

## **Information Regarding the Determination that Hexazinone Residues in Fresno and San Joaquin Counties Resulted from Legal Agricultural Pesticide Use**

Hexazinone, a persistent, mobile herbicide, was registered in California in the late 1970s. It is primarily used in the production of alfalfa and timber crops and, to a much lesser degree, on rights-of-way. Hexazinone's physical and chemical properties indicated that it is persistent and mobile and it was placed on the Groundwater Protection List in Title 3, California Code of Regulations (3 CCR) section 6800(b) list in 1992. The Groundwater Protection List is a list of pesticides with the potential to pollute ground water. The Department of Pesticide Regulation (DPR) has currently analyzed over 3,800 samples from 2,300 wells for the presence of hexazinone residues and has detected these residues in California ground water intermittently since 1994 at levels ranging from 0.05 to 0.27 parts per billion (ppb) in 26 wells. These detections have largely occurred in alfalfa growing regions with a history of hexazinone use. See table on page 2.

DPR determined that residues of hexazinone in ground water were due to legal agricultural use based on the following criteria:

1. Well water samples were analyzed for hexazinone using a method approved by the department that provided unequivocal identification of hexazinone (mass spectroscopy), pursuant to Food and Agricultural Code section 13149(d).
2. In Fresno County three wells contained residues of hexazinone within section M17S19E36. In San Joaquin County the two wells with hexazinone detections were in adjacent sections 02S02E19 and 02S02E30. Detection of a pesticide in more than one well in the same section of land or adjacent sections is one of the factors considered to indicate contamination due to agricultural use.
3. Two of the three Fresno County wells also contained residues of diuron, and two also contained breakdown products of atrazine/simazine. The detection section M17S19E36 is surrounded on three sides by current leaching ground water protection areas (GWPA's), where atrazine, diuron and simazine are regulated to protect ground water. Section 02S02E19 in San Joaquin County is a current runoff GWPA based on previous detections of atrazine, diuron, simazine, and breakdown products of atrazine/simazine. Pesticides detected within a leaching or runoff GWPA, respectively are thought to move to ground water via similar pathways.
4. Hexazinone is formulated in products registered for agricultural use in California.
5. The application of hexazinone in products registered for agricultural use was documented historically in pesticide use reports in the sections of land in Fresno and San Joaquin counties that met criterion 2.
6. The investigations in cooperation with the County Agricultural Commissioners in Fresno and San Joaquin counties revealed no evidence that hexazinone residues resulted from a point source, nonagricultural use, or illegal agricultural use.

## Hexazinone Detections in California Ground Water

County	Location <sup>1</sup>	Wells Sampled For Hexazinone	Hexazinone Positive Wells <sup>2</sup>			
			Unique Positive Wells	Highest conc. (ppb)	First Year Detected	Last Year Sampled
Colusa	15N03W36	2	1	0.056	1998	1998
Fresno	14S21E21	3	1	0.063	2001	2006
Fresno	14S22E13	3	1	0.07	2000	2006
Fresno	17S19E36 <sup>3</sup>	4	3	0.274	2007	2008
Los Angeles	01S09W27	1	1	0.069	2008	2008
Merced	09S14E23	3	1	0.11	1997	1997
San Joaquin	01N05E16	2	1	0.092	2008	2008
San Joaquin	02S04E22	5	1	0.096	2002	2002
San Joaquin	02S05E23	2	1	0.11	1996	2002
San Joaquin	02S05E24	6	1	0.07	1996	2002
San Joaquin	02S06E19 <sup>3</sup>	3	1	0.072	2009	2009
San Joaquin	02S06E30 <sup>3</sup>	1	1	0.093	2009	2009
Solano	06N01E05	4	1	0.094	2002	2002
Solano	06N01E23	2	1	0.126	2007	2007
Solano	06N01W36	4	1	0.092	1995	1995
Stanislaus	04S09E19	5	1	0.27	1996	1996
Stanislaus	04S11E31	5	1	0.263	2004	2004
Stanislaus	06S08E26	2	1	0.062	2007	2007
Stanislaus	07S08E14	1	1	0.073	2001	2002
Stanislaus	07S09E06	2	1	0.094	2007	2007
Tulare	22S27E07	1	1 <sup>4</sup>	0.22	1994	1995
Tulare	22S27E18	6	3 <sup>4</sup>	0.24	1994	1995

<sup>1</sup> Township, range and section of the well(s). A section is approximately one square mile.

<sup>2</sup> Data in these columns apply only to wells that have had at least one sample with a hexazinone concentration above the reporting limit.

<sup>3</sup> Section used to determine that hexazinone residues were due to legal agricultural use.

<sup>4</sup> Detections resulted from point source contamination.