

Young, John, NMENV

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Sent: Thursday, July 06, 2006 3:09 PM
To: Young, John, NMENV
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Subject: notice of recent groundwater results
Attachments: Mortandad Dioxane Results.doc



Mortandad Dioxane
Results.doc ...

John, I want to bring to your attention to groundwater sampling results from two intermediate wells in Mortandad Canyon. During the past year, the Laboratory has detected 1,4-dioxane in these wells. The measured concentrations are between the method detection level of 20 ug/L (parts per billion) and the practical quantification limit of 50 ug/L (parts per billion). These data, and all other groundwater data are in the LANL Water Quality database. They were not previously called out as being near levels of concern specified in the Consent Order. These results will be formally transmitted to you in the upcoming periodic monitoring reports, however, we want to ensure that you are aware of this information in the intervening time.

The laboratory began analyzing for 1,4-dioxane in early 2005 from unfiltered groundwater samples in accordance with U.S. Environmental Protection Agency standard method SW-846: 8260B. Since June 2005, 1,4-dioxane has been found above the method detection level in five samples of perched groundwater from two Mortandad Canyon intermediate wells (MCOI-4 and MCOI-6). Dioxane was not detected in about 540 other analyses of groundwater samples at other locations. The perched groundwater zones where the dioxane was detected are located about 450 feet and 250 feet, respectively, above the regional aquifer. To confirm the detection results, several of the samples were reanalyzed and these analyses also detected dioxane. All of the results are estimated values (J-flagged) by the analytical laboratory and/or during secondary validation because they are between the detection limit and the practical quantification limit. The results are presented in the table attached to this message.

As you know, the Consent Order requires LANL to determine cleanup levels for contaminants having no regulatory standard using the EPA Region VI risk calculations. Under this methodology, the Consent Order cleanup level for 1,4-dioxane is 61 ug/L. Recent LANL sampling results range up to 56.4 ug/L. Although the detections are below the Consent Order cleanup level, we felt it was proper to notify you as part of our commitment to transparency and environmental stewardship. It is important to reiterate that this compound has not been detected in the regional aquifer.

LANL does not know the source of the 1,4-dioxane at this time, but plans to investigate possible origins and perform continued monitoring under the approved Interim Facility-wide Monitoring Plan. The compound is used as a solvent for a wide range of organic products, paints, varnishes, cleaning and detergent preparations, cements, fumigants, corrosion inhibitor, in analytical methods including liquid scintillation counting, and as a solvent stabilizer, particularly in 1,1,1-trichloroethane (TCA).

We will notify you of any increasing trends or exceedances of the calculated risk-based value for this chemical in groundwater samples and will continue to make you aware of any notable, related observations or information. Please let me know of any concerns. Thanks.
Tina

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Tina Behr-Andres, Ph.D., P.E.



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LANL TA-5 TA-3, TA-50, Mortandad Canyon, Groundwater

Dioxane[1,4-] results for three Mortandad Canyon intermediate perched zone wells by GEL using SW-846:8260B (detections are highlighted).

Location	Depth	Sample Date	Fld Prep ¹	Qc Type ²	Lab Sample Type ³	Symbol	Result	Mdl	Units	Dilution Factor	Lab Qual Code ⁴	Valid Flag Code ⁴	Valid Reason Code ⁵
MCOI-4	499	6/23/05	UF	FTB	CS	<	50		ug/L	1	U	R	V7b
MCOI-4	499	6/23/05	UF		RE		23.4		ug/L	1	J	J	V14b, V9, VWQ5
MCOI-4	499	6/23/05	UF		CS		53.3		ug/L	1		J	V7b
MCOI-4	499	9/13/05	UF	FTB	CS	<	50		ug/L	1	U	R, UJ	V14b, V7b
MCOI-4	499	9/13/05	UF		CS		50.8		ug/L	1		J	V14b, V7b
MCOI-4	499	1/24/06	UF	FB	CS	<	50	20	ug/L	1	U	R	V7b
MCOI-4	499	1/24/06	UF	FTB	CS	<	50	20	ug/L	1	U	R	V7b
MCOI-4	499	1/24/06	UF		CS		49	20	ug/L	1	J	J	V7b
MCOI-5	689	6/9/05	UF	FTB	CS	<	50		ug/L	1	U	R	V7b
MCOI-5	689	6/9/05	UF		CS	<	50		ug/L	1	U	R	V7b
MCOI-5	689	9/9/05	UF	FTB	CS	<	50		ug/L	1	U	R, UJ	V7b, VWQ5
MCOI-5	689	9/9/05	UF		CS	<	50		ug/L	1	U	R, UJ	V7b, VWQ5
MCOI-5	689	1/27/06	UF	FTB	CS	<	50	20	ug/L	1	U	R	V7b
MCOI-5	689	1/27/06	UF		CS	<	50	20	ug/L	1	U	R	V7b
MCOI-6	686	6/15/05	UF	FD	CS		56.4		ug/L	1		J	V7b
MCOI-6	686	6/15/05	UF	FD	RE		24.6		ug/L	1	J	J	V14b, V9, VWQ5
MCOI-6	686	6/15/05	UF	FTB	CS	<	50		ug/L	1	U	R	V7b
MCOI-6	686	6/15/05	UF		RE		21.6		ug/L	1	J	J	V14b, V9, VWQ5
MCOI-6	686	6/15/05	UF		CS		52.2		ug/L	1		J	V7b