced no more than 25 feet apart. Because the widths of Debris Mounds 2 and 5 are large, additional samples should be collected on both sides of centerline.

Samples collected beneath the mounds should also be analyzed for VOCs, gross α , gross β , and gamma spectrum.

Response: Additional samples were collected under each mound as discussed with and verbally directed by William Moats and William Stone of the NMED-OB in March and April 1996. Soil samples collected under each mound were analyzed for HE, RCRA metals plus beryllium, VOCs, and SVOCs. Six of the seventeen samples were analyzed by gamma spectroscopy. Five of the seventeen samples were analyzed for isotopic uranium and thorium. The laboratory analytical results did not indicate any evidence of a release of any type. Following a DOE/SNL review of all the gamma spectroscopy sample data, the site was de-listed as a Radioactive Materials Management Area in September 1996. Sampling details and analytical results are presented in the Site 11 NFA Proposal, submitted in October 1997 to NMED.

5. **A sampling plan must be presented for the purpose of verifying cleanup of the radiological point source near Debris Mound 1.**

Response: No radiological point source has been identified at Site 11. No additional sampling plan for radiological sources at Site 11 will be developed.

ER Site 57A, Workman Site: Firing Area

1. **Page 5-37, Section 5.3.1: SNL states "The underground bunker contained two 5-gal and one 20-gal containers of liquid waste ..."**

SNL should provide information regarding the type(s) of liquid waste and whether it was hazardous.

Response: The materials inside the containers were sampled and subjected to a field-hazard characterization by Kirtland Air Force Base (AFB) in August 1994. Apart from the combustibility of a black, pasty material found in the two 5-gallon containers, no other RCRA hazardous characteristics were identified. The containers were overpacked, removed, and disposed of by Kirtland AFB personnel. Full details of the sampling and analysis can be found in

the following report:

D. B. Stevens & Associates, August 1994, Kirtland Air Force Base Artillery Bunker Investigation Project Report, Prepared by IT Corporation, Albuquerque, New Mexico.

2. **Page 5-37, Section 5.3.2: In reference to radiological area sources, SNL states "These anomalies appear to result from the presence of manmade materials, rather than from tests conducted with radioactive materials."**

From a health-based perspective, NMED does not distinguish a difference between radiological contamination left from tests, or the abandonment of (manmade) radioactive materials.

Response: DOE/SNL acknowledges the comment.

3. **Page 5-40, Section 5.3.5.1: A sampling plan must be presented for the purpose of verifying cleanup of the radiological contamination.**

Response: The point source was removed as part of the Surface Radiation VCM in 1995. Sampling and analysis of the two area sources showed that the elevated readings were related to the underlying, naturally-occurring geologic materials, and remediation is not warranted. Details are provided in the Final Report, Survey and Removal of Radioactive Surface Contamination at Environmental Restoration Sites (SNL/NM 1997).

4. **Page 5-43, Section 5.3.6.3: SNL states "The background concentrations and activities will be compared to metal and radionuclide COCs in soil surrounding features at ER Site 57A to assess if a release has occurred to the environment."**

Only 10 local background samples, to be collected at five locations, are proposed. See comment #3, ER Site 9.

Response: Site characterization and site-specific background concentration data will be compared with NMED-OB approved background data to determine whether contamination is present at ER Site 57A.

5. **Page 5-46, Section 5.3.6.3, Utility Poles: SNL, must discuss why no sampling is planned along and beneath the high pressure pipes.**

Response: Additional sample points will be added around the perimeter of the concrete pad as discussed with William Moats, William Stone, and Roger Kennett of the NMED-OB in October 1997. Since the concrete pad is open in the center, an additional soil sample will be collected near the openings for the pipes.

6. **Page 5-46, Section 5.3.6.3, Gun Mounts: The gun mounts should be centered in the grid, and at least one sample collected on each side of the gun mounts.**

Response: Because a large, buried concrete pad and two additional gun locations were recently discovered at this site, DOE/SNL is working with NMED/HRMB personnel to develop an adequate sampling scheme for these features and this area. DOE/SNL is proposing to collect soil

samples on the three sides of each gun location not covered by a concrete slab and to collect concrete and soil samples in front of each gun mount position.

7. **Page 5-46, Section 5.3.6.3, Underground Bunker: SNL states "If a drainline is connected to the drain, contingency sampling may be required."**

If a drainline is connected to the drain, contingency sampling should be conducted to verify the extent of contamination.

Response: Additional soil samples will be collected to determine the extent of a possible release if field-screening or visual observation during the sampling under the floor drain indicate the presence of VOCs or radioactive contamination.

8. **Page 5-46, Section 5.3.6.3, Debris Sampling: A sampling plan must be proposed to investigate the scattered debris shown in Figure 5-19. Also, the scattered debris should be described.**

Response: The scattered debris consists of burned wood scraps, small pieces of wire, and broken glass fragments. These materials are scattered widely across Site 57A and are not an extensive deposit as implied by Figure 5-19. When the three onsite debris mounds were sampled and removed in January 1997, the larger debris fragments (over 3 inches in diameter) scattered throughout the area were also removed, therefore, no additional sampling is believed to be warranted.

9. **Page 5-50, Table 5-6: Sample fractions should also be collected and analyzed for gross α , gross β , and gamma spectrum at the wind tunnel and other concrete pads, utility poles, underground bunker, Debris Mound 1, Debris Mound 2, and Debris Mound 3.**

VOC samples should also be collected beneath Debris Mounds 1, 2, and 3, and beneath the machine shop area at the wind tunnel pad.

Response: Samples for gross alpha and gross beta (both for order-of-magnitude screening only), as well as gamma spectroscopy will be collected at the wind tunnel and other concrete pads, utility poles, and the underground bunker. VOC samples will be collected at the former machine shop/wind tunnel pad location. The debris mounds were sampled and removed under a housekeeping VCM in January 1997. VOC samples were collected of each mound's soil and the soil beneath each mound. The results of this sampling will be included in the NFA proposal for Site 57A when it is submitted in FY98.

10. **Because the machine shop area is a significant concern, sampling should be conducted at this location.**

A pipe sticking out of the ground is located on the east side of the wind tunnel/machine shop pad. Information should be provided regarding the purpose of this pipe.

Response: Sampling is planned for the former machine shop/wind tunnel pad location as indicated for both per Section 5.3.7 of the Work Plan and Comment 9 above. The pipe sticking out of the ground on the east side of the concrete pad is an old, abandoned electrical conduit.

11. **Signs posted around Building 9900 read "Flammable Liquid" and "Danger No Smoking". Designate the type of flammable liquid.**

Response: The flammable liquid reportedly stored in Building 9900 was gasoline.

12. **Soils in the open center part of Pad 4 need to be sampled.**

Response: Sampling is planned for this area. See Response to Comment 5 above.

13. **Information should be provided regarding what if anything is under the steel plate north of Pad 2.**

Response: The steel plate is resting on 4 to 8 inches of soil that overlay the concrete slab in that area.

ER Site 57B, Workman Site: Target Area

1. **Page 5-58, Section 5.4.4: SNL states "Level III analyses will be performed on all samples to support a baseline risk assessment, if initial sampling shows COC concentrations above an action level or background concentrations."**

See comment #1, ER Site 9.

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If detected, VOCs, or other anthropogenic COCs are also included in the risk assessments. The risk assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

2. **Page 5-52, Section 5.4.2: Section 5.4.2 says that all field radiological measurements were "approximately at the background activity level (Appendix F)."**

The location of the radiological point source should be specified. A sampling plan should be presented for the purpose of verifying cleanup of the radiological point source. The values of the field radioactivity measurements and the background activity level should be provided.

Also, see comment #3, Site 9, regarding background activity levels.

Response: Four area sources were identified at ER Site 57B. Sampling and analysis of the four area sources showed that the elevated readings were related to the underlying, naturally-occurring geologic materials, and remediation is not warranted. Details are provided in the Final Report, Survey and Removal of Radioactive Surface Contamination at Environmental Restoration Sites (SNL/NM 1997).

3. **Page 5-60, Section 5.4.6.3: SNL states "The background concentrations will be compared to COCs in soil present at ER Site 57B to assess if a release has occurred to the environment."**

Only 10 local background samples, to be collected at five locations, are proposed. See comment #3, ER Site 9.

Response: Site characterization and site-specific background concentration data were compared with NMED-OB approved background data to determine if contamination is present at ER Site 57B. The results are presented in the Site 57B NFA Proposal, submitted in October 1997 to NMED.

4. **Page 5-65, Table 5-8: Sample fractions should also be collected and analyzed for gross α , gross β , and gamma spectrum beneath the pits and the area between the tower bases. VOC and SVOC samples should also be collected beneath the pits.**

Response: The sampling proposed in the OU 1334 Work Plan has already been conducted, and the site has been proposed for an NFA decision based on Criterion 5 of the Document of Understanding (NMED 1996). No gross alpha or gross beta sampling was performed since the site was a conventional artillery target area and because field-screening and gamma spectroscopy did not identify any radiological material at this site. The Site 57B NFA document was submitted to NMED-OB in October 1997.

5. **At least two samples should be collected from the bottom of each pit at depths of 0-6 inches, 18-24, and 114-120 inches. Composite samples should not be collected for any sample fraction.**

Response: The sampling proposed in the OU 1334 Work Plan has already been conducted, and the site has been proposed for an NFA decision based on Criterion 5 of the Document of Understanding (NMED 1996). No composite samples were collected or analyzed during the site investigation.

6. **No sampling of the debris mound and beneath the debris mound is mentioned. If these wastes are removed, and are shown in the process as being strictly nonhazardous construction demolition debris, then sampling will not be necessary (for this specific case).**

Response: These wastes include strictly nonhazardous construction demolition debris (concrete, rebar, and asphalt). DOE/SNL has no plans to remove or sample the debris mound along the west side of Site 57B.

7. **Information regarding the purpose of the small concrete pad (dated 4-1-44) that is located south of the south tower base should be provided.**

Response: This pad was a cable anchor point for the south tower (as evidenced by the large eyebolt set into the concrete and aligned with the south tower base).

8. **Information regarding the purpose of the small concrete pad that is located northwest of the northern extent of the debris pile (near the power pole) should be provided.**

Response: This is the foundation for an old Kirtland AFB guard shack. The building was maintained and decommissioned by Kirtland AFB. The power and communication lines have

been disconnected even though electrical conduits are still present on the pad.

ER Site 61A, Schoolhouse Mesa Test Site: Blast Area

1. **Page 5-72, Section 5.5.4: SNL states "Level III analyses will be performed on all samples to support a baseline risk assessment if initial sampling shows COC concentrations above an action level or background concentrations."**

See comment #1, ER Site 9.

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If detected, VOCs, or other anthropogenic COCs are also included in the risk assessments. The risk assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

2. **Page 5-72, Section 5.5.5: SNL states "Radiological point source and area source anomalies are distributed over the ER 61A site (Figure 5-28)."**

A sampling plan must be presented for the purpose of verifying cleanup of the radiological sources. Point sources should be shown on Figure 5-28.

Response: Radiological point and area sources were cleaned up as part of the Surface Radiation VCM conducted at ER Sites 9 and 61A. Full details of source identification, removal, verification of the radiological anomaly clean-ups, and location maps are presented in Final Report, Survey and Removal of Radioactive Surface Contamination at Environmental Restoration Sites (SNL/NM 1997).

3. **Page 5-74, Section 5.5.6.3: SNL states "The background concentrations and activities will be compared to metal and radionuclide concentrations in soil and sediment at ER Site 61A to determine if a release has occurred to the environment."**

Only 12 local background samples, to be collected at six locations, are proposed. See comment #3, ER Site 9.

Response: Site characterization and site-specific background concentration data will be compared with NMED-OB approved background data to determine whether contamination is present at ER Site 61A.

4. **Page 5-79, Section 5.5.6.3, Debris Mounds 1 and 2: SNL states "Characterization of debris mounds 1 and 2 includes debris sampling to determine if the mounds contain regulated waste and soil sampling beneath the mounds to determine the extent of waste migration if a hazardous source is identified."**

It is unclear if soil beneath Debris Mounds 1 and 2 will actually be sampled. Sampling must be conducted beneath the two debris mounds, even if TCLP tests demonstrate that "average" mound debris is not a hazardous waste for the purpose of removing and disposing of the debris.

According to Figure 5-32, the two debris mounds extend to maximum distances of about 200 to 300 feet. The proposed number of soil samples to be collected from beneath each mound are not enough to investigate a potential release to the environment. Additional samples should be collected beneath each mound, spaced no more than 25 feet apart. However, digging along Debris Mound 1 may reveal that this feature is nothing more than a berm along the road, created as a result of clearing the immediate area. If the latter assumption is correct, sampling beneath this particular "debris mound" (berm) may not be necessary.

Samples collected beneath each mound should also be analyzed for VOCs, gross α , gross β , and gamma spectrum. Field screening data by themselves are not acceptable for site characterization purposes.

Response: Debris Mounds 1 and 2 were excavated and sampled in January 1997. Soil samples were also collected beneath the mounds, as called for in the OU 1334 Work Plan, except that three samples were also collected under Mound 2. The analytical results are being reviewed and will be submitted in the NFA proposal when it is submitted in 1999. Excavation of the two debris mounds uncovered surprisingly little debris, indicating that these features were created before extensive testing occurred at ER Site 61A and were probably not disposal mounds at all. The mound along the southern edge of the cleared area is nothing more than a berm, and the sampling that was performed is adequate to investigate a potential release. Samples collected under the mounds were analyzed for: VOCs, SVOCs, RCRA metals plus beryllium, HE, isotopic uranium, isotopic thorium, and gamma spectroscopy. Gross alpha and gross beta sampling is not warranted in light of the complete suite of analytes investigated here.

5. **Page 5-79, Section 5.5.6.3, Positive Gamma Areas: The approximate soil sampling locations are not shown in Figure 5-32.**

Response: The five sample locations will be in areas having the highest gamma activities as determined by the Surface Radiation VCM survey.

6. **Regarding the Concrete Blocks (page 5-79, section 5.5.6.3) SNL states on page 5-67, "Fragments of plastic materials and small HE compound fragments (Figure 5-29b) are scattered around the concrete blocks (61-72)."**

Soils surrounding the blocks should be sampled for high explosives, gross α , gross β , and gamma spectrum, regardless of what is found in the chip samples of concrete.

Response: Soil samples will be collected around the concrete blocks and analyzed for HE, gross alpha and gross beta (both for order-of-magnitude screening only), and gamma spectroscopy.

7. **Page 5-75, Table 5-10: Sample fractions should also be collected and analyzed for gross α , gross β , and gamma spectrum at the cleared area, the positive gamma areas, and at sampling locations proposed for arroyo channel sediment.**

Response: Additional samples will be collected in the cleared area, the positive gamma areas, and arroyo channel sediment sampling locations for gross alpha and gross beta (both for order-of-

magnitude screening only), and gamma spectroscopy.

8. **The sampling grid shown in Figure 5-33 should be expanded in all directions, and the number of samples increased.**

Response: DOE/SNL will expand the grid and collect 6 more samples (for a total of 12) at the cleared area.

9. **Dark gray pieces of plastic (?) debris, metal shrapnel, and orange resinous materials are scattered over the entire area. SNL should provide descriptions of these materials (are these materials hazardous and/or radioactive?).**

Response: Site inspections and surveys by DOE/SNL waste management personnel have determined that the metal shrapnel and plastic debris are not hazardous or radioactive. These materials probably result from destructive testing of weapon transportation containers.

ER Site 61C, Schoolhouse Mesa Test Site: Schoolhouse Building

1. **Page 5-83, Figure 5-34: SNL should clarify whether the CEARP soil data was acquired from sampling conducted in 1988 or 1989.**

Response: The Comprehensive Environmental Assessment and Response Program (CEARP) sampling was conducted in 1988.

2. **Page 5-85, Section 5.6.2: SNL states "Five composite samples were analyzed for HE compounds, VOCs, metals, and radionuclides."**

Composite samples are not acceptable for the purpose of site characterization.

Response: The CEARP sampling was conducted to identify sites with potential environmental problems and to assign a hazard ranking score to prioritize site investigations. These data will not be used by DOE/SNL for site characterization.

3. **Page 5-85, Section 5.6.2: SNL states "Gamma spectrometry screens of soil samples were (sic) indicated normal background activities for potassium-40,..."**

See comment #3, ER Site 9, in regard to background activities.

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If detected, VOCs, or other anthropogenic COCs are also included in the risk assessments. The risk assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

4. **Page 5-85, Section 5.6.2: SNL states "Aluminum, barium,...silver and radium concentrations were less than the method detection limit."**

The preceding sentence lists detections for each of these metals. Also, the value for cadmium (107 µg/L) does not match that of Table 5-11, page 5-86, listed as 1.7 µg/L. Obviously, cadmium concentrations of 107 µg/L in ground water would be a concern.

Response: The actual cadmium concentration should be corrected to 1.7 µg/L. The value reported in the sentence for radium was actually for vanadium. These analyte values are qualified with a B₁ in Table 5-11, indicating that the concentration detected is above the instrument detection limit but below the method detection limit. In more conventional reporting terminology, these values would be qualified with a "J."

5. **Page 5-85, Section 5.6.2: SNL should provide the exact location of the one "lb" of HE compounds.**

Response: The paragraph referenced is identical to the one found in Section 5.5.2 on page 5-67 for ER Site 61A. The referenced unexploded ordnance/high explosives (UXO/HE) survey was conducted at ER Sites 9, 20, 61A and 61C, but the distinction between Sites 61A and 61C was not specified in the survey write-up. The HE fragments totaling one pound were found at ER Site 61A, scattered northeast of the concrete slabs. A photograph of some of the HE fragments found is shown in Figure 5-29b on page 5-69 of the OU 1334 Work Plan.

6. **Table 5-11, Page 5-86: The Schoolhouse well (the so called "East Well") has been sampled numerous times by SNL's Sitewide Ground-Water Surveillance Group. All available ground-water data should be summarized in the RFI Work Plan.**

The reported concentration for nitrate as nitrogen (5.2 mg/L, Table 5-11) is relatively high, and thus is a concern. Other sampling at the Schoolhouse well has produced similar results. The drainfield/leachfield associated with historical machine shop activities is also a concern. Monitor wells are recommended at the Schoolhouse site to investigate potential ground-water contamination.

Soil samples should be collected from boreholes drilled in the drainfield/leachfield area.

Response: Ground water data can be found in the SNL/NM Annual Ground Water Monitoring Report, which is sent to NMED annually. The last seven sampling events between September 1993 and March 1996 all show nitrate as nitrogen concentrations between 3.3 and 4.6 mg/L. These concentrations are all below the 5.2 mg/L value for the sample listed in the Work Plan and the 10 mg/L Subpart S Maximum Contaminant Level.

Trenching across the drainfield/leachfield area is planned to locate the drain lines and select the optimum locations for soil sampling to document a possible release. Based on the results of these samples, the decision to collect deeper samples and install monitor wells will be discussed with NMED-OB.

5. **Page 5-85, Section 5.6.2: SNL states "Calcium, iron, manganese, potassium, and sodium were determined to be within the range of background for groundwater in this region."**

Background concentrations for these specific ground-water constituents were not determined in SNL's Phase II interim report; *Background Concentrations of Constituents of Concern to the*

Sandia National Laboratories/New Mexico Environmental Restoration Project Additional information and references should be provided by SNL regarding how the above conclusion was reached.

Background concentrations for these constituents have been determined in the NMED DOE Oversight Bureau report; *Background Ground-Water Quality of the Kirtland Air Force Base Area, Bernalillo County, New Mexico*. SNL staff may wish to consult this report.

Ground water occurs at a relatively shallow depth at this site. Ground water should be investigated at this site as part of the RFI.

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If detected, VOCs, or other anthropogenic COCs are also included in the risk assessments. The risk assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

The decision to investigate ground water contamination at ER Site 61C will be negotiated with NMED-OB following RFI sampling and analysis.

6. **Page 5-89, Section 5.6.4: SNL states "Level III analyses will be performed on all samples to support a baseline risk assessment if initial sampling shows COC concentrations above an action level or background concentration."**

See comment #1, ER Site 9.

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If detected, VOCs, or other anthropogenic COCs are also included in the risk assessments. The risk assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

7. **Page 5-89, Section 5.6.5.1: SNL states "Air sampling may also be conducted at the site to support a baseline risk assessment if COCs are detected above action levels or background concentrations."**

Results of air sampling are not acceptable for the purpose of site characterization.

Response: Air monitoring data alone are not suitable for site characterization. Air monitoring results, if air monitoring is performed, would be used to calculate exposure rate doses for risk assessment purposes only. Empirical data are always desirable and more reliable than an assumption of exposure rate concentrations for risk calculations.

8. **Page 5-93, Section 5.6.5.3: SNL states "The background concentrations will be compared to metal and radionuclide COCs in soil surrounding features at ER Site 61C to assess if a release has occurred to the environment."**

Only 12 local background samples, to be collected at six locations, are proposed. See comment #3, ER Site 9.

Response: Site characterization and site-specific background concentration data will be compared with NMED-OB approved background data to determine whether contamination is present at ER Site 61C.

9. **Page 5-93, Section 5.6.5.3, Sink Drain Line:**

The drainline/leachfield must be located before samples are collected. The proposed trenches may not be adequate. Trenching should be conducted until the drainline/leachfield is delineated. Samples should be collected in those areas most likely to have received wastes.

Field screening data by themselves are not acceptable for site characterization purposes.

Response: Trenching will proceed until the drainfield is delineated. Visual observations and field-screening instruments will be used to help determine if a release has occurred and select sample locations.

DOE/SNL agrees that field-screening data alone are not suitable for site characterization.

10. **Page 5-99, Table 5-13: In addition to those shown in Table 5-13, soil samples collected from the sink drainline, the Schoolhouse Building, the drainage to the arroyo channel, and the arroyo channel sediment should also be analyzed for VOCs, gross α , gross β , and gamma spectrum.**

Response: Additional analyses will be performed on samples from: the sink drain line, the Schoolhouse Building, the drainage to the arroyo channel, and arroyo channel sediment for VOCs, gamma spectroscopy, gross alpha and gross beta (both for order-of-magnitude screening only).

11. **SNL should provide information on whether there was a septic system located at the Schoolhouse which could have caused elevated nitrate in ground water.**

Response: Field inspections do not indicate that the building has ever had sanitary facilities besides the sink, or that there is a septic system at this site. The only piping system that exits in the building is associated with the sink. As indicated in the Work Plan, trenching is planned to confirm piping and septic field leach lines at this site. It is unknown whether possible discharges at this site could be responsible for local impacts to ground water nitrate concentrations.

12. **SNL should provide information on what was machined at the schoolhouse (were radiological materials machined or used at the schoolhouse?).**

Response: Only steel and aluminum were machined at the schoolhouse. According to interviews with former SNL workers, no HE or radioactive materials were machined, used, or stored at the Schoolhouse building.

ER Site 68, Old Burn Site

1. **Page 5-104, Section 5.7.1: Information should be provided to define a SNAP reactor.**

Response: A Systems for Nuclear Auxiliary Power (SNAP) Reactor was a small radioisotopic power generator developed for use in satellites. Interviews with former site personnel indicate that the simulated SNAP reactors used for testing purposes may have contained sodium, graphite, and stainless steel and would not have contained any radioactive material. The sodium, graphite, and stainless steel would have been around the simulated fuel capsule reactor materials. These test devices did not contain depleted uranium (DU), because DU was not an important component in the SNAP reactors.

2. **Page 5-106, Section 5.7.2: The CEARP data, representing sample composites, are not suitable for the purpose of site characterization. Detection limits are not given in Table 5-14. Field and laboratory quality control results are also not presented.**

Response: The CEARP sampling was conducted to identify sites with potential environmental problems and to assign a hazard ranking score to prioritize site investigations. These data are not used by DOE/SNL for site characterization.

3. **Page 5-106, Section 5.7.2: SNL states "Acetone is a common laboratory contaminant, and the toluene values were less than 10 µg/kg, suggesting that these VOC detections may be false positives."**

The toluene detections should be considered valid, unless verified otherwise.

Response: The data identified are for CEARP samples that are not suitable for site characterization. DOE/SNL will not use these data.

4. **Page 5-111, Section 5.7.4: SNL states "Level III analyses will be performed on all samples to support a baseline risk assessment if initial sampling shows COC concentrations above an action level or background concentrations."**

See comment #1, ER Site 9.

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If detected, VOCs, or other anthropogenic COCs are also included in the risk assessments. The risk

assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

5. **Page 5-111, Section 5.7.5: Radiological Anomalies Information should be provided regarding where the 240 radiological point sources are located at ER Site 68. No sampling plan is presented for the purpose of verifying cleanup of the point sources.**

Response: All radiological point sources (predominately DU fragments from the Moonlight Shot testing at Site 71) were located and removed as part of the Surface Radiation VCM conducted at ER Sites 68/71. Full details of source identification, removal, and verification of the radiological anomalies are presented in the Final Report, Survey and Removal of Radioactive Surface Contamination at Environmental Restoration Sites (SNL/NM 1997). Maps showing the point and area sources that were identified and remediated are contained in that report.

Three area sources, contaminated with thorium still remain at Site 68. The extent of the contaminated areas will be delineated by collecting soil samples using a Geoprobe. Samples will be screened for radioactive contamination using field instruments (pancake probe), and gamma spectroscopy, isotopic thorium, RCRA metals plus beryllium, and possibly, SVOCs. If the volume of contaminated soil is small, it will be containerized and shipped off site for disposal. If the volume of contaminated soil is sufficiently large, a soil segregation system may be employed to reduce the volume of contaminated materials. Additional waste characterization samples (TCLP metals) may be required to determine the appropriate disposal option. No specific sampling and analysis plan will be prepared for this work. These activities and analytical data will be included in the Site 68 NFA proposal to be submitted in FY98.

6. **Page 5-114, Section 5.7.6.3: SNL states "The background concentrations and activities will be compared to metal and radionuclide COCs in soil and sediment surrounding and within features at ER Site 68 to assess if a release has occurred to the environment."**

Only 16 local background samples, to be collected at eight locations, are proposed. See comment #3, ER Site 9.

Response: Site characterization and site-specific background concentration data will be compared with NMED-OB approved background data to determine whether contamination is present at ER Site 68.

7. **Page 5-114, Section 5.7.6.3, Borrow Pits: Composite samples are not suitable for the purpose of site characterization.**

Response: Borrow pits were areas mined for soil to build up the berms along the sides of the burn pan at Site 68. As such, extensive characterization may not be warranted. The borrow pits have previously been sampled, and discreet samples were collected at depths of 0-0.5, 0.5-1.0, and 3.0-3.5 feet below grade. Samples were analyzed for gamma spectroscopy, SVOCs, RCRA metals plus beryllium, and VOCs. The analytical results are being reviewed and will be submitted in the NFA proposal when it is submitted in 1998.

8. **Page 5-114, Section 5.7.6.3, Burn Pan: Composite samples are not suitable for the purpose of site characterization.**

At least 4 discrete soil samples should be collected beneath the burn pan at two depths (0-6 inches and 18-24 inches). These samples should be collected even if sediments in the burn pan are found to be nonhazardous for the purpose of their removal and disposal.

Response: Four discrete soil samples beneath the burn pan will be collected if a further survey of the pan reveals any holes or cracks that could have permitted a release. Sampling would be focused around these leak areas.

9. **Page 5-116, Section 5.7.6.3, Debris Mounds: The proposal to collect only one sample beneath each debris mound may be inadequate, depending on the dimensions of each individual mound. Samples should be collected beneath each debris mound, spaced no more than 25 feet apart.**

Response: The "mounds" at Site 68 shown on Figure 5-45 are actually just scattered pieces of scrap wood or concrete rubble (and not actual mounds) and do not cover the 30-50 sq. ft. as indicated on the figure. Only debris Mound 4 and the scattered ceramic pipe debris near the utility poles (and one other location not shown on the figure) require sampling. Samples of the materials themselves as well as beneath the piles will be collected.

10. **Page 5-116, Section 5.7.6.3, Drainage Ditch and Overflow Basin, and Plastic-Lined Pit: The proposed sampling for these three features is inadequate. The overflow basin and the plastic-lined pit should be investigated in a similar way to that done for the burn pan. At least 4 discrete soil samples should be collected beneath the overflow basin and the plastic-lined pit.**

Additional samples should be collected along the bottom of the drainage ditch, spaced no further than 25 feet apart.

Response: The investigation of the overflow basin and plastic-lined pit was more extensive than that indicated in the work plan. Trenches were excavated across the long axis of the basin and pit, and samples were collected at three depths from two locations in each feature. All samples were analyzed for RCRA metals plus beryllium and SVOCs. The deepest samples were also analyzed for VOCs. A few samples were also analyzed for gamma spectroscopy. The analytical results are being reviewed and will be submitted in the NFA proposal when it is submitted in 1998.

Three trenches were excavated along the drainage ditch, and samples were collected from two depths in each trench. All samples were analyzed for RCRA metals plus beryllium, SVOCs, and asbestos. The deep samples (2.5 to 3.0 ft below grade) were analyzed for VOCs. One of the six samples was also analyzed by gamma spectroscopy. The spacing between samples was about 30 to 40 ft and should identify whether a release had occurred along the ditch. The analytical results are being reviewed and will be submitted in the NFA proposal when it is submitted in 1998.

11. **Page 5-116, Section 5.7.6.4: The contingency sampling plan may not be adequate. See also comment #1, ER Site 9.**

Response: DOE/SNL agrees that detections of contaminants above background values warrant further evaluation, but the need for additional field investigation should be evaluated on a case-by-case basis. This evaluation is described as follows; typically DOE/SNL compares COC concentrations for metals and radionuclides with NMED-OB accepted background values. If the concentrations exceed NMED-OB agreed-upon background values, these values are used to perform baseline human health and ecological risk assessments. All high explosives (detectable concentrations or one-half detection limit concentrations) are included in the risk assessment. If

detected, VOCs, or other anthropogenic COCs are also included in the risk assessments. The risk assessments make the very conservative assumption that the maximum concentrations detected are present over the entire site, which is generally not the case. It is possible for a COC concentration to be above background values and not pose a risk to human health or the environment; in that case, additional field work should not be required.

12. **Page 5-117, Table 5-16: The proposed sample fractions for some features are inadequate, and should include the following:**

Sample fractions should be collected and analyzed for gross α , gross β , and gamma spectrum beneath the borrow pits, burn pan, drainage ditch, overflow basin, plastic-lined pit, and at sampling locations proposed for arroyo channel sediment.

Sample fractions should be collected and analyzed for VOCs beneath the borrow pits, burn pan, drainage ditch, overflow basin, plastic-lined pit, and at sampling locations proposed for arroyo channel sediment. Field screening data by themselves are not acceptable for site characterization purposes.

Sample fractions should be collected beneath the burn pan and analyzed for total SVOCs (not TCLP SVOCs).

Sample fractions should be collected beneath the burn pan and analyzed for total metals (not TCLP metals).

Response: Additional soil samples will be collected for gross alpha and gross beta (both for order-of-magnitude screening only) and for VOCs. If a further survey of the burn pan reveals any holes or cracks that could have permitted a release, then additional sampling for VOCs, SVOCs, and metals will be performed in those areas.

13. **There is a debris mound (12 feet by 3 feet) not shown on the Site 68 maps. The mound is located immediately east of the utility poles, and contains burned pieces of pipe(?).**

Response: The waste characteristics of materials in this pile have been determined, and the material will be disposed of as part of a housekeeping VCM at this site. This information will be detailed in the ER Site 68 NFA proposal when it is submitted in 1998.

14. **There is a relatively large debris mound located about 1000 feet northeast of ER Site 68, across the arroyo. This debris mound is definitely a concern but is not shown on the maps of Site 68. If it is to be included as part of ER Site 68, information concerning this debris mound should be provided in the RFI work plan. Otherwise, this information should be provided in a separate document.**

Response: This mound is not part of the Site 68/71 RFI at this time. It will be addressed as a potential new Solid Waste Management Unit (SWMU) and the established procedure will be followed to add this feature to the HSWA Permit list. No schedule for an investigation is presently available.

15. **Page 5-110, Section 5.7.3: SNL states "The depth to groundwater at the site is approximately 199 feet bgl based on measurements at the KAFB 1902 well located approximately 0.5 mi north of ER Site 68 (IT May 1994a)."**

For this geologic environment, KAFB-1902 is located too far away for the purpose of estimating depth to ground water at ER Site 68. In addition, given that limestone bedrock crops out within a few hundred feet west of the Burn Pan, ground water at Site 68 could occur at depths much shallower than 199 feet.

Response: DOE/SNL acknowledges this comment. Monitor wells have been installed closer to Site 68 than KAFB 1902, and this more recent data will be used.

ATTACHMENT 1
REVISED RSI SCHEDULE

EARLY START	EARLY FINISH	ORIG DUR	BUDGET COST	FY98	FY99
				WBS 1.03: CENTRAL COYOTE TEST AREA	
				Site 9: BURIAL SITE/OPEN DUMP SCHOOLHOUSE MESA	
10OCT97		0	0	CWV0093000 START FIELD WORK VCM, S9	
10OCT97	18NOV97	35	35905	CWV0093010 Prepare Draft of VCM/Soil Pile Mgmt Plan, S9	
10OCT97	2FEB98	79	22580	CWV0093050 Perf Nonhaz/Rad Wst Mgt Fld Wrk, S9	
10OCT97	30SEP98	248	3018	CWV0093060 Perf ERFO Waste Movement, 1334	
10OCT97	7OCT97	5	6367	CWV0093070 Mobilize Cntrctrs & Equip f/VCM Fld Wrk, S9	
8OCT97	14NOV97	28	3381	CWV0093080 Perf Add Rmvl/InSitu Trtmnt VCM Fld Wrk, S9	
8OCT97	14OCT97	5	5203	CWV0093090 Perf Verif Samplg/Anly for VCM Fld Wrk, S9	
19NOV97	22DEC97	22	2253	CWV0093020 Perf Removl/InSitu Trtmnt VCM Fld Wrk, S9	
19NOV97	22DEC97	22	41639	CWV0093030 Perf ERFO VCM Supt, S9	
19NOV97	22DEC97	22	2801	CWV0093040 Perf ERFO VCM Confirmatory Soil Samplng, S9	
	22DEC97	0	0	CWV0093100 COMPLETE FIELD WORK, S9	
8JAN98	14JAN98	5	3917	CWV0093105 Validate (DV3) SMO Lab Data, S9	
15JAN98	21JAN98	5	34527	CWV0093110 Obtain Analyses/Eval Data/VCM Fld Wrk, S9	
	2FEB98	0	0	CWV0093120 COMPLETE VCM FIELD IMPLEMENTATION, S9	
12FEB98	13MAR98	22	18460	CWV0093130 Compile Site Data VCM Rpt/NFA Prpsl, S9	
16MAR98	14APR98	22	34195	CWV0093140 Prepare Draft of VCM Rpt/NFA Prpsl, S9	

Plot Date 13NOV97
 Data Date 10OCT97
 Project Start 10OCT97
 Project Finish 12JAN00

Plot Date
 Data Date
 Project Start
 Project Finish

Sheet 1 of 6

SNL ENVIRONMENTAL RESTORATION
 FY98 BASELINE SUBMITTAL
 Detailed Barchart by Site

Sheet 1 of 6

Date	Revision	Checked	Approved

EARLY START	EARLY FINISH	ORIG DUR	BUDGET COST
15APR98	28APR98	10	11074
29APR98	19MAY98	15	7890
	19MAY98	0	0
20MAY98	30SEP98	93	403
1OCT98	8MAR99	105	454
9MAR99	9JUN99	66	19627
	9JUN99	0	0
1OCT97	14NOV97	33	17295
17NOV97	21NOV97	5	4740
24NOV97	2DEC97	5	5065
	2DEC97	0	0
3DEC97	21SEP98	198	428
22SEP98	30SEP98	7	12589
	30SEP98	0	0

FY98	FY99
WBS 1.03: CENTRAL COYOTE TEST AREA	
Site 9: BURIAL SITE/OPEN DUMP SCHOOLHOUSE MESA	
CWV0093150	Perf Int Rev/Inc Comnts VCM Rpt/NFA Prpsl, S9
CWV0093160	DOE Rev/Comnts/Memo VCM Rpt/NFA Prpsl, S9
CWV0093170	SUBMIT VCM RPT/NFA PRPSL TO NMED/EPA, S9
CWV0093180	FY98 NMED/EPA Review VCM Rpt/NFA Prpsl, S9
CWV0093181	FY99 NMED/EPA Review VCM Rpt/NFA Prpsl, S9
CWV0093190	Address NMED/EPA Comnts VCM Rpt/NFA Prpsl, S9
CWV0093220	REC CL III PRMT MOD APRVL VCM RPT/NFA PRPSL, S9
Site 11: EXPLOSIVE BURIAL MOUNDS	
CWV0113000	Prepare Draft of VCM Rpt/NFA Prpsl, S11
CWV0113010	Perf Int Rev/Inc Comnts VCM Rpt/NFA Prpsl, S11
CWV0113020	DOE Rev/Comnts/Memo VCM Rpt/NFA Prpsl, S11
CWV0113030	SUBMIT VCM RPT/NFA PRPSL TO NMED/EPA, S11
CWV0113040	NMED/EPA Review VCM Rpt/NFA Prpsl, S11
CWV0113050	Address NMED/EPA Comnts VCM Rpt/NFA Prpsl, S11
CWV0113060	REC CL III PRMT MOD APRVL VCM RPT/NFA PRPSL, S11

Plot Date 13NOV97
 Data Date 10CT97
 Project Start 10CT97
 Project Finish 12JAN00

REVISION
 SHEET 2 OF 3

SNL ENVIRONMENTAL RESTORATION
 FY98 BASELINE SUBMITTAL
 Detailed Barchart by Site

Date	Revision	Checked	Approved

EARLY START	EARLY FINISH	ORIG DUR	BUDGET COST
10OCT98	28OCT98	20	6050
	28OCT98	0	0
29OCT98	12MAY99	132	856
13MAY99	16AUG99	66	7404
	16AUG99	0	0
10OCT97	14JAN98	66	6256
	14JAN98	0	0
10OCT97		0	0
10OCT97	30SEP98	248	65577
10OCT98	30SEP99	250	65577
	16AUG99	0	0
	16AUG99	0	0

FY98	FY99
WBS 1.03: CENTRAL COYOTE TEST AREA	
Site 61C: SCHOOLHOUSE MESA TEST SITE, BLDG	
CWN61C2070	DOE Rev/Comnts/Memo Draft Conf NFA Prpsl, S61C
CWN61C2080	SUBMIT CONF NFA PROPOSAL TO NMED/EPA, S61C
CWN61C2090	NMED/EPA Review of Draft Conf NFA Prpsl, S61C
CWN61C2100	Addr NMED/EPA Comnts on Conf NFA Prpsl, S61C
CWN61C2110	REC CLASS III PRMT MOD APPRVL CONF NFA, S61C
Site 88B: FIRING SITE, INSTRUMENTATION POLE	
CWN88B2000	Address NMED/EPA Comnts Conf NFA Prpsl, S88B
CWN88B2010	REC CLASS III PRMT MOD APPRVL CONF NFA, S88B
NON-SITE SPECIFIC WORK	
CWRALL1010	FY98 START CENTRAL TEST AREA
CWS0001998	FY98 Subproject Oversight, 1334
CWS0001999	FY99 Subproject Oversight, 1334
CWRALL1000	COMPLETE REMEDIATION FOR CENTRAL TEST AREA
CWRALL1020	COMPLETE CENTRAL TEST AREA

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