

Appendix A: Exposure and Monitoring

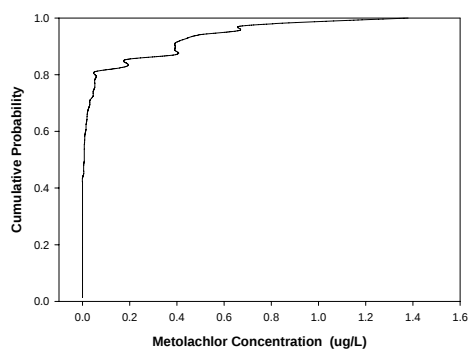
Surface Water Monitoring Data

An evaluation of the surface water monitoring data was conducted to assess the occurrence of metolachlor, metolachlor-OA, and metolachlor-ESA. Surface water data were obtained from the California Department of Pesticide Regulation (<http://www.cdpr.ca.gov/docs/sw/surfdata.htm>) and USGS NAWQA data warehouse. Summary statistics for each sampling site were calculated to show the maximum concentration, median concentration, and average concentration. The number of sampling years and sample frequency varied among monitoring sites (Tables XX and ZZ). More importantly, the surface water sampling program was not targeted to the metolachlor use areas. Therefore, the monitoring data may not represent the most conservative occurrence data for metolachlor and its degradation products in California.

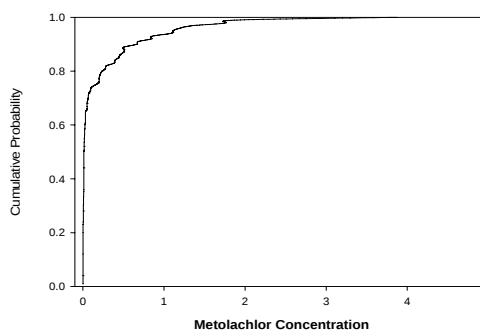
The maximum reported concentration of metolachlor in CADPR and USGS NAWQA monitoring data is 1.38 µg/L in the San Joaquin River near Stevenson and 3.88 µg/L in the Orestimba Creek at the River Road near Crows Landing, CA, respectively. The 90th percentile site metolachlor concentration is 0.394 µg/L in CADPR data and 0.666 µg/L in USGS NAWQA data.

Figure 1: Cumulative Probability Distribution of Maximum Metolachlor Concentrations for CADPR(A) and NAWQA (B)

A.

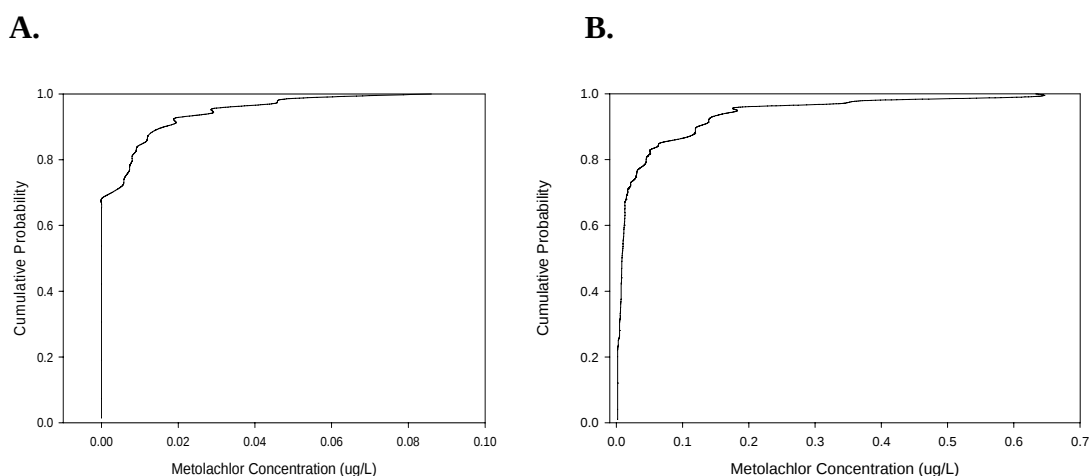


B.



A cumulative probability distribution of median site metolachlor concentrations are shown in Figure 2. The maximum median concentration of metolachlor in CADPR and USGS monitoring data is 0.086 $\mu\text{g/L}$ in Mud Slough, a tributary of the San Joaquin River and 0.633 $\mu\text{g/L}$ in the Orestimba Creek at the River Road near Crows Landing, CA, respectively. The 90th percentile site metolachlor concentration is 0.0162 $\mu\text{g/L}$ in the CADPR data and 0.122 $\mu\text{g/L}$ in the USGS NAWQA data.

Figure 2: Cumulative Probability Distribution of Median Metolachlor Concentrations for CADPR(A) and NAWQA (B)



The maximum reported concentration of metolachlor OA and ESA is 0.086 and 0.0162 $\mu\text{g/L}$, respectively. A distributional analysis of metolachlor degradation product was not conducted because there was limited data on the metolachlor degradation products,

Table A-1: California Surface Water Monitoring Data Summary for Metolachlor

COUNTY	SITE DESCRIPTION	Maximum	Median	Average	LOQ	LATITUDE	LONGITUDE
MERCED	Bear C at Bert Crane Rd Nr Merced California_USGS NAWQA site	0.0311	0.002	0.008775	-1	37.2559	-120.652
MERCED	Culvert Discharge To Mustang C at Monte Vista Ave_USGS NAWQA site	0	0	0	-1	37.5209	-120.64
MERCED	Highline Spillway (trib. to SJR)	0.187	0.0057	0.0303	-1	37.3875	-120.8036
MERCED	Livingston Spillway (trib. to SJR)	0.007	0	0.001915	0.013	37.4084	-120.7211
MERCED	Los Banos C at Hwy 140 California_USGS NAWQA site	0.0514	0.0451	0.0451	-1	37.2767	-120.964
MERCED	Merced R BI Merced Falls Dam Nr Snell California_USGS NAWQA site	0	0	0	0.002	37.5222	-120.332
MERCED	Merced River at River Road Bridge near Newman	0.0567	0	0.003528	-1	37.3506	-120.9617
MERCED	Mud Slough (trib. to SJR)	0.507	0.086	0.1591	0.013	37.2758	-120.9197
MERCED	Mud Slough Nr Gustine California_USGS NAWQA site	0.173	0.0489	0.0677	-1	37.2625	-120.906
MERCED	Mustang C Res at Oakdale Rd Nr Montpelier California_USGS NAWQA site	0.0193	0.0132	0.010833	-1	37.5034	-120.658
MERCED	Mustang C at Bifurcation Structure Nr Ballico California_USGS NAWQA site	0.058	0.029	0.029	-1	37.4776	-120.693
MERCED	Mustang C at Monte Vista Ave Nr Montpelier California_USGS NAWQA site	0.021	0	0.0042	-1	37.5201	-120.64
MERCED	Mustang C at Newport Rd Nr Ballico California_USGS NAWQA site	0.0151	0	0.004257	-1	37.4747	-120.702
MERCED	Newman Wasteway at Hwy 33 Nr Gustine California_USGS NAWQA site	0.198	0.0159	0.051258	-1	37.2934	-121.011
MERCED	Salt Slough (trib. to SJR) at Highway 165	0.951	0.0295	0.131726	0.05	37.2478	-120.8511
MERCED	San Joaquin River near Stevinson	1.38	0.00415	0.119182	0.013	37.2956	-120.8408
SAN JOAQUIN	San Joaquin River near Vernalis	0.44	0	0.013725	-1	37.6761	-121.2653
SAN JOAQUIN	Stanislaus River at Caswell State Park	0.015	0	0.00075	0.013	37.6953	-121.2028
COLUSA	Sacramento River at Colusa	0	0	0	0.013	39.2142	-121.9992
SACRAMENTO	Arcade C Nr Del Paso Heights California_USGS NAWQA site	0.045	0	0.007037	0.013	38.642	-121.382

Table A-1: California Surface Water Monitoring Data Summary for Metolachlor

COUNTY	SITE_DESCRIPTION	Maximum	Median	Average	LOQ	LATITUDE	LONGITUDE
SACRAMENTO	Arcade Creek at Norwood	0.666	0.008	0.036867	0.002	38.6244	-121.4578
SACRAMENTO	Cosumnes R at Michigan Bar California_USGS						
SACRAMENTO	NAWQA site	0	0	0	0.013	38.5003	-121.044
SACRAMENTO	Sacramento River at Freeport	0.0522	0	0.00494	0.013	38.4397	-121.4992
SACRAMENTO	Sacramento River at I Street Bridge	0	0	0	0.035	38.5864	-121.505
SUTTER	Butte Slough at Lower Pass Road	0	0	0	0.009	39.1875	-121.9
SUTTER	Feather River near Nicolaus at Hwy 99 Bridge	0.0051	0	0.000121	0.013	38.8906	-121.6033
SUTTER	Sacramento Slough near Karnak	0	0	0	0.009	38.785	-121.6533
SUTTER	Wadsworth Canal at Franklin Rd	0	0	0	0.009	39.1278	-121.7556
YOLO	Colusa Basin Drain above Knights Landing	0.394	0.0195	0.061025	0.002	38.8125	-121.7731
YOLO	Sacramento Slough	0.394	0.012	0.046933	0.013	38.7833	-121.6338
YUBA	Bear River at Berry Road	0.0075	0.00585	0.005017	0.009	38.9731	-121.5417
COLUSA	Sacramento River at Colusa	0	0	0	0.013	39.2142	-121.9992
SACRAMENTO	Arcade C Nr Del Paso Heights California_USGS						
SACRAMENTO	NAWQA site	0.045	0	0.007037	0.013	38.642	-121.382
SACRAMENTO	Arcade Creek at Norwood	0.666	0.008	0.036867	0.002	38.6244	-121.4578
SACRAMENTO	Cosumnes R at Michigan Bar California_USGS						
SACRAMENTO	NAWQA site	0	0	0	0.013	38.5003	-121.044
SACRAMENTO	Sacramento River at Freeport	0.0522	0	0.00494	0.013	38.4397	-121.4992
SACRAMENTO	Sacramento River at I Street Bridge	0	0	0	0.035	38.5864	-121.505
SUTTER	Butte Slough at Lower Pass Road	0	0	0	0.009	39.1875	-121.9
SUTTER	Feather River near Nicolaus at Hwy 99 Bridge	0.0051	0	0.000121	0.013	38.8906	-121.6033
SUTTER	Sacramento Slough near Karnak	0	0	0	0.009	38.785	-121.6533
SUTTER	Wadsworth Canal at Franklin Rd	0	0	0	0.009	39.1278	-121.7556
YOLO	Colusa Basin Drain above Knights Landing	0.394	0.0195	0.061025	0.002	38.8125	-121.7731
YOLO	Sacramento Slough	0.386	0	0.026056	0.013	38.7833	-121.6338
YOLO	Yolo Bypass at I-80 Nr W Sacramento						
YOLO	California_USGS NAWQA site	0.0075	0.0065	0.00602	-1	38.567	-121.614
YUBA	Bear River at Berry Road	0	0	0	0.009	38.9731	-121.5417
ALPINE	West Fork Carson River At Woodfords,						
ALPINE	California_USGS NAWQA site	0	0	0	0.002	38.7697	-119.833

Table A-1: California Surface Water Monitoring Data Summary for Metolachlor

COUNTY	SITE_DESCRIPTION	Maximum	Median	Average	LOQ	LATITUDE	LONGITUDE
EL DORADO	Upper Truckee River At South Lake Tahoe						
NEVADA	Calif_USGS NAWQA site	0	0	0	0.002	38.9225	-119.991
NEVADA	Truckee R At Farad, California_USGS NAWQA site	0	0	0	0.002	39.4281	-120.033
ORANGE	Santa Ana R Ab Sprd Div BI Imperial Hwy Nr Anaheim_USGS NAWQA site	0.0257	0	0.003398	0.013	33.8558	-117.797
RIVERSIDE	Elsinore Valley MWTP Inflow Nr Lake Elsinore California_USGS NAWQA site	0.0052	0	0.001188	0.002	33.6755	-117.273
RIVERSIDE	Santa Ana R BI Prado Dam California_USGS NAWQA site	0	0	0	-1	33.8833	-117.644
RIVERSIDE	Santa Ana R at Mwd Crossing California_USGS NAWQA site	0	0	0	0.002	33.9681	-117.447
SAN BERNARDINO	Californiajon C BI Lone Pine C Nr Keenbrook California_USGS NAWQA site	0	0	0	0.002	34.2667	-117.463
SAN BERNARDINO	Chino C Ab Central Ave Nr Los Serranos California_USGS NAWQA site	0	0	0	0.002	33.9764	-117.69
SAN BERNARDINO	Chino C downstream of Pine Ave At Prado Dam California_USGS NAWQA site	0.009	0.009	0.009	-1	33.9486	-117.666
SAN BERNARDINO	Cucamonga C Main Channel at Chino ave Nr Ontario California_USGS NAWQA site	0.0094	0.0094	0.0094	-1	34.0116	-117.599
SAN BERNARDINO	Cucamonga C Nr Mira Loma California_USGS NAWQA site	0.0181	0.0116	0.0116	-1	33.9833	-117.599
SAN BERNARDINO	Cucamonga C Nr Upland California_USGS NAWQA site	0	0	0	0.002	34.1792	-117.628
SAN BERNARDINO	Cucamonga C WW Effluent A Chino Ave Nr Ontario California_USGS NAWQA site	0.0073	0.0073	0.0073	-1	34.0114	-117.599
SAN BERNARDINO	Little Chino C Ab Pipeline Ave Nr Los Serranos California_USGS NAWQA site	0.0074	0.0074	0.0074	-1	33.9861	-117.715
SAN BERNARDINO	Mill C Nr Splatters Duck Club In Prado Wetlands California_USGS NAWQA site	0	0	0	0.002	33.9183	-117.633
SAN BERNARDINO	San Timoteo C Nr Eastside Ranch Nr Yucaipa California_USGS NAWQA site	0	0	0	0.002	33.9869	-117.134
SAN BERNARDINO	Santa Ana R Nr Mentone California_USGS NAWQA site	0	0	0	0.013	34.1083	-117.1
SAN BERNARDINO	Santa Ana R at Riverside Rd Nr Riverside California_USGS NAWQA site	0	0	0	0.002	34.0256	-117.362

Table A-1: California Surface Water Monitoring Data Summary for Metolachlor

COUNTY	SITE_DESCRIPTION	Maximum	Median	Average	LOQ	LATITUDE	LONGITUDE
SAN BERNARDINO	Santa Ana R at Upper Ph Nr Running Sprgs						
BERNARDINO	California_USGS NAWQA site	0	0	0	0.002	34.1453	-117.057
SAN BERNARDINO	Sunnyslope Channel at Santa Ana Rrp Nr Rubidoux						
BERNARDINO	California_USGS NAWQA site	0	0	0	0.002	33.9741	-117.426
SAN BERNARDINO	Warm C Ab Orange Show Grounds Nr San Bernardino California_USGS						
BERNARDINO	California_USGS NAWQA site	0	0	0	0.002	34.0978	-117.29
SAN BERNARDINO	Warm C Nr San Bernardino California_USGS NAWQA site						
BERNARDINO	NAWQA site	0.032	0	0.000867	0.013	34.0778	-117.3
SAN BERNARDINO	Warm C above E St Nr San Bernardino California_USGS NAWQA site						
BERNARDINO	California_USGS NAWQA site	0	0	0	0.002	34.0819	-117.293

Table A-2: California Surface Water Monitoring Data Summary for Metolachlor Degradation Products

COUNTY	SITE_DESCRIPTION	CHEMICAL	Maximum	Median	Average	LOQ	LATITUDE	LONGITUDE
MERCED	Salt Slough (trib. to SJR) at Highway 165	metolachlor ESA (ethane sulfonic acid)	0.063	0	0.020714	0.05	37.2478	-120.851
MERCED	Salt Slough (trib. to SJR) at Highway 165	metolachlor OXA (oxanilic acid)	0.059	0	0.008071	0.05	37.2478	-120.851
SAN JOAQUIN	San Joaquin River near Vernalis	metolachlor ESA (ethane sulfonic acid)	0.151	0.109	0.110214	0.05	37.6761	-121.265
SAN JOAQUIN	San Joaquin River near Vernalis	metolachlor OXA (oxanilic acid)	0.079	0.0615	0.0485	0.05	37.6761	-121.265

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California									
County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
MERCED	SANJ	371903120585400	NEWMAN WASTEWAY A HWY 33 NR GUSTINE CA	AG	ug/L	--	.1980	.05126	.05126
STANISLAUS	SANJ	373232121053900	WESTPORT DRAIN NR MODESTO CA	AG	ug/L	<	.03080	.01243	.01243
MERCED	SANJ	372424120432800	LIVINGSTON CN A LVNGSTN TRMNT PLANT NR LVNGSTN CA	MIXED	ug/L	<	.0130	.00458	.00458
SUTTER	SACR	11391100	SACRAMENTO SLOUGH NR KNIGHTS LANDING CA	AG	ug/L	<	.3860	.02755	.02755
YOLO	SACR	11390890	COLUSA BASIN DR A RD 99E NR KNIGHTS LANDING CA	AG	ug/L	E	.3940	.06266	.06266
STANISLAUS	SANJ	374027120424201	DRY C A LEASK BRIDGE BL CASHMAN C NR WATERFORD CA	OTHER	ug/L	<	.0020	.0020	.0020
NEVADA	NVBR	10346000	TRUCKEE R AT FARAD, CA	OTHER	ug/L	<	.0020	.0020	.0020
MERCED	SANJ	11273500	MERCED R A RIVER ROAD BRIDGE NR NEWMAN CA	MIXED	ug/L	--	.0340	.00819	.00819
SAN BERNARDINO	SANA	335910117425801	LITTLE CHINO C AB PIPELINE AVE NR LOS SERRANOS CA	URBAN	ug/L	--	.00740	.00740	.00740
MERCED	SANJ	11273500	MERCED R A RIVER ROAD BRIDGE NR NEWMAN CA	MIXED	ug/L	<	.05670	.00770	.00770
STANISLAUS	SANJ	373753120441101	TURLOCK ID HICKMAN SPILL NR HICKMAN CA	AG	ug/L	<	1.080	.38440	.38440
MERCED	SANJ	11261100	SALT SLOUGH A HWY 165 NR STEVINSON CA	AG	ug/L	<	.510	.08865	.08865

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California									
County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
SAN JOAQUIN	SANJ	11303500	SAN JOAQUIN R NR VERNALIS CA	MIXED	ug/L	--	.680	.01270	.03145
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	--	.07710	.0120	.01876
SAN JOAQUIN	SANJ	11303500	SAN JOAQUIN R NR VERNALIS CA	MIXED	ug/L	--	.0130	.00647	.00647
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	<	.0130	.00733	.00733
SAN JOAQUIN	SANJ	11303500	SAN JOAQUIN R NR VERNALIS CA	MIXED	ug/L	--	.06840	.01754	.01754
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	--	.8520	.18272	.18272
SAN JOAQUIN	SANJ	11303500	SAN JOAQUIN R NR VERNALIS CA	MIXED	ug/L	<	.06550	.01489	.01489
STANISLAUS	SANJ	374209121103800	STANISLAUS R A CASWELL STATE PARK NR RIPON CA	MIXED	ug/L	<	.01480	.00828	.00828
SAN JOAQUIN	SANJ	11303500	SAN JOAQUIN R NR VERNALIS CA	MIXED	ug/L	--	.1050	.04667	.04667
STANISLAUS	SANJ	374209121103800	STANISLAUS R A CASWELL STATE PARK NR RIPON CA	MIXED	ug/L	<	.0130	.01109	.01109
SAN JOAQUIN	SANJ	11303500	SAN JOAQUIN R NR VERNALIS CA	MIXED	ug/L	--	.0070	.00629	.00629
STANISLAUS	SANJ	374209121103800	STANISLAUS R A CASWELL STATE PARK NR RIPON CA	MIXED	ug/L	--	.0130	.00727	.00727

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California

County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
SAN JOAQUIN	SANJ	11303500	SAN JOAQUIN R NR VERNALIS CA	MIXED	ug/L	<	.0150	.00791	.00791
STANISLAUS	SANJ	374209121103800	STANISLAUS R A CASWELL STATE PARK NR RIPON CA	MIXED	ug/L	--	.01190	.00495	.00495
SAN JOAQUIN	SANJ	11303500	SAN JOAQUIN R NR VERNALIS CA	MIXED	ug/L	--	.440	.04445	.04445
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	E	1.110	.13656	.13656
STANISLAUS	SANJ	373811120590001	DRY C A GALLO BRIDGE BL HWY 132 A MODESTO CA	URBAN	ug/L	--	.0130	.00664	.00664
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	--	1.20	.16340	.16340
STANISLAUS	SANJ	373811120590001	DRY C A GALLO BRIDGE BL HWY 132 A MODESTO CA	URBAN	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	--	.50	.13944	.13944
STANISLAUS	SANJ	11290500	SAN JOAQUIN R AT MAZE RD BRIDGE NR MODESTO CA	MIXED	ug/L	--	.02520	.01733	.01733
STANISLAUS	SANJ	373910120570601	SONOMA STORMDRAIN A SCENIC DRIVE A MODESTO CA	URBAN	ug/L	--	.0310	.0310	.0310

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California

County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	E	3.880	.63269	.63269
STANISLAUS	SANJ	373639120551001	TURLOCK ID CERES MAIN SPILL NR CERES CA	AG	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	--	1.90	.33599	.33599
STANISLAUS	SANJ	373701120561601	TUOLUMNE R A MITCHELL RD BRIDGE A MODESTO CA	AG	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	11274538	ORESTIMBA CR AT RIVER RD NR CROWS LANDING CA	AG	ug/L	--	.4560	.05118	.05118
SAN BERNARDINO	SANA	11063510	CAJON C BL LONE PINE C NR KEENBROOK CA	OTHER	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	373925120550701	DRY C A CLAUS RD BRIDGE A MODESTO CA	AG	ug/L	<	.01070	.00478	.00478
SAN BERNARDINO	SANA	335506117381201	MILL C NR SPLATTERS DUCK CLUB IN PRADO WETLANDS CA	MIXED	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	373927120551301	FARABUINDO STORMDRAIN A CLAUS RD A MODESTO CA	URBAN	ug/L	--	.0050	.0050	.0050
SAN BERNARDINO	SANA	340041117355901	CUCAMONGA C WW EFFLUENT A CHINO AVE NR ONTARIO CA	OTHER	ug/L	--	.00727	.00727	.00727
SAN BERNARDINO	SANA	340042117355901	CUCAMONGA C MAIN CHANNEL A CHINO AVE NR ONTARIO CA	URBAN	ug/L	--	.00936	.00936	.00936

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California

County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
SAN BERNARDINO	SANA	340132117214401	SANTA ANA R A RIVERSIDE RD NR RIVERSIDE CA	OTHER	ug/L	<	.0020	.0020	.0020
EL DORADO	NVBR	10336610	UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE CALIF	MIXED	ug/L	<	.0020	.0020	.0020
SAN BERNARDINO	SANA	340843117032501	SANTA ANA R A UPPER PH NR RUNNING SPRGS CA	OTHER	ug/L	<	.0020	.0020	.0020
MERCED	SANJ	11262900	MUD SLOUGH NR GUSTINE CA	AG	ug/L	--	.5070	.14493	.14493
SAN BERNARDINO	SANA	11073470	CUCAMONGA C NR UPLAND CA	OTHER	ug/L	<	.0020	.0020	.0020
SAN BERNARDINO	SANA	11073495	CUCAMONGA C NR MIRA LOMA CA	URBAN	ug/L	--	.01810	.01162	.01162
RIVERSIDE	SANA	11074000	SANTA ANA R BL PRADO DAM CA	MIXED	ug/L	E	.0130	.00991	.00991
SAN BERNARDINO	SANA	335835117253401	SUNNYSLOPE CHANNEL NR RIBIDOUX NC AT SANTA ANA RRP	URBAN	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	373842121131800	HOSPITAL C A RIVER RD NR PATTERSON CA	AG	ug/L	--	.2170	.11943	.11943
STANISLAUS	SANJ	373731120595401	WEST SIDE STORMDRAIN A NEECE DRIVE A MODESTO CA	URBAN	ug/L	<	.0020	.0020	.0020
SAN BERNARDINO	SANA	335913117080701	SAN TIMOTEO C NR EASTSIDE RANCH NR YUCAIPA CA	OTHER	ug/L	<	.09640	.02164	.02164
STANISLAUS	SANJ	11274560	HARDING DRAIN A CARPENTER RD NR PATTERSON CA	AG	ug/L	<	.2890	.03285	.03285

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California

County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
SAN BERNARDINO	SANA	335655117395601	CHINO C DS OF PINE AVE AT PRADO DAM CA	URBAN	ug/L	--	.00897	.00897	.00897
STANISLAUS	SANJ	373809120370201	TUOLUMNE R A ROBERTS FERRY BR NR ROBERTS FERRY CA	OTHER	ug/L	<	.0020	.0020	.0020
SACRAMENTO	SANJ	11335000	COSUMNES R A MICHIGAN BAR CA	OTHER	ug/L	<	.0130	.0130	.0130
MERCED	SANJ	372829120420801	MUSTANG C A NEWPORT RD NR BALLICO CA	OTHER	ug/L	<	.01510	.01081	.01081
STANISLAUS	SANJ	11290000	TUOLUMNE R A MODESTO CA	MIXED	ug/L	<	.020	.00522	.00522
STANISLAUS	SANJ	11274570	SAN JOAQUIN R A PATTERSON BR NR PATTERSON CA	MIXED	ug/L	--	.2360	.06546	.06546
STANISLAUS	SANJ	11290000	TUOLUMNE R A MODESTO CA	MIXED	ug/L	--	.280	.02990	.02990
MERCED	SANJ	372217120554700	STEVINSON LOWER LATERAL NR STEVINSON CA	AG	ug/L	--	.0030	.00250	.00250
SAN BERNARDINO	SANA	335835117412701	CHINO C AB CENTRAL AVE NR LOS SERRANOS CA	URBAN	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	373027121051401	OLIVE AVE DR NR PATTERSON CA	AG	ug/L	--	.2040	.11847	.11847
MERCED	SANJ	371636120575200	LOS BANOS C A HWY 140 CA	MIXED	ug/L	--	.05140	.04510	.04510
ORANGE	SANA	11075610	SANTA ANA R AB SPRD DIV BL IMPERIAL HWY NR ANAHEIM	MIXED	ug/L	<	.0130	.0130	.0130

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California

County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
MERCED	SANJ	373020120385201	MUSTANG C 1.1MI S OF MONTE VISTA AVE NR MONTPELIER	OTHER	ug/L	<	.0130	.0130	.0130
ORANGE	SANA	11075610	SANTA ANA R AB SPRD DIV BL IMPERIAL HWY NR ANAHEIM	MIXED	ug/L	E	.02570	.00502	.00502
SACRAMENTO	SACR	11447360	ARCADE C NR DEL PASO HEIGHTS CA	URBAN	ug/L	--	.6660	.02182	.02182
ALPINE	NVBR	10310000	WEST FORK CARSON RIVER AT WOODFORDS, CA	OTHER	ug/L	<	.0020	.0020	.0020
COLUSA	SACR	11389500	SACRAMENTO R A COLUSA CA	MIXED	ug/L	<	.0130	.0130	.0130
SACRAMENTO	SACR	11447650	SACRAMENTO R A FREEPORT CA	MIXED	ug/L	<	.05220	.00856	.00856
MERCED	SANJ	371521120390800	BEAR C A BERT CRANE RD NR MERCED CA	MIXED	ug/L	--	.03110	.01143	.01143
STANISLAUS	SANJ	11290200	TUOLUMNE R A SHILOH RD BRIDGE NR GRAYSON CA	MIXED	ug/L	--	.05090	.01004	.01004
SAN BERNARDINO	SANA	340455117173801	WARM C ABV E ST NR SAN BERNARDINO CA	URBAN	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	11303000	STANISLAUS R A RIPON CA	MIXED	ug/L	<	.0060	.00295	.00295
STANISLAUS	SANJ	373749120593701	NINTH ST STORMDRAIN A SEVENTH ST BR A MODESTO CA	URBAN	ug/L	--	.0070	.0070	.0070
SAN BERNARDINO	SANA	335827117253801	SUNNYSLOPE CHANNEL A SANTA ANA RRP NR RUBIDOUX CA	URBAN	ug/L	<	.0020	.0020	.0020

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California

County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
MERCED	SANJ	373112120382901	MUSTANG C A MONTE VISTA AVE NR MONTPELIER CA	OTHER	ug/L	<	.0210	.00845	.00845
STANISLAUS	SANJ	374111121000301	STORM DRAIN INLET W SIDE WHITEHORSE AVE A MODESTO	OTHER	ug/L	<	.0060	.0060	.0060
STANISLAUS	SANJ	373632121014701	TUOLUMNE R A CARPENTER RD BRIDGE A MODESTO CA	MIXED	ug/L	<	.0020	.0020	.0020
SAN BERNARDINO	SANA	11051500	SANTA ANA R NR MENTONE CA	OTHER	ug/L	<	.0130	.0130	.0130
STANISLAUS	SANJ	373621121102801	SAN JOAQUIN R BL WSID PMP AB TUOL R NR WESTLEY CA	MIXED	ug/L	--	.160	.10943	.10943
SAN BERNARDINO	SANA	11060400	WARM C NR SAN BERNARDINO CA	URBAN	ug/L	<	.0320	.0080	.0080
MERCED	SANJ	372323120481700	HIGHLINE CN SPILL NR HILMAR CA	AG	ug/L	--	.20	.03998	.03998
RIVERSIDE	SANA	11066460	SANTA ANA R A MWD CROSSING CA	MIXED	ug/L	<	.0020	.0020	.0020
SAN BERNARDINO	SANA	340552117172701	WARM C AB ORANGE SHOW GROUNDS NR SAN BERNARDINO CA	URBAN	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	11274500	ORESTIMBA C NR NEWMAN CA	OTHER	ug/L	<	.0170	.01550	.01550
STANISLAUS	SANJ	373847120590801	MCHENRY STORMDRAIN A BODEM ST A MODESTO CA	URBAN	ug/L	--	.0210	.01012	.01012
SUTTER	SACR	11425000	FEATHER R NR NICOLAUS	MIXED	ug/L	<	.0130	.00781	.00781

Table A-3: USGS NAWQA Surface Water Monitoring Data Summary for Metolachlor in California

County	Suid	Staid	Place Name	Land Use Group	Units	Remark	Max	Median	Average
MERCED	SANJ	11260815	SAN JOAQUIN R NR STEVINSON CA	MIXED	ug/L	--	1.380	.12235	.12235
STANISLAUS	SANJ	11274554	SPANISH GRANT COMBINED DRAIN NR PATTERSON CA	AG	ug/L	--	.8440	.61133	.61133
YOLO	SACR	11453120	YOLO BYPASS A I-80 NR W SACRAMENTO CA	MIXED	ug/L	--	.0120	.00739	.00739
RIVERSIDE	SANA	334032117162201	ELSINORE VALLEY MWTP INFLOW NR LAKE ELSINORE CA	MIXED	ug/L	<	.00523	.00289	.00289
STANISLAUS	SANJ	374115120591601	STORM DRAIN INLET S SIDE WENTWORTH LN A MODESTO CA	OTHER	ug/L	<	.0060	.0060	.0060
MERCED	SANJ	11270900	MERCED R BL MERCED FALLS DAM NR SNELL CA	OTHER	ug/L	<	.0020	.0020	.0020
STANISLAUS	SANJ	11274653	DEL PUERTO C AT VINEYARD ROAD NR PATTERSON	AG	ug/L	--	1.77	0.19060 4	0.19060 4

Air Monitoring

An evaluation of air water monitoring data was conducted to assess the occurrence of metolachlor, metolachlor-OA, and metolachlor-ESA. Air monitoring data were obtained from the California Department of Pesticide Regulation (Segawa, et al, 2003 and Kollman, 2002). A review of the air monitoring data indicates that metolachlor was detected in trace quantities in an air monitoring study in Lompoc City, Santa Barabara County (Segawa, et al, 2003). Air concentrations of metolachlor were 1.7 ng/m³ for the highest one day average, 1.01 ng/m³ for the highest 3 day average, 0.54 ng/m³ for the highest 18 day average concentration. Air concentrations of metolachlor were not reported in the California Pesticide Air Monitoring Results: 1986-2000 (Kollman, 2002). Additionally, there were no air monitoring data for the metolachlor degradation products.

The potential impact of metolachlor air concentrations on surface water quality was assessed for the standard water body. Air concentrations above the pond are assumed to be the maximum reported air concentration in CA (1.7 ng/m³). The potential contribution of volatile metolachlor was evaluated assuming different air volumes above the pond. Mass loading of metolachlor was calculated assuming a complete rainwater “wash-out” from the air space above the pond. Metolachlor water concentrations from atmospheric deposition of volatile metolachlor are not expected to exceed 60 ng/L.

References

Kollman, Wynetta S. 2002. Summary of Bill 1807/3219: Pesticide Air Monitoring Results: Conducted by the California Air Resources Board 1986-2000. California Department of Pesticide Regulation, Sacramento, CA.

Segawa, Randy, Jay Schreider, and Pamela Wofford. 2003. Ambient Air Monitoring for Pesticides in Lompoc, California. Vol. 1: Executive Summary. California Department of Pesticide Regulation, Sacramento, CA.