

KAFB BFFS  
ST-106 and SS-111  
EDB Sparge well proposal  
North of BTEX Plume

**Cobrain, Dave, NMENV**

**From:** Kieling, John, NMENV  
**Sent:** Monday, May 05, 2014 12:55 PM  
**To:** Cobrain, Dave, NMENV; Reuter, Stephen, NMENV  
**Subject:** Fwd: Summary comments for air sparging



WUAs comments on air sparging below.

----- Original message -----

**From:** "Shean, Frederic"  
**Date:** 05/05/2014 12:45 PM (GMT-07:00)  
**To:** "Kieling, John, NMENV"  
**Cc:** "Billy Gallegos ([bagallegos@cabq.gov](mailto:bagallegos@cabq.gov))"  
**Subject:** FW: Summary comments for air sparging

John,

I was out sick on Friday, but did get your message. I hope the information below is not too late for incorporation into the comment letter.

***Rick Shean***

*Water Quality Hydrologist  
Albuquerque Bernalillo County Water Utility Authority  
P.O. Box 568  
Albuquerque, NM 87103  
505-768-3634 (office)  
505- 366-7561(mobile)*

**From:** John Sigda [<mailto:jsigda@intera.com>]  
**Sent:** Monday, May 05, 2014 12:15 PM  
**To:** Shean, Frederic; Dave Cobrain  
**Cc:** Eileen Marcillo; John Sigda  
**Subject:** Summary comments for air sparging

Detailed comments to follow later today.

Sorry for the delay.

Regards,  
John

In summary, INTERA's review of CB&I's proposed IM for air sparging of the LNAPL source area identified the following major issues:

1. Air sparging at the proposed location will do nothing to remove LNAPL from the deep vadose zone and saturated zone because no LNAPL has been observed at this well and it lies outside the known extent of the LNAPL lens. The two proposed air sparging wells will not serve to contain a significant fraction of the



contaminant plumes. Thus, the proposed design fails as an IM because it will not remove LNAPL mass and it will not contain the migrating dissolved phase plume.

2. The proposed location not only lies outside the known extent of the LNAPL lens, it also appears to have relatively low concentrations of EDB and benzene. Installing the proposed IM remediation at this location will not be cost effective because the investment will remove a relatively small contaminant mass. Installing the proposed system at locations with LNAPL and higher contaminant concentrations will prove far more cost effective.

3. The proposed location and design will require several new monitoring wells to evaluate performance. Well KAFB-10617 cannot serve as a monitoring well because its groundwater levels are above the top of the screen, reaching 2.15 ft above the screen during the third quarter of 2013.

4. The proposed design does not discuss the most recent guidance on design of air sparging systems from the US Army Corps of Engineers (US ACE, 2013). The design should follow that guidance to the extent appropriate for the site.

5. CB&I contend that anaerobic bioremediation is reducing BTEX and EDB concentrations in the LNAPL source area and therefore air sparging is not appropriate. CB&I present no data to demonstrate that anaerobic degradation rates for EDB are anything other than negligible and ignore the reality that combined mass removal from volatilization and aerobic biodegradation will be many times greater than mass removal from anaerobic biodegradation.

6. The proposed location for the LNAPL IM fails to remove LNAPL and will remove a relatively small contaminant mass from the dissolved phase, therefore the location should be changed to one where LNAPL and higher contaminant concentrations have been observed, such as near KAFB-10610 and KAFB-106142.

J.M. Sigda, Ph.D.  
Senior Hydrogeologist



INTERA Incorporated  
6000 Uptown Blvd NE, Suite 220  
Albuquerque, NM 87110  
505.246.1600 x1212  
505.264.2383 CELL  
505.246.2600 FAX  
[jsigda@intera.com](mailto:jsigda@intera.com)  
[www.intera.com](http://www.intera.com)

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