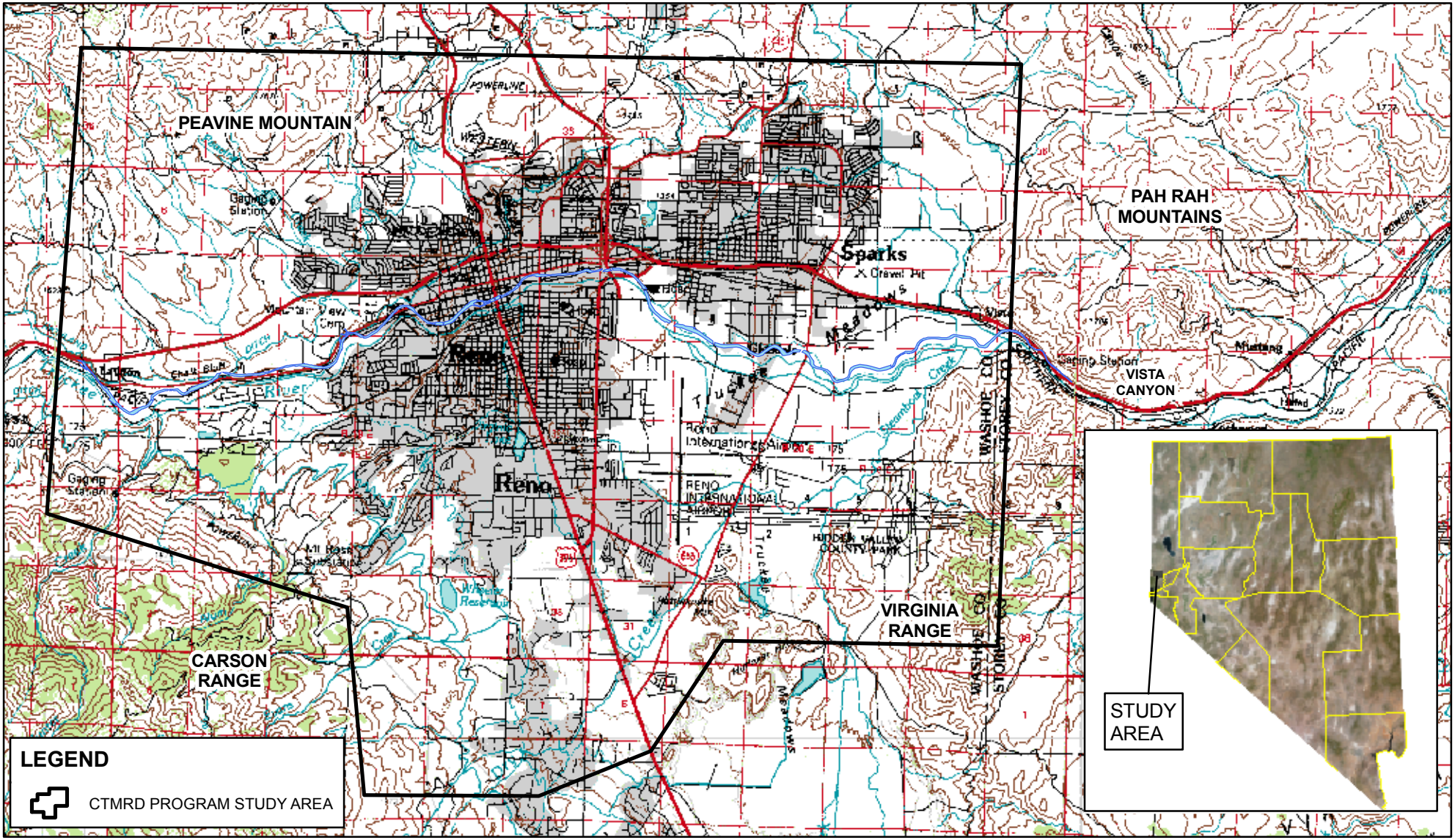

SOURCE:
USGS 7.5 Minute Quad Sheets;
Reno and Carson City, 1981

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Miles

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

SWL	MT	03/2007
N0637B	1.1	

CTMRD PROGRAM STUDY AREA LOCATION MAP

LEGEND

WELLS

- TMWA Well with PCE Detect
- TMWA PCE Treated Well
- Production Well
- TMWA Monitoring Well
- WCDWR Monitoring Well
- Other Monitoring Wells
- Key Well Selected for Trend Analysis

PCE USING BUSINESSES

- Auto Paint
- Auto Repair
- Chemical Manufacturer
- Drycleaner
- Paint shop

CREEKS/RIVERS/SLOUGHS

DITCH/DRAIN

CANAL

BEDROCK ALLUVIUM CONTACT

STREETS

HYDROSTRATIGRAPHIC CROSS SECTION LINES

INFERRED FAULT

NEAR SURFACE GEOTHERMAL SOURCE AREA

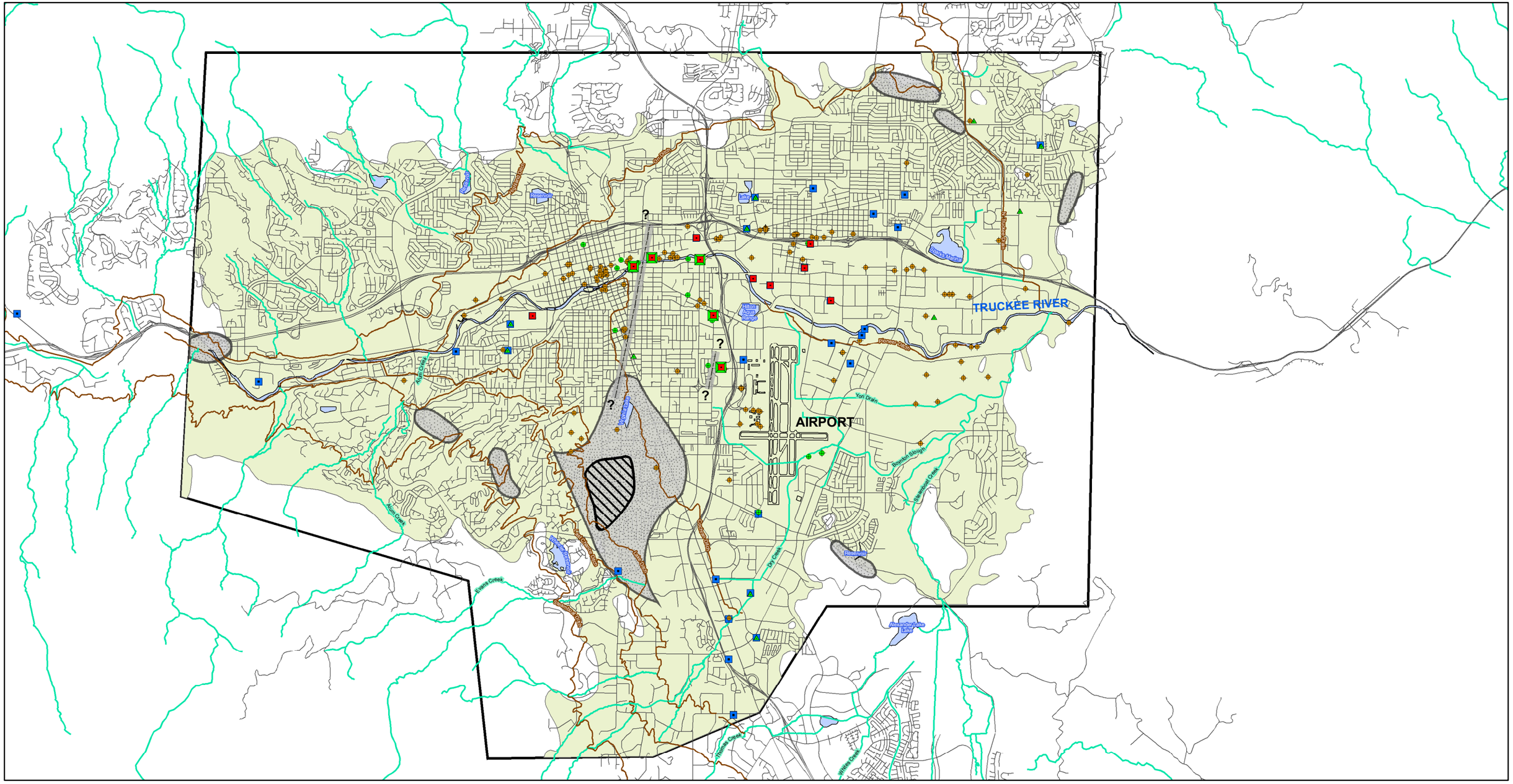
GEOTHERMAL WATER AT DEPTH

WATER BODIES

SEWER INVESTIGATION SUBREGION

ALLUVIUM

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
LEGEND PAGE	MB	MT	01/2007
	N0637B	1.2	



LEGEND

- ▬ ▬ Faults
- ─ Streets
- ▨ Near Surface Geothermal Source Area
- ▩ Geothermal Water at Depth
- ■ Alluvium
- ☐ Study Area

0 6,500
Feet

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WASHOE COUNTY DWR

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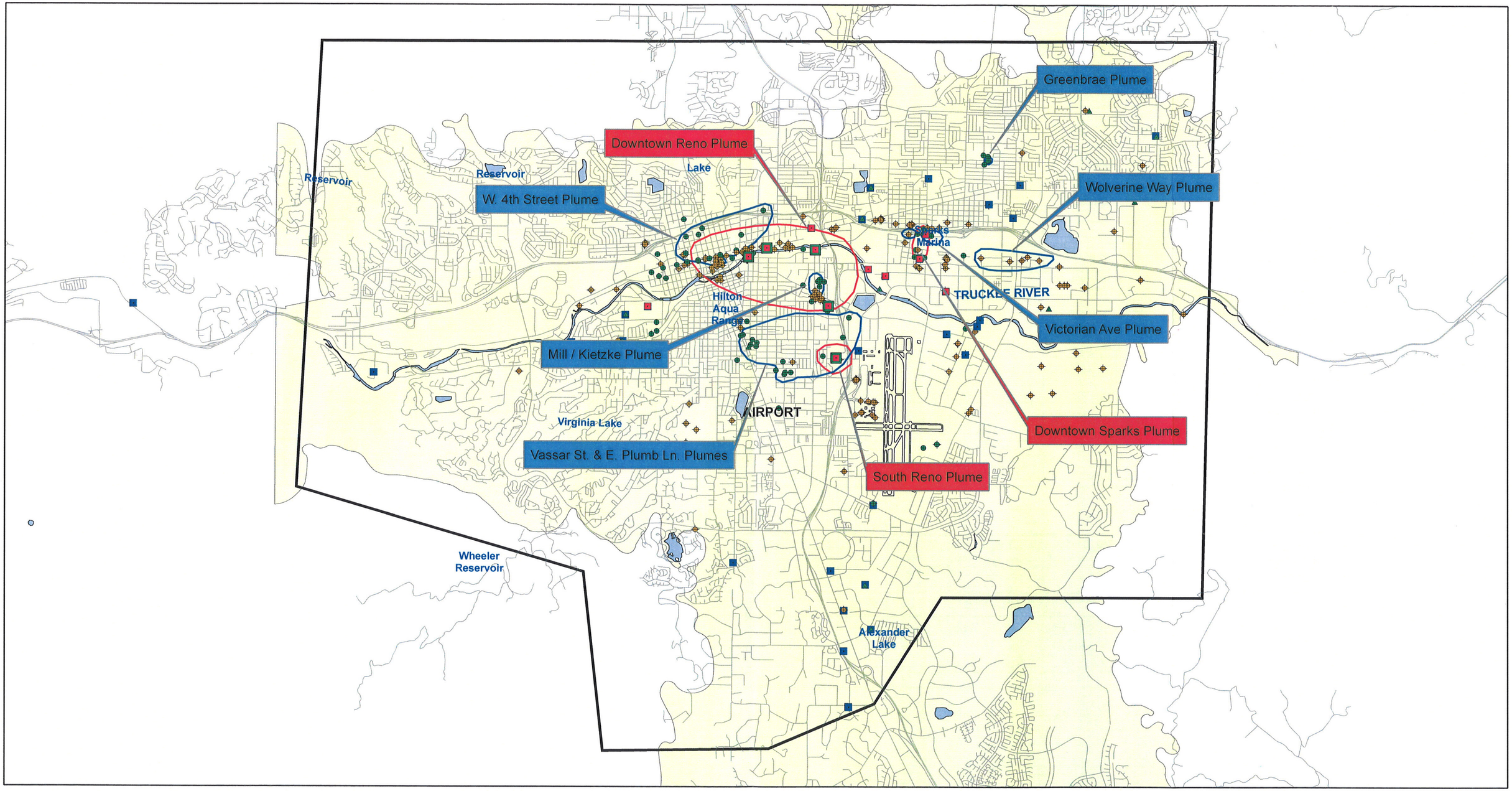
OVERVIEW MAP

MB MT 01/2007
N0637B **1.3**



LEGEND

- Streets
- Shallow Plumes
- Deep Plumes
- Study Area
- Bedrock - Alluvium Contact

0 6,300
Feet

N W E S

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
PCE PLUME LOCATIONS AND DESIGNATIONS	MB	MT	01/2007
	N0637B	1.4	

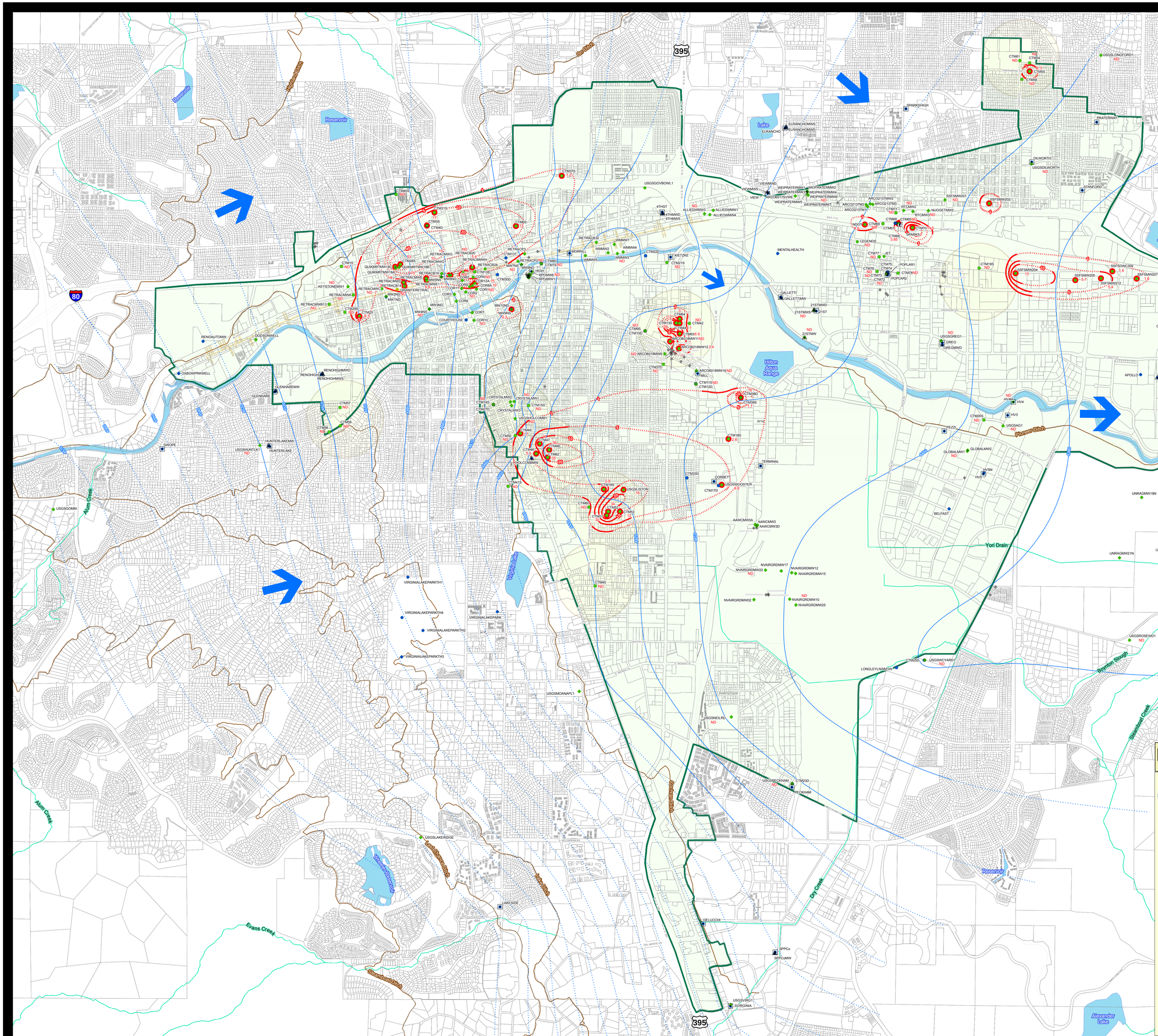


FIGURE 3.1

Water Level and PCE Concentration in Shallow Wells During March 2006

Department of Water Resources

Well Type
- WCDWR MONITORING
- OTHER
- TMWA MONITORING
- PRODUCTION

Water Level Elevation Contours
Shallow Wells Only
Feet Above Mean Sea Level - Dashed Where Approximate or Estimated

Groundwater Flow Direction
Contamination Boundary
ReTRAC Trench (Approximate Location)
2003 Sewer Investigation Sub-Regions
Creek
Ditch

Sample Results

- Detect > 1 µg/L PCE
- Deep Well (Values not plotted here)
- Shallow Well
- Abandoned
- Composite Well

PCE Contours

(Dashed where approximate)

- > 1 µg/L
- > 5 µg/L
- > 10 µg/L
- > 20 µg/L
- > 40 µg/L
- > 80 µg/L

NOTES:

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Contours drawn using primarily March 2006 water level and PCE data. Contours are likely to change as information from new or different wells is generated.

1,000 0 1,000
Feet

CTM REMEDIATION DISTRICT

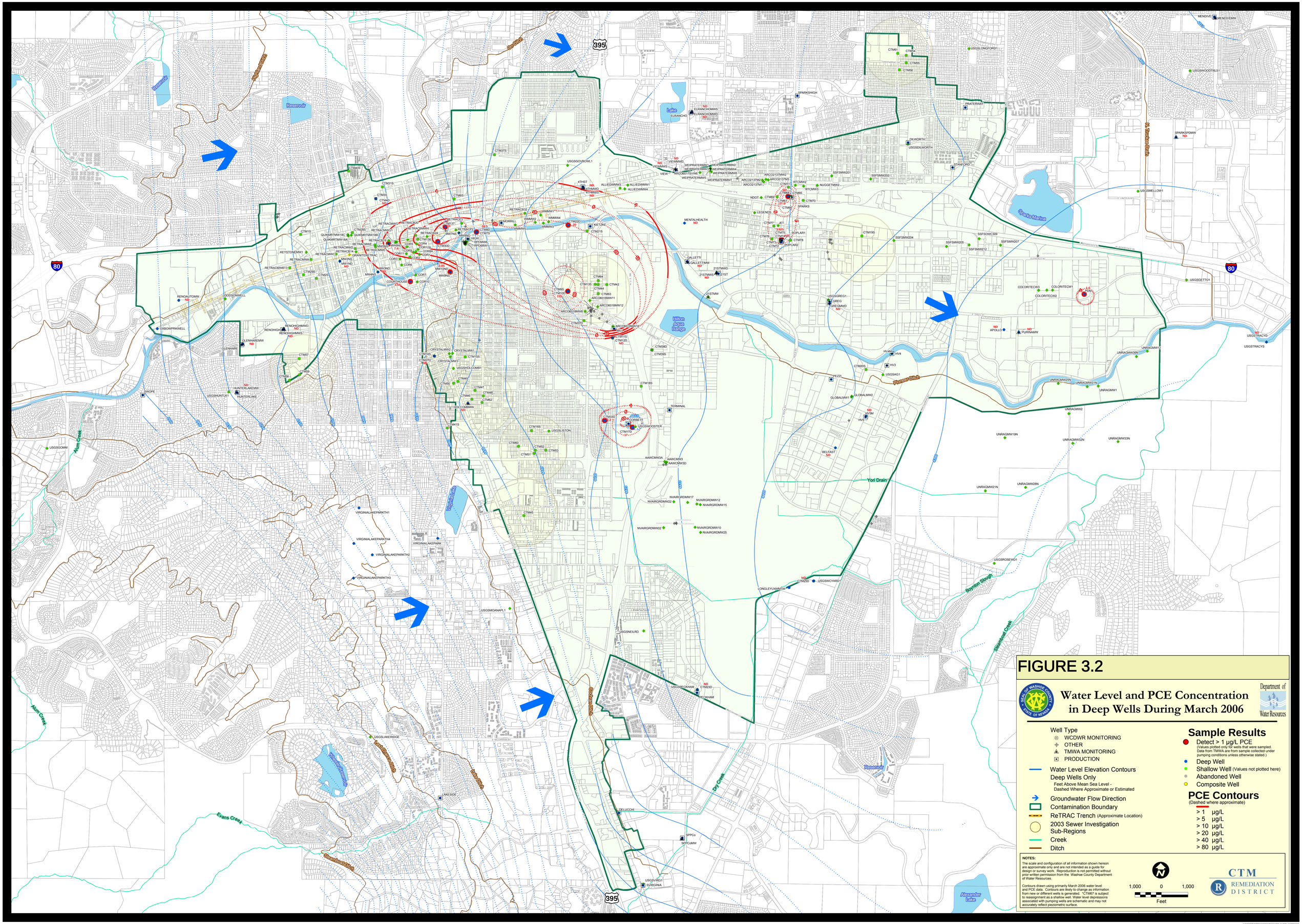

FIGURE 3.2

Water Level and PCE Concentration in Deep Wells During March 2006

Well Type
- WCDWR MONITORING
- OTHER
- TMWA MONITORING
- PRODUCTION

Water Level Elevation Contours
Deep Wells Only
Feet Above Mean Sea Level - Dashed Where Approximate or Estimated

Groundwater Flow Direction
Contamination Boundary
ReTRAC Trench (Approximate Location)
2003 Sewer Investigation Sub-Regions
Creek
Ditch

Sample Results

- Detect > 1 µg/L PCE (Values plotted only for wells that were sampled. Data from TMWA are from sample collected under pumping conditions unless otherwise stated.)
- Deep Well
- Shallow Well (Values not plotted here)
- Abandoned Well
- Composite Well

PCE Contours

(Dashed where approximate)

- > 1 µg/L
- > 5 µg/L
- > 10 µg/L
- > 20 µg/L
- > 40 µg/L
- > 80 µg/L

NOTES:

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Contours drawn using primarily March 2006 water level and PCE data. Contours are likely to change as information from new or different wells is generated. "CTM67 is subject to reassignment as a shallow well. Water level depressions associated with pumping wells are schematic and may not accurately reflect piezometric surface.

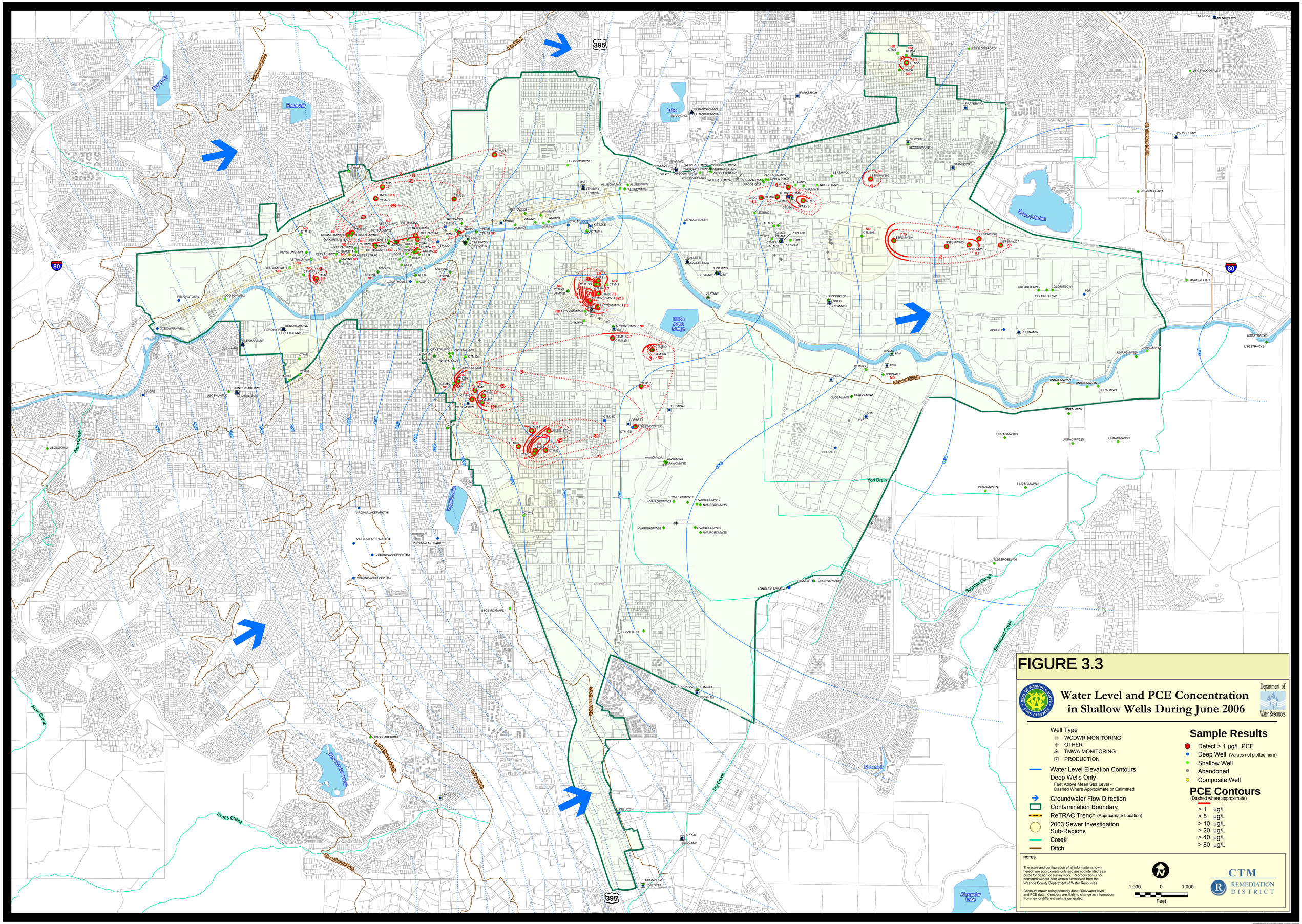

FIGURE 3.3

Water Level and PCE Concentration in Shallow Wells During June 2006

Department of Water Resources

Well Type
- WCDWR MONITORING
- OTHER
- TMWA MONITORING
- PRODUCTION

Water Level Elevation Contours
Deep Wells Only
Feet Above Mean Sea Level - Dashed Where Approximate or Estimated

Groundwater Flow Direction
Contamination Boundary
ReTRAC Trench (Approximate Location)
2003 Sewer Investigation Sub-Regions
Creek
Ditch

Sample Results

- Detect > 1 µg/L PCE
- Deep Well (Values not plotted here)
- Shallow Well
- Abandoned
- Composite Well

PCE Contours

(Dashed where approximate)

- > 1 µg/L
- > 5 µg/L
- > 10 µg/L
- > 20 µg/L
- > 40 µg/L
- > 80 µg/L

NOTES:

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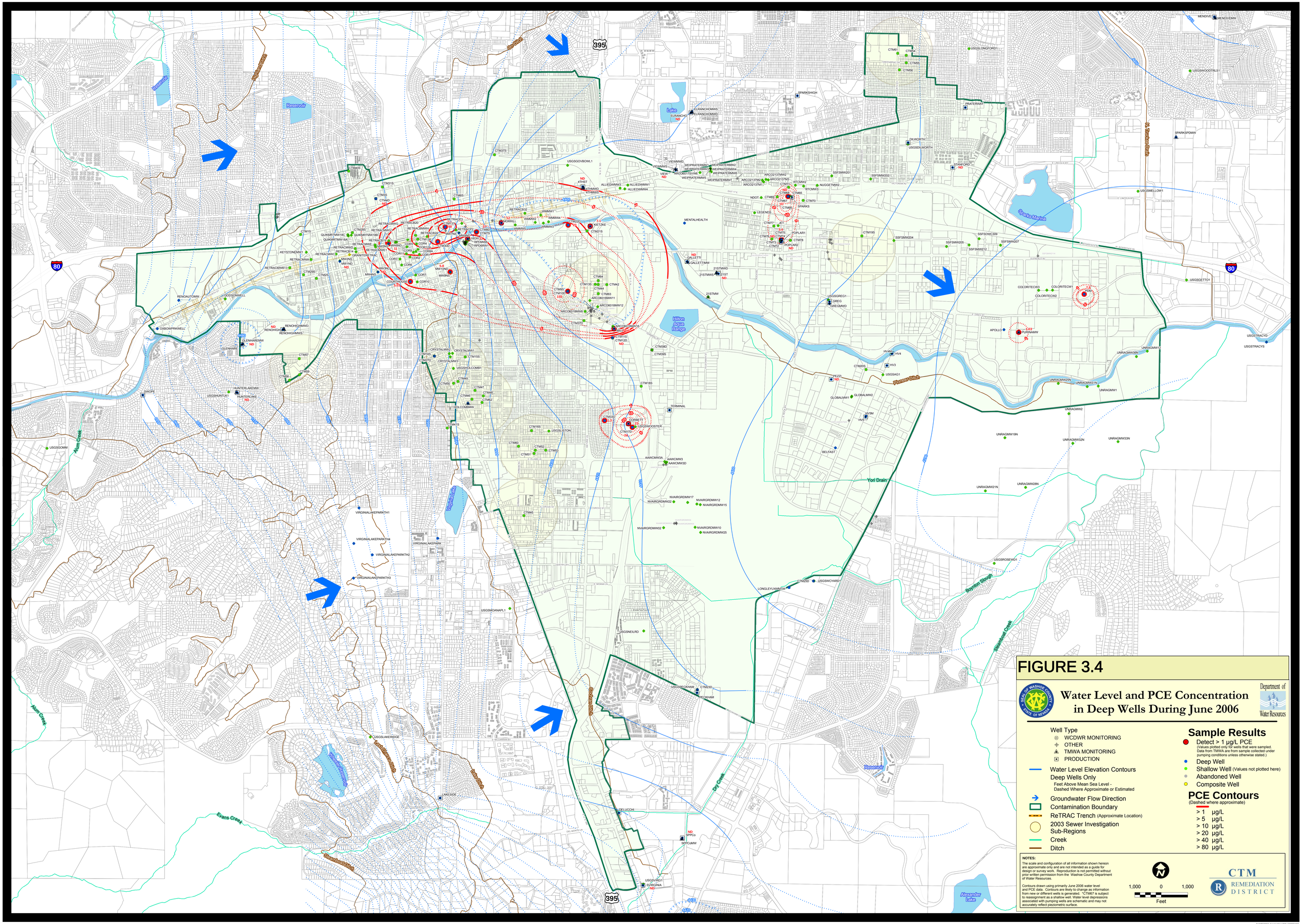
Contours drawn using primarily June 2006 water level and PCE data. Contours are likely to change as information from new or different wells is generated.

1,000 0 1,000
Feet

CTM REMEDIATION DISTRICT


Water Level and PCE Concentration in Deep Wells During June 2006
FIGURE 3.4
Well Type
WCDWR MONITORING
OTHER
TMWA MONITORING
PRODUCTION
Water Level Elevation Contours
Deep Wells Only
Feet Above Mean Sea Level - Dashed Where Approximate or Estimated
Groundwater Flow Direction
Contamination Boundary
ReTRAC Trench (Approximate Location)
2003 Sewer Investigation Sub-Regions
Creek
Ditch
Sample Results
Detect > 1 µg/L PCE
(Values plotted only for wells that were sampled. Data from TMWA are from sample collected under pumping conditions unless otherwise stated.)
Deep Well
Shallow Well (Values not plotted here)
Abandoned Well
Composite Well
PCE Contours
(Dashed where approximate)
> 1 µg/L
> 5 µg/L
> 10 µg/L
> 20 µg/L
> 40 µg/L
> 80 µg/L
NOTES:
The scale and configuration of all information shown hereon are approximate only and are not intended as a guide for design or survey work. Reproduction is not permitted without prior written permission from the Washoe County Department of Water Resources.
Contours drawn using primarily June 2006 water level and PCE data. Contours are likely to change as information from new or different wells is generated. *CTM67 is subject to reassignment as a shallow well. Water level depressions associated with pumping wells are schematic and may not accurately reflect piezziometric surface.
1,000 0 1,000
Feet
Department of Water Resources
CTM REMEDIATION DISTRICT
Reservoir
Lake
Hilton Aqua Range
Sparks Marina
Virginia Lake
Alexander Lake
Yori Drain
Boynton Slough
Steamboat Creek
Dry Creek
Orchard Ditch
Alum Creek
Evans Creek
Pioneer Ditch
Highland Ditch
N. Truckee Drain
395
80

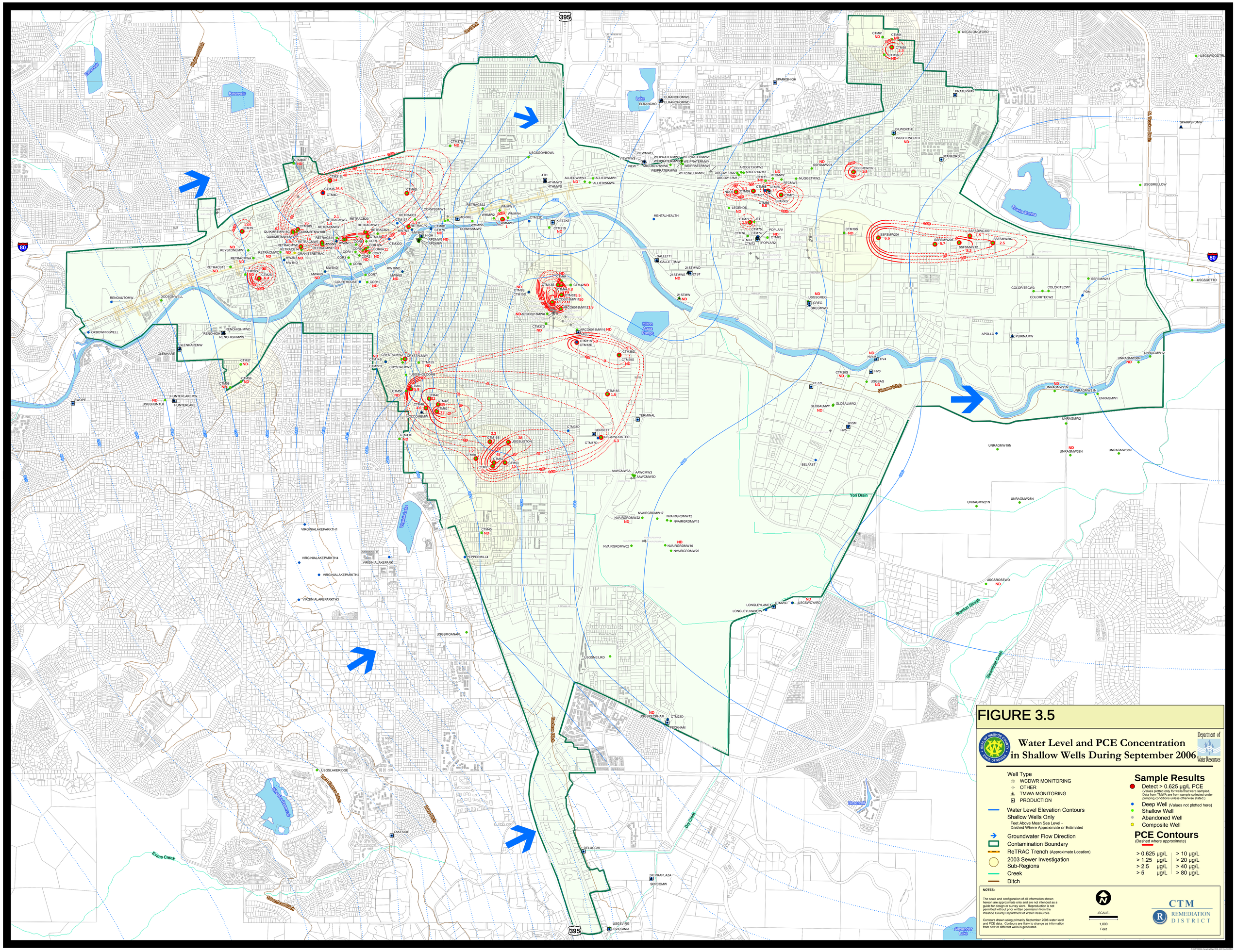


FIGURE 3.5
Water Level and PCE Concentration in Shallow Wells During September 2006
Department of Water Resources
Well Type
WCDWR MONITORING
OTHER
TMWA MONITORING
PRODUCTION
Water Level Elevation Contours
Shallow Wells Only
Feet Above Mean Sea Level - Dashed Where Approximate or Estimated
Groundwater Flow Direction
Contamination Boundary
ReTRAC Trench (Approximate Location)
2003 Sewer Investigation Sub-Regions
Creek
Ditch
Sample Results
Detect > 0.625 µg/L PCE
(Values plotted only for wells that were sampled. Data from TMWA are from sample collected under pumping conditions unless otherwise stated.)
Deep Well (Values not plotted here)
Shallow Well
Abandoned Well
Composite Well
PCE Contours
(Dashed where approximate)
> 0.625 µg/L
> 1.25 µg/L
> 2.5 µg/L
> 5 µg/L
> 10 µg/L
> 20 µg/L
> 40 µg/L
> 80 µg/L
NOTES:
The scale and configuration of all information shown hereon are approximate only and are not intended as a guide for design or survey work. Reproduction is not permitted without prior written permission from the Washoe County Department of Water Resources.
Contours drawn using primarily September 2006 water level and PCE data. Contours are likely to change as information from new or different wells is generated.
-SCALE-
1,000 Feet
CTM REMEDIATION DISTRICT
Yori Drain
Boynton Slough
Steamboat Creek
Dry Creek
Pleasant Ditch
Evans Creek
Hidden Aqua Range
Swan Marina
Alexander Lake
Reservoir
Lake
395
80

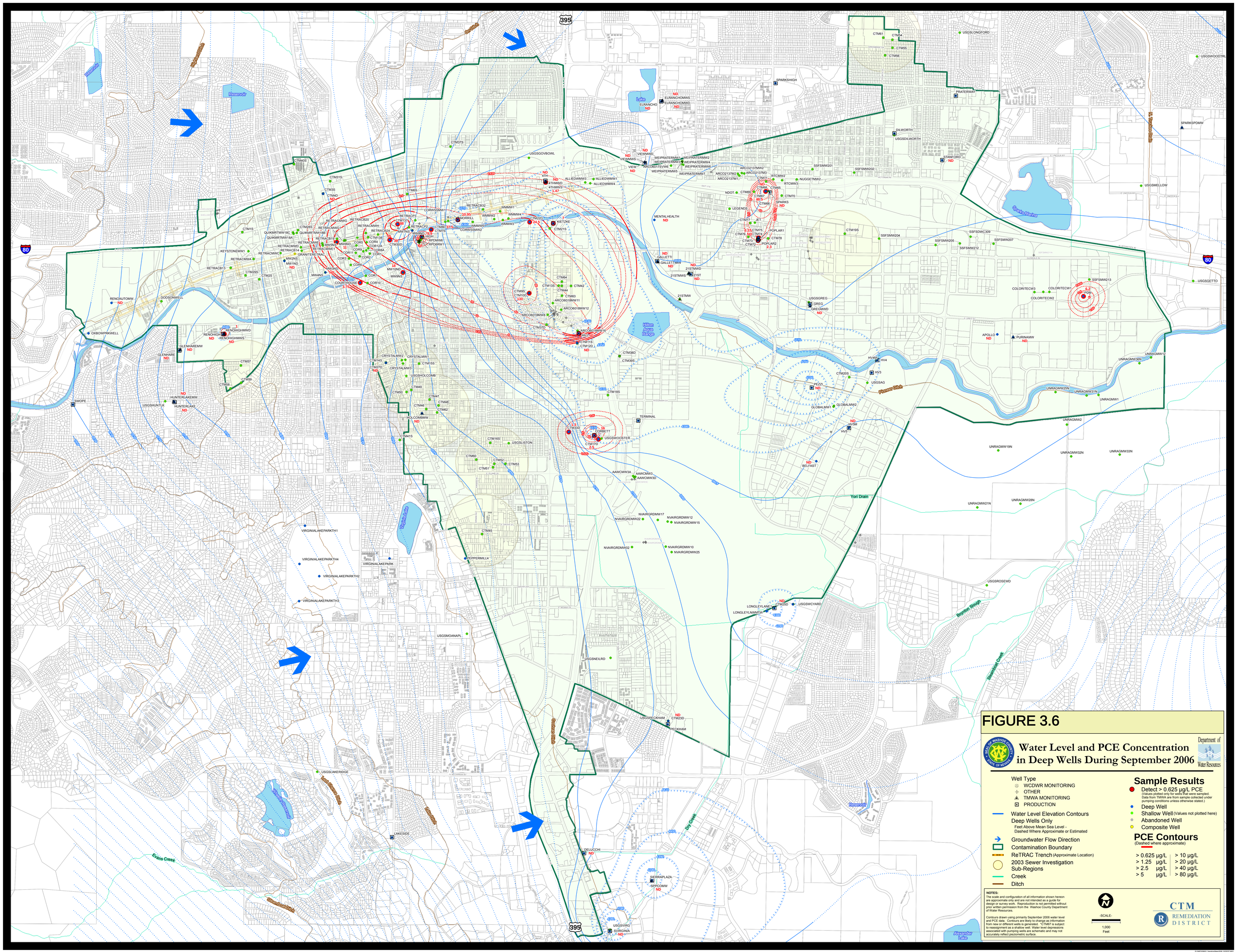


FIGURE 3.6

Water Level and PCE Concentration in Deep Wells During September 2006

Department of Water Resources

Well Type
- WCDWR MONITORING
- OTHER
- ▲ TMWA MONITORING
- ⊡ PRODUCTION

Water Level Elevation Contours
Deep Wells Only
Feet Above Mean Sea Level -
Dashed Where Approximate or Estimated

→ Groundwater Flow Direction

Contamination Boundary

ReTRAC Trench (Approximate Location)

2003 Sewer Investigation Sub-Regions

Creek

Ditch

Sample Results

● Detect > 0.625 µg/L PCE
(Values plotted only for wells that were sampled. Data from TMWA are from sample collected under pumping conditions unless otherwise stated.)

● Deep Well

● Shallow Well (Values not plotted here)

● Abandoned Well

○ Composite Well

PCE Contours

(Dashed where approximate)

> 0.625 µg/L	> 10 µg/L
> 1.25 µg/L	> 20 µg/L
> 2.5 µg/L	> 40 µg/L
> 5 µg/L	> 80 µg/L

NOTES:
The scale and configuration of all information shown hereon are approximate only and are not intended as a guide for design or survey work. Reproduction is not permitted without prior written permission from the Washoe County Department of Water Resources.

Contours drawn using primarily September 2006 water level and PCE data. Contours are likely to change as information from new or different wells is generated. *CTM67 is subject to reassignment as a shallow well. Water level depressions associated with pumping wells are schematic and may not accurately reflect piezometric surface.

N

-SCALE-

1,000
Feet

CTM
REMEDIATION DISTRICT

R:\GMP\2006Q3_Sampling\Maps\2006_Q3DEEP.MXD

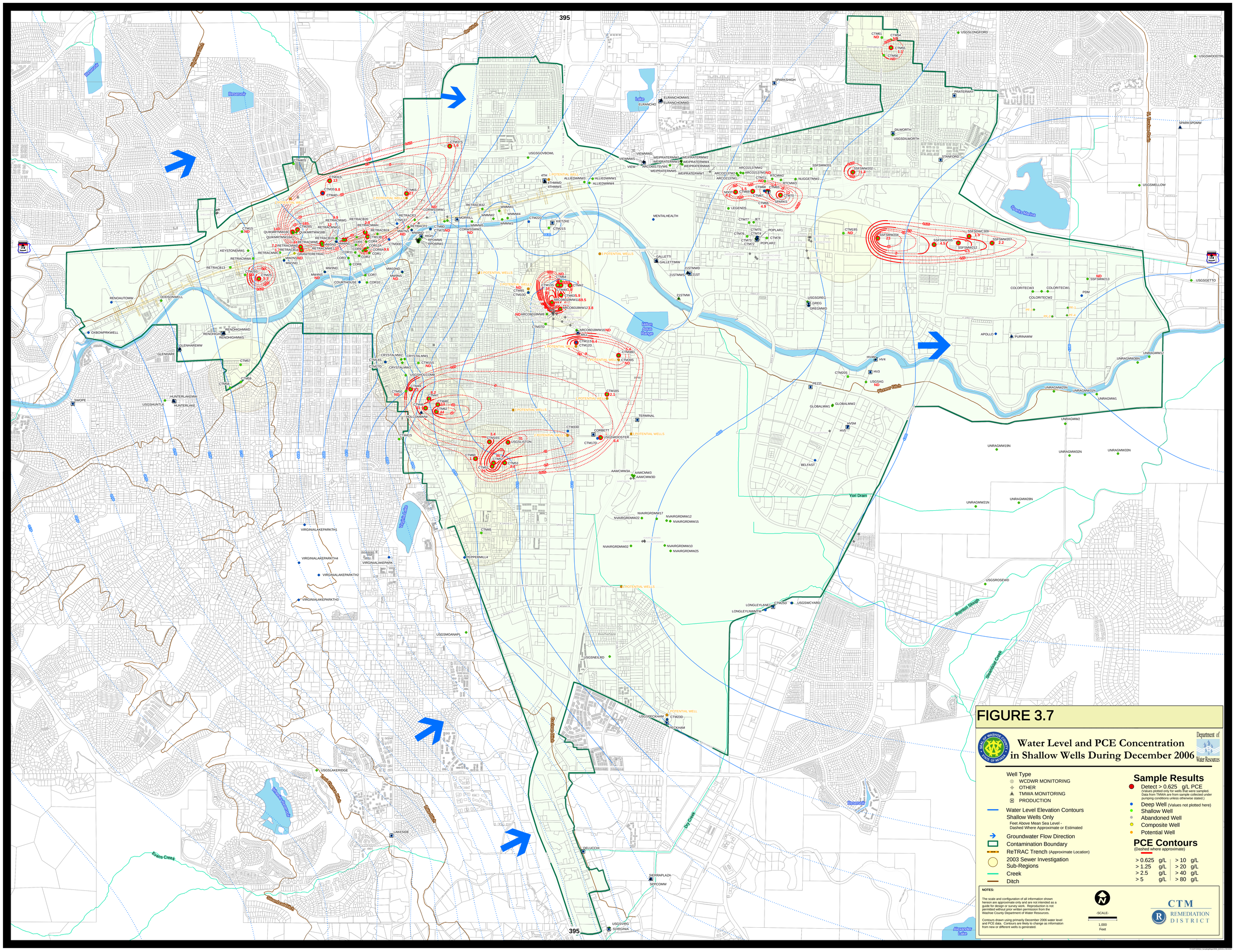


FIGURE 3.7

Water Level and PCE Concentration in Shallow Wells During December 2006

Department of Water Resources

Well Type
- WCDWR MONITORING
- OTHER
- TMWA MONITORING
- PRODUCTION

Water Level Elevation Contours
Shallow Wells Only
Feet Above Mean Sea Level - Dashed Where Approximate or Estimated

Groundwater Flow Direction
Contamination Boundary
ReTRAC Trench (Approximate Location)
2003 Sewer Investigation Sub-Regions
Creek
Ditch

Sample Results

- Detect > 0.625 g/L PCE (Values plotted only for wells that were sampled. Data from TMWA are from sample collected under pumping conditions unless otherwise stated.)
- Deep Well (Values not plotted here)
- Shallow Well
- Abandoned Well
- Composite Well
- Potential Well

PCE Contours

(Dashed where approximate)

> 0.625 g/L	> 10 g/L
> 1.25 g/L	> 20 g/L
> 2.5 g/L	> 40 g/L
> 5 g/L	> 80 g/L

NOTES:

The scale and configuration of all information shown hereon are approximate only and are not intended as a guide for design or survey work. Reproduction is not permitted without prior written permission from the Washoe County Department of Water Resources.

Contours drawn using primarily December 2006 water level and PCE data. Contours are likely to change as information from new or different wells is generated.

-SCALE-

1,000 Feet

CTM REMEDIATION DISTRICT

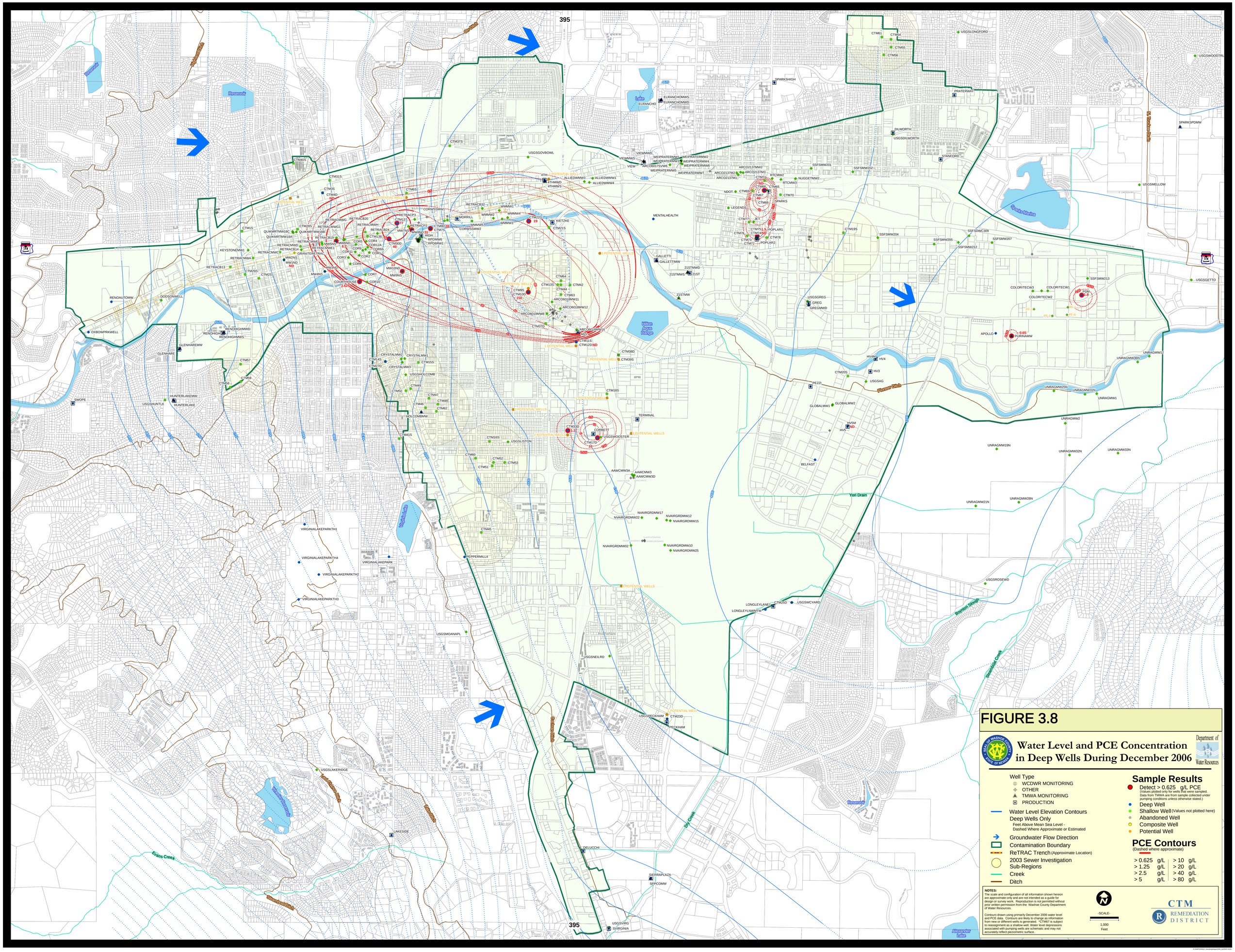
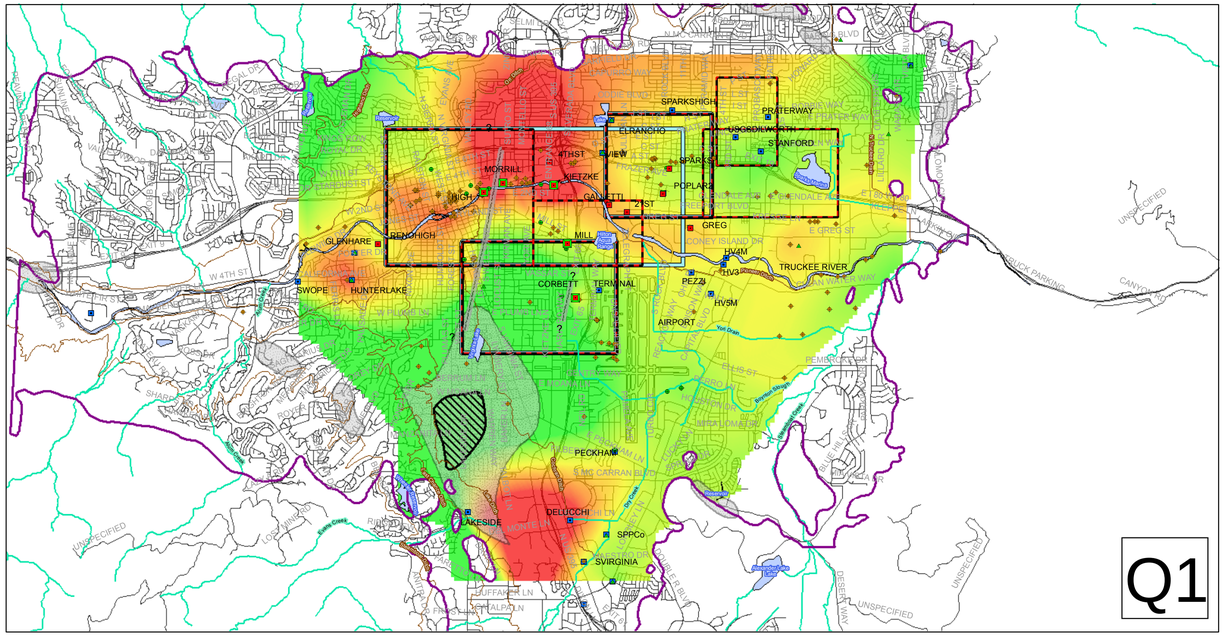
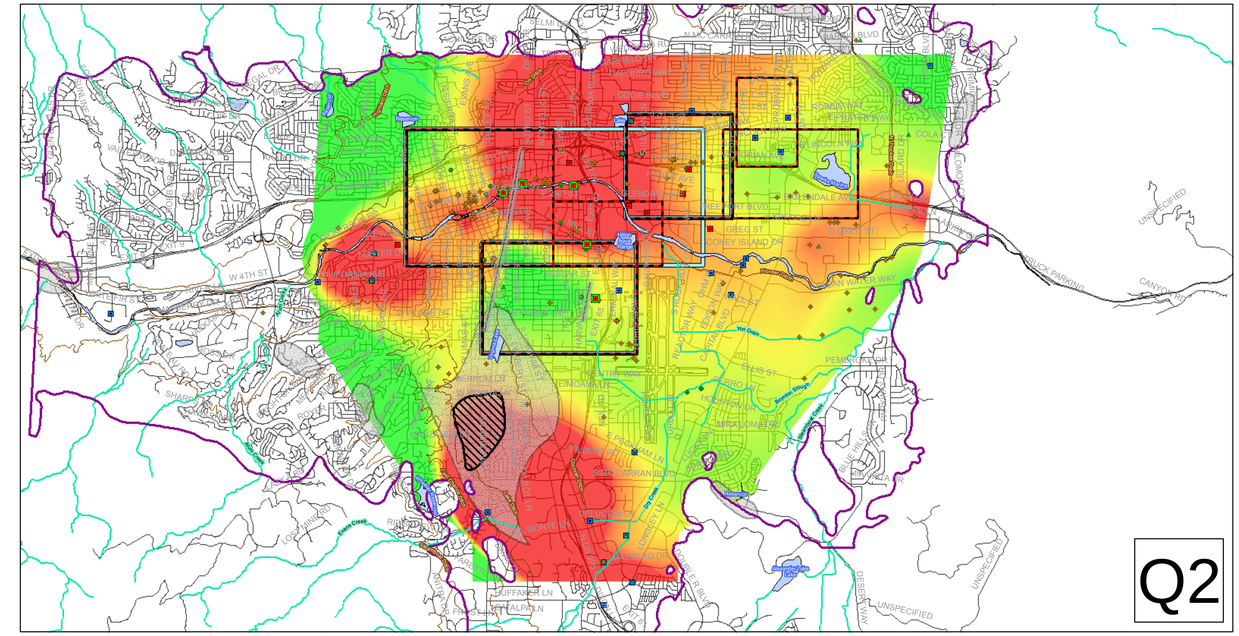
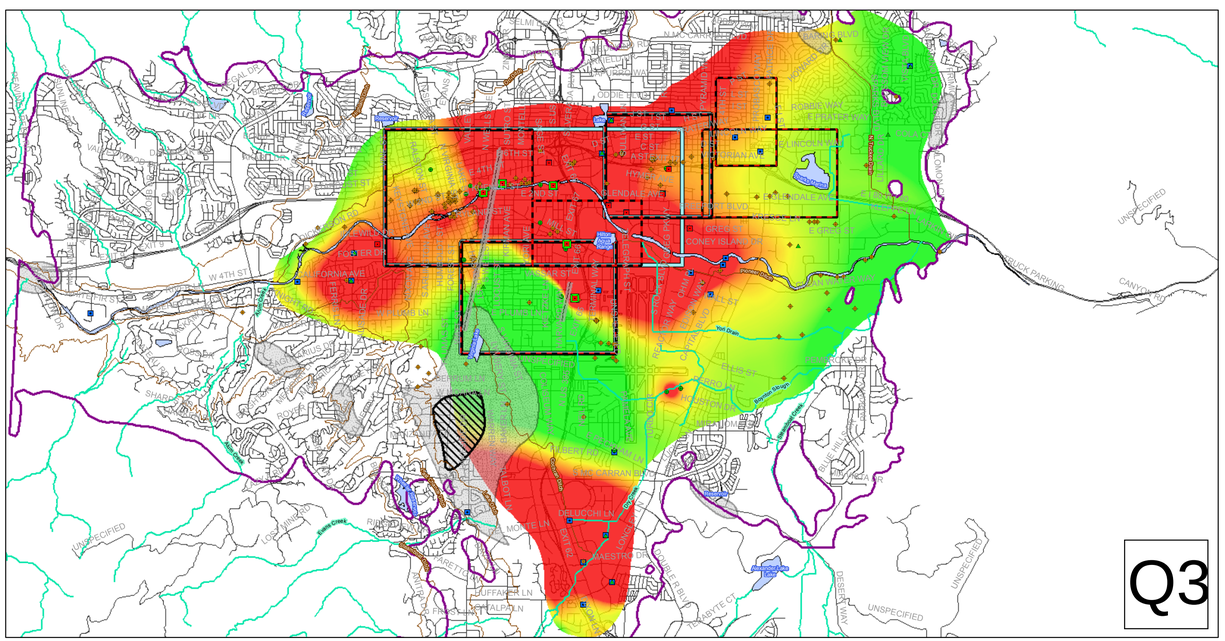
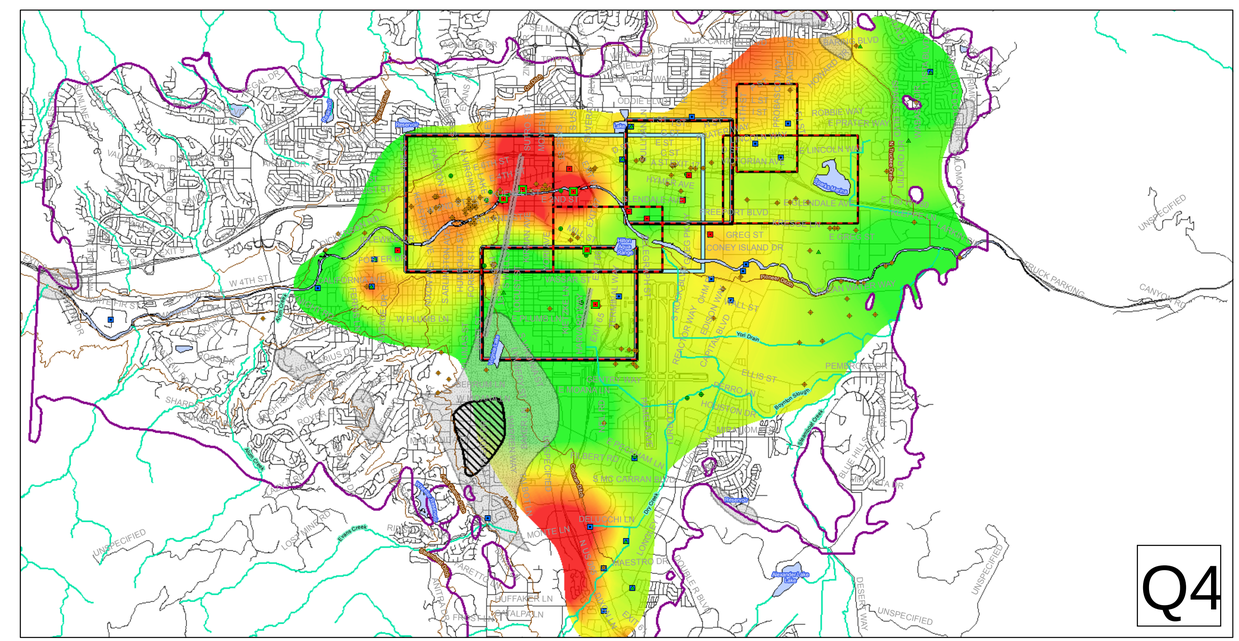


FIGURE 3.8
Water Level and PCE Concentration in Deep Wells During December 2006
Department of Water Resources
Well Type
WCDWR MONITORING
OTHER
TMWA MONITORING
PRODUCTION
Water Level Elevation Contours
Deep Wells Only
Feet Above Mean Sea Level - Dashed Where Approximate or Estimated
Groundwater Flow Direction
Contamination Boundary
ReTRAC Trench (Approximate Location)
2003 Sewer Investigation Sub-Regions
Creek
Ditch
Sample Results
Detect > 0.625 g/L PCE
(Values plotted only for wells that were sampled. Data from TMWA are from sample collected under pumping conditions unless otherwise stated.)
Deep Well
Shallow Well (Values not plotted here)
Abandoned Well
Composite Well
Potential Well
PCE Contours
(Dashed where approximate)
> 0.625 g/L
> 1.25 g/L
> 2.5 g/L
> 5 g/L
> 10 g/L
> 20 g/L
> 40 g/L
> 80 g/L
NOTES:
The scale and configuration of all information shown hereon are approximate only and are not intended as a guide for design or survey work. Reproduction is not permitted without prior written permission from the Washoe County Department of Water Resources.
Contours drawn using primarily December 2006 water level and PCE data. Contours are likely to change as information from new or different wells is generated. *CTM67 is subject to reassignment as a shallow well. Water level depressions associated with pumping wells are schematic and may not accurately reflect piezometric surface.
-SCALE-
1,000 Feet
CTM REMEDIATION DISTRICT
395
Lake Aqua Range
Sparks Marina
Steamboat Creek
Yori Drain
Boynton Slough
Evans Creek
Dry Creek
Alexander Lake









Notes: Q1-Q4 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Water Level Difference

- 10.0 feet
- 0
- -10.0 feet
- Shallow Plume Subregions
- Deep Plume Subregions

N W E S

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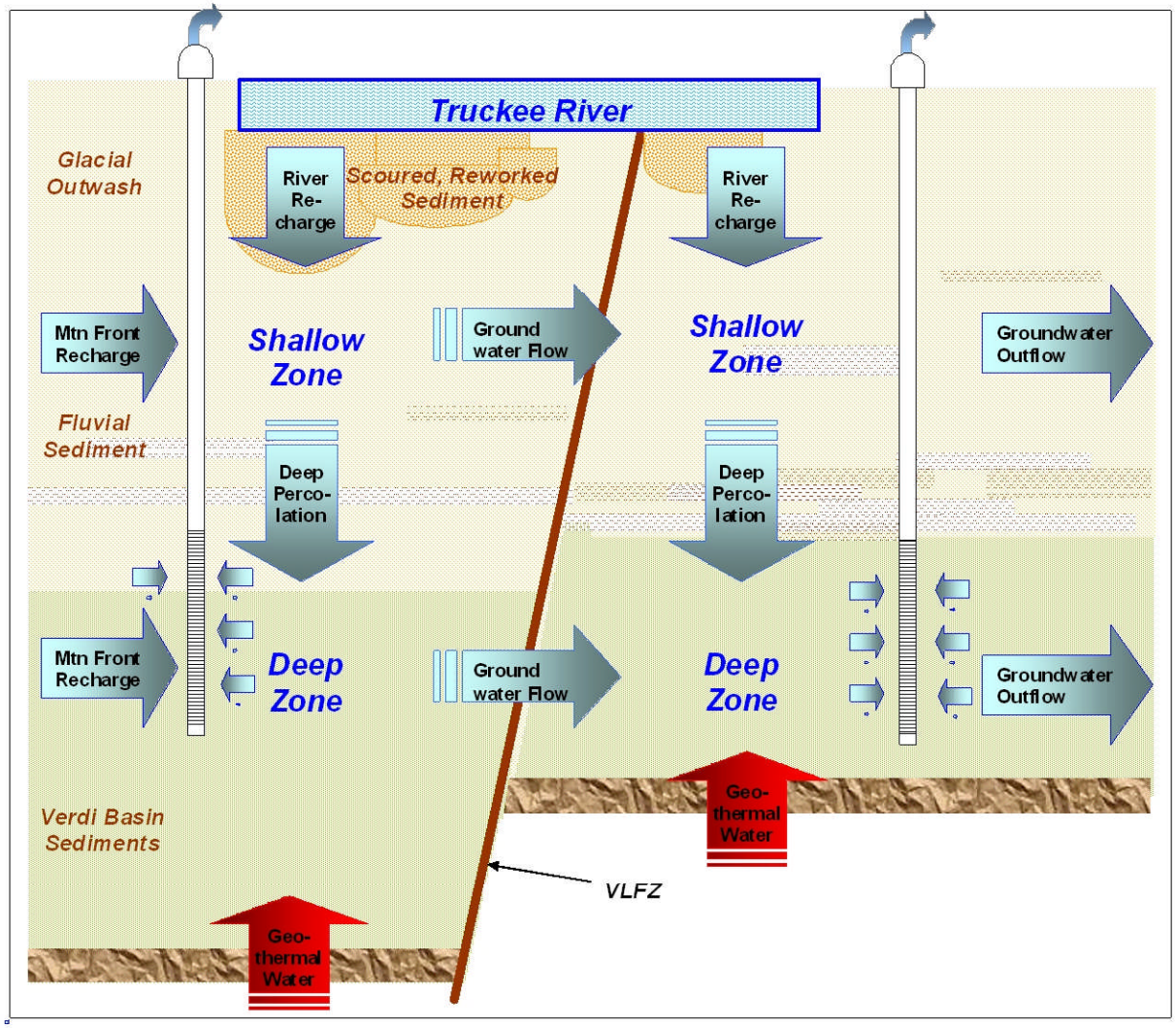
Miles

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
Q1 - Q4 2006 WATER LEVEL DIFFERENCE MAP	MB	MT	01/2008
	N0637B	3.9	



OVERVIEW OF CENTRAL TRUCKEE MEADOWS (CTM) CONCEPTUAL HYDROGEOLOGIC MODEL

- The major Shallow Zone hydrostratigraphic units include Quaternary glacial outwash underlain by Quaternary and Tertiary fluvial sediments. These sediments are heterogeneous and dip slightly eastward. In the Truckee River corridor, they are scoured and reworked, creating coarse grained conduits in which stratification has been disrupted and vertical permeability increased.
- The major Deep Zone hydrostratigraphic units include heterogeneous Quaternary and Tertiary fluvial sediments and the Verdi Basin Sediments, which also dip slightly eastward. The Shallow Zone and Deep Zone are grossly separated by lower permeability strata of varying lateral continuity. The effectiveness of this aquitard to impede vertical groundwater flow varies from location to location, depending on the lateral and vertical continuity of the layers within it. In general, the Shallow and Deep Zone appear to be in better communication west of the Virginia Lake Fault Zone (VLFZ) than east of the VLFZ.
- The Verdi Basin Sediments are generally finer grained than the overlying fluvial sediments, but in the central portion of the CTM, the upper VBS contain sediments that are similar in character to the overlying fluvial sediments. Many of the municipal water supply well located east of the VLFZ are at least partly screened in the Verdi Basin Sediments.
- The VLFZ (and other possible lateral groundwater flow barriers such as the Harvard Way Barrier) is a vertically oriented zone of lower permeability that impedes (but does not stop) lateral groundwater flow. Water levels on one side of the VLFZ generally do not respond to pumping on the other side. As a result, a prominent cone of depression forms in the Deep Zone east of the VLFZ during the peak municipal pumping period of Summer and Fall.
- Groundwater generally flows from west to east in the CTM, and is influenced by vertical groundwater level steps across flow barriers such as the VLFZ, recharge form the Truckee River, and municipal groundwater pumping.
- Recharge occurs via lateral inflow from mountain front recharge, river recharge, deep percolation of water from the Shallow Zone to the Deep Zone, and upflow of geothermal water. Additional recharge occurs via water injection through selected production wells in the winter and spring (but is not shown on this figure).
- Areas of coarse grained, scoured sediment along the Truckee River are particularly prone to rapid recharge from the river.
- Discharge occurs from the Shallow Zone by lateral outflow and deep percolation. Deep percolation is driven or enhanced by vertical gradients resulting from groundwater pumping of municipal water supply wells.
- Discharge from the Deep Zone occurs by lateral outflow and pumping of municipal water supply wells. Municipal pumping is most prevalent in the summer and fall, and creates large groundwater depressions in the deep zone, that cause local groundwater flow reversal.

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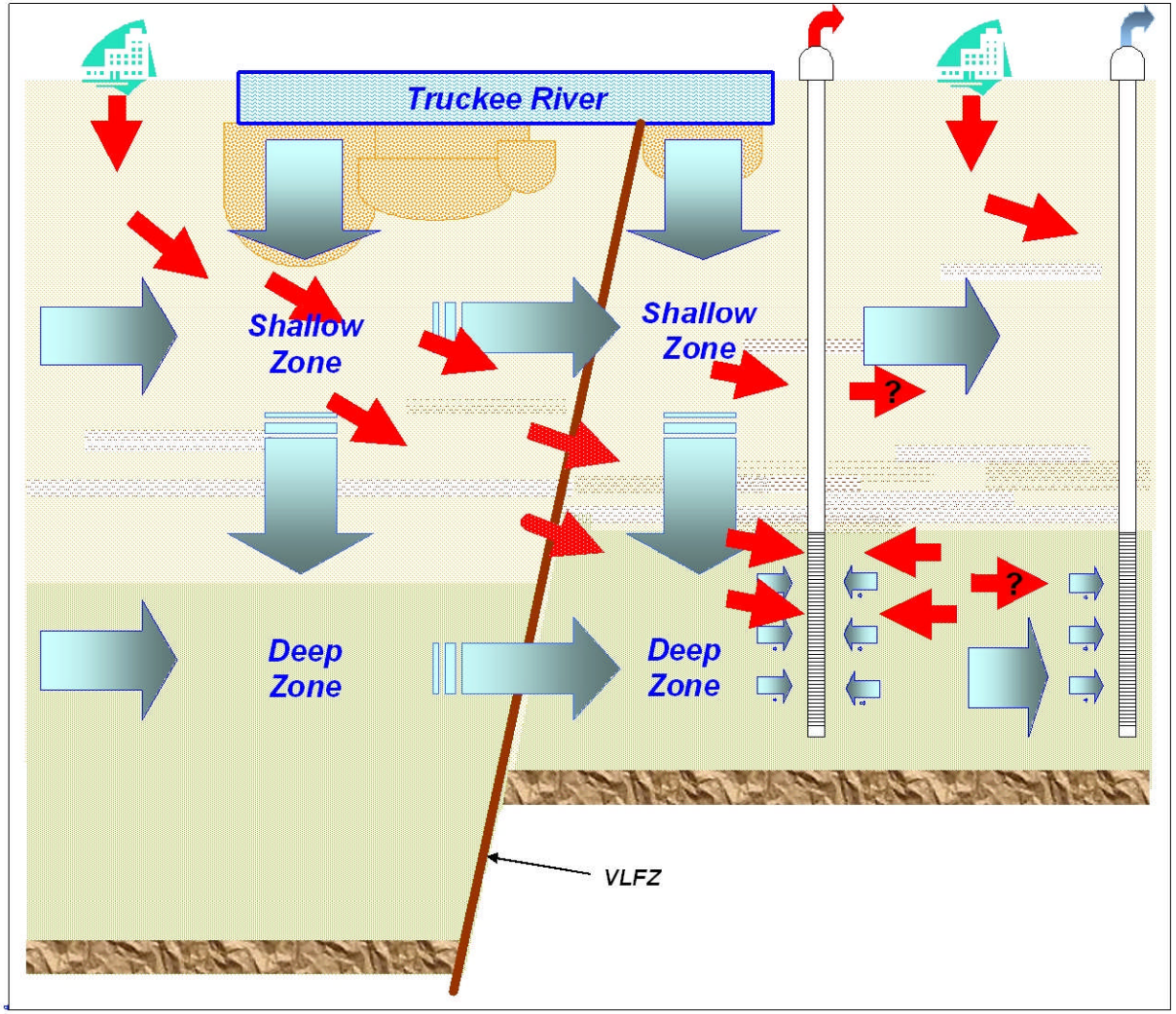
SWL	MT	02/2008
6N637B30	5.1	

CENTRAL TRUCKEE MEADOWS CONCEPTUAL HYDROGEOLOGICAL MODEL



OVERVIEW OF CENTRAL TRUCKEE MEADOWS (CTM) CONCEPTUAL PCE TRANSPORT MODEL

- PCE is not naturally occurring; therefore all PCE detected in the CTM originated at the ground surface from Potentially Contaminating Activities (PCAs), such as dry cleaning, manufacturing, vehicle maintenance and other activities. Secondary sources include PCE discharges to leaking sewer lines.
- Downward migration of contaminants into groundwater is enhanced by the predominantly coarse grained character of the Quaternary glacial outwash sediments and the presence of scoured and reworked sediments near the Truckee River.
- Although groundwater concentrations detected to date do not indicate the presence of dense nonaqueous phase liquid PCE product (DNAPL), the persistence of the PCE plumes in the CTM suggests that secondary DNAPL sources may exist.
- PCE migrates laterally in the Shallow Zone, and is typically driven deeper by the natural dip of the strata and vertical groundwater gradients enhanced by municipal pumping and recharge from the Truckee River.
- Recharge from the Truckee River may limit the lateral migration of PCE in the Shallow Zone, either by forming a hydraulic impediment (flow divide), by dilution, or by driving contamination deeper due to enhanced vertical gradients.
- The Shallow Zone and Deep Zone are grossly separated by lower permeability strata of varying lateral continuity. The effectiveness of this aquitard to impede vertical groundwater flow and PCE transport varies from location to location, depending on the lateral and vertical continuity of the layers within it. In general, the Shallow and Deep Zone appear to be in better communication west of the Virginia Lake Fault Zone (VLFZ) than east of the VLFZ.
- The VLFZ (and other possible lateral groundwater flow barriers such as the Harvard Way Barrier) is a vertically oriented zone of lower permeability that impedes (but does not stop) lateral groundwater flow and PCE transport. The exact location and mechanism of PCE transport across these barriers is not known at this time.
- PCE is drawn downward into the Deep Zone and captured by municipal wells equipped with wellhead treatment systems to remove the PCE. The degree of capture of the shallow and deep plumes is variable. In some cases, PCE in the Shallow Zone may flow past municipal pumping wells without being drawn down, or may be incompletely captured. PCE in the Deep Zone may flow laterally past the wells or may flow past the well's capture zones during periods when pumping is not conducted.
- Downgradient municipal wells that are presently not impacted or not being used could become impacted in the future if they capture Shallow Zone PCE and draw it deeper or if they capture Deep Zone PCE that has migrated past the existing capture network.
- Recharge through municipal pumping wells may serve to contain Deep Zone PCE plumes, but this effect is not well understood.

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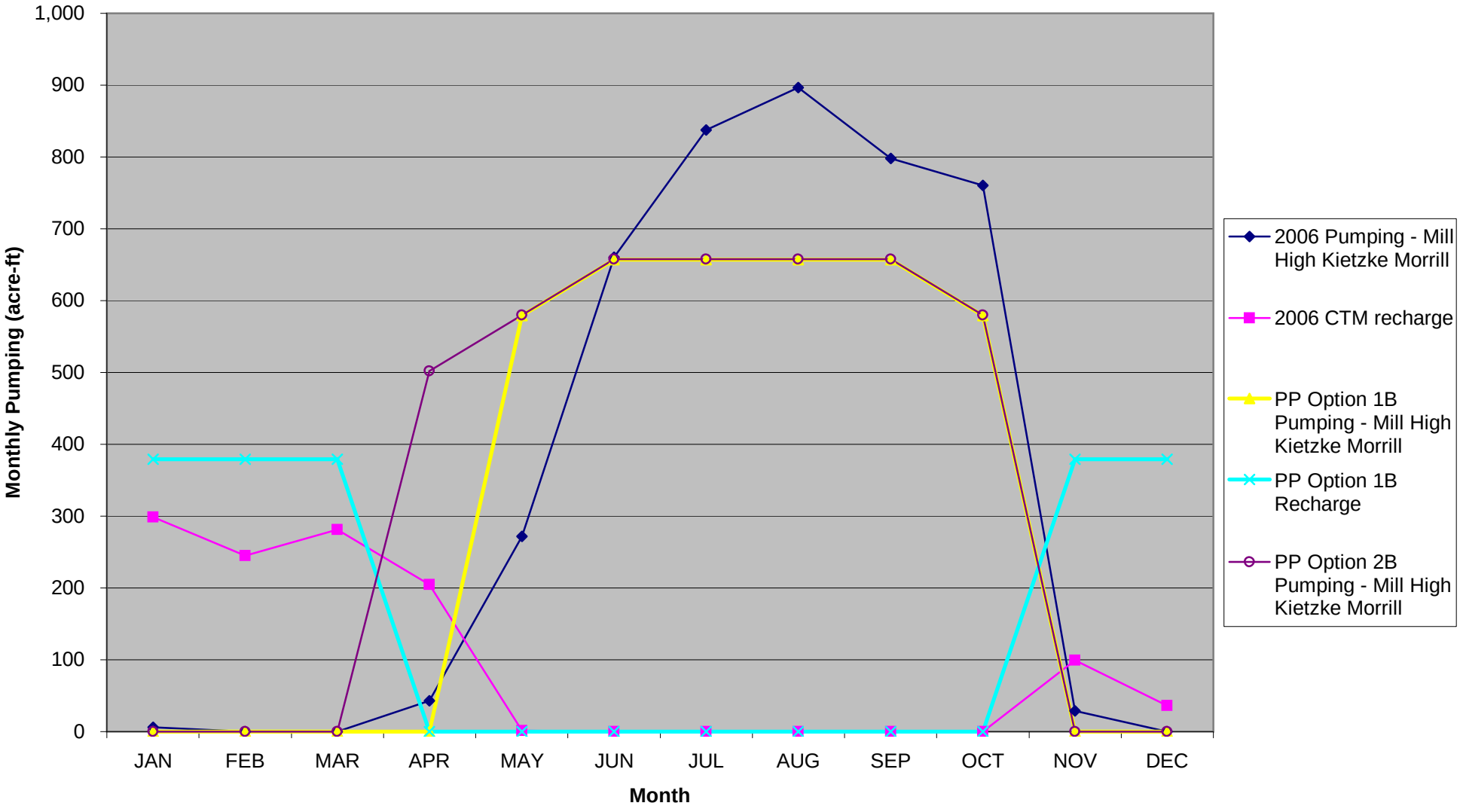
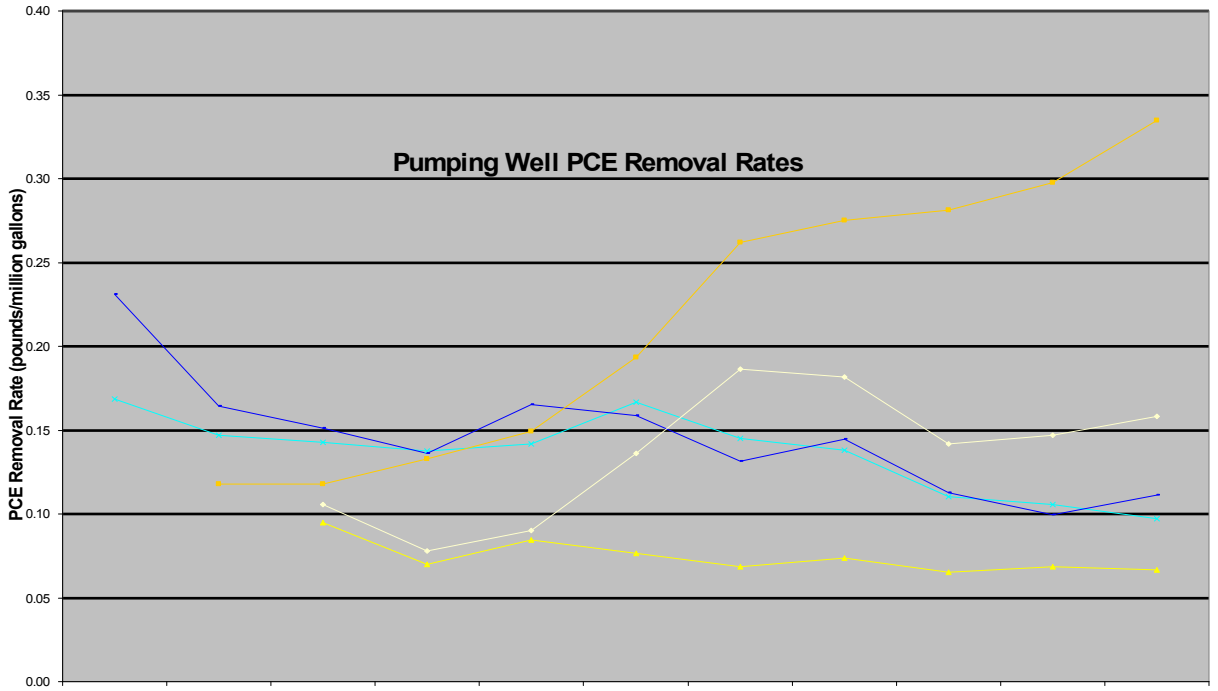
CENTRAL TRUCKEE MEADOWS CONCEPTUAL PCE TRANSPORT MODEL	SWL	MT	02/2008
	6N637B30	5.2	

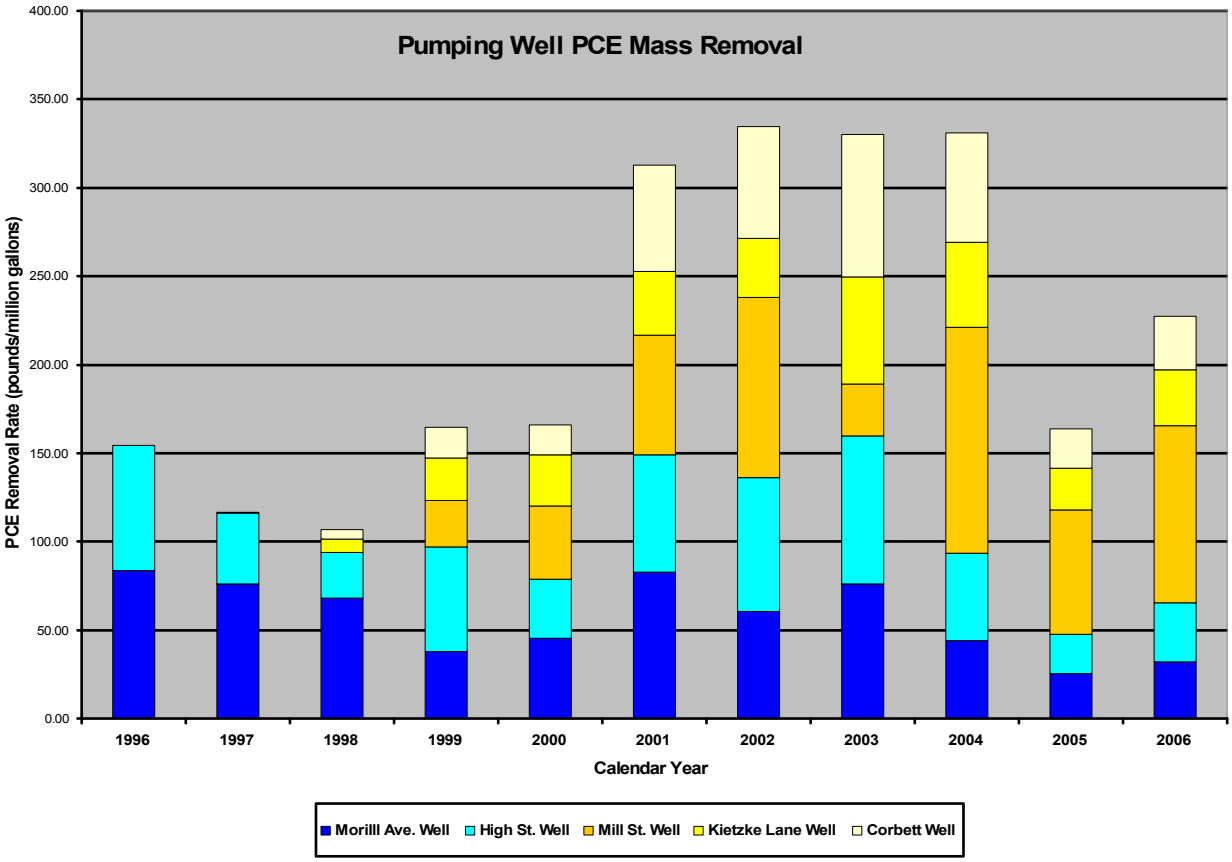
WorleyParsons Komex

resources & energy

Figure 5.3: Comparison of 2006 Municipal Well Pumping to the Pumping Plan



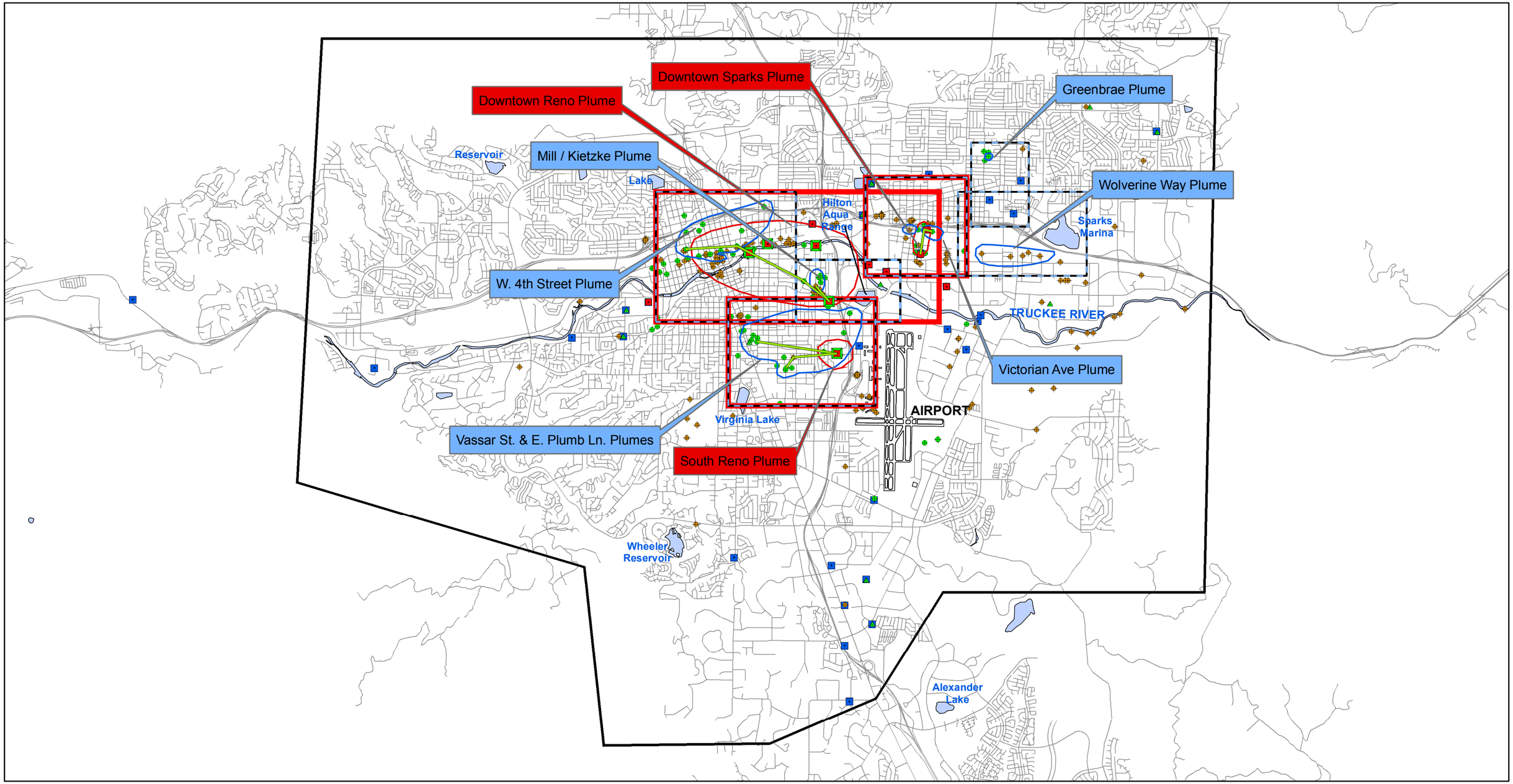




WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

PCE REMOVAL RATES - PCE MASS REMOVAL	SWL	MT	02/2008
	6N637B30	**5.4**	



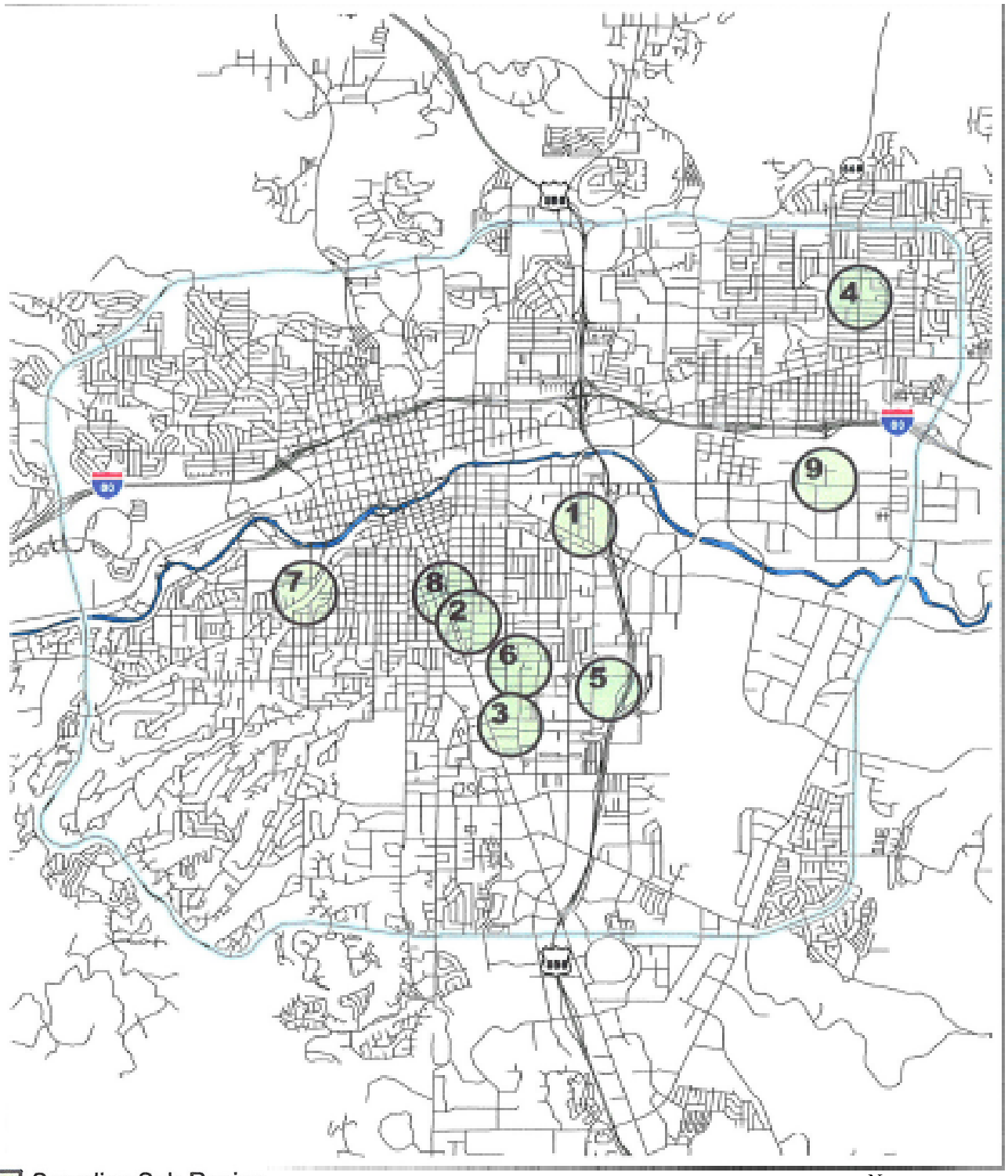
Legend

- Concentration Profile Baseline
- Shallow Plumes
- Deep Plumes
- Shallow Plume Subregions
- Deep Plume Subregions
- Streets
- Study Area

N
W E
S

0 6,500
Feet

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
PLUME SUBREGION LOCATIONS	MB	MT	01/2007
	N0637B	6.1	



Sampling Sub-Region
Truckee River
McCarran Blvd.

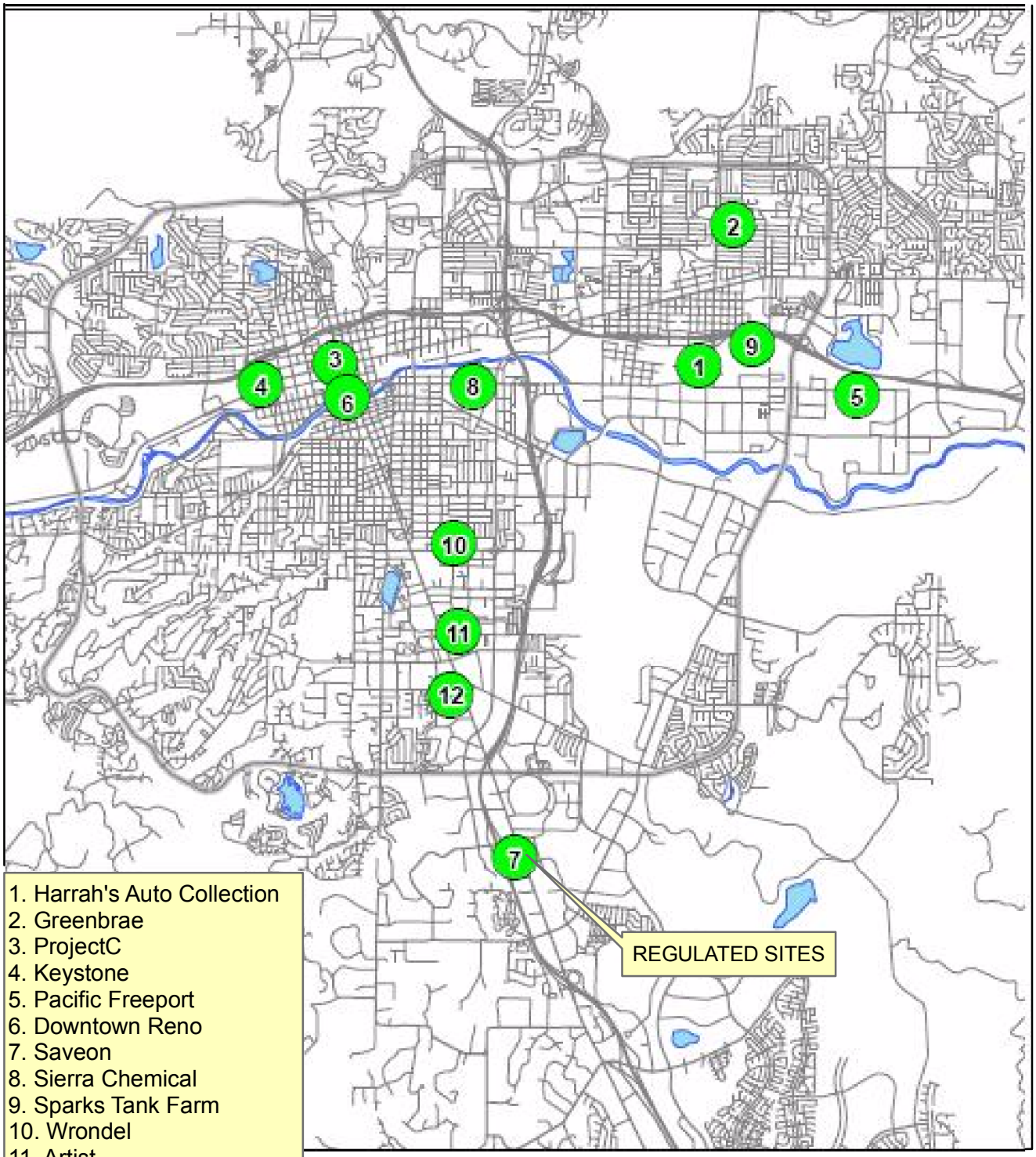
Note: Adapted from Kleinfelder, 2003

N
W
E
S

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

LOCATION OF SEWER INVESTIGATION SUBREGIONS	MB	MT	01/2007
	N0637B	**6.2a**	



1. Harrah's Auto Collection
2. Greenbrae
3. ProjectC
4. Keystone
5. Pacific Freeport
6. Downtown Reno
7. Saveon
8. Sierra Chemical
9. Sparks Tank Farm
10. Wrondel
11. Artist
12. Old Town

Note: Adapted from McGinley, 2002

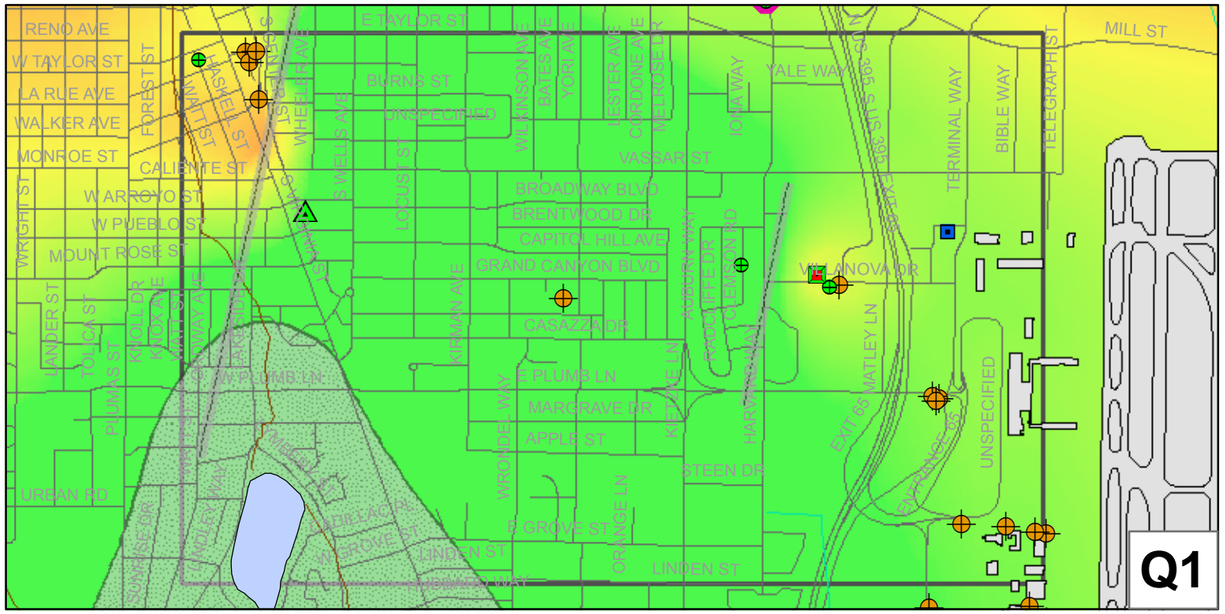
N
W E
S

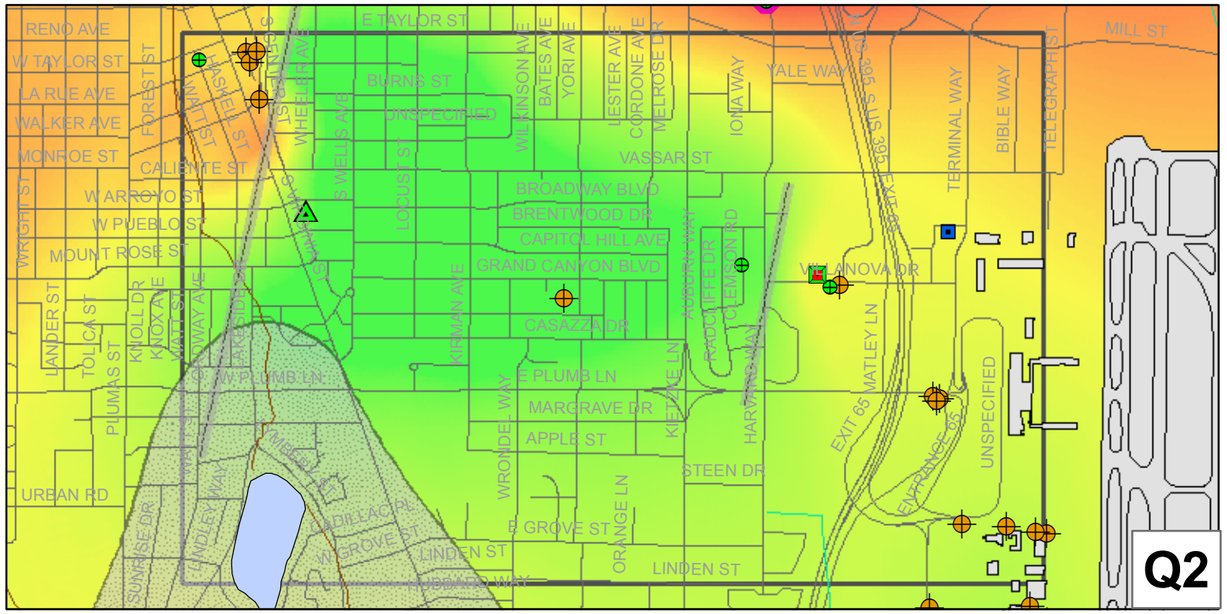
WASHOE COUNTY DWR

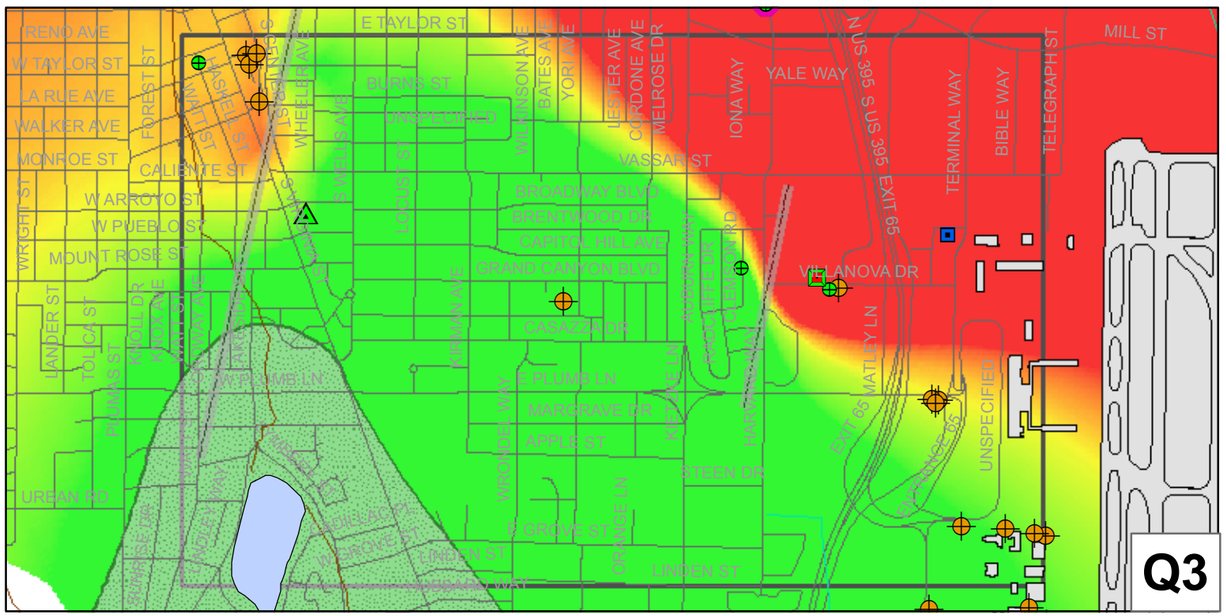
WorleyParsons Komex
resources & energy

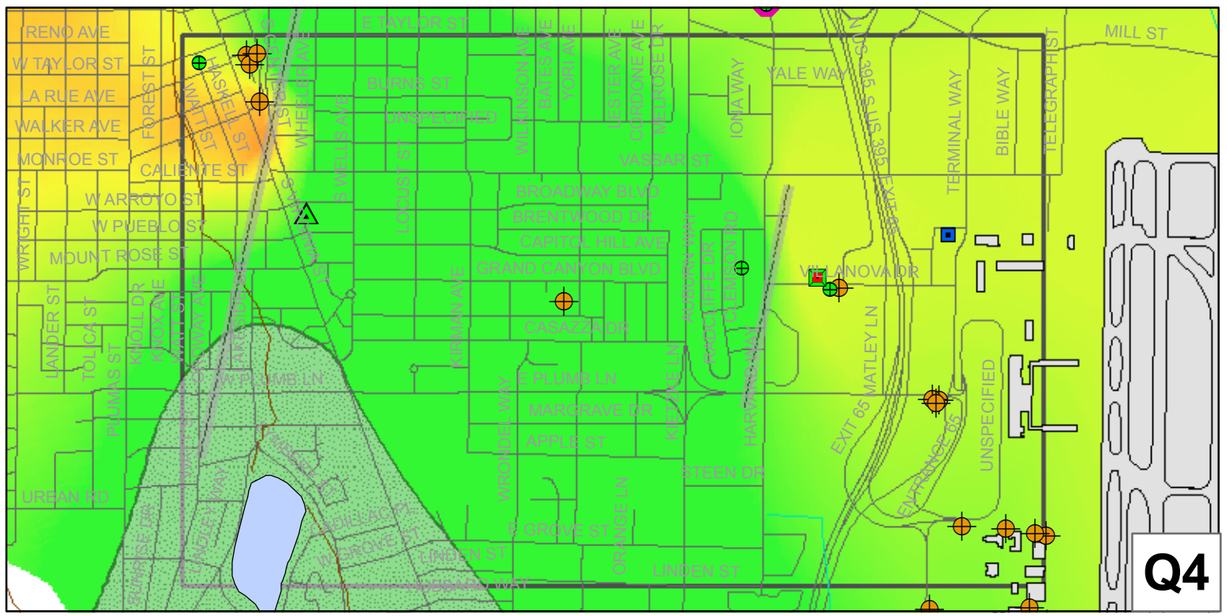
MB	MT	01/2007
N0637B	**6.2b**	

LOCATION OF NDEP CORRECTIVE ACTION SITES









Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

Vassar Street/East Plumb Lane Subregion Water Level Difference map

10.0 feet

0

-10.0 feet

N
W E
S

0 2,640

Feet

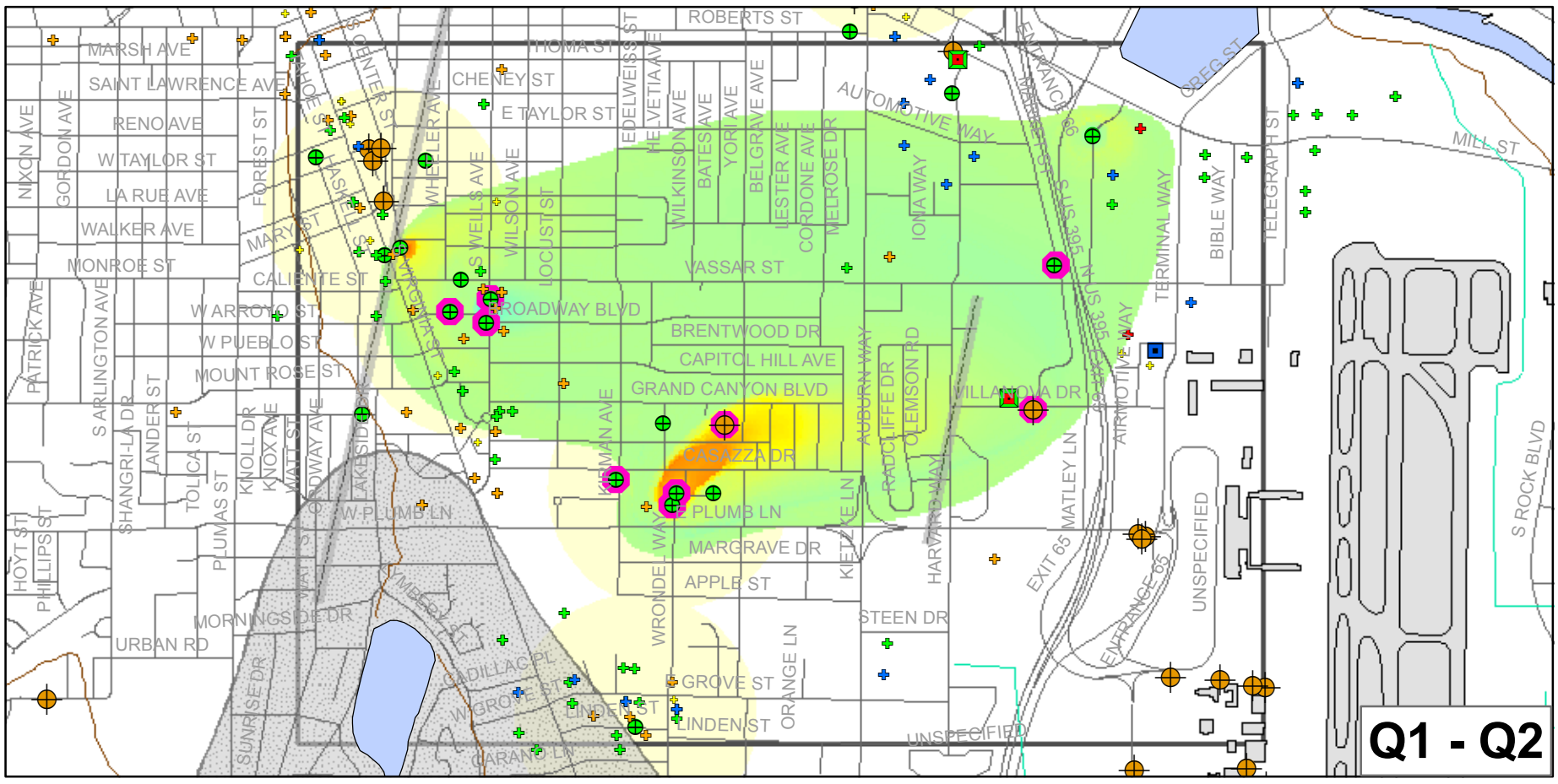
WASHOE COUNTY DWR

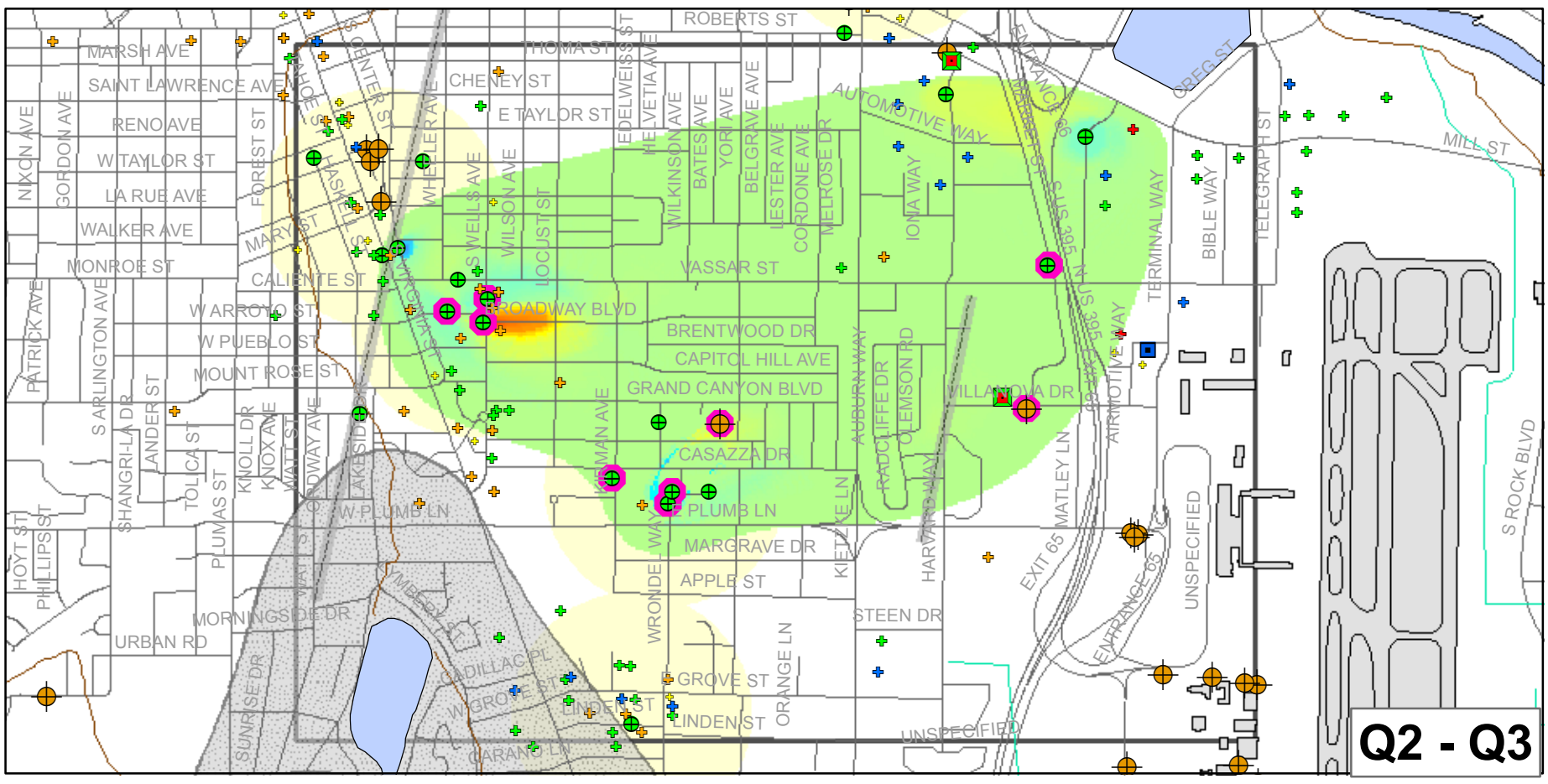
WorleyParsons Komex

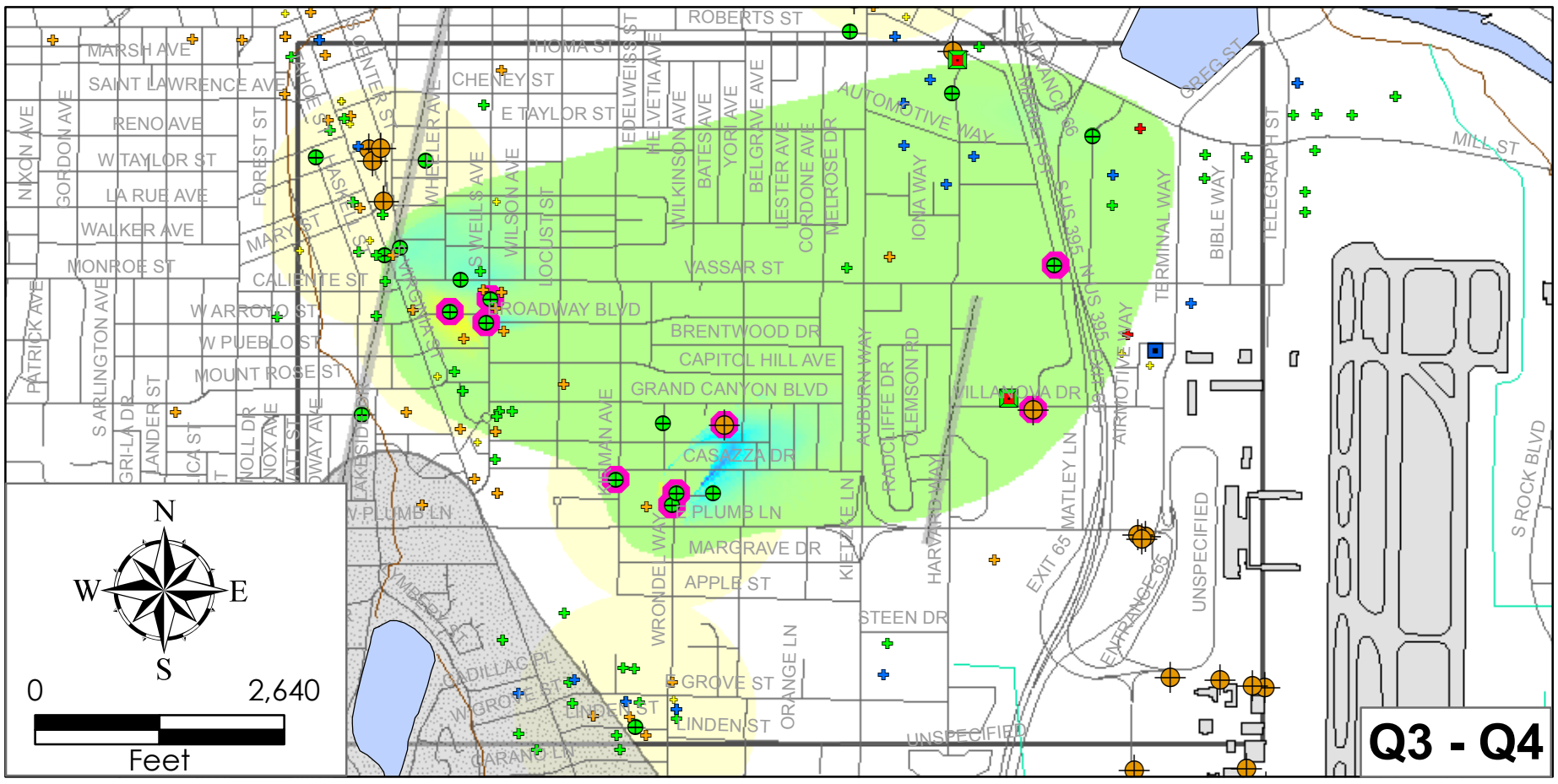
resources & energy

VASSAR STREET/EAST PLUMB LANE SUBREGION Q1-Q4 2006 WATER LEVEL DIFFERENCE MAP

MB	MT	01/2008
6N637B	6.3	







Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

VASSAR STREET/E PLUMB LN SUBREGION 2006
PCE CONCENTRATION CHANGE

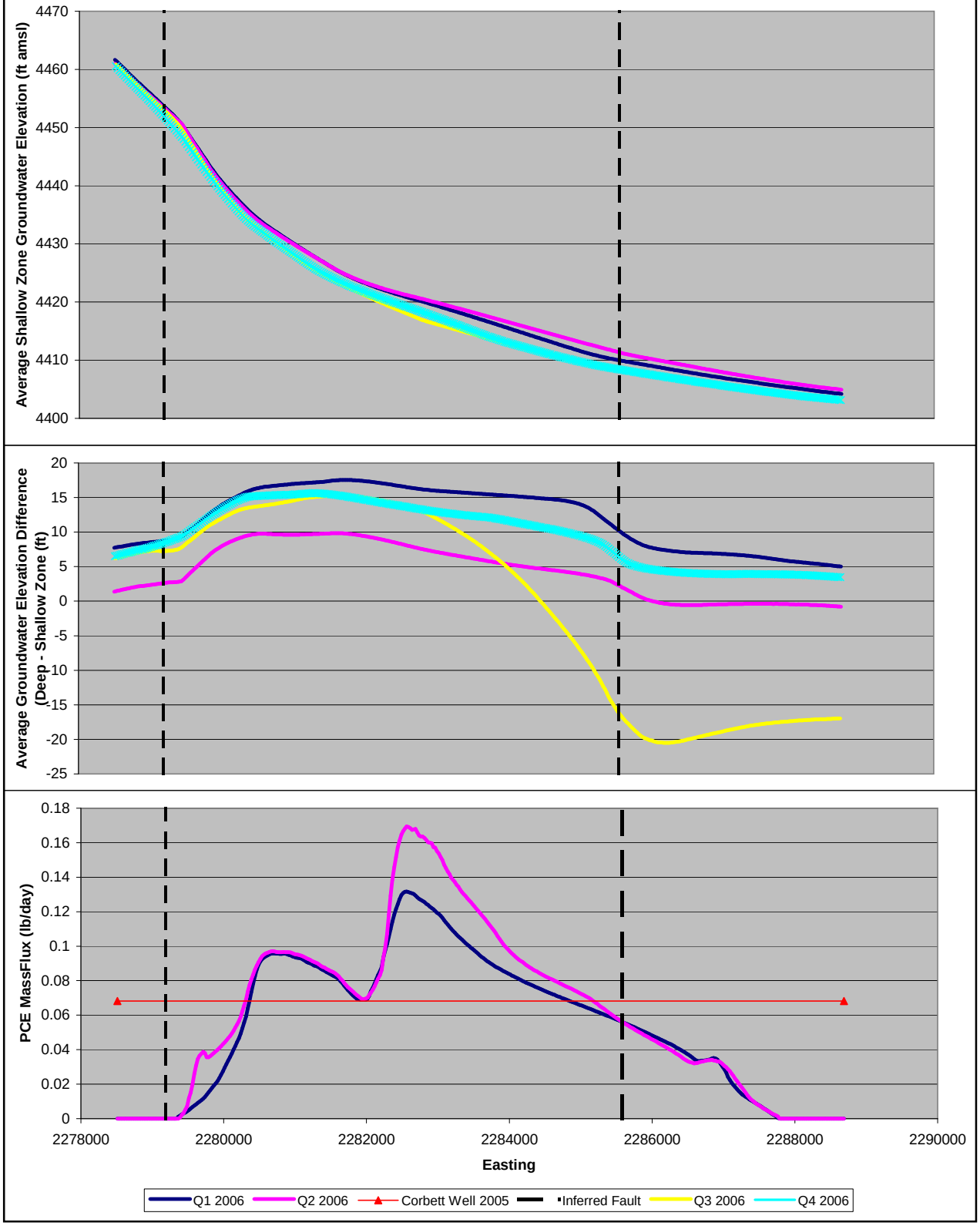
SWL	PM	01/2008
6N637B30	6.4	

WorleyParsons Komex

resources & energy

Figure 6.5: Average 2006 Groundwater Elevation, Groundwater Elevation Difference and Mass Flux

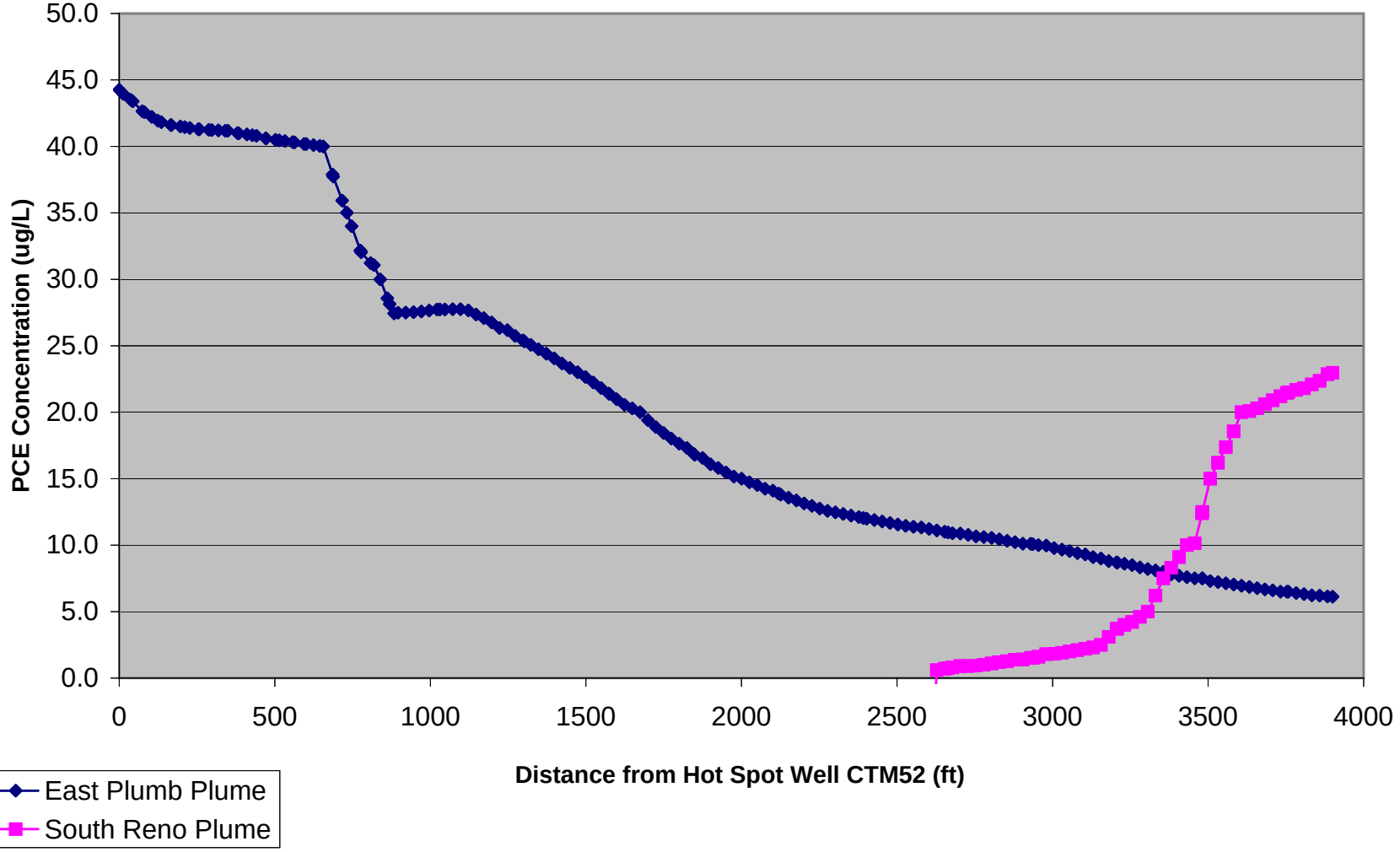
Vassar Street / East Plumb Lane Plume Subregion



WorleyParsons Komex

resources & energy

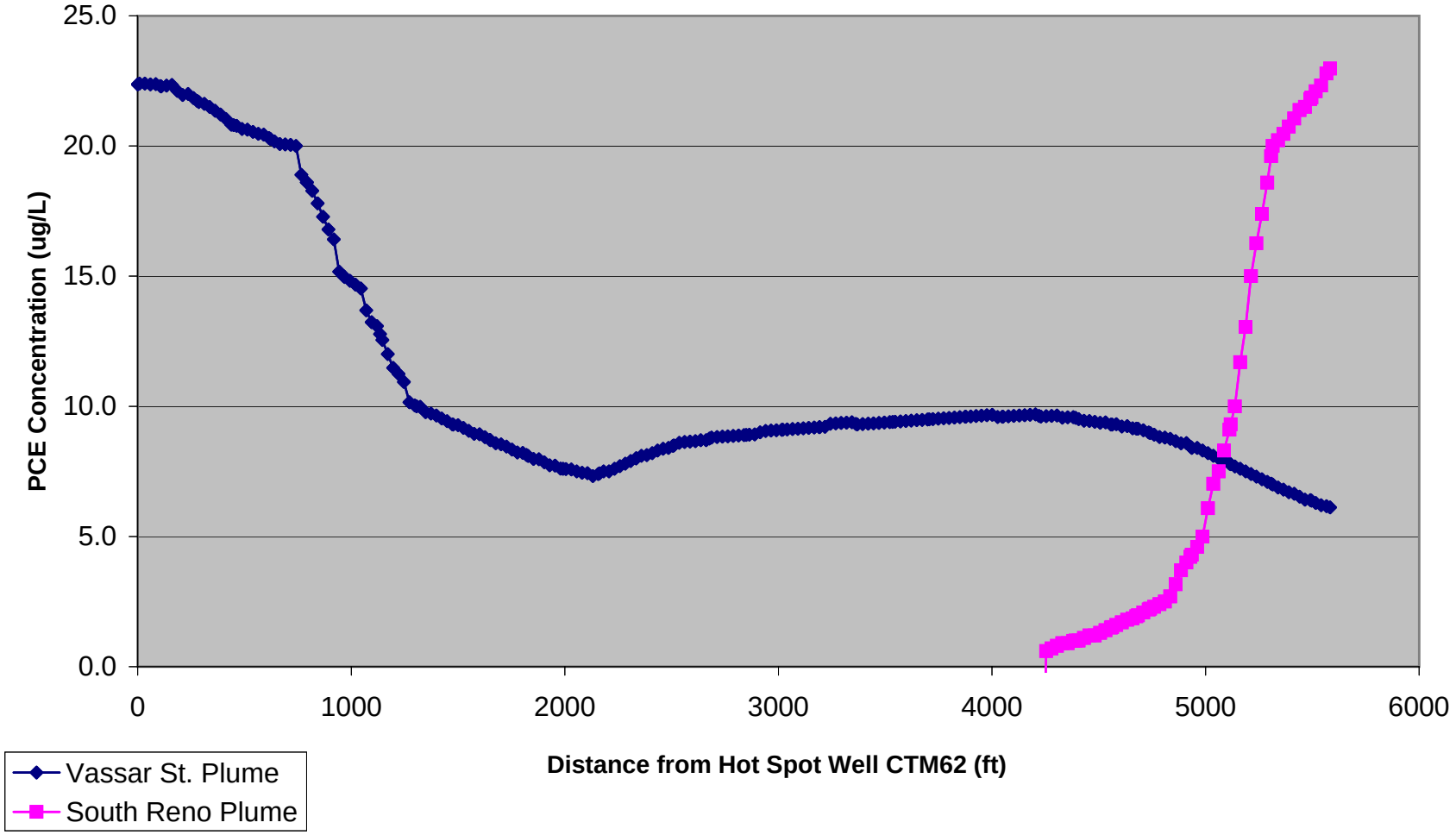
Figure 6.6 : East Plumb Lane / South Reno Concentration Profile, Q2 2006

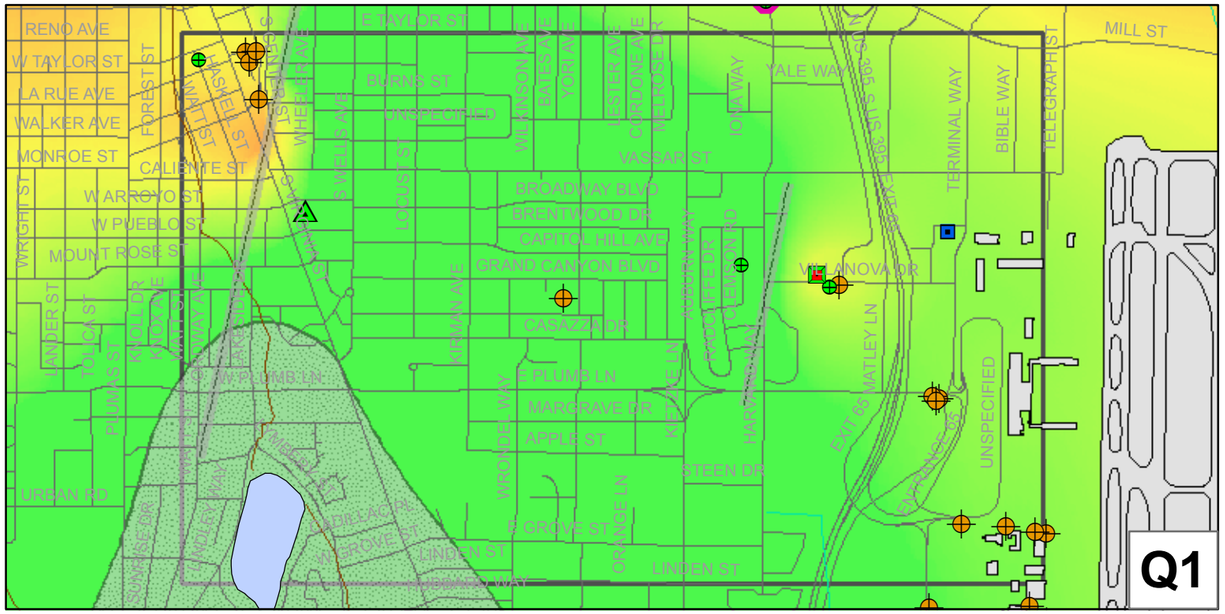


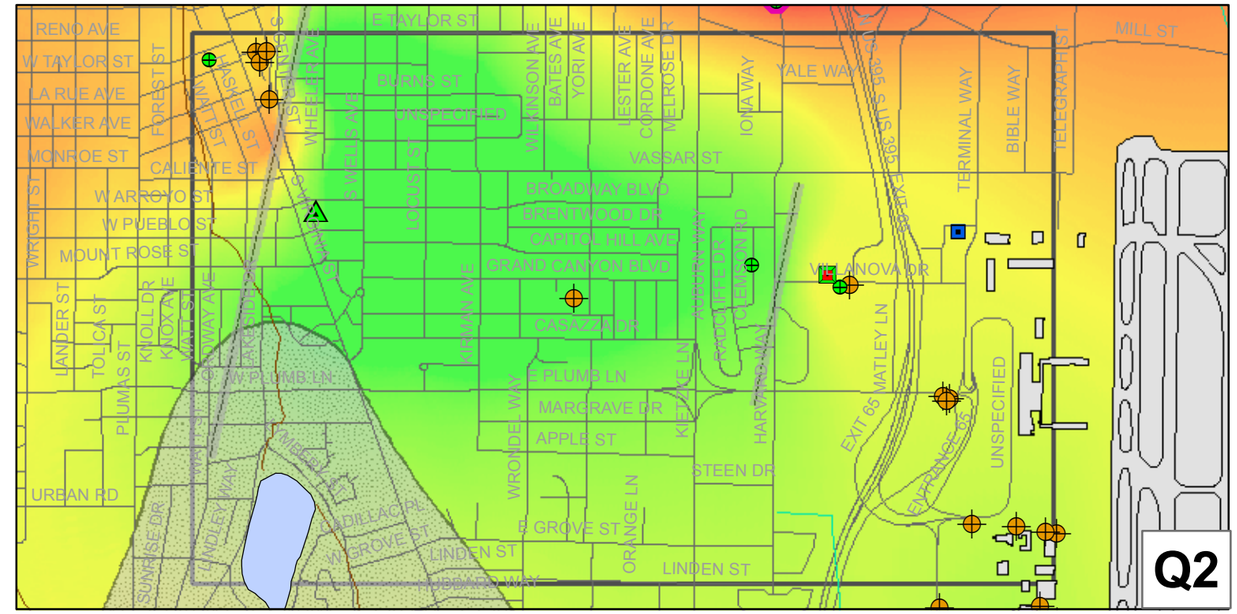
WorleyParsons Komex

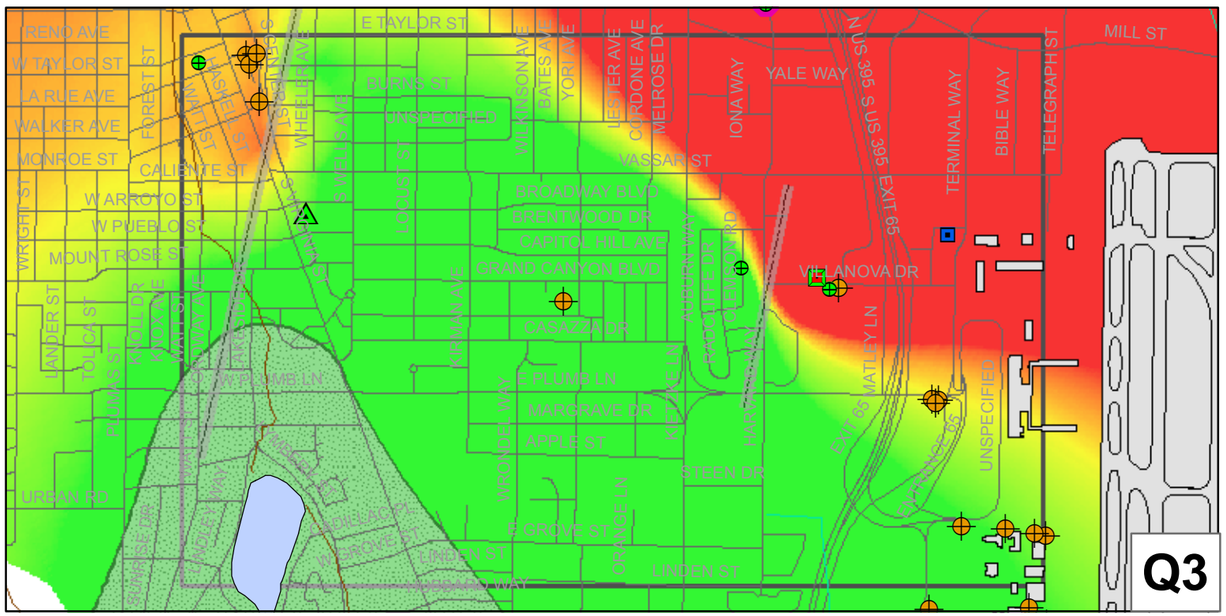
resources & energy

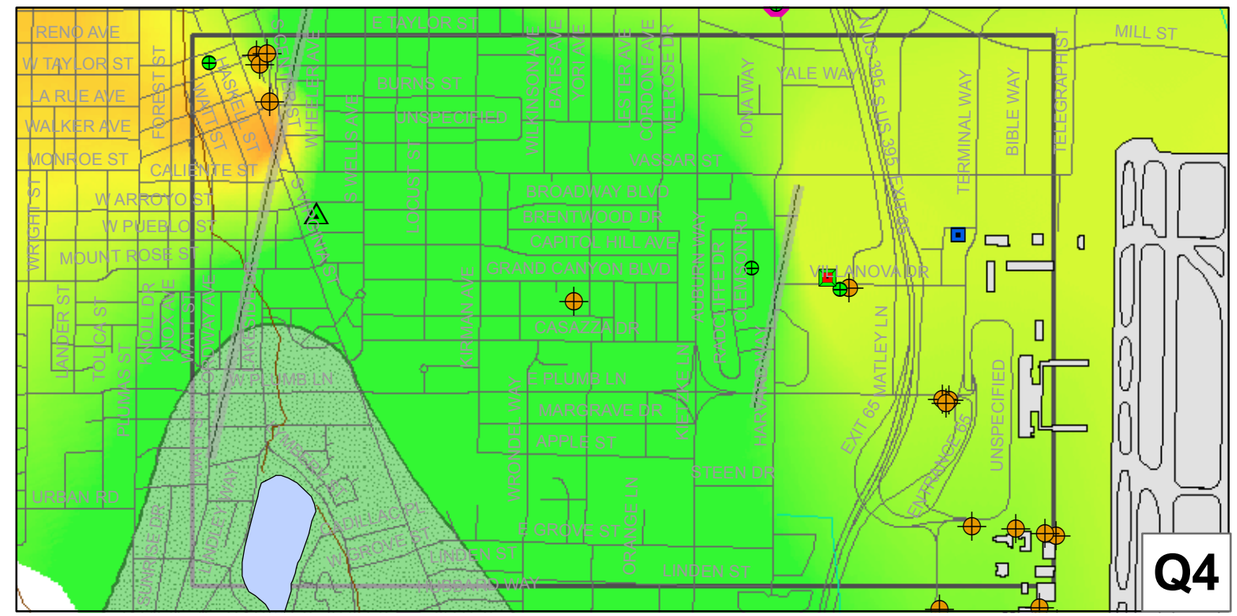
Figure 6.7: Vassar Street / South Reno Concentration Profile, Q2 2006











Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

South Reno Subregion Water Level Difference map

10.0 feet

0

-10.0 feet

N
W E
S

0 2,640

Feet

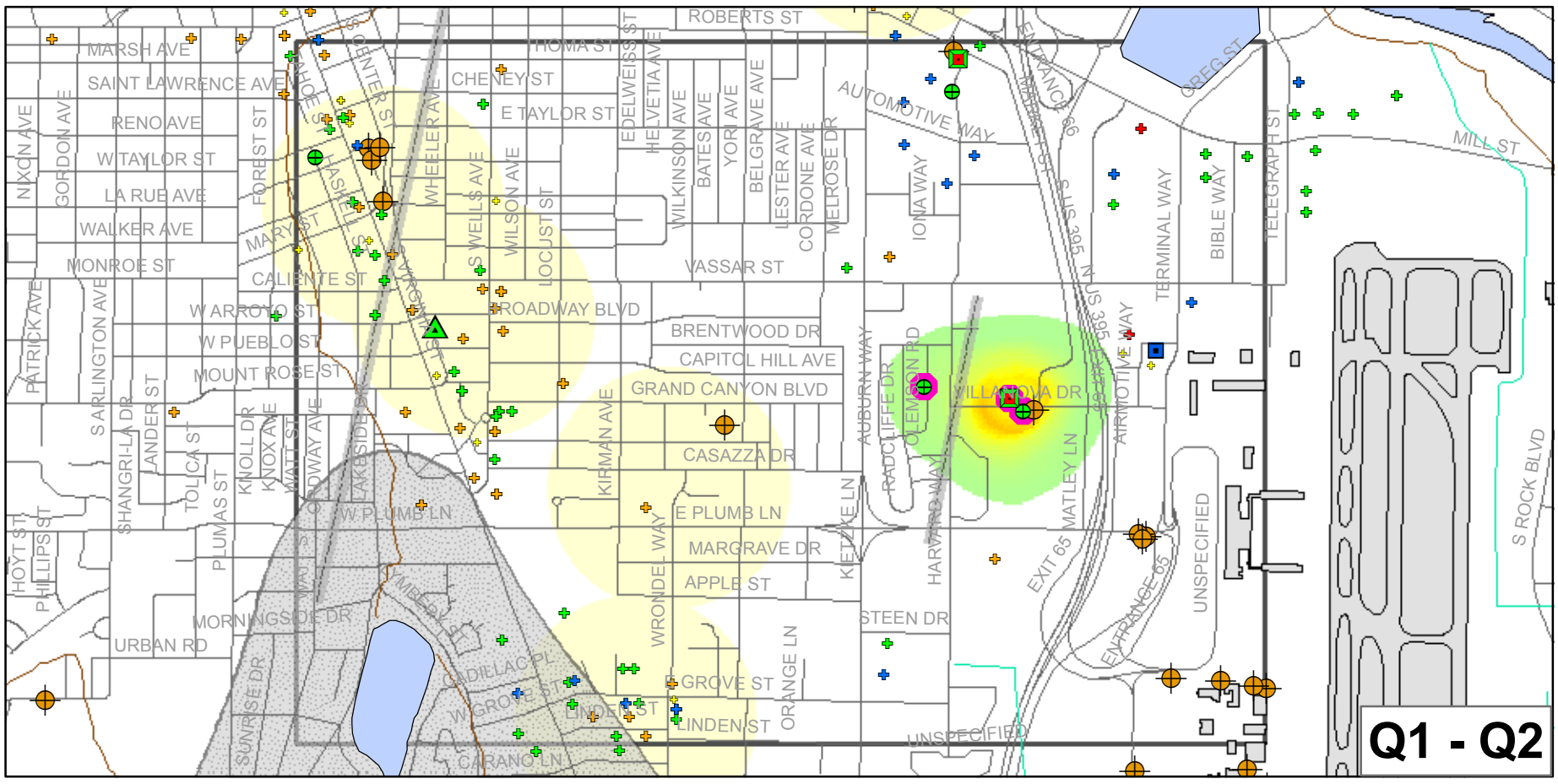
WASHOE COUNTY DWR

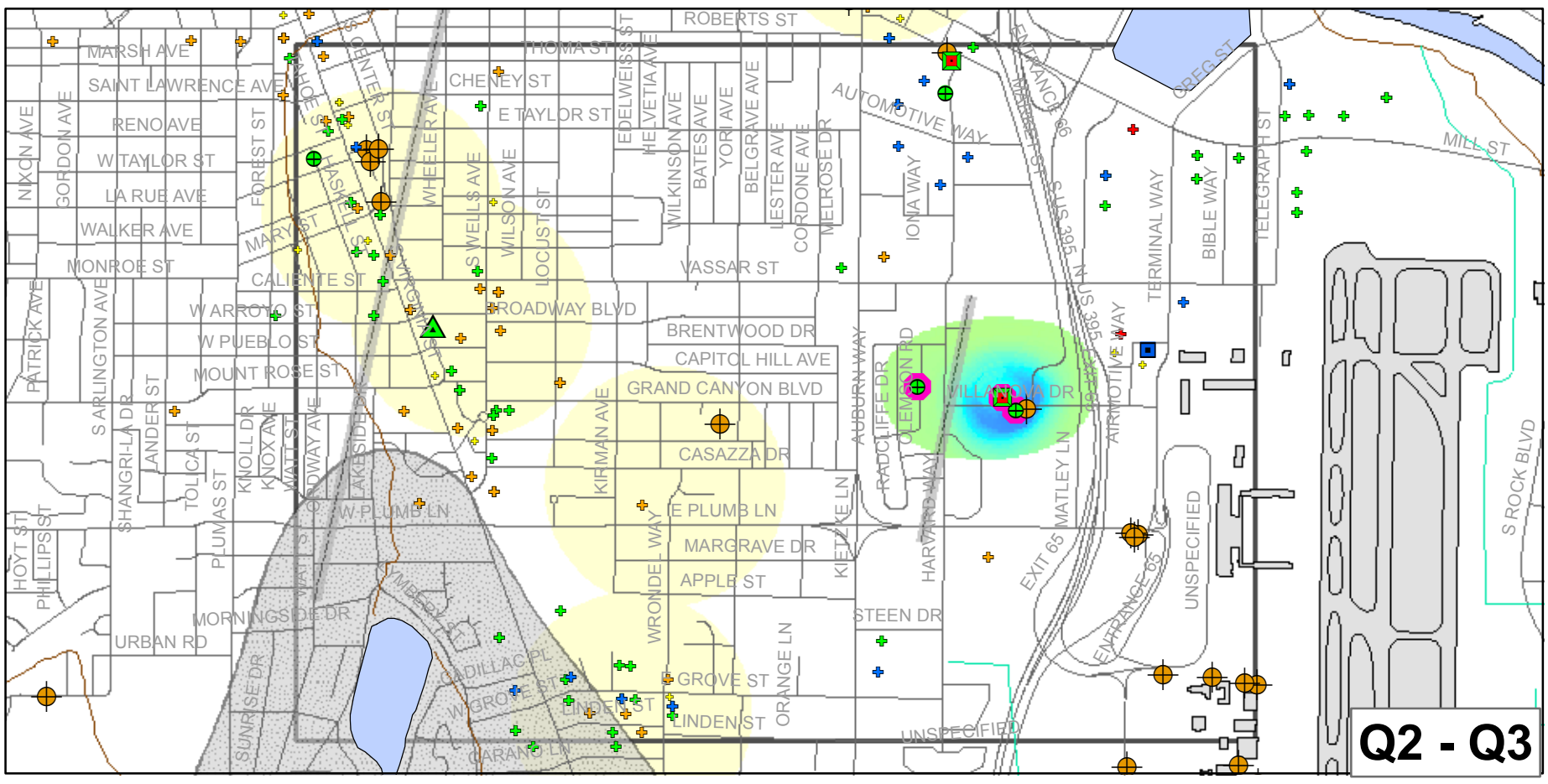
WorleyParsons Komex

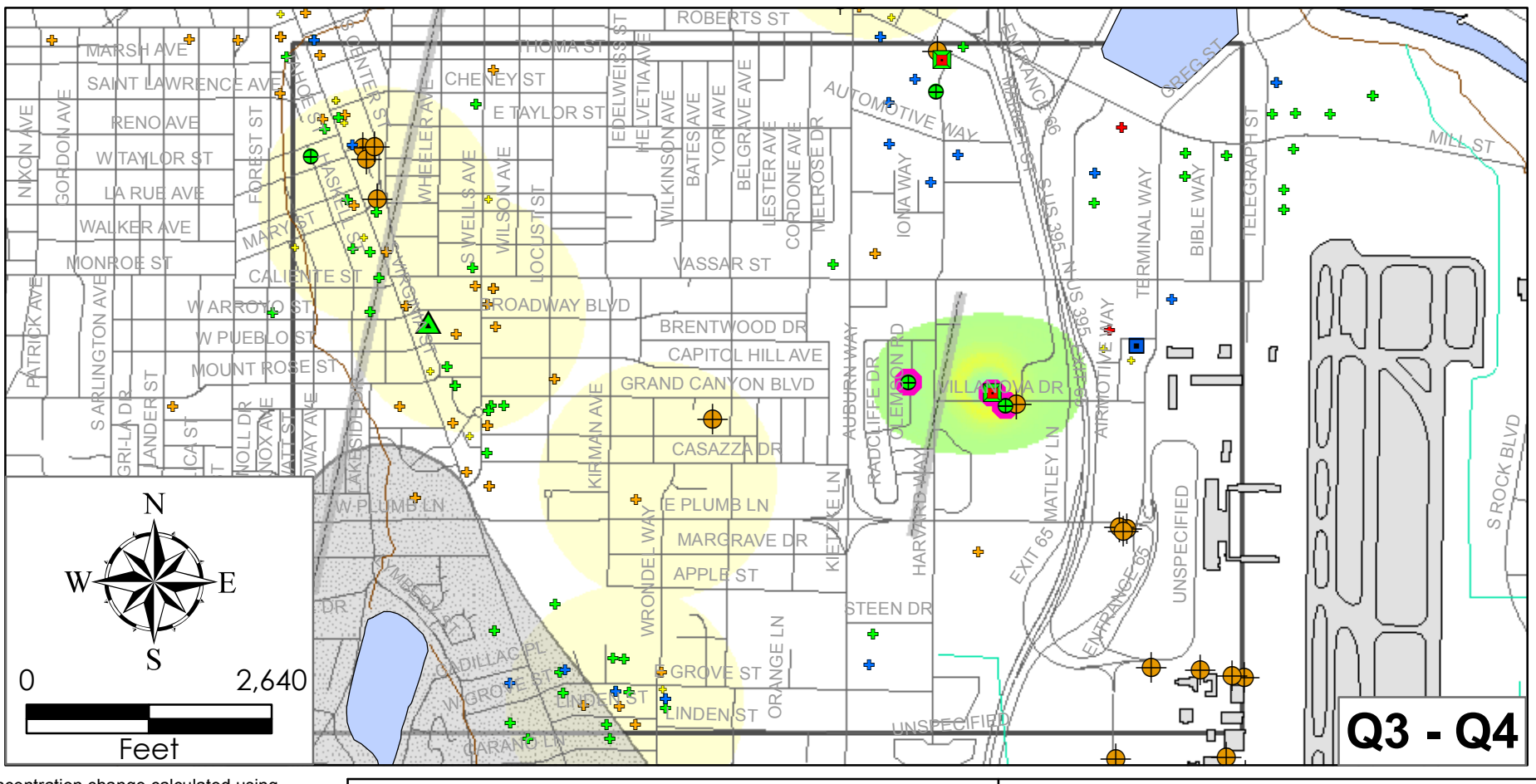
resources & energy

SOUTH RENO SUBREGION Q1-Q4 2006
WATER LEVEL DIFFERENCE MAP

MB	MT	01/2008
6N637B	6.8	







Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

30.0 µg/L

0

-30.0 µg/L

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

SOUTH RENO SUBREGION 2006
PCE CONCENTRATION CHANGE

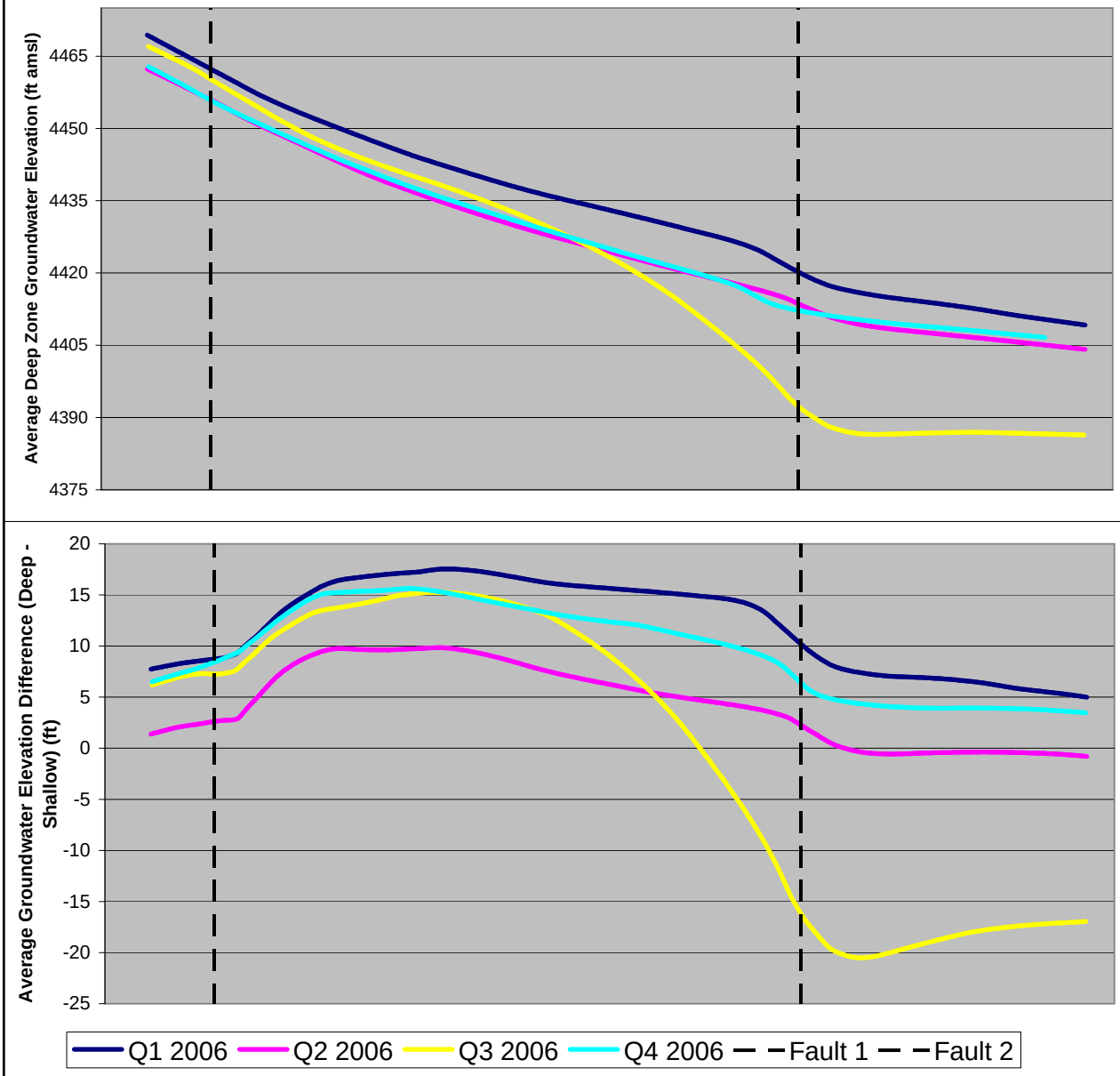
SWL	PM	01/2008
6N637B30	6.9	

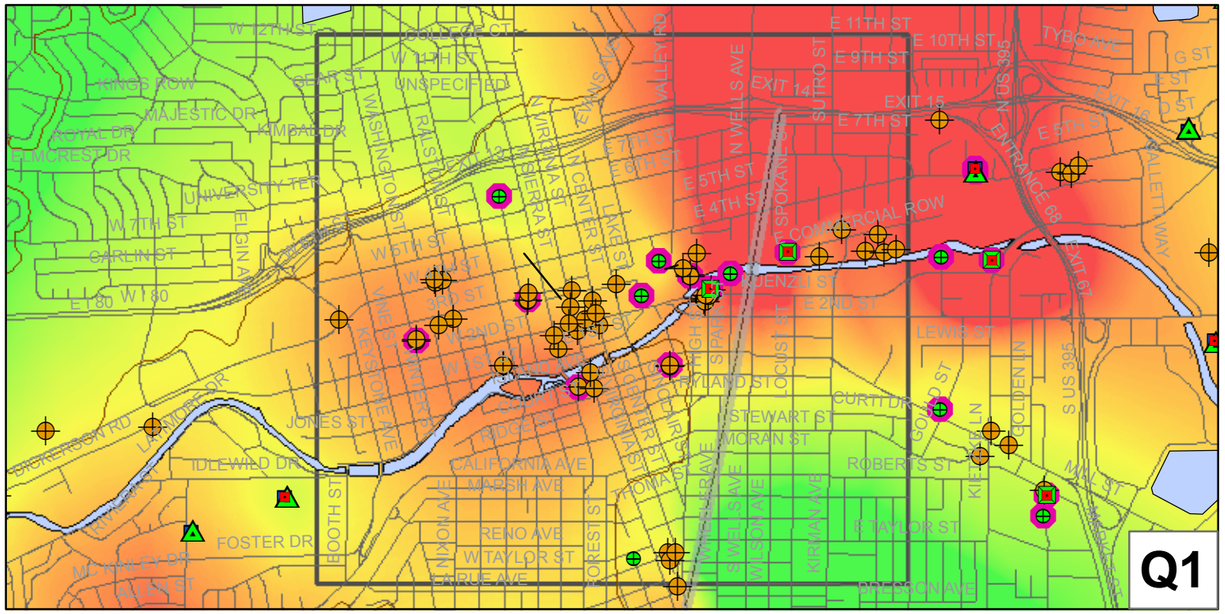
WorleyParsons Komex

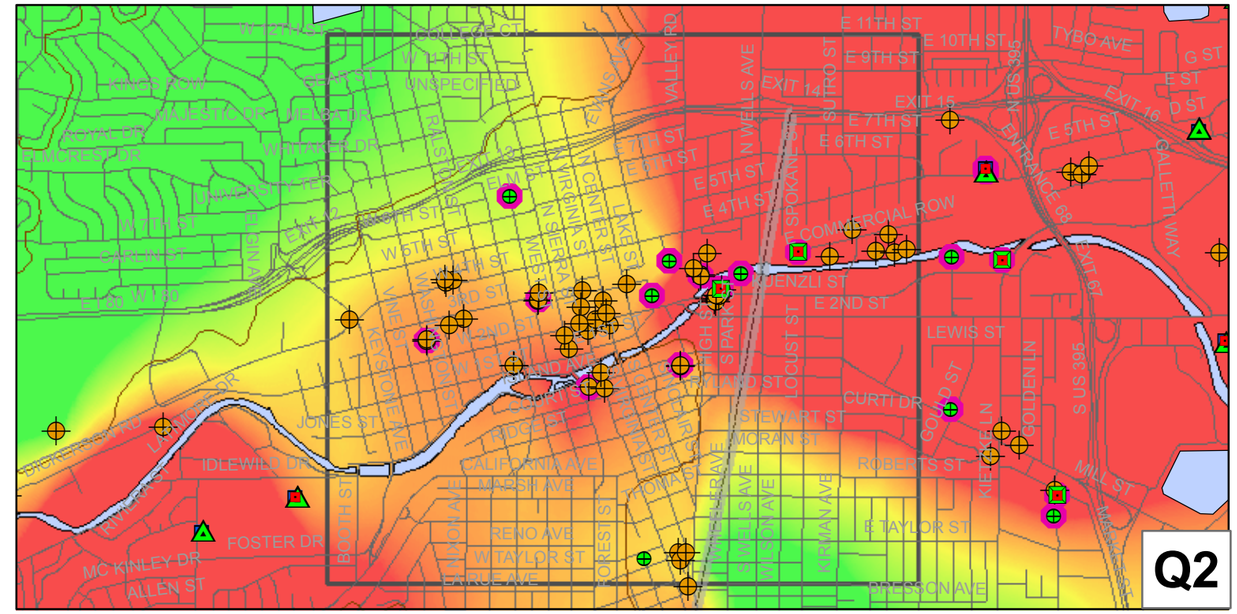
resources & energy

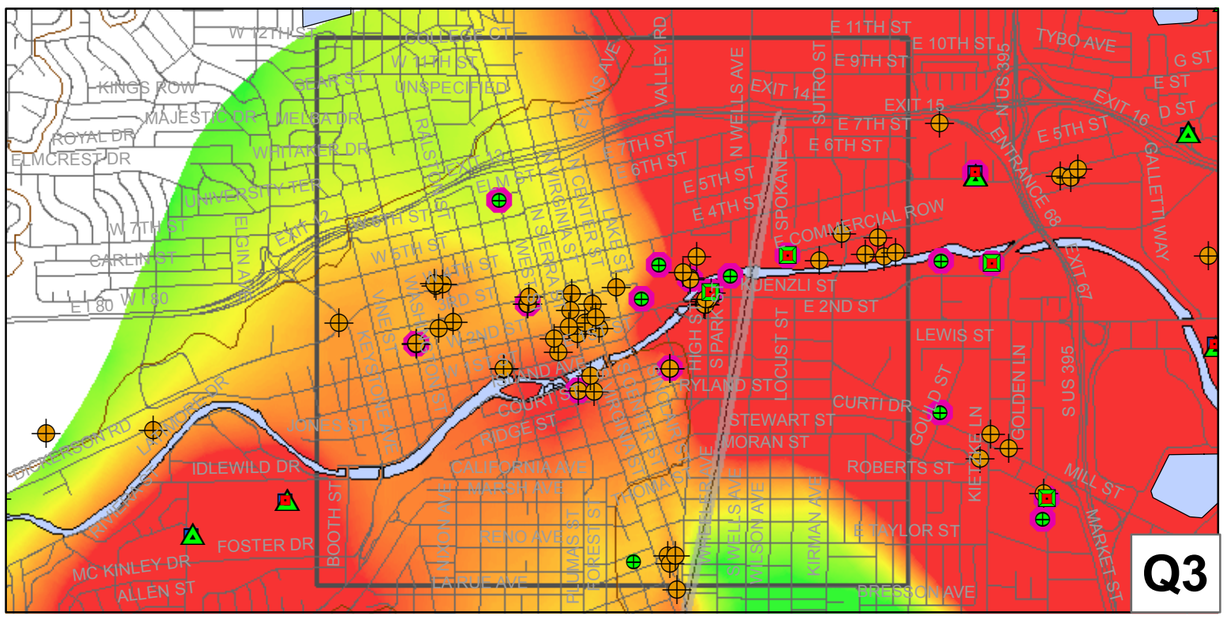
Figure 6.10: Average 2006 Groundwater Elevation and Groundwater Elevation Difference

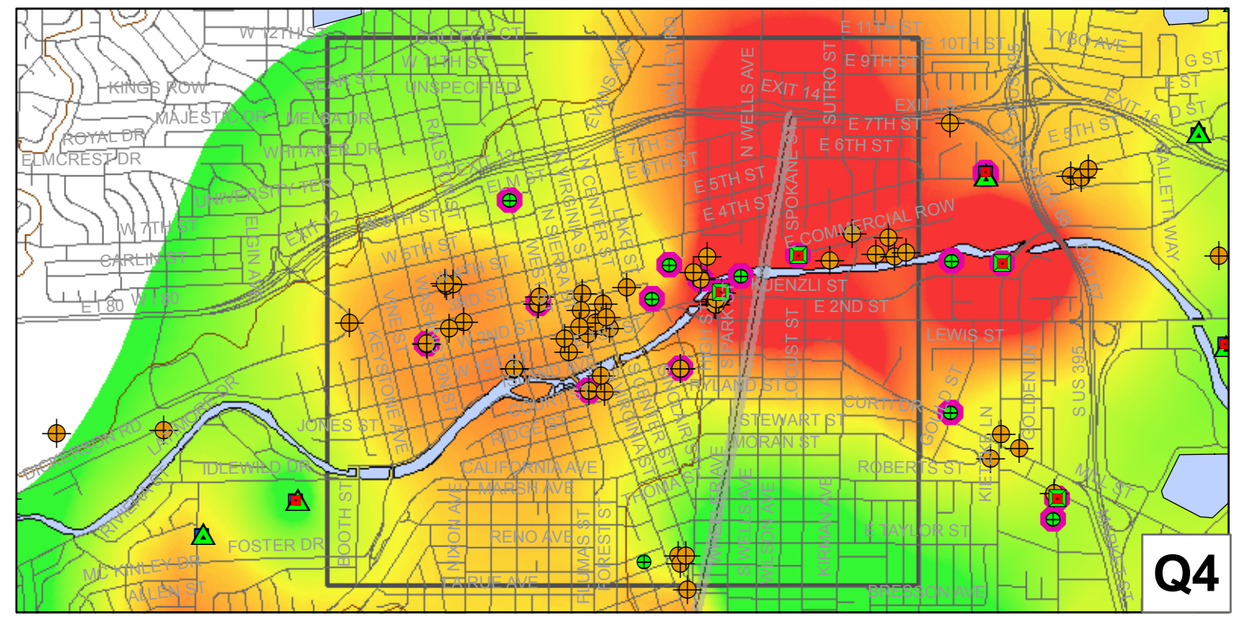
South Reno Plume Subregion











Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

West 4th Street Subregion Water Level Difference map

10.0 feet

0

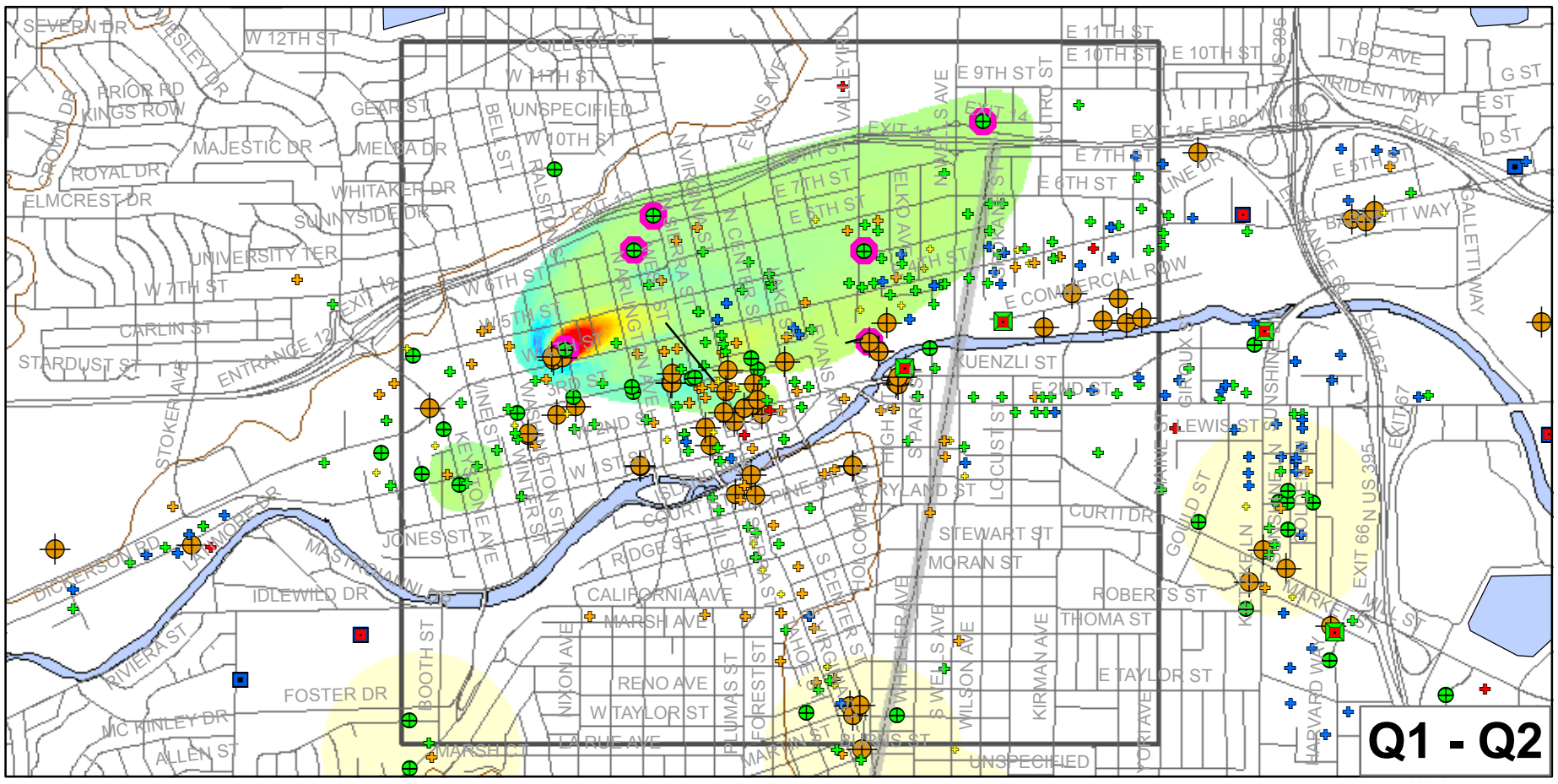
-10.0 feet

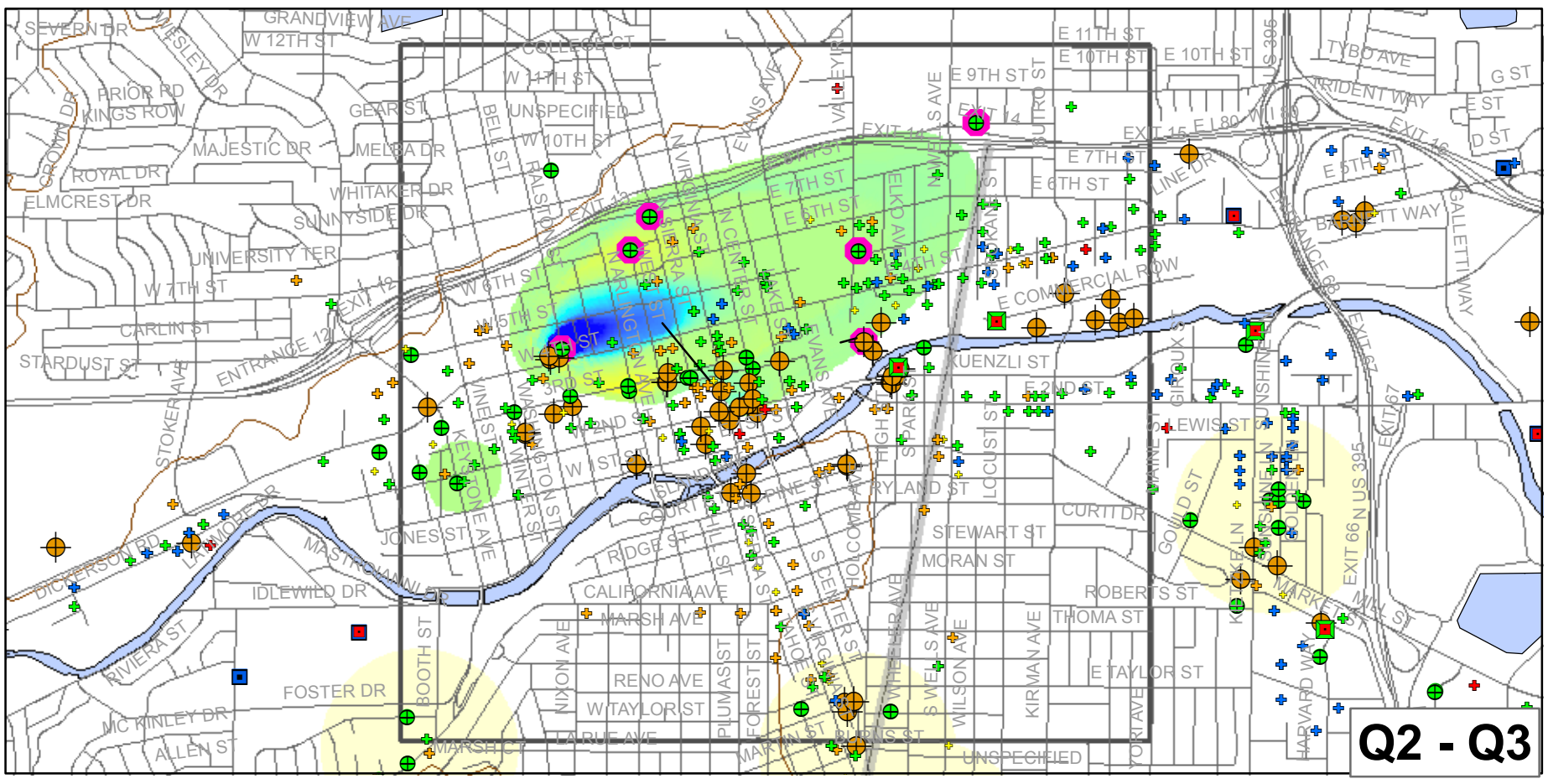
N W E S

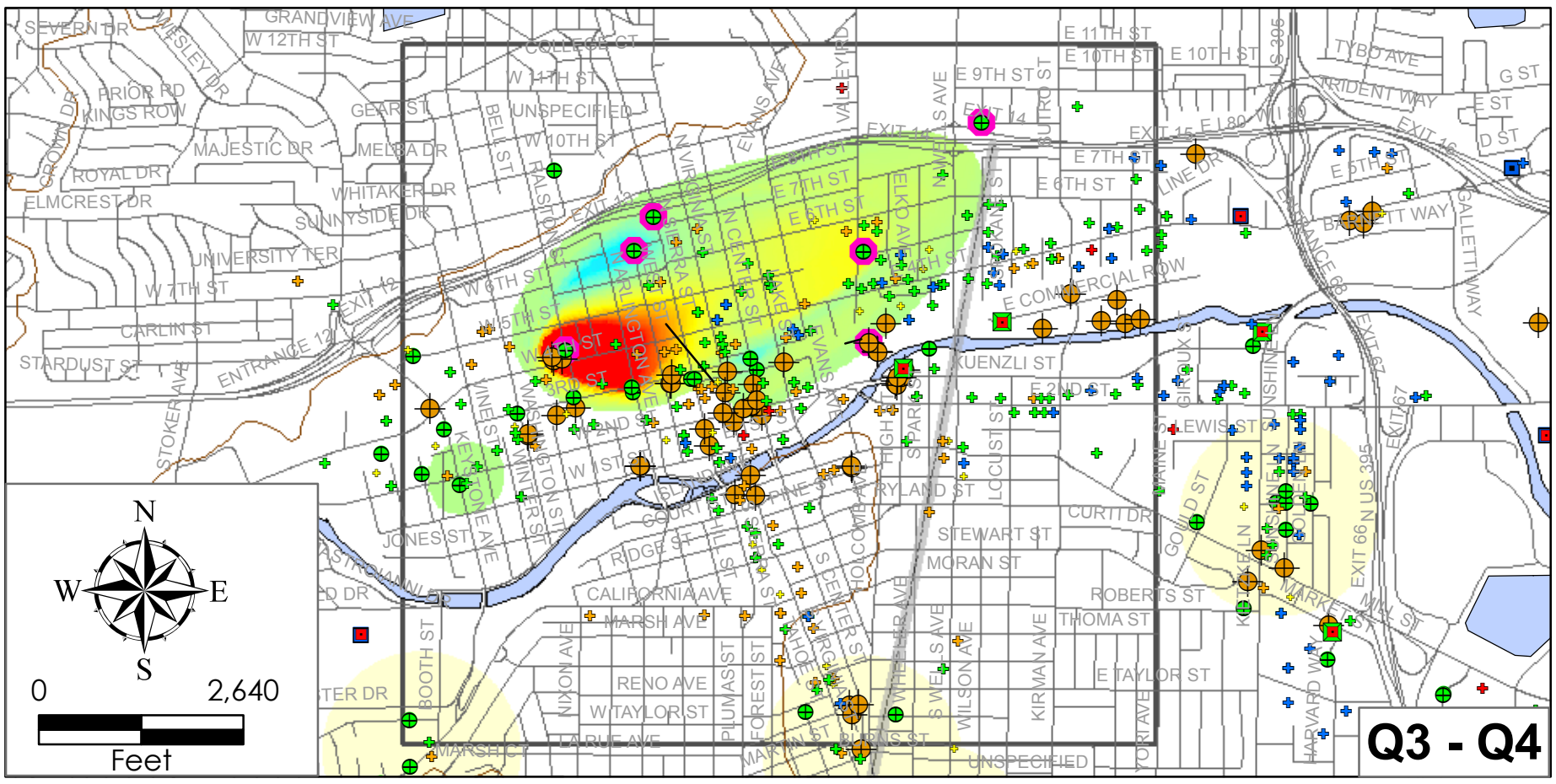
0 2,640

Feet

WASHOE COUNTY DWR	**WorleyParsons Komex** resources & energy		
WEST 4TH STREET SUBREGION Q1-Q4 2006 WATER LEVEL DIFFERENCE MAP	MB	MT	01/2008
	6N637B	**6.11**	







Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

30.0 µg/L

0

-30.0 µg/L

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

WEST 4TH STREET SUBREGION 2006
PCE CONCENTRATION CHANGE

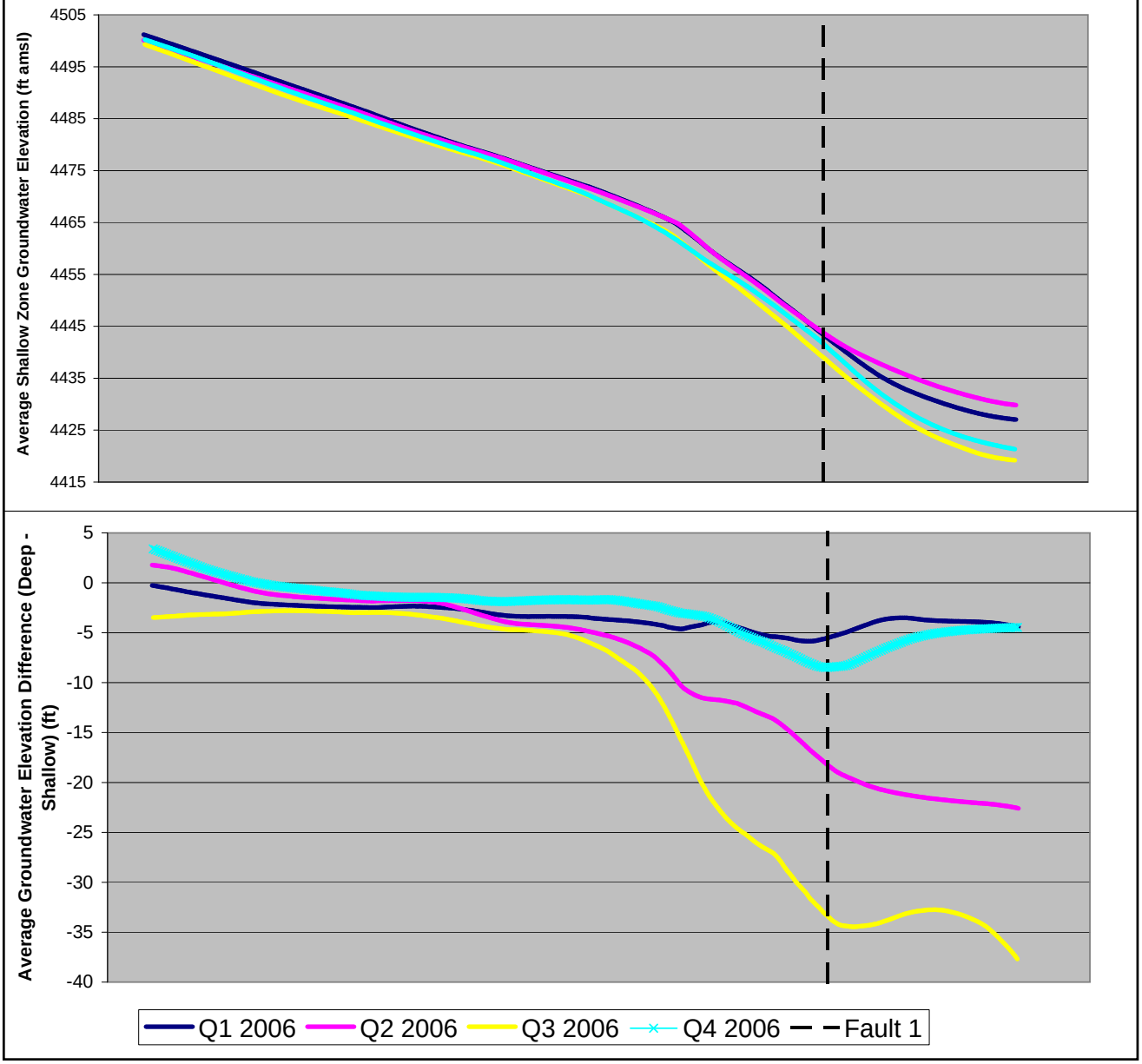
SWL	PM	01/2008
6N637B30	6.12	

WorleyParsons Komex

resources & energy

Figure 6.13: Average 2006 Groundwater Elevation and Groundwater Elevation Difference

West 4th Street Plume Subregion



WorleyParsons Komex

resources & energy

Figure 6.14: West 4th Street / Downtown Reno Concentration Profile, Q2 2006

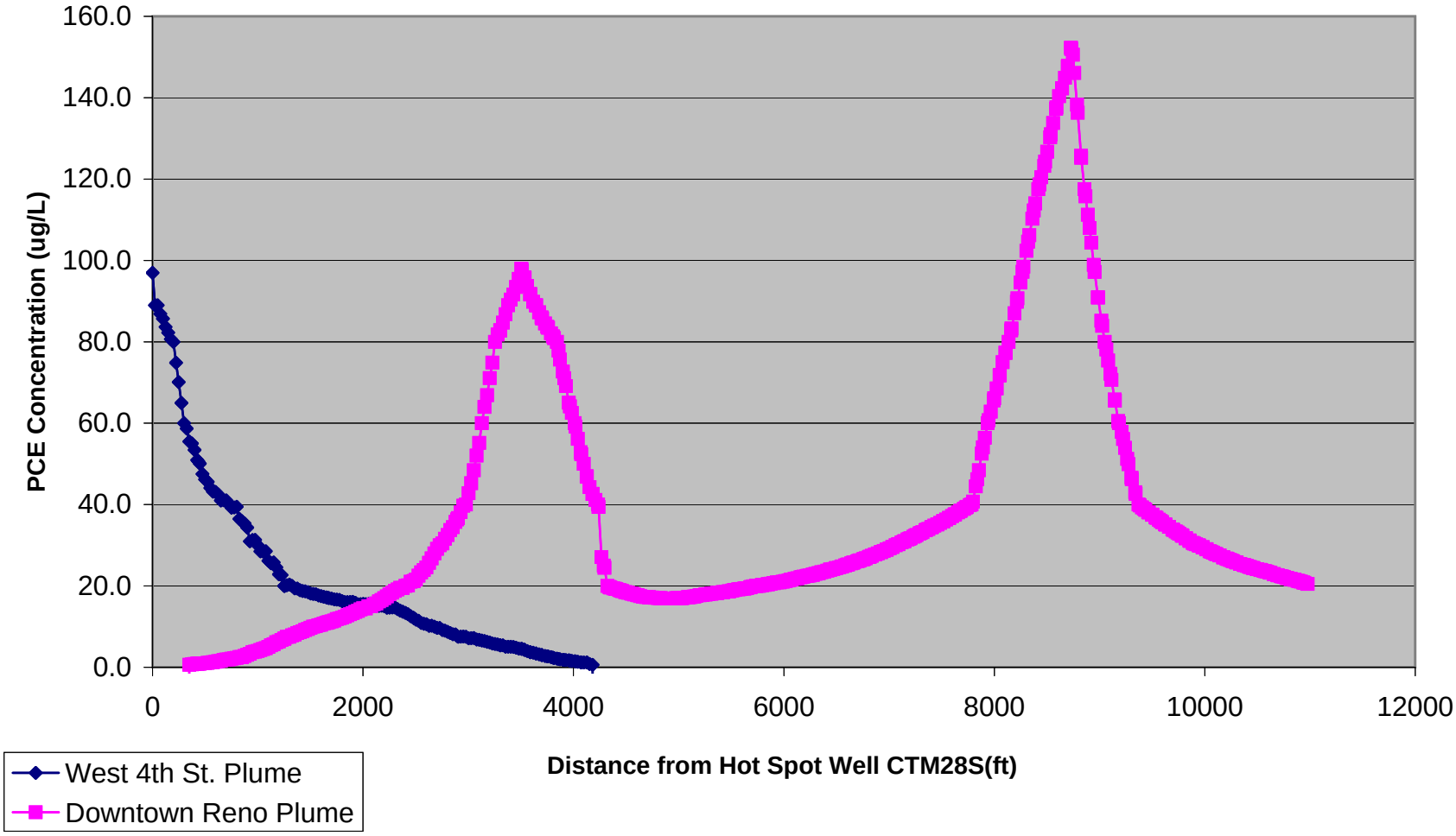


FIGURE 6.15a COMPARISON OF WEST 4TH STREET KEY WELL HYDROGRAPHS, RENO HIGH AND HIGH STREET WELL PUMPING, AND TRUCKEE RIVER STAGE

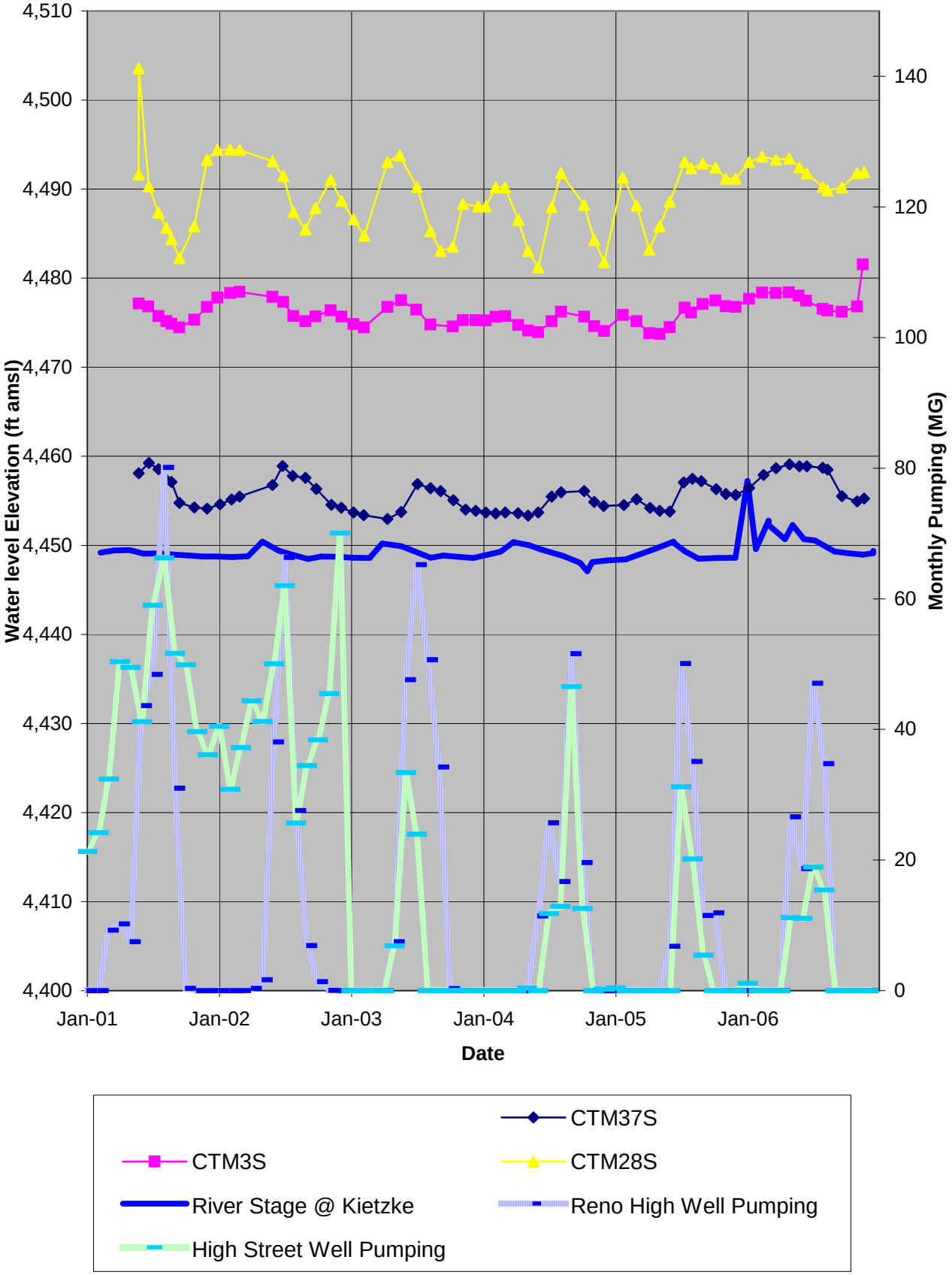
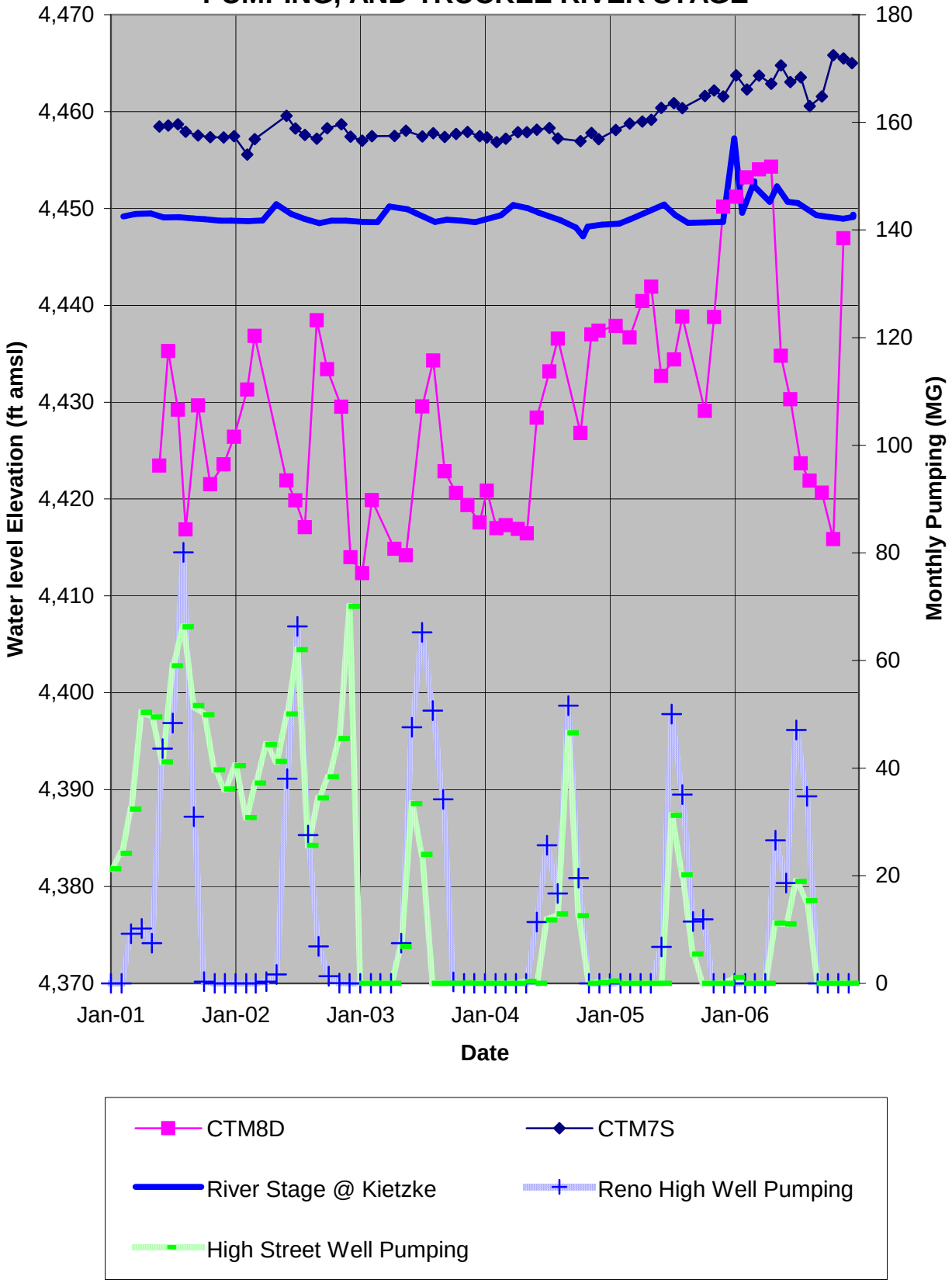
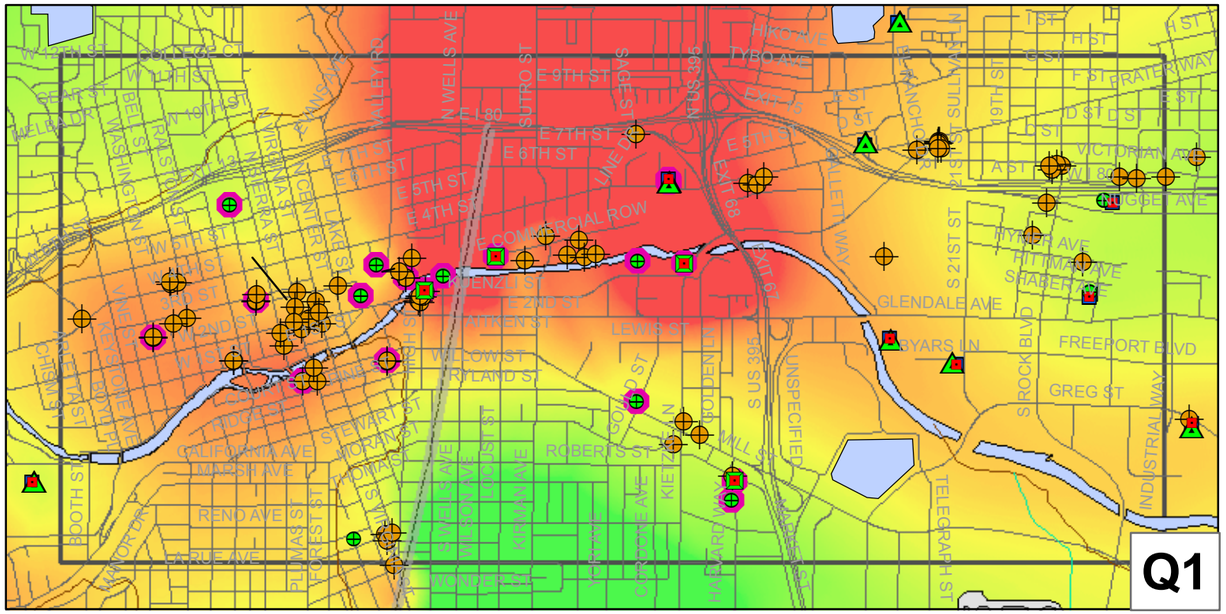
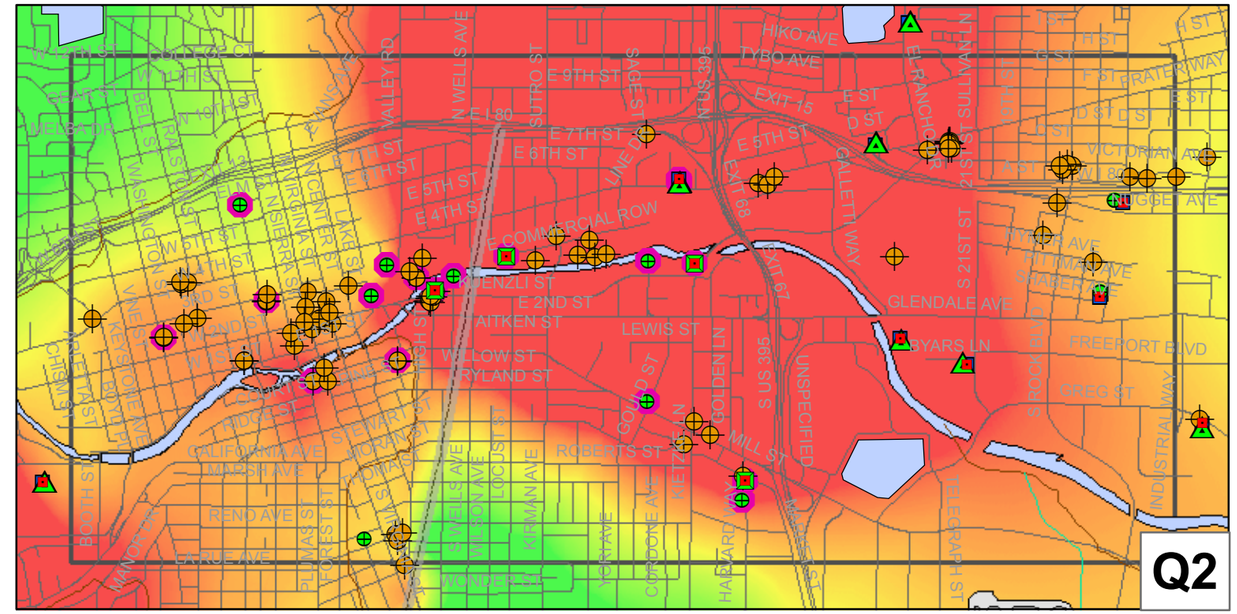
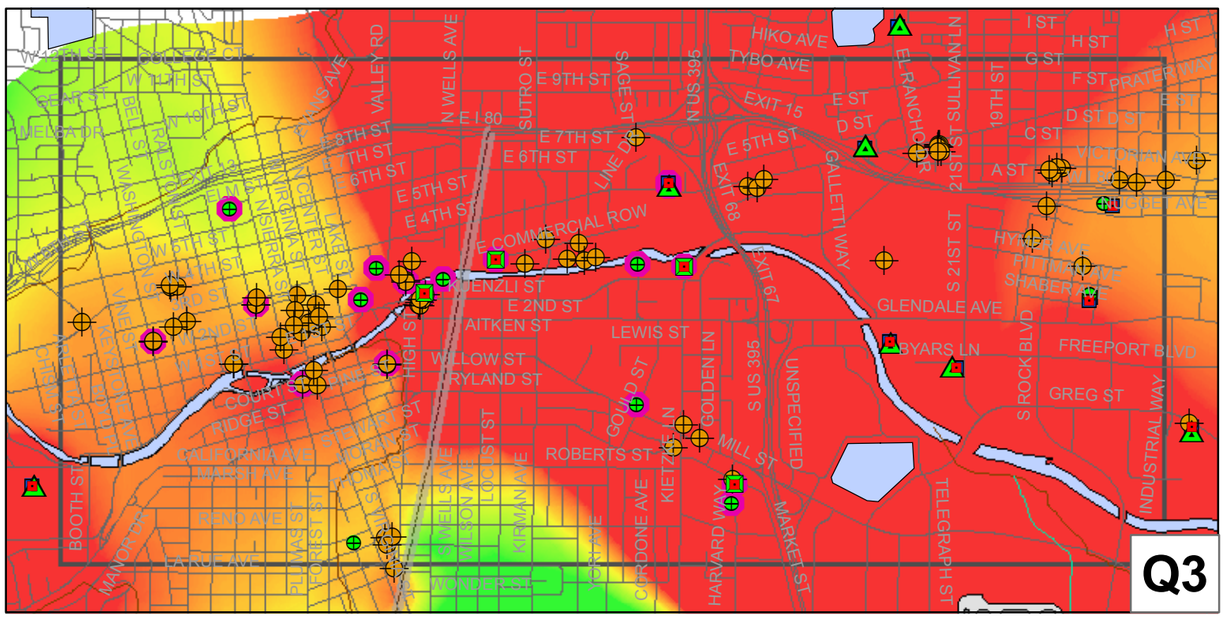


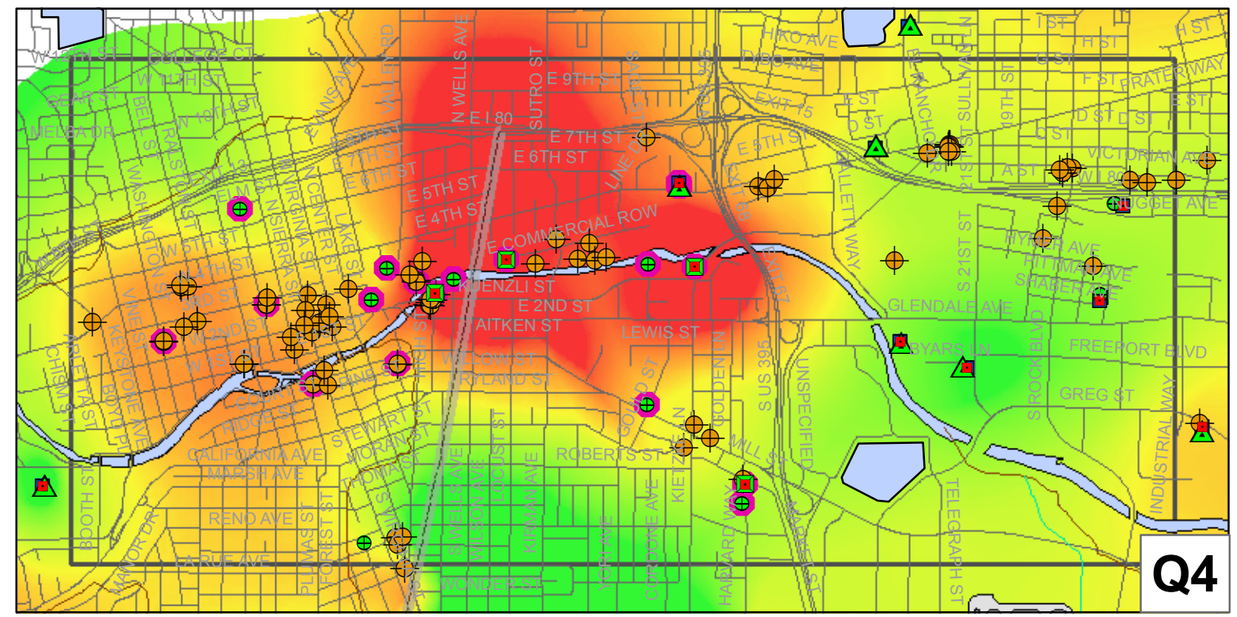
FIGURE 6.15b COMPARISON OF CTM7S and CTM8D HYDROGRAPHS, RENO HIGH AND HIGH STREET WELL PUMPING, AND TRUCKEE RIVER STAGE











Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

Downtown Reno Subregion Water Level Difference map

10.0 feet

0

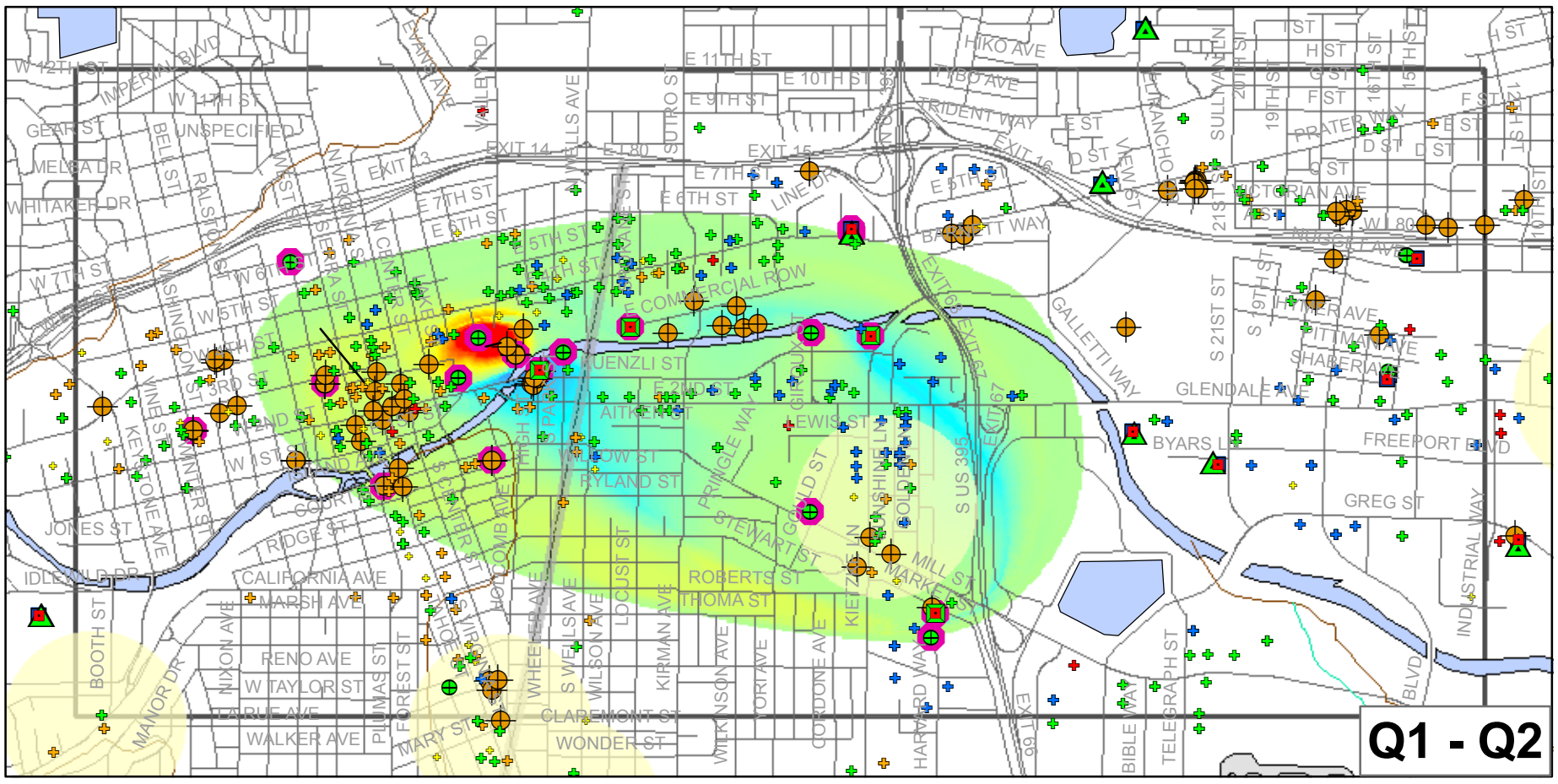
-10.0 feet

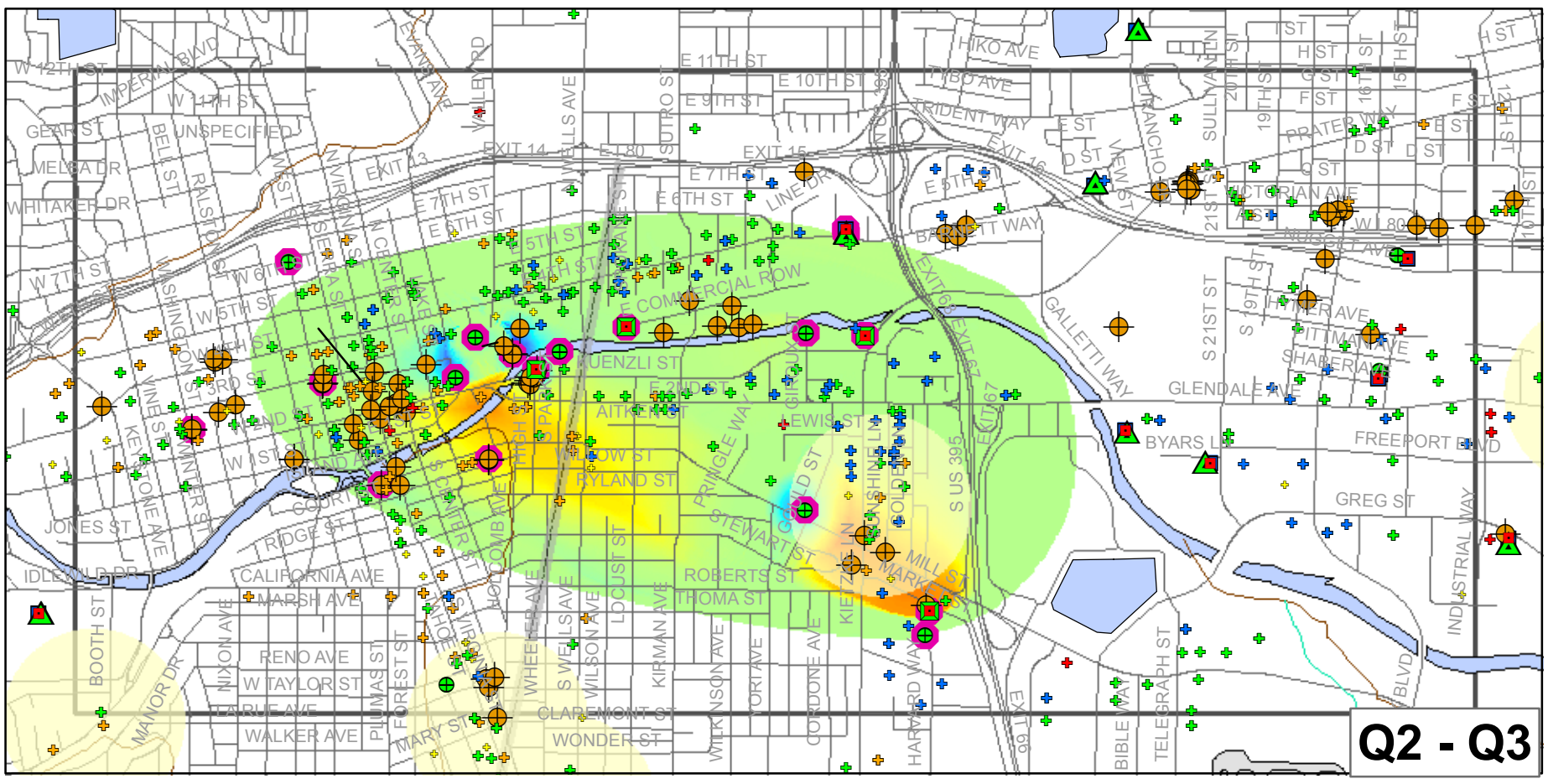
N
W E
S

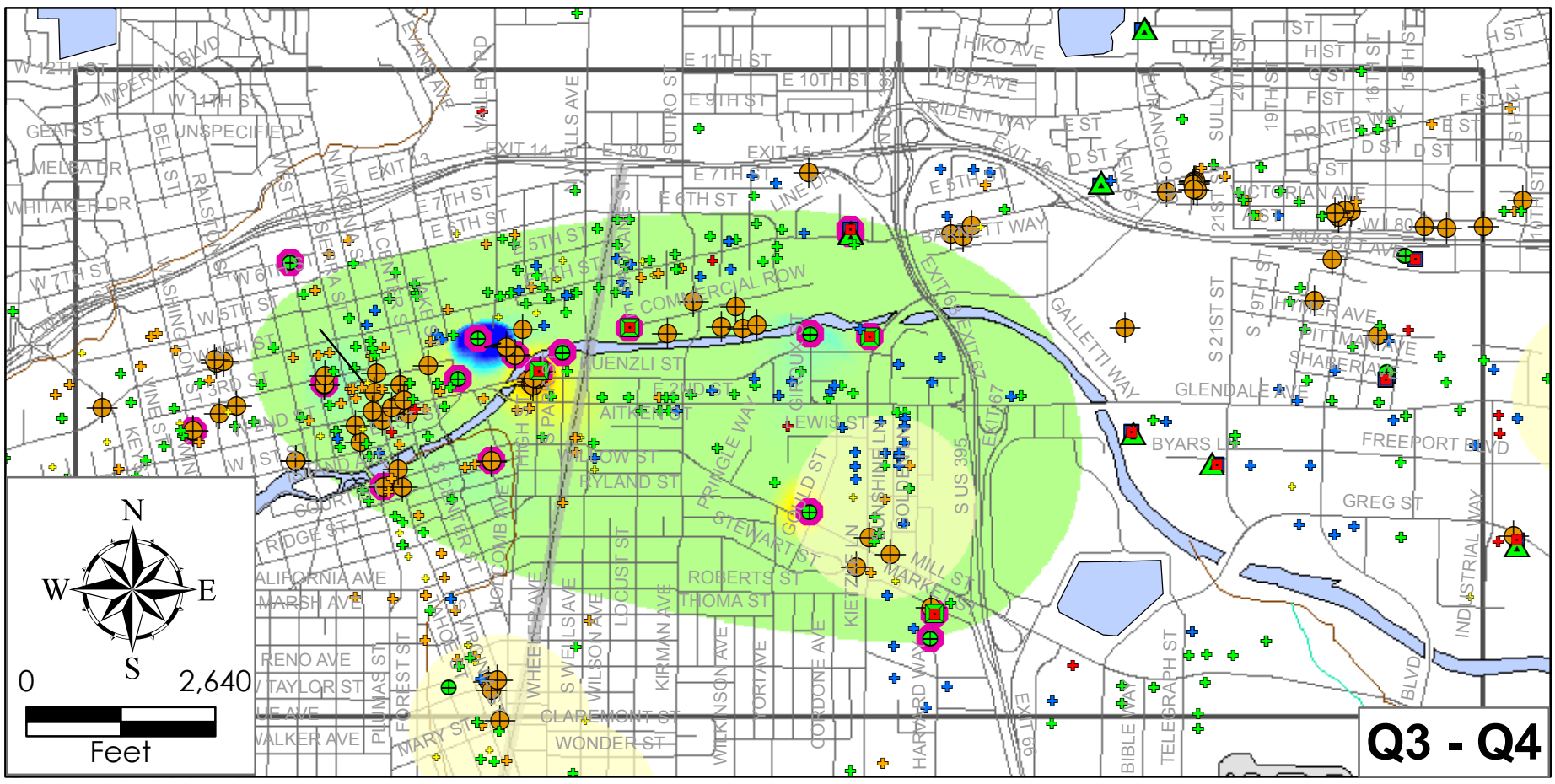
0 2,640

Feet

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
DOWNTOWN RENO SUBREGION Q1-Q4 2006 WATER LEVEL DIFFERENCE MAP	MB	MT	01/2008
	6N637B	6.16	







Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

30.0 µg/L

0

-30.0 µg/L

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

DOWNTOWN RENO SUBREGION 2006
PCE CONCENTRATION CHANGE

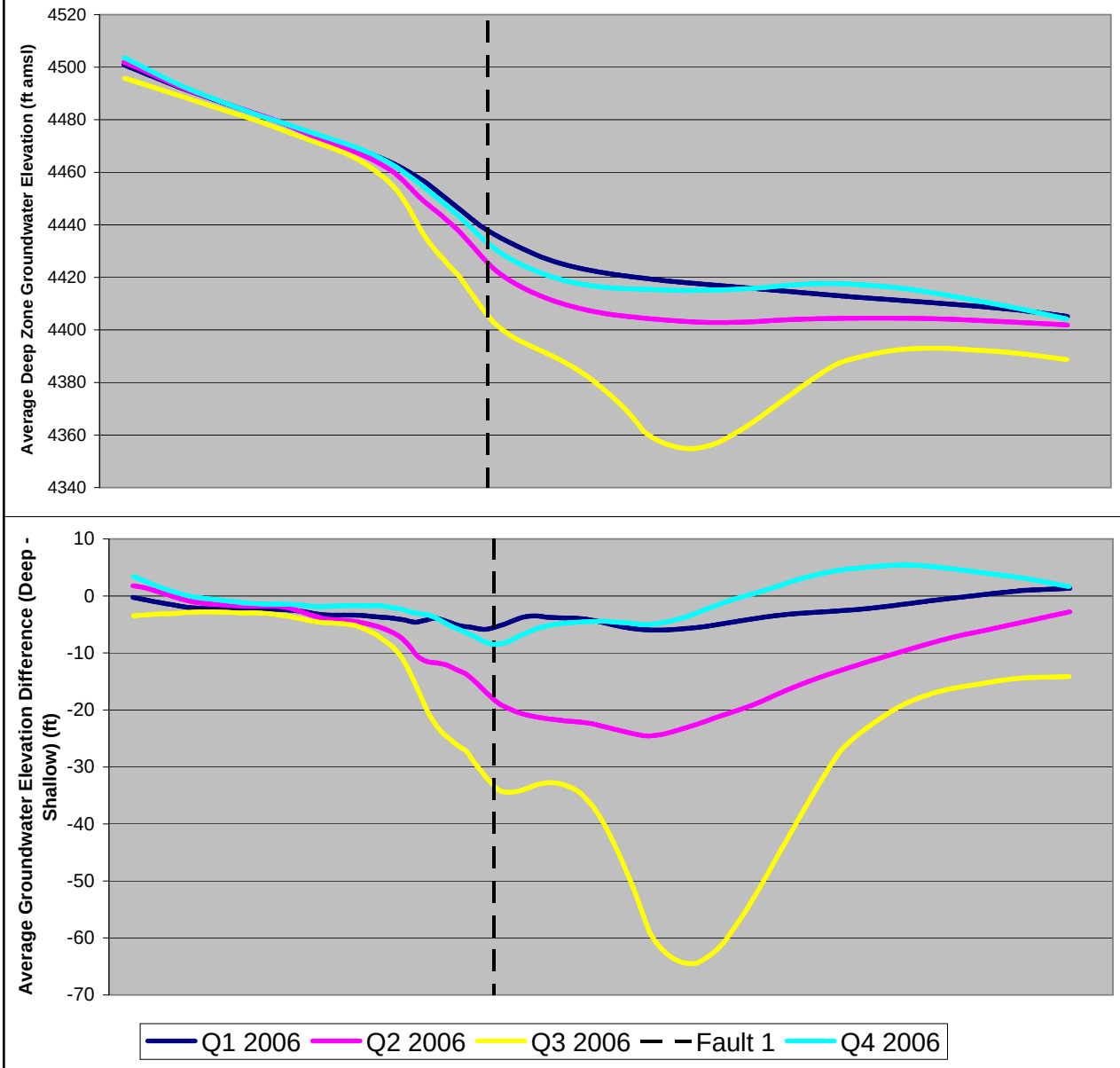
SWL	PM	01/2008
6N637B30		6.17

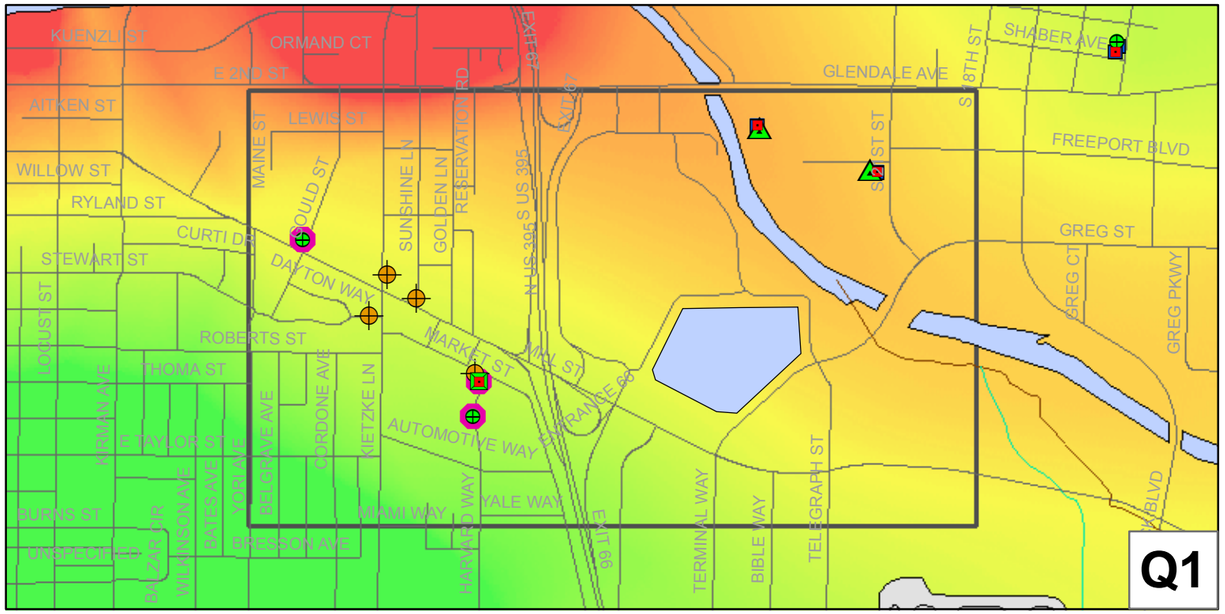
WorleyParsons Komex

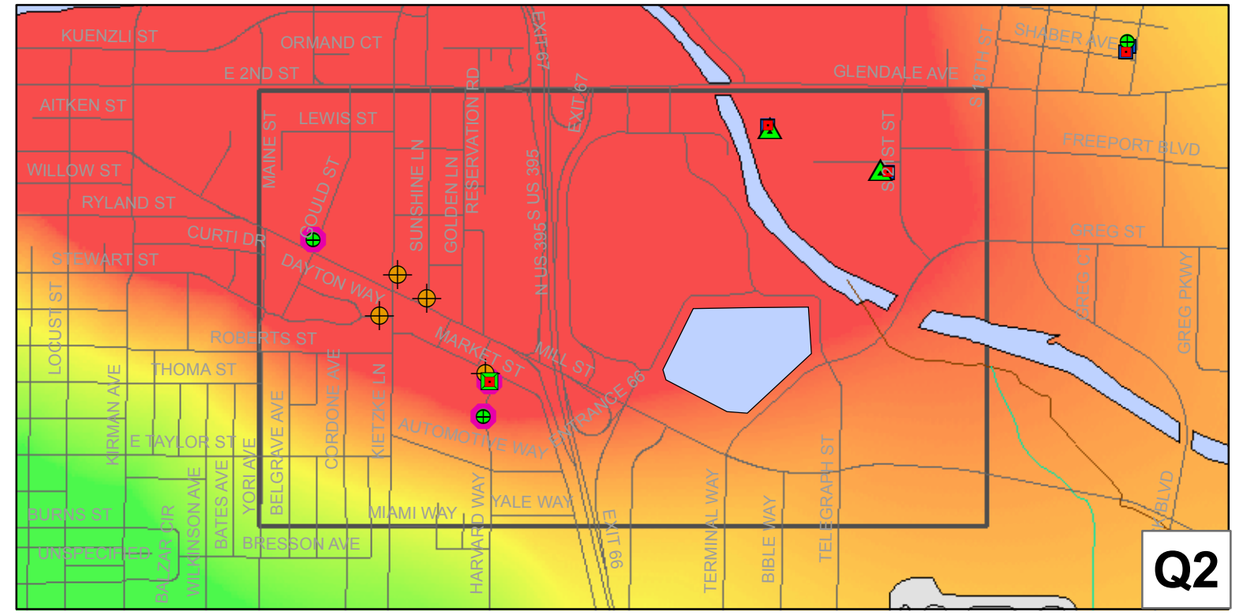
resources & energy

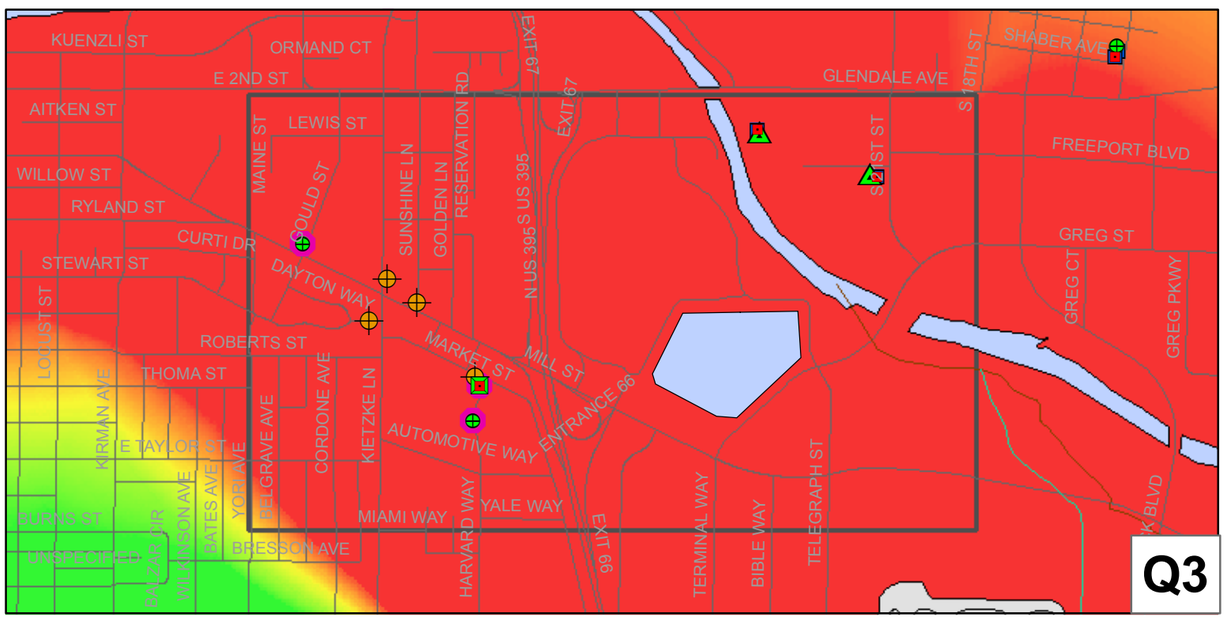
Figure 6.18 : Average 2006 Groundwater Elevation and Groundwater Elevation Difference

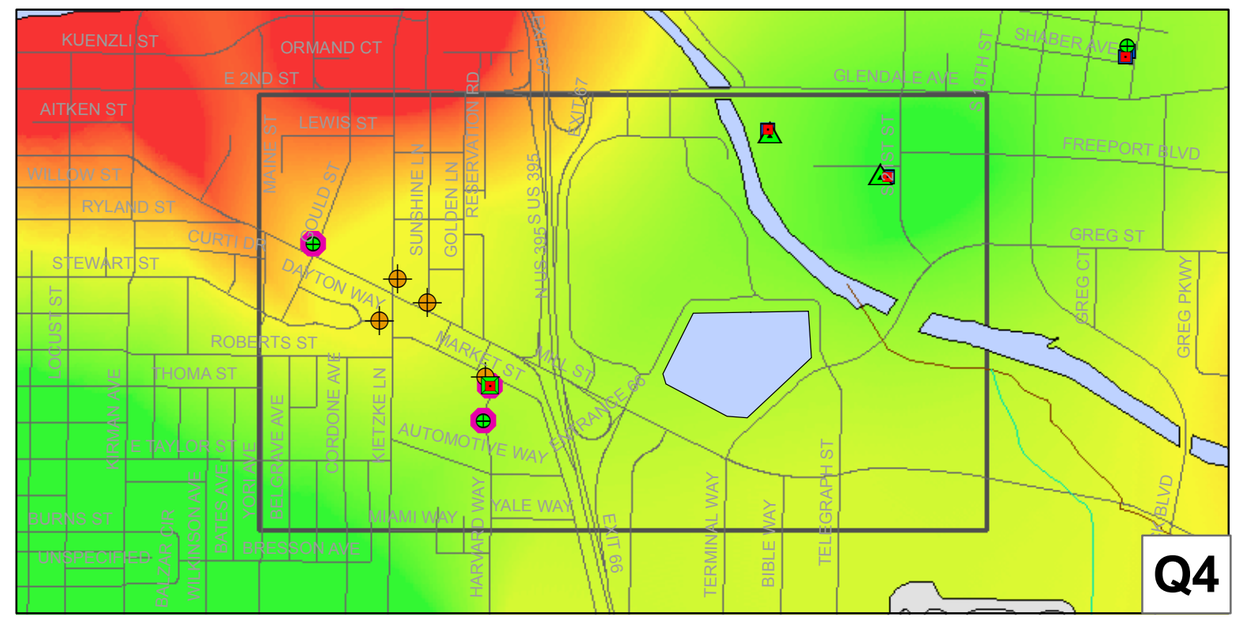
Downtown Reno Plume Subregion











Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

Mill/Kietzke Subregion Water Level Difference map

10.0 feet

0

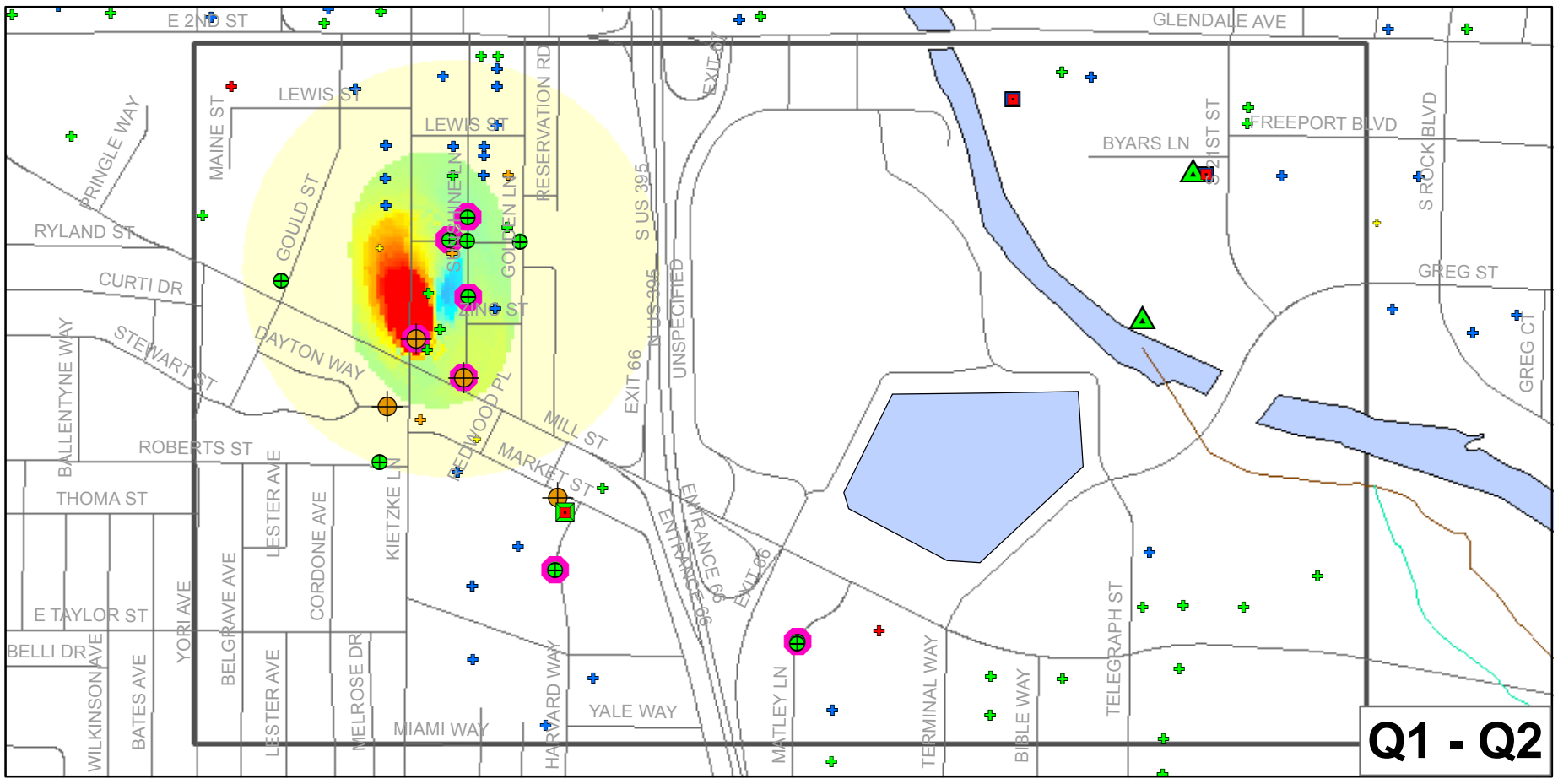
-10.0 feet

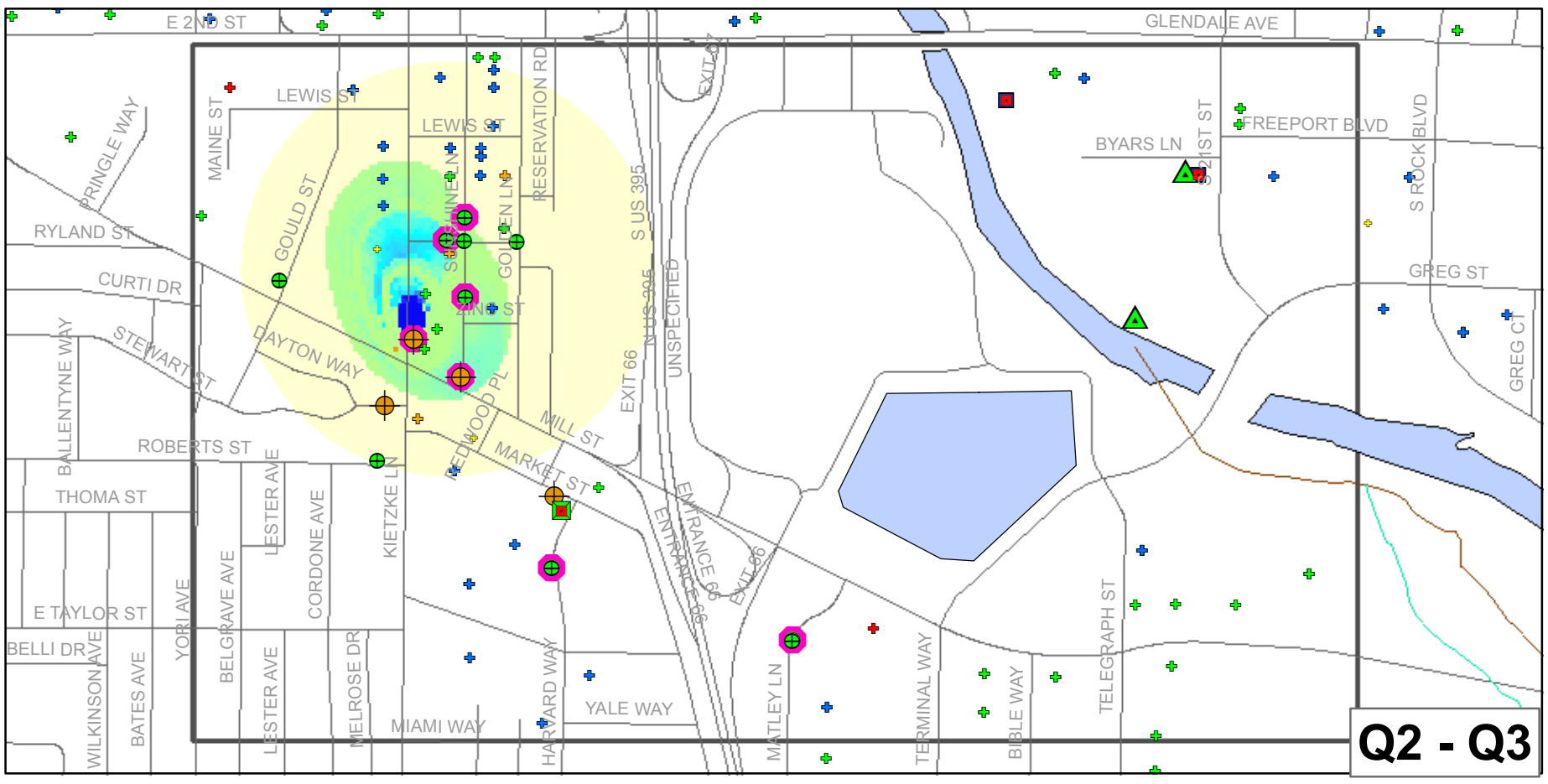
N
W E
S

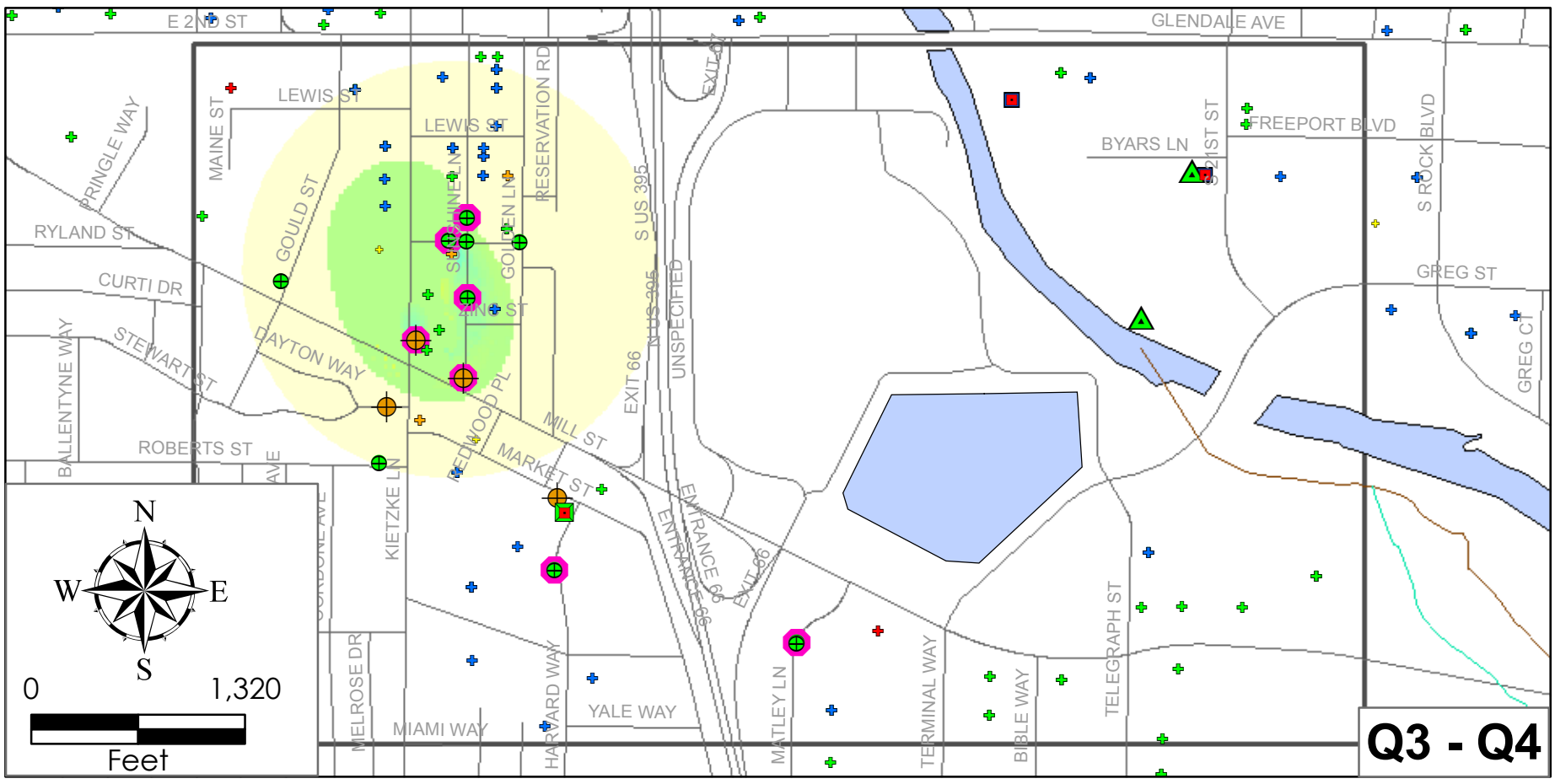
0 2,640

Feet

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
MILL/KIETZKE SUBREGION Q1-Q4 2006 WATER LEVEL DIFFERENCE MAP	MB	MT	01/2008
	6N637B	6.19	







Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

30.0 µg/L
0
-30.0 µg/L

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

MILL/KIETZKE SUBREGION 2006
PCE CONCENTRATION CHANGE

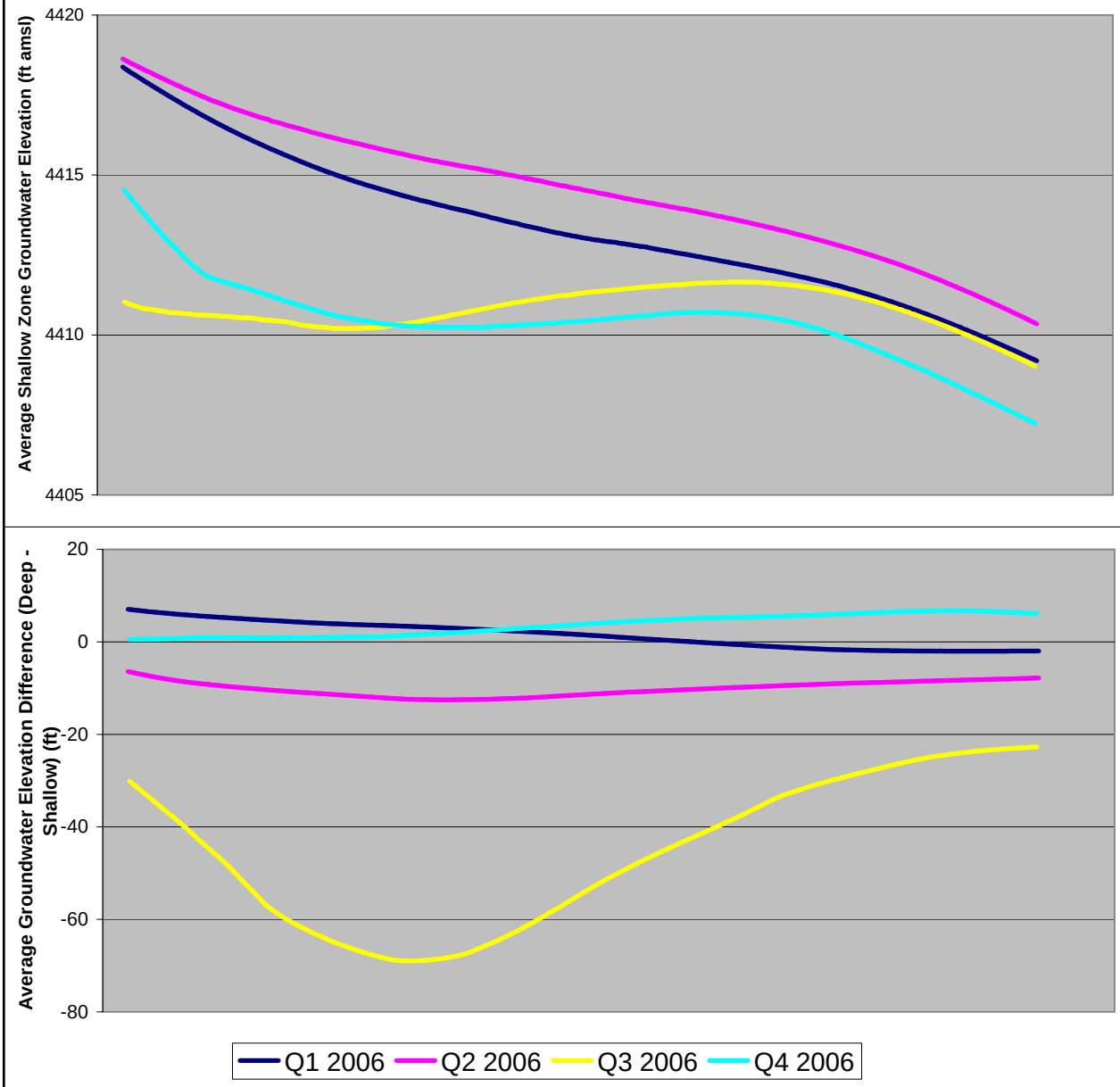
SWL	PM	01/2008
6N637B30	6.20	

WorleyParsons Komex

resources & energy

Figure 6.21: Average 2006 Groundwater Elevation and Groundwater Elevation Difference

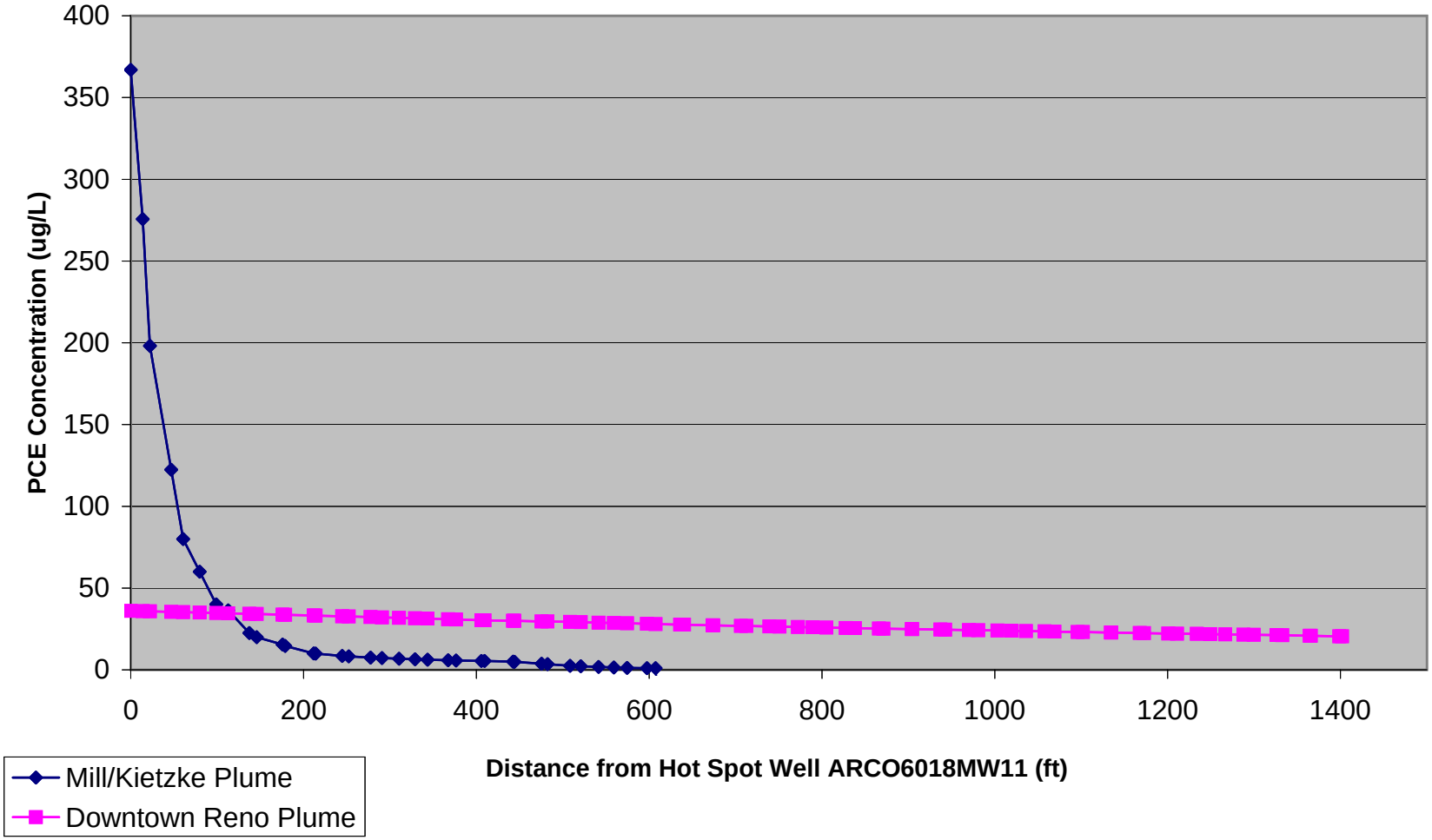
Mill / Kietzke Plume Subregion

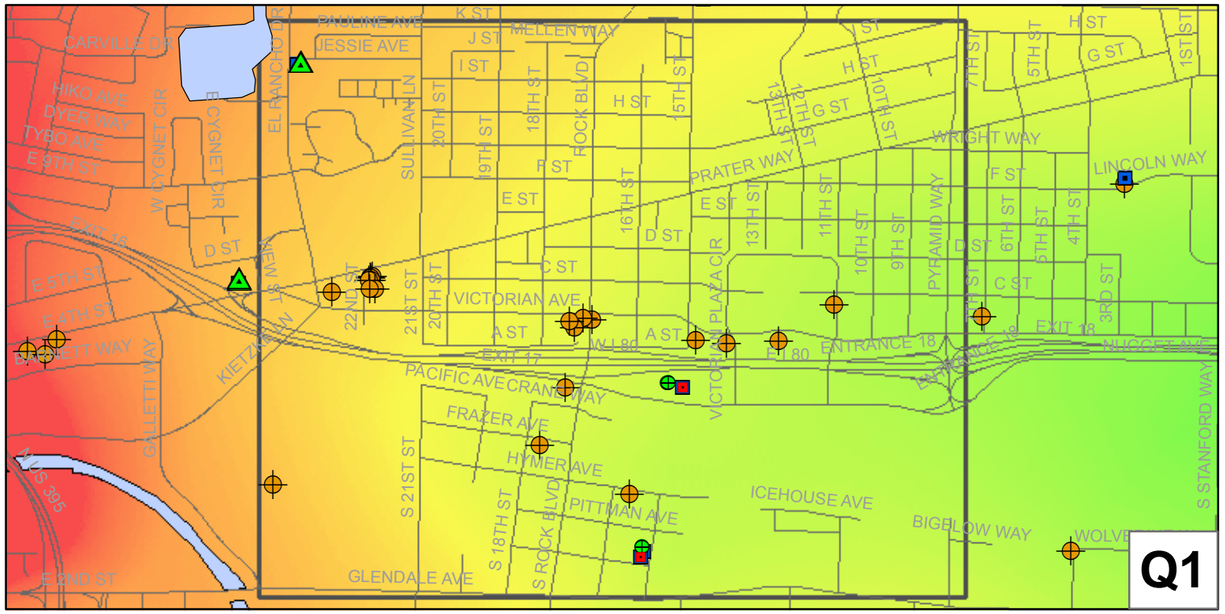


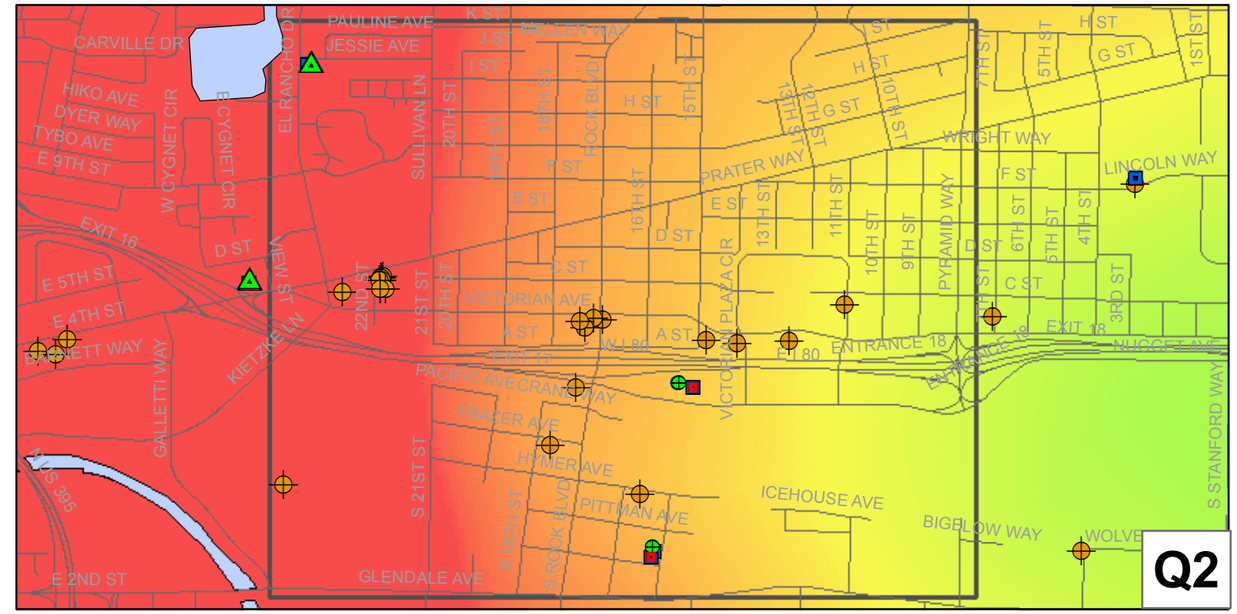
WorleyParsons Komex

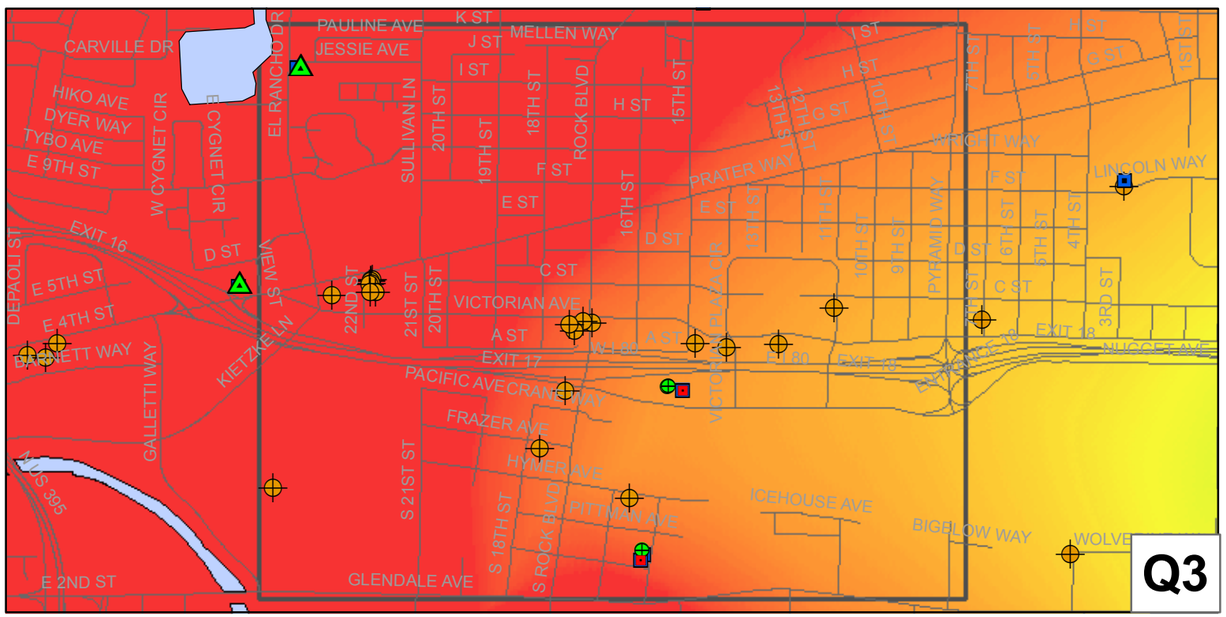
resources & energy

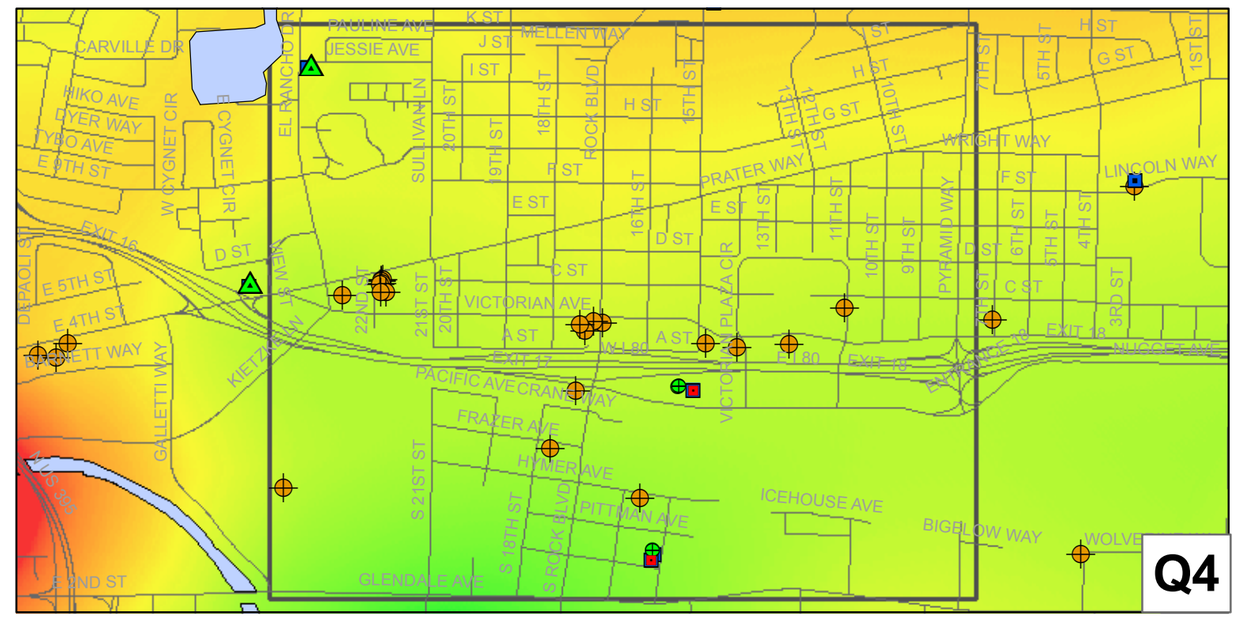
Figure 6.22: Mill/Kietzke / Downtown Reno Concentration Profile, Q2 2006











Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

Victorian Avenue Subregion Water Level Difference map

10.0 feet

0

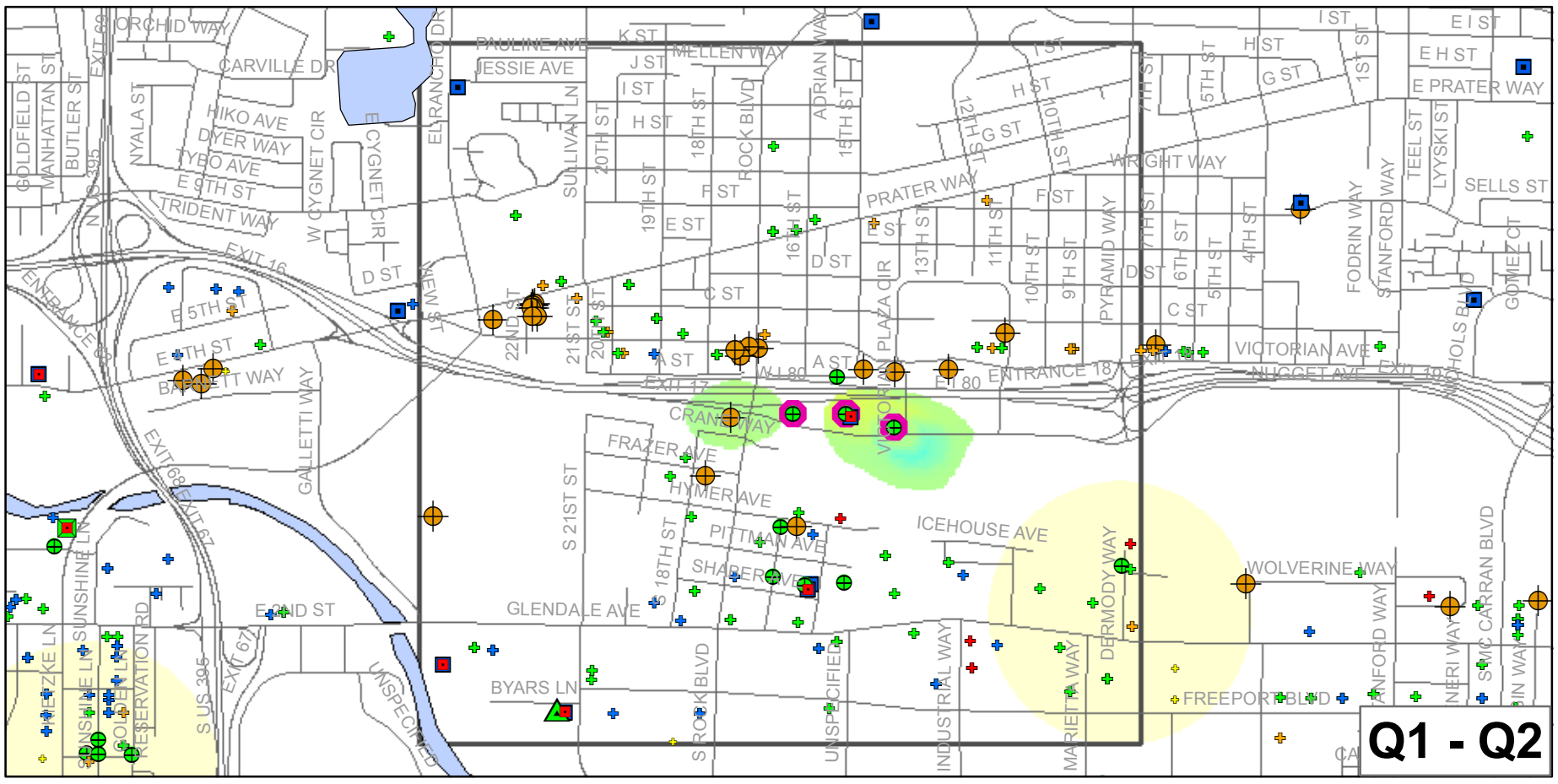
-10.0 feet

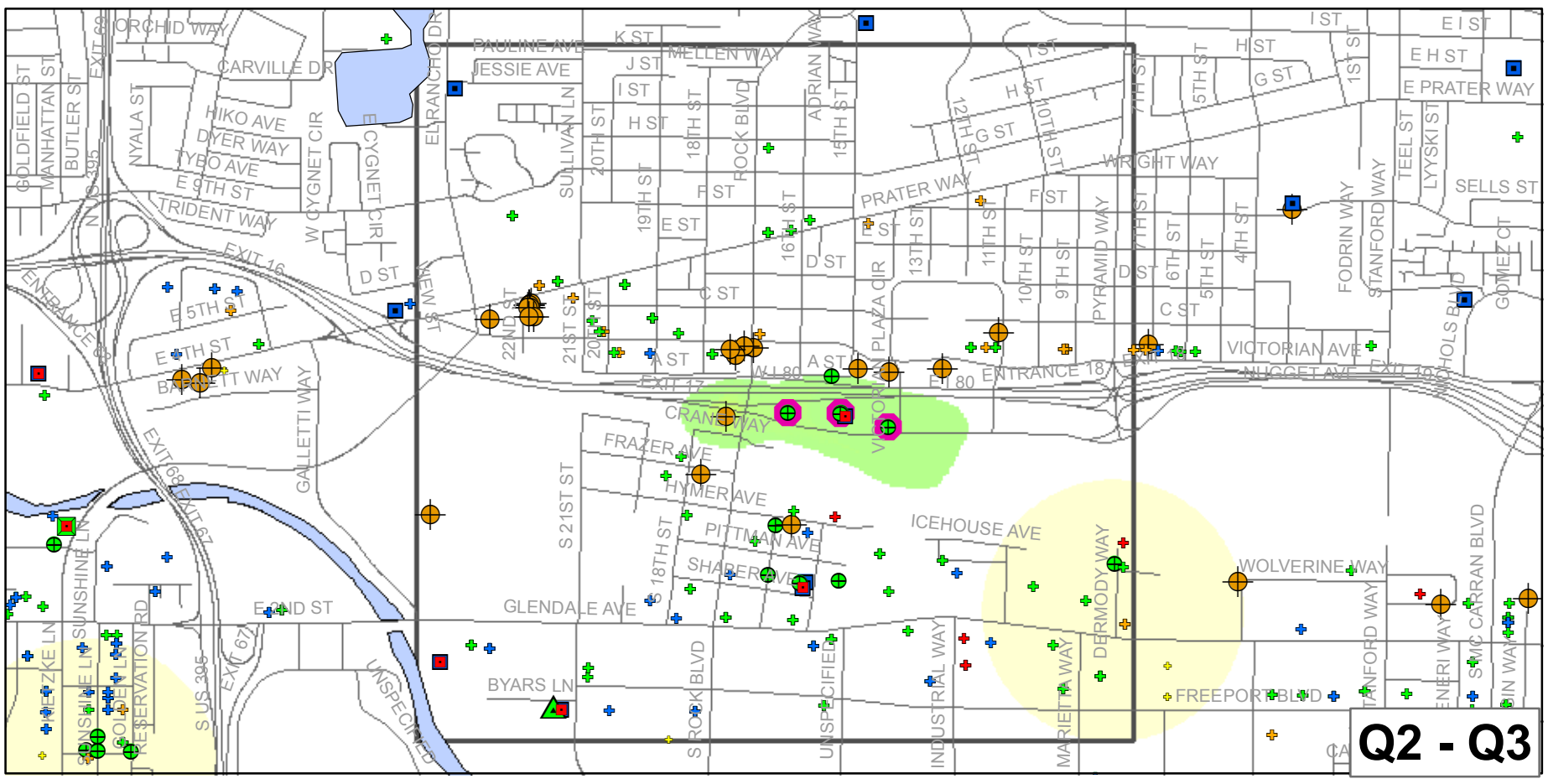
N
W E
S

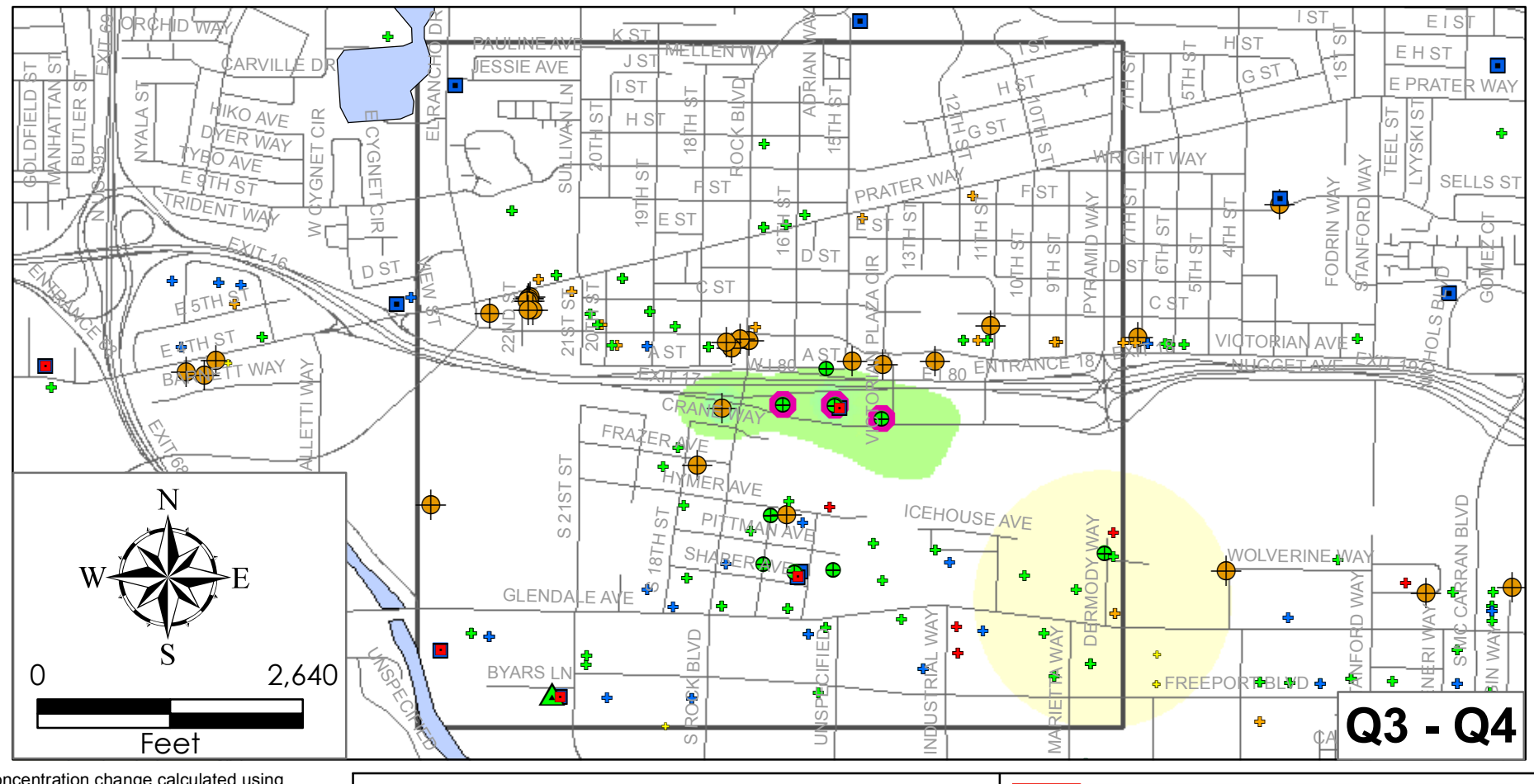
0 2,640

Feet

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
VICTORIAN AVENUE SUBREGION Q1-Q4 2006 WATER LEVEL DIFFERENCE MAP	MB	MT	01/2008
	6N637B	6.23	







Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

30.0 µg/L

0

-30.0 µg/L

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

VICTORIAN AVENUE SUBREGION 2006
PCE CONCENTRATION CHANGE

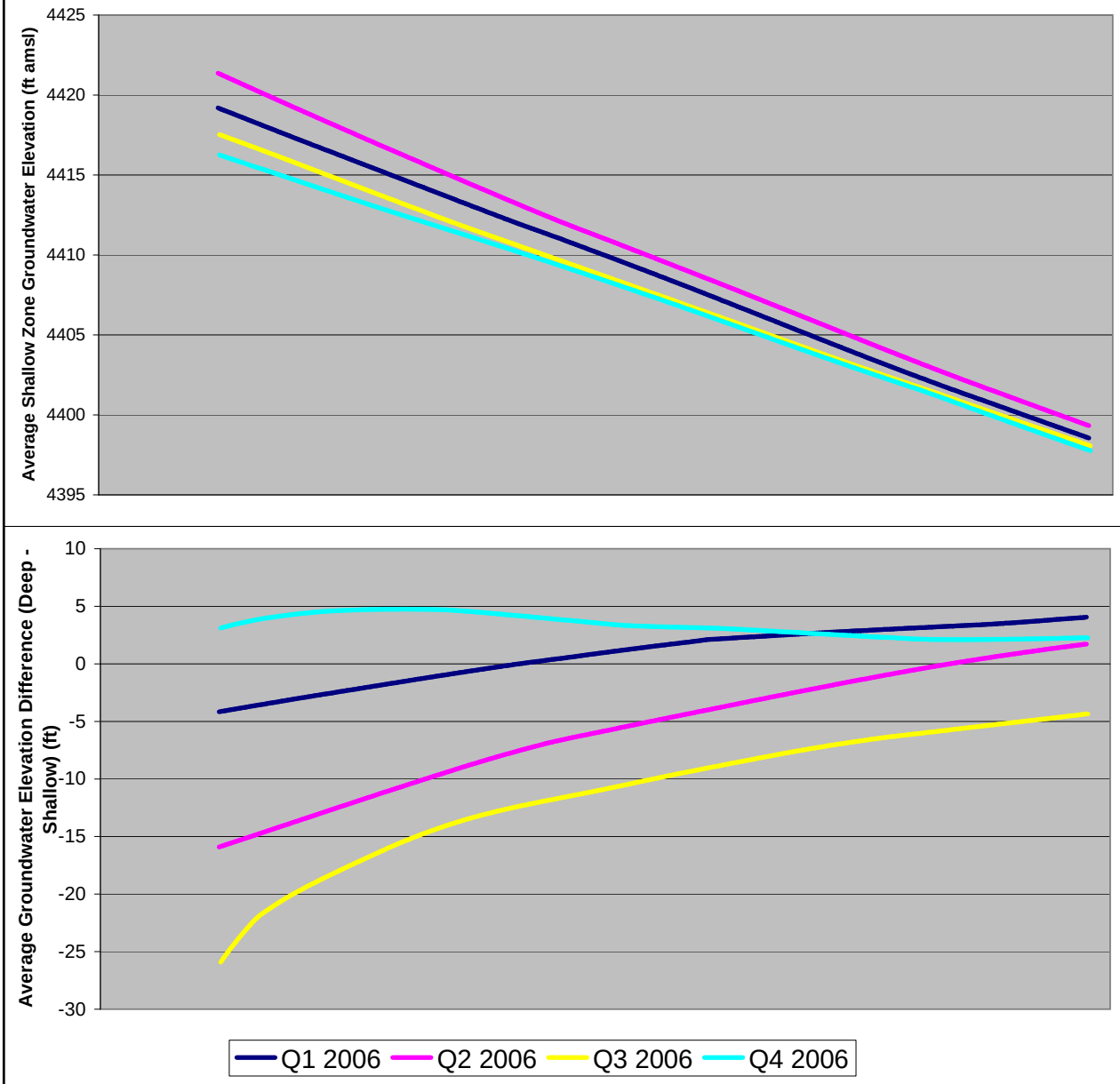
SWL	PM	01/2008
6N637B30	6.24	

WorleyParsons Komex

resources & energy

Figure 6.25: Average 2006 Groundwater Elevation and Groundwater Elevation Difference

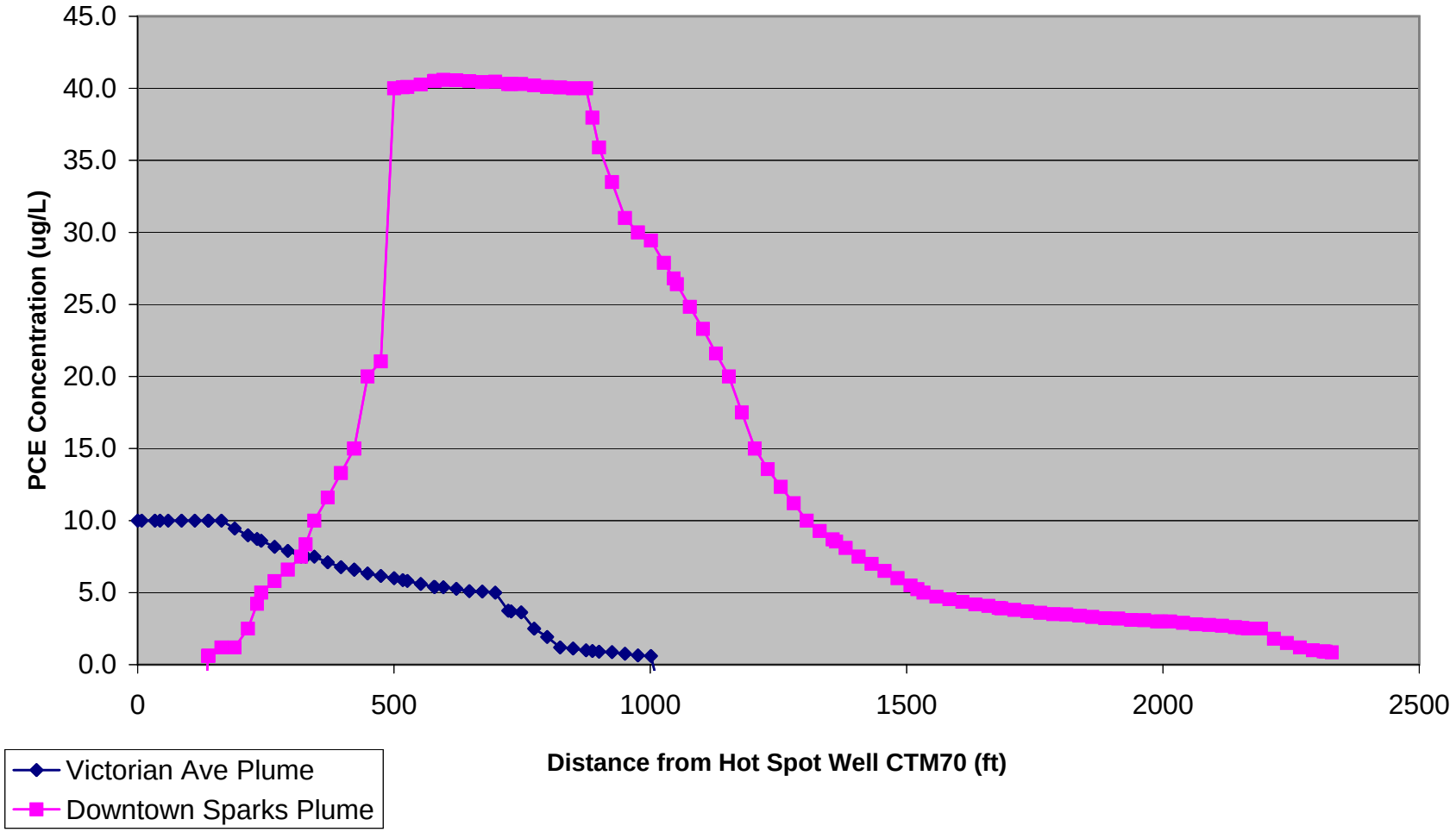
Victorian Avenue Plume Subregion

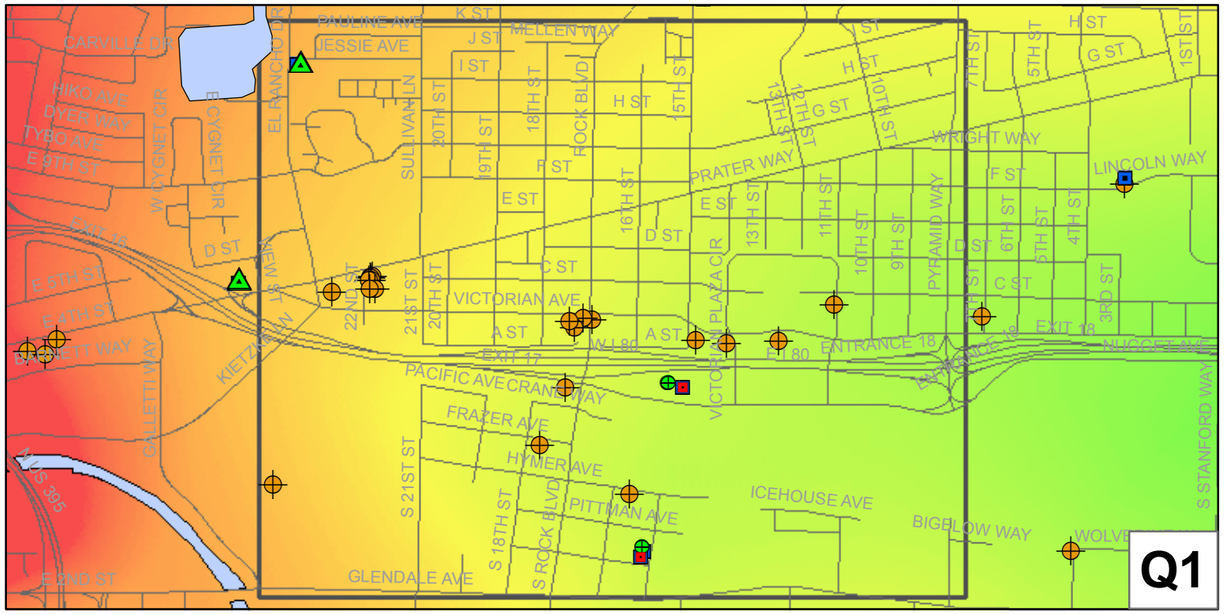


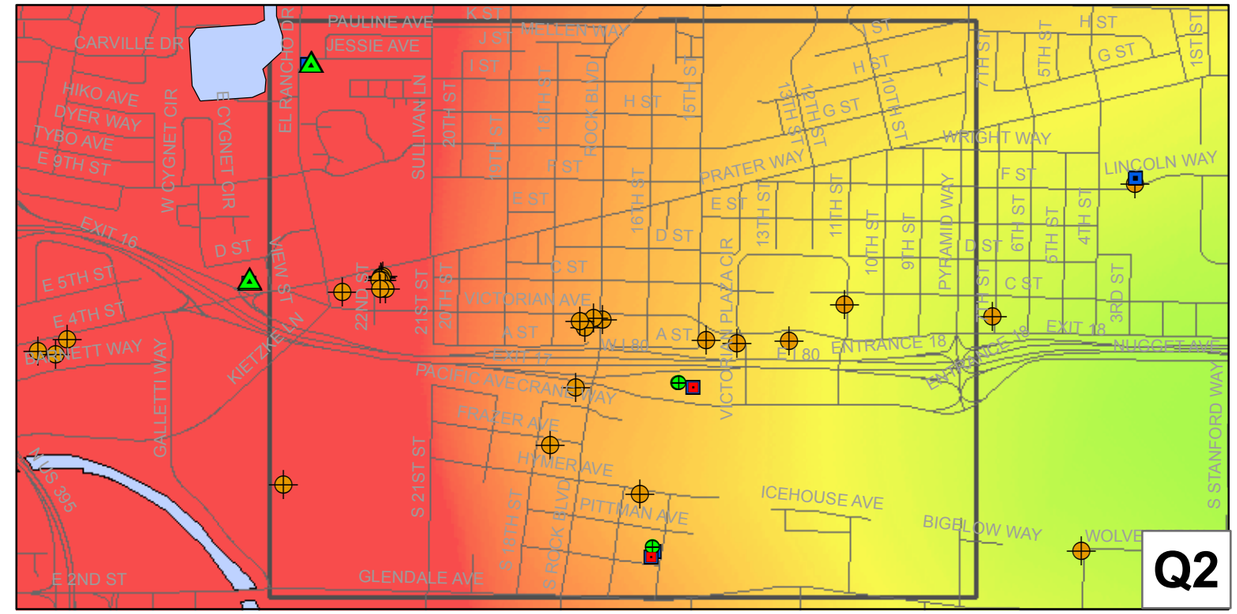
WorleyParsons Komex

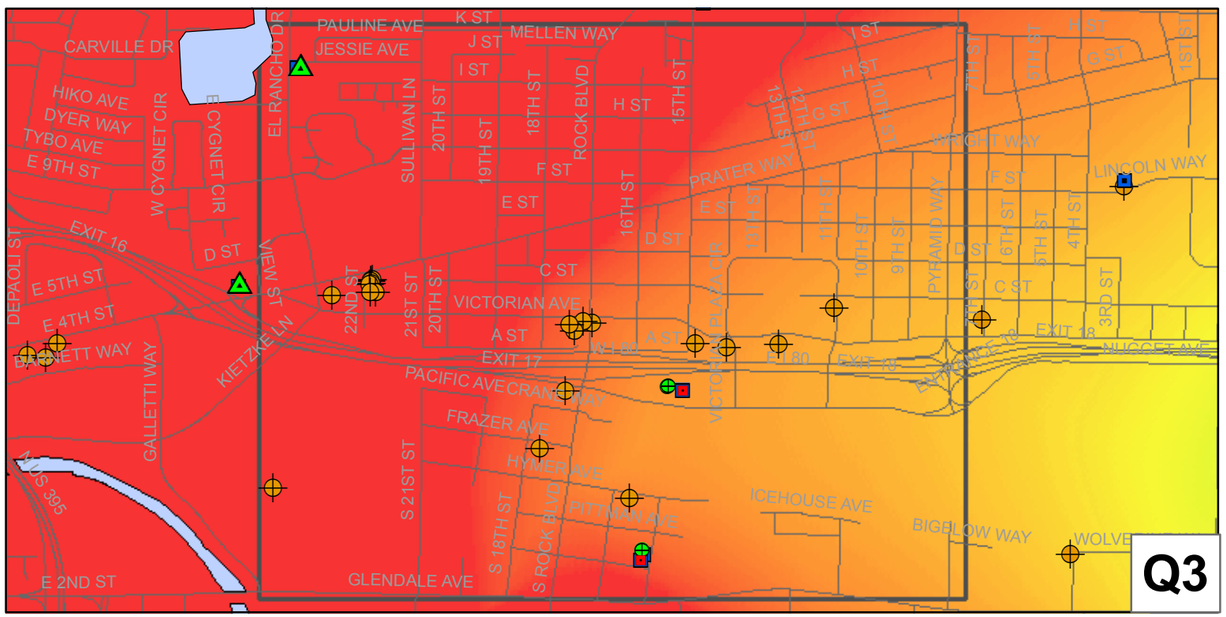
resources & energy

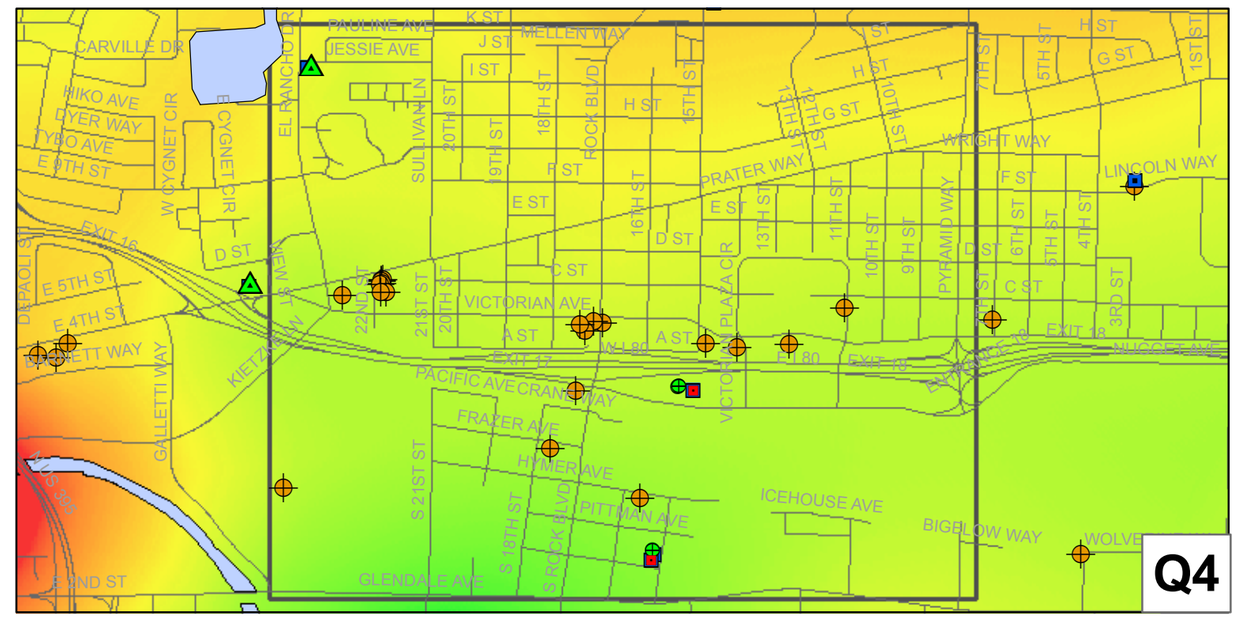
Figure 6.26: Victorian Ave / Downtown Sparks Concentration Profile, Q2 2006











Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

Downtown Sparks Subregion Water Level Difference map

10.0 feet

0

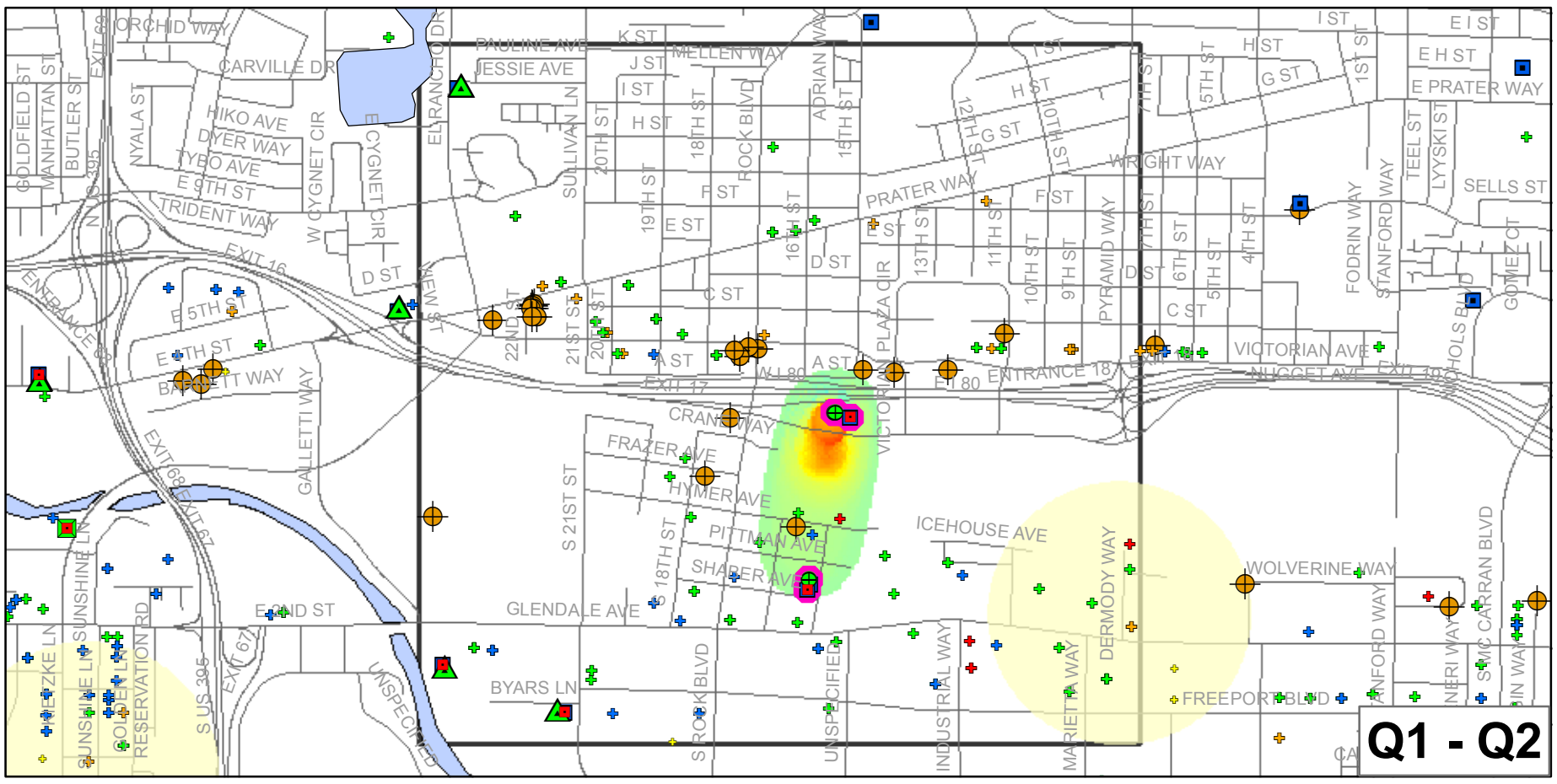
-10.0 feet

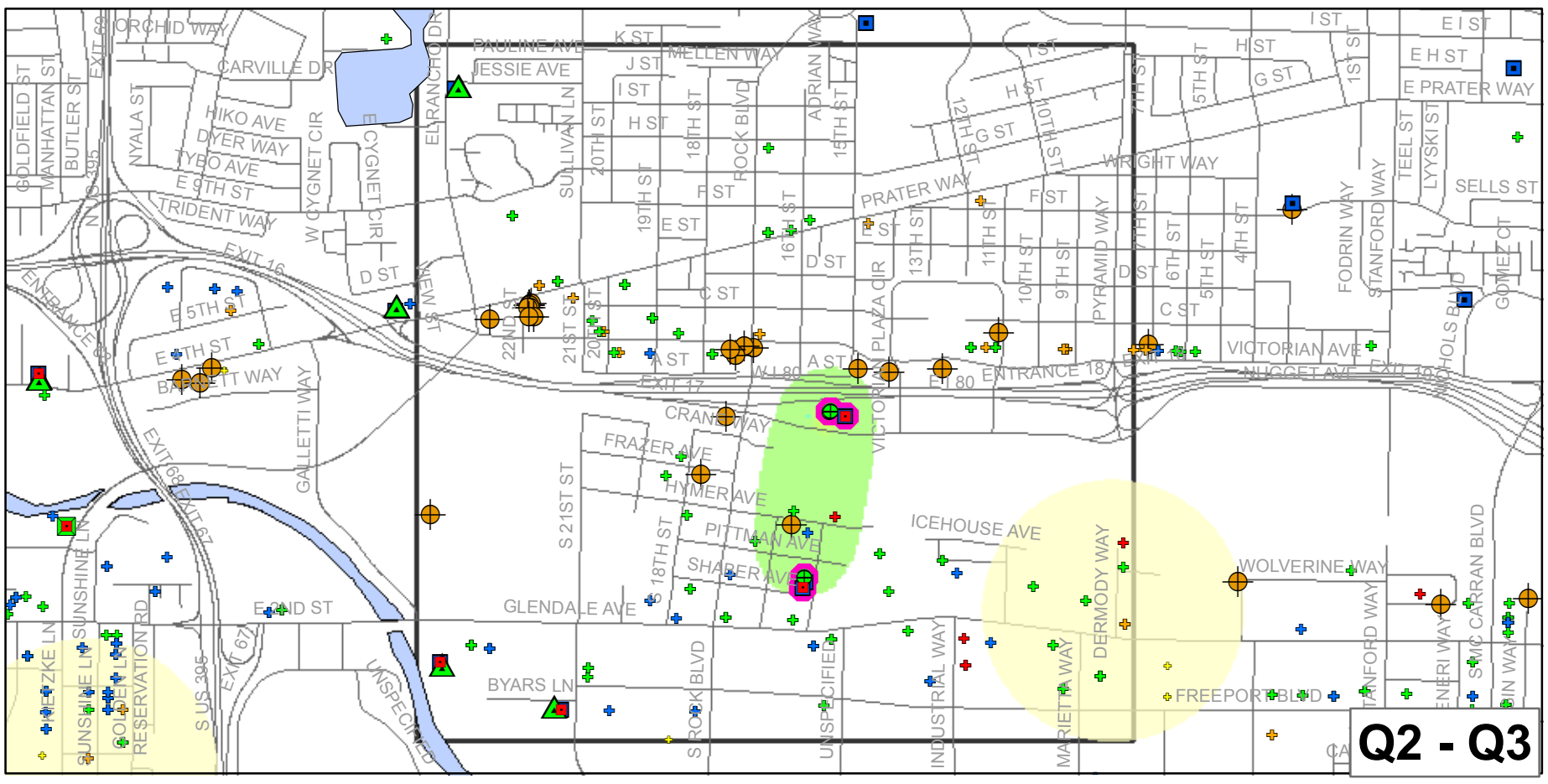
N
W E
S

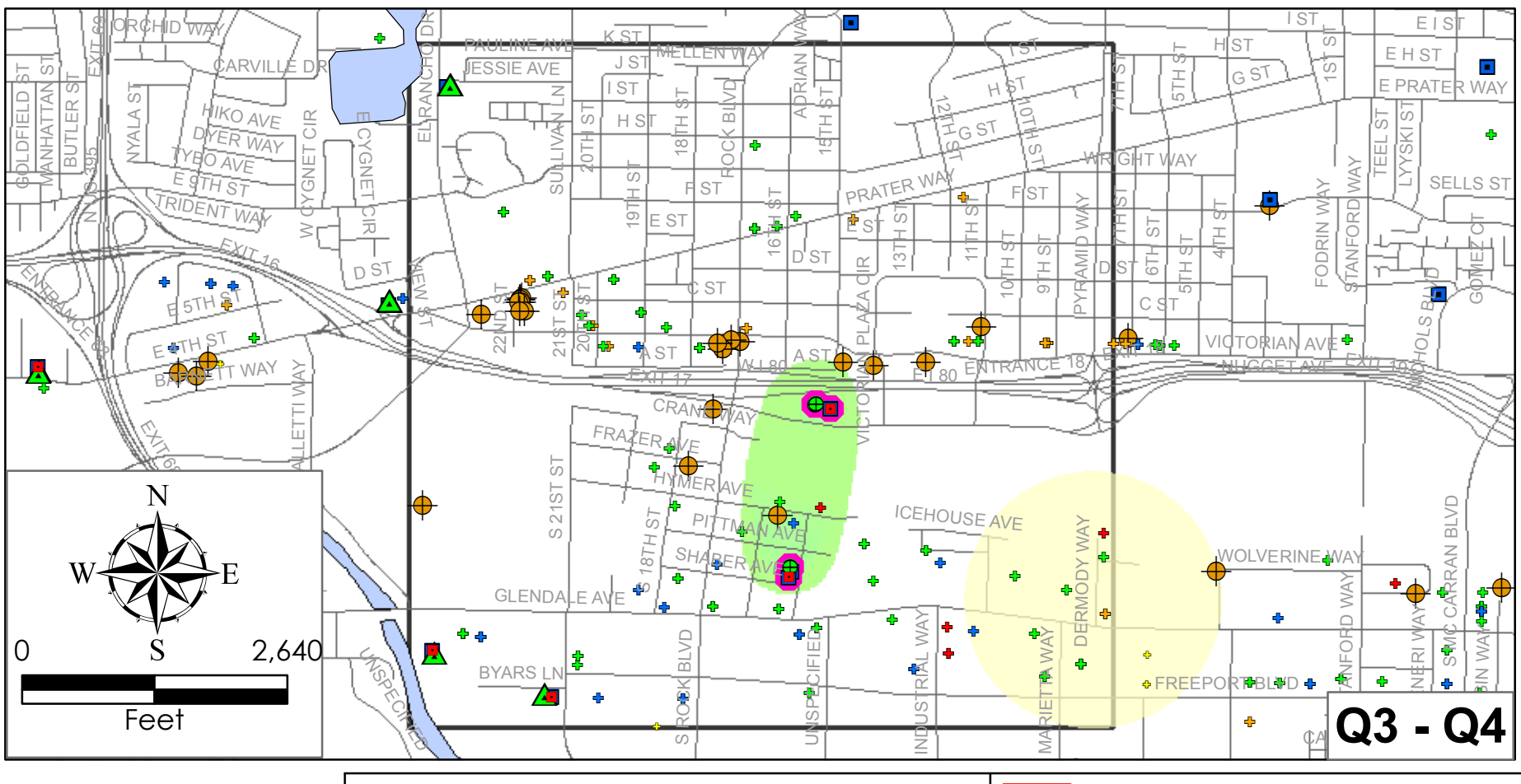
0 2,640

Feet

WASHOE COUNTY DWR	**WorleyParsons Komex** resources & energy		
DOWNTOWN SPARKS SUBREGION Q1-Q4 2006 WATER LEVEL DIFFERENCE MAP	MB	MT	01/2008
	6N637B	**6.27**	







Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

DOWNTOWN SPARKS SUBREGION 2006
PCE CONCENTRATION CHANGE

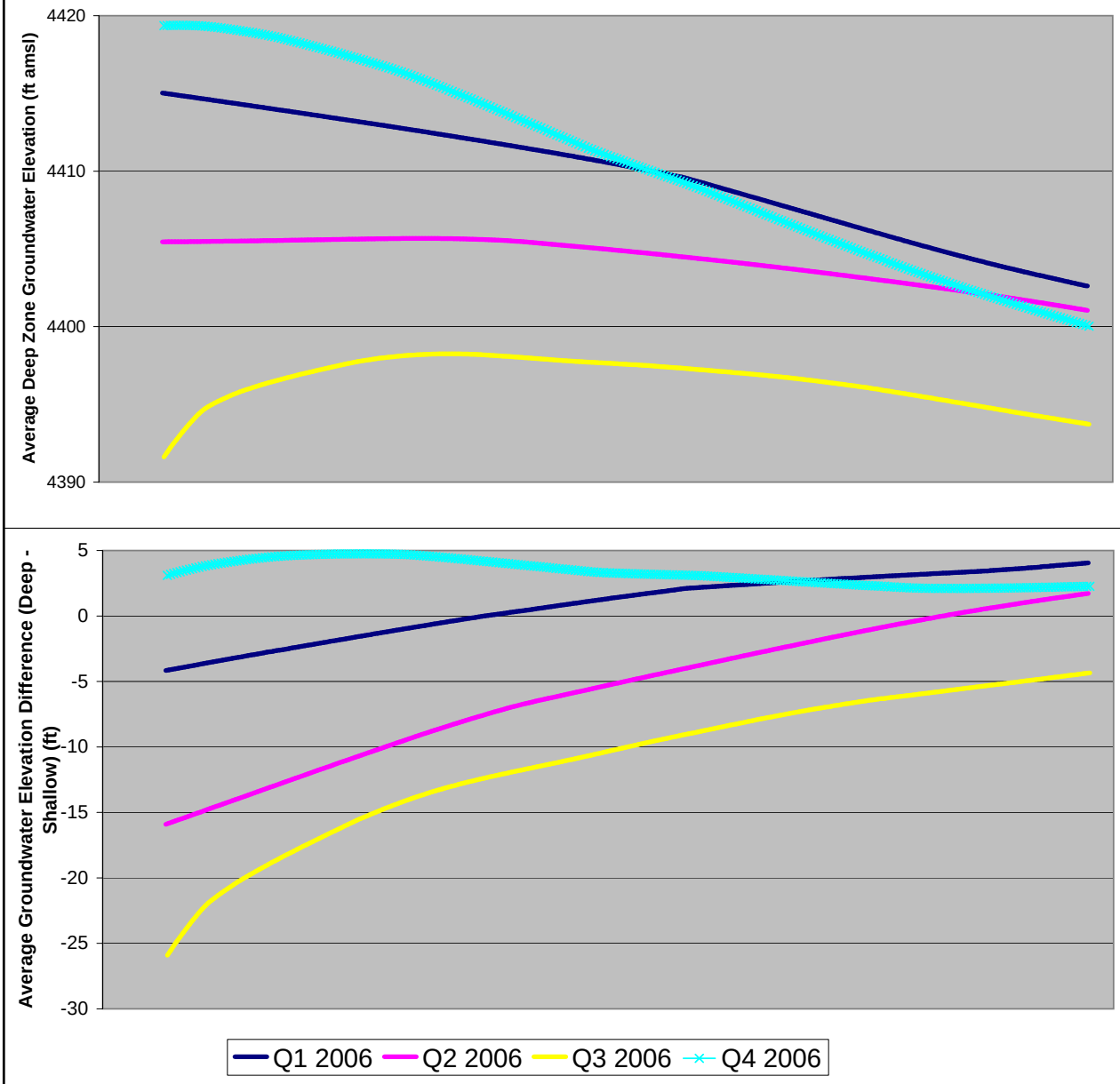
SWL	PM	01/2008
6N637B30	6.28	

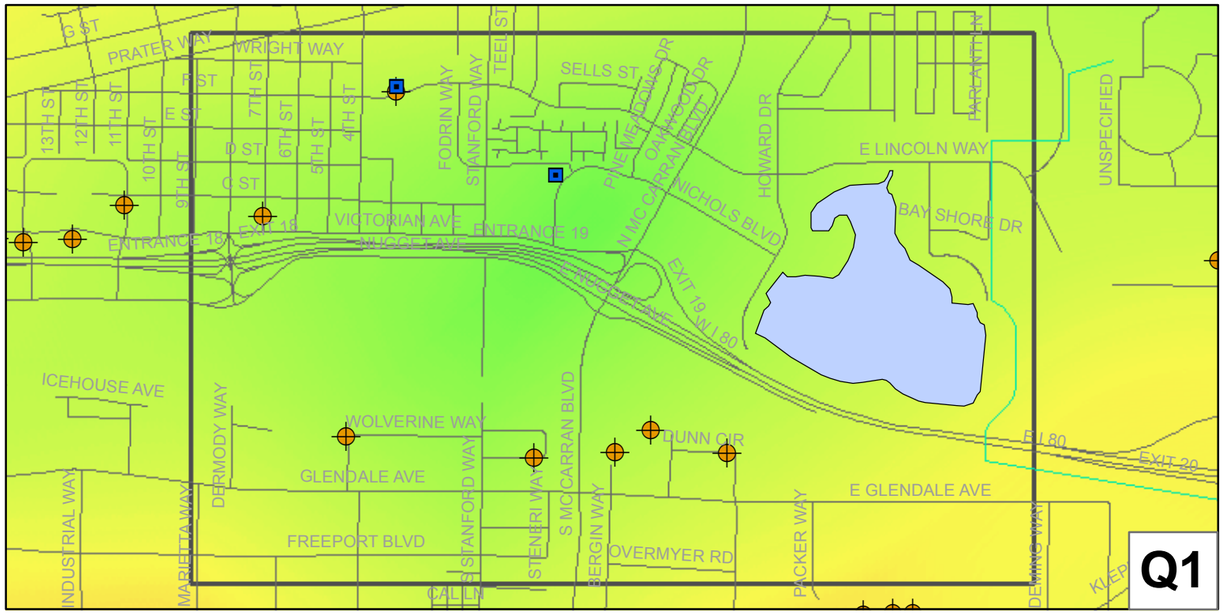
WorleyParsons Komex

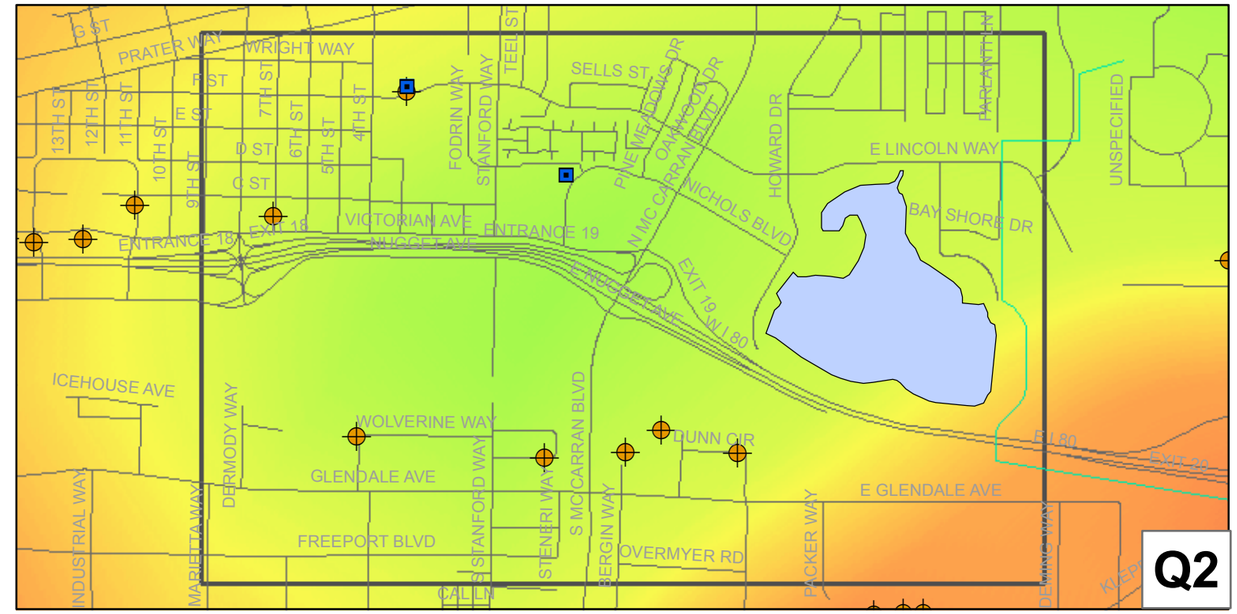
resources & energy

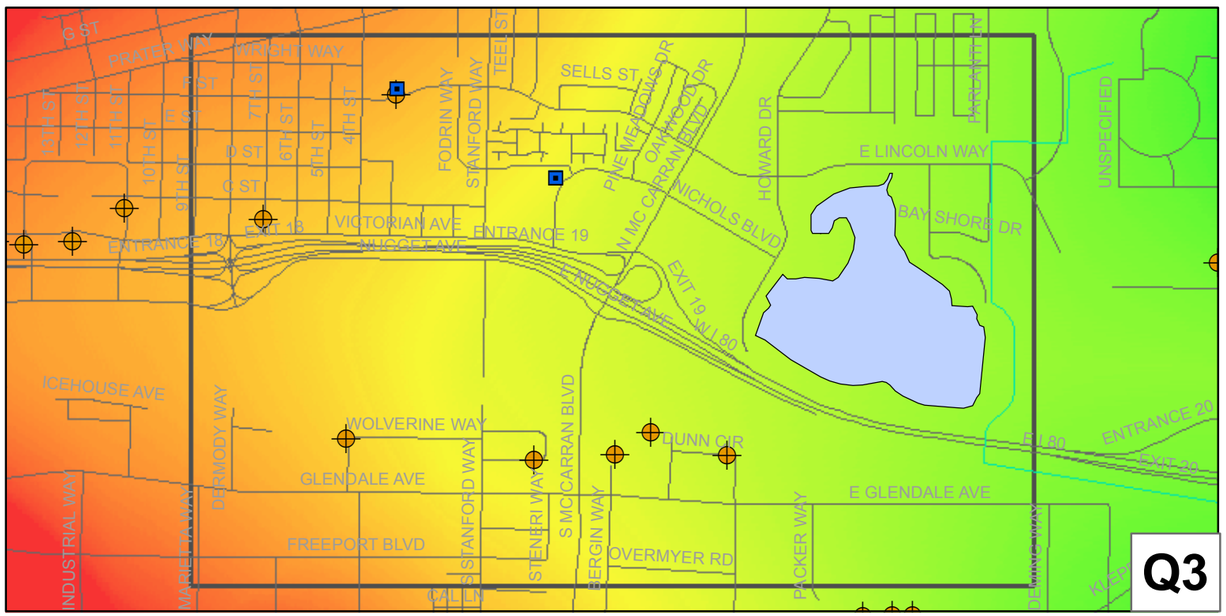
Figure 6.29: Average 2006 Groundwater Elevation and Groundwater Elevation Difference

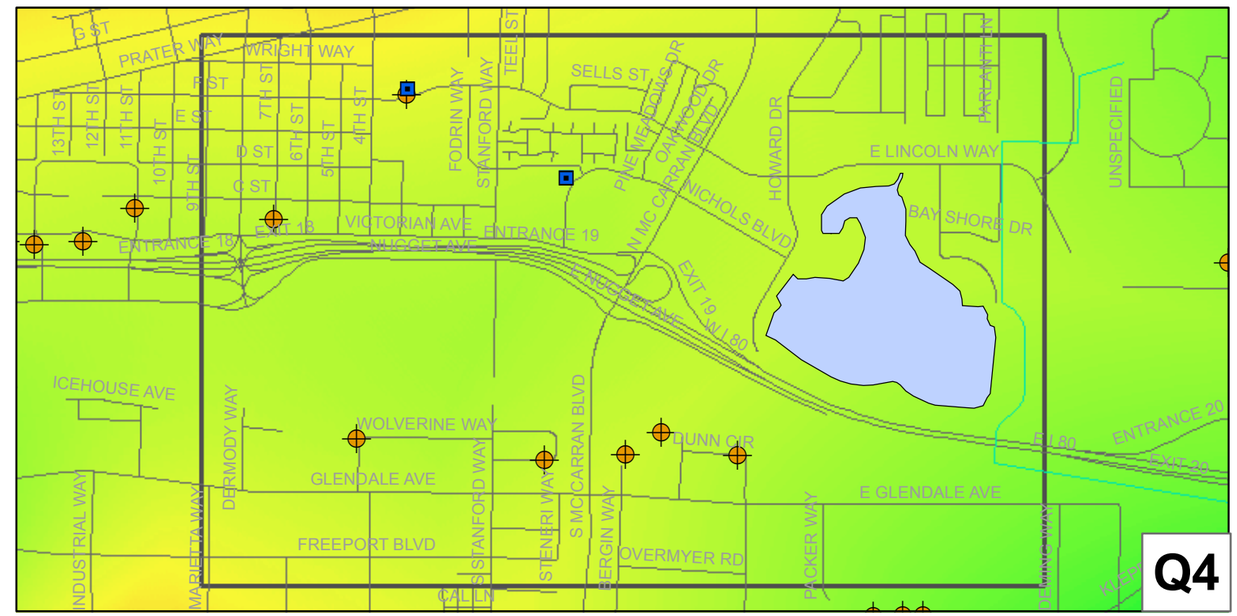
Downtown Sparks Plume Subregion











Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

Wolverine Way Subregion Water Level Difference map

10.0 feet

0

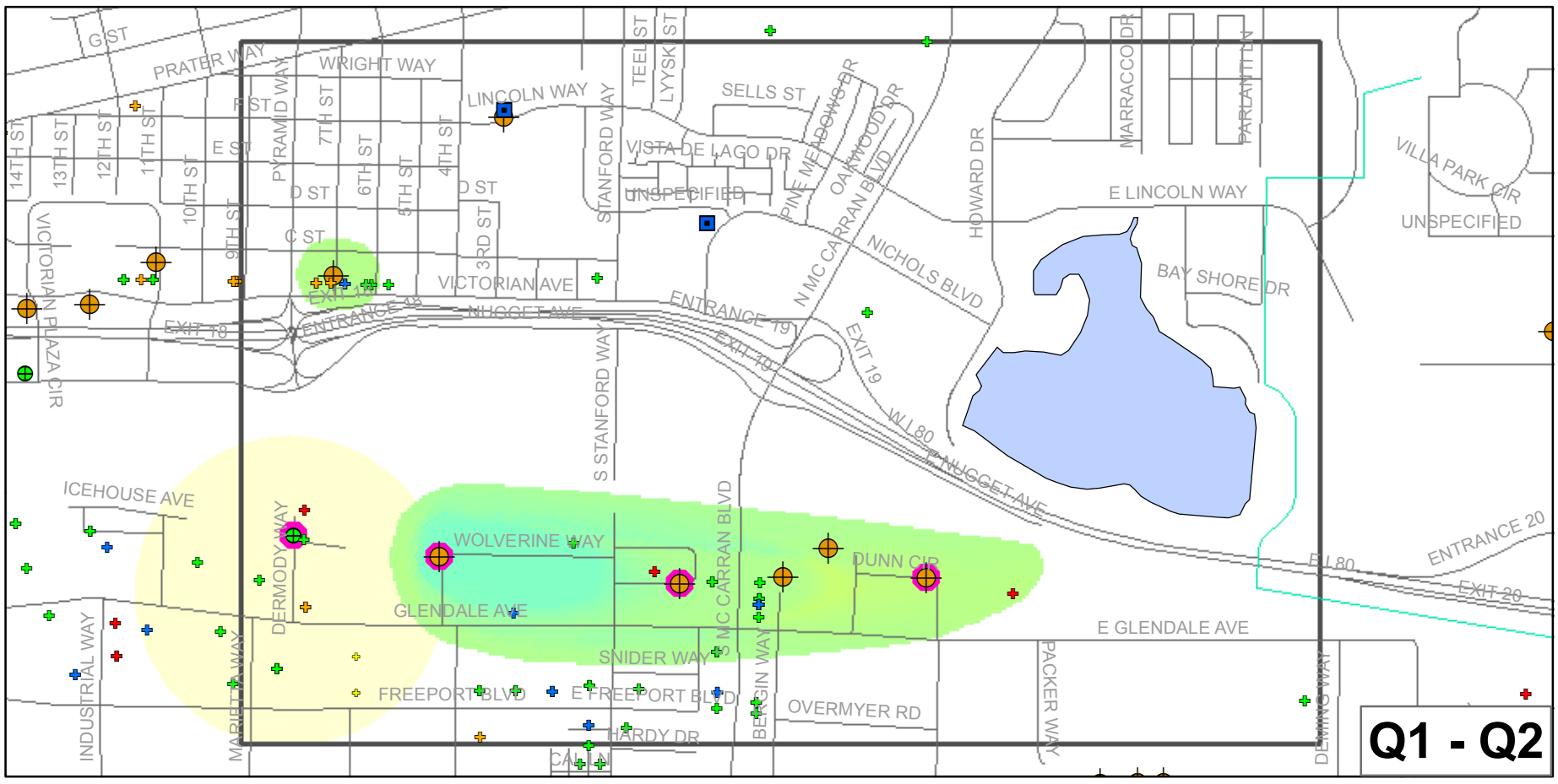
-10.0 feet

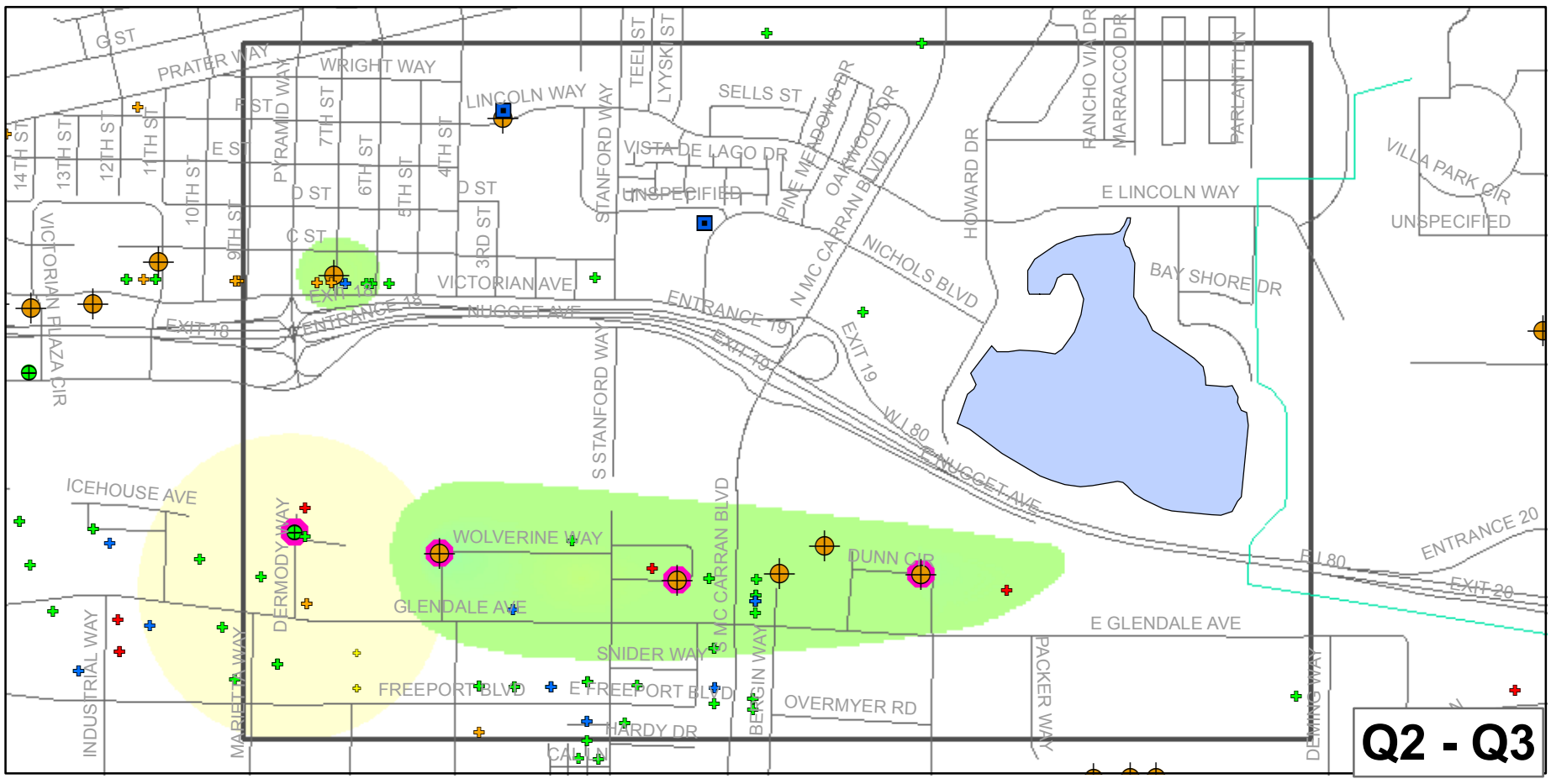
N
W E
S

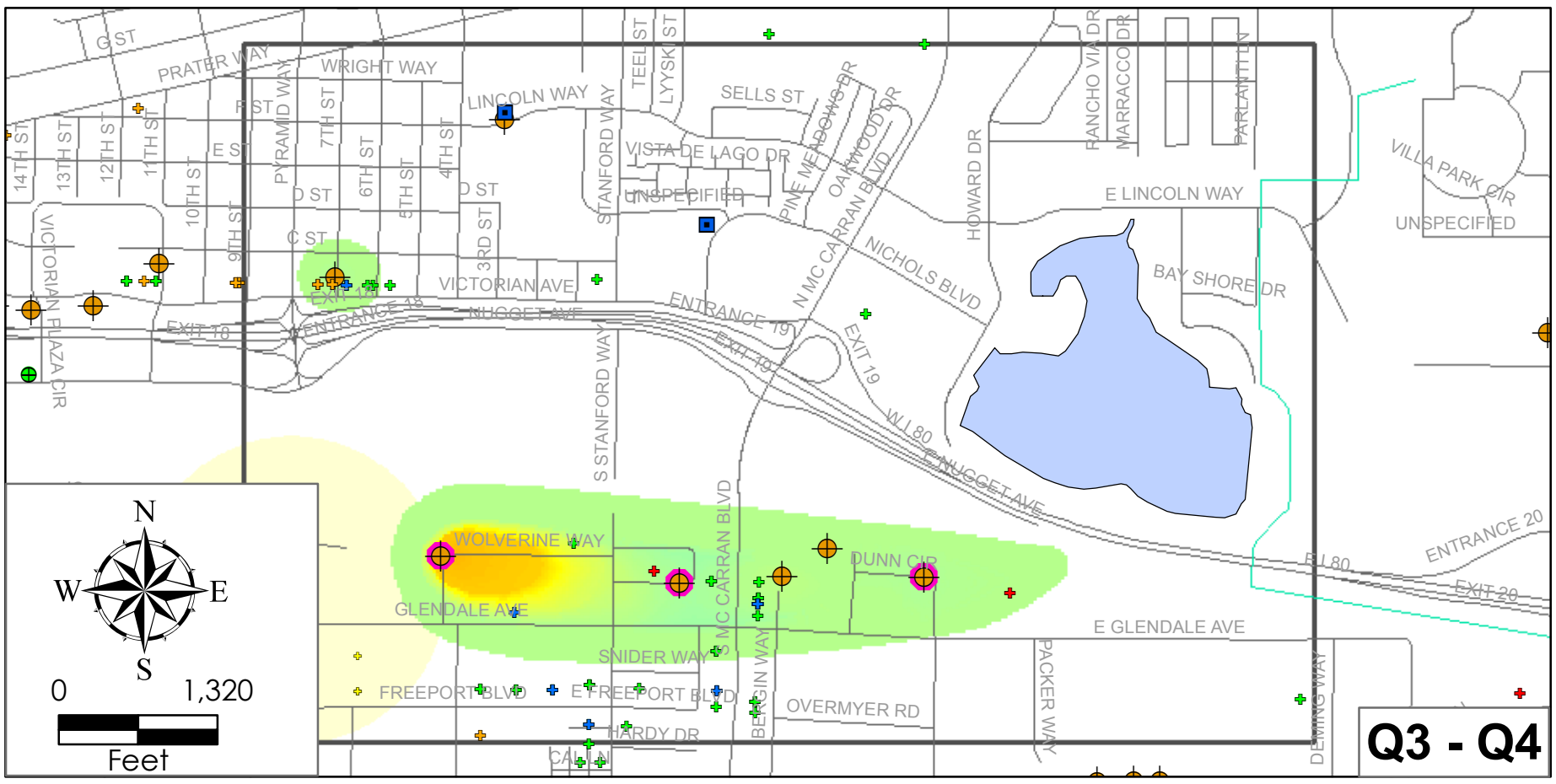
0 2,640

Feet

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
WOLVERINE WAY SUBREGION Q1-Q4 2006 WATER LEVEL DIFFERENCE MAP	MB	MT	01/2008
	6N637B	6.30	







Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

WOLVERINE WAY STREET SUBREGION 2006
PCE CONCENTRATION CHANGE

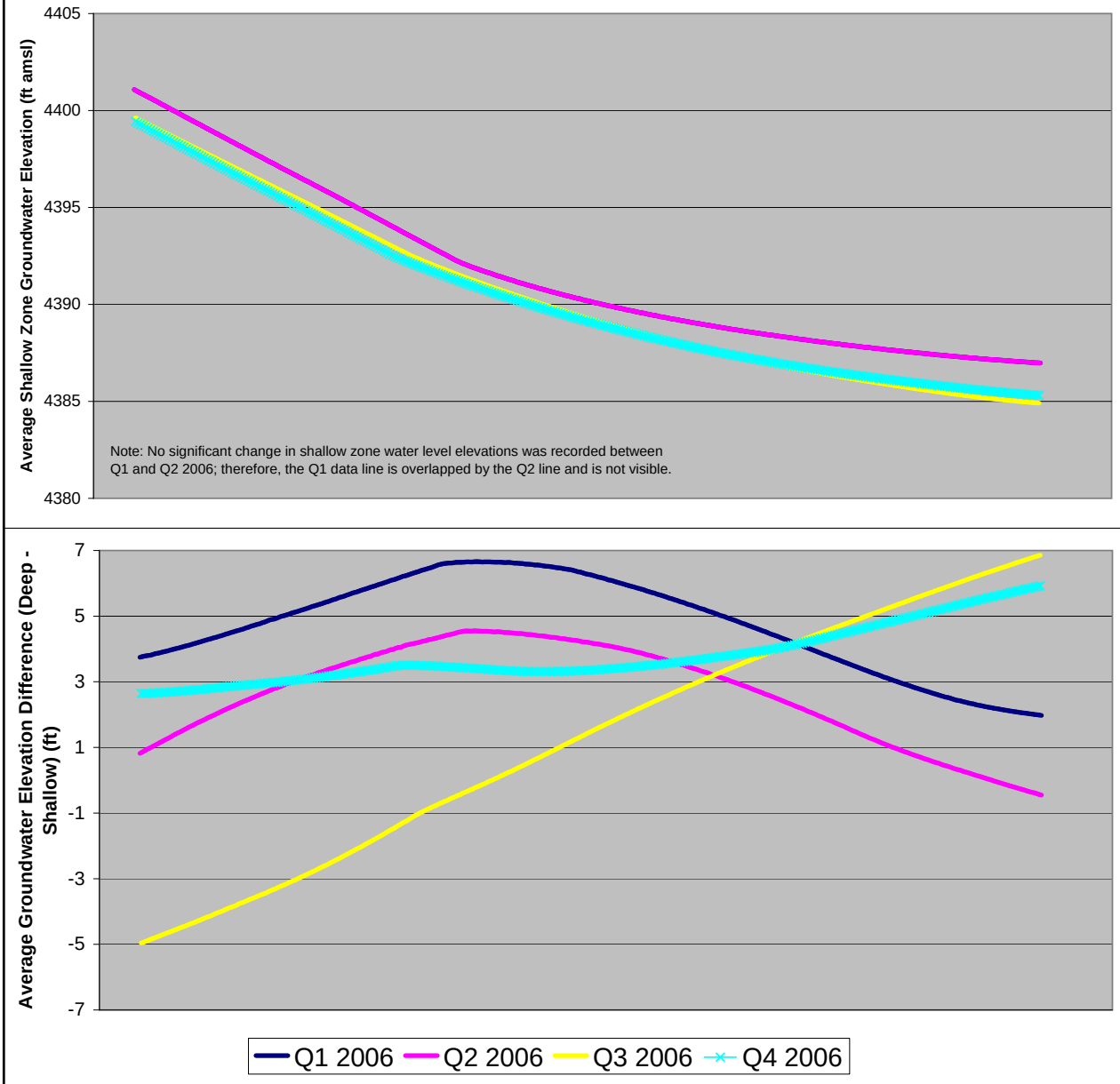
SWL	PM	01/2008
6N637B30		6.31

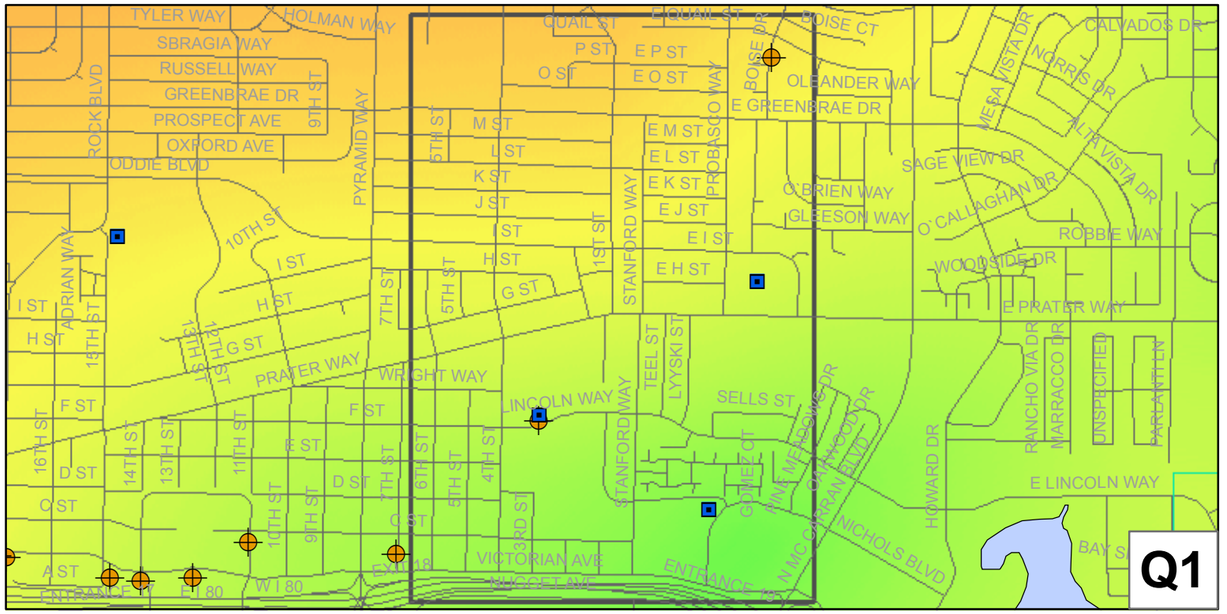
WorleyParsons Komex

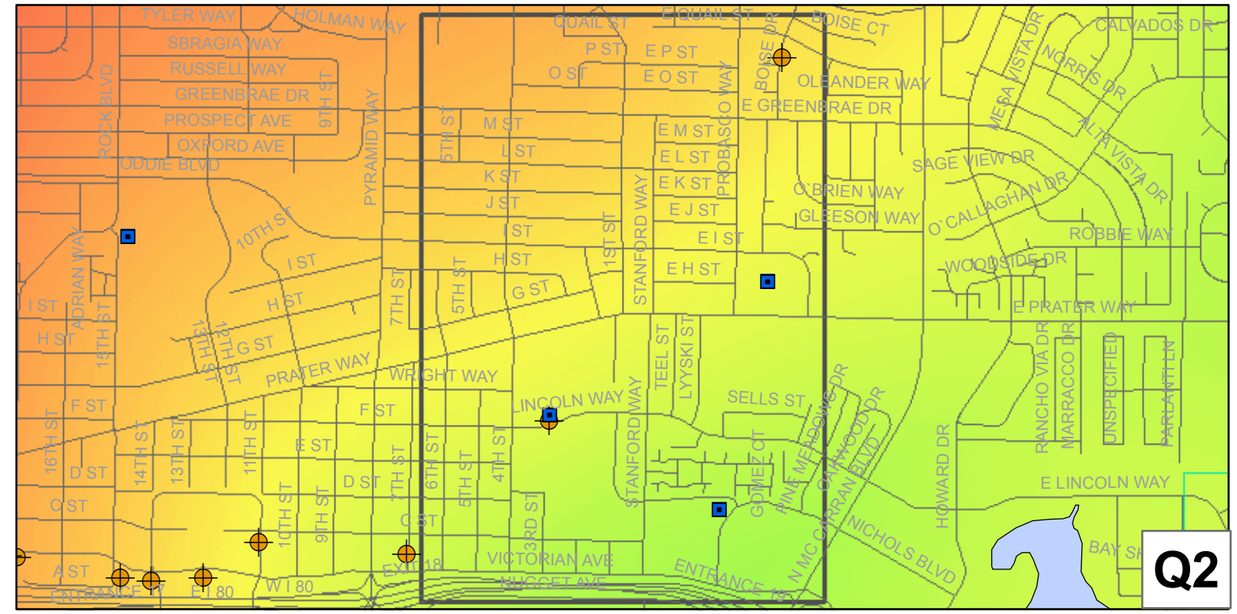
resources & energy

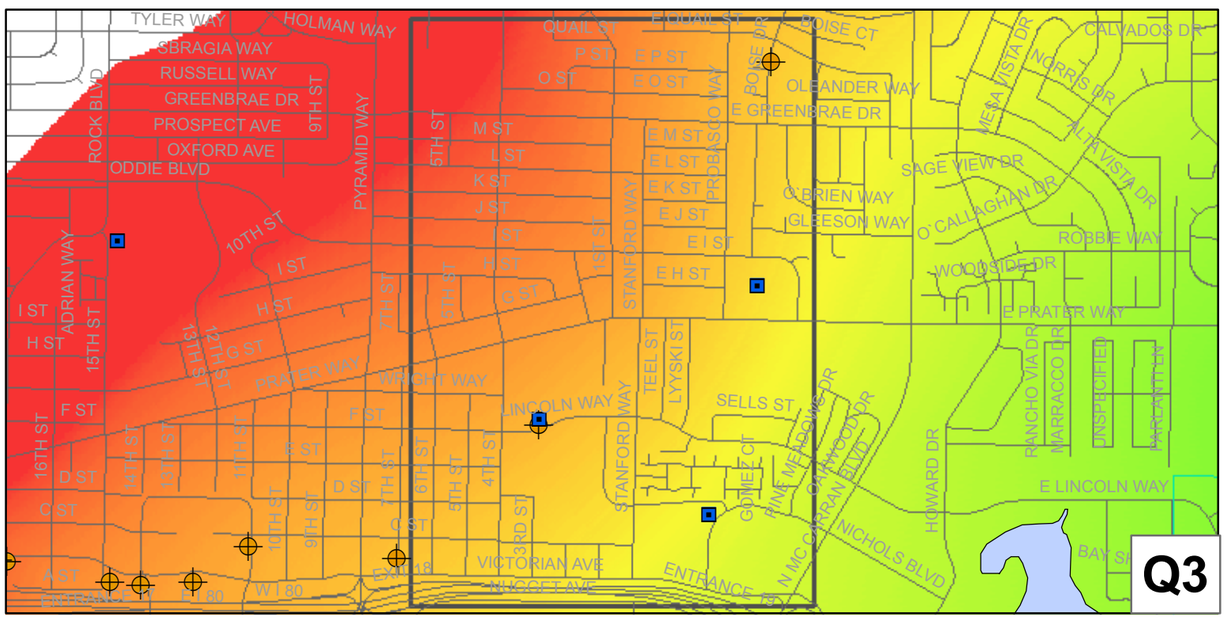
Figure 6.32: Average 2006 Groundwater Elevation and Groundwater Elevation Difference

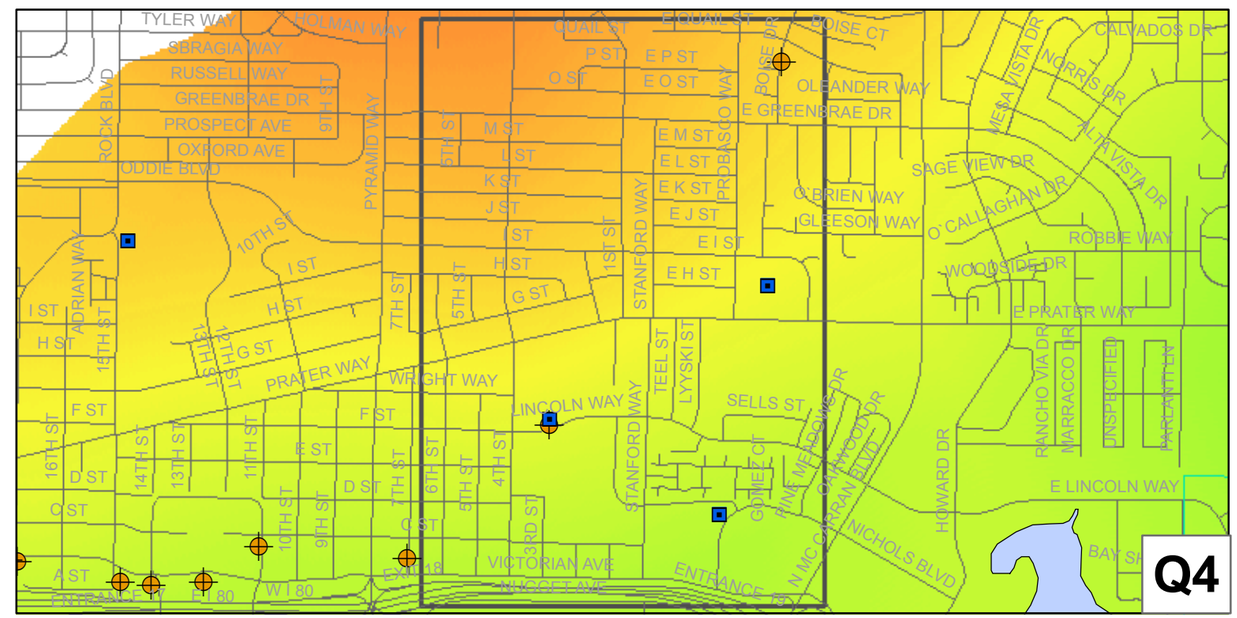
Wolverine Way Plume Subregion











Notes: Q1-Q4, 2006 Water Level Difference calculated by subtracting the contoured water level elevation in the shallow zone from the contoured water level elevation in the deep zone.

LEGEND

Subregion boundary

Greenbrae Drive Subregion Water Level Difference map

10.0 feet

0

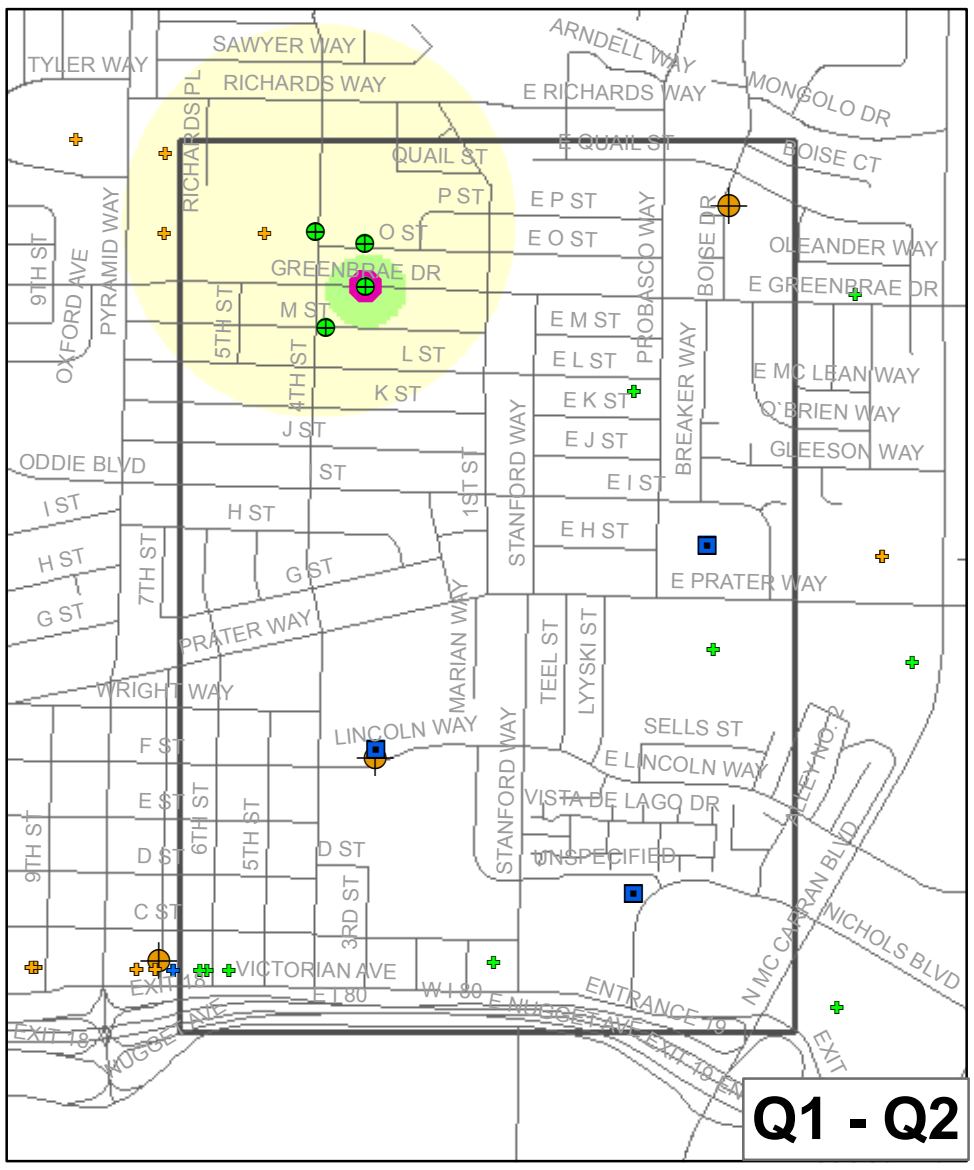
-10.0 feet

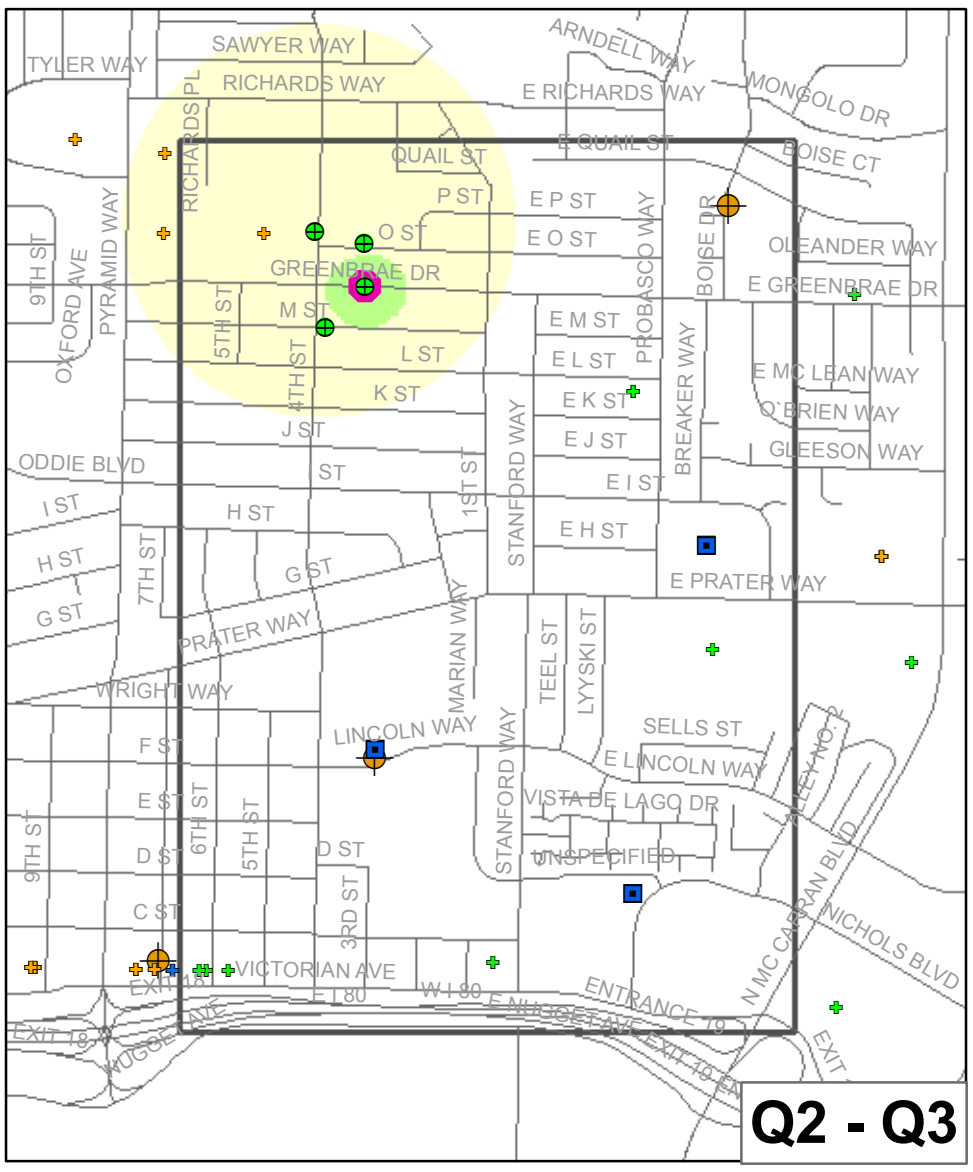
N
W E
S

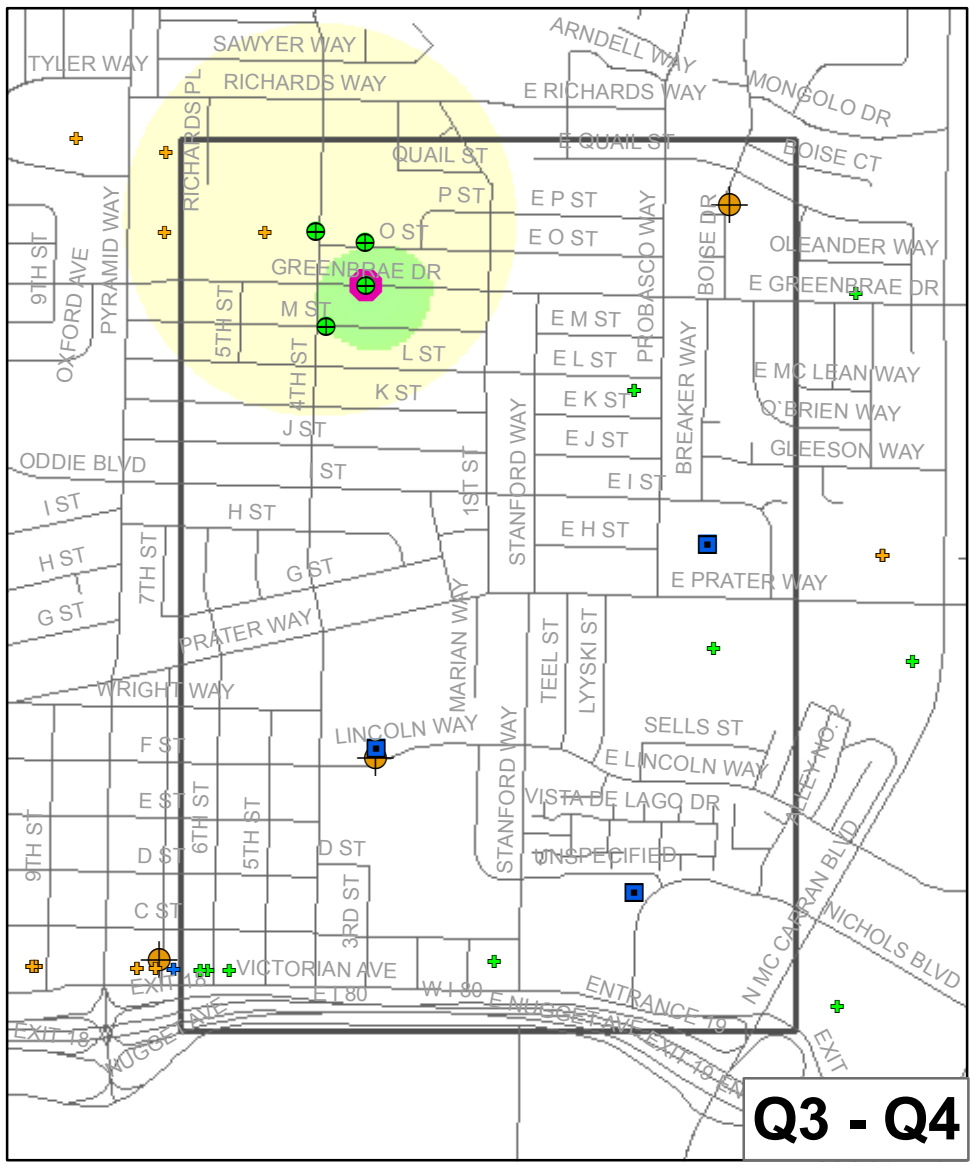
0 2,640

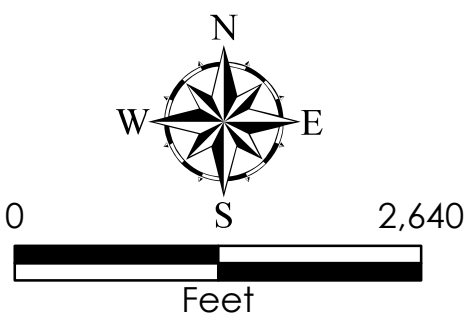
Feet

WASHOE COUNTY DWR	WorleyParsons Komex resources & energy		
GREENBRAE DRIVE SUBREGION Q1-Q4 2006 WATER LEVEL DIFFERENCE MAP	MB	MT	01/2008
	6N637B	6.33	









Notes:
PCE concentration change calculated using the formula: (Previous quarter subtracted from current quarter, ie., (Q2 - Q1).

WASHOE COUNTY DWR

WorleyParsons Komex
resources & energy

GREENBRAE DRIVE SUBREGION 2006
PCE CONCENTRATION CHANGE

SWL	PM	01/2008
6N637B30		6.34

WorleyParsons Komex

resources & energy

Figure 6.35: Average 2006 Groundwater Elevation and Groundwater Elevation Difference

Greenbrae Drive Plume Subregion