

WATER CHEMISTRY IN CEDAR CITY, UT IRRIGATION SYSTEMS

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CEDAR CITY IRRIGATION SYSTEMS

Older neighborhoods

- Divert water from Coal Creek into a series of canals and ditches.

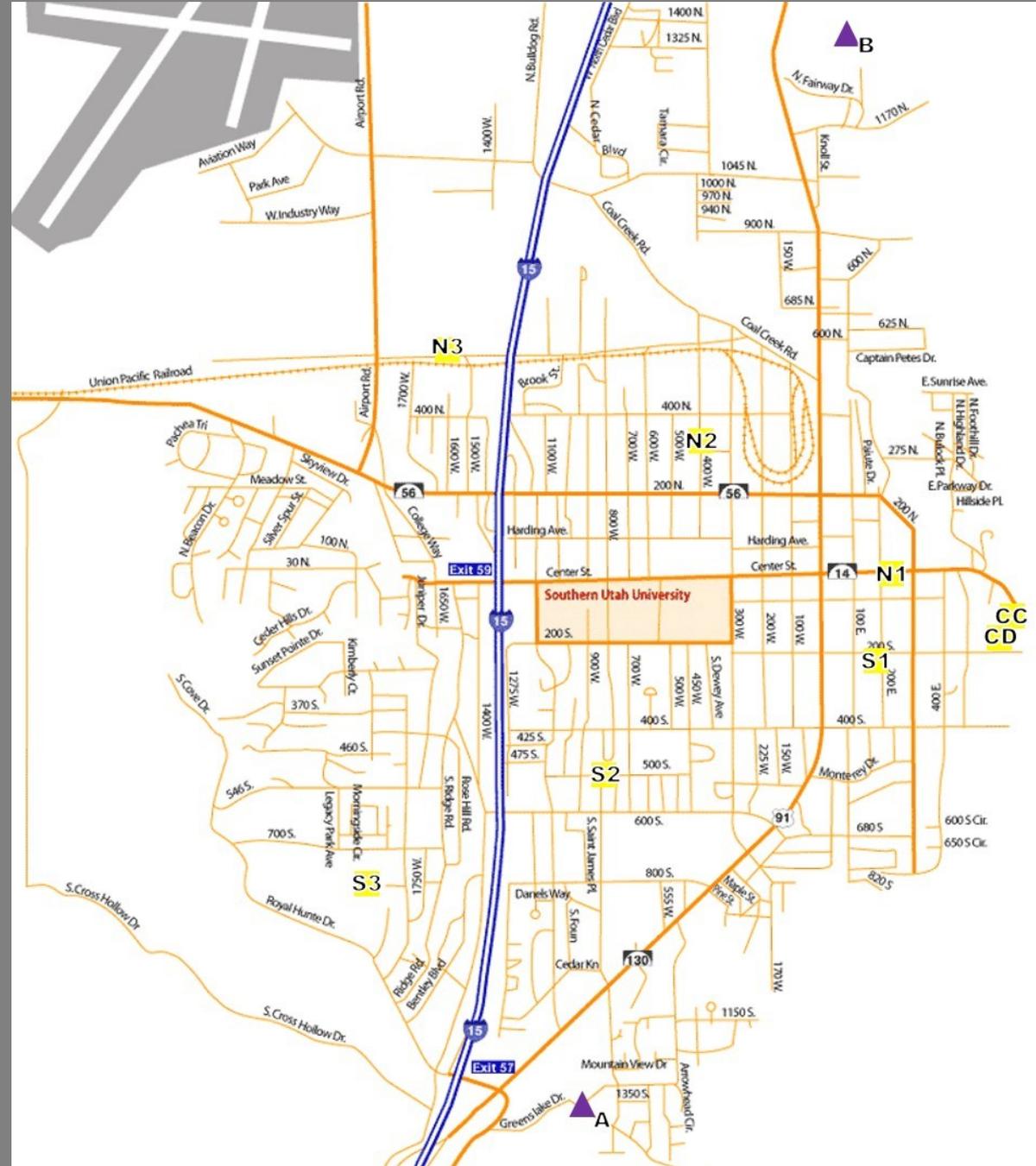


Newer neighborhoods

- Use sprinklers or similar devices from well water.



COLLECTION SITES



Legend

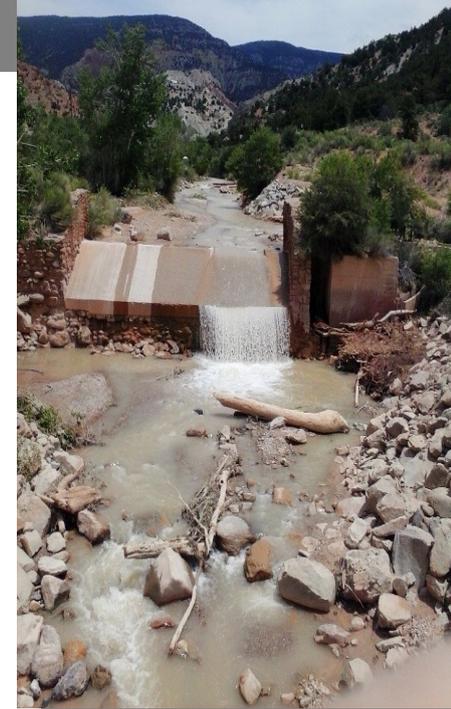
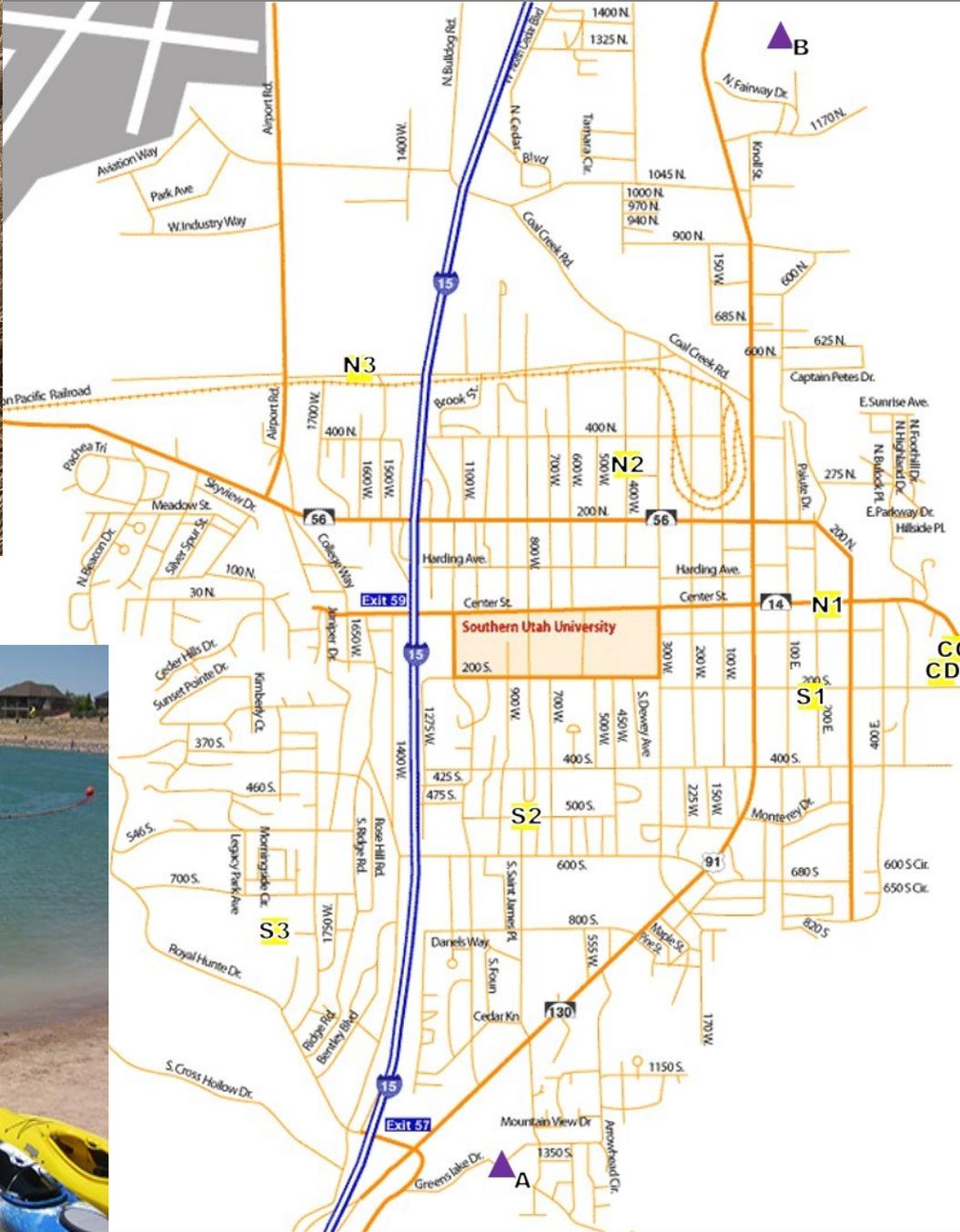


Irrigation: Sites



Non-irrigation

COLLECTION SITES



DATA COLLECTED

- May – October 2014
- Weekly at 8 sites
- High precipitation
- June – present 2015



Water Chemistry

Dissolved oxygen (% , mg/L)

Conductivity

Total dissolved solids (TDS)

pH

Alkalinity

Nitrate/Nitrite

Salinity



HYPOTHESES

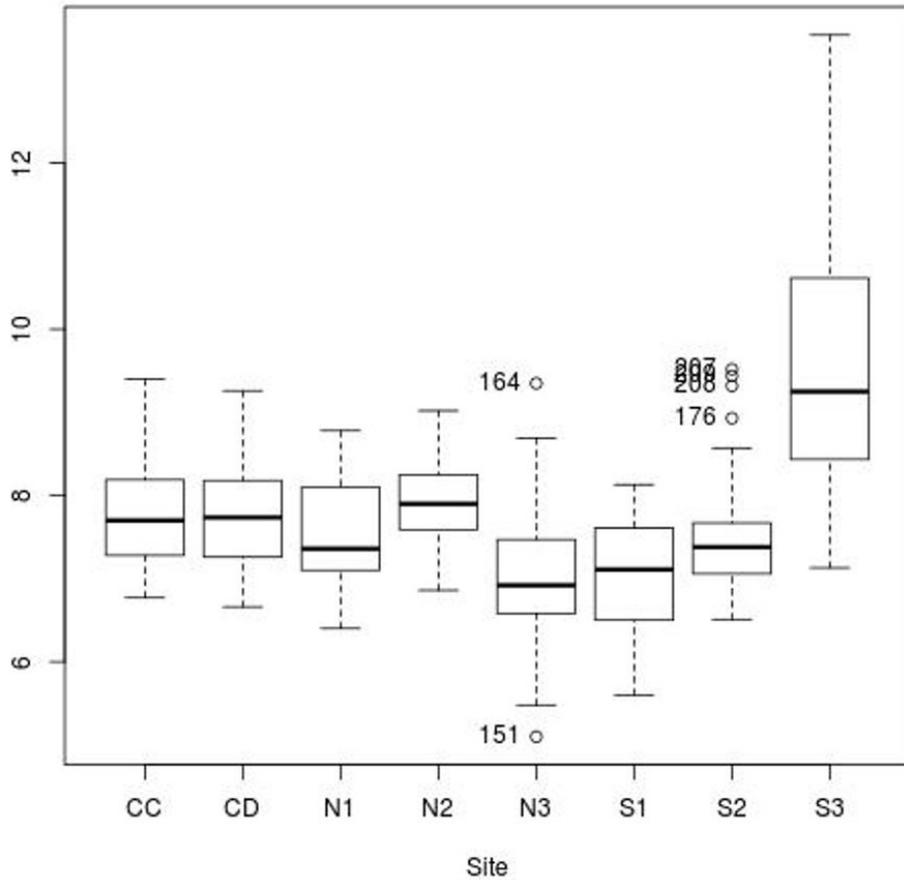
- 1) Changes will be observed in water chemistry as surface water moves from Coal Creek through Cedar City.
- 2) Irrigation strategies influence water chemistry during periods of high precipitation.

RESULTS

Water Chemistry

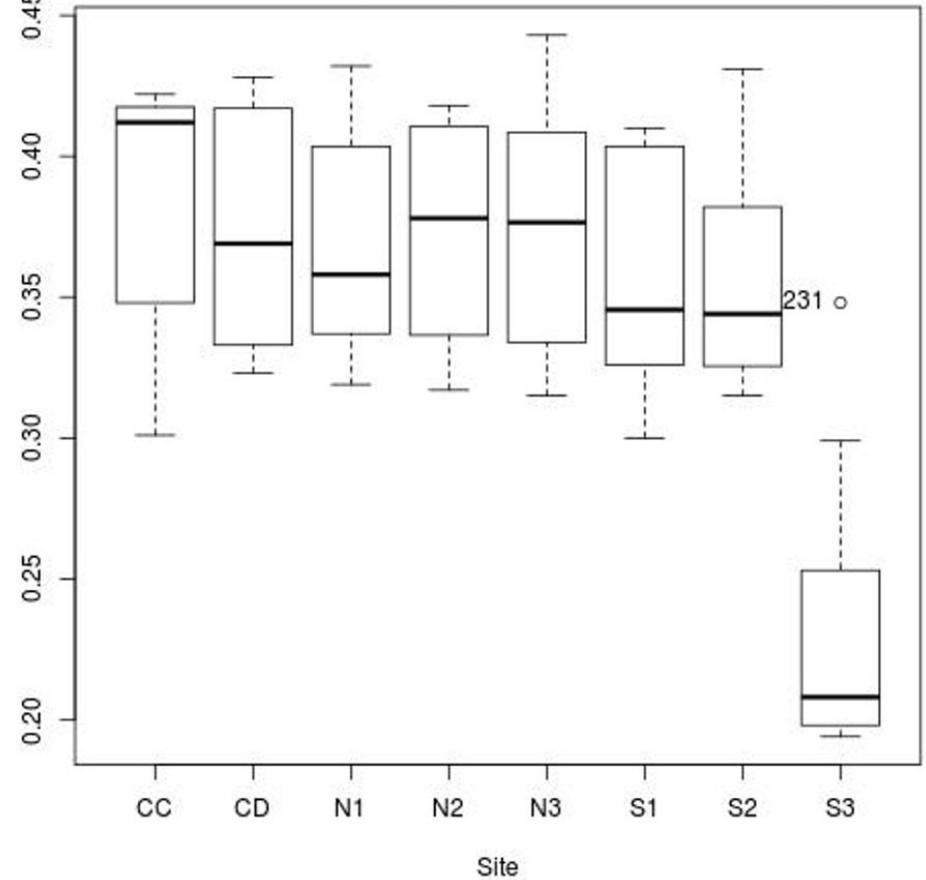
Dissolved Oxygen (mg/L)

a a a a b b a a



Total Dissolved Solids

a a a a a a a b

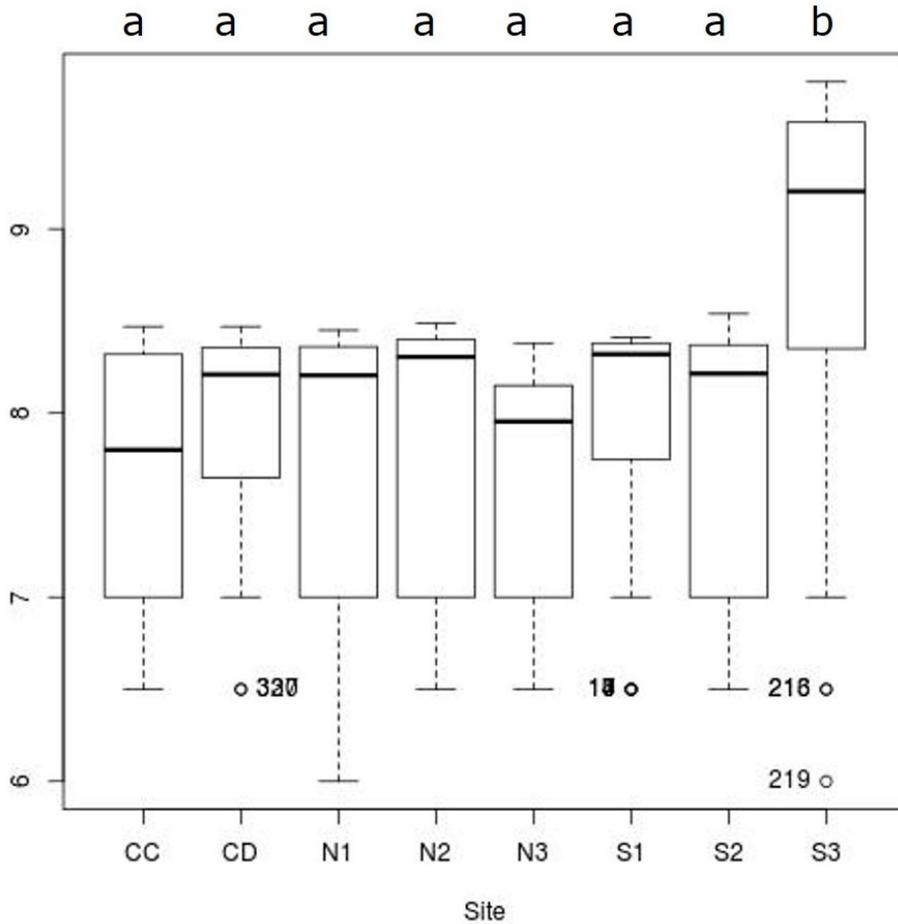


Different letters represent a significant difference with a $P\text{-value} \leq .05$.

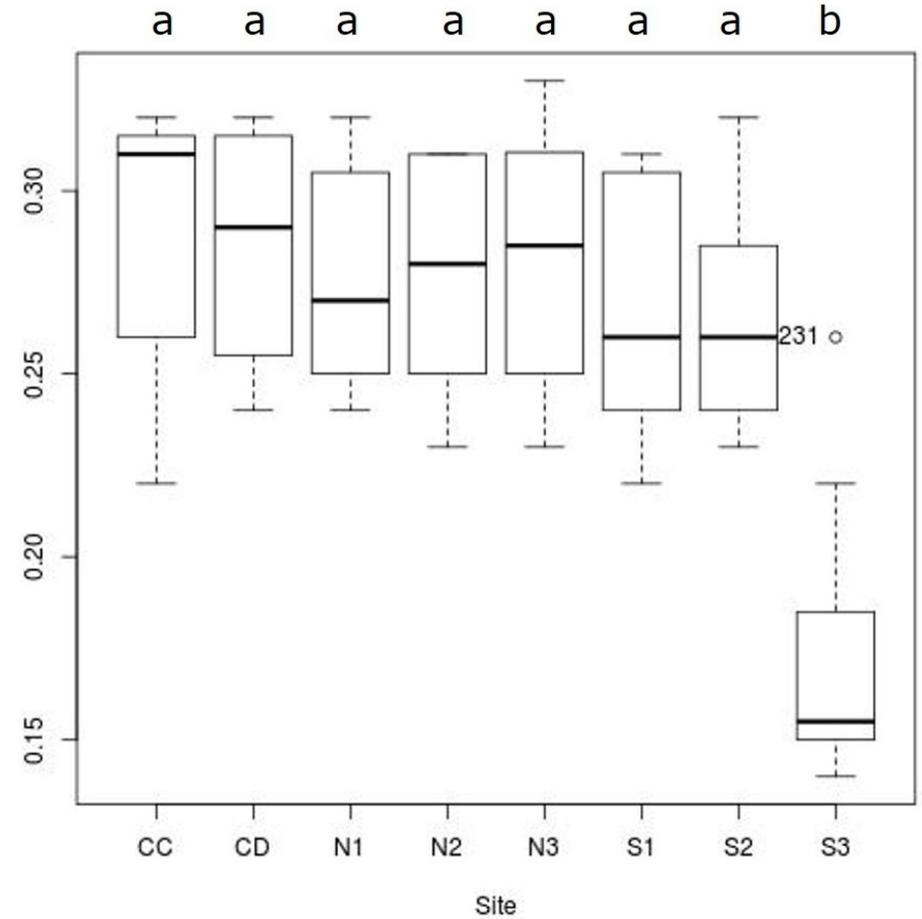
RESULTS

Water Chemistry

pH



Salinity

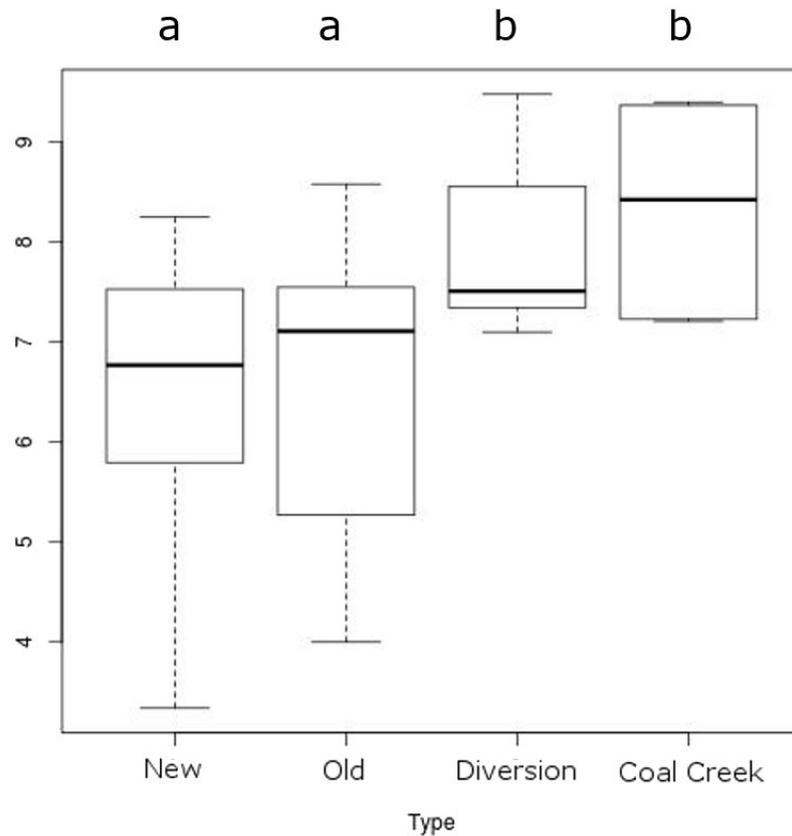


Different letters represent a significant difference with a P -value $\leq .05$.

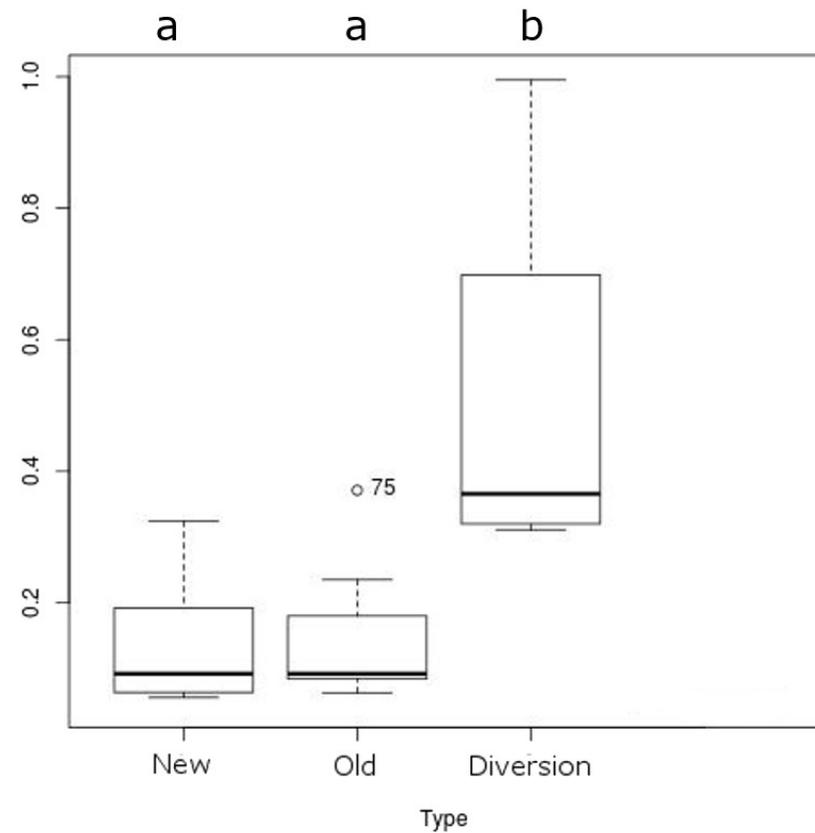
RESULTS

High Precipitation

Dissolved Oxygen



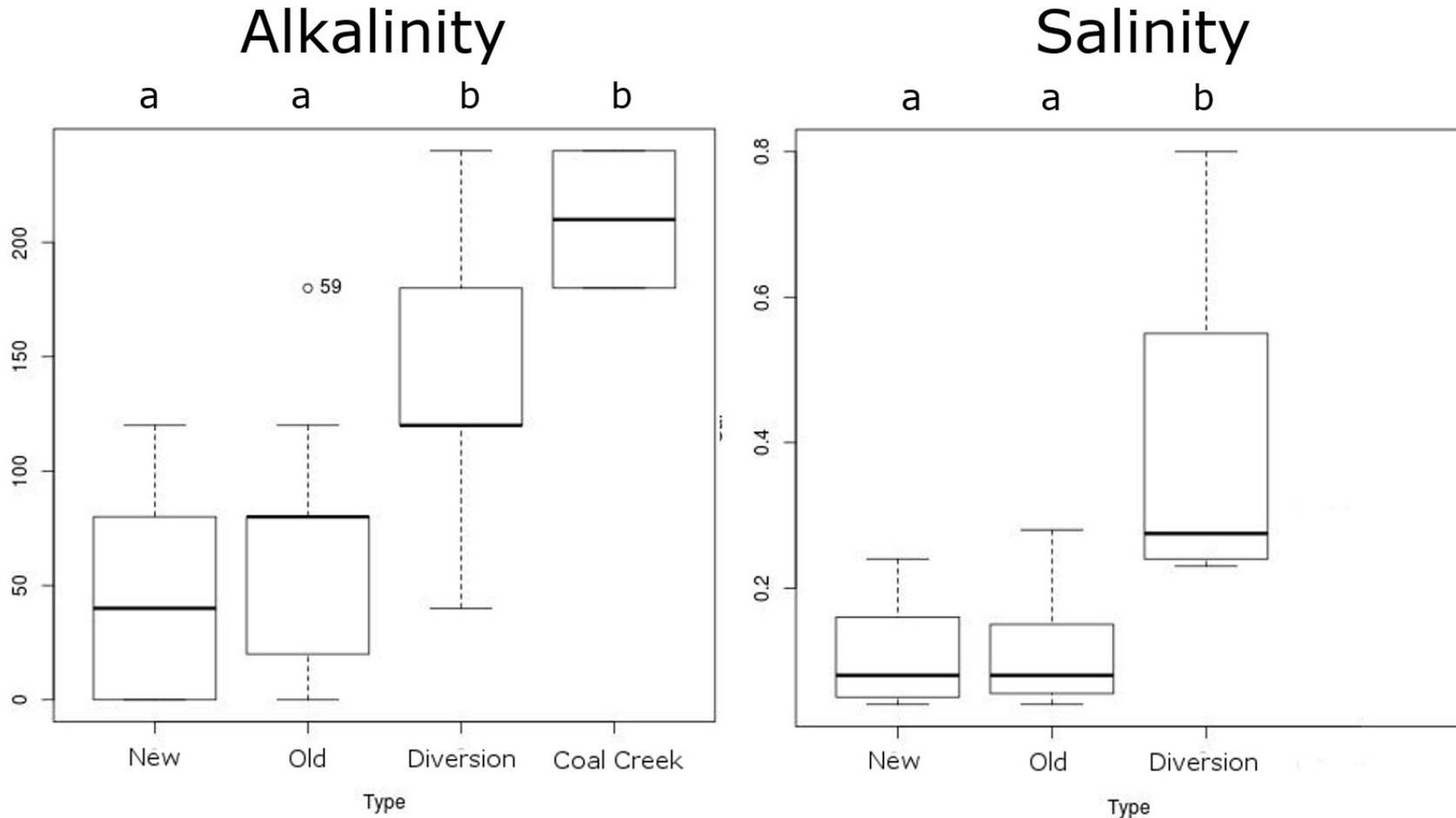
Total Dissolved Solids



Different letters represent a significant difference with a P -value $\leq .05$.

RESULTS

High Precipitation



Different letters represent a significant difference with a P -value $\leq .05$.

CONCLUSION

Hypothesis 1

- Reject H_0 .
- chemistry changes were observed as surface water moved throughout town.

Hypothesis 2

- Fail to reject H_0 .
- No significant difference between old and new irrigation strategies.



CURRENT WORK

Hypothesis

Microbial community changes will be associated with differences in water chemistry.

Bacterial community will be isolated from water samples.



ACKNOWLEDGEMENTS

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<http://iutahepscor.org>

