

Daily Report

California Irrigation Management Information System

Department of Water Resources

Office of Water Use Efficiency

Rendered in ENGLISH units

September 29, 2010 - October 29, 2010

Printed on January 10, 2011

Monterey Bay - San Benito - 126

Date	CIMIS ETo (in)	Precip (in)	Sol Rad (Ly/day)	Avg Vap (mBars)	Max Air Temp (°F)	Min Air Temp (°F)	Avg Air Temp (°F)	Max Rel Hum (%)	Min Rel Hum (%)	Avg Rel Hum (%)	Dew Pt (°F)	Avg wSpd (MPH)	Wnd Run (miles)	Avg Soil Temp (°F)
09/29/10	0.19	0.00	449	12.1	88.0	61.6	72.1	64	32	45	49.5	3.6	86.5	69.0
09/30/10	0.15	0.00	424	13.3	86.1	53.0	65.6	95	35	62	52.1	2.9	68.8	68.4
Tot/Avgs	0.34	0.00	437	12.7	87.1	57.3	68.9	80	34	54	50.8	3.3	77.7	68.7

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10/01/10	0.14	0.00	382	15.4	84.9	51.8	65.2	98	41	73	56.1	2.7	64.7	67.8
10/02/10	0.13	0.00	358	15.2	82.1	55.3	65.9	89	43	70	55.7	3.4	81.3	68.1
10/03/10	0.12	0.00	398	14.0	70.9	53.6	58.8	96	64	83	53.5	4.5	108.5	67.4
10/04/10	0.09	0.00	296	12.6	64.0	53.5	57.7	90	65	77	50.7	4.6	111.5	66.1
10/05/10	0.04	0.00	169	12.7	65.9	50.3	56.3	94	60	82	51.0	2.0	48.4	65.3
10/06/10	0.07	0.00	246	12.6	68.7	47.0	57.2	98	53	79	50.8	2.7	65.1	64.5
10/07/10	0.12	0.00	374	12.4	72.1	47.8	58.3	96	53	75	50.3	3.0	71.4	64.3
10/08/10	0.13	0.00	405	11.8	78.8	45.3	59.9	92	39	67	48.9	2.6	61.8	63.9
10/09/10	0.14	0.00	402	11.9	82.3	47.4	64.1	88	33	58	49.2	2.7	64.1	64.1
10/10/10	0.14	0.00	400	13.5	85.9	51.9	66.9	79	39	60	52.6	2.8	66.4	64.8
10/11/10	0.15	0.00	397	13.7	89.7	52.7	69.7	86	32	55	52.9	2.4	58.6	65.3
10/12/10	0.15	0.00	399	12.0	93.6	53.2	69.0	70	24	50	49.4	2.4	59.0	65.6
10/13/10	0.15	0.00	254	13.8	96.9	60.0	73.8	69	24	48	53.2	3.0	71.9	66.4
10/14/10	0.14	0.00	396	12.6	95.5	54.2	65.5	86	28	58	50.6	2.8	66.6	65.8
10/15/10	0.12	0.00	393	13.2	78.0	50.2	59.4	97	49	76	51.9	2.8	67.5	65.1
10/16/10	0.08	0.00	287	13.3	73.2	49.5	56.6	100	53	85	52.1	2.6	62.7	64.5
10/17/10	0.02	0.14	100	13.2	60.3	51.5	54.8	97	76	90	52.0	2.3	55.2	63.6
10/18/10	0.09	0.00	326	14.2	71.5	51.8	58.8	96	62	84	53.9	2.8	68.5	63.2
10/19/10	0.11	0.00	348	13.2	78.0	46.8	57.3	99	45	82	51.9	2.6	63.4	63.0
10/20/10	0.09	0.00	314	13.5	76.3	48.5	56.2	100	56	88	52.5	3.1	75.0	62.8
10/21/10	0.06	0.00	224	12.6	67.2	50.3	57.8	88	57	77	50.7	3.0	73.4	62.8
10/22/10	0.06	0.14	220	14.4	67.9	50.1	57.2	98	62	90	54.3	2.6	61.6	62.5
10/23/10	0.05	0.28	194	13.7	67.8	51.9	56.9	99	54	87	53.0	2.2	52.8	62.4
10/24/10	0.01	0.08	70	17.4	69.4	57.0	62.9	98	78	89	59.6	3.9	93.6	62.6
10/25/10	0.09	0.00	313	12.2	66.0	47.4	57.3	98	42	76	49.8	3.4	82.5	62.5
10/26/10	0.10	0.00	344	10.2	67.0	41.6	53.3	96	46	73	45.0	3.2	77.4	61.1

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10/27/10	0.10	0.00	302	7.8	72.4	36.4	52.2	94	32	59	38.1	2.7	64.7	59.7
10/28/10	0.11	0.00	311	8.6	80.0	41.6	56.9	80	23	54	40.7	2.7	64.3	59.0
10/29/10	0.06	0.07	208	10.5	69.0	45.6	55.8	85	42	69	45.9	2.9	70.1	59.1
Tot/Avg	2.86	0.71	304	12.8	75.7	49.8	60.1	92	47	73	50.9	2.9	70.1	63.9

Flag Legend

A - Historical Average	I - ignore	R - Far out of Normal Range
C or N - Not Collected	M - Missing Data	S - Not in Service
H - Hourly Missing or Flagged	Q - Related Sensor Missing	Y - Moderately Out of Range

Conversion Table

$W/sq.m = Ly/day / 2.065$	$inches * 25.4 = mm$
$C = 5/9 * (F - 32)$	$m/s = mph * 0.447$
$kPa = mBars * 0.1$	

QUARTERLY PERIOD: 10/1/2010 TO 12/31/10

		TOTAL RW ADDED		TOTAL RW REQ'D		SUMMER 2010 RW PILOT PROJECT AGRONOMIC IRRIGATION RATE CALCULATIONS																				
		TOMATOES										LETTUCE					BEANS					SQUASH				
9/29/2010 >	35.7473	0.0000	1.8204	2.1361	0.0342	0.20	11	1.08	0.85	0.25	0.0174	7	0.85	0.75	0.23	0.0104	6	1.15	0.75	0.31	0.0035	6	0.95	0.75	0.25	0.0029
9/30/2010 >	35.7473	0.0000	1.8204	2.1675	0.0324	0.19	11	1.07	0.85	0.24	0.0164	7	0.86	0.75	0.22	0.0100	6	1.15	0.75	0.29	0.0033	6	0.95	0.75	0.24	0.0027
10/1/2010 >	35.7473	0.0000	1.8204	2.1931	0.0256	0.15	12	1.06	0.85	0.19	0.0128	8	0.87	0.75	0.17	0.0080	6	1.15	0.75	0.23	0.0026	6	0.95	0.75	0.19	0.0022
10/2/2010 >	35.7473	0.0000	1.8204	2.2170	0.0239	0.14	12	1.05	0.85	0.17	0.0119	8	0.88	0.75	0.16	0.0075	6	1.15	0.75	0.21	0.0025	6	0.95	0.75	0.18	0.0020
10/3/2010 >	35.7473	0.0000	1.8204	2.2392	0.0222	0.13	12	1.04	0.85	0.16	0.0109	8	0.9	0.75	0.16	0.0071	6	1.15	0.75	0.20	0.0023	6	0.95	0.75	0.16	0.0019
10/4/2010 >	35.7653	0.0180	1.8384	2.2696	0.0205	0.12	12	1.03	0.85	0.15	0.0100	8	0.91	0.75	0.15	0.0067	6	1.15	0.75	0.18	0.0021	6	0.95	0.75	0.15	0.0017
10/5/2010 >	35.7653	0.0000	1.8384	2.2750	0.0153	0.09	12	1.02	0.85	0.11	0.0074	8	0.92	0.75	0.11	0.0051	6	1.15	0.75	0.14	0.0016	6	0.95	0.75	0.11	0.0013
10/6/2010 >	35.7653	0.0000	1.8384	2.2818	0.0068	0.04	12	1.01	0.85	0.05	0.0033	8	0.94	0.75	0.05	0.0023	7	1.15	0.75	0.06	0.0007	7	0.95	0.75	0.05	0.0006
10/7/2010 >	35.7653	0.0000	1.8384	2.2937	0.0119	0.07	12	1.00	0.85	0.08	0.0056	8	0.95	0.75	0.09	0.0041	7	1.15	0.75	0.11	0.0012	7	0.95	0.75	0.09	0.0010
10/8/2010 >	35.7653	0.0000	1.8384	2.3142	0.0205	0.12	13	0.99	0.85	0.14	0.0096	9	0.97	0.75	0.16	0.0071	7	1.13	0.75	0.18	0.0021	7	0.95	0.75	0.15	0.0017
10/9/2010 >	35.7653	0.0000	1.8384	2.3363	0.0221	0.13	13	0.97	0.85	0.15	0.0102	9	0.99	0.75	0.17	0.0079	7	1.11	0.75	0.19	0.0022	7	0.93	0.75	0.16	0.0018
10/10/2010 >	35.7653	0.0000	1.8384	2.3698	0.0235	0.14	13	0.95	0.85	0.16	0.0107	9	1.00	0.75	0.19	0.0085	7	1.08	0.75	0.20	0.0023	7	0.91	0.75	0.17	0.0019
10/11/2010 >	35.7653	0.0000	1.8384	2.3830	0.0232	0.14	13	0.93	0.85	0.15	0.0105	9	1.00	0.75	0.19	0.0085	7	1.06	0.75	0.20	0.0023	7	0.88	0.75	0.16	0.0019
10/12/2010 >	35.7653	0.0000	1.8384	2.4075	0.0245	0.15	13	0.91	0.85	0.16	0.0110	9	1.00	0.75	0.20	0.0092	7	1.04	0.75	0.21	0.0024	7	0.86	0.75	0.17	0.0020
10/13/2010 >	35.8628	0.0975	1.9359	2.4318	0.0243	0.15	13	0.90	0.85	0.16	0.0109	9	1.00	0.75	0.20	0.0092	8	1.02	0.75	0.20	0.0023	8	0.84	0.75	0.17	0.0019
10/14/2010 >	35.8628	0.0000	1.9359	2.4529	0.0211	0.15	13	0.65	0.85	0.11	0.0079	9	1.00	0.75	0.20	0.0092	8	0.99	0.75	0.20	0.0023	8	0.82	0.75	0.16	0.0019
10/15/2010 >	35.8666	0.0038	1.9397	2.4726	0.0197	0.14	14	0.65	0.85	0.11	0.0073	10	1.00	0.75	0.19	0.0085	8	0.97	0.75	0.18	0.0021	8	0.80	0.75	0.15	0.0017
10/16/2010 >	35.8666	0.0000	1.9397	2.4893	0.0168	0.12	14	0.65	0.85	0.09	0.0063	10	1.00	0.75	0.16	0.0073	8	0.95	0.75	0.15	0.0017	8	0.78	0.75	0.12	0.0014
10/17/2010 >	35.8666	0.0000	1.9397	2.5005	0.0111	0.08	14	0.65	0.85	0.06	0.0042	10	1.00	0.75	0.11	0.0049	8	0.93	0.75	0.10	0.0011	8	0.77	0.75	0.08	0.0009
10/18/2010 >	35.8666	0.0000	1.9397	2.5033	0.0028	0.02	14	0.65	0.85	0.02	0.0010	10	1.00	0.75	0.03	0.0012	8	0.90	0.75	0.02	0.0003	8	0.75	0.75	0.02	0.0002
10/19/2010 >	35.8666	0.0000	1.9397	2.5157	0.0124	0.09	14	0.65	0.85	0.07	0.0047	10	1.00	0.75	0.12	0.0055	8	0.88	0.75	0.11	0.0012	8	0.75	0.75	0.09	0.0010
10/20/2010 >	35.9683	0.1017	2.0414	2.5309	0.0152	0.11	14	0.65	0.85	0.08	0.0058	10	1.00	0.75	0.15	0.0067	9	0.86	0.75	0.13	0.0014	9	0.75	0.75	0.11	0.0013
10/21/2010 >	35.9683	0.0000	2.0414	2.5433	0.0124	0.09	14	0.65	0.85	0.07	0.0047	10	1.00	0.75	0.12	0.0055	9	0.84	0.75	0.10	0.0012	9	0.75	0.75	0.09	0.0010
10/22/2010 >	35.9683	0.0000	2.0414	2.5515	0.0082	0.06	15	0.65	0.85	0.05	0.0031	11	1.00	0.75	0.08	0.0037	9	0.82	0.75	0.07	0.0007	9	0.75	0.75	0.06	0.0007
10/23/2010 >	35.9683	0.0000	2.0414	2.5597	0.0082	0.06	15	0.65	0.85	0.05	0.0031	11	1.00	0.75	0.08	0.0037	9	0.79	0.75	0.06	0.0007	9	0.75	0.75	0.06	0.0007
10/24/2010 >	35.9683	0.0000	2.0414	2.5666	0.0068	0.05	15	0.65	0.85	0.04	0.0026	11	1.00	0.75	0.07	0.0031	9	0.77	0.75	0.05	0.0006	9	0.75	0.75	0.05	0.0006
10/25/2010 >	35.9683	0.0000	2.0414	2.5679	0.0014	0.01	15	0.65	0.85	0.01	0.0005	11	1.00	0.75	0.01	0.0006	9	0.74	0.75	0.01	0.0001	9	0.75	0.75	0.01	0.0001
10/26/2010 >	35.9683	0.0000	2.0414	2.5801	0.0122	0.09	15	0.65	0.85	0.07	0.0047	11	1.00	0.75	0.12	0.0055	9	0.72	0.75	0.09	0.0010	9	0.75	0.75	0.09	0.0010
10/27/2010 >	35.9758	0.0075	2.0489	2.5937	0.0135	0.10	15	0.65	0.85	0.08	0.0052	11	1.00	0.75	0.13	0.0061	10	0.69	0.75	0.09	0.0011	10	0.75	0.75	0.10	0.0011
10/28/2010 >	35.9758	0.0000	2.0489	2.6072	0.0135	0.10	15	0.65	0.85	0.08	0.0052	11	1.00	0.75	0.13	0.0061	10	0.67	0.75	0.09	0.0010	10	0.75	0.75	0.10	0.0011
10/29/2010 >	35.9758	0.0000	2.0489	2.6220	0.0148	0.11	16	0.65	0.85	0.08	0.0058	12	1.00	0.75	0.15	0.0067	10	0.64	0.75	0.09	0.0011	10	0.75	0.75	0.11	0.0013

0.06 0.65 1.00 0.62 0.75

$\Delta = 0.229 \text{ ACRE-FI}$

**SUMMER 2010
RW PILOT PROJECT
AGRONOMIC IRRIGATION RATE CALCULATIONS**

QUARTER PERIOD: 7/1/2010 TO 9/30/2010

DATE	R.W. METER READING (ACRE-FT)	DAILY R.W. ADDED (ACRE-FT)	TOTAL R.W. ADDED (ACRE-FT)	TOTAL R.W. REQ'D (ACRE-FT)	DAILY R.W. REQ'D (ACRE-FT)	CIMIS ET _c (IN)	DRIP-IRRIGATED TOMATOES (0.823ACRES)				SPRAY-IRRIGATED LETTUCE (0.549ACRES)				SPRAY-IRRIGATED BEANS (0.137ACRES)				SPRAY-IRRIGATED SQUASH (0.137ACRES)					
							WEEK	Kc (IN)	IRRIG EFF (%)	IRRIG REQ'D (IN)	DAILY IRRIG REQ'D (ACRE-FT)	WEEK	Kc (IN)	IRRIG EFF (%)	IRRIG REQ'D (IN)	DAILY IRRIG REQ'D (ACRE-FT)	WEEK	Kc (IN)	IRRIG EFF (%)	IRRIG REQ'D (IN)	DAILY IRRIG REQ'D (ACRE-FT)	WEEK	Kc (IN)	IRRIG EFF (%)
				0.2284	0.2284		BASE* 2.50	PLANTING																
7/14/2010 >	33.9269			0.2445	0.0161	0.25	1	0.80	0.85	0.24	0.0161													
7/15/2010 >	34.1324	0.2055	0.2055	0.2617	0.0172	0.26	1	0.82	0.85	0.25	0.0172													
7/16/2010 >	34.1952	0.0628	0.2683	0.2780	0.0163	0.24	1	0.84	0.85	0.24	0.0163													
7/17/2010 >	34.1952	0.0000	0.2683	0.2946	0.0167	0.24	1	0.86	0.85	0.24	0.0167													
7/18/2010 >	34.1952	0.0000	0.2683	0.3124	0.0178	0.25	1	0.88	0.85	0.26	0.0178													
7/19/2010 >	34.2897	0.0945	0.3628	0.3291	0.0167	0.23	1	0.90	0.85	0.24	0.0167													
7/20/2010 >	34.3480	0.0583	0.4211	0.3420	0.0129	0.17	1	0.94	0.85	0.19	0.0129													
7/21/2010 >	34.3480	0.0000	0.4211	0.3552	0.0129	0.17	2	0.96	0.85	0.19	0.0132													
7/22/2010 >	34.4301	0.0821	0.5032	0.3702	0.0132	0.17	2	0.98	0.85	0.22	0.0150													
7/23/2010 >	34.4301	0.0000	0.5032	0.3871	0.0150	0.19	2	1.00	0.85	0.25	0.0169													
7/24/2010 >	34.4301	0.0000	0.5032	0.4036	0.0169	0.21	2	1.02	0.85	0.24	0.0165													
7/25/2010 >	34.4301	0.0000	0.5032	0.4188	0.0165	0.20	2	1.05	0.85	0.22	0.0152													
7/26/2010 >	34.5115	0.0814	0.5846	0.4293	0.0152	0.18	2	1.08	0.85	0.16	0.0105													
7/27/2010 >	34.5115	0.0000	0.5846	0.4453	0.0105	0.12	2	1.10	0.85	0.23	0.0160													
7/28/2010 >	34.5115	0.0000	0.5846	0.4624	0.0160	0.18	2	1.12	0.85	0.25	0.0172													
7/29/2010 >	34.6115	0.0000	0.5846	0.4818	0.0172	0.19	2	1.14	0.85	0.28	0.0193													
7/30/2010 >	34.6115	0.0000	0.5846	0.4818	0.0193	0.21	3	1.16	0.85	0.28	0.0197													
7/31/2010 >	34.6115	0.0000	0.5846	0.5014	0.0197	0.21	3	1.18	0.85	0.28	0.0181													
8/1/2010 >	34.6262	0.0147	0.5993	0.5195	0.0181	0.19	3	1.18	0.85	0.28	0.0181													
8/2/2010 >	34.6262	0.0000	0.5993	0.5390	0.0195	0.20	3	1.21	0.85	0.28	0.0195													
8/3/2010 >	34.6262	0.0000	0.5993	0.5609	0.0218	0.22	3	1.23	0.85	0.32	0.0218													
8/4/2010 >	34.6262	0.0000	0.5993	0.5820	0.0212	0.21	3	1.25	0.85	0.31	0.0212													
8/5/2010 >	34.6262	0.0000	0.5993	0.6002	0.0212	0.21	3	1.25	0.85	0.26	0.0182													
8/6/2010 >	34.6310	0.0048	0.6041	0.6163	0.0182	0.18	4	1.25	0.85	0.24	0.0161													
8/7/2010 >	34.6310	0.0000	0.6041	0.6355	0.0161	0.16	4	1.25	0.85	0.28	0.0192													
8/8/2010 >	34.6310	0.0000	0.6041	0.6536	0.0192	0.19	4	1.25	0.85	0.26	0.0182													
8/8/2010 >	34.6310	0.0190	0.6231	0.6726	0.0182	0.18	4	1.25	0.85	0.28	0.0192													
8/9/2010 >	34.6500	0.0000	0.6231	0.6910	0.0192	0.19	4	1.25	0.85	0.28	0.0192													
8/10/2010 >	34.6500	0.0000	0.6231	0.7071	0.0182	0.18	4	1.25	0.85	0.28	0.0182													
8/11/2010 >	34.6500	0.0000	0.6231	0.7274	0.0182	0.18	4	1.25	0.85	0.24	0.0161													
8/12/2010 >	34.6500	0.0000	0.6231	0.7474	0.0161	0.16	4	1.25	0.85	0.26	0.0182													
8/12/2010 >	34.6500	0.1170	0.7401	0.8716	0.0242	0.18	6	1.25	0.85	0.26	0.0182													
8/13/2010 >	34.6670	0.0924	0.8325	0.8946	0.0228	0.17	6	1.25	0.85	0.25	0.0171													
8/14/2010 >	34.7594	0.0000	0.8325	0.9173	0.0228	0.17	6	1.25	0.85	0.25	0.0171													
8/15/2010 >	34.7594	0.0000	0.8325	0.9428	0.0228	0.17	6	1.25	0.85	0.25	0.0171													
8/16/2010 >	34.7594	0.0000	0.8325	0.9683	0.0265	0.19	5	1.25	0.85	0.28	0.0192													
8/16/2010 >	34.7594	0.0000	0.8325	0.9938	0.0265	0.19	5	1.25	0.85	0.28	0.0192													
8/17/2010 >	34.7594	0.0000	0.8325	1.0193	0.0282	0.21	5	1.25	0.85	0.31	0.0212													
8/17/2010 >	34.7594	0.0724	0.9049	1.0448	0.0242	0.18	6	1.25	0.85	0.26	0.0182													
8/18/2010 >	34.8318	0.0000	0.9049	1.0703	0.0242	0.18	6	1.25	0.85	0.26	0.0182													
8/18/2010 >	34.8318	0.0000	0.9049	1.0958	0.0269	0.20	6	1.25	0.85	0.29	0.0202													

KEY OF ASSUMPTIONS

- DRIP IRRIGATION EFFICIENCY @ 85% (per FAO)
- SPRAY IRRIGATION EFFICIENCY @ 75% (per FAO)
- K_c VS TIME FOR TOMATOES, LETTUCE, SQUASH, BEANS BASED ON UN-FAO VALUES (SEE ATTACHED CHARTS & FAO LITERATURE)
- ET_c BASED ON CDWR-CIMIS VALUES (SEE ATTACHED)
- IRRIGATION REQUIRED = ET_c * K_c / (%EFF)
- BASE* IRRIGATION IS THAT IRRIGATION NECESSARY TO ADD ENOUGH RESIDUAL MOISTURE TO SOIL TO GET THE "WATER HOLDING CAPACITY" PAST THE "WILTING POINT" TO ALLOW TRANSPLANTS TO ESTABLISH, & SEEDS TO GERMINATE + ESTABLISH.

WEEK	Kc (IN)	IRRIG EFF (%)	IRRIG REQ'D (IN)	DAILY IRRIG REQ'D (ACRE-FT)	BASE*	PLANTING			
					2.00	0.75	2.67	0.1222	
1	0.55	0.75	0.13	0.0060					
1	0.55	0.75	0.12	0.0057					
1	0.55	0.75	0.12	0.0057					
1	0.55	0.75	0.14	0.0064					
1	0.55	0.75	0.16	0.0070					
1	0.55	0.75	0.13	0.0060					
1	0.55	0.75	0.15	0.0067					