
Central Valley Regional Water Quality Control Board

TO: Clay L. Rodgers
Assistant Executive Officer

Dale W. Harvey
Supervising Engineer

FROM: Joshua G. Mahoney
Water Resource Control Engineer

DATE: 30 March 2017

SUBJECT: DRAFT - COLLECTION OF FRUIT SAMPLES IRRIGATED WITH NON-PRODUCED WASTEWATER NEAR CAWELO WATER DISTRICT

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff observed the collection of citrus samples (i.e., navals, mandarins, and lemons) by Advanced Environmental Concepts, Inc., a third party consulting group collecting samples on behalf of Cawelo Water District. Central Valley Water Board staff (Staff) obtained ownership of all citrus samples throughout the sampling event. Citrus samples were mailed to Weck Laboratories, Inc., for analysis.

PRESENT PARTIES

Sample Team from Advanced Environmental Concepts, Inc. (AEC)

Representatives from Cawelo Water District (Cawelo)

Central Valley Regional Water Quality Control Board (Central Valley Water Board)

- W. Dale Harvey, Supervising Engineer
- Joshua Mahoney, Water Resource Control Engineer

University of the Pacific (UOP)

- Ben Grafius, Assistant

GENERAL SAMPLING PROCEDURES

Equipment:

1. Nitrile gloves
2. Wipes
3. Mason jars (hereafter sample container)
4. Ice chests

Fruit Handling:

1. Nitrile gloves were used while handling fruit.
2. Cut fruit vine with trimmers.
3. Wipe the fruit.

4. Place the fruit in the sample container.
5. Seal the container and tape the lid.
6. Sample containers remain in the ice chest until delivered to the laboratory.

Fruit Selection Criteria:

1. Minimum distance from main road was five tree rows.
2. Minimum distance from access road was six trees.
3. Samples collected from the same tree were picked from different branches.
4. All samples were ripe.
5. No unfavorable features or colors.
6. Samples were representative of the fruit an average consumer would find at a store.

SAMPLE SITES

Site 1

Site Name: Control-1_Mandarin-1
Fruit Type: Mandarin
Fruits per Sample Container: 3

Sample Containers per Tree: 1
Tree Row: 11(from the east)
Tree Count from the road: 6, 7, and 8

Sample Time for AEC: 08:39

Sample Names:

B-M-I (AEC sample)
B-M-II (AEC duplicate sample)
Control-1 (UOP sample)

Notes: Irrigation water from Southern San Joaquin Municipal Utility District.
Trees were recently picked.
All samples contained three mandarins due to fruit size.

Site 2

Site Name: Control-2_Mandarin-2
Fruit Type: Mandarin
Fruits per Sample Container: 4

Sample Containers per Tree: 1
Tree Row: 10 (from the east)
Tree Count from the road: 8, 9, and 10

Sample Time: 09:41

Sample Names:

B-M-2 (AEC sample)
Control-2 (UOP sample)

Notes: Irrigation water from Ducor Irrigation District.

Site 3

Site Name: Control-3_Lemon-1
Fruit Type: Lemon
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 17 (from the west)
Tree Count from the road: 7, 8, and 10

Sample Time: 10:07

Sample Names:

B-L-1 (AEC sample)
Control-3 (UOP sample)

Notes: Trees were recently picked.
Irrigation water from Ducor Irrigation District and irrigation wells.

Site 4

Site Name: Control-4_Mandarin-3
Fruit Type: Mandarin
Fruits per Sample Container: 4

Sample Containers per Tree: 1
Tree Row: 11 (from the east)
Tree Count from the road: 7, 8, and 9

Sample Time: 10:30

Sample Names:

B-M-3 (AEC sample)
Control-4 (UOP sample)

Notes: Irrigation water from Ducor Irrigation District and irrigation wells.

Site 5

Site Name: Control-5_Naval-1
Fruit Type: Naval
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 38 (from the east)
Tree Count from the road: 3 and 4

Sample Time: 10:52

Sample Names:

B-O-I (AEC sample)
B-O-II (AEC duplicate sample)
Control-5 (UOP sample)

Notes: Trees were recently picked. Only fruit on trees 3 and 4.
Irrigation water from Ducor Irrigation District and irrigation wells.

Site 6

Site Name: Control-6_Naval-2
Fruit Type: Naval
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 13 (from the north)
Tree Count from the road: 6, 7, and 8

Sample Time: 11:36

Sample Names:

B-O-2 (AEC sample)
Control-6 (UOP sample)

Notes: Irrigation water from Terra Bella Water District.

Site 7

Site Name: Control-7_Lemon-2
Fruit Type: Lemon
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 6 (from the south)
Tree Count from the road: 5, 6, and 8

Sample Time: 12:05

Sample Names:

B-L-2 (AEC sample)
B-L-11 (AEC duplicate sample)
Control-7 (UOP sample)

Notes: Trees were recently picked. No fruit on tree 7.
Irrigation water from Terra Bella Water District.

Site 8

Site Name: Control-8_Lemon-3
Fruit Type: Lemon
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 6 (from the west)
Tree Count from the road: 6, 7, and 8

Sample Time: 13:04

Sample Names:

B-L-3 (AEC sample)
Control-8 (UOP sample)

Notes: Irrigation water from Vandalia Irrigation District.

Site 9

Site Name: Control-9_Naval-3
Fruit Type: Naval
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 5 (from the west)
Tree Count from the road: 7, 8, and 9

Sample Time: 13:18

Sample Names:

B-O-3 (AEC sample)
Control-9 (UOP sample)

Notes: Irrigation water from Vandalia Irrigation District.
Trees were recently picked.

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SITE PHOTOS

TIME STAMP ON PICTURES IS ONE HOUR FAST

Site 1 – Naval Tree



Site 2 – Mandarin Tree



Site 8 – Lemon Tree



Site 4 – Selecting Fruit Samples



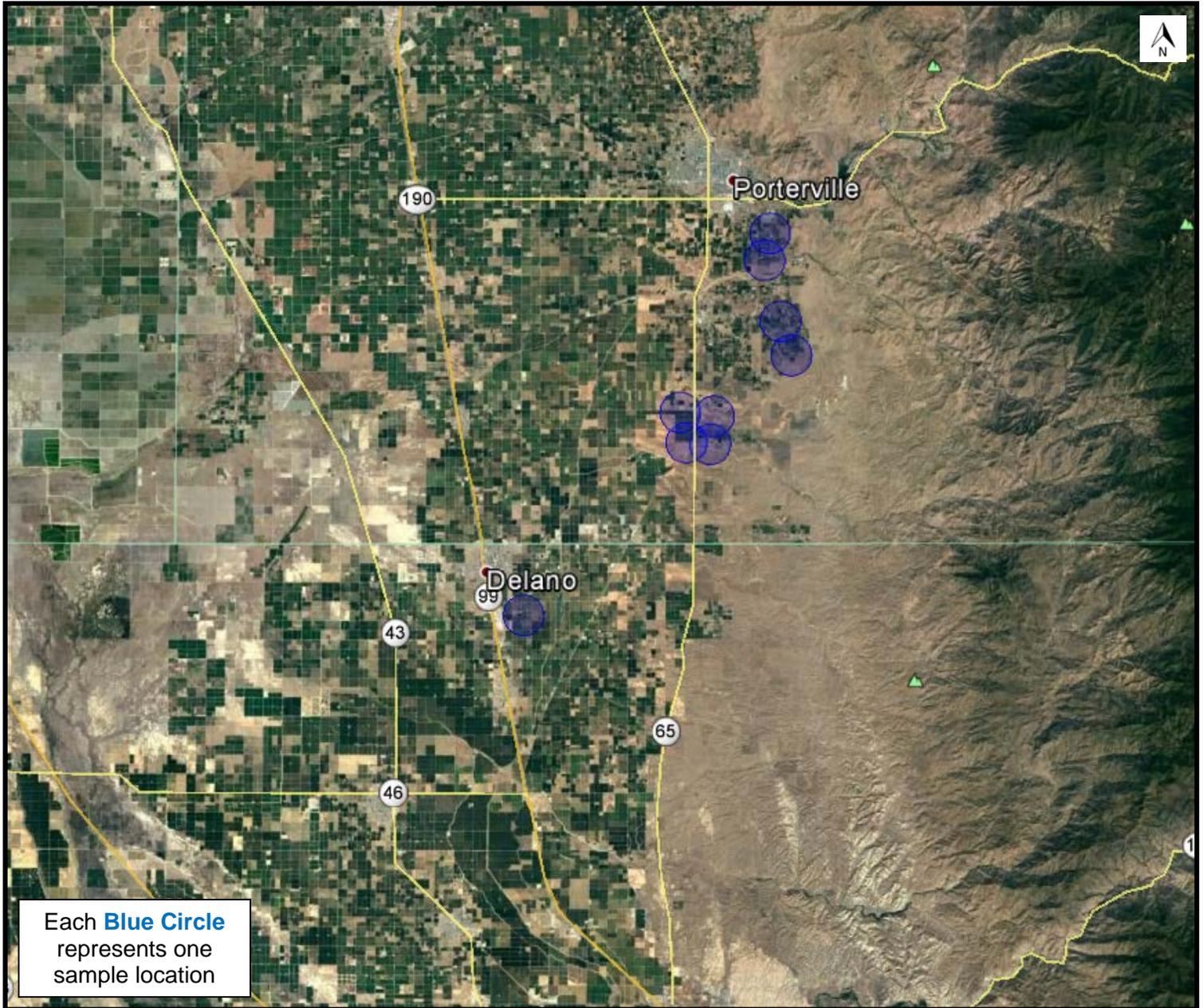
Site 1 – Cleaning Fruit



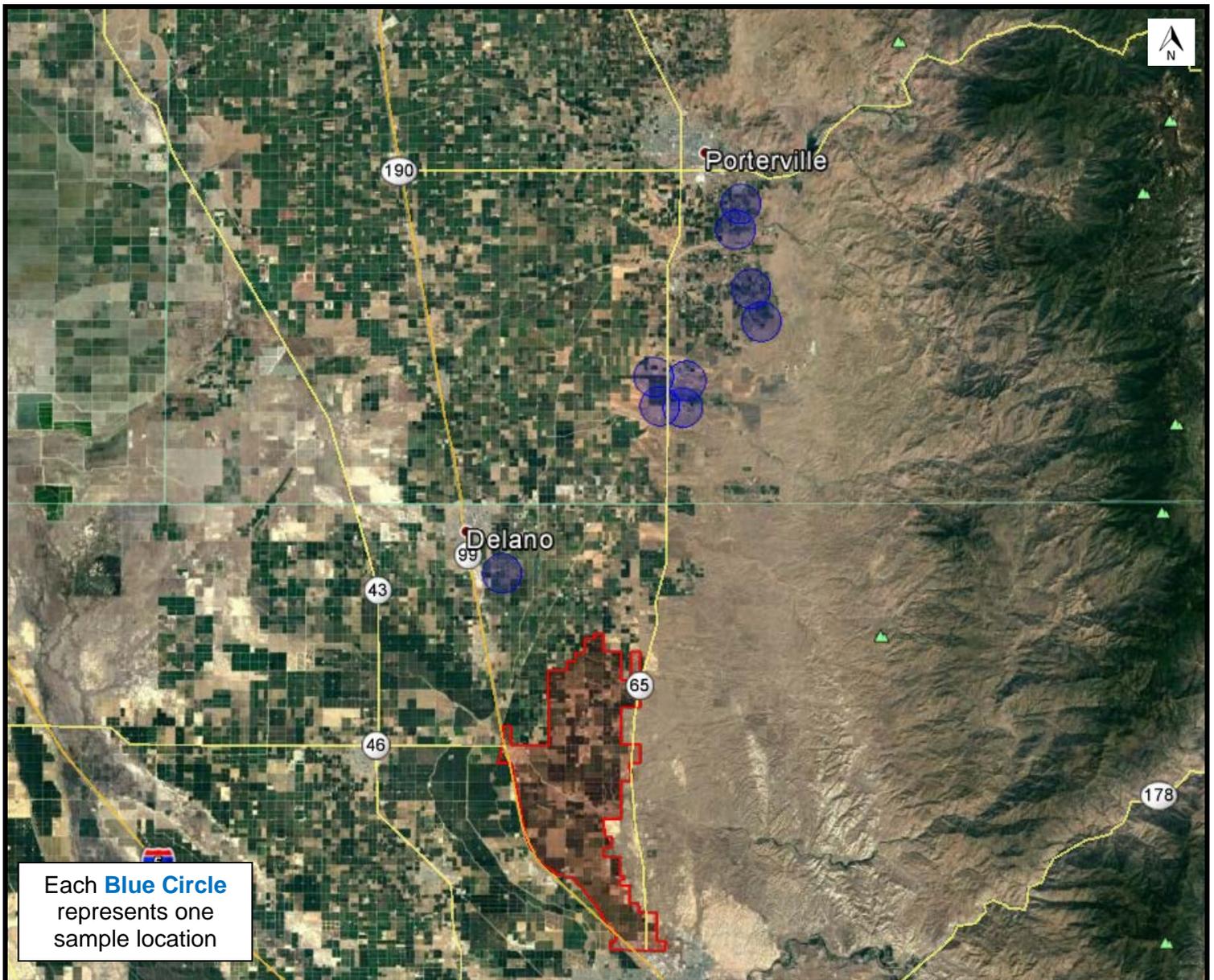
Site 9 – Fruit Sample Containers



SITE MAP
Sample Locations



SITE MAP
Sample Locations with Cawelo Water District's
Service Territory



SITE MAP
Sample Locations with Cawelo Water District's
Service Territory and Storage Reservoirs

