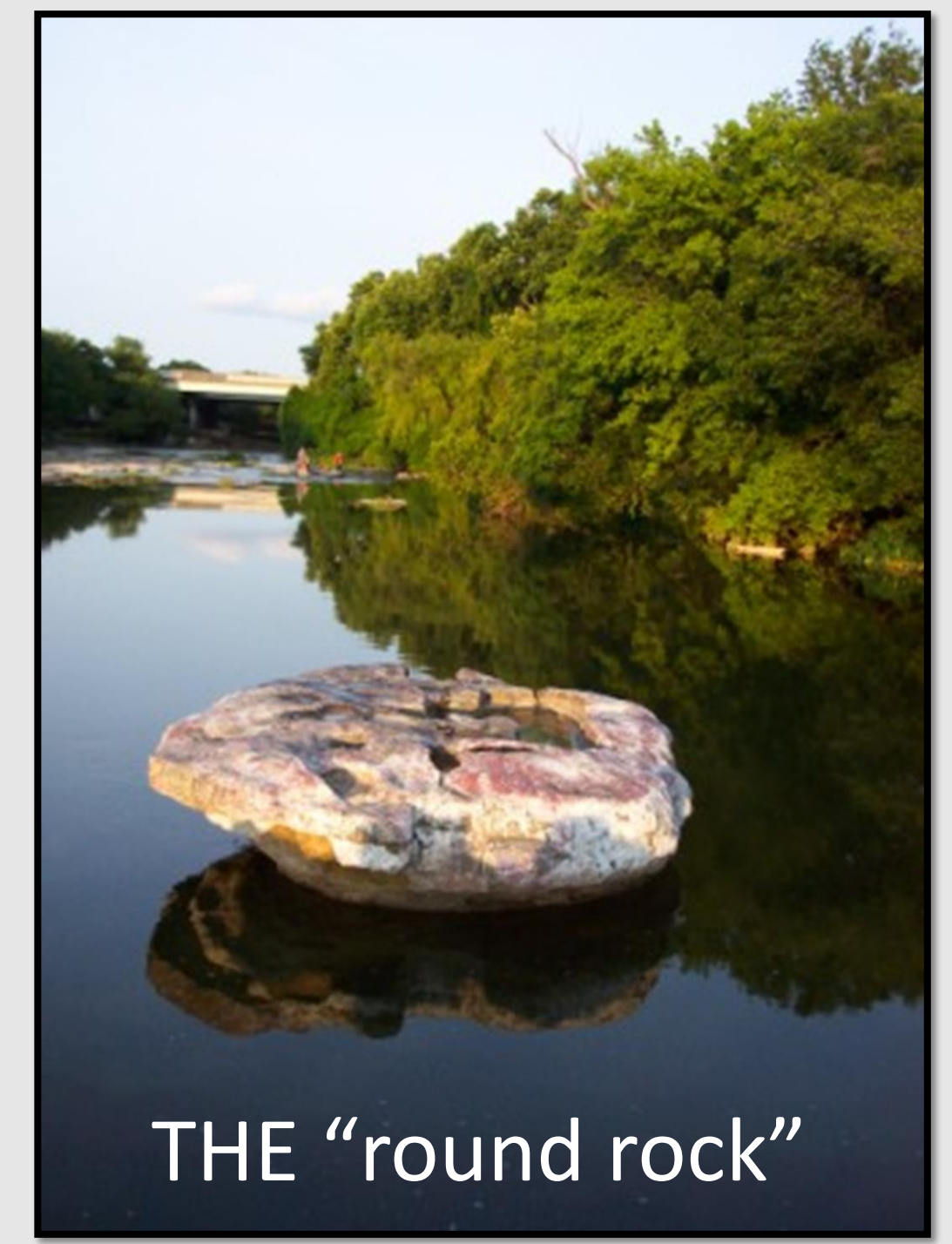


## Background:

- The City of Round Rock, TX, has experienced **rapid** population growth:
- We have approximately 31,600 **direct** water connections; of those 29,000 are residential.
- Many new homes being built, the majority include irrigation systems. Most people moving here are not from Texas.
- Current water trends show **high peaking** in the summer months. We receive many upset calls regarding high water bills during this time.
- We already offered free irrigation system evaluations, but knew we needed a better way to educate customers on their water use—and not just the cost, but the gallons! We determined our **meter** change out project was a major way to accomplish this need.



THE "round rock"

## Metering Program

### AMR water meter retrofit:

- Began in November 2009 as a pilot in 300 homes;
- Originally planned as a 7-year project.
- All meter change-outs done in-house;
- 7.2 million dollars dedicated to the project to make the City a 100% AMR/drive-by system.
- By 2014, 98% of meters had been replaced. It was a fully drive-by system.
- We began AMI infrastructure installation in March 2014 to start the transition to an AMI system,
- Then...technology changed!!

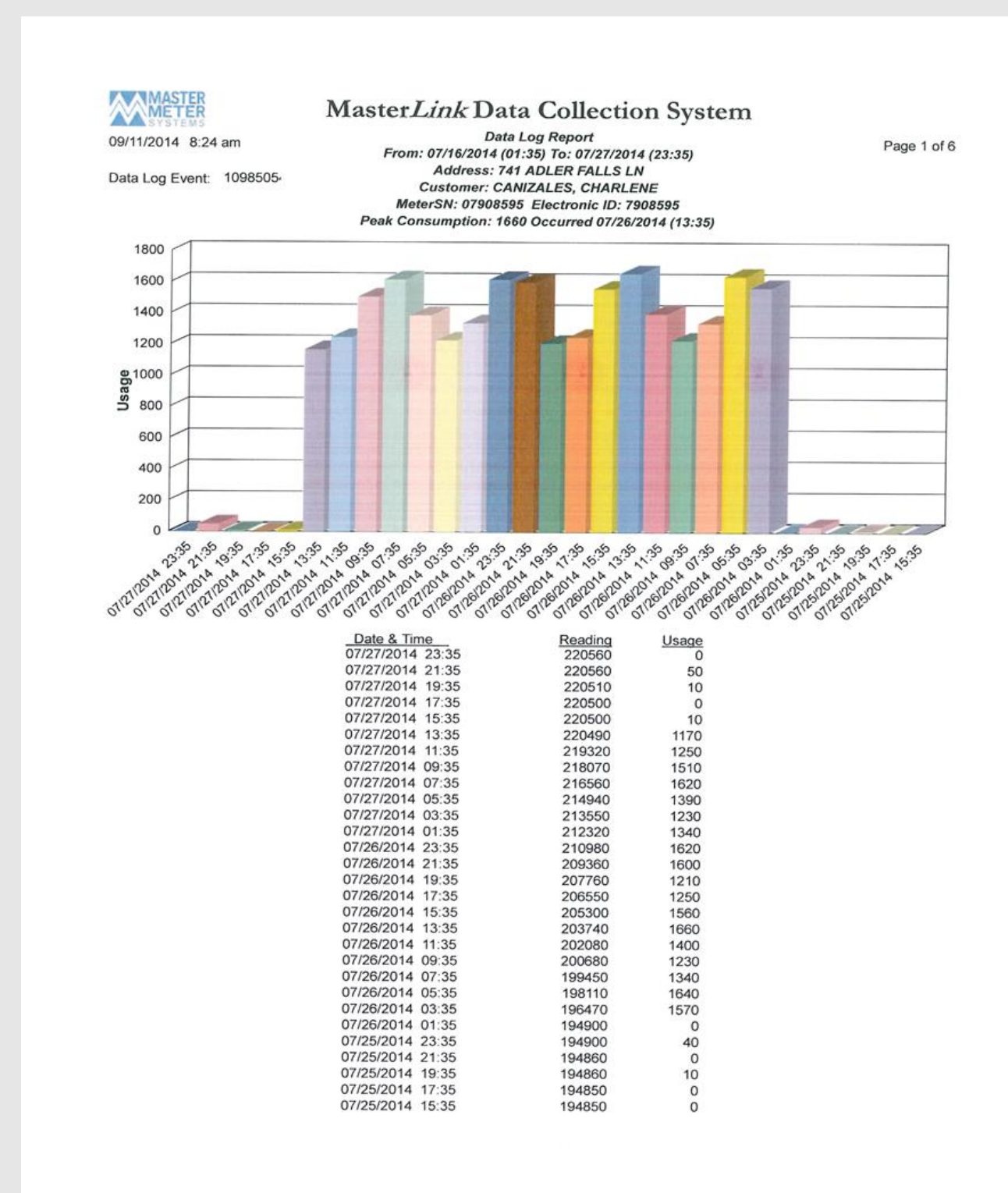
### AMI meter retrofit:

- Began installing new 2-way, 4G meter registers in full-force in 2015 and continue today.
- Meter lids had to be changed out from metal to plastic; this was an unanticipated cost that added \$800,000 to the project.
- By August 2016, 75% of the residential and small commercial registers are changed out (just over 27,000)
- 4 base stations are installed and 3 repeaters.
- Internal utility staff can access hourly water use on these customers to better serve them.

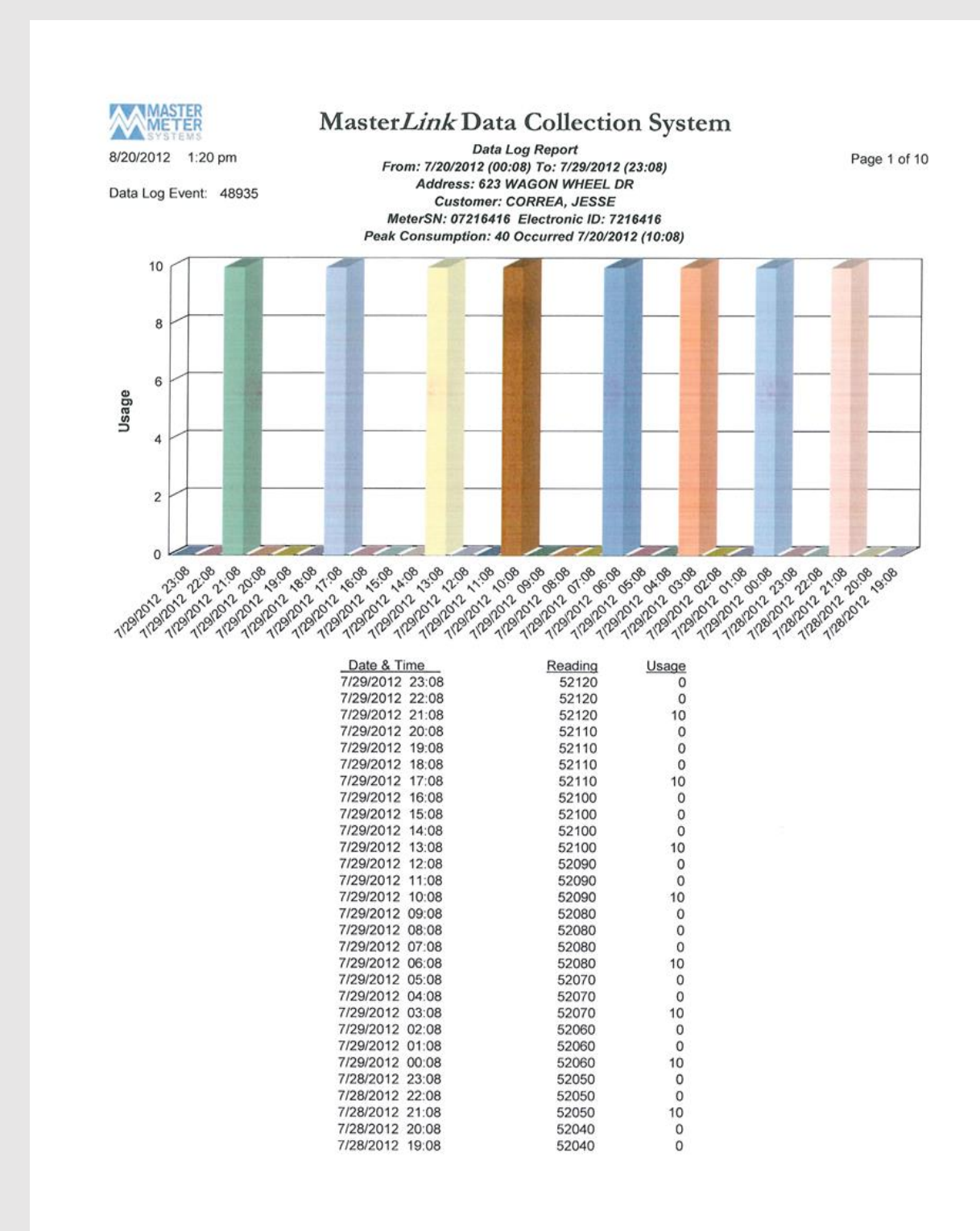
## Examples of AMR water use reports from the AMR (drive-by) system:

These reports require a staff member to drive to the property to download the meter information, specify the time increments, then drive back to office to download on a computer. Could take from 2-hr to 1 week, depending on the requests that came in. While time-consuming, very much appreciated information.

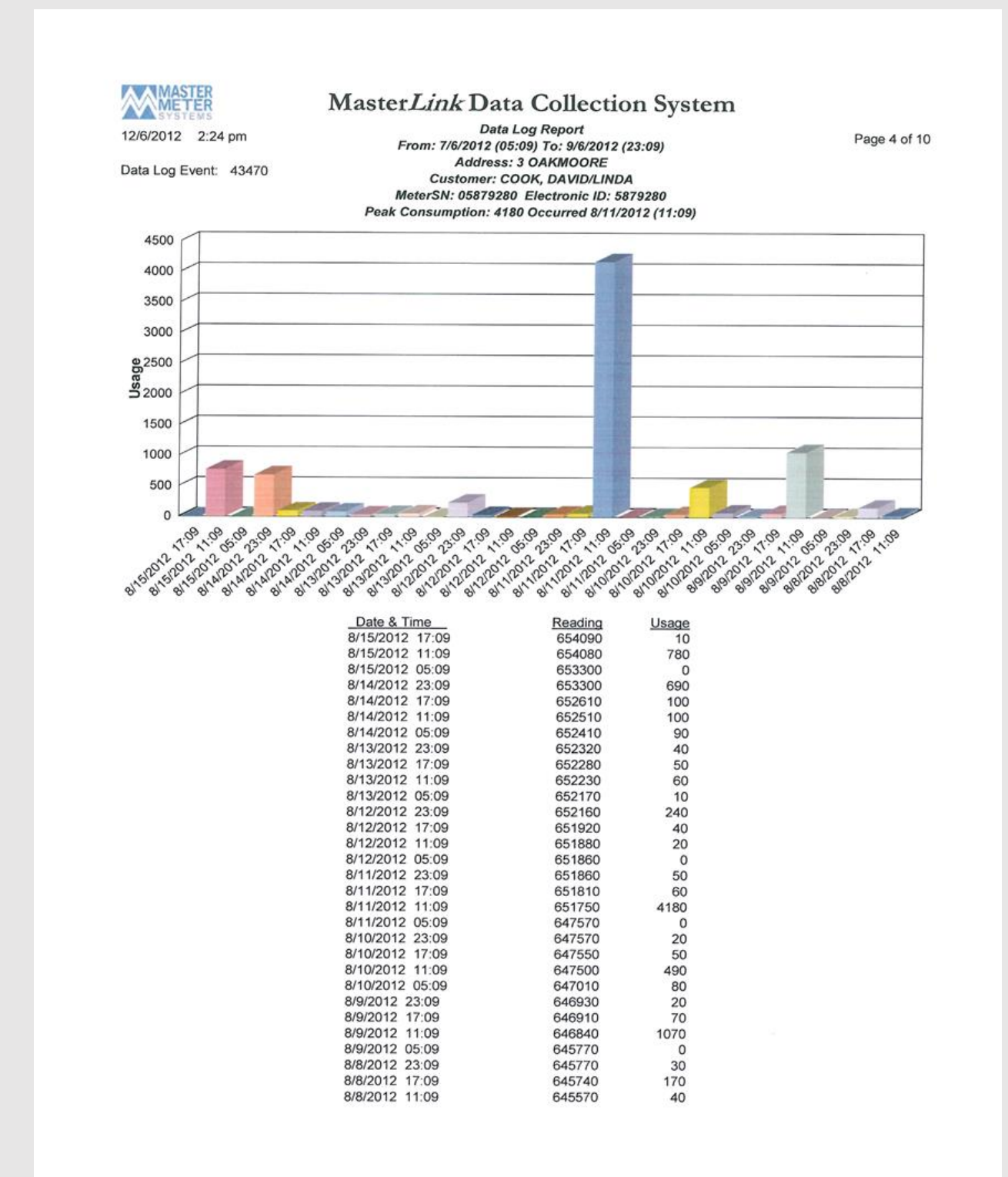
During summer of 2015, we have 357 requests!



Water use in 2-hour increments; continuous water use for 34-hrs.



Water use in 1-hr increments; a small leak here, like a toilet refilling.



Water use in 6-hr increments; large spike assumed to be irrigation system.

- AMI system has a utility dashboard, so water use can be accessed nearly immediately. Water use is updated every 12-hours in the system.
- Utility billing staff is able to send this information to customer for them to see and to see more details when customer calls in about a concern (aka: high bill complaint).
- Many customers think this is pretty cool; hope to have our customer portal up and running by spring 2017.
- Some customers still skeptical that this is accurate, but when this information was included with irrigation evaluations, and the high use days matched up to their irrigation days they generally had to agree they used the water.

