

Strawberries: The effects of modifying irrigation methods for transplant establishment



Objectives:

- Keep strawberry transplants healthy
- Switch to drip irrigation as early as possible

Main Issues:

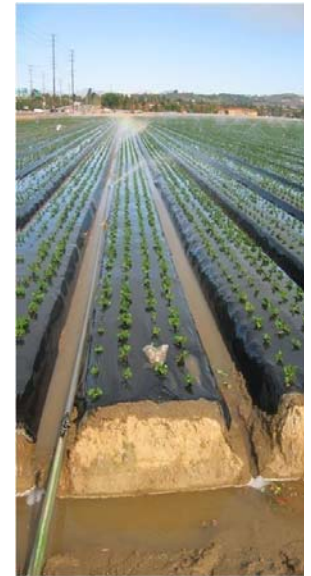
- Soil salinity management
- Uncollected sprinkler irrigation run-off

Keys to Implementation:

- Real-time soil salinity sensors
- Correct drip irrigation design and management
- Demonstration-scale plots

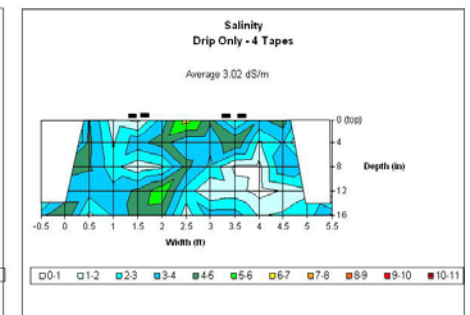
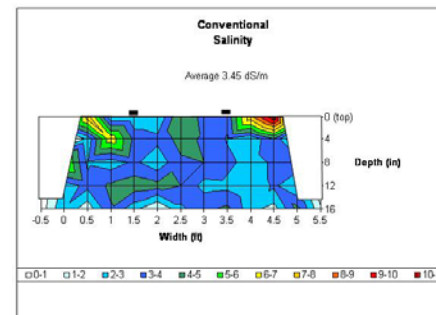
Results:

- Improved yields (~10%) and less water applied (~10%)

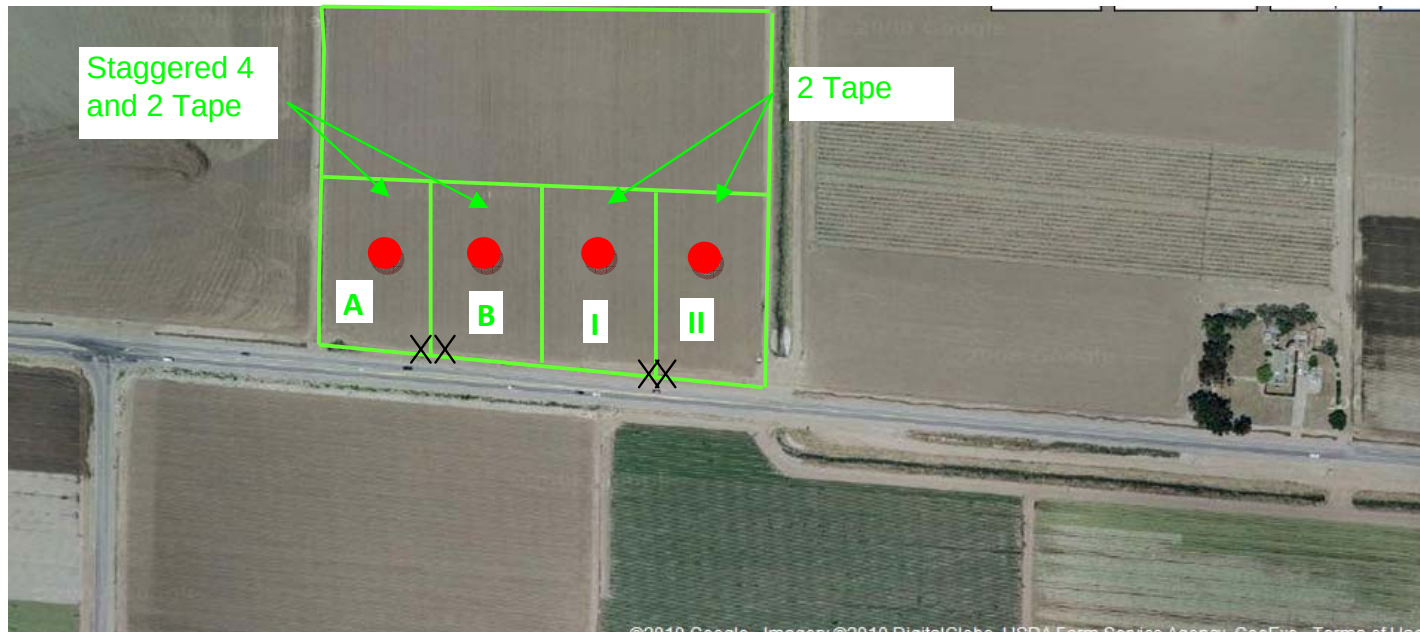


Funding by:

California Department of Food & Agriculture and
US Bureau of Reclamation – Mid Pacific Region
California Strawberry Commission
John Deere Water
United Water Conservation District



Manzanita Ranch 2



Item	Quantity
2" SeaMetrics Flow Meter	4
Datalogger	4
5TE Soil Moisture/Temp/EC Sensor	12
PS1 Pressure Switch	4

Volumetric Data

Strawberry Salinity Management Project
Santa Maria Data

Grower: Dave Peck

Manzanita 2

Plant Date: 15 November 2010

Drip Meter Readings

Date	2 tape		Four Tape/ 4Tape	
	I -Conventional	II - Conventional	A - Partial	B - Partial
11/6/2010	1.94	1.87	1.68	1.83
11/23/2010	1.97	1.91	1.71	1.86
11/28/2010	1.97	1.91	1.71	1.86
12/16/2010	2.03	1.97	1.77	1.91
1/5/2011	2.03	1.97	1.77	1.91
1/23/2011	2.09	2.01	1.82	1.95
2/12/2011	2.18	2.11	1.90	2.03
2/24/2011	2.18	2.11	1.90	2.03
3/23/2011	2.236	2.17	1.945	2.069
5/10/2011	2.623	broken	2.246	2.56

Volume in AF

11/6/2010	0.00	0.00	0.00	0.00
11/23/2010	0.03	0.03	0.03	0.03
11/28/2010	0.03	0.03	0.03	0.03
12/16/2010	0.09	0.10	0.09	0.08
1/5/2011	0.09	0.10	0.09	0.08
1/23/2011	0.15	0.14	0.13	0.12
2/12/2011	0.24	0.24	0.22	0.21
2/24/2011	0.24	0.24	0.22	0.21
3/23/2011	0.30	0.30	0.26	0.24
5/10/2011	0.69	na	0.56	0.73

Area

	1.62	1.62	1.42	1.35
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Inches applied from drip

11/6/2010	0.00	0.00	0.00	0.00
11/23/2010	0.25	0.25	0.25	0.26
11/28/2010	0.25	0.25	0.25	0.26
12/16/2010	0.68	0.73	0.73	0.74
1/5/2011	0.69	0.73	0.73	0.74
1/23/2011	1.09	1.02	1.12	1.10
2/12/2011	1.79	1.76	1.83	1.84
2/24/2011	1.79	1.78	1.83	1.84
3/23/2011	2.21	2.21	2.21	2.16
5/10/2011	5.07	na	4.75	6.49

Sprinkler Estimates

Minutes Operated

11/6/2010	0.00	0.00	0.00	0.00
11/23/2010	0.00	0.00	0.00	0.00
11/28/2010	600.00	600.00	400.00	400.00
12/16/2010	600.00	600.00	400.00	400.00
1/5/2011	0.00	0.00	0.00	0.00
1/23/2011	0.00	0.00	0.00	0.00
2/12/2011	0.00	0.00	0.00	0.00
2/24/2011	0.00	0.00	0.00	0.00

Total Sprinkler Inches

11/6/2010	0.00	0.00	0.00	0.00
11/23/2010	0.00	0.00	0.00	0.00
11/28/2010	2.75	2.75	1.83	1.83
12/16/2010	5.50	5.50	3.67	3.67
1/5/2011	5.50	5.50	3.67	3.67
1/23/2011	5.50	5.50	3.67	3.67
2/12/2011	5.50	5.50	3.67	3.67
2/24/2011	5.50	5.50	3.67	3.67

Total Inches

11/6/2010	0.00	0.00	0.00	0.00
11/23/2010	0.25	0.25	0.25	0.26
11/28/2010	3.00	3.00	2.09	2.10
12/16/2010	6.18	6.23	4.40	4.41
1/5/2011	6.19	6.23	4.40	4.41
1/23/2011	6.59	6.52	4.79	4.77
2/12/2011	7.30	7.27	5.49	5.51
2/24/2011	7.30	7.28	5.49	5.51
3/23/2011	7.71	7.71	5.87	5.83
5/10/2011	10.58	na	8.42	10.16

Manzanita - Block A

11/28/2010 – 15 DAP

Conventional Only

12/18/2010 – 35 DAP



1/5/2011 – 53 DAP

1/23/2011 – 71 DAP



Manzanita - Block A

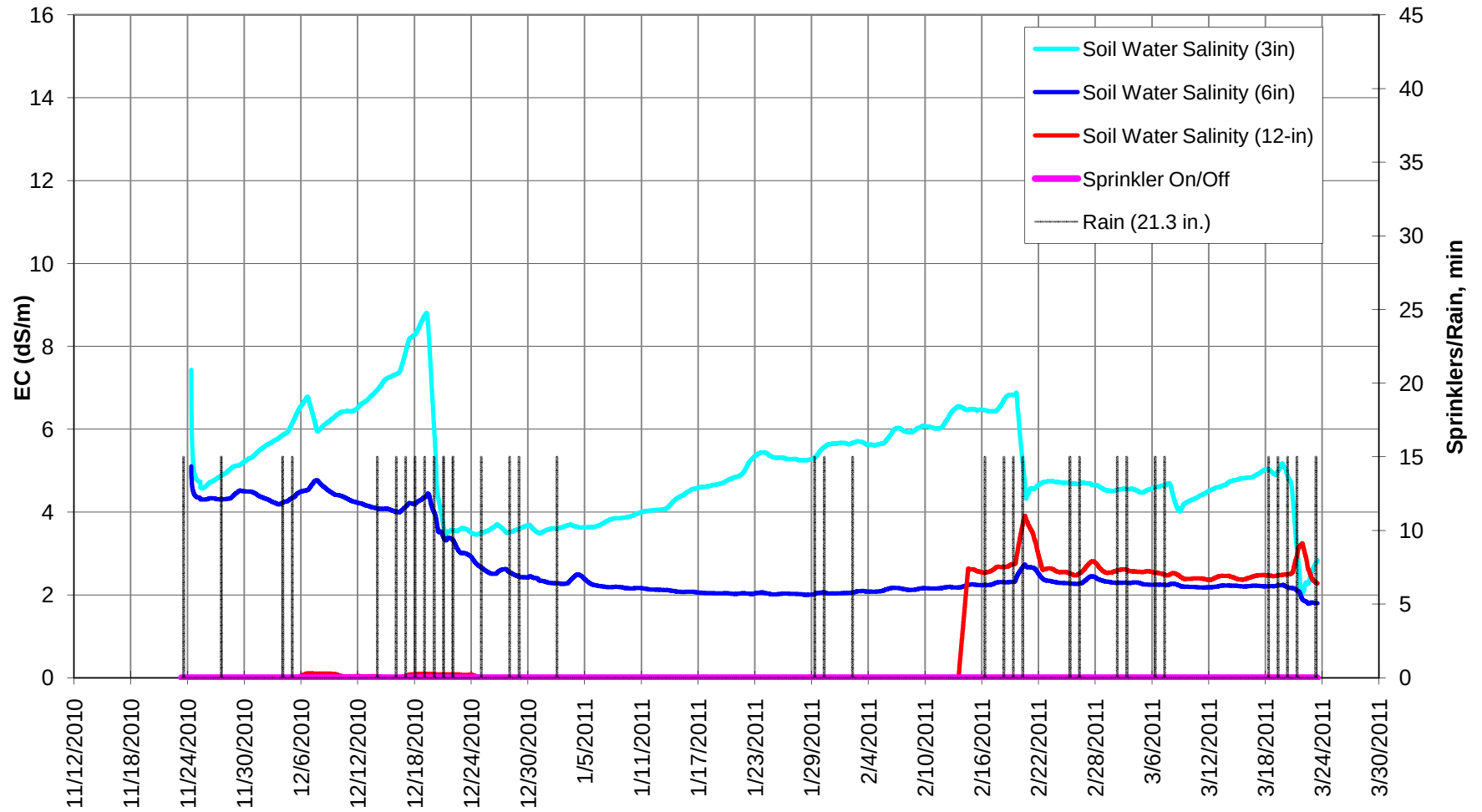
2/11/2011 – 90 DAP Conventional Only 2/24/2011 – 103 DAP



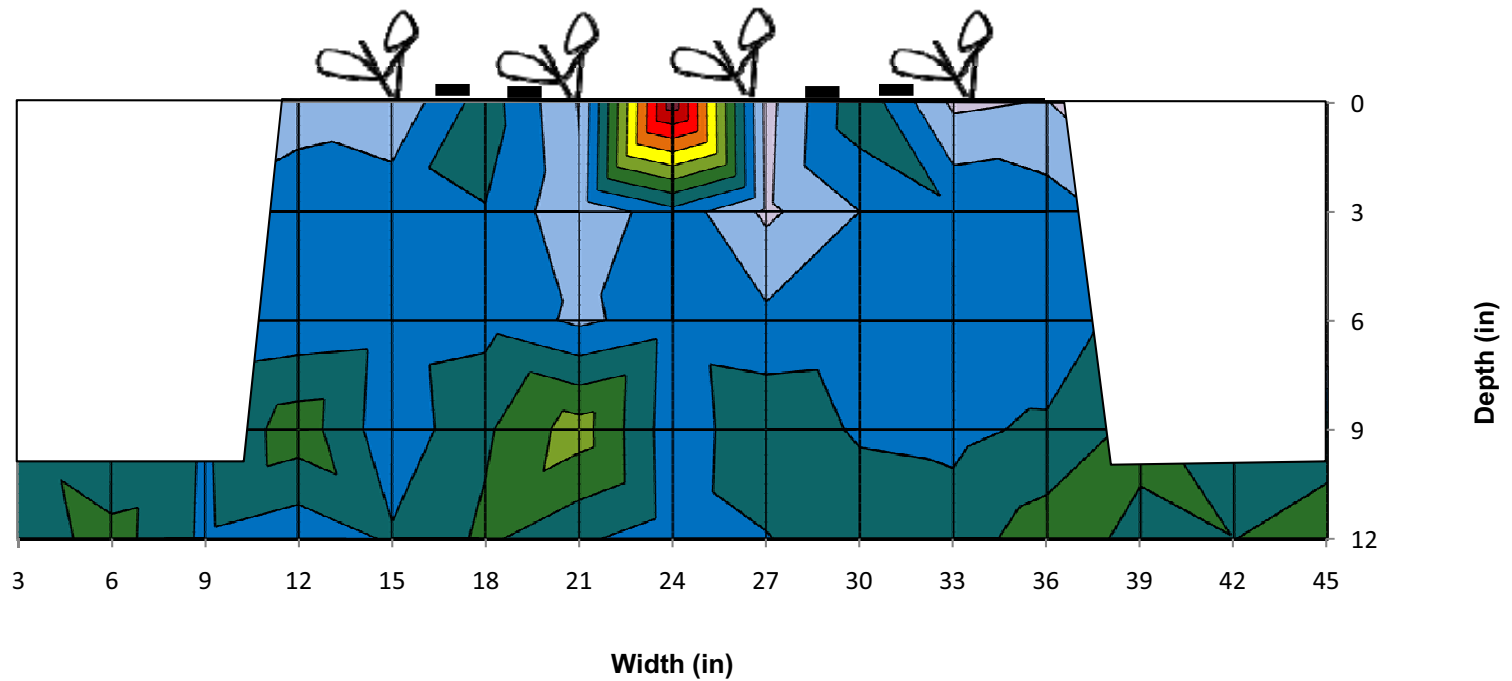
3/11/2011 – 118 DAP



Manzanita - Block A



Manzanita 2 (Block 4A) - March 2011



Manzanita - Block II

Drip Only

11/28/2010 – 15 DAP



1/5/2011 – 53 DAP



1/23/2011 – 71 DAP



2/11/2011 – 118 DAP



Manzanita - Block II

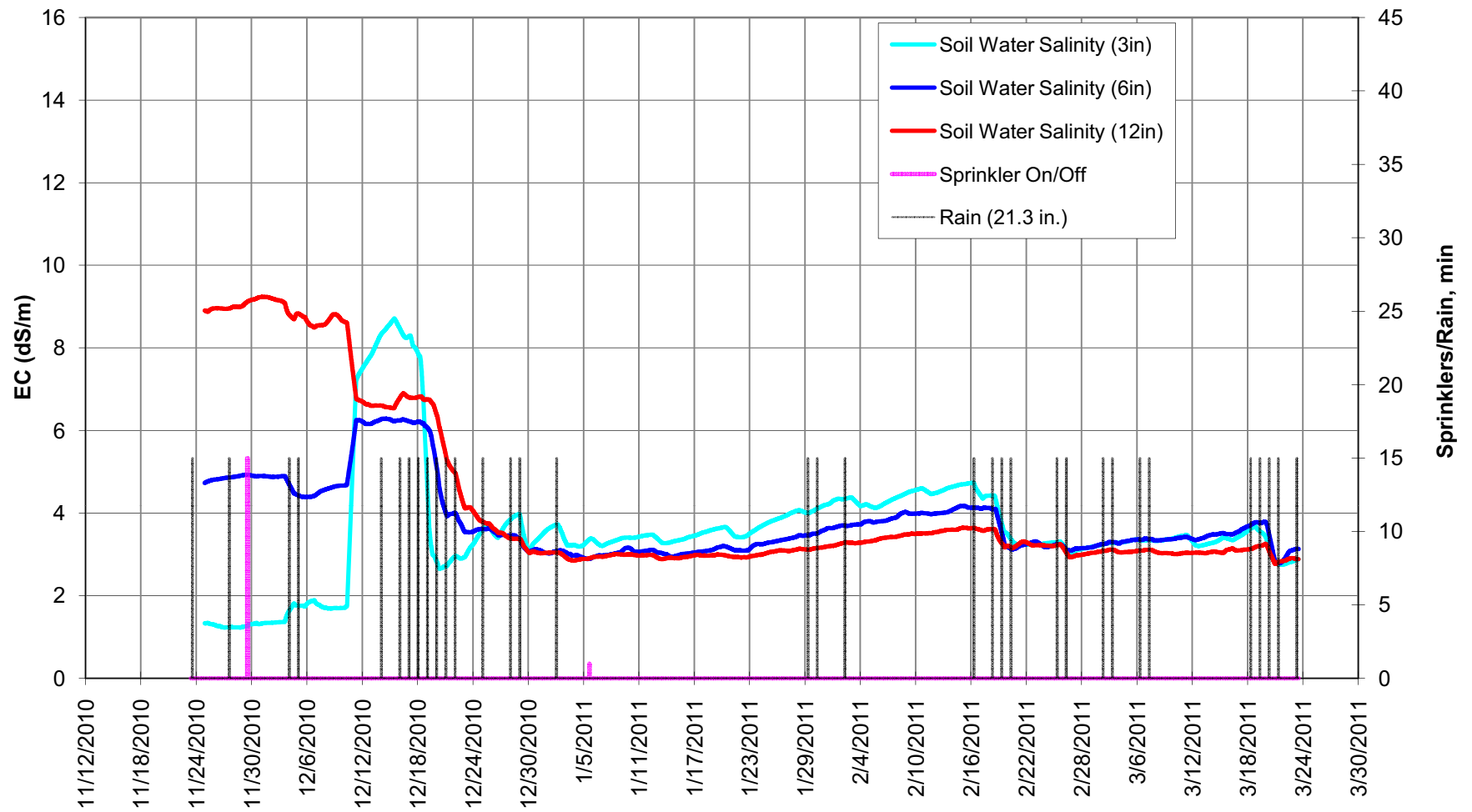
2/24/2011 – 103 DAP

Drip Only

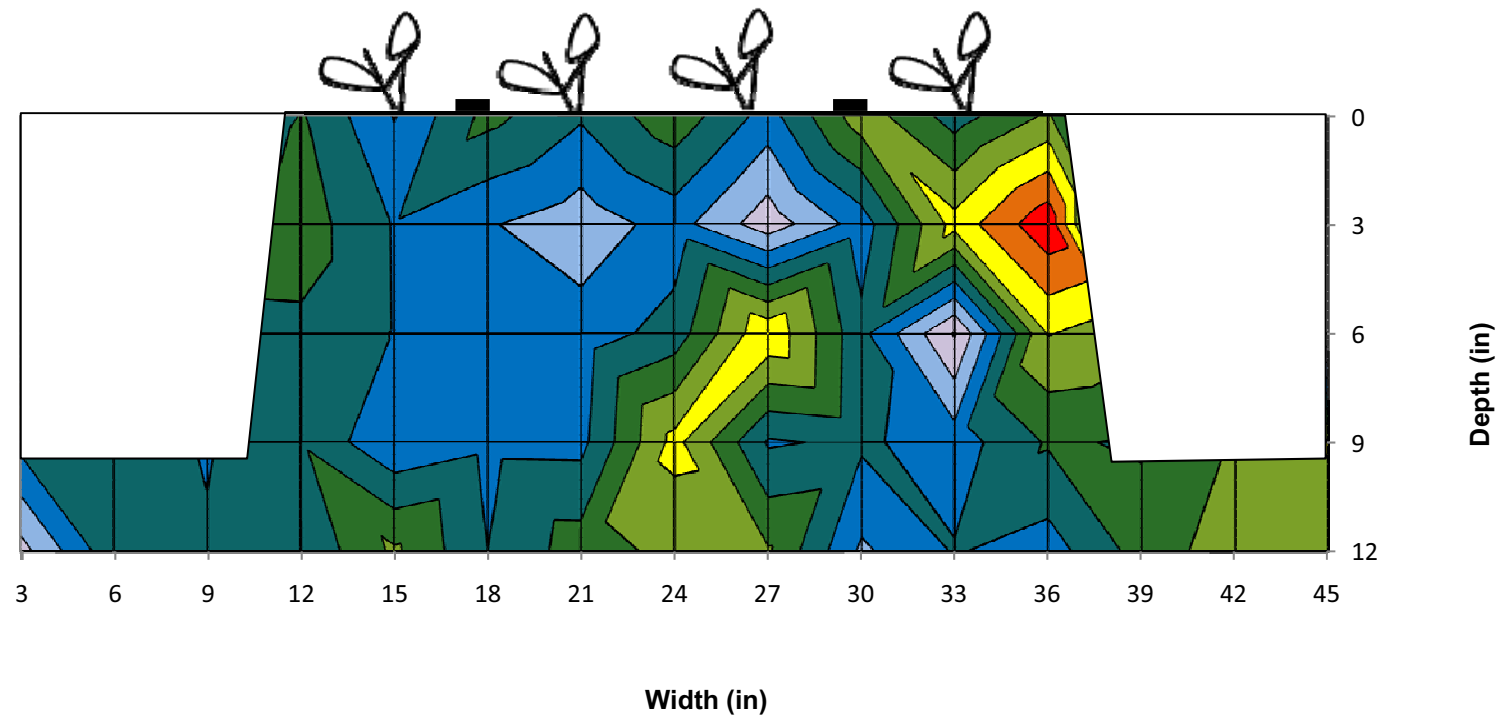
3/11/2011 – 118 DAP



Manzanita Block II



Manzanita 2 Conventional (Block II) - March 2011



0-1 1-2 2-3 3-4 4-5 5-6 6-7 7-8 8-9 9-10