

DATA EVALUATION RECORD

STUDY 6

CHEM 030703 Naphtalam sodium salt §164-1

FORMULATION--15--SOLUBLE CONCENTRATE (SC/L)

STUDY ID 41385403

White, C.K., M. Beevers, and P. Noon. 1989. Terrestrial field dissipation of Alanap on two California melon fields. Uniroyal Project No. 8782. Unpublished study performed by California Agricultural Research, Inc., Kerman, CA; North Coast Laboratories, Inc., Arcata, CA; and Uniroyal Chemical Company, Inc., Middlebury, CT; and submitted by Uniroyal Chemical Company, Inc., Middlebury, CT.

DIRECT REVIEW TIME = 8

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CONCLUSIONS:

Field Dissipation - Terrestrial

1. This study cannot be used to fulfill data requirements.
2. These data are considered to be of uncertain value and should not be used to predict the environmental behavior of naptalam and its degradates.



3. This study is unacceptable for the following reasons:

the analytical method was not specific, it could not distinguish between naptalam and its degradates; and

the data were too variable to accurately assess the dissipation of naptalam residues in the soil.

4. Because the analytical method was not specific and could not distinguish between naptalam and its degradates, the problems with this study cannot be resolved with the submission of additional data. A new study is required.

METHODOLOGY:

Naptalam (Alanap-L, 2 lb/gallon SC/L, Uniroyal Chemical) was surface-applied twice at 4 lb ai/A/application to two field plots (50 x 50 feet) located near Kerman, California. The first plot was sandy loam soil (69% sand, 21% silt, 10% clay, 0.66% organic matter, pH 6.1, CEC 4.1 meq/100 g) and was treated on June 28, 1988. The second field plot was loamy sand soil (83.6% sand, 10.0% silt, 6.4% clay, 0.3% organic matter, pH 6.3, CEC 3.5 meq/100 g) and was treated on July 6, 1988. The plots were harrowed prior to treatment; immediately following the applications, the plots were cultivated (weasel) to a 2-inch depth and hand-planted to watermelon. The second application was made to each plot postemergence (26-27 days postplanting); the first plot was treated on July 25, 1988, and the second plot was treated on August 1, 1988. Following the second application, the plots were cultivated to a 2-inch depth. At each site, an untreated plot (size unspecified at sandy loam site, 10 x 35 feet at loamy sand site) was maintained as a control. The treated plots were divided into 100 subplots (5 x 5 feet); three subplots were randomly chosen for sampling at each designated interval. Soil samples were taken in 6-inch increments to a maximum depth of 5 feet; samples from the 0- to 6-inch soil layer were collected with a soil probe (1-inch diameter). For depths below 6 inches, the surface 6 inches of soil were removed with a shovel, and a bucket auger (2 3/4-inch diameter) was inserted to a 6-inch depth. The surface 1-inch of soil in the auger was discarded, then two 1-inch diameter cores were taken from within the auger bucket. Six cores were taken at each depth; for each subplot, soil cores from similar depths were composited. Soil samples were taken prior to each application and at intervals between 0 and 270 days after the second application; soil samples were stored frozen for up to 511 days prior to extraction.

Soil samples were thawed at room temperature and sieved (10-mesh screen), and a subsample (10 g) was distilled with a mixture of 10 N sodium hydroxide:distilled water:20% titanium trichloride (50:20:1), 1 drop of silicone antifoam solution, and zinc chips to hydrolyze naptalam and its degradate N-1-naphthylphthalimide to 1-naphthylamine. The distillate was collected and brought to volume with

methanol and water, and an aliquot was analyzed for total residues as 1-naphthylamine using reverse-phase HPLC with methanol:water (60:40, v:v) as the mobile phase and fluorescence detection. The detection limit was 0.1 ppm. Recovery efficiencies from soil samples fortified with naptalam at 0.5 ppm ranged from 70 to 135% (average 94%; Tables VIII and IX [amended]).

DATA SUMMARY:

Total naptalam residues (measured as 1-naphthylamine) dissipated with a registrant-calculated half-life of 37.4 days ($r^2 = 0.593$) in the 0- to 6-inch depth of a sandy loam soil plot in California that was treated with naptalam (2 lb/gallon SC/L) twice (27-day interval) at 4 lb ai/A/application (8 lb ai/A total) and planted to watermelon immediately after the first treatment. Average total naptalam residues decreased from 2.33 ppm immediately after the first application to <0.1 ppm immediately before the second treatment; average total naptalam residues were 1.67 ppm immediately after the second treatment (maximum 2.40 ppm at 0.5 days; Table I [amended]), decreased to 0.41 ppm by 2 days, were 1.39 ppm at 4 days, and decreased to <0.1 ppm by 179 days (Table III). At lower soil depths, maximum concentrations of total naptalam residues were 0.23 ppm in the 6- to 12-inch depth, 0.22 ppm in the 12- to 18-inch depth, and were not detected (<0.1 ppm) below 18 inches (Table I [amended]).

Total naptalam residues (measured as 1-naphthylamine) dissipated with a registrant-calculated half-life of 10.6 days ($r^2 = 0.604$) in the 0- to 6-inch depth of a loamy sand soil plot in California that was treated with naptalam (2 lb/gallon SC/L) in two applications (26-day interval) of 4 lb ai/A/application (8 lb ai/A total) and planted to watermelon immediately after the first treatment. Average total naptalam residues decreased from 1.77 ppm immediately after the first application to 0.12 ppm immediately before the second treatment; average total naptalam residues ranged from 1.39 to 2.30 ppm between 0 and 7 days after the second treatment (maximum 4.20 ppm at 0.5 days; Table II [amended]), then decreased to ≤ 0.04 ppm by 91 days posttreatment (Table V). At lower soil depths, maximum concentrations of total naptalam residues were 0.33 ppm in the 6- to 12-inch depth, 0.13 ppm in the 12- to 18-inch depth, 0.25 ppm in the 18- to 24-inch depth, 0.20 ppm in the 24- to 30-inch depth, and were not detected (<0.1 ppm) at depths below 30 inches (Table II [amended]).

Naptalam residues did not accumulate in the soil as a result of the double application of naptalam at 4 lb ai/A with a 26/27-day application interval. At the loamy sand site, the immediate posttreatment concentration of total naptalam residues in the 0- to 6-inch soil depth was 1.77 ppm after the first treatment and 2.30 ppm after the second treatment. At the sandy loam site, the immediate posttreatment concentrations were 2.33 and 1.67 ppm after the first and second treatments, respectively.

During the studies at both sites, air temperatures ranged from 26 to 107 F. Rainfall plus irrigation totaled approximately 30 inches at the loamy sand site and 58 inches at the sandy loam site.

COMMENTS:

1. The analytical method was not specific; it could not distinguish between naptalam and its degradates. The analytical procedure hydrolyzed naptalam and its degradate N-1-naphthylphthalimide to 1-naphthylamine. The study authors rationalized that by analyzing for total naptalam residues, this was a worst case scenario, "and alnap itself may dissipate even faster."
2. The data were too variable to accurately assess the dissipation of naptalam residues in the soil. In addition to the variability of average concentrations of total "1-naphthylamine containing" residues in the soil between sampling intervals, total residue concentrations were also highly variable between composite samples taken at the same interval (Tables I and II [amended]). The study authors offered no explanation for the variability.
3. Total naptalam residues were stable when samples of the soils used in the study were fortified with naptalam at 0.5 ppm and stored frozen for up to 1 year (Tables IV and VI [amended]). Field soil samples were stored frozen for up to 511 days prior to extraction. Since the residues were found to be stable up to 1 year, it is unlikely that any degradation occurred during the additional 146 days of storage; however, if any additional storage stability data are available, they should be provided.
4. Field test data were incomplete. Rainfall data were incomplete and partially illegible. Soil surface temperature data were only provided for the last 2 months of the study (March and April, 1989).
5. To calculate dissipation half-lives following the second application of naptalam, the study author used data from the sampling intervals of 0-14 days posttreatment for the loamy sand site (Table VI and Figure 6) and the intervals of 0-120 days for the sandy loam site (Table IV and Figure 4).
6. Both treated plots received one application of fertilizer (16-16-16, banded, 7/13-14/88) and one application of Lannate-L (methomyl) at 4 pt/A by hand sprayer 8/19/88.
7. The first plot was furrow-irrigated immediately following each application, at 6 days after the first application, and at 1, 4, 6, 15, 20, 27, 32, and 42 days after the second application (p.39 of document). Each irrigation was >1.3 acre-inches; the maximum irrigation was 5.2 acre-inches (p.39 of document). The plot was disked to a depth of 8 inches at 176 days after the second application. Site

history includes: 1987, peas with thiram as a seed treatment; 1986 fallow, no pesticide application.

The second plot was furrow-irrigated immediately following each application, and at 7, 14, and 21 days after the first application, and 10, 20, 36, and 45 after the second application (p.65 of document). Each irrigation was >1.3 acre-inches; the maximum irrigation was 3.2 acre-inches (p.65 of document). The plot was disked to a depth of 8 inches at 169 days after the second application. Site history includes: 1985-1987, fallow with no chemical treatment.

8. The depth to the water table was 45 feet at the loamy sand site and 80 feet at the sandy loam site. The slope of the field was <1% at the loamy sand site and 1% at the sandy loam site. No drainage systems were present.
9. 1-Naphthylamine was referred to as aminonaphthalene in the analytical method description provided in the document. The name 1-naphthylamine was used in this review to be consistent with the terminology used in the other reviews in this report.

TABLE I. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-1 TREATED WITH ALANAP.
QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC % RECOVERY SPIKE DUPE	
88-08-173-01	1	ODAT1, PRE, 0-6, REP1, T	<0.10	111	124
88-08-173-06	2	ODAT1, PRE, 6-12, REP1, T	<0.10	111	124
88-08-173-05	51	ODAT1, 0-6, REP1, UTC	<0.10	115	103
88-08-173-10	52	ODAT1, 6-12, REP1, UTC	<0.10	115	103
88-08-173-02	31	ODAT1, 0-6, REP1, T	3.0	111	124
(1) 88-08-173-03	37	ODAT1, 0-6, REP2, T	0.84	111	124
88-08-173-03	37	ODAT1, 0-6, REP2, T DUPE	0.52	105	108
88-08-173-04	43	ODAT1, 0-6, REP3, T	3.3	111	124
88-08-173-07	32	ODAT1, 6-12, REP1, T	<0.10	111	124
88-08-173-08	38	ODAT1, 6-12, REP2, T	<0.10	115	103
88-08-173-09	44	ODAT1, 6-12, REP3, T	<0.10	115	103
88-08-173-12	33	ODAT1, 12-18, REP1, T	<0.10	115	103
88-08-173-13	39	ODAT1, 12-18, REP2, T	<0.10	115	103
88-08-173-14	45	ODAT1, 12-18, REP3, T	<0.10	115	103
88-08-289-01	87	7DAT1, 0-6, REP1, UTC	<0.10	109	106
88-08-174-01	57	7DAT1, 0-6, REP1, T	1.8	109	106
88-08-174-01	57	7DAT1, 0-6, REP1, T DUPE	0.93	105	108
88-08-364-01	67	7DAT1, 0-6, REP2, T	0.35	109	106
88-08-364-01	67	7DAT1, 0-6, REP2, T DUPE	0.25	105	108
88-08-364-11	77	7DAT1, 0-6, REP3, T	<0.10	109	106
88-08-364-11	77	7DAT1, 0-6, REP3, T DUPE	<0.10	105	108
88-08-174-02	58	7DAT1, 6-12, REP1, T	0.33	109	106
(2) 88-08-174-02	58	7DAT1, 6-12, REP1, T DUPE	0.32	90	95
88-08-364-02	68	7DAT1, 6-12, REP2, T	<0.10	109	106
88-08-364-12	78	7DAT1, 6-12, REP3, T	<0.10	109	106
88-08-174-03	59	7DAT1, 12-18, REP1, T	<0.10	89	95
(3) 88-08-364-03	69	7DAT1, 12-18, REP2, T	<0.10	89	95
(4) 88-08-364-13	79	7DAT1, 12-18, REP3, T	<0.10	89	95
(5) 88-08-174-04	60	7DAT1, 18-24, REP1, T	<0.10	88	85
(6) 88-08-364-04	70	7DAT1, 18-24, REP2, T	<0.10	88	85
(7) 88-08-364-14	80	7DAT1, 18-24, REP3, T	<0.10	88	85
88-08-363-21	127	14DAT1, 0-6, REP1, UTC	<0.10	109	106
(8) 88-08-289-11	97	14DAT1, 0-6, REP1, T	0.49	109	106
88-08-363-01	107	14DAT1, 0-6, REP2, T	0.38	109	106
88-08-363-11	117	14DAT1, 0-6, REP3, T	0.37	109	106
88-08-289-12	98	14DAT1, 6-12, REP1, T	<0.10	89	95
88-08-363-02	108	14DAT1, 6-12, REP2, T	<0.10	89	95
88-08-363-12	118	14DAT1, 6-12, REP3, T	<0.10	89	95
88-08-289-13	99	14DAT1, 12-18, REP1, T	<0.10	89	95
88-08-363-03	109	14DAT1, 12-18, REP2, T	<0.10	89	95
88-08-363-13	119	14DAT1, 12-18, REP3, T	<0.10	89	95
88-08-290-01	137	ODAT2, PRE, 0-6, REP1, T	<0.10	109	106
88-08-290-11	147	ODAT2, PRE, 0-6, REP2, T	<0.10	114	120
88-08-290-21	157	ODAT2, PRE, 0-6, REP3, T	<0.10	114	120
88-08-290-02	138	ODAT2, PRE, 6-12, REP1, T	<0.10	114	120
88-08-290-12	148	ODAT2, PRE, 6-12, REP2, T	<0.10	114	120
88-08-290-22	158	ODAT2, PRE, 6-12, REP3, T	<0.10	114	120
(9) 88-08-382-31	209	ODAT2, 0-6, REP1, UTC	<0.10	95	92

TABLE I. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-1 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC % RECOVERY SPIKE DUPE	
88-08-382-01	177	ODAT2, 0-6, REP1, T	1.7	114	120
88-08-382-01	177	ODAT2, 0-6, REP1, T DUPE	1.5	75	97
88-08-382-11	187	ODAT2, 0-6, REP2, T	1.8	114	120
88-08-382-11	187	ODAT2, 0-6, REP2, T DUPE	1.6	75	97
(10) 88-08-382-21	197	ODAT2, 0-6, REP3, T	1.7	95	92
88-08-382-02	178	ODAT2, 6-12, REP1, T	<0.10	95	92
88-08-382-12	188	ODAT2, 6-12, REP2, T	<0.10	95	92
88-08-382-22	198	ODAT2, 6-12, REP3, T	<0.10	95	92
88-08-382-03	179	ODAT2, 12-18, REP1, T	<0.10	95	92
88-08-382-13	189	ODAT2, 12-18, REP2, T	<0.10	95	92
88-08-382-23	199	ODAT2, 12-18, REP3, T	<0.10	95	92
(11) 88-09-210-09	219	0.5DAT2, 0-6, REP1, T	1.7	95	92
88-09-210-19	229	0.5DAT2, 0-6, REP2, T	2.4	95	92
88-09-210-29	239	0.5DAT2, 0-6, REP3, T	0.72	95	92
88-09-210-10	220	0.5DAT2, 6-12, REP1, T	<0.10	95	92
88-09-210-20	230	0.5DAT2, 6-12, REP2, T	<0.10	95	92
88-09-210-30	240	0.5DAT2, 6-12, REP3, T	<0.10	95	92
88-09-210-11	221	0.5DAT2, 12-18, REP1, T	<0.10	95	92
88-09-210-21	231	0.5DAT2, 12-18, REP2, T	<0.10	95	92
88-09-210-31	241	0.5DAT2, 12-18, REP3, T	<0.10	95	92
88-11-169-11	290	1DAT2, 0-6, REP1, UTC	<0.10	94	103
88-11-169-12	291	1DAT2, 6-12, REP1, UTC	<0.10	94	103
88-10-280-01	259	1DAT2, 0-6, REP1, T	0.96	105	108
88-10-280-11	269	1DAT2, 0-6, REP2, T	1.6	105	108
88-11-169-01	280	1DAT2, 0-6, REP3, T	1.2	94	103
88-10-280-02	260	1DAT2, 6-12, REP1, T	<0.10	105	108
88-10-280-02	260	1DAT2, 6-12, REP1, T DUPE	<0.10	90	95
88-10-280-12	270	1DAT2, 6-12, REP2, T	0.22	105	108
(12) 88-11-169-02	281	1DAT2, 6-12, REP3, T	0.18	94	103
88-10-280-03	261	1DAT2, 12-18, REP1, T	0.17	105	108
88-10-280-03	261	1DAT2, 12-18, REP1, T DUPE	<0.10	90	95
88-10-280-13	271	1DAT2, 12-18, REP2, T	<0.10	105	108
88-11-169-03	282	1DAT2, 12-18, REP3, T	<0.10	94	103
88-10-280-04	262	1DAT2, 18-24, REP1, T	<0.10	91	91
88-10-280-14	272	1DAT2, 18-24, REP2, T	<0.10	91	91
88-11-169-04	283	1DAT2, 18-24, REP3, T	<0.10	91	91
88-10-280-05	263	1DAT2, 24-30, REP1, T	<0.10	91	91
88-10-280-15	273	1DAT2, 24-30, REP2, T	<0.10	91	91
88-11-169-05	284	1DAT2, 24-30, REP3, T	<0.10	91	91
88-12-274-01	329	2DAT2, 0-6, REP1, UTC	<0.10	83	96
88-12-274-02	330	2DAT2, 6-12, REP1, UTC	<0.10	83	96
88-12-275-01	299	2DAT2, 0-6, REP1, T	<0.10	77	87
(13) 88-12-275-01	299	2DAT2, 0-6, REP1, T DUPE	0.18	89	95
(14) 88-12-275-11	309	2DAT2, 0-6, REP2, T	0.22	77	87
(15) 88-12-275-21	319	2DAT2, 0-6, REP3, T	0.91	77	87
88-12-275-02	300	2DAT2, 6-12, REP1, T	<0.10	77	87
88-12-275-12	310	2DAT2, 6-12, REP2, T	<0.10	77	87
88-12-275-22	320	2DAT2, 6-12, REP3, T	<0.10	77	87
88-12-275-03	301	2DAT2, 12-18, REP1, T	<0.10	77	87

TABLE I. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-1 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

<u>NCL</u> <u>SAMPLE #</u>	<u>CAR</u> <u>#</u>	<u>SAMPLE</u> <u>DESCRIPTION</u>	<u>ALANAP (PPM)</u>	<u>QC % RECOVERY</u> <u>SPIKE DUPE</u>
88-12-275-13	311	2DAT2, 12-18, REP2, T	<0.10	77 87
88-12-275-23	321	2DAT2, 12-18, REP3, T	<0.10	77 87
88-12-284-01	369	4DAT2, 0-6, REP1, UTC	<0.10	83 96
88-12-284-02	370	4DAT2, 6-12, REP1, UTC	<0.10	83 96
88-12-278-01	339	4DAT2, 0-6, REP1, T	2.0	92 92
88-12-278-11	349	4DAT2, 0-6, REP2, T	0.67	92 92
88-12-278-21	359	4DAT2, 0-6, REP3, T	1.5	92 92
88-12-278-02	340	4DAT2, 6-12, REP1, T	0.15	92 92
(16) 88-12-278-02	340	4DAT2, 6-12, REP1, T DUPE	0.23	89 95
88-12-278-12	350	4DAT2, 6-12, REP2, T	<0.10	92 92
88-12-278-22	360	4DAT2, 6-12, REP3, T	<0.10	92 92
(17) 88-12-278-03	341	4DAT2, 12-18, REP1, T	0.22	90 95
88-12-278-03	341	4DAT2, 12-18, REP1, T DUPE	0.19	83 96
88-12-278-13	351	4DAT2, 12-18, REP2, T	<0.10	83 96
88-12-278-23	361	4DAT2, 12-18, REP3, T	<0.10	83 96
88-12-278-04	342	4DAT2, 18-24, REP1, T	<0.10	103 98
88-12-278-14	352	4DAT2, 18-24, REP2, T	<0.10	103 98
88-12-278-24	362	4DAT2, 18-24, REP3, T	<0.10	103 98
88-12-278-05	343	4DAT2, 24-30, REP1, T	<0.10	103 98
88-12-278-15	353	4DAT2, 24-30, REP2, T	<0.10	91 91
88-12-278-25	363	4DAT2, 24-30, REP3, T	<0.10	103 98
88-11-339-31	409	7DAT2, 0-6, REP1, UTC	<0.10	94 103
88-11-339-32	410	7DAT2, 6-12, REP1, UTC	<0.10	94 103
88-11-339-33	411	7DAT2, 12-18, REP1, UTC	<0.10	94 103
(18) 88-11-339-01	379	7DAT2, 0-6, REP1, T	0.13	94 103
88-11-339-11	389	7DAT2, 0-6, REP2, T	0.96	94 103
88-11-339-21	399	7DAT2, 0-6, REP3, T	0.87	94 103
88-11-339-02	380	7DAT2, 6-12, REP1, T	<0.10	94 103
88-11-339-12	390	7DAT2, 6-12, REP2, T	<0.10	94 103
88-11-339-22	400	7DAT2, 6-12, REP3, T	<0.10	94 103
88-11-339-03	381	7DAT2, 12-18, REP1, T	<0.10	94 103
88-11-339-13	391	7DAT2, 12-18, REP2, T	<0.10	94 103
88-11-339-23	401	7DAT2, 12-18, REP3, T	<0.10	94 103
88-12-171-01	449	13DAT2, 0-6, REP1, UTC	<0.10	83 96
88-12-171-02	450	13DAT2, 6-12, REP1, UTC	<0.10	83 96
88-12-171-03	451	13DAT2, 12-18, REP1, UTC	<0.10	106 105
88-12-160-01	419	13DAT2, 0-6, REP1, T	0.59	92 92
88-12-160-11	429	13DAT2, 0-6, REP2, T	0.84	92 92
88-12-160-21	439	13DAT2, 0-6, REP3, T	0.14	92 92
88-12-160-02	420	13DAT2, 6-12, REP1, T	<0.10	92 92
88-12-160-12	430	13DAT2, 6-12, REP2, T	<0.10	92 92
88-12-160-22	440	13DAT2, 6-12, REP3, T	<0.10	75 97
88-12-160-03	421	13DAT2, 12-18, REP1, T	<0.10	106 105
88-12-160-13	431	13DAT2, 12-18, REP2, T	<0.10	106 105
88-12-160-23	441	13DAT2, 12-18, REP3, T	<0.10	106 105

TABLE I. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-1 TREATED WITH ALANAP.
QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

<u>NCL</u> <u>SAMPLE #</u>	<u>CAR</u> <u>#</u>	<u>SAMPLE</u> <u>DESCRIPTION</u>	<u>ALANAP (PPM)</u>	<u>QC % RECOVERY</u> <u>SPIKE DUPE</u>
89-05-299-01	649	179DAT2, 0-6, REP1, UTC	<0.10	85 88
89-05-297-01	619	179DAT2, 0-6, REP1, T	<0.10	85 88
89-05-297-11	629	179DAT2, 0-6, REP2, T	<0.10	85 88
89-05-297-21	639	179DAT2, 0-6, REP3, T	<0.10	85 88
89-05-297-02	620	179DAT2, 6-12, REP1, T	<0.10	85 88
89-05-297-12	630	179DAT2, 6-12, REP2, T	<0.10	85 88
89-05-297-22	640	179DAT2, 6-12, REP3, T	<0.10	85 88
89-05-300-01	589	270DAT2, 0-6, REP1, UTC	<0.10	85 88
89-05-298-01	559	270DAT2, 0-6, REP1, T	<0.10	85 88
89-05-298-11	569	270DAT2, 0-6, REP2, T	<0.10	85 88
89-05-298-21	579	270DAT2, 0-6, REP3, T	<0.10	85 88
89-05-298-02	560	270DAT2, 6-12, REP1, T	<0.10	85 88
89-05-298-12	570	270DAT2, 6-12, REP2, T	<0.10	85 88
89-05-298-22	580	270DAT2, 6-12, REP3, T	<0.10	85 88

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original
document*

*(see pp 121 + 122 of
document for values)*

TABLE I. SOIL DISSIPATION. SOIL FROM SITE T-1 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC % RECOVERY	
				SPIKE	DUPE
88-12-275-13	311	2DAT2, 12-18, REP2, T	<0.10	77	87
88-12-275-23	321	2DAT2, 12-18, REP3, T	<0.10	77	87
88-12-284-01	369	4DAT2, 0-6, REP1, UTC	<0.10	83	96
88-12-284-02	370	4DAT2, 6-12, REP1, UTC	<0.10	83	96
88-12-278-01	339	4DAT2, 0-6, REP1, T	2.0	92	92
88-12-278-11	349	4DAT2, 0-6, REP2, T	0.67	92	92
88-12-278-21	359	4DAT2, 0-6, REP3, T	1.5	92	92
88-12-278-02	340	4DAT2, 6-12, REP1, T	0.15	92	92
88-12-278-02	340	4DAT2, 6-12, REP1, T DUPE	0.23	90	95
88-12-278-12	350	4DAT2, 6-12, REP2, T	<0.10	92	92
88-12-278-22	360	4DAT2, 6-12, REP3, T	<0.10	92	92
88-12-278-03	341	4DAT2, 12-18, REP1, T	0.21	90	95
88-12-278-03	341	4DAT2, 12-18, REP1, T DUPE	0.19	83	96
88-12-278-13	351	4DAT2, 12-18, REP2, T	<0.10	83	96
88-12-278-23	361	4DAT2, 12-18, REP3, T	<0.10	83	96
88-12-278-04	342	4DAT2, 18-24, REP1, T	<0.10	103	98
88-12-278-14	352	4DAT2, 18-24, REP2, T	<0.10	103	98
88-12-278-24	362	4DAT2, 18-24, REP3, T	<0.10	103	98
88-12-278-05	343	4DAT2, 24-30, REP1, T	<0.10	103	98
88-12-278-15	353	4DAT2, 24-30, REP2, T	<0.10	91	91
88-12-278-25	363	4DAT2, 24-30, REP3, T	<0.10	103	98
88-11-339-31	409	7DAT2, 0-6, REP1, UTC	<0.10	94	103
88-11-339-32	410	7DAT2, 6-12, REP1, UTC	<0.10	94	103
88-11-339-33	411	7DAT2, 12-18, REP1, UTC	<0.10	94	103
88-11-339-01	379	7DAT2, 0-6, REP1, T	0.12	94	103
88-11-339-11	389	7DAT2, 0-6, REP2, T	0.96	94	103
88-11-339-21	399	7DAT2, 0-6, REP3, T	0.87	94	103
88-11-339-02	380	7DAT2, 6-12, REP1, T	<0.10	94	103
88-11-339-12	390	7DAT2, 6-12, REP2, T	<0.10	94	103
88-11-339-22	400	7DAT2, 6-12, REP3, T	<0.10	94	103
88-11-339-03	381	7DAT2, 12-18, REP1, T	<0.10	94	103
88-11-339-13	391	7DAT2, 12-18, REP2, T	<0.10	94	103
88-11-339-23	401	7DAT2, 12-18, REP3, T	<0.10	94	103
88-12-171-01	449	13DAT2, 0-6, REP1, UTC	<0.10	83	96
88-12-171-02	450	13DAT2, 6-12, REP1, UTC	<0.10	83	96
88-12-171-03	451	13DAT2, 12-18, REP1, UTC	<0.10	106	105
88-12-160-01	419	13DAT2, 0-6, REP1, T	0.59	92	92
88-12-160-11	429	13DAT2, 0-6, REP2, T	0.84	92	92
88-12-160-21	439	13DAT2, 0-6, REP3, T	0.14	92	92
88-12-160-02	420	13DAT2, 6-12, REP1, T	<0.10	92	92
88-12-160-12	430	13DAT2, 6-12, REP2, T	<0.10	92	92
88-12-160-22	440	13DAT2, 6-12, REP3, T	<0.10	75	97
88-12-160-03	421	13DAT2, 12-18, REP1, T	<0.10	106	105
88-12-160-13	431	13DAT2, 12-18, REP2, T	<0.10	106	105
88-12-160-23	441	13DAT2, 12-18, REP3, T	<0.10	106	105
88-12-172-11	489	30DAT2, 0-6, REP1, UTC	<0.10	83	96
88-12-172-12	490	30DAT2, 6-12, REP1, UTC	<0.10	83	96
88-12-171-11	459	30DAT2, 0-6, REP1, T	0.25	75	97

TABLE I. SOIL DISSIPATION. SOIL FROM SITE T-1 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC & RECOVERY SPIKE DUPE
88-12-171-21	469	30DAT2, 0-6, REP2, T	0.13	75 97
88-12-172-01	479	30DAT2, 0-6, REP3, T	0.15	75 97
88-12-171-12	460	30DAT2, 6-12, REP1, T	<0.10	75 97
88-12-171-22	470	30DAT2, 6-12, REP2, T	<0.10	75 97
88-12-172-02	480	30DAT2, 6-12, REP3, T	<0.10	75 97
88-12-171-13	461	30DAT2, 12-18, REP1, T	<0.10	106 105
88-12-171-23	471	30DAT2, 12-18, REP2, T	<0.10	106 105
88-12-172-03	481	30DAT2, 12-18, REP3, T	<0.10	90 95
88-12-198-21	529	64DAT2, 0-6, REP1, UTC	<0.10	106 105
88-12-172-21	499	64DAT2, 0-6, REP1, T	<0.10	92 92
88-12-198-01	509	64DAT2, 0-6, REP2, T	<0.10	92 92
88-12-198-01	509	64DAT2, 0-6, REP2, T DUPE	0.13	90 95
88-12-198-11	519	64DAT2, 0-6, REP3, T	0.23	92 92
88-12-198-11	519	64DAT2, 0-6, REP3, T DUPE	0.44	90 95
88-12-172-22	500	64DAT2, 6-12, REP1, T	<0.10	92 92
88-12-198-02	510	64DAT2, 6-12, REP2, T	<0.10	92 92
88-12-198-02	510	64DAT2, 6-12, REP2, T DUPE	<0.10	90 95
88-12-198-12	520	64DAT2, 6-12, REP3, T	<0.10	92 92
88-12-198-12	520	64DAT2, 6-12, REP3, T DUPE	<0.10	90 95
88-12-172-23	501	64DAT2, 12-18, REP1, T	<0.10	88 82
88-12-198-03	511	64DAT2, 12-18, REP2, T	<0.10	88 82
88-12-198-13	521	64DAT2, 12-18, REP3, T	<0.10	88 82
88-12-202-31	569	91DAT2, 0-6, REP1, UTC	<0.10	77 87
88-12-202-32	570	91DAT2, 6-12, REP1, UTC	<0.10	77 87
88-12-202-01	539	91DAT2, 0-6, REP1, T	0.47	77 87
88-12-202-11	549	91DAT2, 0-6, REP2, T	0.52	77 87
88-12-202-21	559	91DAT2, 0-6, REP3, T	0.19	77 87
88-12-202-02	540	91DAT2, 6-12, REP1, T	<0.10	77 87
88-12-202-12	550	91DAT2, 6-12, REP2, T	<0.10	77 87
88-12-202-22	560	91DAT2, 6-12, REP3, T	<0.10	77 87
88-12-202-03	541	91DAT2, 12-18, REP1, T	<0.10	87 78
88-12-202-13	551	91DAT2, 12-18, REP2, T	<0.10	87 78
88-12-202-23	561	91DAT2, 12-18, REP3, T	<0.10	87 78
89-02-055-01	579	120DAT2, 0-6, REP1, T	<0.10	87 78
89-02-055-04	589	120DAT2, 0-6, REP2, T	<0.10	87 78
89-02-055-07	599	120DAT2, 0-6, REP3, T	<0.10	87 78
89-02-055-02	580	120DAT2, 6-12, REP1, T	<0.10	88 82
89-02-055-05	590	120DAT2, 6-12, REP2, T	<0.10	88 82
89-02-055-08	600	120DAT2, 6-12, REP3, T	<0.10	88 82
89-05-299-01	649	179DAT2, 0-6, REP1, UTC	<0.10	85 88
89-05-297-01	619	179DAT2, 0-6, REP1, T	<0.10	85 88
89-05-297-11	629	179DAT2, 0-6, REP2, T	<0.10	85 88
89-05-297-21	639	179DAT2, 0-6, REP3, T	<0.10	85 88
89-05-297-02	620	179DAT2, 6-12, REP1, T	<0.10	85 88
89-05-297-12	630	179DAT2, 6-12, REP2, T	<0.10	85 88
89-05-297-22	640	179DAT2, 6-12, REP3, T	<0.10	85 88

TABLE II. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-2 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC % RECOVERY SPIKE DUPE	
(1) 88-12-257-01	1	ODAT1, PRE, 0-6, REP1	<0.10	103	117
88-12-258-01	31	ODAT1, 6-12, REP1, UTC	<0.10	98	110
(2) 88-12-257-11	11	ODAT1, 0-6, REP1, T	2.0	103	117
(3) 88-12-257-17	17	ODAT1, 0-6, REP2, T	1.8	103	117
(4) 88-12-257-23	23	ODAT1, 0-6, REP3, T	1.5	103	117
88-12-257-12	12	ODAT1, 6-12, REP1, T	<0.10	85	88
88-12-257-18	18	ODAT1, 6-12, REP2, T	<0.10	85	88
88-12-257-24	24	ODAT1, 6-12, REP3, T	<0.10	85	88
88-12-257-13	13	ODAT1, 12-18, REP1, T	<0.10	135	107
88-12-257-19	19	ODAT1, 12-18, REP2, T	<0.10	135	107
88-12-257-25	25	ODAT1, 12-18, REP3, T	<0.10	135	107
88-12-287-01	67	7DAT1, 0-6, REP1, UTC	<0.10	76	88
(5) 88-12-276-01	37	7DAT1, 0-6, REP1, T	0.78	98	110
88-12-276-11	47	7DAT1, 0-6, REP2, T	<0.10	98	110
(6) 88-12-276-11	47	7DAT1, 0-6, REP2, T DUPE	<0.10	89	95
88-12-276-21	57	7DAT1, 0-6, REP3, T	0.66	98	110
88-12-276-02	38	7DAT1, 6-12, REP1, T	<0.10	98	110
88-12-276-12	48	7DAT1, 6-12, REP2, T	<0.10	98	110
88-12-276-22	58	7DAT1, 6-12, REP3, T	<0.10	98	110
88-12-276-03	39	7DAT1, 12-18, REP1, T	<0.10	76	88
88-12-276-13	49	7DAT1, 12-18, REP2, T	<0.10	76	88
88-12-276-23	59	7DAT1, 12-18, REP3, T	<0.10	76	88
(7) 88-12-276-04	40	7DAT1, 18-24, REP1, T	<0.10	88	83
(8) 88-12-276-14	50	7DAT1, 18-24, REP2, T	<0.10	88	83
(9) 88-12-276-24	60	7DAT1, 18-24, REP3, T	<0.10	88	83
88-12-296-01	107	14DAT1, 0-6, REP1, UTC	<0.10	70	86
(10) 88-12-295-01	77	14DAT1, 0-6, REP1, T	0.13	76	88
88-12-295-11	87	14DAT1, 0-6, REP2, T	0.87	76	88
88-12-295-21	97	14DAT1, 0-6, REP3, T	<0.10	76	88
(11) 88-12-295-21	97	14DAT1, 0-6, REP3, T DUPE	0.25	90	95
88-12-295-02	78	14DAT1, 6-12, REP1, T	<0.10	70	86
88-12-295-12	88	14DAT1, 6-12, REP2, T	<0.10	70	86
88-12-295-22	98	14DAT1, 6-12, REP3, T	<0.10	70	86
(12) 88-12-295-03	79	14DAT1, 12-18, REP1, T	0.12	70	86
88-12-295-03	79	14DAT1, 12-18, REP1, T DUPE	0.15	90	95
88-12-295-13	89	14DAT1, 12-18, REP2, T	<0.10	70	86
88-12-295-23	99	14DAT1, 12-18, REP3, T	<0.10	70	86
(13) 88-12-295-04	80	14DAT1, 18-24, REP1, T	0.17	91	91
(14) 88-12-295-04	80	14DAT1, 18-24, REP1, T DUPE	0.22	103	93
88-12-295-14	90	14DAT1, 18-24, REP2, T	<0.10	91	91
88-12-295-24	100	14DAT1, 18-24, REP3, T	<0.10	91	91
(15) 88-12-295-05	81	14DAT1, 24-30, REP1, T	0.23	103	93
(16) 88-12-295-15	91	14DAT1, 24-30, REP2, T	<0.10	103	93
(17) 88-12-295-25	101	14DAT1, 24-30, REP3, T	<0.10	103	93
(18) 88-12-295-06	82	14DAT1, 30-36, REP1, T	0.37	103	93
(19) 88-12-295-16	92	14DAT1, 30-36, REP2, T	<0.10	103	93
(20) 88-12-295-26	102	14DAT1, 30-36, REP3, T	0.29	103	93
(21) 88-12-295-07	83	14DAT1, 36-42, REP1, T	<0.10	88	83
(22) 88-12-295-17	93	14DAT1, 36-42, REP2, T	<0.10	88	83
(23) 88-12-295-27	103	14DAT1, 36-42, REP3, T	<0.10	88	83

TABLE II. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-2 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC % RECOVERY SPIKE	DUPE
(24) 88-12-295-08	84	14DAT1, 42-48, REP1, T	<0.10	88	83
(25) 88-12-295-18	94	14DAT1, 42-48, REP2, T	<0.10	88	83
(26) 88-12-295-28	104	14DAT1, 42-48, REP3, T	<0.10	88	83
88-12-256-01	117	ODAT2 PRE, 0-6, REP1, T	0.13	83	96
88-12-256-11	127	ODAT2 PRE, 0-6, REP2, T	0.24	83	96
88-12-256-21	137	ODAT2 PRE, 0-6, REP3, T	<0.10	83	96
88-12-256-02	118	ODAT2 PRE, 6-12, REP1, T	<0.10	83	96
88-12-256-12	128	ODAT2 PRE, 6-12, REP2, T	<0.10	83	96
88-12-256-22	138	ODAT2 PRE, 6-12, REP3, T	<0.10	83	96
(27) 88-12-256-03	119	ODAT2 PRE, 12-18, REP1, T	<0.10	103	117
(28) 88-12-256-13	129	ODAT2 PRE, 12-18, REP2, T	<0.10	103	117
(29) 88-12-256-23	119	ODAT2 PRE, 12-18, REP3, T	<0.10	103	117
88-12-355-10	179	ODAT2, 0-6, REP1, UTC	<0.10	86	82
(30) 88-12-355-01	147	ODAT2, 0-6, REP1, T	1.7	86	82
88-12-355-04	157	ODAT2, 0-6, REP2, T	1.7	86	82
88-12-355-07	167	ODAT2, 0-6, REP3, T	0.86	86	82
88-12-355-02	148	ODAT2, 6-12, REP1, T	<0.10	86	82
88-12-355-05	158	ODAT2, 6-12, REP2, T	<0.10	86	82
88-12-355-08	168	ODAT2, 6-12, REP3, T	<0.10	86	82
88-12-355-03	149	ODAT2, 12-18, REP1, T	<0.10	109	106
88-12-355-06	159	ODAT2, 12-18, REP2, T	<0.10	109	106
88-12-355-09	169	ODAT2, 12-18, REP3, T	<0.10	109	106
88-12-356-01	189	0.5DAT2, 0-6, REP1, T	4.2	109	106
88-12-356-04	199	0.5DAT2, 0-6, REP2, T	1.2	109	106
88-12-356-07	209	0.5DAT2, 0-6, REP3, T	1.5	109	106
88-12-356-02	190	0.5DAT2, 6-12, REP1, T	<0.10	109	106
88-12-356-05	200	0.5DAT2, 6-12, REP2, T	<0.10	96	95
88-12-356-08	210	0.5DAT2, 6-12, REP3, T	<0.10	96	95
88-12-356-03	191	0.5DAT2, 12-18, REP1, T	<0.10	96	95
88-12-356-06	201	0.5DAT2, 12-18, REP2, T	<0.10	96	95
88-12-356-09	211	0.5DAT2, 12-18, REP3, T	<0.10	96	95
(31) 88-12-357-10	249	1DAT2, 0-6, REP1, UTC	<0.10	94	86*
88-12-357-01	219	1DAT2, 0-6, REP1, T	2.9	96	95
88-12-357-04	229	1DAT2, 0-6, REP2, T	2.2	89	113
88-12-357-07	239	1DAT2, 0-6, REP3, T	0.88	89	113
88-12-357-02	220	1DAT2, 6-12, REP1, T	<0.10	96	95
88-12-357-05	230	1DAT2, 6-12, REP2, T	0.25	89	113
(32) 88-12-357-08	240	1DAT2, 6-12, REP3, T	<0.10	89	113*
88-12-357-03	221	1DAT2, 12-18, REP1, T	<0.10	89	113
88-12-357-06	231	1DAT2, 12-18, REP2, T	<0.10	89	113
88-12-357-09	241	1DAT2, 12-18, REP3, T	<0.10	89	113
88-12-357-11	222	1DAT2, 18-24, REP1, T	<0.10	91	91
88-12-357-12	232	1DAT2, 18-24, REP2, T	<0.10	91	91
88-12-357-13	242	1DAT2, 18-24, REP3, T	<0.10	91	91
(33) 88-12-358-10	289	2DAT2, 0-6, REP1, UTC	<0.10	94	86*
(34) 88-12-358-01	259	2DAT2, 0-6, REP1, T	<0.10	94	86*
(35) 88-12-358-01	259	2DAT2, 0-6, REP1, T DUPE	2.8	88	83

TABLE II. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-2 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC % RECOVERY SPIKE DUPE
(36) 88-12-358-01	259	2DAT2, 0-6, REP1, TRIP	1.8	92 92
(37) 88-12-358-04	269	2DAT2, 0-6, REP2, T	1.6	94 86
(38) 88-12-358-04	269	2DAT2, 0-6, REP2, T DUPE	0.68	88 83
(39) 88-12-358-07	279	2DAT2, 0-6, REP3, T	0.69	94 86
(40) 88-12-358-07	279	2DAT2, 0-6, REP3, T DUPE	2.3	88 83
88-12-358-02	260	2DAT2, 6-12, REP1, T	0.12	90 95
88-12-358-05	270	2DAT2, 6-12, REP2, T	0.12	90 95
88-12-358-08	280	2DAT2, 6-12, REP3, T	<0.10	90 95
88-12-358-03	261	2DAT2, 12-18, REP1, T	<0.10	90 95
88-12-358-06	271	2DAT2, 12-18, REP2, T	0.13	90 95
88-12-358-09	281	2DAT2, 12-18, REP3, T	0.13	90 95
88-12-358-11	262	2DAT2, 18-24, REP1, T	<0.10	91 91
88-12-358-12	272	2DAT2, 18-24, REP2, T	<0.10	91 91
88-12-358-13	282	2DAT2, 18-24, REP3, T	0.25	91 91
88-12-358-14	263	2DAT2, 24-30, REP1, T	<0.10	91 91
88-12-358-15	273	2DAT2, 24-30, REP2, T	<0.10	88 82
(41) 88-12-358-16	283	2DAT2, 24-30, REP3, T *	0.20	88 82
(42) 88-12-358-16	283	2DAT2, 24-30, REP3, T DUPE	<0.10	103 93
(43) 88-12-358-17	264	2DAT2, 30-36, REP1, T	<0.10	103 93
(44) 88-12-358-18	274	2DAT2, 30-36, REP2, T *	<0.10	103 93
(45) 88-12-358-20	265	2DAT2, 36-42, REP1, T	<0.10	103 93
(46) 88-12-358-21	275	2DAT2, 36-42, REP2, T	<0.10	103 93
(47) 88-12-358-23	286	2DAT2, 42-48, REP3, T	<0.10	92 92
(48) 88-12-358-24	287	2DAT2, 48-54, REP3, T	<0.10	92 92
(49) 88-12-358-25	288	2DAT2, 54-60, REP3, T	<0.10	92 92
89-01-156-10	329	4DAT2, 0-6, REP1, UTC	<0.10	98 99
89-01-156-01	299	4DAT2, 0-6, REP1, T	1.6	98 99
89-01-156-04	309	4DAT2, 0-6, REP2, T	1.9	98 99
89-01-156-07	319	4DAT2, 0-6, REP3, T	0.68	98 99
89-01-156-02	300	4DAT2, 6-12, REP1, T	<0.10	98 99
89-01-156-05	310	4DAT2, 6-12, REP2, T	0.12	98 99
89-01-156-08	320	4DAT2, 6-12, REP3, T	0.33	98 99
89-01-156-03	302	4DAT2, 12-18, REP1, T	<0.10	98 99
89-01-156-06	311	4DAT2, 12-18, REP2, T	0.13	98 99
89-01-156-09	321	4DAT2, 12-18, REP3, T	<0.10	98 99
89-01-156-13	303	4DAT2, 18-24, REP1, T	<0.10	103 98
89-01-156-14	312	4DAT2, 18-24, REP2, T	<0.10	103 98
89-01-156-15	322	4DAT2, 18-24, REP3, T	<0.10	103 98
89-01-156-16	304	4DAT2, 24-30, REP1, T	<0.10	103 98
89-01-156-17	313	4DAT2, 24-30, REP2, T	<0.10	103 98
89-01-156-18	323	4DAT2, 24-30, REP3, T	<0.10	103 98
89-01-158-01	339	7DAT2, 0-6, REP1, T	2.2	90 95
(50) 89-01-158-04	349	7DAT2, 0-6, REP2, T	2.6	87 78
89-01-158-07	359	7DAT2, 0-6, REP3, T	0.84	90 95
89-01-158-02	340	7DAT2, 6-12, REP1, T	0.11	90 95
89-01-158-05	350	7DAT2, 6-12, REP2, T	<0.10	90 95
(51) 89-01-158-05	350	7DAT2, 6-12, REP2, T DUPE	0.11	87 78

* CAR #284 and #285, 2DAT2, 30-36, REP3 and 2DAT2, 36-42, REP3 were lost due to breakage.

TABLE II. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-2 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC & RECOVERY SPIKE DUPE
89-01-158-08	360	7DAT2, 6-12, REP3, T	<0.10	98 99
89-01-158-03	341	7DAT2, 12-18, REP1, T	<0.10	90 95
89-01-158-06	351	7DAT2, 12-18, REP2, T	<0.10	98 99
89-01-158-09	361	7DAT2, 12-18, REP3, T	<0.10	87 78
(52) 89-01-158-13	342	7DAT2, 18-24, REP1, T	<0.10	88 85
(53) 89-01-158-14	352	7DAT2, 18-24, REP2, T	<0.10	88 85
(54) 89-01-158-15	362	7DAT2, 18-24, REP3, T	<0.10	88 85
89-01-162-01	379	14DAT2, 0-6, REP1, T	<0.10	87 78
89-01-162-01	379	14DAT2, 0-6, REP1, T DUPE	<0.10	87 78
89-01-162-04	389	14DAT2, 0-6, REP2, T	1.1	87 78
89-01-162-07	399	14DAT2, 0-6, REP3, T	0.73	87 78
89-01-162-02	380	14DAT2, 6-12, REP1, T	<0.10	87 78
89-01-162-05	390	14DAT2, 6-12, REP2, T	<0.10	98 99
89-01-162-08	400	14DAT2, 6-12, REP3, T	<0.10	98 99
89-01-162-03	370	14DAT2, 12-18, REP1, T	<0.10	98 99
89-01-162-06	391	14DAT2, 12-18, REP2, T	<0.10	98 99
89-01-162-09	401	14DAT2, 12-18, REP3, T	<0.10	98 99
89-01-163-01	419	30DAT2, 0-6, REP1, T	<0.10	87 78
89-01-163-01	419	30DAT2, 0-6, REP1, T DUPE	<0.10	98 99
89-01-163-04	429	30DAT2, 0-6, REP2, T	<0.10	87 78
89-01-163-04	429	30DAT2, 0-6, REP2, T DUPE	<0.10	98 99
89-01-163-07	439	30DAT2, 0-6, REP3, T	<0.10	87 78
89-01-163-07	439	30DAT2, 0-6, REP3, T DUPE	<0.10	98 99
(55) 89-01-163-02	420	30DAT2, 6-12, REP1, T	<0.10	94 86
(56) 89-01-163-05	430	30DAT2, 6-12, REP2, T	<0.10	94 86
(57) 89-01-163-08	440	30DAT2, 6-12, REP3, T	<0.10	94 86
89-02-059-10	489	63DAT2, 0-6, REP1, UTC	<0.10	87 78
(58) 89-02-059-01	459	63DAT2, 0-6, REP1, T	0.16	87 78
(59) 89-02-059-01	459	63DAT2, 0-6, REP1, T DUPE	0.18	88 83
89-02-059-04	469	63DAT2, 0-6, REP2, T	<0.10	87 78
(60) 89-02-059-04	469	63DAT2, 0-6, REP2, T DUPE	<0.10	88 83
(61) 89-02-059-07	479	63DAT2, 0-6, REP3, T	0.16	87 78
(62) 89-02-059-07	479	63DAT2, 0-6, REP3, T DUPE	0.15	88 83
89-02-059-02	460	63DAT2, 6-12, REP1, T	<0.10	87 78
89-02-059-05	470	63DAT2, 6-12, REP2, T	<0.10	87 78
89-02-059-08	480	63DAT2, 6-12, REP3, T	<0.10	87 78
89-02-059-03	461	63DAT2, 12-18, REP1, T	<0.10	87 78
89-02-059-06	471	63DAT2, 12-18, REP2, T	<0.10	87 78
89-02-059-09	481	63DAT2, 12-18, REP3, T	<0.10	87 78
89-02-235-01	499	91DAT2, 0-6, REP1, T	<0.10	103 98
89-02-235-04	509	91DAT2, 0-6, REP2, T	<0.10	103 98
89-02-235-07	519	91DAT2, 0-6, REP3, T	<0.10	103 98
(63) 89-02-235-02	500	91DAT2, 6-12, REP1, T	<0.10	92 92
(64) 89-02-235-05	510	91DAT2, 6-12, REP2, T	<0.10	92 92
(65) 89-02-235-08	520	91DAT2, 6-12, REP3, T	<0.10	92 92
89-02-236-01	539	120DAT2, 0-6, REP1, T	<0.10	103 98
(66) 89-02-236-04	549	120DAT2, 0-6, REP2, T	0.11	103 98

TABLE II. AMENDED. SOIL DISSIPATION. SOIL FROM SITE T-2 TREATED WITH ALANAP. QC RECOVERIES INCLUDED. RESULTS EXPRESSED AS ALANAP ON DRY WEIGHT BASIS.

NCL SAMPLE #	CAR #	SAMPLE DESCRIPTION	ALANAP (PPM)	QC % RECOVERY SPIKE	DUPE
(67) 89-02-236-04	549	120DAT2, 0-6, REP2, T DUPE	0.12	101	93
89-02-236-07	559	120DAT2, 0-6, REP3, T	<0.10	103	98
(68) 89-02-236-02	540	120DAT2, 6-12, REP1, T	<0.10	103	98
(69) 89-02-236-05	550	120DAT2, 6-12, REP2, T	<0.10	103	98
(70) 89-02-236-08	560	120DAT2, 6-12, REP3, T	<0.10	103	98
(71) 89-02-236-03	541	120DAT2, 12-18, REP1, T	<0.10	88	83
(72) 89-02-236-06	551	120DAT2, 12-18, REP2, T	<0.10	88	83
(73) 89-02-236-09	561	120DAT2, 12-18, REP3, T	<0.10	88	83
(74) 89-02-236-13	542	120DAT2, 18-24, REP1, T	<0.10	88	83
(75) 89-02-236-14	552	120DAT2, 18-24, REP2, T	<0.10	88	83
(76) 89-02-236-15	562	120DAT2, 18-24, REP3, T	<0.10	88	83
(77) 89-11-323-01	579	179DAT2, 0-6, REP1, T	<0.10	88	85
(78) 89-11-323-03	589	179DAT2, 0-6, REP2, T	<0.10	88	85
(79) 89-11-323-05	599	179DAT2, 0-6, REP3, T	<0.10	88	85
(80) 89-11-323-09	619	270DAT2, 0-6, REP1, T	<0.10	88	85
(81) 89-11-323-11	629	270DAT2, 0-6, REP2, T	<0.10	88	85
(82) 89-11-323-13	639	270DAT2, 0-6, REP3, T	<0.10	88	85

TABLE III

Alanap Average Residues (ppm)
Site T-1

Sample	Depth					Total Residues	ln Total	ln 0-6"
	0-6"	6-12"	12-18"	18-24"	24-30"			
0-Day Pre(1)	ND	ND				0		
0-Day Post(1)	2.33	ND	ND			2.33	0.846	0.846
8-Day(1)	0.55	0.11	ND			0.66	-0.416	-0.598
14-Day(1)	0.41	ND	ND			0.41	-0.892	-0.892
0-Day Pre(2)	ND	ND				0		
0-Day Post(2)	1.67	ND	ND			1.67	0.513	0.513
0.5-Day (2)	1.61	ND	ND			1.61	0.476	0.476
1-Day (2)	1.25	0.13	0.03	ND	ND	1.41	0.344	0.223
2-Day (2)	0.41	ND	ND			0.41	-0.892	-0.892
4-Day (2)	1.39	0.06	0.07	ND	ND	1.52	0.419	0.329
7-Day (2)	0.65	ND	ND			0.65	-0.431	-0.431
13-Day (2)	0.52	ND	ND			0.52	-0.654	-0.654
30-Day (2)	0.18	ND	ND			0.18	-1.715	-1.715
64-Day (2)	0.13	ND	ND			0.13	-2.040	-2.040
91-Day (2)	0.39	ND	ND			0.39	-0.942	-0.942
120-Day (2)	0.10	ND	ND			0.1	-2.303	-2.303
179-Day (2)	ND	ND				0		
270-Day (2)	ND	ND				0		

ND = Non-detectable (<0.1 ppm)

Numbers below 0.1 ppm are averages where one or two of the reps had non-detectable Alanap

Samples represented by blank spaces were not analyzed

Numbers in parentheses indicate the first or second application

Second application made 27 days after the first

TABLE IV. AMENDED. STORAGE STABILITY TYPE T-1 SOIL FOR ALANAP DISSIPATION STUDY.

NCL ID	STORAGE PERIOD	VALUE OF STORED SPIKE (PPM) *	VALUE OF FRESH SPIKE (PPM)
	0 MONTH		
	BLANK	----	0.000
	SPIKE	----	0.52
	SPIKE DUPE	----	0.54
	MEAN	----	0.53
	1 MONTH		
88-11-171-19NRDS	BLANK	0.000	0.000
88-11-171-20A	SPIKE	0.50	0.44
88-11-171-21A	SPIKE DUPE	0.50	0.41
	MEAN	0.50	0.425
	2 MONTH		
88-11-171-22NRDS	BLANK	0.000	----
88-11-171-23A	SPIKE	0.43	0.50
88-11-171-24A	SPIKE DUPE	0.47	----
	MEAN	0.45	0.50
	3 MONTH		
88-11-171-25A	BLANK	0.0172	----
88-11-171-26A	SPIKE	0.48	0.46
88-11-171-27A	SPIKE DUPE	0.49	0.47
	MEAN	0.485	0.465
	4 MONTH		
88-11-171-28A	BLANK	0.000	----
88-11-171-29A	SPIKE	0.41	0.40
88-11-171-30A	SPIKE DUPE	0.43	0.37
	MEAN	0.42	0.385
	6 MONTH		
88-11-171-31A	BLANK	0.000	----
88-11-171-32A	SPIKE	0.48	0.42
88-11-171-33A	SPIKE DUPE	0.45	0.44
	MEAN	0.465	0.43
	9 MONTH		
88-11-171-34A	BLANK	0.000	----
88-11-171-35A	SPIKE	0.49	0.40
88-11-171-36A	SPIKE DUPE	0.45	0.42
	MEAN	0.47	0.41
	12 MONTH		
(1) 88-11-171-37A	BLANK	0.000	0.000
88-11-171-38A	SPIKE	0.51	0.51
88-11-171-39A	SPIKE DUPE	0.49	0.48
	MEAN	0.50	0.495

* Values are expressed as Alanap and not corrected for blanks or percent moisture. All spikes were performed on the same batch of T-1 soil. Storage stability started on two dates: 11/23/88 and 04/06/89.

TABLE 7

Alanap Average Residues (ppm)
Site T-2

Sample	Depth										
		0-6"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"	Total	In 0-6" In Total
0-Day Pre(1)	ND									0	
0-Day Post(1)	1.77	ND	ND							1.77	0.571 0.571
7-Day(1)	0.48	ND	ND	ND						0.48	-0.734 -0.734
14-Day(1)	0.38	ND	0.04	0.06	0.08	0.22	ND	ND		0.56	-0.568 -0.580
0-Day Pre(2)	0.12	ND	ND							0.12	-2.120 -2.120
0-Day Post(2)	1.42	ND	ND							1.42	0.351 0.351
0.5-Day (2)	2.30	ND	ND							2.3	0.833 0.833
1-Day (2)	1.39	0.08	ND	ND						2.07	0.638 0.728
2-Day (2)	1.39	0.08	0.09	0.08	0.03	ND	ND	ND		1.67	0.329 0.513
4-Day (2)	1.39	0.15	0.04	ND	ND					1.58	0.329 0.457
7-Day (2)	1.88	0.06	ND	ND						1.94	0.531 0.663
14-Day (2)	0.61	ND	ND							0.61	-0.494 -0.494
30-Day (2)	ND	ND								0	
63-Day (2)	0.11	ND	ND							0.11	-2.207 -2.207
91-Day (2)	ND	ND								0	
120-Day (2)	0.04	ND	ND	ND						0.04	-3.219 -3.219
179-Day (2)	ND									0.00	
270-Day (2)	ND									0.00	

ND = Non-detectable (<0.10 ppm)

Numbers below 0.1 ppm are averages where one or two of the reps had non-detectable Alanap

Samples represented by blank spaces were not analyzed

Numbers in parentheses indicate the first or second application

Second application made 26 days after the first

TABLE VI. AMENDED. STORAGE STABILITY TYPE T-2 SOIL FOR ALANAP DISSIPATION STUDY.

NCL ID	STORAGE PERIOD	VALUE OF STORED SPIKE (PPM) *	VALUE OF FRESH SPIKE (PPM)
	0 MONTH		
	BLANK	----	0.000
	SPIKE	----	0.40
	SPIKE DUPE	----	0.44
	MEAN	----	0.42
	1 MONTH		
88-11-172-19NRDS	BLANK	0.000	0.000
88-11-172-20A	SPIKE	0.47	0.51
88-11-172-21A	SPIKE DUPE	0.49	0.49
	MEAN	0.48	0.50
	2 MONTH		
88-11-172-22NRDS	BLANK	0.025	----
88-11-172-23A	SPIKE	0.43	0.45
88-11-172-24A	SPIKE DUPE	0.45	----
	MEAN	0.44	0.45
	3 MONTH		
88-11-172-25A	BLANK	0.0068	----
88-11-172-26A	SPIKE	0.46	0.51
88-11-172-27A	SPIKE DUPE	0.50	0.49
	MEAN	0.485	0.465
	4 MONTH **		
88-11-172-28	BLANK	0.000	----
88-11-172-29	SPIKE	0.35	0.23
88-11-172-30A	SPIKE DUPE	0.34	0.32
	MEAN	0.345	0.275
	6 MONTH		
88-11-172-31A	BLANK	0.000	----
88-11-172-32A	SPIKE	0.41	0.42
88-11-172-33A	SPIKE DUPE	0.41	0.44
	MEAN	0.41	0.43
	9 MONTH		
88-11-172-34A	BLANK	0.000	----
88-11-172-35A	SPIKE	0.42	0.42
88-11-172-36A	SPIKE DUPE	0.40	0.41
	MEAN	0.41	0.415
	12 MONTH		
(1)88-11-172-37A	BLANK	0.000	0.000
88-11-172-38A	SPIKE	0.49	0.45
88-11-172-39A	SPIKE DUPE	0.44	0.43
	MEAN	0.465	0.44

* Values are expressed as Alanap and not corrected for blanks or percent moisture. All spikes were performed on the same batch of T-2 soil.

** The sensitivity of the HPLC during this chromatographic run decreased over time. The 4 month stored spikes were shot before the fresh spikes and therefore appear to have greater recovery. Both sets of samples appear to have low recoveries due to a comparison to a standard shot earlier. Storage stability started on two dates: 11/23/89 and 04/06/89.

TABLE VIII. AMENDED. QUALITY CONTROL FOR T1. SUMMARY OF SPIKE RECOVERY DATA FOR ALANAP DISSIPATION FIELD SAMPLES. SOIL IS SPIKED WITH 0.5 PPM ALANAP. RECOVERIES ARE:

<u>DATE EXTRACTED</u>	<u>DATE ANALYZED</u>	<u>% SPIKE RECOVERY</u>
11/04/88	11/06/88	111
11/04/88 DUPE	11/06/88	124
11/08/88	11/18/88	115
11/08/88 DUPE	11/18/88	103
11/11/88	11/19/88	109
11/11/88 DUPE	11/19/88	106
11/14/88	11/19/88	114
11/14/88 DUPE	11/19/88	120
11/15/88	12/07/88 - 12/08/88	95
11/15/88 DUPE	12/07/88 - 12/08/88	92
11/23/88	12/11/88 - 12/12/88	105
11/23/88 DUPE	12/11/88 - 12/12/88	108
11/30/88	12/12/88	94
11/30/88 DUPE	12/12/88	103
12/10/88	12/14/88 - 12/15/88	77
12/10/88 DUPE	12/14/88 - 12/15/88	87
12/12/88	12/16/88	92
12/12/88 DUPE	12/16/88	92
12/13/88	12/16/88	75
12/13/88 DUPE	12/16/88	97
12/14/88	12/17/88	83
12/14/88 DUPE	12/17/88	96
(1) 01/10/89	01/11/89	84*
(1) 01/10/89 DUPE	01/11/89	87*
04/24/89	04/26/89	91
04/24/89 DUPE	04/26/89	91
04/26/89	04/28/89	88
04/26/89 DUPE	04/28/89	82
05/25/89	05/30/89	85
05/25/89 DUPE	05/30/89	88
(2) 06/07/89	06/28/89	101*
07/11/89	08/05/89	93
07/11/89 DUPE	08/05/89	93
08/21/89	09/20/89	80
08/21/89 DUPE	09/20/89	83
08/08/89	09/20/89	80
08/08/89 DUPE	09/20/89	74
(3) 09/20/89	09/20/89	89*
(3) 09/20/89 DUPE	09/20/89	95*
(4) 09/22/89	09/22/89	90*
09/22/89 DUPE	09/22/89	95
(5) 11/15/89	11/16/89	101*
(5) 11/15/89 DUPE	11/16/89	96*
(6) 11/29/89	11/29/89	88*
(6) 11/29/89 DUPE	11/29/89	85*

MEAN = 94.2*
STANDARD DEVIATION = 11.7*

TABLE IX. AMENDED. QUALITY CONTROL FOR T2. SUMMARY OF SPIKE RECOVERY DATA FOR ALANAP DISSIPATION FIELD SAMPLES. SOIL IS SPIKED WITH 0.5 PPM ALANAP. RECOVERIES ARE:

<u>DATE EXTRACTED</u>	<u>DATE ANALYZED</u>	<u>% SPIKE RECOVERY</u>
11/23/88	12/11/88 - 12/12/88	80
11/23/88 DUPE	12/11/88 - 12/12/88	89
12/16/88	12/27/88	85
12/16/88 DUPE	12/27/88	88
(1) 12/14/88	12/17/88	103*
(1) 12/14/88 DUPE	12/17/88	117*
12/17/88	12/27/88	135
12/17/88 DUPE	12/27/88	107
12/20/88	12/27/88	98
12/20/88 DUPE	12/27/88	110
12/29/88	01/11/89	76
12/29/88 DUPE	01/11/89	88
01/03/89	01/11/89	70
01/03/89 DUPE	01/11/89	86
01/04/89	01/11/89	86
01/04/89 DUPE	01/11/89	82
(2) 01/10/89	01/11/89	84*
(2) 01/10/89 DUPE	01/11/89	79*
(3) 01/10/89	01/17/89	106*
(3) 01/10/89 DUPE	01/17/89	105*
01/11/89	01/18/89	109
01/11/89 DUPE	01/18/89	106
01/12/89	01/18/89	96
01/12/89 DUPE	01/18/89	95
01/13/89	01/18/89	89
01/13/89 DUPE	01/18/89	113
04/18/89	04/18/89	87
04/18/89 DUPE	04/18/89	78
04/20/89	04/21/89 - 04/22/89	103
04/20/89 DUPE	04/21/89 - 04/22/89	98
(4) 06/07/89	06/28/89	90*
07/11/89	08/05/89	102
07/11/89 DUPE	08/05/89	98
08/21/89	09/20/89	84
08/21/89 DUPE	09/20/89	81
09/23/89	09/23/89	98
09/23/89 DUPE	09/23/89	99
11/06/89	11/10/89	93
11/06/89 DUPE	11/10/89	87
(5) 11/15/89	11/16/89	89*
(5) 11/15/89 DUPE	11/16/89	87*
(6) 11/21/89	11/22/89	101*
(6) 11/21/89 DUPE	11/22/89	93*
(7) 11/26/89	11/27/89	88*
(7) 11/26/89 DUPE	11/27/89	83*
(8) 11/28/89	11/29/89	92*
(8) 11/28/89 DUPE	11/29/89	92*

MEAN = 93.7*
STANDARD DEVIATION = 12.1*

STUDY AUTHOR(S) 'S RESULTS AND/OR CONCLUSIONS

RESULTS AND DISCUSSION

The soil dissipation and mobility of N-1-naphthylphthalimic acid formulated as ALANAP-L were examined on two sandy loam watermelon-planted sites in California. The field portion of the study was conducted by California Agricultural Research, Inc., Fresno, CA. The two complete reports "ALANAP-L Terrestrial Field Dissipation in a Watermelon Field" are included as Appendices I and II. Study CAR-66B-87 is for site T-1 while study CAR-66A-87 is for site T-2. A description of soil characteristics are given in Table I. Temperature and weather data are presented in Appendices III and IV. Soils sampled from control and treated plots were analyzed by North Coast Laboratories, LTD, in Arcata, CA. The soil extraction and HPLC procedures are summarized in Table II and the full report is attached as Appendix V. An amendment to the report is attached as Appendix VI. Data from the amendment were used in this report.

Tables III and V summarize the results from the two sites. In site T-1 (Table III), the first application of ALANAP dissipated before the second application at 27 days (sample 0-Day Pre (2)). Residues were detected after the second application through the 120-day sample. Low level residues were found in the 6-12" layer eight days after the first application and 1 and 4 days after the second application. There were very low residues found in the 12-18" layer on days 1 and 4.

In site T-2 (Table V), the residues from the first application (0.12 ppm) had not quite dissipated to the limit of detection by the time of the second application in 26 days (0-Day Pre (2)). The 1-naphthylamine containing residues were present fourteen days after the second application, then were seen in the 63 and 120 day samples, but not on days 30 and 91.

RESULTS AND DISCUSSION (Continued)

Low level residues were observed in the 6-12" layer at 1, 2, 4 and 7 days post second application. In the 12-18" soil, very low levels of 1-naphthylamine containing residues were found at 14 days after the first application and days 2 and 4 after the second application.

On day 14 of the first application, residues were not detected at 6-12", but were seen in only Rep 1 at 12-18", 18-24" and 24-30" (Table VIII). 1-naphthylamine containing residues were found in the 30-36" depth in Reps 1 and 2. On day 2 of the second application, residues were seen at 18-24" and 24-30" in Rep 3 only (Table IX). The inconsistency of these results between the two sites and the first and second applications in site T-2 strongly suggests that they are caused by contamination and do not indicate leaching of ALANAP and its metabolites.

Half-life

Table VII presents a summary of half-lives calculated in Tables IV and VI (Figures 3-6). Averaging only the two half-lives for the second application gives a half-life of 24 days. If the first applications are included, the average half-life is 15 days. The half-life after the second application includes more data points and therefore is considered more valid; therefore, the half-life from this study is 24 days. The half-life for site T-2, second application was calculated with residue data up to day 14. The non-detectable residues at days 30 and 91 indicate the the significant residues end at day 14.

RESULTS AND DISCUSSION (Continued)

Mobility

Tables III and V are consistent in showing some movement of ALANAP and/or its metabolites beyond the 0-6" layer, particularly after the second application. ALANAP-L is the water soluble sodium salt of the herbicide. It binds well to soil and has a reasonably short half-life.

1-naphthylamine containing residues were detected at depths greater than 18" in site T-2. However, these are not consistent and do not appear to be part of a trend. For instance, in the soil for site T-1, there were no residues found below 18". In site T-2, the deep residues were found at 14 days post application one and 2 days post application two, a significant difference. In the 14 day post first application, residues were not detectable at the 6-12" layer, but were 0.22 ppm at the 30-36" depth. These inconsistencies suggest these residues are the result of contamination, probably during sampling. The similarity of half-life calculated from the 0-6" and "all depths" data is another indication of lack of significant leaching.

Analysis

The analytical method used converts ALANAP to 1-naphthylamine (1-NA) and analyzes that material. The hydrolysis will also convert ALANAP imide, a possible metabolite (Figure 1) to 1-NA. Additionally, 1-NA itself is a potential metabolite. The method then will detect ALANAP plus metabolites. Therefore, this is a worst case study and ALANAP itself may dissipate even faster.

Typical chromatograms are shown in Figure 2. Storage stability data are presented in Tables IV through VII in Appendix V (pages 24-27) and pages 14-17 of Appendix VI.