

**AMBIENT MONITORING REPORT**

Date: January 19, 2016

1. Study highlights:

- Study Number: 283
- Title: Surface Water Monitoring for Chlorantraniliprole in Agricultural Areas of the California Central Coast, 2013
- Author: KayLynn Newhart, Kevin Kelley

County: Santa Barbara, San Luis Obispo, Monterey

- Study area: Waterbody/ Watershed: Tembladero Slough, Solomon Creek, Santa Maria Estuary, Reclamation Ditch, Reclamation Ditch III, Salinas River, Alisal Slough, Quail Creek, Chualar Creek, Arroyo Grande Creek, Little Oso Faco Creek, Orcutt Creek

- Land Use Type:  Ag  Urban  Forested  Mixed  Other

- Water body type:  Storm drain outfall  Creek  River  Pond  Lake  
 Drainage ditch  Other: [Click here to enter describe other](#)

- Objectives: 1. Determine presence of chlorantraniliprole concentrations in surface water runoff from agricultural areas of high pesticide uses 2. Compare pesticide concentrations to the lowest US EPA acute and chronic aquatic life benchmarks.

- Sampling period: July 2013 - October 2013

- Pesticides monitored:  
Insecticide - Chlorantraniliprole

- Major findings:

There were 47 detections of chlorantraniliprole out of 65 samples collected in the study, equating to the detection frequency of 72%. Of those detections, the highest was 9.71 ppb in Quail Creek on October 15. The next highest detection of 2.90 ppb was in Chualar Creek on October 16. There were 36 detections that ranged from 0.102-1.68 ppb. Of the remaining samples, concentrations of chlorantraniliprole in 10 were trace detections (i.e., between the MDL of 0.0370 ppb and RL 0.1 ppb) and in 17 samples were below the MDL. One sample at Alisal Slough was not collected on October 15 due to lack of water in the waterway. USEPA aquatic life benchmarks for freshwater invertebrates are 4.9 ppb (acute) and 4.5 ppb (chronic). Both acute and chronic aquatic life benchmarks were exceeded in the sample from Quail Creek on October 15, 2013. All other sample concentrations were below the USEPA aquatic life benchmarks (Table 1).

2. Pesticide detection frequency

Table 1. Pesticides detected in water. Complete data set in Appendix.

| Pesticide           | Number of samples | Number of detections | Reporting Limit (µg/L) | Detection frequency (%) | Lowest USEPA benchmark (BM) (µg/L)* | Number of BM exceedances | BM exceedance frequency (%) |
|---------------------|-------------------|----------------------|------------------------|-------------------------|-------------------------------------|--------------------------|-----------------------------|
| Chlorantraniliprole | 65                | 48                   | 0.1                    | 72                      | IA 4.9<br>IC 4.5                    | 1                        | 1.5                         |

\* IA, invertebrate acute; IC, invertebrate chronic

### 3. Laboratory QC summary

| QC Type                              | Water Samples |                             | Sediment Samples |                             |
|--------------------------------------|---------------|-----------------------------|------------------|-----------------------------|
|                                      | Total Number  | Number of QC out of control | Total Number     | Number of QC out of control |
| Lab Blanks                           | 20            | 0                           | NA               | NA                          |
| Matrix Spikes/Duplicates             | 20            | 0                           | NA               | NA                          |
| Laboratory Control Spikes/Duplicates | 0             | 0                           | NA               | NA                          |
| Blind Spikes                         | 4             | 0                           | NA               | NA                          |
| Surrogate Spikes                     | 0             | 0                           | NA               | NA                          |
| Other QC: Describe                   | NA            | NA                          | NA               | NA                          |
| Other QC: Describe                   | NA            | NA                          | NA               | NA                          |

Explain out of control QC and interpretation of data:

All recoveries were within ongoing limits (64.7%-120%). All blind spikes were within control limits. All QA/QC data were deemed acceptable.

### 4. Supporting Information

Index of Supporting Information:

Appendix I. Study protocol

Appendix II. Sampling site information

Appendix III. Water quality data

Appendix IV. Water monitoring data

Appendix V. Analytical methods