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EPA, Region 6 Compliance Assurance and Enforcement Division
John Blevins, Director <mailto:blevins.john@epa.gov>

EPA Region 6 Multimedia Planning and Permitting Division (6PD)
Federal Facilities Section
Susan Spalding, Associate Director for RCRA Programs <mailto:spalding.susan@epa.gov>
1445 Ross Ave, Ste 1200
Dallas, TX 75202

Tara Hubner RCRA Environmental Scientist <mailto:Hubner.Tara@epamail.epa.gov>
EPA Region 6
1445 Ross Avenue Suite 1200
Dallas, Texas 75202-2733

NMED Interim Department Secretary David Martin <mailto:david.martin@state.nm.us>
PO BOX 26110,
Santa Fe, New Mexico 87502

Mr. James Bearzi NMED HW Bureau Chief <mailto:james.bearzi@state.nm.us>
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Bill Olsen NMED Groundwater Chief <mailto:bill.olsen@state.nm.us>
1190 Saint Francis Drive
PO Box 5469
Santa Fe, NM 87502

**Request for EPA Region 6 Oversight for Public Participation and Technical Concerns for the
Kirtland Air Force Base (KAFB)
Bulk Fuel Facility Jet Fuel Plume**

The undersigned groups and individuals are requesting that EPA Region 6 exercise its oversight authority to ensure that the appropriate permits and public participatory requirements of Resource Conservation and Recovery Act (RCRA) and the Safe Drinking Water Act (SDWA) are met by the New Mexico Environment Department (NMED). The reasons for the request are described below.

Significant public concern is present for a jet fuel leakage plume at KAFB that is estimated to be 8,000,000 gallons. The size of the plume and the presence of contaminants that have reached the aquifer at KAFB and have traveled offsite beneath residential neighborhoods are of concern to the Albuquerque community. The plume of contamination may threaten municipal production wells and the health of residents. The plume was discovered in 1999 by an NMED hydrologist in the groundwater bureau. No further investigation was pursued until in or about 2007.

Under Resource Conservation and Recovery Act (RCRA)

We appreciate the public informational meetings given the New Mexico Environmental Department Hazardous Waste Bureau (NMED HWB) on the Kirtland Air Force Base (KAFB) Jet Fuel Plume. Investigation Plans and Interim Measures have

been required. However, there are proposals for remediation that include vapor extraction with injection of wastewater back into the aquifer through an underground injection control (UIC) Class IV well. The KAFB Permit was presented to the public in 2007. No extension of the public comment period was granted to the public.

The Permit was originally captioned for the Open Burn and Open Detonation Units. Although major modifications were subsequently made to the Permit before its approval in July 15, 2010, public requests to reopen the public comment period were denied. Additionally, despite the realization in or about 2007 that extensive contamination existed at the Bulk Fuel Facility the public was precluded from participating in that portion of the Permit related to Corrective Action needed for the Bulk Fuel Facility. The Bulk Fuels Facility was only listed in *Permit Part 6.4.1.3 (#8) Areas with Groundwater Contamination and Table I-3*, requiring a CME Report due 180 days after NMED approves site characterization. No further characterization of the Bulk Fuel Facility was provided to the public during the Permit approval process.

Characterization of the site is required previous to the implementation of remedies. However, KAFB is proposing the implementation of remedies prior to the completion of any CME Report. A CME Report is required subsequent to full site characterization, which has not yet been performed. The public is entitled to a review, comment period and public hearing previous to the selection of any remedies that would be proposed in a CME Report.

Work Plans that have been approved or partially approved by NMED include substantial modifications to groundwater monitoring for number, location of downgradient and upgradient monitoring wells. The work plans have not been previously submitted to the public for any review and comment. *40 CFR 270.42 Appendix I, C Groundwater Monitoring*. Modifications are being made to the permit under the Resource Conservation and Recovery Act (RCRA) that are class 2 or class 3 modifications. The limited corrective action measures described for the Bulk Fuel Facility do not include what is currently being undertaken at KAFB and offsite in the surrounding community. The need for extensive changes to groundwater monitoring and soil vapor monitoring were not contemplated or presented to the public in the permit.

Given the high level of public interest in the Jet Fuel Plume in Albuquerque's aquifer, and its proximity to City of Albuquerque municipal, KAFB and other public drinking water wells, the Class 2 modifications rise to Class 3 modifications. These modifications have been made without public opportunity for full public participation to include review, comment and opportunity for public hearing, if requested, as provided for by RCRA.

"Since Class 3 modifications involve substantial changes to facility operating conditions or waste management practices they should be subject to the same review and public participation procedures as permit applications. The specific procedures for Class 3 modifications are at *40 CFR 270.42(c)*."

*Federal Register/Vol. 53. No. 188 Rules and Regulations
28th Sept 1988 pg. 37919*

Substantial public interest exists under NMAC also that provides for Class 2 modifications to be treated as Class 3 modifications.

The substantial changes to the permit that include plans that are being implemented without opportunity for review and comment and remedies being proposed without presentation in a Corrective Measures Report include the following:

1. **IM Plan** – excavates former Fuel Offloading Excavation Plan- Rack area, complete shallow boreholes along ancillary piping, and conducts various tests.
2. **Vadose Zone Investigation Plan** – complete soil borings and soil-vapor wells.
3. **Groundwater Investigation Plan** – install groundwater monitoring wells
4. **The LNAPL Containment Plan and injection well remedy** were approved by NMED on December 10, 2010 with no presentation of a permit to the public. The public is uninformed as to whether a Class IV or Class V injection well is planned for use. Class IV injection wells require a UIC permit. Air quality concerns have not been addressed. Minimum construction and siting requirements have not been presented to the public. Injection of treated wastewater has not been investigated for potential to spread contamination that may exist near injection sites. Injection of fluids is not assured to be accomplished in an environmentally safe manner. The location to receive waste from the LNAPL Storage Tank and the details of transportation and disposal location has not been provided. Disposal of activated carbon filters has not been determined. The location of injection wells to receive the pump and treat wastewater has not been provided.

The need for a UIC permit has not been addressed. A UIC permit requires public notification, opportunity for comment and review. See,

"40 CFR Section 145.11 referring to Sections 124.10 (a)(1)(ii), (a)(1)(iii), (a)(1)(v), (b), (c), (d), and (e)—(Public notice); Section 124.11—(Public comments and requests for hearings); Section 124.12(a)—(Public hearings); Section 124.17 (a) and (c)—(Response to comments)."

Technical concerns that have not been addressed because NMED has not required a UIC RCRA permit are the following:

Underground Injection Control (UIC) Wells –The State has discretion to permit the UIC wells under RCRA and/or Safe Drinking Water Act. Neither RCRA nor the SWDA has been addressed.

Whether the injection wells would be protective given reinjection of contaminated water into Albuquerque's drinking water aquifer has not been determined. We are requesting that NMED require a permit under both RCRA and SWDA in order to ensure that the drinking water supply is adequately protected. The permit process must follow public review, comment and public hearing procedures outlined above. The Environmental Protection Agency established minimum requirements necessary to meet the objective of adequate protection of drinking water. Those include:

1. All injection wells must be either authorized by permit or rule.
2. Minimum construction and siting requirements.
3. Requirements for permit applications and processes which must be followed for permit evaluation.

Enforcement of program requirements. ---<http://www.epa.gov/region6/6en/w/sdwauc.htm>

The KAFB LNAPL Containment Plan site has an elaborate pump and treat system for which many questions remain. The characterization of the aquifer has not

been adequately investigated with contour maps provided. The hydrological studies of the aquifer injection have not been made and evaluated as to what impacts on seeps and springs are located within the hydrological area of influence for the plan. No formal studies have been done to insure that the injection well will not cause turbulence and disperse contaminants over a wider area, thereby raising the maximum contaminant levels in the aquifer. Nor has there been a report submitted by KAFB to identify the number of known contaminant plumes within area that could be affected by the infiltration and injection systems plan. The permit itself recognizes 9 areas of groundwater contamination but does not identify previous areas that remain contaminated.

The full extent of surrounding contamination is not identified in the permit or plans. Other plumes of contaminants that exist in the area should be identified and mapped in relation to the Jet Fuel Plume. **According to NMED Website the Permit that was issued in 7/15/2010, ????** In the permit the groundwater contamination sites are listed that show 8 other sites. Many sites were designated in the past for “no further action” but may still contain contamination that is present at some level that would be released by the pump and treat and injection.

The permit identifies the following areas for groundwater contamination:

Permit Part 6.4.1.3. Areas with Groundwater Contamination

Groundwater contamination or the potential for groundwater contamination has been identified at the following areas:

1. Tijeras Arroyo Groundwater (TAG) Area – trichloroethylene (TCE) and nitrate;
2. Landfills #4, #5, and #6, LF-008 (SWMU 6-4)–potential for contamination by selenium and TCE;
3. Manzano Base Groundwater – TCE;
4. Sewage Lagoons and Golf Course Pond, WP-026 – TCE, nitrate;
5. Manzano Sewage Treatment Facility, WP-16 (SWMU 6-24) – potential for Contamination;
6. Monitoring well WYO-4 area – TCE;
7. McCormick Ranch -- Nitrate;
8. Bulk Fuels Facility, ST-106 and SS-111 -- Fuel (JP-4, JP-8, and Aviation Gas) Contamination; and
9. EOD Hill – Perchlorate contamination.

An issue arises as to whether monitoring of the injection well site is provided for.

Monitoring wells across KAFB and Sandia National Laboratories are known to be defective in many respects due to incorrect location, improper construction, corroded well screens, cross contamination of different saturation zones and improper sampling procedures. Wells that currently exist in the Bulk Facility plume gave unreliable data according to HWB Chief James Bearzi during the November 30, 2010 informational presentation. At the January 12, 2011 informational presentation, NMED announced that 29 of the existing wells had been approved. No assurance that the approval was based on reliable factors was presented.

Consideration of pH, water temperature differences in relation to the natural conditions of groundwater or impacts on surface water and other water rights

holders regarding their beneficial use, have not been provided for public review prior to approval of the LNAPL injection plan and associated aquifer Underground Controlled Injection.

Additional technical concerns are as follow:

1. There has been no study on the affects of hydrocarbons and EDB on the treatment system and what type of filtration system that may be most effective.
 2. The compatibility is unknown for the LNAPL treated water in relation to the groundwater or whether the chemical analysis of the treated water includes an analysis for mineral balance. Mineral balance is needed for determination of ion balance in the water, the scaling tendency of the water or the sodium adsorption ratio. The quantity of the pump and treat water output that can affect water quality in the aquifer has not been described for the period of time over which operations will continue.
 3. Bromide concentration in the groundwater has not been considered in the treatment process. The types of chemical analyses that are necessary to perform have not been presented. Modest concentrations of bromide in the water to be treated feed water can significantly promote the formation of Disinfectant By Products (DBPs). Treatment methods must be adequately described to ensure that various chemicals and compounds are identified and do not mask the presence of other chemicals and contaminants. This masking process can result if the appropriate testing and treating methods are not utilized. Such technologies may necessarily include mass spectrometry, dual-column dual-detector analysis where ethylene dibromide (EDB) and hydrocarbons are simultaneously present. Without such varied testing the EDB and hydrocarbons may mask the presence of the other.
5. Partial Approval of the 3 KAFB Work Plans December 10, 2010, NMED issued partial approval of the 3 Work Plans with direction to:
- Install 78 additional groundwater wells
 - Install 35 additional soil-gas wells
 - Develop all groundwater wells
 - Conduct borehole geophysical logging, existing and new wells
 - Complete soil sampling at 27 deep borings
 - Complete soil sampling at former fuel offloading rack and along pipeline to tanks.

The addition of the large number of 78 groundwater wells may be excessive and could lead to further aquifer contamination. No plan has been presented for review and comment by the public for the monitoring wells and whether the aquifer has been adequately characterized for flow direction and hydraulic head. The GIS modeling for flow direction has not performed from a reliable network of monitoring No GIS investigation using topography has been provided to determine flows direction. The public has not been presented with information that the monitoring well network is reliable to make such a determination.

The January 12, 2011, Power Point presentation of HWB Chief Bearzi identified the July sampling event may have been from wells that were not properly developed. NMED has a duty to determine if data provided is full, accurate and complete. Nevertheless, NMED purports there is no change in the size of the plume based on the same data that NMED deems unreliable.

6. Vapor Extraction Units were previously utilized to an approved plan and did not include air quality concerns. The ABCWUA and City and County governments requested a Vapor Extraction plan for a permit of the NMED

HWB, and there has been no mention of this matter in the public informational meetings.

Additionally, the wide scope of proposed changes and commitment of federal resources have not been addressed or supplemented by any environmental analysis under the KAFB Environmental Impact Statement.

The relation between corrective action procedures and permit modification is not clear. The relationship between plans and remedies seems to have blurred. The public is uninformed as to the classification levels of the ongoing permit modifications and what is to be the KAFB corrective action compliance period with specific deliverables. NMED should clarify what process it is approving these plans under and what the classifications of the modifications are. Public Participation as provided for by RCRA is not being fulfilled. NMED should identify the planning process in relation to the remedy process.

Through public information requests we have found there has not been a Corrective Action Order with overall specifics. In the 40 years of jet fuel leakage, the slow response and lack of enforcement measures by NMED is disappointing.

Investigation is needed under the Safe Drinking Water Act as to whether the public utility wells closest to the contamination were developed properly so that the contamination will not enter the well screens. Documentation needs to be provided when a plume of contamination could arrive at municipal wells. NMED has rejected without explanation CH2MHill analyses for the plume to arrive at municipal and KAFB wells under worst and best case scenarios. There is a lack of agency coordination between ABCWUA and NMED HWB as to whether the municipal wells should be replaced.

Whether the contaminants would be blocked from being delivered into the ABCWUA drinking water distribution system and piped to our homes, schools, hospitals, churches and businesses, is a major issue. This is a bigger concern since the recent discovery of EDB. The older municipal wells may be somewhat shallow in relation to the water table and lack the annular casing rings, as do more modern wells. One may question why a huge expenditure for 78 monitoring wells is required but not a single municipal well is under consideration for replacement.

NMED has stated that they will **NOT** implement precautionary measures to shut down Ridge Crest and Burton Wells #5, which are respectively 4-8 city blocks from the plume. NMED is regulating under RCRA and the need for the application of the SWDA is necessary to address the problem of the municipal production wells. There has not been a groundwater characterization report on the cone of the depression, calculating the current pump rate, direction and rate of flow considering the cone of influence nor has there been a public discussion of the map boundaries set by the SWDA, determination of susceptibility of the water supply to the contamination or allowing the public to formally comment on what will happen to the aquifer with a injection system that will be used.

We request that EPA exercise its oversight capacity to review and clarify these above issues.

Respectfully,

Elaine Cimino
Citizens for Environmental Safeguards (CES)
1132 Stanford Dr NE Albuquerque, NM 87106

Cliff Bain
Peaceful Skies Coalition (PSC)

Kathy Wanpovi Sanchez,
Tewa Women United

Citizens for Alternatives to Radioactive Dumping (CARD)
Janet Greenwald

Concerned Citizens for Nuclear Safety (CCNS)
Joni Arends

Robert Anderson
Jeanne Pahls
Stop the War Machine (SWM)

Agua est Vida Action Team (AVAT)
Leslie Weinstock

CC: EPA, Region 6,
Compliance Assurance and Enforcement Division
John Blevins, Director

EPA Region 6 Multimedia Planning and Permitting Division (6PD)
Federal Facilities Section
Susan Spalding, Associate Director for RCRA Programs

Tara Hubner RCRA Environmental Scientist
EPA REGION 6
1445 Ross Avenue Suite 1200
Dallas, Texas 75202-2733

David Martin, NMED Interim Cabinet Secretary
Harold L. Runnels Building
1190 St. Francis Drive
Suite N4050
Santa Fe, New Mexico 87505

Mr. James Bearzi NMED Hazardous Waste Bureau Chief
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Bill Olsen NMED Groundwater Chief

John D'Antonio
Office of the State Engineer

In Care of Kristina Eckhart <mailto:kristina.eckhart@state.nm.gov>
130 South Capitol Street Concha Ortiz y Pino Building
P.O. Box 25102
Santa Fe, NM 87504-5102

The Office of Inspector General (OIG) of the U.S. Environmental Protection Agency
(EPA)
WASHINGTON, D.C. 20460
Najjum Wade
najjum.wade@epa.gov,
Eric Lewis
lewis.eric@epa.gov