APPENDIX A

Sampling Protocol for Acrolein Application

APPENDIX B

Site Photographs

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APPENDIX C

Application Data Obtained from the Applicator

Application Data Obtained from the Applicator:

Application Location: Head of Kern Island, Bakersfield, Kern County
Canal Flow Rate: 357 cubic feet per second (cfs)
Canal Vegetation Condition: Code C growth
Canal Water Temperature: 68°F
Linear Flow Rate: above 2.5 miles per hour
Acrolein Dosage: 0.50 gallons per cfs
Total Acrolein Applied: 184 gallons
Acrolein Gallons per Hour: 46
Injection Pressure: 50 psi
Orifice Size: 0.070
P.P.M.: 4.0
Time Started: 8:30 am
Time Stopped: 12:30 am
Elapsed Time: 4 hours
Pounds Used: 1288
Pounds Remaining: 1162
Application Date: June 6, 2006

APPENDIX D

Acrolein Application Study Results from Lab

Kern Canal Acrolein Application Study

Barcode	LIMS Sample ID	Sampling Location	Sampling Date	Receipt Date	Analysis Date	Acrolein Concent. (ppb)	Detection Limit (ppb)	Dilution Factor
TX007431	200288074	TRIP BLANK	6/21/2006	6/26/2006	7/10/2006	<0.3	0.3	1.0
TX007395	200288020	TRIP SPIKE	6/21/2006	6/26/2006	7/13/2006	10	0.9	3.0
TX007398	200288028	1W-BKGD	6/21/2006	6/26/2006	7/10/2006	1.1	0.7	2.3
TX007404	200288040	1E-BKGD	6/21/2006	6/26/2006	6/28/2006	<1.5	1.5	5.1
TX007394	200288015	1E-FS	6/21/2006	6/26/2006	7/13/2006	11	0.9	3.0
TX007408	200288044	1E	6/22/2006	6/26/2006	7/3/2006	15	2.3	7.7
TX007402	200288038	1EC	6/22/2006	6/26/2006	7/3/2006	10	2.5	8.2
TX007426	200288067	1EP	6/22/2006	6/26/2006	7/13/2006	3.2	0.8	2.6
TX007418	200288054	1W	6/22/2006	6/26/2006	7/10/2006	11	2.3	7.8
TX007406	200288042	1WC	6/22/2006	6/26/2006	7/3/2006	10	2.1	6.9
TX007425	200288065	1WP	6/22/2006	6/26/2006	7/11/2006	5.3	0.8	2.6
TX007427	200288071	2EL	6/22/2006	6/26/2006	7/13/2006	9.5	2	6.8
TX007400	200288033	2ELP	6/22/2006	6/26/2006	7/11/2006	2.2	0.8	2.6
TX007396	200288022	2WL	6/22/2006	6/26/2006	7/10/2006	10	0.7	2.4
TX007397	200288026	2WLP	6/22/2006	6/26/2006	7/11/2006	1.4	0.7	2.4
TX007419	200288055	3E	6/22/2006	6/26/2006	7/3/2006	14	2	6.6
TX007403	200288039	3EP	6/22/2006	6/26/2006	6/28/2006	2.7	0.8	2.5
TX007420	200288056	3W	6/22/2006	6/26/2006	7/3/2006	8.4	2.2	7.2
TX007424	200288063	3WP	6/22/2006	6/26/2006	7/11/2006	2.7	0.8	2.6
TX007401	200288035	4E	6/22/2006	6/26/2006	7/13/2006	20	1.6	5.2
TX007417	200288053	4EP	6/22/2006	6/26/2006	7/10/2006	2.2	0.7	2.4
TX007412	200288048	4W	6/22/2006	6/26/2006	7/13/2006	17	1.4	4.8
TX007410	200288046	4WP	6/22/2006	6/26/2006	7/10/2006	1.9	0.8	2.5
TX007416	200288052	5E	6/22/2006	6/26/2006	7/3/2006	13	2.1	6.9
TX007409	200288045	5EP	6/22/2006	6/26/2006	7/10/2006	3.2	0.8	2.5
TX007422	200288120	5W	6/22/2006	6/26/2006	7/13/2006	16	1.5	4.9
TX007423	200288060	5WP	6/22/2006	6/26/2006	7/11/2006	2.6	0.8	2.5
TX007415	200288051	6E	6/22/2006	6/26/2006	7/13/2006	18	1.6	5.3
TX007407	200288043	6EP	6/22/2006	6/26/2006	7/3/2006	1.4	0.8	2.5
TX007421	200288057	6W	6/22/2006	6/26/2006	7/13/2006	13	1.6	5.2
TX007411	200288047	6WP	6/22/2006	6/26/2006	7/10/2003	1.2	0.7	2.4
TX007405	200288041	7E	6/22/2006	6/26/2006	7/3/2006	11	2.1	7.1
TX007399	200288031	7EP	6/22/2006	6/26/2006	7/10/2003	1.7	0.8	2.5
TX007413	200288049	7W	6/22/2006	6/26/2006	7/13/2006	24	2.1	6.9
TX007414	200288050	7WP	6/22/2006	6/26/2006	7/10/2003	2.4	0.7	2.4

Kern Acrolein Application

Spike Results:

Canisters TX007394 & TX007395 were spiked with acrolein gas.

TX007394 (1E-FS): 5.2 psi of acrolein gas from cylinder AAL069919 was transferred to the evacuated canister (-30"Hg). The concentration of this acrolein spike was 54.7 ppb.

TX007395 (TRIP SPIKE): 5.0 psi of acrolein gas from cylinder AAL069919 was transferred to the evacuated canister (-30"Hg). The concentration of this acrolein spike was 54.7 ppb.

Both canisters were brought to the field and back to the lab where they were pressurized as follows:

TX007394 was received in the lab at -9.5"Hg, pressurized to 11.8 psig with ultra pure N2, equilibrated, and analyzed by method MLD066. Theoretical spiked concentration level was estimated as 10.69 ppb. Analysis value was 10.67 ppb. The percent recovery was 99.8.

TX007395 was received in the lab at -19.5"Hg, and was pressurized the same way as TX007394. Theoretical spiked concentration level was 10.28 ppb. The analysis value was 10.39 ppb. The percent recovery was 101.

Calculations:

TX007394

C1 x V1 = C2 x V2

C1 = 54.7 ppb = concentration of acrolein spike
1 atm = 14.7 psia
psig + 14.7 = psia
6 L = canister volume at 1 atm
11.8 psig + 14.7 = 26.5 psia
26.5 psia/14.7 psia/atm = 1.8 atm

V2 = 6 L/atm (1.8 atm)
= 10.8 L

volume = 11.8 psig/(10.8L - 6.0L)
= 2.46 psig/L

V1 = 5.2 psig / 2.46 psig/L
= 2.11L

C2=(C1 x V1)/V2
= (54.7 ppb x 2.11 L) / 10.8 L
= 10.69 ppb

Per cent recovery = 10.67 ppb/10.69 ppb *100
= 99.8

TX007395

C1 x V1 = C2 x V2

C1 = 54.7 ppb = concentration of acrolein spike
1 atm = 14.7 psia
psig + 14.7 = psia
6 L = canister volume at 1 atm
11.8 psig + 14.7 = 26.5 psia
26.5 psia/14.7 psia/atm = 1.8 atm

V2 = 6 L/atm (1.8 atm)
= 10.8 L

volume = 11.8 psig/(10.8L - 6.0L)
= 2.46 psig/L

V1 = 5.0 psig / 2.46 psig/L
= 2.03 L

C2=(C1 x V1)/V2
= (54.7 ppb x 2.03 L) / 10.8 L
= 10.28 ppb

Per cent recovery = 10.39 ppb/10.28 ppb *100
= 101

Kern Acrolein Application
Quality Control Results

Laboratory System Blanks	
Analysis	**Acrolein**
Date	**ppb**
6/28/2006	<0.3
7/3/2006	<0.3
7/10/2006	<0.3
7/11/2006	<0.3
7/13/2006	<0.3

Control Samples (Control Limits 2.85 / 1.73)	
Analysis	**Acrolein**
Date	**ppb**
6/28/2006	2.33
7/3/2006	2.14
7/10/2006	2.08
7/11/2006	2.35
7/13/2006	2.39

Laboratory Duplicate Analyses (%D Criteria Limit = 24.4%)				
Site ID	**Analysis Date**	**Acrolein Primary**	**Acrolein Duplicate**	**%D**
		Result (ppb)	**Result (ppb)**	
1EC	7/3/2006	10.3	10.4	1.1
6EP	7/3/2006	1.42	1.24	13.2
4EP	7/10/2006	2.18	1.93	12.4
2WLP	7/11/2006	1.45	1.58	9.0
1EP	7/13/2006	3.22	3.07	4.8

Collocated Sample Results			
	Acrolein Concentration (ppb)		
Site ID	**Primary Sampler**	**Collocated Sampler**	**Relative Percent Difference**
1E	15	10	40
1W	11	10	9.5