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Colonel Michael S. Duvall
Commander
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Mr. John W. Soladay
1 Civic Plaza NM
3rd Floor, Room 3023
Albuquerque, NM 87102

RE: Response to Comments, City of Albuquerque Environmental Health Department Letter
(12 March 2009), "RE: Screening-level Risk Evaluation for Petroleum Hydrocarbon Fuel
Compounds in Soil Vapor Bulk Fuels Facility, Kirtland Air Force Base Dated 10-2-2008"

Dear Mr. Soladay

Thank you for your request of clarification to the Kirtland AFB Screening Level Risk Evaluation for Petroleum Hydrocarbon Fuel Compounds in Soil Vapor, Bulk Fuels Facility. The following information provides response to comments made in your 12 March 2009 letter (Attachment 1) after careful review by our contracted Health Physicist.

In response to Comment #1 – Purging three volumes is a standard industry practice for sampling various environmental media, such as soil gas or groundwater, to make sure that all "static," possibly non-representative media, has been removed from the sampling equipment and only a representative sample of the environmental media is collected. The purge rate is selected such that a steady flow of the environmental media of interest, which should be relatively uniform in concentration throughout the sampling area, is established and then collected for the sample.

In response to Comment #2 – The equations used for the USEPA regional screening levels (RSLs) for ambient air are based on Risk Assessment Guidance for Superfund, Part F (RAGS Part F) (USEPA 2009). The inhalation rate is not part of the equations used to calculate the RSLs. As noted in RAGS Part F (Section 1.1, page 2): "This document recommends that when estimating risk via inhalation, risk assessors should use the concentration of the chemical in air as the exposure metric (e.g., mg/m³), rather than inhalation intake of a contaminant in air based on IR and BW (e.g., mg/kg-day)" where IR represents inhalation rate and BW represents body weight. Therefore, differences in inhalation rates that may occur through various types of activities do not affect the RSL results. Exposure time (hours per day), exposure frequency (days per year), and exposure duration (years of exposure) are the exposure assumptions used in

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the RSL calculations. The residential RSLs assume continuous exposure (24 hours per day). A conservative assumption of 8 hours per day was used for the recreational shallow soil gas screening levels. This assumption is likely to overestimate how much time people engage in recreational activities at the park during one day. Therefore, the 8 hour exposure time should provide a health- protective screening levels for recreational activities at the park.

In response to Comment #3 – The RSL user’s guide provides equations for calculating RSLs for ambient air for residential land use and commercial/industrial land use based on RAGS Part F. The same approach was used for the recreational shallow soil gas screening levels (with the addition of the attenuation factor to account for attenuation between the subsurface and ambient air). This approach reflects the latest guidance from USEPA on evaluating inhalation exposure.

In response to Comment #4 – I believe you are referencing the NMED data and the CH2M HILL data in this comment. We have stated in the first paragraph of the section on Ambient Air Quality Sampling that we cannot vouch for the validity of the data collected by an organization outside our control but the results are intended for general discussion in the document. Our main conclusions are based on the soil vapor data collected by our contractor.

In response to Comment #5 – The comparison is noting that ambient air concentrations at Bullhead Park do not appear to be substantially different from those at the offsite location. Since the positive detections of fuel compounds in ambient air at the offsite location are apparently the result of some ambient environmental source in the Albuquerque area, it is not unreasonable to conclude that ambient air at Bullhead Park may be affected to some degree by those same environmental sources. Overall, neither the detected toluene concentrations from the offsite location nor the concentrations at the Bullhead Park locations were considered to be major contributors to the non-cancer hazard index.

In response to Comment #6 – The SSV samples, or concentrations, are not being discounted or modified. The values of 50 days per year and 8 hours per day relate to the exposure scenario and are not used to modify the actual analytical data.

In response to Comment #7 – The uncertainties with the attenuation factor and recreational exposure assumptions are acknowledged in the memo. It is unclear how the calculated carcinogenic risk values for non-carcinogenic compounds have been derived. It is not standard risk assessment practice to calculate cancer risk by summing risk values for chemicals that are not classified as carcinogenic and do not have screening levels based on cancer effects.

The data presented in the “Screening Level Risk Evaluation” concludes the risk presented is within acceptable ranges based on the USEPA recommended risk range standards, rather than there is “no risk” as noted in your letter.

If you have any questions, please do not hesitate to contact me at (505) 846-7377 or Mr. Brent Wilson, Base Civil Engineer, at (505) 846-7911.

Sincerely

A handwritten signature in cursive script, appearing to read "Michael S. Duvall".

MICHAEL S. DUVALL, Colonel, USAF
Commander

cc:
NMED/GWB, Mr. Swanson,
USEPA-Region 6 (6PD-N), Ms. King
CH2MHill, Ms. Minchak
Admin. Record, CNMCC, Montoya Campus w/atch
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