



SI. SANA MARTINEZ/  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

*Hazardous Waste Bureau*

2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303  
Phone (505) 476-6000 Fax (505) 476-6030  
[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)

RECEIVED  
3.20.12



DAVE MARTIN  
Secretary

BLITCH TONGATE  
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 20, 2012

Mark Patterson  
BRAC Coordinator  
Ravenna Army Ammunition Plan  
Building 1037  
8451 State Route 5  
Ravenna, OH 44266

Steve Smith  
USACE FWDA Program Manager  
CESWF-PER-DD  
819 Taylor Street, Room 3B06  
PO Box 17300  
Fort Worth, TX 76102-0300

**RE: NOTICE OF DISAPPROVAL  
RCRA FACILITY INVESTIGATION REPORT,  
PARCEL 21  
FORT WINGATE DEPOT ACTIVITY, NEW MEXICO  
EPA ID# NM6213820974  
FWDA-11-004**

Dear Messrs. Patterson and Smith:

The New Mexico Environment Department (NMED) received the Department of the Army's (the Permittee) *RCRA Facility Investigation Report, Parcel 21*, (Report) dated January 14, 2011, submitted pursuant to Section VII.H of the Fort Wingate Hazardous Waste Facility Permit. NMED has reviewed the Report and hereby issues this Notice of Disapproval (NOD). The Permittee must address the following comments.

**COMMENT 1**

The Permittee must update Figure 2-2 (Historical Land Use and Reuse Parcel Boundaries) to identify all FWDA property that has been transferred.

## COMMENT 2

In section 3.5 (Conclusions and Recommendations), page 3-9, the Permittee discusses preparation of a Corrective Measures Study (CMS) at the TNT Leaching Beds (SWMU 1). If the Permittee intends to propose complete removal of all contaminated soils at this site, a CMS may not be necessary.

## COMMENT 3

The Permittee did not conduct discreet sampling as directed at the sites identified in NMED's July 8, 2008 Notice of Disapproval (NOD) at SWMU 2 (Bldg 515 Clean and Paint Bldg and Acid Holding Pond), Section 4.0, or at SWMU 19 (Building 501, Former Boiler House), Section 6.0 for PCB analysis. The use of MI Sampling was addressed in Comment 11 of NMED's July 8, 2008 Work Plan NOD and Comment 1 of NMED's Approval with Modifications dated December 12, 2008. The Permittee's original statement regarding MI sampling along with NMED's response to MI sampling in the Approval with Modification is included below:

### Permittee's Statement

In the Comment Response provided in Appendix A of the Work Plan, Comment 2, the Permittee states that "[t]he Army firmly believes that the MI sampling approach does in fact provide decision level data for explosives as well as other constituents of concern. Attachment A to this response to NOD comments is a technical paper that provides specific results and findings of current research as well as the applied use of the MI sampling methodology for environmental characterization purposes. The Army believes that this technical paper provides significant background information supporting the use of MI sampling for generation of decision-level data for explosives and other constituents of concern at FWDA. The text of the revised Work Plan has not been changed with respect to the proposed use of MI sampling at a number of AOCs and SWMUs in Parcel 21. Following NMED review of the technical paper, the Army proposes further discussion regarding the MI approach and its applicability at FWDA."

### NMED Response

"NMED has reviewed the technical paper provided and as stated in the paper, MI sampling has only been effectively applied to areas where the highest concentrations of energetic material residues have been found (e.g., near firing points, around targets, and areas where unexploded ordnance (UXO) or discarded munitions have been blown in place (BIP)). In the event that constituents unrelated to explosives may be a concern, MI sampling has not been shown to be an appropriate method for detection of these types of constituents. In addition, the proposed MI sample collection depths range from zero to three inch depths and one foot depths. The method recommends sample collection depths of 2.5 to 5 centimeters (one to two inches) [method 8330B, p. A-13].

EPA Region 10 is applying MI sampling at the Portland Harbor Superfund site in Oregon (this is not discussed in the technical paper: see EPA Technology Innovation Program:

[in.org/programs/21m2\\_lit\\_show.cfm?id=6611](http://www.epa.gov/epaosopr/21m2_lit_show.cfm?id=6611)). As cited in this paper, "Multi-incremental sampling is an innovative approach to evaluate whether soils at a site can be considered "clean" of constituents of concern (COCs). This approach, which is being disseminated to EPA technical staff throughout the U.S., involves collecting multi-incremental samples composed of 30 or more sub-samples within each designated sampling area, which results in a high sampling density. The multi-incremental sampling approach is considered more representative of areas with no known source of hazardous constituents." As noted, MI sampling may be appropriate in areas where there is no expectation to discover contamination. However, in areas where there have been known releases, MI sampling may not be an appropriate method. Again, the COCs at the Oregon site do not include VOCs.

As a follow up to this comment and to gain a better understanding of how MI sampling has been applied in Region 10, Ms. Kristine Koch of EPA Region 10 was contacted (October 17, 2008). Ms. Koch was the project lead for the Triangle Park site in Oregon. Triangle Park had a long history of use under multiple owners. Characterization work had been conducted in the past, but additional investigation has been requested by a new purchaser of the property. MI sampling was applied. Ms. Koch indicated that where there had been known spills, MI sampling was not the most appropriate approach and that in these areas, discrete sampling was conducted. Ms. Koch further indicated that this was one of their first sites applying MI sampling, and that in the future, they would change the approach to include: smaller decision units within smaller areas, systematic random sampling to avoid clustered data, field quality assurance samples, and a more rigorous work plan.

Based upon the discussion with Ms. Koch, it appears that there may be some areas at Ft. Wingate where MI sampling may be appropriate. However, MI sampling is not an all-encompassing tool to be applied site-wide. Specific areas where there is a high likelihood of contamination due to spills or areas where there is historical data indicating previous spills or migration of contamination should not be sampled using the MI method. Rather, discrete sampling is more appropriate.

In addition, the method is not appropriate for characterizing aqueous – phase releases or releases affected by aqueous – phase transport mechanisms. NMED considers MI sampling to be acceptable as a screening tool in some situations but is appropriate for compliance only for surface releases with detonations as the contaminant release source and then only for explosive compounds and some metals. This method has only been applied to soils collected in the uppermost soil surfaces and from soils where expected fallout patterns from detonations have occurred."

The types of releases that are likely to have occurred at Buildings 501 and 515 would not have had a distribution pattern similar to that of ordinance detonations. There is the potential for hotspots to be overlooked using this approach and results for sampled constituents, such as PCB's, do not take into account the dilution resulting from MI sampling. MI sampling may only be used as a screening tool for investigation of non-explosive contaminant releases. The Permittee must conduct discrete sampling at SWMU 2 and SWMU 19 as required by NMED's Approval with Modifications.

#### COMMENT 4

At SWMU 2 (Acid Holding Pond), in Section 4, Table 4-2(Summary of Detected Constituents in Soil Current Investigations), the Permittee lists high lab reporting limits for metals results. The Permittee must explain the high reporting limits for metals, including a comparison to the appropriate screening levels, or propose to collect additional samples at the Acid Holding Pond.

#### COMMENT 5

At SWMU 2 (Acid Holding Pond), in Section 4, Tables 4-1(Summary of Detected Constituents in Soil Previous Investigations) and 4-2(Summary of Detected Constituents in Soil Current Investigations), the Permittee compared total chromium results to CrIII screening levels. The Permittee must determine the species of chromium to support the use of the CrIII screening level rather than the CrVI screening level.

#### COMMENT 6

At SWMU 2 (Acid Holding Pond), in Sections 4.4.5(Characterization of Floor Trough and Discharge Pipe), page 4-10, the Permittee reported a 4.0 mg/kg arsenic result, which is greater than the residential cleanup level of 3.9 mg/kg. However, in Section 4.5 (Conclusions and Recommendations), page 4-12, states "The current investigations of the concrete floor trough and the **drainage pipe** to the acid holding pond found that the underlying soils did not contain constituents at concentrations exceeding Permit cleanup levels." The Permittee must address this and other high arsenic values at this location, and discuss how FWDA will resolve this issue through revision of the Background Study.

#### COMMENT 7

In Section 6.3 (Current Investigations), page 6-4, the Permittee states that, "As described in Section 6.4 of the approved Work Plan, two MI soil sampling areas were established over 1/8 acre exposure units (see Figure 6-2 and Photo 6-3) to provide a repeatable and accurate measure of the average concentrations of PCBs that may be present within this area at which human receptors may potentially be exposed. This is consistent with Section 1.2.2 of the Technical Background Document for Development of Soil Screening Levels (NMED, 2009)."

MI Sampling is not consistent with Section 1.2.2 of NMED's 2009 Soil Screening guidance. The guidance discusses data sets consisting of multiple sample results, not the combining of multiple samples to produce one analysis that results in one data point. The Permittee may use MI sampling for PCB investigation only as a screening tool. See Comment 3.



**COMMENT 8**

In Section 6.4 (Evaluation of Data from Current and Previous Investigations), page 6-5, the Permittee states "...[a]s noted in Section 6.3, a ground water sample was collected from TMW13 on 22 October 2009. Results are presented in a document entitled *Fort Wingate Depot Activity Ground Water Periodic Monitoring Report, October 2009 to January 2010* (USACE, 2010). As shown in that document, no PCBs were detected in the ground water sample collected from TMW13." There is no indication in that report that samples obtained from TMW13 were analyzed for PCBs. Revise the Report to remove the statement regarding PCB detections at TMW13 or cite the correct document that contains PCB chemical analytical results for well TMW13 groundwater samples.

**COMMENT 9**

In Section 6.4 (Evaluation of Data From Current and Previous Investigations), page 6-5, the Permittee states that analytical results for pre- and post-demolition soil samples for SWMU 19, Bldg 501, Former Boiler House, are not in the FWDA database, and that from manual comparison two samples exceeded permit levels for PCB 1254 and PCB 1260. The results of MI sampling detected PCB 1260 in all of the samples at levels below the residential screening level of 2.22 mg/kg; however, the results, when multiplied by the number of increments exceeds the screening level indicating the potential for hotspots. The Permittee must propose further investigation for PCBs at this site in the revised Report.

As stated above, the Permittee may use MI sampling for PCB investigation only as a screening tool in this situation. See Comment 3 above.

**COMMENT 10**

In Section 8.0 (AOC 62 – Building 508, Smokeless Powder Magazine), the Permittee lists results and MDLs in Table 8-1 (Summary of Detected Constituents in Soil, Previous Investigations) that are three orders of magnitude higher than the results reported in this section and also three orders of magnitude higher than Table 9-1 (Summary of Detected Constituents in Soil) from the previous Work Plan.

Table 8-1 in the Report also lists fewer results from previous investigations than Table 9-1 in the Work Plan.

Table 8-2 (Summary of Detected Constituents in Soil, Current Investigations AOC 62) lists lab reporting limits and MDLs in ug/kg instead of the previous mg/kg units. The Permittee must ensure that all results are accurately reported using the correct units throughout Report. Revise the Report accordingly.

**COMMENT 11**

In Section 12.5 (Conclusions and Recommendations) the Permittee recommends no further action at AOC 75, two former transformer locations near Buildings 501 and 515, because MI sampling analysis detected PCBs at lower concentrations than the SSLs. See Comment 9 above. Propose to conduct further investigation at these locations.

**COMMENT 12**

In the revised Report, discuss current groundwater conditions in Parcel 21. Add a separate section in the Report and reference documents, such as Groundwater Monitoring Plans or Reports, as appropriate.

**COMMENT 13**

NMED has updated its soil screening guidance. For future Reports, use NMED's *Risk Assessment Guidance for Site Investigation and Remediation*, dated February 2012 (2012 Guidance) for risk evaluation.

The Permittee must evaluate cumulative risk at sites where multiple constituents are detected. See Section 5.0 of the 2012 Soil Screening Guidance (SSG). If only one constituent is detected at a sampling site, Table A-1 of the SSG may be used for compliance purposes.

**COMMENT 14**

NMED understands that the Permittee will submit an addendum to the Report that includes the results of soil sampling conducted after the demolition of Building 522 (AOC 60).

Also, regarding SWMU 72 (Building 530) demolition, the Report states that the building shell was still standing at the time of submittal in January 2011. NMED received the Army's document submittal: "Site Specific Final Report Building Demolition, Septic Tank Removal and Ancillary Tasks" dated January 20, 2012, which states that the results of demolition related sampling were sent by the contractor to the Permittee to be included in final Report. This and any other demolition related sampling results must be included with the revised Report and with other associated Parcel Reports.

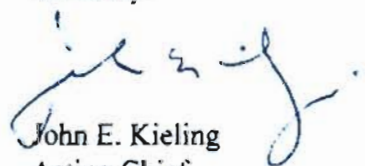
**COMMENT 15**

As part of a separate Parcel 21 investigation, the Permittee did initiate an Interim Measure to remove brass casings southwest of Building 530. NMED reviewed the Brass Casings Interim Measures submittal as part of review of this Report, and had no comments.

The Permittee must address all comments contained in this letter and submit a revised Report. The cover page must indicate that the submittal is a revision and was prepared for NMED. The revised Report must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition the Permittee must submit a redline-strikeout version (electronic) of the revised Report that shows where all changes have been made. The revised Report must be submitted to NMED no later than August 31, 2012.

If you have any questions regarding this letter, please contact Shannon Duran at (505)-476-6058.

Sincerely,



John E. Kieling  
Acting Chief  
Hazardous Waste Bureau

cc: Shannon Duran, NMED HWB  
Dave Cobrain, NMED HWB  
Christy Esler, USACE  
Laurie King, U.S EPA Region 6  
Chuck Hendrickson, U.S. EPA Region 6  
Tony Perry, Navajo Nation  
Franklin Jishie, Navajo Nation  
Jason John, Navajo Nation  
Eugenia Quintana, Navajo Nation  
Steve Beran, Zuni Pueblo  
Darrell Tsabetsaye, Zuni Pueblo  
Kirk Bemis, Zuni Pueblo  
Clayton Seoutewa, Southwest Region BIA  
Rose Duwyenie, Navajo BIA  
Judith Wilson, BIA  
Eldine Stevens, BIA  
Barbara Davis, BIA  
Katherine Nunan, BIA

File: FWDA 2012 & Reading File  
HWB-FWDA-11-004