

June 14, 2011

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Jim Davis, Ph.D.
Division Director
Resource Protection Division/NMED
Harold Runnels Bldg.
1190 St. Francis Dr.
P.O. Box 5469
Santa Fe, NM 87502

Dear Mr. Davis:

In response to your recent requests for water quality data for the Albuquerque Bernalillo County Water Utility Authority (Water Authority) well field closest to the KAFB Bulk Fuels Spill Site and data on the supply well construction, screening intervals, pump tests, and depression/rebound data, staff has reviewed extensive documents and records. The following items relevant to the Burton and Ridgecrest well fields are provided for your information and use.

1. Water Quality Data Set

To obtain information that can be used to improve the understanding and management of groundwater in the Albuquerque area, the City of Albuquerque Public Works Department and the Albuquerque Bernalillo Water Utility Authority have collected and analyzed thousands of water quality samples from water supply wells in the Albuquerque area continuously since 1988. This data set does not include results of Safe Drinking Water Act Compliance monitoring, but the monitoring protocol has followed regulatory analytical methods. Samples have been collected at least once per year for each production well.

Bill Sanderson, the Water Authority Water Quality Program Data Analyst, has prepared water quality data for Burton and Ridgecrest wells from the dataset described above for transmittal as attachments as described below. Please contact Bill should you need assistance. Bill is available at 342-3022 or wsanderson@abcwua.org.

- a) Spreadsheet **1988 - 2010 BURTON AND RIDGECREST WATER WELL RESULTS. XLS** provides data in a report format similar to the U.S. Geologic Survey (USGS) Summary of Water-Quality Data for City of Albuquerque Drinking-Water Supply Wells 1988-97. Results were excluded from the summary that were not in the range for the individual wells reported in the USGS report. Reported results were formatted to match significant digits given in the study, detection limits were reported by using the less than sign (<), and units were updated to maintain consistency.
- b) Spreadsheet **Excluded Results from Burton_Ridgecrest.xls** lists the results which were excluded from the summary.
- c) Spreadsheet **Raw Data from Burton and Ridgecrest 1988-2001.xls** lists the raw data used to prepare the summary described in item a) above.

2. USGS Reports

Resulting data from the above monitoring effort have been used to produce the following USGS reports that will provide you with information on the water quality of the Santa Fe Group Aquifer System underlying Albuquerque:

SUMMARY OF WATER-QUALITY DATA FOR CITY OF ALBUQUERQUE DRINKING-WATER SUPPLY WELLS, 1988-97, US Geological Survey, Open-File Report 99-155, Laura M. Bexfield, USGS, William E. Lindberg, City of Albuquerque; and Scott K. Anderholm,. Prepared in cooperation with the City of Albuquerque. Albuquerque, NM 1999.

Spatial Patterns and Temporal Variability in Water Quality from City of Albuquerque Drinking-Water Supply Wells and Piezometer Nests, with Implications for the Ground-Water Flow System, US Department of the Interior, US Geological Survey, Water-Resources Investigations Report 01-4244, Laura M. Bexfield and Scott K. Anderholm. Prepared in cooperation with the City of Albuquerque. Albuquerque, NM 2002.

To provide information on the quantity and flow of the aquifer water resource, the following USGS documents have been identified and are provided to you:

GEOHYDROLOGIC FRAMEWORK AND HYDROLOGIC CONDITIONS IN THE ALBUQUERQUQE BASIN, CENTRAL NW MEXICO, US Geological Survey, Water-Resources Investigations Report 93-4149, Condé R. Thorn, Douglas P. McAda, and John Michael Kernodle. Prepared in cooperation with the City of Albuquerque Public Works Department, Water Utility Division. Albuquerque, NM 1993.

Geochemical Characterization of Ground-water Flow in the Santa Fe Group Aquifer System, Middle Rio Grande Basin, New Mexico, US Department of the Interior, US Geological Survey, Water-Resources Investigations Report 03-4131, L. Niel Plummer, Laura M. Bexfield, Scott K. Anderholm, Ward E. Sanford and Eurybiades Busenberg. Reston, VA 2004.

The USGS documents will be mailed to you.

3. USGS Study of Low Level VOCs

An article from The JOURNAL OF HYDROLOGIC ENGINEERING, NOVEMBER 2008, *Low-Level Detections of Halogenated Volatile Organic Compounds in Groundwater: Use in Vulnerability Assessments*, L. Niel Plummer; Eurybiades Busenberg; Sandra M. Eberts; Laura M. Bexfield; Craig J. Brown; Lynne S. Fahlquist; Brian G. Katz; and Matthew K. Landon is attached. The article describes a USGS study of low level VOCs. VOC samples were collected from 39 public water supply wells across the Albuquerque area, including 10 Water Authority wells, Kirtland Air Force wells, and the VA Hospital well in 2005. Given the ultra-low detection levels in the pg/L range, there are VOC detections in every well, regardless of location. Plummer attributes ultra-low-level detection of several compounds to contact of some small fraction of the sampled ground water with modern air. The unpublished study results are provided as the spreadsheet **VOC Converted ABCWUA and KAFB Vicinity.xls**. Laura Bexfield of USGS should be able to assist you in interpretation of the data. Laura can be reached at (505) 830-7972 or bexfield@usgs.gov.

Results of organic contaminant monitoring at Burton and Ridgecrest wells from 1988 to the present are provided in the following spreadsheets. Jane DeRose-Bamman, Water Quality Program Manager for the Water Authority Drinking Water System, is assembling those data. Jane can be reached at 342-3016 or jderose-bamman@abcwua.org.

BURTON 1 SOC 200810-201104.xls
BURTON 2 SOC 200810-201104.xls
BURTON 3 SOC 200810-201104.xls
BURTON 4 SOC 200810-201104.xls
BURTON 5 SOC 200810-201104.xls
RIDGECREST 1 SOC 200810-201104.xls
RIDGECREST 2 SOC 200810-201104.xls
RIDGECREST 3 SOC 200810-201104.xls
RIDGECREST 4 SOC 200810-201104.xls
RIDGECREST 5 SOC 200810-201104.xls
BURTON 1 VOC 1988-201105.xls,
BURTON 2 VOC 200810-201105.xls
BURTON 3 VOC 1996-201105.xls
BURTON 4 VOC 200810-201105.xls
BURTON 5 VOC 1992-2007.xls
BURTON5 VOC 200810-201105.xls
RIDGECREST 1 VOC 1991-Feb2008.xls
RIDGECREST 1 VOC May200810-201105.xls
RIDGECREST 2 VOC 1989-2007.xls
RIDGECREST 2 VOC 200810-201105.xls
RIDGECREST 3 VOC 1990-2007.xls
RIDGECREST 3 VOC 200810-201105.xls
RIDGECREST 4 VOC 1989-2007.xls
RIDGECREST 4 VOC 200810-201105.xls
RIDGECREST 5 VOC 1992-2007.xls
RIDGECREST 5 VOC 200810-201105.xls.

4. Well Logs and Lithography Data

In November 2010, a search of documents yielded well logs and lithography data for Burton wells 1, 2, and 3 and Ridgecrest Wells 1, 2, 3, 4 and 5. Those findings were transmitted as attachments to a letter to KAFB staff. A copy was sent to James Bearzi of NMED. The transmittal letter and attachments are attached as a pdf.

5. Results of Compliance Monitoring

Results of compliance monitoring for all wells should be available in the NMED Drinking Water Bureau files. Prior to 2002, the wells were the point of compliance. Subsequently, the point of compliance is the Entry Point to the Distribution. As a result, compliance monitoring results will be available only for Ridgecrest 5, the only well in the two (2) well fields that discharges directly to the distribution system rather than to a collector line to the associated well filed reservoir. Please contact Jane if there are questions regarding the compliance results records.

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Please let me if you have questions about any of the items included in this transmittal. I can be reached at (505)342-3015 or bgastian@abcwua.org.

Regards,



Barbara J. Gastian
Compliance Division Manager
Water Authority

Cc: John M. Stomp, III, P.E.
Jane DeRose-Bamman
Bill Sanderson