



California Regional Water Quality Control Board

Central Valley Region



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23 August 2005

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Mr. James Witty
Synagro West, Inc.
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Christine and Dan Mahoney
P.O. Box 788
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***NOTICE OF APPLICABILITY OF WATER QUALITY ORDER NO. 2004-0012-DWQ
(GENERAL WASTE DISCHARGE REQUIREMENTS FOR
THE DISCHARGE OF BIOSOLIDS TO LAND)
EMIGH SOUZA RANCH (SO-22)
SOLANO COUNTY***

Synagro West, Inc. and Christine and Dan Mahoney (hereafter “Discharger”) submitted a Notice of Intent for coverage under State Water Resources Control Board Water Quality Order No. 2004-0012-DWQ, the *General Waste Discharge Requirements for the Discharge of Biosolids to Land* (Biosolids GO), on 3 December 2004. Additional information was received on 6 July 2005.

Based on the information submitted in the Notice of Intent, the proposed land application of biosolids satisfies the general and specific conditions of Order No. 2004-0012-DWQ. Therefore, this letter serves as formal notice that the current Biosolids GO (Order No. 2004-0012-DWQ) is applicable to the sites and discharge described below.

Site Description

The original Notice of Intent states that biosolids will be applied to approximately 815 acres of agricultural land owned by Christine and Dan Mahoney. The land comprises five contiguous designated sites in the southeastern portion of Solano County as summarized below and depicted on Attachment A.

<u>Site ID</u>	<u>Section</u>	<u>Township</u>	<u>Range</u>	<u>Gross Acreage</u>
SO 22-1	11	T4N	R1E	308
SO 22-2	11	T4N	R1E	98
SO 22-3	11	T4N	R1E	149
SO 22-4	11	T4N	R1E	92
SO 22-5	14	T4N	R1E	168
Total Area (acres)				815

California Environmental Protection Agency



The terrain is gently sloped with elevations ranging from approximately 90 to 150 feet above mean sea level (MSL), and surface water drainage is to intermittent streams that traverse the site. Site soils are typically mixtures of clay, silt, and sand, and exhibit cation exchange capacities of 17 to 33 meq/100 g, which indicates slight to moderate potential for degradation of soil and land productivity from biosolids application. Soil pH values range from 5.6 to 6.4, indicating a moderate potential for crop damage and crop metals accumulation due to soluble metals in biosolids. The sites are typically planted to pasture grasses and wheat. The sites are not irrigated and receive approximately 15 inches of precipitation per year as the sole water source.

The Discharger submitted a Groundwater Assessment Report for the sites on 6 July 2005. Five shallow groundwater samples were obtained using direct push techniques from various locations on 9 June 2005 (see Attachment A). Information from the boring logs and groundwater analytical report is summarized below.

<u>Sampling Location</u>	<u>Approximate Ground Surface Elevation (feet MSL)</u>	<u>Total Depth of Boring (feet)</u>	<u>Estimated Water Table Elevation (feet MSL)</u>
SO 22-1	130	25	< 105 ¹
SO 22-2	90	25	79
SO 22-3	140	25	< 115 ¹
SO 22-4	140	25	< 115 ¹
SO 22-5	130	25	< 105 ¹

¹ Groundwater was not encountered in the boring.

Groundwater was encountered at approximately 10.5 below ground surface near the northeast corner of the proposed sites in SO 22-2. Unlike the other boring locations, which were in upslope areas, this location was near the topographic low point of the site approximately 10 feet above one of the intermittent stream channels. The estimated groundwater elevation at that location coincides with the approximate elevation of the streambed. Analytical results for the groundwater sample indicate that the groundwater was relatively saline, with 1,100 mg/L total dissolved solids, 300 mg/L chloride, 291 mg/L sodium, 6.7 mg/L nitrate nitrogen, and 9.7 mg/L total Kjeldahl nitrogen. Concentrations of certain metals exceeded applicable groundwater quality limits, as indicated in the table below.

	Arsenic	Cadmium	Copper	Lead	Mercury	Nickel
Groundwater Concentration (ug/L)	49.6	13.1	636	516	2.49	943
Applicable Water Quality Limit (ug/L)	0.004	0.07	170	2	1.2	12

The results, although limited and inconclusive, indicate that groundwater beneath the site contains high levels of metals, which may be naturally occurring.

To prevent groundwater degradation, the Discharger proposed to limit biosolids applications to areas of the site where the ground surface is higher than 90 feet MSL. However, because that elevation is apparently only 10 feet above the groundwater table, it is appropriate to require that the Discharger limit biosolids applications for areas where the ground surface is higher than 105 feet MSL or monitor groundwater quality beneath fields SO 22-2 and SO 22-3.

Discharge Description

Biosolids will be applied no more than two years out of every five years, and only between April 15 and October 15. Biosolids will be incorporated into the soil on the same day, and will not be applied during precipitation events (as required by Solano County ordinance). Setbacks that comply with the Biosolids GO and Solano County Ordinance will be marked prior to each application. The overall facility perimeter and on-site drainages/creeks will have at least 33 feet of unmowed grass or similar vegetation. Therefore, storm water retention is not required.

Monitoring and Reporting Program

The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2005-0832, which is attached to this Notice, and which replaces Monitoring and Reporting Program No. 2004-0012-DWQ. The MRP is effective immediately, and requires monthly monitoring reports. If biosolids were not applied during a particular month, the monthly monitoring report shall so state.

Conditions That Must be Met Prior to Discharge

- A. At least **15 days** before the first planned biosolids application, the Discharger shall submit the following to satisfy the Pre-Application Report requirement set forth in Provision D.1.a of the Biosolids GO:
 1. A Land Productivity Evaluation Report that complies with Item 10.A of the Pre-Application Report requirements in MRP No. 2004-0012-DWQ. The Land Productivity Report shall also consider whether soil pH control is needed to control leaching of soluble metals to the water table, and shall present a specific plan for soil pH monitoring and control.
- B. The Biosolids Storage, Spill Response and Traffic, and Adverse Weather and Alternative Plans submitted with the NOI are adequate. The Discharger shall review these documents monthly during the application season for applicability, and any required revisions shall be submitted with the Monthly Monitoring Reports.
- C. At least **15 days** before the first planned biosolids application, the Discharger shall submit proof of compliance with Provision D.5 of the Biosolids GO.
- D. In determining allowable application rates to comply with Discharge Specification B.3, the Discharger shall calculate plant available nitrogen (PAN) using the procedure, volatilization factors, and mineralization rates described in Appendix E of the US Environmental Protection Agency's *Guide for Land Appliers* (EPA/831-B-93-002b), unless otherwise expressly approved. Determination of PAN shall

consider nitrogen mineralization from previous years' biosolids applications and all supplemental nutrient sources.

Other Conditions

E. Biosolids shall not be applied to any ground where the elevation is less than 105 feet MSL unless and until the Discharger installs groundwater monitoring wells in accordance with an approved workplan and begins groundwater monitoring in accordance with the MRP.

This letter serves as formal notice that Water Quality Order No. 2004-0012-DWQ is applicable to the fields described herein. If the discharge violates the terms or conditions of the General Order, the Regional Board may take enforcement action, including assessment of administrative civil liability. If you plan to change the method of discharge, you must submit a new NOI for coverage under the General Order or a Report of Waste Discharge (if you desire individual Waste Discharge Requirements) before any changes are implemented

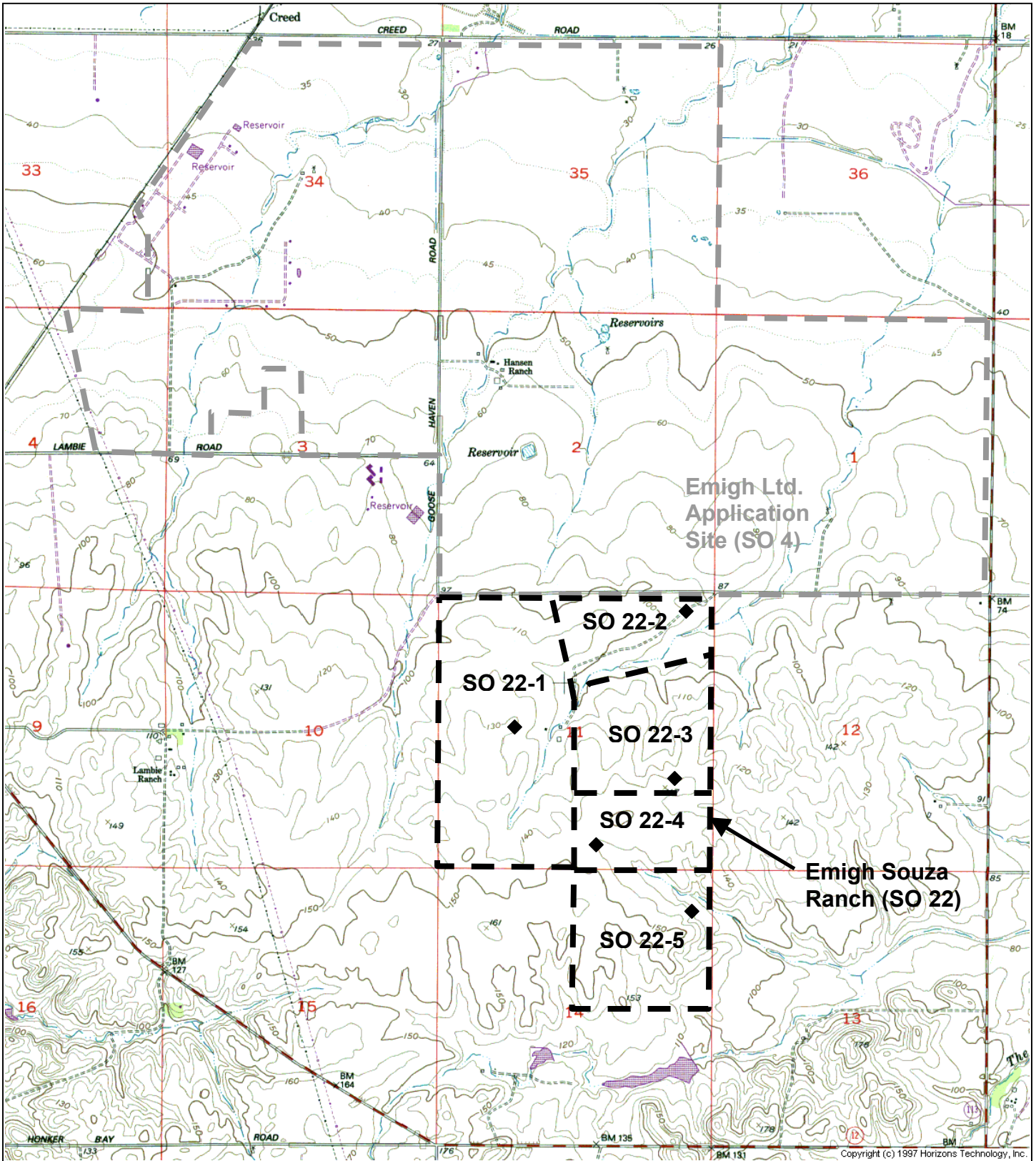
If you have any questions regarding this Notice of Applicability, please contact Anne Olson at (916) 464-4740.

THOMAS R. PINKOS
Executive Officer

Enclosure: Attachment A
State Board Order No. 2004-0012-DWQ
Monitoring and Reporting Program No. R5-2005-0832

cc w/ enc.: Jeffrey Bell, Solano County Environmental Health Department, Fairfield
Mark Grey, Synagro West, Inc., Corona

ATTACHMENT A



Site Plan

Synagro West, Inc. and Christine and Dan Mahoney
 Emigh Souza Ranch (SO-22)
 Solano County

Reference:

USGS 7.5 minute map Rio Vista Quadrangle

◆ Hydropunch groundwater sampling location, June 2005



Scale: Approx. 1" = 2,640'