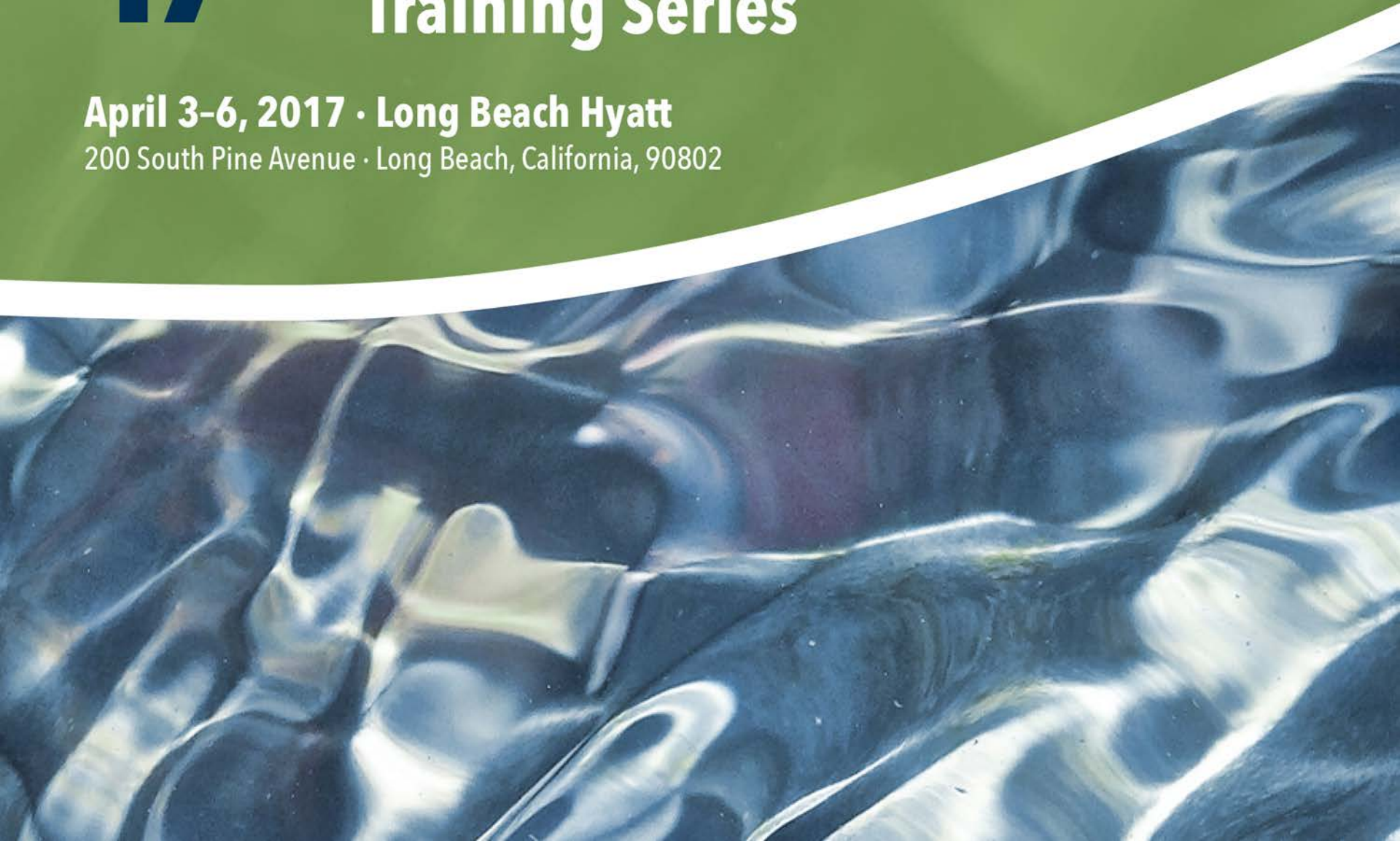


17th Technical Training Series



April 3-6, 2017 · Long Beach Hyatt
200 South Pine Avenue · Long Beach, California, 90802



Sacramento County Land Application Case Study



Will Scheffler, REHS
Sacramento County EMD/LEA

Outline

- ▶ Site Background
- ▶ EMD/LEA Role
- ▶ Regulations
- ▶ Alternative Depth and Frequency Request
- ▶ Interagency Cooperation
- ▶ Agencies' Items to be Addressed
- ▶ Land Application Concerns

Site Background

3000+ Acres in rural Sacramento County

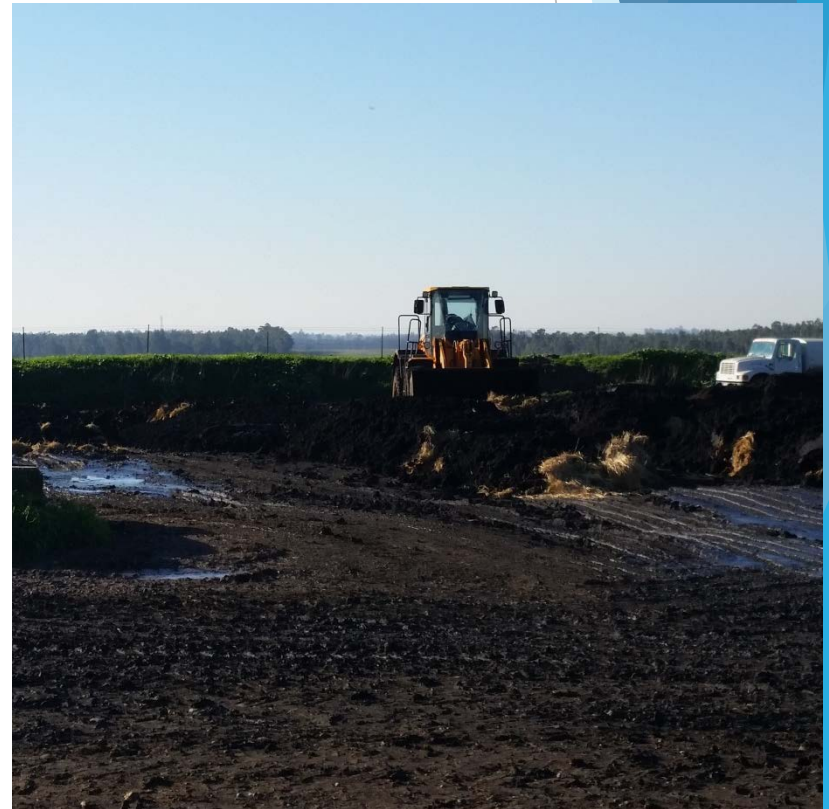
Primary Use: Grazing Land for Cattle, Goats



Land Application



Other Site Uses



EMD's Role

- ▶ EMD staff inspect site monthly for compliance with provisions in Use Permit (odors, nuisance conditions, track-outs, ect.)

Violations are forwarded to County Code Enforcement.

- ▶ Complaints received by EMD are directed to third party biosolids spreader for immediate correction.

LEA's History & Role

- ▶ Complaints received regarding green waste odors and litter.
- ▶ Enforcement action for stockpiling material and operating solid waste facility without SWFP.
- ▶ Stipulated Notice and Order 2010
- ▶ Monthly Inspections at Site (Biosolids & Green waste)

LEA Inspections



Change in Regulations

▶ Per January 1, 2016:

- ▶ Land Application removed as an excluded activity.
- ▶ Material must meet metals and pathogens concentration limits at time of land application.
- ▶ Maximum frequency and depth of land application
 - ▶ Non agricultural only zoned lands: no more than once a year, total accumulated depth on surface not to exceed 12 inches
 - ▶ Agricultural only zoned lands: no more than three times a year, total accumulated depth on surface not to exceed 12 inches

Metals and Pathogens?

▶ Testir

▶ Samp

▶ Durin

receiving

▶ After

 COMPOST ANALYSIS for SALMONELLA per 4 GRAM SAMPLE

Total Salmonella None Detected

Percent Moisture 8.1

 COMPOST ANALYSIS for COLIFORMS in 1 GRAM SAMPLE

Total Coliforms 381 MPN/gm

Fecal Coliforms 86 MPN/gm

Percent Moisture 8.1

* Sample analyzed as recieved and reported on a dry weight basis.

Regulated Limits ++		Values Determined +		Reporting Limits
-----		-----		-----
41	Arsenic (As)	ND	*	5.5
39	Cadmium (Cd)	ND	*	0.8
1200	Chromium (Cr)	6.0 mg/kg	*****	0.8
1500	Copper (Cu)	10.9 mg/kg	*****	0.4
300	Lead (Pb)	6.5 mg/kg	*****	1.0
17	Mercury (Hg)	1.47 mg/kg	*****	0.01
420	Nickel (Ni)	6.6 mg/kg	*****	0.2
36	Selenium (Se)	3.224 mg/kg	*****	1.2
2800	Zinc (Zn)	50.6 mg/kg	*****	0.4

ND = value below detection limits

ND	Below Limits	At Toxic Level
----	--------------	----------------

nes.

Alternative Frequencies & Depth

“The EA, in consultation with the California Department of Food and Agriculture to determine if the land application is agronomically beneficial and with the Regional Water Quality Control Board regarding water quality, may approve alternative frequencies and depths, if the EA after such consultation determines that the alternative will not adversely affect public health and safety or the environment.”

(14 CCR 17852(24.5)(A)(4)(b))

[REDACTED] is requesting an alternative application rate of 3 feet every other year for the following reasons.

- Direct observation has shown 3 feet of green material will settle to 18 inches or less in the first year and to 1 foot or less by year two.
- A deeper layer of green material soil retains seasonal moisture much better and requires less irrigation than native soils.
- 12 inches or less of green material does not provide for adequate plant root development or moisture retention.
- Due to the nature of processed green material 12 inches or less of green material is extremely difficult to spread with any degree of uniformity.
- Deeper application rates less often reduce labor costs, significantly reduce the use of fossil fuels, reduce soil compaction and allow for more sustainable grazing.
- **Decomposing green material is a nitrogen consumer**, therefore green material performance is highly dependent on manure applications and deeper application rates less often allow more efficient manure fertilizer application and utilization.
- Limiting topsoil development, which is the objective of beneficial green material use at [REDACTED] to a maximum of 12 inches has no agronomic basis and restricts agricultural productivity. A maximum accumulated topsoil depth for 48 inches, aligned with root zone needs, is needed and **beneficial for the long term sustainable crop production at [REDACTED]**
- All of the above are described in more detail in the attached agronomic report [REDACTED] [REDACTED] dated July 2016.

Joint Inspection



RWQCB NOVs

- ▶ 2 NOVs issued in 11/2016 and 01/2017 green waste land application on biosolids designated fields in WDRs.

“Before making a material change in the character, location, or volume of discharge, the discharger shall file a new Report of Waste Discharge with the Regional Board.”



Items to Be Addressed

RWQCB

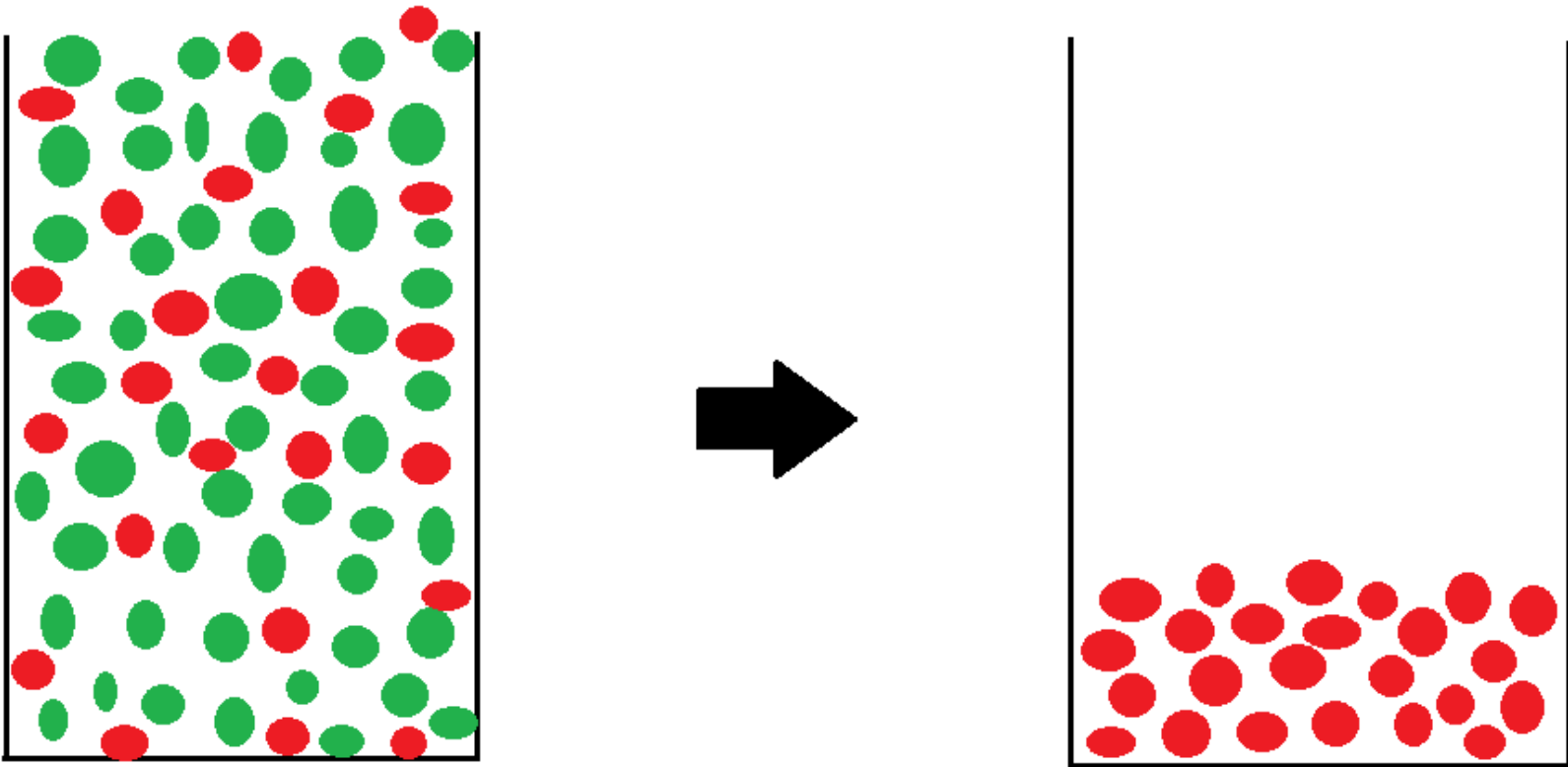
- Excess nitrogen leaching into groundwater.
- Migration of physical contaminants off-site into waterways.

CDFA

- Nutrients may exceed agronomic rate of crop uptake.

Approval of site's alternative depth and frequency request cannot be determined until additional information is provided for review.

Land Application Concerns



36" compostable material with 1% physical contaminants by weight

Land Application Concerns Continued

Use Permit?

Horizontal Composting?

Addition of Manure

Questions?