

US EPA ARCHIVE DOCUMENT

TEXT SEARCHABLE DOCUMENT

Data Evaluation Report of Water Monitoring Study

PMRA Submission Number {.....}

EPA MRID Number 46490305

Test material: Fipronil

IUPAC name: 5-amino-1-(2,6-dichloro- α,α,α -trifluoro-*p*-tolyl)-4-trifluoromethylsulfinylpyrazole-3-carbonitrile

CAS name: 5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-[(trifluoromethyl)sulfinyl]-1*H*-pyrazole-3-carbonitrile

Primary Reviewer: James Hetrick, Ph.D.
EPA

Signature:
Date:



Secondary Reviewer: Thuy Nguyen
EPA

Signature:
Date:


3/6/08

CITATION: Hurst, Kenneth M. 2004. Chipco Topchoice® Insecticide: Surface Water Runoff Monitoring Study at a Residential Setting in Mecklenburg County, NC. Sponsored by BayerCrop Science, RTP, NC. Performed by BayerCrop Science, RTP, NC and AgVise Laboratories, Northward, ND. MRID 46490305.



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EXECUTIVE SUMMARY:

The fipronil water monitoring study (MRID 46490305) provides supplemental data on the runoff potential of fipronil and its degradation products (MB46136, MB46513, and MB 46950) and its impact on fipronil residue occurrence in surface water from use of Chipco Topchoice® in a residential setting in Mecklenburg, NC. This study was submitted to fulfill a condition of registration regarding runoff concerns of fipronil residues from broadcast use of fipronil for control of fire ants. The registrant did not provide any concurrent biological monitoring of the aquatic environment to assess the impact of fipronil and its degradation products on aquatic invertebrates.

The data are deemed supplemental because there is an insufficient description of the storage stability study. To upgrade the study, the registrant should provide a complete description of the storage stability study.

Fipronil was broadcast applied at a rate of 0.0125 lbs ai/A in 2002 and 2003 to a small urban watershed in Mecklenburg, NC. Fipronil residue occurrence was monitored at the entry point and exit point of a small stream transecting a fipronil-treated catchment area in a residential setting. There was one detection of fipronil (< 0.010 µg/L @ 15 days post fipronil application) in an exit water sample. All other samples had fipronil residue concentrations < 0.004 µg/L. There were no detections of fipronil residues in sediment except for MB46136 (< 0.100 µg/kg) in two samples from the entry point location.

I. MATERIALS AND METHODS

GUIDELINE FOLLOWED:

The SETAC-Europe: Procedures for Assessing the Environmental Fate and Ecotoxicity of Pesticides (March 1995; pp. 1, 34) is not applicable.

COMPLIANCE:

This study was conducted in compliance with USEPA FIFRA Good Laboratory Practices (40 CFR Part 160), which are consistent with the OECD Principles of GLP (p. 3). Signed and dated GLP, Data Confidentiality, Quality Assurance, and Certificate of Authenticity statements were provided (pp. 2-3, 5-6).

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A. MATERIALS:

The objective of this study was to assess the runoff potential of fipronil and its degradation products from use of Chipco Topchoice® in residential settings.

1. Study Description

The runoff monitoring study was conducted at an apartment complex in Mecklenburg, NC. This study was selected because it represents a residential area with turf, impervious surfaces, and natural area with a small stream (**Figures 1, 2, 3, 4, 5; pp 67-71**). A unnamed small stream flows east to west through a catchment area of 5.45 acres and drains into Brier Creek. Runoff from the site is channeled into the stream through curb drains, in-turf drains, and surface water flow. Representative samples of drainage water and in-turf drainage water were analyzed for water quality parameters (**Table II**).

The soils in the catchment area were classified as a Monacan soil series (fine -loamy, mixed, Thermic Fluvaquentic Eutrochrepts) and Arents. These soils were used as backfill material around the apartment complex. Soil physicochemical properties are shown in **Table 1 (pp 87)**.

The soil hydrologic grouping for the site is C. The steepest slope in the catchment area is 10%.

The fipronil application area accounts for 1.78 acres of turf and natural space with pine straw mulch; the remaining area (3.7 acres) was impervious surfaces and buffer zone. Two locations were monitored in the stream. The stream entry point into the catchment area was located east of a rectangular culvert under Randolph Road. This sampling location was selected to assess background concentrations of fipronil and its degradation products. The stream exit point from the catchment area was the point where the small stream transecting the catchment area enters Brier Creek.

The sampling locations (Entry and Exit sites) were equipped with an autosampler and flowmeter. The autosamplers were programmed to collect duplicate 100 ml samples at 3 hour intervals for the first 3 month and 6 hour intervals for the remaining 3 months of the study. Grab samples were taken for some samples to compensate for instrument malfunction, low stream flow, or weather conditions. Stream flow data including water level and average velocity of stream flow are shown in **Table II (pp 97-106)** and **Figure 2 (pp 26)**. Flow rate of the stream was calculated by multiplying the cross-sectional area by the velocity of the stream flow. Water samples at the Entry site were taken from 3 to 55 days after application of fipronil (**Appendix G1, pp 108-109**). Water samples at the Exit site were taken from 1 to 180 days after the fipronil application (**Appendix G2, pp 110-122**). Water samples were removed from

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the autosamplers daily and then stored under refrigeration (35-40°F) until transferred to the laboratory. Samples were transferred to the laboratory on blue ice and stored frozen..

Sediment samples were taken at the Entry and Exit sampling sites on June 20, 2003. Eight acetate sleeve cores of sediment were collected, composited, and then a subsample of the composite sample was placed into a 250 ml Nalgene bottle. Sediment samples were transported on blue ice and then stored in a freezer until analysis.

A rain gauge was used to collect on-site precipitation. The on-site cumulative rainfall was 21.6 inches for the duration of the study. The on-site precipitation was comparable to the local NOAA weather data at the Douglas International Airport, Charlotte, NC (**Table III, pp 24**).

2. Site Preparation and Maintenance

The test site had well established fescue turf. It was mowed weekly during the study. The turf was aerated and fertilized during the study (1 week after fipronil application). The turf had also been spot treated with AMDRO® several years prior to this study. Although the test site had an in-ground irrigation system, they were not used because of local water use restrictions for the 2002 drought.

3. Pesticide Application

Chipco Topchoice® insecticide was applied on September 12, 2002. The 1.78 acre treated area received 164.3 pounds of Chipco TopChoice® insecticide (0.0137 % fipronil). The calculated application rate was 0.0126 lbs ai/A. Applications were made using calibrated drop spreaders. A 15 -foot buffer was maintained along the small stream, curb drains, and in-turf drains. Granulars on any impervious surfaces were swept or blown onto the turf.

4. Analytical

Water samples were stored frozen for a maximum time period of 90 days (**Appendix G2, pp 111-122**). The source of storage stability data were referenced to Texas runoff study (**MRID 46733902; Tables VIII and IX, pp 37**). The storage stability data indicate fipronil, MB46513, MB45950, and MB46136 were stable during a 25 month storage period. [The reviewer notes there is an incomplete description of the storage stability study in the Texas runoff study (**MRID 46733902**)].

Residues of fipronil in water samples were analyzed using a LC/MS/MS method entitled "Method of Analysis for Possible Residues of Fipronil, MB46513, MB45950, and MB46136 in Water-Revision 2000- Revision 4" issued May 21, 2002. This method has a method detection limit (MDL) of 0.004 µg/L and limit of quantification (LOQ) of 0.010 µg/L. (Reviewer Note: The method procedure requires filtration through a nylon filtration disk after an acetoanitrile extraction of unfiltered runoff water (**Bayer Crop Study 02YV36530, page 126**).

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Procedural method verification in HPCL water at concentrations of 0.005, 0.01, and 0.1 µg/L showed recoveries of 86± 13 for fipronil (n=36), 87± 12 for MB46513 (n=36), 86± 11 for MB45950 (n=36), and 90± 11 for MB46136 (n=36) (**Table V, pp 28**). Method verification was conducted using stream water and HPLC water at 0.010 and 0.100 µg/L. Residue recoveries ranged from 78%±11 to 85%±4 (**Table IV, pp 27**). Bulk water for the field spike analysis was collected for field spike samples. The field spike samples were prepared at 0, 0.010, 0.020, 0.100, and 0.200 µg/L. Field spike samples were handled in a similar manner as the water samples. Recoveries of the field spikes were 74 -84% for fipronil, 84%-90% for MB46513, 78-80% for MB45950, and 81-89% for MB46136 (**Table VIII, pp 30**).

Residues of fipronil in sediment samples were analyzed using a LC/MS/MS method entitled "Method of Analysis for Possible Residues of Fipronil, MB46513, MB45950, and MB46136 in Sediment" issued November 19, 2003. This method has method detection limit (MDL) of 0.030 µg/kg and limit of quantification (LOQ) of 0.100 µg/kg. Acceptable residue recovery was defined as 70 to 120% recovery of spike residues at concentrations above the LOQ and 60 to 130% recovery below the LOQ.

Method verification was conducted using sediment spike at 0.500 µg/L. Residue recoveries ranged from 85.8% to 96.2 (**Table IX, pp 31**).

Mass loss of fipronil residues was estimated using sample concentration multiplied by the mean flow rate (gallons/minute).

B. REPORTED RESULTS

1. **Concentration of Fipronil Residues in Stream Water-** There were no fipronil residue detections in the Entry test site (**Table VII, pp 35-36**). There was only one sample (36530A-2089) with a detection (< 0.010 µg/L) of fipronil at the Exit test site (**Table VIII, pp 37-50**). All other samples had fipronil residue concentrations of < 0.004 µg/L.
2. **Mass Loss of Fipronil Residues from the Application Site-** The mass loss of fipronil was estimated for Sample 36530A-2089 (9/27 /02, 01:26) over a 6 hour flow period. The estimated mass loss was <11.1 mg of applied fipronil. This loss is equivalent to < 0.11% of the applied fipronil (**pp 32**).
3. **Concentration of Fipronil Residues in Sediment-** There were no detections of fipronil residues in sediment except for MB46136 (< 0.100 µg/kg) in two samples from the entry point location (**Table IX, pp 31**).

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C. REVIEWER COMMENTS

1. The registrant referenced a storage stability study in a Texas runoff study (MRID 46733902). The Texas runoff study does not provide a detailed description of the storage stability study.
2. The fipronil water monitoring study (MRID 46490305) provides supplemental data on the runoff potential of fipronil and its degradation products (MB46136, MB46513, and MB 46950) and its impact on fipronil residue occurrence in surface water from use of Chipco Topchoice® in a residential setting in Mecklenburg, NC. The data are deemed supplemental because there is an insufficient description of the storage stability study. This study was submitted to fulfill a condition of registration regarding runoff concerns of fipronil residues from broadcast use of fipronil for control of fire ants. The registrant did not provide any concurrent biological monitoring of the aquatic environment to assess the impact of fipronil and its degradation products on aquatic invertebrates.
3. The fipronil application was made in September. This application period does not coincide with highest precipitation months. Therefore, fipronil runoff and occurrence in surface water is expected to be higher with spring (April-May) applications.
4. MB46136 detections in sediment at the stream entry point suggest that fipronil was being used upstream from the catchment area.



Figure 1. Study Site Location

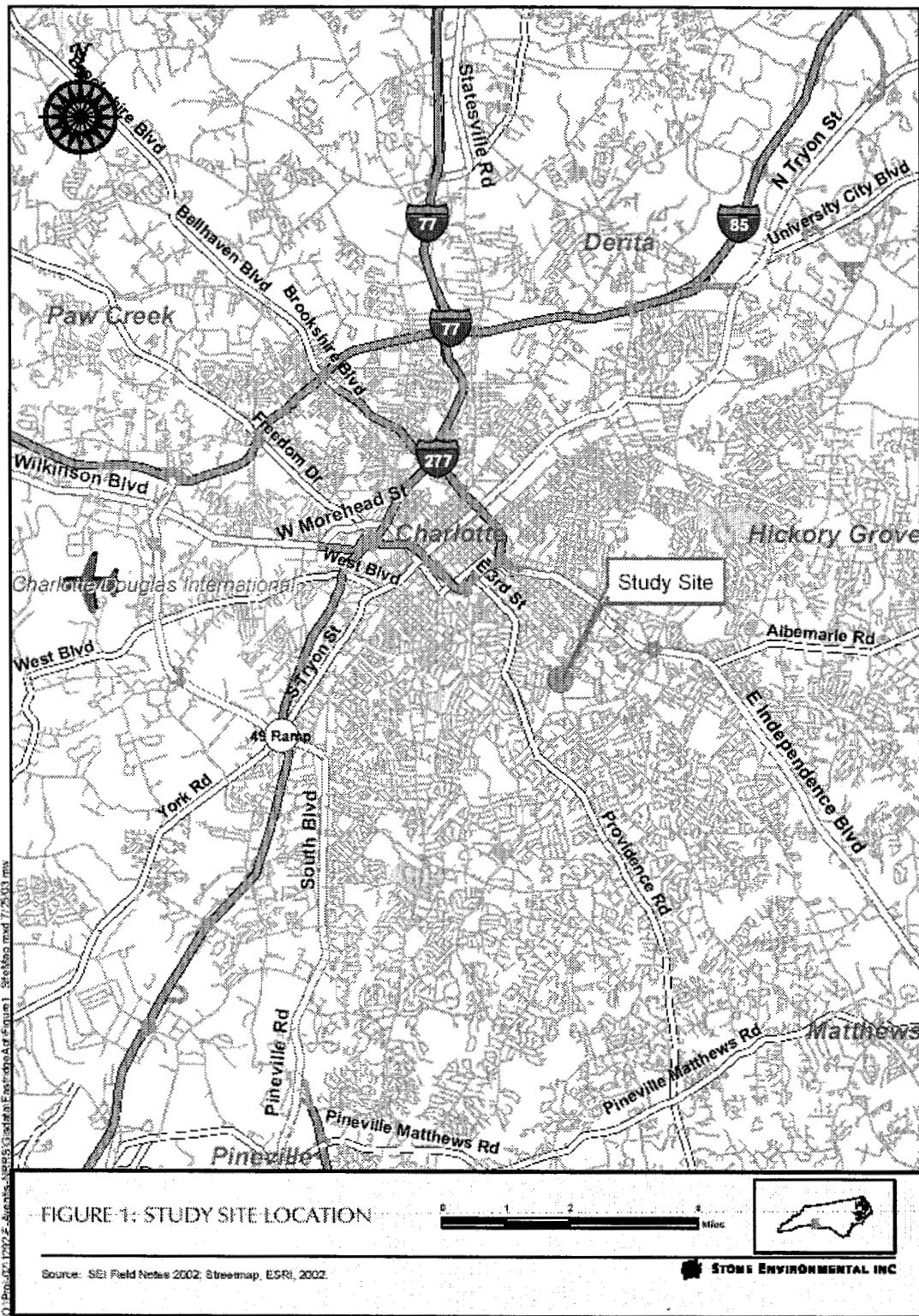




Figure 2. Test Site Topography





Figure 3. Stormwater Drainage Network



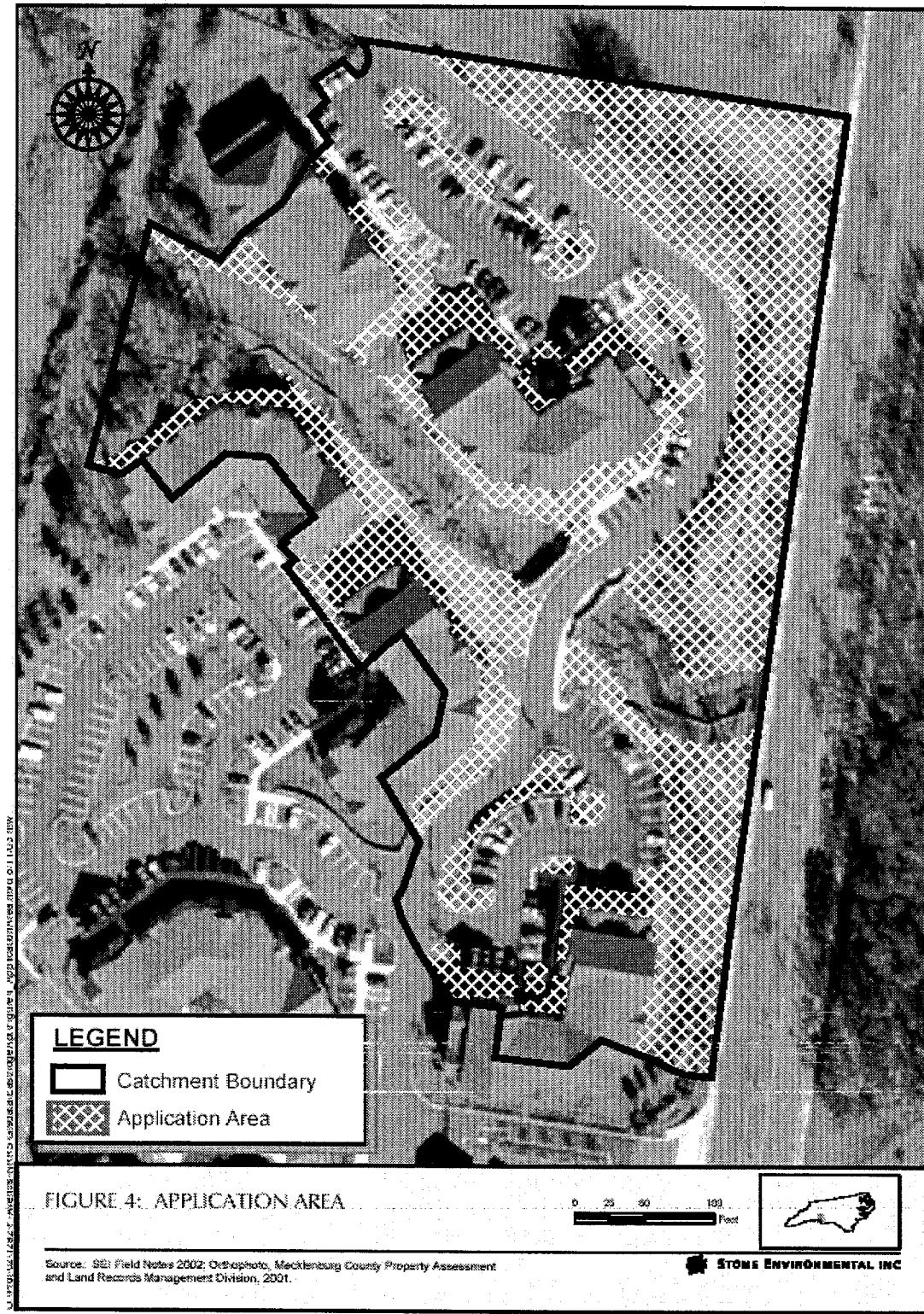
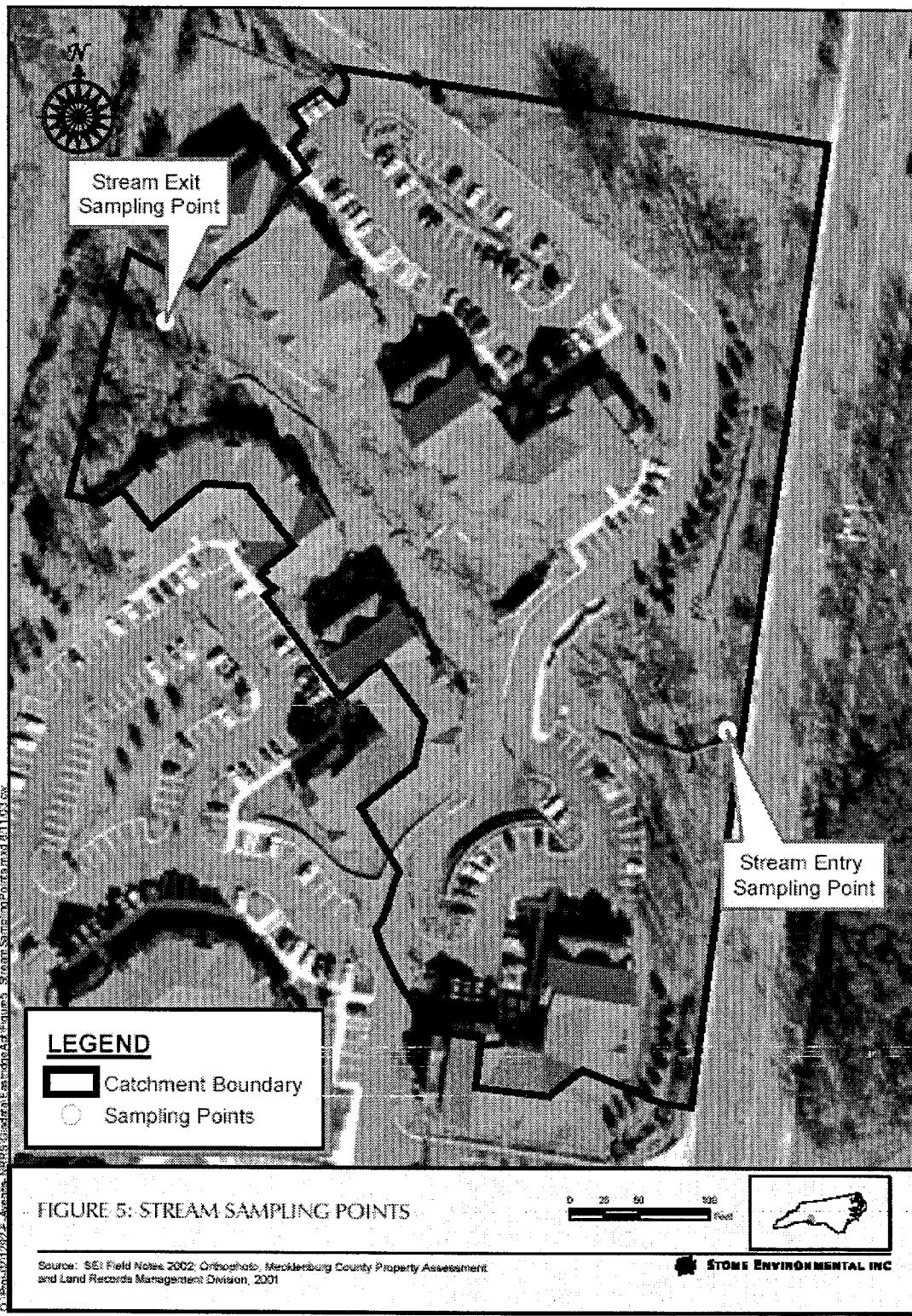
**Figure 4. Application Area**



Figure 5. Stream Sampling Points



**Water**

Water samples for characterization were collected on 6 March 2003 from three locations within the treated area. They were collected from a drainage swale and in-turf drains following a rainfall and are representative of runoff from the catchment area. They were shipped to Agvise Laboratories on 10 March 2003 and received the next day. The results are listed in Table II. Copies of the laboratory reports are included in this Appendix.

Table II: Water Characterization

Parameter	Analytical Result		
Sample ID	36530A-Water-1	36530A-Water-2	36530A-Water-3
pH	6.3	6.9	7.3
Sodium (ppm)	1	1	0.3
Calcium (ppm)	7	8	11
Magnesium (ppm)	2	2	3
Hardness mg equivalent CaCO ₃ (ppm)	27	28	42
Conductivity (mmhos/cm)	0.11	0.08	0.09
Sodium Absorption Ratio	0.05	0.04	0.02
Total Dissolved Solids (ppm)	98	108	88
Turbidity (NTU)	10.8	21.9	27.6

**Soil**

Soil samples for characterization were collected on 6 March 2003 from three locations within the treated area. The samples were obtained from the top 6 inches of soil after removal of the turf and roots. The samples contained gravel, an obvious indication of soil disturbance during construction of the apartment complex. They were shipped to Agvise Laboratories on 10 March 2003 and received the next day. The results are listed in Table I. Copies of the laboratory reports are included in this Appendix.

Table I: Soil Characterization

Parameter	Analytical Result		
Sample ID	36530A-Soil-1	36530A-Soil-2	36530A-Soil-3
Percent Sand	52	58	56
Percent Silt	28	26	32
Percent Clay	20	16	12
USDA Texture	Sandy Loam	Sandy Loam	Sandy Loam
Bulk Density (gm/cc)	1.13	1.09	1.21
CEC (meq/100 g)	9.5	9.0	9.6
Percent Moisture (1/3 bar)	20.2	18.6	18.0
Percent Organic Matter	1.6	1.1	1.6
pH	6.8	6.6	7.2
Calcium (ppm)	1090	996	1300
Magnesium (ppm)	174	185	150
Sodium (ppm)	16	20	14
Potassium (ppm)	91	78	90
Hydrogen (ppm)	23	22	16



The "Entry" and "Exit" samplers were equipped with Isco Model 750 Area-Velocity Modules. The area velocity sensor detects the average velocity of the stream flow as it moves up or downstream. The sensor, equipped with an internal pressure transducer, also measures the level of the flow stream. The cross-sectional area of the channel is programmed into the unit. The module determines the flow rate by multiplying the channel cross-sectional area by the velocity of the stream flow.

The "Entry" flow sensor was placed in the rectangular culvert carrying the stream under Randolph Road and into the apartment complex. The culvert was 9.0 feet wide with the sensor placed 9 inches from the bottom of the culvert to allow for possible silting. The instrumentation was programmed to collect velocity and flow data at 10-minute intervals.

The "Exit" flow sensor was placed in the bed of the stream as it left the catchment area. The stream bed was irregular in its cross-sectional area. Thus the cross-sectional area of the channel was determined at various segment heights, and the module was programmed with the height and area as shown below in Table I. The instrumentation was programmed to collect velocity and flow data at 10-minute intervals.

Table I. Cross-Sectional Area of Stream Channel at "Exit" Sampler

Height (inches)	Segment Height (inches)	Width (feet)	Cross- Sectional Area of Segment (square feet)	Total Cross- Sectional Area (square feet)
3	3	8.33	2.08	2.08
4	1	9.00	0.75	2.83
6	2	11.08	1.85	4.68
8	2	12.00	2.00	6.68
10	2	12.75	2.13	8.80
12	2	13.08	2.18	10.98
15	3	15.50	3.88	14.86
18	3	16.08	4.02	18.88
24	6	18.25	9.13	28.00
30	6	20.92	10.46	38.46
36	6	22.50	11.25	49.71
42	6	23.58	11.79	61.50
48	6	24.25	12.13	73.63

A summary of the daily average level, velocity and flow data from the "Entry" and "Exit" samplers is contained in Table II of this Appendix.



Table II. Flow Data for "Entry" and "Exit" Location

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
0	12 Sep 02	0.00	0.988	0.04	143	0.023	NA	NA
1	13 Sep 02	0.00	0.983	0.19	744	0.026	NA	NA
2	14 Sep 02	0.56	1.107	0.07	449	0.079	NA	NA
3	15 Sep 02	0.86	1.671	0.37	2803	0.390	2.97	5407
4	16 Sep 02	0.02	1.378	0.10	657	0.268	1.69	2153
5	17 Sep 02	0.17	1.273	0.07	375	0.227	1.21	1112
6	18 Sep 02	0.01	1.117	0.05	241	0.152	0.63	348
7	19 Sep 02	0.00	1.089	0.09	399	0.166	0.38	224
8	20 Sep 02	0.00	1.063	0.07	293	0.156	0.29	143
9	21 Sep 02	0.00	1.051	0.04	181	0.088	0.51	157
10	22 Sep 02	0.00	1.039	0.01	38	0.086	0.40	119
11	23 Sep 02	0.00	1.039	0.12	496	0.089	0.38	119
12	24 Sep 02	0.00	1.010	0.80	3287	0.054	0.27	53
13	25 Sep 02	0.00	1.012	-0.47	-1908	0.005	0.26	4
14	26 Sep 02	0.56	1.412	0.22	1331	0.283	2.04	2686
15	27 Sep 02	0.17	1.319	0.04	218	0.255	0.97	945
16	28 Sep 02	0.00	1.193	-0.13	-649	0.203	0.89	662
17	29 Sep 02	0.00	1.084	0.26	1126	0.137	0.59	292



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
18	30 Sep 02	0.00	1.062	0.17	730	0.112	0.50	199
19	01 Oct 02	0.02	1.094	-0.06	-270	0.141	0.56	286
20	02 Oct 02	0.00	1.086	0	-17	0.129	0.46	214
21	03 Oct 02	0.00	1.065	-0.06	-260	0.101	0.48	172
22	04 Oct 02	0.00	1.056	-0.12	-525	0.069	0.75	178
23	05 Oct 02	0.00	1.056	0	19	0.075	0.45	120
24	06 Oct 02	0.00	1.032	0.14	568	0.054	0.46	88
25	07 Oct 02	0.00	1.023	0.11	436	0.037	0.46	58
26	08 Oct 02	0.00	1.008	-0.10	-398	0.024	0.12	15
27	09 Oct 02	0.02	1.007	0.08	334	0.012	0.09	4
28	10 Oct 02	0.05	1.023	0.33	1360	0.045	0.15	50
29	11 Oct 02	1.70	1.814	0.52	5286	0.545	1.07	4069
30	12 Oct 02	0.00	1.181	0.04	209	0.191	1.02	721
31	13 Oct 02	0.66	1.542	0.44	3408	0.411	2.27	5225
32	14 Oct 02	0.00	1.191	-0.05	-252	0.221	0.92	764
33	15 Oct 02	0.77	1.438	0.23	1743	0.319	2.30	3940
34	16 Oct 02	0.53	1.682	0.39	3489	0.415	3.29	7672
35	17 Oct 02	0.00	1.183	-0.13	-629	0.209	0.90	691
36	18 Oct 02	0.00	1.114	-0.05	-242	0.160	0.46	260



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
37	19 Oct 02	0.00	1.170	0.40	1915	0.138	0.45	222
38	20 Oct 02	0.01	1.177	1.08	5122	0.138	0.39	194
39	21 Oct 02	0.40	1.372	0.15	957	0.241	1.53	2195
40	22 Oct 02	0.09	1.398	0.14	887	0.289	1.89	2522
41	23 Oct 02	0.00	1.167	0.03	152	0.181	0.89	593
42	24 Oct 02	0.00	1.127	-0.01	-25	0.148	0.55	296
43	25 Oct 02	0.06	1.133	0.10	470	0.144	0.47	248
44	26 Oct 02	0.00	1.21	0.54	2640	0.197	0.82	592
45	27 Oct 02	0.00	1.157	0.10	461	0.165	0.59	351
46	28 Oct 02	0.52	1.432	0.20	1613	0.288	0.99	1408
47	29 Oct 02	0.12	1.365	0.07	358	0.262	1.04	1031
48	30 Oct 02	0.01	1.229	-0.12	-596	0.218	0.98	787
49	31 Oct 02	0.00	1.158	-0.12	-561	0.194	0.74	527
50	01 Nov 02	0.00	1.128	-0.12	-558	0.180	0.56	364
51	02 Nov 02	0.00	1.143	-0.13	-600	0.177	0.54	349
52	03 Nov 02	0.00	1.155	-0.13	-606	0.173	0.45	285
53	04 Nov 02	0.01	1.177	-0.12	-553	0.191	0.36	241
54	05 Nov 02	1.00	1.474	0.21	1995	0.358	1.70	4618
55	06 Nov 02	0.15	1.557	0.36	2780	0.408	2.39	5412



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
56	07 Nov 02	0.00	1.172	-0.10	-473	0.248	0.32	303
57	08 Nov 02	0.00	1.163	-0.06	-285	0.248	0.29	258
58	09 Nov 02	0.00	1.169	0.05	236	0.246	0.06	61
59	10 Nov 02	0.02	1.196	0.03	152	0.234	-0.30	-258
60	11 Nov 02	0.53	1.498	0.34	2454	0.375	-0.88	-1655
61	12 Nov 02	0.22	1.908	0.66	5582	0.595	3.08	7773
62	13 Nov 02	0.01	1.351	-0.03	-115	0.291	1.08	1316
63	14 Nov 02	0.00	1.199	-0.16	-775	0.233	0.54	467
64	15 Nov 02	0.00	1.18	-0.16	-762	0.224	0.57	455
65	16 Nov 02	0.01	1.682	0.25	2339	0.506	2.05	7008
66	17 Nov 02	0.00	1.58	0.18	1107	0.403	3.26	5643
67	18 Nov 02	0.48	1.235	0.18	898	0.246	0.93	850
68	19 Nov 02	0.77	1.153	0.18	839	0.231	0.91	762
69	20 Nov 02	0.12	1.172	0.18	852	0.252	0.53	503
70	21 Nov 02	0.01	1.205	0.11	544	0.249	0.40	360
71	22 Nov 02	0.00	1.195	-0.01	-26	0.249	0.19	174
72	23 Nov 02	0.01	1.193	0.05	254	0.305	0.49	732
73	24 Nov 02	0.00	1.183	0.06	287	0.334	0.63	828
74	25 Nov 02	0.00	1.172	-0.12	-580	0.278	0.22	221



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
75	26 Nov 02	0.00	1.169	-0.12	-563	0.243	0.27	246
76	27 Nov 02	0.00	1.175	-0.01	-43	0.246	0.26	239
77	28 Nov 02	0.00	1.053	0.10	434	0.234	0.30	251
78	29 Nov 02	0.00	1.058	0.08	342	0.205	0.44	328
79	30 Nov 02	0.00	1.180	0	2	0.215	0.44	351
80	01 Dec 02	0.00	1.097	-0.18	-787	0.211	0.44	338
81	02 Dec 02	0.01	1.070	-0.11	-462	0.211	0.51	396
82	03 Dec 02	0.00	1.125	-0.10	-441	0.206	0.57	431
83	04 Dec 02	0.06	1.164	-0.04	-114	0.253	0.93	1172
84	05 Dec 02	0.18	1.728	0.40	3110	0.548	3.94	9488
85	06 Dec 02	0.20	1.283	0.14	723	0.301	1.26	1483
86	07 Dec 02	0.01	1.099	0.05	222	0.246	0.86	792
87	08 Dec 02	0.00	1.057	0.05	213	0.233	0.95	820
88	09 Dec 02	0.00	1.151	0.05	232	0.230	1.09	929
89	10 Dec 02	0.05	1.148	0.05	240	0.230	1.01	855
90	11 Dec 02	0.47	1.524	0.39	2630	0.406	2.59	5296
91	12 Dec 02	0.00	1.235	0.30	1496	0.241	1.04	919
92	13 Dec 02	1.06	1.784	0.55	5089	0.537	3.69	12513
93	14 Dec 02	0.00	1.351	-0.04	-163	0.294	1.40	1725



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
94	15 Dec 02	0.00	1.116	-0.29	-1308	0.234	0.87	751
95	16 Dec 02	0.00	1.105	-0.29	-1295	0.229	0.76	645
96	17 Dec 02	0.00	1.16	-0.26	-1217	0.224	0.58	483
97	18 Dec 02	0.00	1.167	-0.14	-684	0.221	0.53	430
98	19 Dec 02	0.00	1.176	-0.14	-665	0.224	0.44	366
99	20 Dec 02	0.55	1.604	0.27	2265	0.404	2.48	5494
100	21 Dec 02	0.00	1.222	-0.08	-410	0.236	1.00	868
101	22 Dec 02	0.00	1.188	-0.08	-384	0.216	1.07	853
102	23 Dec 02	0.00	1.169	-0.08	-378	0.231	0.66	562
103	24 Dec 02	1.17	1.943	0.44	5330	0.685	2.83	15614
104	25 Dec 02	0.46	2.022	0.33	3275	0.506	3.99	10041
105	26 Dec 02	0.00	1.494	0.09	568	0.279	0.87	937
106	27 Dec 02	0.00	1.402	0.07	415	0.252	0.81	760
107	28 Dec 02	0.00	1.407	0.08	455	0.246	0.82	755
108	29 Dec 02	0.00	1.456	0.08	470	0.242	0.93	834
109	30 Dec 02	0.00	1.435	0.07	432	0.247	0.75	692
110	31 Dec 02	0.00	1.495	-0.06	-392	0.247	0.75	695
111	01 Jan 03	0.11	1.593	0.02	137	0.288	0.58	642
112	02 Jan 03	0.00	1.471	-0.06	-366	0.260	0.68	666



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
113	03 Jan 03	0.13	1.633	0.05	327	0.306	0.99	1217
114	04 Jan 03	0.00	1.353	-0.10	-561	0.244	0.91	824
115	05 Jan 03	0.00	1.319	0.02	108	0.237	0.89	786
116	06 Jan 03	0.00	1.378	-0.06	-352	0.249	0.80	747
117	07 Jan 03	0.00	1.315	-0.11	-592	0.245	0.75	685
118	08 Jan 03	0.00	1.400	-0.09	-508	0.251	0.69	642
119	09 Jan 03	0.00	1.439	-0.1	-602	0.26	0.58	562
120	10 Jan 03	0.00	1.463	-0.03	-139	0.265	0.56	558
121	11 Jan 03	0.00	1.38	-0.03	-195	0.263	0.52	510
122	12 Jan 03	0.00	1.353	-0.10	-546	0.254	0.62	586
123	13 Jan 03	0.00	1.372	0	50	0.263	0.77	764
124	14 Jan 03	0.00	1.440	-0.04	-242	0.258	0.75	722
125	15 Jan 03	0.00	1.379	-0.03	-167	0.252	0.56	529
126	16 Jan 03	0.01	1.350	0.01	57	0.253	0.68	644
127	17 Jan 03	0.15	1.376	-0.02	-70	0.261	0.71	694
128	18 Jan 03	0.00	1.227	0	33	0.242	0.55	496
129	19 Jan 03	0.00	1.232	0.08	398	0.241	0.59	524
130	20 Jan 03	0.00	1.366	0.09	485	0.251	0.52	481
131	21 Jan 03	0.09	1.392	0.09	541	0.242	0.62	560



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
132	22 Jan 03	0.00	1.361	0.17	934	0.246	0.57	523
133	23 Jan 03	0.00	1.283	0.14	758	0.26	1.10	1310
134	24 Jan 03	0.05	1.175	0.16	745	0.244	0.93	845
135	25 Jan 03	0.04	1.204	0.10	486	0.233	1.02	883
136	26 Jan 03	0.00	1.284	0.10	519	0.222	1.16	948
137	27 Jan 03	0.00	1.238	0.10	500	0.213	1.20	944
138	28 Jan 03	0.00	1.18	0.10	476	0.193	1.06	745
139	29 Jan 03	0.12	1.429	0.19	1198	0.236	1.23	1195
140	30 Jan 03	1.02	2.230	0.37	3334	0.554	3.72	10096
141	31 Jan 03	0.00	1.635	0.22	1434	0.310	1.54	2006
142	01 Feb 03	0.00	1.501	0.10	606	0.245	1.08	984
143	02 Feb 03	0.00	1.396	0.11	601	0.228	1.25	1051
144	03 Feb 03	0.00	1.555	0.11	664	0.222	1.14	937
145	04 Feb 03	0.12	1.744	0.11	756	0.267	1.01	1038
146	05 Feb 03	0.00	1.549	0.12	751	0.227	1.10	920
147	06 Feb 03	0.38	1.612	0.11	677	0.253	1.42	1887
148	07 Feb 03	0.22	2.053	0.24	1964	0.425	2.81	5716
149	08 Feb 03	0.00	1.488	0.21	1262	0.233	1.03	879
150	09 Feb 03	0.00	1.526	0.20	1263	0.217	1.16	927



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
151	10 Feb 03	0.23	1.876	0.16	1240	0.322	2.15	3102
152	11 Feb 03	0.00	1.508	0.10	605	0.233	0.96	826
153	12 Feb 03	0.00	1.572	0.08	482	0.225	0.97	809
154	13 Feb 03	0.00	1.450	0.06	351	0.236	0.57	503
155	14 Feb 03	0.17	1.571	0.08	505	0.264	0.93	1018
156	15 Feb 03	0.04	1.786	0.09	627	0.275	0.84	871
157	16 Feb 03	0.03	1.570	0.09	555	0.269	1.63	1868
158	17 Feb 03	0.00	1.652	0.12	841	0.331	2.25	3298
159	18 Feb 03	0.36	1.866	0.15	1162	0.359	2.89	4317
160	19 Feb 03	0.00	1.664	0.15	1008	0.279	1.11	1201
161	20 Feb 03	0.02	1.840	0.15	1115	0.248	0.91	848
162	21 Feb 03	0.02	1.786	0.15	1052	0.238	0.97	855
163	22 Feb 03	0.77	2.386	0.45	4852	0.505	3.62	11206
164	23 Feb 03	0.02	1.965	0.76	6034	0.313	1.55	2053
165	24 Feb 03	0.00	1.679	0.76	5155	0.239	0.94	835
166	25 Feb 03	0.00	1.763	0.76	5413	0.233	0.98	849
167	26 Feb 03	0.33	1.883	0.76	5779	0.290	1.60	2385
168	27 Feb 03	0.54	2.353	0.76	7225	0.561	4.34	10699
169	28 Feb 03	0.01	1.905	0.76	5849	0.318	1.50	2087



Table II. Flow Data for "Entry" and "Exit" Location (continued)

Days After Application	Date	On-Site Daily Rainfall (in)	Stream Conditions at "Entry" Location			Stream Conditions at "Exit" Location		
			Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)	Average Stream Level (ft)	Average Flow Velocity (ft/sec)	Average Flow Rate (gpm)
170	01 Mar 03	0.38	2.014	0.76	6184	0.351	1.84	3827
171	02 Mar 03	0.08	2.135	0.76	6554	0.422	2.75	5480
172	03 Mar 03	0.00	1.785	0.76	5479	0.257	0.91	869
173	04 Mar 03	0.00	1.899	0.76	5829	0.237	0.98	861
174	05 Mar 03	0.11	2.075	0.76	6371	0.305	1.13	1369
175	06 Mar 03	1.19	2.187	0.64	6267	0.738	3.81	17968
176	07 Mar 03	0.00	1.452	0.15	871	0.277	0.85	923
177	08 Mar 03	0.00	1.306	0	30	0.240	0.94	837
178	09 Mar 03	0.00	1.363	0.12	658	0.241	1.01	905
179	10 Mar 03	0.00	1.337	0.11	594	0.235	0.94	818
180	11 Mar 03	0.00	1.323	0.11	588	0.234	0.87	754
181	12 Mar 03	0.00	1.321	0.11	587	0.235	0.81	709



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Appendix G

Critical Dates



APPENDIX G1, Critical Dates for "Entry" Samples

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-0011	15 Sep 02	0559	3	17 Sep 02	20	24 Apr 03	25 Apr 03	222
36530A-0033	16 Sep 02	1159	4	17 Sep 02	19	28 Mar 03	28 Mar 03	193
36530A-0047	17 Sep 02	1159	5	25 Sep 02	19	28 Mar 03	28 Mar 03	192
36530A-0049	18 Sep 02	1811	6	25 Sep 02	3	22 Oct 02	22 Oct 02	34
36530A-0051	19 Sep 02	1820	7	25 Sep 02	3	22 Oct 02	22 Oct 02	33
36530A-0053	20 Sep 02	1804	8	25 Sep 02	3	22 Oct 02	22 Oct 02	32
36530A-0055	21 Sep 02	1857	9	25 Sep 02	3	22 Oct 02	22 Oct 02	31
36530A-0057	22 Sep 02	2130	10	25 Sep 02	3	22 Oct 02	22 Oct 02	30
36530A-0059	23 Sep 02	2051	11	25 Sep 02	3	22 Oct 02	22 Oct 02	29
36530A-0061	24 Sep 02	1821	12	25 Sep 02	3	22 Oct 02	22 Oct 02	28
36530A-0063	25 Sep 02	2204	13	30 Sep 02	3	22 Oct 02	22 Oct 02	27
36530A-0065	26 Sep 02	0420	14	30 Sep 02	3	22 Oct 02	22 Oct 02	26
36530A-0067	26 Sep 02	0530	14	30 Sep 02	3	22 Oct 02	22 Oct 02	26
36530A-0073	26 Sep 02	1159	14	30 Sep 02	20	24 Apr 03	25 Apr 03	211
36530A-0091	27 Sep 02	1350	15	30 Sep 02	19	28 Mar 03	28 Mar 03	182
36530A-0127	10 Oct 02	1730	28	14 Oct 02	20	24 Apr 03	25 Apr 03	197
36530A-0135	11 Oct 02	0859	29	14 Oct 02	20	24 Apr 03	25 Apr 03	196
36530A-0147	12 Oct 02	0259	30	14 Oct 02	20	24 Apr 03	25 Apr 03	195
36530A-0153	13 Oct 02	1159	31	14 Oct 02	19	28 Mar 03	28 Mar 03	166
36530A-0165	14 Oct 02	0259	32	21 Oct 02	20	24 Apr 03	25 Apr 03	193
36530A-0169	15 Oct 02	1159	33	21 Oct 02	20	24 Apr 03	25 Apr 03	192
36530A-0189	16 Oct 02	1459	34	21 Oct 02	20	24 Apr 03	25 Apr 03	191

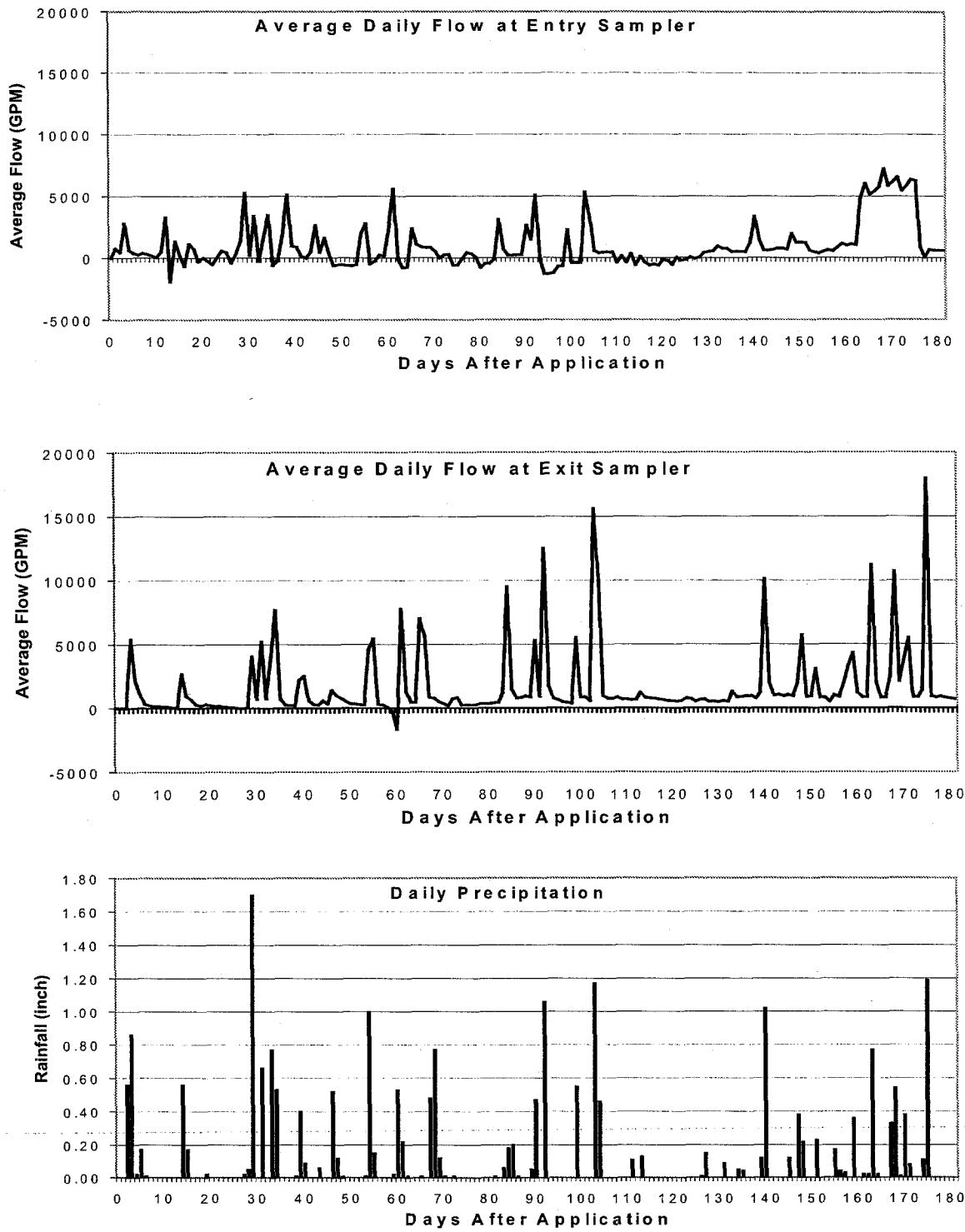


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APPENDIX G1, Critical Dates for "Entry" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-0195	16 Oct 02	2359	34	21 Oct 02	19	28 Mar 03	28 Mar 03	163
36530A-0197	18 Oct 02	1650	36	21 Oct 02	20	24 Apr 03	25 Apr 03	189
36530A-0199	19 Oct 02	1746	37	21 Oct 02	20	24 Apr 03	25 Apr 03	188
36530A-0201	20 Oct 02	1818	38	21 Oct 02	20	24 Apr 03	25 Apr 03	187
36530A-0219	22 Oct 02	0859	40	30 Oct 02	20	24 Apr 03	25 Apr 03	185
36530A-0227	23 Oct 02	1751	41	30 Oct 02	20	24 Apr 03	25 Apr 03	184
36530A-0257	29 Oct 02	0859	47	30 Oct 02	20	24 Apr 03	25 Apr 03	178
36530A-0299	06 Nov 02	1159	55	11 Nov 02	20	24 Apr 03	25 Apr 03	170

**Figure 2. Precipitation and Stream Flow**



APPENDIX G2, Critical Dates for "Exit" Samples

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2001	13 Sep 02	1835	1	17 Sep 02	2	10 Oct 02	11 Oct 02	28
36530A-2003	14 Sep 02	1723	2	17 Sep 02	2	10 Oct 02	11 Oct 02	27
36530A-2005	14-15 Sep 02	Not Available	2-3	17 Sep 02	2	10 Oct 02	11 Oct 02	26-27
36530A-2007	14-15 Sep 02	Not Available	2-3	17 Sep 02	2	10 Oct 02	11 Oct 02	26-27
36530A-2009	14-15 Sep 02	Not Available	2-3	17 Sep 02	2	10 Oct 02	11 Oct 02	26-27
36530A-2011	15 Sep 02	1849	3	17 Sep 02	2	10 Oct 02	11 Oct 02	26
36530A-2013	15 Sep 02	2149	3	17 Sep 02	2	10 Oct 02	11 Oct 02	26
36530A-2015	16 Sep 02	0049	4	17 Sep 02	2	10 Oct 02	11 Oct 02	25
36530A-2017	16 Sep 02	0349	4	17 Sep 02	2	10 Oct 02	11 Oct 02	25
36530A-2019	16 Sep 02	0649	4	17 Sep 02	2	10 Oct 02	11 Oct 02	25
36530A-2021	16 Sep 02	0949	4	17 Sep 02	2	10 Oct 02	11 Oct 02	25
36530A-2023	16 Sep 02	1249	4	17 Sep 02	2	10 Oct 02	11 Oct 02	25
36530A-2025	16 Sep 02	1549	4	17 Sep 02	2	10 Oct 02	11 Oct 02	25
36530A-2027	16 Sep 02	1849	4	17 Sep 02	2	10 Oct 02	11 Oct 02	25
36530A-2029	16 Sep 02	2149	4	25 Sep 02	2	10 Oct 02	11 Oct 02	25
36530A-2031	17 Sep 02	0049	5	25 Sep 02	2	10 Oct 02	11 Oct 02	24
36530A-2033	17 Sep 02	0130	5	25 Sep 02	2	10 Oct 02	11 Oct 02	24
36530A-2035	17 Sep 02	0349	5	25 Sep 02	3	22 Oct 02	22 Oct 02	35
36530A-2037	17 Sep 02	0649	5	25 Sep 02	3	22 Oct 02	22 Oct 02	35
36530A-2039	17 Sep 02	0949	5	25 Sep 02	3	22 Oct 02	22 Oct 02	35
36530A-2041	17 Sep 02	1249	5	25 Sep 02	3	22 Oct 02	22 Oct 02	35
36530A-2043	17 Sep 02	1549	5	25 Sep 02	3	22 Oct 02	22 Oct 02	35



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2045	17 Sep 02	1849	5	25 Sep 02	3	22 Oct 02	22 Oct 02	35
36530A-2047	17 Sep 02	2149	5	25 Sep 02	3	22 Oct 02	22 Oct 02	35
36530A-2049	19 Sep 02	1150	7	25 Sep 02	4	23 Oct 02	23 Oct 02	34
36530A-2051	19 Sep 02	1249	7	25 Sep 02	4	23 Oct 02	23 Oct 02	34
36530A-2053	19 Sep 02	1549	7	25 Sep 02	4	23 Oct 02	23 Oct 02	34
36530A-2055	19 Sep 02	1840	7	25 Sep 02	4	23 Oct 02	23 Oct 02	34
36530A-2057	19 Sep 02	1849	7	25 Sep 02	4	23 Oct 02	23 Oct 02	34
36530A-2059	19 Sep 02	2149	7	25 Sep 02	4	23 Oct 02	23 Oct 02	34
36530A-2061	20 Sep 02	0049	8	25 Sep 02	4	23 Oct 02	23 Oct 02	33
36530A-2063	20 Sep 02	0349	8	25 Sep 02	4	23 Oct 02	23 Oct 02	33
36530A-2065	20 Sep 02	0649	8	25 Sep 02	4	23 Oct 02	23 Oct 02	33
36530A-2067	20 Sep 02	0949	8	25 Sep 02	4	23 Oct 02	23 Oct 02	33
36530A-2069	20 Sep 02	1249	8	25 Sep 02	4	23 Oct 02	23 Oct 02	33
36530A-2071	20 Sep 02	1549	8	25 Sep 02	4	23 Oct 02	23 Oct 02	33
36530A-2073	21 Sep 02	1907	9	25 Sep 02	7	18 Dec 02	19 Dec 02	89
36530A-2075	22 Sep 02	2120	10	25 Sep 02	7	18 Dec 02	19 Dec 02	88
36530A-2077	23 Sep 02	2100	11	25 Sep 02	7	18 Dec 02	19 Dec 02	87
36530A-2079	24 Sep 02	1829	12	25 Sep 02	7	18 Dec 02	19 Dec 02	86
36530A-2081	25 Sep 02	2223	13	30 Sep 02	7	18 Dec 02	19 Dec 02	85
36530A-2083	26 Sep 02	1845	14	30 Sep 02	7	18 Dec 02	19 Dec 02	84
36530A-2085	26 Sep 02	1926	14	30 Sep 02	4	23 Oct 02	23 Oct 02	27
36530A-2087	26 Sep 02	2226	14	30 Sep 02	4	23 Oct 02	23 Oct 02	27



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2089	27 Sep 02	0126	15	30 Sep 02	4	23 Oct 02	23 Oct 02	26
36530A-2091	27 Sep 02	0426	15	30 Sep 02	4	23 Oct 02	23 Oct 02	26
36530A-2093	27 Sep 02	0726	15	30 Sep 02	4	23 Oct 02	23 Oct 02	26
36530A-2095	27 Sep 02	1026	15	30 Sep 02	4	23 Oct 02	23 Oct 02	26
36530A-2097	27 Sep 02	1326	15	30 Sep 02	4	23 Oct 02	23 Oct 02	26
36530A-2099	27 Sep 02	1626	15	30 Sep 02	4	23 Oct 02	23 Oct 02	26
36530A-2101	27 Sep 02	1926	15	30 Sep 02	4	23 Oct 02	23 Oct 02	26
36530A-2103	27 Sep 02	2226	15	30 Sep 02	4	23 Oct 02	23 Oct 02	26
36530A-2105	28 Sep 02	0126	16	30 Sep 02	4	23 Oct 02	23 Oct 02	25
36530A-2111	28 Sep 02	1026	16	30 Sep 02	4	23 Oct 02	23 Oct 02	25
36530A-2113	28 Sep 02	1326	16	30 Sep 02	4	23 Oct 02	23 Oct 02	25
36530A-2115	28 Sep 02	1626	16	30 Sep 02	7	18 Dec 02	19 Dec 02	82
36530A-2119	30 Sep 02	1225	18	07 Oct 02	7	18 Dec 02	19 Dec 02	80
36530A-2137	01 Oct 02	1026	19	07 Oct 02	7	18 Dec 02	19 Dec 02	79
36530A-2153	02 Oct 02	1026	20	07 Oct 02	7	18 Dec 02	19 Dec 02	78
36530A-2167	03 Oct 02	0726	21	07 Oct 02	7	18 Dec 02	19 Dec 02	77
36530A-2171	04 Oct 02	1753	22	07 Oct 02	7	18 Dec 02	19 Dec 02	76
36530A-2173	05 Oct 02	0943	23	07 Oct 02	7	18 Dec 02	19 Dec 02	75
36530A-2175	06 Oct 02	1932	24	07 Oct 02	7	18 Dec 02	19 Dec 02	74
36530A-2177	07 Oct 02	1755	25	14 Oct 02	7	18 Dec 02	19 Dec 02	73
36530A-2179	08 Oct 02	1800	26	14 Oct 02	7	18 Dec 02	19 Dec 02	72
36530A-2181	09 Oct 02	1755	27	14 Oct 02	7	18 Dec 02	19 Dec 02	71

APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2183	10 Oct 02	1744	28	14 Oct 02	7	18 Dec 02	19 Dec 02	70
36530A-2193	11 Oct 02	1709	29	14 Oct 02	5	07 Nov 02	08 Nov 02	28
36530A-2195	11 Oct 02	2009	29	14 Oct 02	5	07 Nov 02	08 Nov 02	28
36530A-2197	11 Oct 02	2309	29	14 Oct 02	5	07 Nov 02	08 Nov 02	28
36530A-2207	12 Oct 02	1409	30	14 Oct 02	5	07 Nov 02	08 Nov 02	27
36530A-2209	12 Oct 02	1709	30	14 Oct 02	5	07 Nov 02	08 Nov 02	27
36530A-2211	12 Oct 02	2009	30	14 Oct 02	5	07 Nov 02	08 Nov 02	27
36530A-2213	12 Oct 02	2309	30	14 Oct 02	6	26 Nov 02	26 Nov 02	45
36530A-2215	13 Oct 02	0209	31	14 Oct 02	6	26 Nov 02	26 Nov 02	44
36530A-2225	13 Oct 02	1709	31	21 Oct 02	6	26 Nov 02	26 Nov 02	44
36530A-2227	13 Oct 02	2009	31	21 Oct 02	6	26 Nov 02	26 Nov 02	44
36530A-2229	14 Oct 02	1402	32	21 Oct 02	6	26 Nov 02	26 Nov 02	43
36530A-2231	14 Oct 02	1702	32	21 Oct 02	6	26 Nov 02	26 Nov 02	43
36530A-2233	14-15 Oct 02	Not Available	32-33	21 Oct 02	6	26 Nov 02	26 Nov 02	42-43
36530A-2235	16 Oct 02	1758	34	21 Oct 02	5	07 Nov 02	08 Nov 02	23
36530A-2237	16 Oct 02	1753	34	21 Oct 02	5	07 Nov 02	08 Nov 02	23
36530A-2239	16 Oct 02	2053	34	21 Oct 02	5	07 Nov 02	08 Nov 02	23
36530A-2241	16 Oct 02	2353	34	21 Oct 02	5	07 Nov 02	08 Nov 02	23
36530A-2249	17 Oct 02	1153	35	21 Oct 02	5	07 Nov 02	08 Nov 02	22
36530A-2251	17 Oct 02	1453	35	21 Oct 02	5	07 Nov 02	08 Nov 02	22
36530A-2253	17 Oct 02	1753	35	21 Oct 02	6	26 Nov 02	26 Nov 02	40
36530A-2255	17 Oct 02	2053	35	21 Oct 02	6	26 Nov 02	26 Nov 02	40



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2257	17 Oct 02	2353	35	21 Oct 02	6	26 Nov 02	26 Nov 02	40
36530A-2265	18 Oct 02	1153	36	21 Oct 02	6	26 Nov 02	26 Nov 02	39
36530A-2267	18 Oct 02	1453	36	21 Oct 02	8	03 Jan 03	03 Jan 03	77
36530A-2269	18 Oct 02	1753	36	21 Oct 02	8	03 Jan 03	03 Jan 03	77
36530A-2271	18 Oct 02	2053	36	21 Oct 02	8	03 Jan 03	03 Jan 03	77
36530A-2273	18 Oct 02	2353	36	21 Oct 02	8	03 Jan 03	03 Jan 03	77
36530A-2277	19 Oct 02	0553	37	21 Oct 02	8	03 Jan 03	03 Jan 03	76
36530A-2283	19 Oct 02	1453	37	21 Oct 02	8	03 Jan 03	03 Jan 03	76
36530A-2295	20 Oct 02	0853	38	21 Oct 02	8	03 Jan 03	03 Jan 03	75
36530A-2311	21 Oct 02	0853	39	30 Oct 02	8	03 Jan 03	03 Jan 03	74
36530A-2319	21 Oct 02	2053	39	30 Oct 02	8	03 Jan 03	03 Jan 03	74
36530A-2321	21 Oct 02	2353	39	30 Oct 02	5	07 Nov 02	08 Nov 02	18
36530A-2323	22 Oct 02	0253	40	30 Oct 02	5	07 Nov 02	08 Nov 02	17
36530A-2325	22 Oct 02	0553	40	30 Oct 02	5	07 Nov 02	08 Nov 02	17
36530A-2327	22 Oct 02	0853	40	30 Oct 02	5	07 Nov 02	08 Nov 02	17
36530A-2329	22 Oct 02	1153	40	30 Oct 02	5	07 Nov 02	08 Nov 02	17
36530A-2331	22 Oct 02	1453	40	30 Oct 02	5	07 Nov 02	08 Nov 02	17
36530A-2333	22 Oct 02	1753	40	30 Oct 02	6	26 Nov 02	26 Nov 02	35
36530A-2335	22 Oct 02	2053	40	30 Oct 02	6	26 Nov 02	26 Nov 02	35
36530A-2337	22 Oct 02	2353	40	30 Oct 02	6	26 Nov 02	26 Nov 02	35
36530A-2339	23 Oct 02	0253	41	30 Oct 02	6	26 Nov 02	26 Nov 02	34
36530A-2341	23 Oct 02	0553	41	30 Oct 02	6	26 Nov 02	26 Nov 02	34



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2343	23 Oct 02	0853	41	30 Oct 02	6	26 Nov 02	26 Nov 02	34
36530A-2345	23 Oct 02	1153	41	30 Oct 02	6	26 Nov 02	26 Nov 02	34
36530A-2359	24 Oct 02	0853	42	30 Oct 02	8	03 Jan 03	03 Jan 03	71
36530A-2375	25 Oct 02	0853	43	30 Oct 02	8	03 Jan 03	03 Jan 03	70
36530A-2395	26 Oct 02	1453	44	30 Oct 02	8	03 Jan 03	03 Jan 03	69
36530A-2409	27 Oct 02	1153	45	30 Oct 02	8	03 Jan 03	03 Jan 03	68
36530A-2425	28 Oct 02	1153	46	30 Oct 02	8	03 Jan 03	03 Jan 03	67
36530A-2435	29 Oct 02	0253	47	30 Oct 02	8	03 Jan 03	03 Jan 03	66
36530A-2437	29 Oct 02	0553	47	30 Oct 02	8	03 Jan 03	03 Jan 03	66
36530A-2439	29 Oct 02	0853	47	30 Oct 02	8	03 Jan 03	03 Jan 03	66
36530A-2441	29 Oct 02	1153	47	30 Oct 02	8	03 Jan 03	03 Jan 03	66
36530A-2443	29 Oct 02	1453	47	30 Oct 02	8	03 Jan 03	03 Jan 03	66
36530A-2445	29 Oct 02	1753	47	30 Oct 02	8	03 Jan 03	03 Jan 03	66
36530A-2447	29 Oct 02	2053	47	04 Nov 02	9	06 Jan 03	06 Jan 03	69
36530A-2449	29 Oct 02	2353	47	04 Nov 02	9	06 Jan 03	06 Jan 03	69
36530A-2451	30 Oct 02	0253	48	04 Nov 02	9	06 Jan 03	06 Jan 03	68
36530A-2455	30 Oct 02	0853	48	04 Nov 02	9	06 Jan 03	06 Jan 03	68
36530A-2459	30 Oct 02	1453	48	04 Nov 02	9	06 Jan 03	06 Jan 03	68
36530A-2463	30 Oct 02	2053	48	04 Nov 02	9	06 Jan 03	06 Jan 03	68
36530A-2473	31 Oct 02	1153	49	04 Nov 02	9	06 Jan 03	06 Jan 03	67
36530A-2487	01 Nov 02	0853	50	04 Nov 02	9	06 Jan 03	06 Jan 03	66
36530A-2501	02 Nov 02	0553	51	04 Nov 02	9	06 Jan 03	06 Jan 03	65



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2515	03 Nov 02	0253	52	04 Nov 02	9	06 Jan 03	06 Jan 03	64
36530A-2537	04 Nov 02	1153	53	11 Nov 02	9	06 Jan 03	06 Jan 03	63
36530A-2551	05 Nov 02	0853	54	11 Nov 02	9	06 Jan 03	06 Jan 03	62
36530A-2557	05 Nov 02	1753	54	11 Nov 02	9	06 Jan 03	06 Jan 03	62
36530A-2563	06 Nov 02	0253	55	11 Nov 02	9	06 Jan 03	06 Jan 03	61
36530A-2565	06 Nov 02	0553	55	11 Nov 02	9	06 Jan 03	06 Jan 03	61
36530A-2567	06 Nov 02	0853	55	11 Nov 02	9	06 Jan 03	06 Jan 03	61
36530A-2569	06 Nov 02	1153	55	11 Nov 02	9	06 Jan 03	06 Jan 03	61
36530A-2571	06 Nov 02	1453	55	11 Nov 02	9	06 Jan 03	06 Jan 03	61
36530A-2573	06 Nov 02	1753	55	11 Nov 02	9	06 Jan 03	06 Jan 03	61
36530A-2575	06 Nov 02	2053	55	11 Nov 02	9	06 Jan 03	06 Jan 03	61
36530A-2577	06 Nov 02	2353	55	11 Nov 02	10	08 Jan 03	08 Jan 03	63
36530A-2579	07 Nov 02	0253	56	11 Nov 02	10	08 Jan 03	08 Jan 03	62
36530A-2581	07 Nov 02	0553	56	11 Nov 02	10	08 Jan 03	08 Jan 03	62
36530A-2585	07 Nov 02	1153	56	11 Nov 02	10	08 Jan 03	08 Jan 03	62
36530A-2589	07 Nov 02	1753	56	11 Nov 02	10	08 Jan 03	08 Jan 03	62
36530A-2591	07 Nov 02	2053	56	11 Nov 02	10	08 Jan 03	08 Jan 03	62
36530A-2597	08 Nov 02	0553	57	11 Nov 02	10	08 Jan 03	08 Jan 03	61
36530A-2615	09 Nov 02	0853	58	11 Nov 02	10	08 Jan 03	08 Jan 03	60
36530A-2633	10 Nov 02	1153	59	11 Nov 02	10	08 Jan 03	08 Jan 03	59
36530A-2645	11-12 Nov 02	Not Available	60-61	18 Nov 02	10	08 Jan 03	08 Jan 03	57
36530A-2649	11-12 Nov 02	Not Available	60-61	18 Nov 02	10	08 Jan 03	08 Jan 03	57



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2653	11-12 Nov 02	Not Available	60-61	18 Nov 02	10	08 Jan 03	08 Jan 03	57
36530A-2657	12-13 Nov 02	Not Available	61-62	18 Nov 02	10	08 Jan 03	08 Jan 03	57
36530A-2661	12-13 Nov 02	Not Available	61-62	18 Nov 02	10	08 Jan 03	08 Jan 03	56
36530A-2665	12-13 Nov 02	Not Available	61-62	18 Nov 02	10	08 Jan 03	08 Jan 03	56
36530A-2669	12-13 Nov 02	Not Available	61-62	18 Nov 02	10	08 Jan 03	08 Jan 03	56
36530A-2673	13-14 Nov 02	Not Available	62-63	18 Nov 02	10	08 Jan 03	08 Jan 03	56
36530A-2685	13-14 Nov 02	Not Available	62-63	18 Nov 02	11	08 Jan 03	08 Jan 03	55
36530A-2689	14-15 Nov 02	Not Available	63-64	18 Nov 02	11	08 Jan 03	08 Jan 03	55
36530A-2691	15 Nov 02	1755	64	18 Nov 02	11	08 Jan 03	08 Jan 03	54
36530A-2699	16 Nov 02	0555	65	18 Nov 02	11	08 Jan 03	08 Jan 03	53
36530A-2709	16 Nov 02	2055	65	18 Nov 02	11	08 Jan 03	08 Jan 03	53
36530A-2713	17 Nov 02	0255	66	18 Nov 02	11	08 Jan 03	08 Jan 03	52
36530A-2717	17 Nov 02	0855	66	18 Nov 02	11	08 Jan 03	08 Jan 03	52
36530A-2721	17 Nov 02	1455	66	18 Nov 02	11	08 Jan 03	08 Jan 03	52
36530A-2725	17 Nov 02	2055	66	25 Nov 02	11	08 Jan 03	08 Jan 03	52
36530A-2729	18 Nov 02	0255	67	25 Nov 02	11	08 Jan 03	08 Jan 03	51
36530A-2733	18 Nov 02	0855	67	25 Nov 02	11	08 Jan 03	08 Jan 03	51
36530A-2737	18 Nov 02	1455	67	25 Nov 02	11	08 Jan 03	08 Jan 03	51
36530A-2741	18 Nov 02	2055	67	25 Nov 02	11	08 Jan 03	08 Jan 03	51
36530A-2745	19 Nov 02	0255	68	25 Nov 02	11	08 Jan 03	08 Jan 03	50
36530A-2751	19 Nov 02	1155	68	25 Nov 02	12	13 Jan 03	14 Jan 03	56
36530A-2767	20 Nov 02	1155	69	25 Nov 02	11	08 Jan 03	08 Jan 03	49



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-2783	21 Nov 02	1155	70	25 Nov 02	11	08 Jan 03	08 Jan 03	48
36530A-2799	22 Nov 02	1155	71	25 Nov 02	11	08 Jan 03	08 Jan 03	47
36530A-2815	23 Nov 02	1155	72	25 Nov 02	12	13 Jan 03	14 Jan 03	52
36530A-2829	24 Nov 02	0855	73	25 Nov 02	12	13 Jan 03	14 Jan 03	51
36530A-2847	25 Nov 02	1155	74	02 Dec 02	12	13 Jan 03	14 Jan 03	50
36530A-2863	26 Nov 02	1155	75	02 Dec 02	12	13 Jan 03	14 Jan 03	49
36530A-2879	27 Nov 02	1155	76	02 Dec 02	12	13 Jan 03	14 Jan 03	48
36530A-2897	28 Nov 02	1455	77	02 Dec 02	12	13 Jan 03	14 Jan 03	47
36530A-2913	29 Nov 02	1455	78	02 Dec 02	12	13 Jan 03	14 Jan 03	46
36530A-2925	30 Nov 02	0855	79	02 Dec 02	12	13 Jan 03	14 Jan 03	45
36530A-2939	01 Dec 02	0555	80	02 Dec 02	12	13 Jan 03	14 Jan 03	44
36530A-2965	02 Dec 02	2055	81	12 Dec 02	12	13 Jan 03	14 Jan 03	43
36530A-2975	03 Dec 02	1155	82	12 Dec 02	12	13 Jan 03	14 Jan 03	42
36530A-2989	04 Dec 02	0855	83	12 Dec 02	12	13 Jan 03	14 Jan 03	41
36530A-2995	06 Dec 02	1755	85	12 Dec 02	13	13 Jan 03	14 Jan 03	39
36530A-2999	06 Dec 02	2355	85	12 Dec 02	13	13 Jan 03	14 Jan 03	39
36530A-3007	07 Dec 02	1155	86	12 Dec 02	13	13 Jan 03	14 Jan 03	38
36530A-3011	07 Dec 02	1755	86	12 Dec 02	13	13 Jan 03	14 Jan 03	38
36530A-3015	07 Dec 02	2355	86	12 Dec 02	13	13 Jan 03	14 Jan 03	38
36530A-3027	08 Dec 02	1755	87	12 Dec 02	13	13 Jan 03	14 Jan 03	37
36530A-3039	09 Dec 02	1155	88	12 Dec 02	13	13 Jan 03	14 Jan 03	36
36530A-3057	10 Dec 02	1455	89	12 Dec 02	13	13 Jan 03	14 Jan 03	35



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-3075	11 Dec 02	1755	90	12 Dec 02	13	13 Jan 03	14 Jan 03	34
36530A-3079	11 Dec 02	2355	90	20 Dec 02	13	13 Jan 03	14 Jan 03	34
36530A-3083	12 Dec 02	0555	91	20 Dec 02	13	13 Jan 03	14 Jan 03	33
36530A-3087	12 Dec 02	1155	91	20 Dec 02	13	13 Jan 03	14 Jan 03	33
36530A-3097	13 Dec 02	1155	92	20 Dec 02	15	14 Mar 03	14 Mar 03	91
36530A-3105	14 Dec 02	1155	93	20 Dec 02	15	14 Mar 03	14 Mar 03	90
36530A-3115	15 Dec 02	1755	94	20 Dec 02	15	14 Mar 03	14 Mar 03	89
36530A-3121	16 Dec 02	1155	95	20 Dec 02	15	14 Mar 03	14 Mar 03	88
36530A-3129	17 Dec 02	1155	96	20 Dec 02	15	14 Mar 03	14 Mar 03	87
36530A-3137	18 Dec 02	1155	97	20 Dec 02	15	14 Mar 03	14 Mar 03	86 /
36530A-3145	19 Dec 02	1155	98	20 Dec 02	15	14 Mar 03	14 Mar 03	85 /
36530A-3153	20 Dec 02	1155	99	03 Jan 03	15	14 Mar 03	14 Mar 03	84
36530A-3163	21-22 Dec 02	Not Available	100-101	03 Jan 03	15	14 Mar 03	14 Mar 03	82-83
36530A-3175	22-23 Dec 02	Not Available	101-102	03 Jan 03	15	14 Mar 03	14 Mar 03	81-82
36530A-3183	23-24 Dec 02	Not Available	102-103	03 Jan 03	15	14 Mar 03	14 Mar 03	80-81
36530A-3187	27-28 Dec 02	Not Available	106-107	03 Jan 03	15	14 Mar 03	14 Mar 03	76-77
36530A-3199	28-29 Dec 02	Not Available	107-108	03 Jan 03	15	14 Mar 03	14 Mar 03	75-76
36530A-3207	29-30 Dec 02	Not Available	108-109	03 Jan 03	15	14 Mar 03	14 Mar 03	74-75
36530A-3215	30-31 Dec 02	Not Available	109-110	03 Jan 03	15	14 Mar 03	14 Mar 03	73-74
36530A-3221	31 Dec 02-01 Jan 03	Not Available	110-111	03 Jan 03	15	14 Mar 03	14 Mar 03	72-73
36530A-3233	02 Jan 03	1412	112	03 Jan 03	16	19 Mar 03	19 Mar 03	76



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-3239	03 Jan 03	0812	113	20 Jan 03	16	19 Mar 03	19 Mar 03	75
36530A-3247	04 Jan 03	0812	114	20 Jan 03	16	19 Mar 03	19 Mar 03	74
36530A-3257	05 Jan 03	1412	115	20 Jan 03	16	19 Mar 03	19 Mar 03	73
36530A-3263	06 Jan 03	0812	116	20 Jan 03	16	19 Mar 03	19 Mar 03	72
36530A-3273	07 Jan 03	1412	117	20 Jan 03	16	19 Mar 03	19 Mar 03	71
36530A-3281	08 Jan 03	1412	118	20 Jan 03	16	19 Mar 03	19 Mar 03	70
36530A-3289	09 Jan 03	1412	119	20 Jan 03	16	19 Mar 03	19 Mar 03	69
36530A-3295	10 Jan 03	0812	120	20 Jan 03	16	19 Mar 03	19 Mar 03	68
36530A-3305	11 Jan 03	1412	121	20 Jan 03	16	19 Mar 03	19 Mar 03	67
36530A-3315	12 Jan 03	2012	122	20 Jan 03	16	19 Mar 03	19 Mar 03	66
36530A-3323	13 Jan 03	2012	123	20 Jan 03	16	19 Mar 03	19 Mar 03	65
36530A-3329	14 Jan 03	1412	124	20 Jan 03	16	19 Mar 03	19 Mar 03	64
36530A-3333	15 Jan 03	0212	125	20 Jan 03	16	19 Mar 03	19 Mar 03	63
36530A-3345	16 Jan 03	1412	126	20 Jan 03	16	19 Mar 03	19 Mar 03	62
36530A-3353	17 Jan 03	1412	127	20 Jan 03	16	19 Mar 03	19 Mar 03	61
36530A-3358	19 Jan 03	1412	129	03 Feb 03	17	27 Mar 03	27 Mar 03	67
36530A-3367	20 Jan 03	1412	130	03 Feb 03	17	27 Mar 03	27 Mar 03	66
36530A-3371	21 Jan 03	0212	131	03 Feb 03	17	27 Mar 03	27 Mar 03	65
36530A-3381	22 Jan 03	0812	132	03 Feb 03	17	27 Mar 03	27 Mar 03	64
36530A-3389	22-24 Jan 03	Not Available	132-134	03 Feb 03	17	27 Mar 03	27 Mar 03	62-64
36530A-3435	28 Jan 03	1412	138	03 Feb 03	17	27 Mar 03	27 Mar 03	58
36530A-3443	29 Jan 03	1412	139	03 Feb 03	17	27 Mar 03	27 Mar 03	57



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-3451	30 Jan 03	1412	140	03 Feb 03	17	27 Mar 03	27 Mar 03	56
36530A-3455	31 Jan 03	0212	141	03 Feb 03	17	27 Mar 03	27 Mar 03	55
36530A-3465	01 Feb 03	0812	142	03 Feb 03	17	27 Mar 03	27 Mar 03	54
36530A-3475	02 Feb 03	1412	143	03 Feb 03	17	27 Mar 03	27 Mar 03	53
36530A-3483	03 Feb 03	1412	144	11 Feb 03	17	27 Mar 03	27 Mar 03	52
36530A-3489	04 Feb 03	0812	145	11 Feb 03	17	27 Mar 03	27 Mar 03	51
36530A-3497	05 Feb 03	0812	146	11 Feb 03	17	27 Mar 03	27 Mar 03	50
36530A-3505	06 Feb 03	0812	147	11 Feb 03	17	27 Mar 03	27 Mar 03	49
36530A-3513	07 Feb 03	0812	148	11 Feb 03	17	27 Mar 03	27 Mar 03	48
36530A-3523	08 Feb 03	1412	149	11 Feb 03	20	24 Apr 03	25 Apr 03	76
36530A-3529	09 Feb 03	0812	150	11 Feb 03	18	27 Mar 03	27 Mar 03	46
36530A-3537	10 Feb 03	0812	151	11 Feb 03	18	27 Mar 03	27 Mar 03	45
36530A-3547	11 Feb 03	1412	152	24 Feb 03	18	27 Mar 03	27 Mar 03	44
36530A-3553	12 Feb 03	0812	153	24 Feb 03	18	27 Mar 03	27 Mar 03	43
36530A-3563	13 Feb 03	1412	154	24 Feb 03	20	24 Apr 03	25 Apr 03	71
36530A-3569	14 Feb 03	0812	155	24 Feb 03	18	27 Mar 03	27 Mar 03	41
36530A-3577	15 Feb 03	0812	156	24 Feb 03	18	27 Mar 03	27 Mar 03	40
36530A-3585	19 Feb 03	0812	160	24 Feb 03	18	27 Mar 03	27 Mar 03	36
36530A-3593	20 Feb 03	0812	161	24 Feb 03	18	27 Mar 03	27 Mar 03	35
36530A-3601	21 Feb 03	0812	162	24 Feb 03	18	27 Mar 03	27 Mar 03	34
36530A-3609	22 Feb 03	0812	163	24 Feb 03	18	27 Mar 03	27 Mar 03	33
36530A-3617	23 Feb 03	0812	164	24 Feb 03	18	27 Mar 03	27 Mar 03	32



APPENDIX G2, Critical Dates for "Exit" Samples (continued)

Sample ID	Sampling Date	Sampling Time	Days After Application	Shipping and Receipt Date	Analytical Set ID	Extraction Date	Analysis Date	Storage Interval (Days)
36530A-3627	24 Feb 03	0812	165	06 Mar 03	18	27 Mar 03	27 Mar 03	31
36530A-3633	25 Feb 03	0212	166	06 Mar 03	19	28 Mar 03	28 Mar 03	31
36530A-3635	25 Feb 03	0812	166	06 Mar 03	18	27 Mar 03	27 Mar 03	30
36530A-3641	26 Feb 03	0212	167	06 Mar 03	19	28 Mar 03	28 Mar 03	30
36530A-3643	26 Feb 03	0812	167	06 Mar 03	18	27 Mar 03	27 Mar 03	29
36530A-3651	27 Feb 03	0812	168	06 Mar 03	19	28 Mar 03	28 Mar 03	29
36530A-3659	28 Feb 03	0812	169	06 Mar 03	19	28 Mar 03	28 Mar 03	28
36530A-3667	01 Mar 03	0812	170	06 Mar 03	19	28 Mar 03	28 Mar 03	27
36530A-3679	02 Mar 03	2012	171	06 Mar 03	19	28 Mar 03	28 Mar 03	26
36530A-3683	03 Mar 03	0812	172	06 Mar 03	19	28 Mar 03	28 Mar 03	25
36530A-3691	04 Mar 03	0812	173	13 Mar 03	19	28 Mar 03	28 Mar 03	24
36530A-3701	05 Mar 03	1412	174	13 Mar 03	19	28 Mar 03	28 Mar 03	23
36530A-3706	06 Mar 03	0212	175	13 Mar 03	19	28 Mar 03	28 Mar 03	22
36530A-3715	07 Mar 03	0812	176	13 Mar 03	19	28 Mar 03	28 Mar 03	21
36530A-3725	08 Mar 03	1412	177	13 Mar 03	19	28 Mar 03	28 Mar 03	20
36530A-3733	09 Mar 03	1412	178	13 Mar 03	20	24 Apr 03	25 Apr 03	47
36530A-3741	10 Mar 03	1412	179	13 Mar 03	20	24 Apr 03	25 Apr 03	46
36530A-3749	11 Mar 03	0812	180	13 Mar 03	19	28 Mar 03	28 Mar 03	17



5.2 Sample Collection

A total of 1056 samples (duplicates at 528 timings) were collected from the "Entry" sampler and 1752 samples (duplicates at 876 timings) from the "Exit" sampler during the study period. The collection interval was 3 hours for the initial 3 months of the study and 6 hours for the remainder. Duplicate samples of 100 mL were collected at each sampling time and placed in 125 mL amber Nalgene® bottles. Occasionally the automated samplers malfunctioned due to power supply problems or freezing temperatures. Under these circumstances samples were collected manually, and a note was placed in the field record. The dates of sample collection are found in Appendix G of this report.

5.3 Weather Data

Rainfall data were collected at the test site. These were supplemented by NOAA data collected at Charlotte's Douglas International Airport about 7 miles away. A spring and summer drought was broken by abundant rainfall in the autumn. The rains in the first half of the study exceeded the historical average. This early rainfall after the application of the test substance maximized the possibility for surface runoff and transport of the test substance into the monitored receiving stream. Both historical and study period precipitation data are summarized in Table III. Daily rainfall and temperature data are presented in Appendix D.

Table III. Monthly Precipitation

Month	Normal Monthly Precipitation (1961-1990)*	NOAA Precipitation Data (2002-2003)*	On-Site Precipitation Data (2002-2003)
September	3.83 in	3.48 in (12-30 September 2002)	2.35 in (12-30 September 2002)
October	3.66 in	5.43 in	4.96 in
November	3.36 in	4.38 in	3.34 in
December	3.18 in	4.96 in	4.22 in
January	4.00 in	1.96 in	1.72 in
February	3.55 in	3.61 in	3.26 in
March	4.39 in	2.04 in (1-13 March 2003)	1.76 in (1-13 March 2003)

* From NOAA weather station, Douglas International Airport, Charlotte, NC.

During the study period, a total of 21.6 inches of precipitation were recorded at the test site. Assuming uniform rainfall over the 5.45-acre site, this is equivalent to 3.2 million gallons of water that could be potential run-off into the receiving stream.



5.5.2 Procedural Recoveries

Each sample set contained at least one control sample (HPLC grade water) fortified with a mixture of fipronil, MB46513, MB45950 and MB46136. The fortification levels were 0.005, 0.010 or 0.100 ng/mL. The procedural recoveries are summarized in Table V. In addition, all quantitative data for the procedural recoveries are included in Appendix J.

Table V. Mean Procedural Recoveries from Fortified HPLC Water

Analyte	Fortification Level (ng/mL)	Number	Mean Percent Recovery
Fipronil	0.005	1	87
	0.010	17	84
	0.100	18	88
	Mean	36	86 ± 13
MB46513	0.005	1	96
	0.010	17	84
	0.100	18	90
	Mean	36	87 ± 12
MB45950	0.005	1	90
	0.010	17	85
	0.100	18	87
	Mean	36	86 ± 11
MB46136	0.005	1	109
	0.010	17	90
	0.100	18	89
	Mean	36	90 ± 11

5.5.3 Analytical Results of Water Samples

Samples from the "Entry" and "Exit" samplers were analyzed to evaluate the possibility of runoff containing fipronil related residues. The LOQ was 0.010 ng/mL, and the MDL was 0.004 ng/mL for fipronil and its metabolites, MB46513, MB45950, and MB46136. All quantitative data for the analysis of the "Entry" and "Exit" samples is provided in Appendix J.



5.5 Water Analysis

5.5.1 Method Verification

The analytical method for water has been validated internally and has undergone a successful independent laboratory validation. The results of these studies are presented in separate reports (References 2 and 3).

The analytical method was verified prior to beginning analysis of the field samples using a fortification solution of a mixture of fipronil and its metabolites. The verification set consisted of 1 control sample of HPLC water, 2 control samples of onsite water, 2 samples of onsite water fortified at the LOQ (0.01 ng/mL), 2 samples of onsite water fortified at 10XLOQ (0.10 ng/mL), 1 sample of HPLC water fortified at the LOQ and 1 sample of HPLC water fortified at 10XLOQ. The results of the method verification were satisfactory and are shown in Table IV. In addition, all quantitative data for the method verification is provided in Appendix J.

Table IV. Water Method Verification Results

Sample Identification	Fortification Level (ng/mL)	Percent Recovery			
		Fipronil	MB46513	MB45950	MB46136
HPLC Water	0	ND	ND	ND	ND
36530A Bulk-1 Rep 1	0	ND	ND	ND	ND
36530A Bulk-1 Rep 2	0	ND	ND	ND	ND
36530A Bulk-1 Spike LOQ-1	0.01	73	86	77	83
36530A Bulk-1 Spike LOQ-2	0.01	75	74	72	86
36530A Bulk-1 Spike 10XLOQ-1	0.10	70	79	75	83
36530A Bulk-1 Spike 10XLOQ-2	0.10	68	72	76	84
HPLC Water Spike LOQ	0.01	90	92	85	93
HPLC Water Spike 10XLOQ	0.10	93	91	85	84
Mean Recovery		78 ± 11 n=6	82 ± 8 n=6	78 ± 6 n=6	85 ± 4 n=6

**Table VIII. Recoveries from Field Fortified Water Samples**

Sample	Fortification Level (ng/mL)	Percent Recovery			
		Fipronil	MB46513	MB45950	MB46136
HPLC Water Blank*	0	ND	ND	ND	ND
36530-Rec 25**	0.01	74	87	86	94
36530-Rec 26**	0.10	89	97	94	100
36530A-FS-01	0	ND	ND	ND	ND
36530A-FS-02	0	ND	ND	ND	ND
36530A-FS-03	0.02	81	90	80	87
36530A-FS-04	0.02	74	84	79	89
36530A-FS-05	0.20	84	87	78	82
36530A-FS-06	0.20	82	84	77	81

* Control sample for the analytical set.

** Fresh procedural fortification samples for the analytical set.

5.5.5 Storage Stability

The majority of water samples were analyzed within 95 days of collection. A few samples were analyzed late in the study with a maximum storage interval of 222 days. Storage stability studies in water have been initiated for other studies within the Chipco Topchoice® Insecticide program. These ongoing studies will demonstrate the stability of fipronil and its metabolites in water over typical storage periods.

5.6 Sediment Analysis

5.6.1 Method of Analysis

During the course of this study, a method of analysis was developed for the sediment samples. The acceptable recoveries observed in the sample set demonstrated the capability of the method to extract fipronil-related residues from sediment. The procedural recoveries in this study are provided in Table IX.

5.6.2 Analytical Results of Sediment Samples

The "Entry" and "Exit" sediment samples, collected 9 months after the application of the test substance, were analyzed to evaluate the possibility of fipronil-related residues to accumulate in the stream sediment. The results are summarized in Table IX.



Table IX. Analytical Results of Sediment Samples

Sample Identification	Sampling Location	Analytical Results (ppb)			
		Fipronil	MB46513	MB45950	MB46136
36530A-Sediment-01-500ppt*	Fresh Spike	0.434	0.431	0.429	0.481
36530A-Sediment-01	"Entry"	ND	ND	ND	<LOQ
36530A-Sediment-02	"Entry"	ND	ND	ND	<LOQ
36530A-Sediment-03	"Exit"	ND	ND	ND	ND
36530A-Sediment-04	"Exit"	ND	ND	ND	ND

* Freshly fortified at 0.500 ppb to serve as a method recovery sample.

The two sediment samples from the "Entry" location contained metabolite MB46136 at levels below the Limit of Quantification. No other fipronil-related residues were observed in the "Entry" samples. No fipronil-related residues were detected in the "Exit" samples.

5.7 Mass Transport of Fipronil-Related Residues

Multiplication of the stream flows and residue concentrations can provide an estimate of the mass transport of fipronil-related residues from the test site. The single water sample in this study containing residues had a concentration of fipronil at <0.010 ng/mL and no detectable metabolite residues. The sample (36530A-2089) was collected at 0126 hours on 27 September 2002. The preceding and succeeding samples contained no detectable residues. For the purposes of this calculation, it was assumed that all water flow for the three hours preceding and three hours succeeding that sample contained fipronil at that level. This calculation procedure provides a conservative upper-limit estimate of the potential mass introduced into the stream.

The ten-minute flow rates at the "Exit" sampler for that time period are presented in Table X.



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Table VII. Analytical Results of "Entry" Water Samples

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
3	36530A-0011	15 Sep 02	0559	ND	ND	ND	ND
4	36530A-0033	16 Sep 02	1159	ND	ND	ND	ND
5	36530A-0047	17 Sep 02	1159	ND	ND	ND	ND
6	36530A-0049	18 Sep 02	1811	ND	ND	ND	ND
7	36530A-0051	19 Sep 02	1820	ND	ND	ND	ND
8	36530A-0053	20 Sep 02	1804	ND	ND	ND	ND
9	36530A-0055	21 Sep 02	1857	ND	ND	ND	ND
10	36530A-0057	22 Sep 02	2130	ND	ND	ND	ND
11	36530A-0059	23 Sep 02	2051	ND	ND	ND	ND
12	36530A-0061	24 Sep 02	1821	ND	ND	ND	ND
13	36530A-0063	25 Sep 02	2204	ND	ND	ND	ND
14	36530A-0065	26 Sep 02	0420	ND	ND	ND	ND
14	36530A-0067	26 Sep 02	0530	ND	ND	ND	ND
14	36530A-0073	26 Sep 02	1159	ND	ND	ND	ND
15	36530A-0091	27 Sep 02	1350	ND	ND	ND	ND
28	36530A-0127	10 Oct 02	1730	ND	ND	ND	ND
29	36530A-0135	11 Oct 02	0859	ND	ND	ND	ND
30	36530A-0147	12 Oct 02	0259	ND	ND	ND	ND
31	36530A-0153	13 Oct 02	1159	ND	ND	ND	ND
32	36530A-0165	14 Oct 02	0259	ND	ND	ND	ND
33	36530A-0169	15 Oct 02	1159	ND	ND	ND	ND



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Table VII. Analytical Results of "Entry Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
34	36530A-0189	16 Oct 02	1459	ND	ND	ND	ND
34	36530A-0195	16 Oct 02	2359	ND	ND	ND	ND
36	36530A-0197	18 Oct 02	1650	ND	ND	ND	ND
37	36530A-0199	19 Oct 02	1746	ND	ND	ND	ND
38	36530A-0201	20 Oct 02	1818	ND	ND	ND	ND
40	36530A-0219	22 Oct 02	0859	ND	ND	ND	ND
41	36530A-0227	23 Oct 02	1751	ND	ND	ND	ND
47	36530A-0257	29 Oct 02	0859	ND	ND	ND	ND
55	36530A-0299	06 Nov 02	1159	ND	ND	ND	ND



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Table VIII. Analytical Results of "Exit Water Samples"

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
1	36530A-2001	13 Sep 02	1635	ND	ND	ND	ND
2	36530A-2003	14 Sep 02	1723	ND	ND	ND	ND
2-3	36530A-2005	14-15 Sep 02	Not Available	ND	ND	ND	ND
2-3	36530A-2007	14-15 Sep 02	Not Available	ND	ND	ND	ND
2-3	36530A-2009	14-15 Sep 02	Not Available	ND	ND	ND	ND
3	36530A-2011	15 Sep 02	1849	ND	ND	ND	ND
3	36530A-2013	15 Sep 02	2149	ND	ND	ND	ND
4	36530A-2015	16 Sep 02	0049	ND	ND	ND	ND
4	36530A-2017	16 Sep 02	0349	ND	ND	ND	ND
4	36530A-2019	16 Sep 02	0649	ND	ND	ND	ND
4	36530A-2021	16 Sep 02	0949	ND	ND	ND	ND
4	36530A-2023	16 Sep 02	1249	ND	ND	ND	ND
4	36530A-2025	16 Sep 02	1549	ND	ND	ND	ND
4	36530A-2027	16 Sep 02	1849	ND	ND	ND	ND
4	36530A-2029	16 Sep 02	2149	ND	ND	ND	ND
5	36530A-2031	17 Sep 02	0049	ND	ND	ND	ND
5	36530A-2033	17 Sep 02	0130	ND	ND	ND	ND
5	36530A-2035	17 Sep 02	0349	ND	ND	ND	ND
5	36530A-2037	17 Sep 02	0649	ND	ND	ND	ND



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Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
5	36530A-2039	17 Sep 02	0949	ND	ND	ND	ND
5	36530A-2041	17 Sep 02	1249	ND	ND	ND	ND
5	36530A-2043	17 Sep 02	1549	ND	ND	ND	ND
5	36530A-2045	17 Sep 02	1849	ND	ND	ND	ND
5	36530A-2047	17 Sep 02	2149	ND	ND	ND	ND
7	36530A-2049	19 Sep 02	1150	ND	ND	ND	ND
7	36530A-2051	19 Sep 02	1249	ND	ND	ND	ND
7	36530A-2053	19 Sep 02	1549	ND	ND	ND	ND
7	36530A-2055	19 Sep 02	1840	ND	ND	ND	ND
7	36530A-2057	19 Sep 02	1849	ND	ND	ND	ND
7	36530A-2059	19 Sep 02	2149	ND	ND	ND	ND
8	36530A-2061	20 Sep 02	0049	ND	ND	ND	ND
8	36530A-2063	20 Sep 02	0349	ND	ND	ND	ND
8	36530A-2065	20 Sep 02	0649	ND	ND	ND	ND
8	36530A-2067	20 Sep 02	0949	ND	ND	ND	ND
8	36530A-2069	20 Sep 02	1249	ND	ND	ND	ND
8	36530A-2071	20 Sep 02	1549	ND	ND	ND	ND
9	36530A-2073	21 Sep 02	1907	ND	ND	ND	ND
10	36530A-2075	22 Sep 02	2120	ND	ND	ND	ND
11	36530A-2077	23 Sep 02	2100	ND	ND	ND	ND
12	36530A-2079	24 Sep 02	1829	ND	ND	ND	ND



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Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
13	36530A-2081	25 Sep 02	2223	ND	ND	ND	ND
14	36530A-2083	26 Sep 02	1845	ND	ND	ND	ND
14	36530A-2085	26 Sep 02	1926	ND	ND	ND	ND
14	36530A-2087	26 Sep 02	2226	ND	ND	ND	ND
15	36530A-2089	27 Sep 02	0126	<LOQ ✓	ND	ND	ND
15	36530A-2091	27 Sep 02	0426	ND	ND	ND	ND
15	36530A-2093	27 Sep 02	0726	ND	ND	ND	ND
15	36530A-2095	27 Sep 02	1026	ND	ND	ND	ND
15	36530A-2097	27 Sep 02	1326	ND	ND	ND	ND
15	36530A-2099	27 Sep 02	1626	ND	ND	ND	ND
15	36530A-2101	27 Sep 02	1926	ND	ND	ND	ND
15	36530A-2103	27 Sep 02	2226	ND	ND	ND	ND
16	36530A-2105	28 Sep 02	0126	ND	ND	ND	ND
16	36530A-2111	28 Sep 02	1026	ND	ND	ND	ND
16	36530A-2113	28 Sep 02	1326	ND	ND	ND	ND
16	36530A-2115	28 Sep 02	1626	ND	ND	ND	ND
18	36530A-2119	30 Sep 02	1225	ND	ND	ND	ND
19	36530A-2137	01 Oct 02	1026	ND	ND	ND	ND
20	36530A-2153	02 Oct 02	1026	ND	ND	ND	ND
21	36530A-2167	03 Oct 02	0726	ND	ND	ND	ND
22	36530A-2171	04 Oct 02	1753	ND	ND	ND	ND



Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
23	36530A-2173	05 Oct 02	0943	ND	ND	ND	ND
24	36530A-2175	06 Oct 02	1932	ND	ND	ND	ND
25	36530A-2177	07 Oct 02	1755	ND	ND	ND	ND
26	36530A-2179	08 Oct 02	1800	ND	ND	ND	ND
27	36530A-2181	09 Oct 02	1755	ND	ND	ND	ND
28	36530A-2183	10 Oct 02	1744	ND	ND	ND	ND
29	36530A-2193	11 Oct 02	1709	ND	ND	ND	ND
29	36530A-2195	11 Oct 02	2009	ND	ND	ND	ND
29	36530A-2197	11 Oct 02	2309	ND	ND	ND	ND
30	36530A-2207	12 Oct 02	1409	ND	ND	ND	ND
30	36530A-2209	12 Oct 02	1709	ND	ND	ND	ND
30	36530A-2211	12 Oct 02	2009	ND	ND	ND	ND
30	36530A-2213	12 Oct 02	2309	ND	ND	ND	ND
31	36530A-2215	13 Oct 02	0209	ND	ND	ND	ND
31	36530A-2225	13 Oct 02	1709	ND	ND	ND	ND
31	36530A-2227	13 Oct 02	2009	ND	ND	ND	ND
32	36530A-2229	14 Oct 02	1402	ND	ND	ND	ND
32	36530A-2231	14 Oct 02	1702	ND	ND	ND	ND
32-33	36530A-2233	14-15 Oct 02	Not Available	ND	ND	ND	ND
34	36530A-2235	16 Oct 02	1758	ND	ND	ND	ND
34	36530A-2237	16 Oct 02	1753	ND	ND	ND	ND



Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
34	36530A-2239	16 Oct 02	2053	ND	ND	ND	ND
34	36530A-2241	16 Oct 02	2353	ND	ND	ND	ND
35	36530A-2249	17 Oct 02	1153	ND	ND	ND	ND
35	36530A-2251	17 Oct 02	1453	ND	ND	ND	ND
35	36530A-2253	17 Oct 02	1753	ND	ND	ND	ND
35	36530A-2255	17 Oct 02	2053	ND	ND	ND	ND
35	36530A-2257	17 Oct 02	2353	ND	ND	ND	ND
36	36530A-2265	18 Oct 02	1153	ND	ND	ND	ND
36	36530A-2267	18 Oct 02	1453	ND	ND	ND	ND
36	36530A-2269	18 Oct 02	1753	ND	ND	ND	ND
36	36530A-2271	18 Oct 02	2053	ND	ND	ND	ND
36	36530A-2273	18 Oct 02	2353	ND	ND	ND	ND
37	36530A-2277	19 Oct 02	0553	ND	ND	ND	ND
37	36530A-2283	19 Oct 02	1453	ND	ND	ND	ND
38	36530A-2295	20 Oct 02	0853	ND	ND	ND	ND
39	36530A-2311	21 Oct 02	0853	ND	ND	ND	ND
39	36530A-2319	21 Oct 02	2053	ND	ND	ND	ND
39	36530A-2321	21 Oct 02	2353	ND	ND	ND	ND
40	36530A-2323	22 Oct 02	0253	ND	ND	ND	ND
40	36530A-2325	22 Oct 02	0553	ND	ND	ND	ND
40	36530A-2327	22 Oct 02	0853	ND	ND	ND	ND



Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
40	36530A-2329	22 Oct 02	1153	ND	ND	ND	ND
40	36530A-2331	22 Oct 02	1453	ND	ND	ND	ND
40	36530A-2333	22 Oct 02	1753	ND	ND	ND	ND
40	36530A-2335	22 Oct 02	2053	ND	ND	ND	ND
40	36530A-2337	22 Oct 02	2353	ND	ND	ND	ND
41	36530A-2339	23 Oct 02	0253	ND	ND	ND	ND
41	36530A-2341	23 Oct 02	0553	ND	ND	ND	ND
41	36530A-2343	23 Oct 02	0853	ND	ND	ND	ND
41	36530A-2345	23 Oct 02	1153	ND	ND	ND	ND
42	36530A-2359	24 Oct 02	0853	ND	ND	ND	ND
43	36530A-2375	25 Oct 02	0853	ND	ND	ND	ND
44	36530A-2395	26 Oct 02	1453	ND	ND	ND	ND
45	36530A-2409	27 Oct 02	1153	ND	ND	ND	ND
46	36530A-2425	28 Oct 02	1153	ND	ND	ND	ND
47	36530A-2435	29 Oct 02	0253	ND	ND	ND	ND
47	36530A-2437	29 Oct 02	0553	ND	ND	ND	ND
47	36530A-2439	29 Oct 02	0853	ND	ND	ND	ND
47	36530A-2441	29 Oct 02	1153	ND	ND	ND	ND
47	36530A-2443	29 Oct 02	1453	ND	ND	ND	ND
47	36530A-2445	29 Oct 02	1753	ND	ND	ND	ND
47	36530A-2447	29 Oct 02	2053	ND	ND	ND	ND

Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)		
				Fipronil	MB46513	MB45950
47	36530A-2449	29 Oct 02	2353	ND	ND	ND
48	36530A-2451	30 Oct 02	0253	ND	ND	ND
48	36530A-2455	30 Oct 02	0853	ND	ND	ND
48	36530A-2459	30 Oct 02	1453	ND	ND	ND
48	36530A-2463	30 Oct 02	2053	ND	ND	ND
49	36530A-2473	31 Oct 02	1153	ND	ND	ND
50	36530A-2487	01 Nov 02	0853	ND	ND	ND
51	36530A-2501	02 Nov 02	0553	ND	ND	ND
52	36530A-2515	03 Nov 02	0253	ND	ND	ND
53	36530A-2537	04 Nov 02	1153	ND	ND	ND
54	36530A-2551	05 Nov 02	0853	ND	ND	ND
54	36530A-2557	05 Nov 02	1753	ND	ND	ND
55	36530A-2563	06 Nov 02	0253	ND	ND	ND
55	36530A-2565	06 Nov 02	0553	ND	ND	ND
55	36530A-2567	06 Nov 02	0853	ND	ND	ND
55	36530A-2569	06 Nov 02	1153	ND	ND	ND
55	36530A-2571	06 Nov 02	1453	ND	ND	ND
55	36530A-2573	06 Nov 02	1753	ND	ND	ND
55	36530A-2575	06 Nov 02	2053	ND	ND	ND
55	36530A-2577	06 Nov 02	2353	ND	ND	ND
56	36530A-2579	07 Nov 02	0253	ND	ND	ND





Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
56	36530A-2581	07 Nov 02	0553	ND	ND	ND	ND
56	36530A-2585	07 Nov 02	1153	ND	ND	ND	ND
56	36530A-2589	07 Nov 02	1753	ND	ND	ND	ND
56	36530A-2591	07 Nov 02	2053	ND	ND	ND	ND
57	36530A-2597	08 Nov 02	0553	ND	ND	ND	ND
58	36530A-2615	09 Nov 02	0853	ND	ND	ND	ND
59	36530A-2633	10 Nov 02	1153	ND	ND	ND	ND
60-61	36530A-2645	11-12 Nov 02	Not Available	ND	ND	ND	ND
60-61	36530A-2649	11-12 Nov 02	Not Available	ND	ND	ND	ND
60-61	36530A-2653	11-12 Nov 02	Not Available	ND	ND	ND	ND
61-62	36530A-2657	12-13 Nov 02	Not Available	ND	ND	ND	ND
61-62	36530A-2661	12-13 Nov 02	Not Available	ND	ND	ND	ND
61-62	36530A-2665	12-13 Nov 02	Not Available	ND	ND	ND	ND
61-62	36530A-2669	12-13 Nov 02	Not Available	ND	ND	ND	ND
62-63	36530A-2673	13-14 Nov 02	Not Available	ND	ND	ND	ND
62-63	36530A-2685	13-14 Nov 02	Not Available	ND	ND	ND	ND
63-64	36530A-2689	14-15 Nov 02	Not Available	ND	ND	ND	ND
64	36530A-2691	15 Nov 02	1755	ND	ND	ND	ND
65	36530A-2699	16 Nov 02	0555	ND	ND	ND	ND
65	36530A-2709	16 Nov 02	2055	ND	ND	ND	ND
66	36530A-2713	17 Nov 02	0255	ND	ND	ND	ND



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Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
66	36530A-2717	17 Nov 02	0855	ND	ND	ND	ND
66	36530A-2721	17 Nov 02	1455	ND	ND	ND	ND
66	36530A-2725	17 Nov 02	2055	ND	ND	ND	ND
67	36530A-2729	18 Nov 02	0255	ND	ND	ND	ND
67	36530A-2733	18 Nov 02	0855	ND	ND	ND	ND
67	36530A-2737	18 Nov 02	1455	ND	ND	ND	ND
67	36530A-2741	18 Nov 02	2055	ND	ND	ND	ND
68	36530A-2745	19 Nov 02	0255	ND	ND	ND	ND
68	36530A-2751	19 Nov 02	1155	ND	ND	ND	ND
69	36530A-2767	20 Nov 02	1155	ND	ND	ND	ND
70	36530A-2783	21 Nov 02	1155	ND	ND	ND	ND
71	36530A-2799	22 Nov 02	1155	ND	ND	ND	ND
72	36530A-2815	23 Nov 02	1155	ND	ND	ND	ND
73	36530A-2829	24 Nov 02	0855	ND	ND	ND	ND
74	36530A-2847	25 Nov 02	1155	ND	ND	ND	ND
75	36530A-2863	26 Nov 02	1155	ND	ND	ND	ND
76	36530A-2879	27 Nov 02	1155	ND	ND	ND	ND
77	36530A-2897	28 Nov 02	1455	ND	ND	ND	ND
78	36530A-2913	29 Nov 02	1455	ND	ND	ND	ND
79	36530A-2925	30 Nov 02	0855	ND	ND	ND	ND
80	36530A-2939	01 Dec 02	0555	ND	ND	ND	ND



Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
81	36530A-2965	02 Dec 02	2055	ND	ND	ND	ND
82	36530A-2975	03 Dec 02	1155	ND	ND	ND	ND
83	36530A-2989	04 Dec 02	0855	ND	ND	ND	ND
85	36530A-2995	06 Dec 02	1755	ND	ND	ND	ND
85	36530A-2999	06 Dec 02	2355	ND	ND	ND	ND
86	36530A-3007	07 Dec 02	1155	ND	ND	ND	ND
86	36530A-3011	07 Dec 02	1755	ND	ND	ND	ND
86	36530A-3015	07 Dec 02	2355	ND	ND	ND	ND
87	36530A-3027	08 Dec 02	1755	ND	ND	ND	ND
88	36530A-3039	09 Dec 02	1155	ND	ND	ND	ND
89	36530A-3057	10 Dec 02	1455	ND	ND	ND	ND
90	36530A-3075	11 Dec 02	1755	ND	ND	ND	ND
90	36530A-3079	11 Dec 02	2355	ND	ND	ND	ND
91	36530A-3083	12 Dec 02	0555	ND	ND	ND	ND
91	36530A-3087	12 Dec 02	1155	ND	ND	ND	ND
92	36530A-3097	13 Dec 02	1155	ND	ND	ND	ND
93	36530A-3105	14 Dec 02	1155	ND	ND	ND	ND
94	36530A-3115	15 Dec 02	1755	ND	ND	ND	ND
95	36530A-3121	16 Dec 02	1155	ND	ND	ND	ND
96	36530A-3129	17 Dec 02	1155	ND	ND	ND	ND
97	36530A-3137	18 Dec 02	1155	ND	ND	ND	ND



Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
98	36530A-3145	19 Dec 02	1155	ND	ND	ND	ND
99	36530A-3153	20 Dec 02	1155	ND	ND	ND	ND
100-101	36530A-3163	21-22 Dec 02	Not Available	ND	ND	ND	ND
101-102	36530A-3175	22-23 Dec 02	Not Available	ND	ND	ND	ND
102-103	36530A-3183	23-24 Dec 02	Not Available	ND	ND	ND	ND
106-107	36530A-3187	27-28 Dec 02	Not Available	ND	ND	ND	ND
107-108	36530A-3199	28-29 Dec 02	Not Available	ND	ND	ND	ND
108-109	36530A-3207	29-30 Dec 02	Not Available	ND	ND	ND	ND
109-110	36530A-3215	30-31 Dec 02	Not Available	ND	ND	ND	ND
110-111	36530A-3221	31 Dec 02-01 Jan 03	Not Available	ND	ND	ND	ND
112	36530A-3233	02 Jan 03	1412	ND	ND	ND	ND
113	36530A-3239	03 Jan 03	0812	ND	ND	ND	ND
114	36530A-3247	04 Jan 03	0812	ND	ND	ND	ND
115	36530A-3257	05 Jan 03	1412	ND	ND	ND	ND
116	36530A-3263	06 Jan 03	0812	ND	ND	ND	ND
117	36530A-3273	07 Jan 03	1412	ND	ND	ND	ND
118	36530A-3281	08 Jan 03	1412	ND	ND	ND	ND
119	36530A-3289	09 Jan 03	1412	ND	ND	ND	ND
120	36530A-3295	10 Jan 03	0812	ND	ND	ND	ND
121	36530A-3305	11 Jan 03	1412	ND	ND	ND	ND



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Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
122	36530A-3315	12 Jan 03	2012	ND	ND	ND	ND
123	36530A-3323	13 Jan 03	2012	ND	ND	ND	ND
124	36530A-3329	14 Jan 03	1412	ND	ND	ND	ND
125	36530A-3333	15 Jan 03	0212	ND	ND	ND	ND
126	36530A-3345	16 Jan 03	1412	ND	ND	ND	ND
127	36530A-3353	17 Jan 03	1412	ND	ND	ND	ND
129	36530A-3358	19 Jan 03	1412	ND	ND	ND	ND
130	36530A-3367	20 Jan 03	1412	ND	ND	ND	ND
131	36530A-3371	21 Jan 03	0212	ND	ND	ND	ND
132	36530A-3381	22 Jan 03	0812	ND	ND	ND	ND
132-134	36530A-3389	22-24 Jan 03	Not Available	ND	ND	ND	ND
138	36530A-3435	28 Jan 03	1412	ND	ND	ND	ND
139	36530A-3443	29 Jan 03	1412	ND	ND	ND	ND
140	36530A-3451	30 Jan 03	1412	ND	ND	ND	ND
141	36530A-3455	31 Jan 03	0212	ND	ND	ND	ND
142	36530A-3465	01 Feb 03	0812	ND	ND	ND	ND
143	36530A-3475	02 Feb 03	1412	ND	ND	ND	ND
144	36530A-3483	03 Feb 03	1412	ND	ND	ND	ND
145	36530A-3489	04 Feb 03	0812	ND	ND	ND	ND
146	36530A-3497	05 Feb 03	0812	ND	ND	ND	ND
147	36530A-3505	06 Feb 03	0812	ND	ND	ND	ND
148	36530A-3513	07 Feb 03	0812	ND	ND	ND	ND



Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
149	36530A-3523	08 Feb 03	1412	ND	ND	ND	ND
150	36530A-3529	09 Feb 03	0812	ND	ND	ND	ND
151	36530A-3537	10 Feb 03	0812	ND	ND	ND	ND
152	36530A-3547	11 Feb 03	1412	ND	ND	ND	ND
153	36530A-3553	12 Feb 03	0812	ND	ND	ND	ND
154	36530A-3563	13 Feb 03	1412	ND	ND	ND	ND
155	36530A-3569	14 Feb 03	0812	ND	ND	ND	ND
156	36530A-3577	15 Feb 03	0812	ND	ND	ND	ND
160	36530A-3585	19 Feb 03	0812	ND	ND	ND	ND
161	36530A-3593	20 Feb 03	0812	ND	ND	ND	ND
162	36530A-3601	21 Feb 03	0812	ND	ND	ND	ND
163	36530A-3609	22 Feb 03	0812	ND	ND	ND	ND
164	36530A-3617	23 Feb 03	0812	ND	ND	ND	ND
165	36530A-3627	24 Feb 03	0812	ND	ND	ND	ND
166	36530A-3635	25 Feb 03	0812	ND	ND	ND	ND
167	36530A-3643	26 Feb 03	0812	ND	ND	ND	ND
168	36530A-3651	27 Feb 03	0812	ND	ND	ND	ND
169	36530A-3659	28 Feb 03	0812	ND	ND	ND	ND
170	36530A-3667	01 Mar 03	0812	ND	ND	ND	ND
171	36530A-3679	02 Mar 03	2012	ND	ND	ND	ND
172	36530A-3683	03 Mar 03	0812	ND	ND	ND	ND
173	36530A-3691	04 Mar 03	0812	ND	ND	ND	ND



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Table VIII. Analytical Results of "Exit Water Samples" (continued)

Days After Application	Sample ID	Collection Date	Collection Time	Analytical Results (ppb)			
				Fipronil	MB46513	MB45950	MB46136
174	36530A-3701	05 Mar 03	1412	ND	ND	ND	ND
175	36530A-3706	06 Mar 03	0212	ND	ND	ND	ND
176	36530A-3715	07 Mar 03	0812	ND	ND	ND	ND
177	36530A-3725	08 Mar 03	1412	ND	ND	ND	ND
178	36530A-3733	09 Mar 03	1412	ND	ND	ND	ND
179	36530A-3741	10 Mar 03	1412	ND	ND	ND	ND
180	36530A-3749	11 Mar 03	0812	ND	ND	ND	ND

**Table X. Flow Rates Preceding and Succeeding the Sample Containing Detectable Fipronil Residues**

Date and Time	Flow Rate (gpm)	Date and Time	Flow Rate (gpm)
9/26/2002 22:30	707	9/27/2002 1:40	657
9/26/2002 22:40	837	9/27/2002 1:50	532
9/26/2002 22:50	737	9/27/2002 2:00	703
9/26/2002 23:00	869	9/27/2002 2:10	671
9/26/2002 23:10	984	9/27/2002 2:20	851
9/26/2002 23:20	749	9/27/2002 2:30	949
9/26/2002 23:30	847	9/27/2002 2:40	941
9/26/2002 23:40	693	9/27/2002 2:50	1006
9/26/2002 23:50	842	9/27/2002 3:00	974
9/27/2002 0:00	644	9/27/2002 3:10	982
9/27/2002 0:10	985	9/27/2002 3:20	956
9/27/2002 0:20	672	9/27/2002 3:30	956
9/27/2002 0:30	692	9/27/2002 3:40	792
9/27/2002 0:40	735	9/27/2002 3:50	995
9/27/2002 0:50	735	9/27/2002 4:00	1097
9/27/2002 1:00	659	9/27/2002 4:10	987
9/27/2002 1:10	695	9/27/2002 4:20	995
9/27/2002 1:20	706	9/27/2002 4:30	726
9/27/2002 1:30*	607	Mean	815

* Sample 36530A-2089 collected at 9/27/02, 01:26

The mass transport or loss during this 6-hour period is calculated by:

$$\text{Mass Loss in mg} = \text{Sample Concentration (ng/mL)} \times \text{Mean Flow Rate (gal/min)} \\ \times 360 \text{ min} \times 3785 \text{ mL/gal} \times 10^{-6} \text{ mg/ng}$$

$$\text{Mass Loss} = <0.010 \text{ ng/mL} \times 815 \text{ gal/min} \times 360 \text{ min} \times 3785 \text{ mL/gal} \times 10^{-6} \text{ mg/ng}$$

$$\text{Mass Loss} = <11.1 \text{ mg}$$

This calculation, using conservative assumptions, estimates an upper limit of <11.1 mg of fipronil has been lost from the test site in the runoff water. This corresponds to <0.11% of the 10.2 grams of the active ingredient, fipronil, applied to the test site.