SENT TO COUNCIL:

Distributed on:
JUN 21 2011
City Manager's Office

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: John Stufflebean

SUBJECT: SEE BELOW

DATE: 06-20-11

Approved [signature] Date 6/21/11

INFORMATION

SUBJECT: MERCURY NEWS ARTICLE ABOUT 'NDMA' IN GROUNDWATER

On June 15, 2011, the *San Jose Mercury News* published an article ("Suspected carcinogen found in groundwater") about a recently completed study conducted by the Santa Clara Valley Water District (SCVWD) that found trace amounts of the chemical N-Nitrosodimethylamine (NDMA) in the shallow groundwater beneath the test site. The study included sampling of the shallow groundwater only, not deep water aquifers used as a source for drinking water. The SCVWD initiated the study in 2008 to evaluate any potential impacts on groundwater from using recycled water for landscape irrigation and to determine if additional study is necessary; technical review of the study is underway and the final report is due July 2011.

NDMA is one of numerous chemicals that scientists are detecting and studying to determine their health effects and how they should be regulated for both drinking and recycled water. NDMA is a synthetic organic compound produced in the manufacture of liquid rocket fuel and rubber. The United States banned production of NDMA in 1978 when it was determined to be a probable human carcinogen. NDMA is also found in low concentrations as an indirect by-product in a number of consumer products such as cosmetics, beer, tobacco, smoked fish, and cured meats. The compound is pervasive in part because it forms when other, larger compounds decompose. NDMA is also formed when solutions containing ammonia or nitrates are chlorinated, such as when drinking water and wastewater are disinfected. NDMA degrades in the presence of sunlight and through decomposition in soil, and can be removed using ultraviolet treatment.

During the study, the SCVWD detected NDMA in the shallow groundwater on occasion at levels ranging from less than 2 to 4 parts-per-trillion (ppt). In California, the public health goal for the compound in *drinking* water is 3 ppt, which represents the concentration that would not pose a significant public health risk. The California Department of Public Health (CDPH) has set a "notification level" of 10 ppt and a "response level" of 300 ppt for NDMA in drinking water supplies. If a utility detects NDMA above the notification level, CDPH recommends informing consumers and customers about the presence of the chemical and associated health concerns; if detected above the response level, CDPH recommends removing the drinking water source from service. South Bay Water Recycling – which supplies recycled water from the San Jose/Santa

Clara Water Pollution Control Plant to customers in San José, Santa Clara, and Milpitas – meets all water quality standards as regulated by the CDPH and the San Francisco Regional Water Quality Control Board. The CDPH has also recommended that recycled water used for non-potable uses *not* be treated for removal of NDMA, however staff continually monitor technical literature for NDMA and other chemicals to evaluate the feasibility of alternative treatment and control technologies.

The SCVWD, in an agreement with the City of San José, is currently constructing an advanced recycled water treatment (AWT) facility. The AWT facility will employ modern treatment processes like reverse osmosis and ultraviolet disinfection that will remove and significantly reduce many chemicals like NDMA. The highly purified water from the AWT facility will be blended with treated recycled water from the City of San José's recycled water facilities and will enhance the quality of water for non-drinking water purposes including irrigation, commercial, and industrial uses. The facility will be completed in mid-2012.

The SCVWD is undertaking recycled water studies as a component of its comprehensive management approach to establish an appropriate balance between the expanded use of recycled water and groundwater protection in Santa Clara Valley. The results of this and future studies will be used to develop best management practices and future monitoring requirements. Study results also will continue to inform the SCVWD's management approach that may influence current and future uses of recycled water, where and how recycled water will be used in Santa Clara County, and the level of treatment recycled water would need to meet intended uses.

For the last decade, the City of San José has aggressively supported ongoing scientific research regarding the application of recycled water for landscape irrigation and the potential impacts of NDMA and other chemicals to irrigated soils and groundwater. Studies at the local level with UC Berkeley and at the national level with the WateReuse Research Foundation have helped the industry better understand the sources and fate of NDMA, leaching characteristics during landscape irrigation, and biodegradation after irrigation. While more research is warranted, the information collected thus far indicates that, with our established technology and best management practices, recycled water can continue to be used for landscape irrigation without significant risk to our soils and groundwater.

Staff will update the Treatment Plant Advisory Committee and San José City Council on the final results of the SCVWD's Recycled Water Study and management programs regarding recycled water use and groundwater protection, in particular as they relate to the AWT facility.

/s/
JOHN STUFFLEBEAN
Director, Environmental Services

For questions, please contact Eric Hansen, Acting SBWR Manager, at (408) 363-4714.