# Utilities Department

*Quarterly Report*

Beach Frontage at
Low Service Pump Station
Lake Michigan

# 2011

**April**

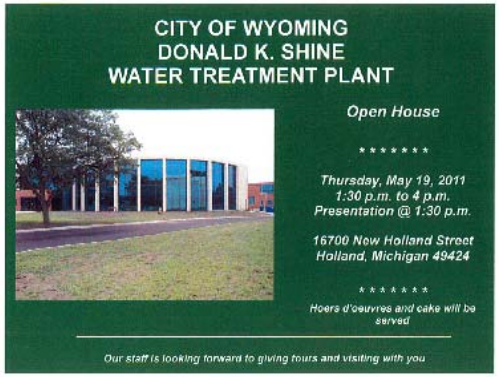
**through**

**June**

# Water Treatment Plant Open House

***Reception to celebrate completion of the Phase 1B Expansion Project***

***Mayor Jack Poll, right, offered congratulatory comments and provided project detail.***




***Invited guests included design and construction engineers, contractors, wholesale customers, elected officials and area residents.***

Visiting Residents, above

Lobby Gathering, right


Members of the Donald K. Shine Family

Human Resources Supervisor Kim Oostindie and Kent County Commissioner Harold Voorhees

May Shine and WTP Retiree Ken Doorn

## Drinking Water Treatment Plant

This Quarter:

Final Completion of the Raw Water Line/Carbon Transfer Facility Project

The final revised contract with Pioneer Construction totaled $5,373,026.12.

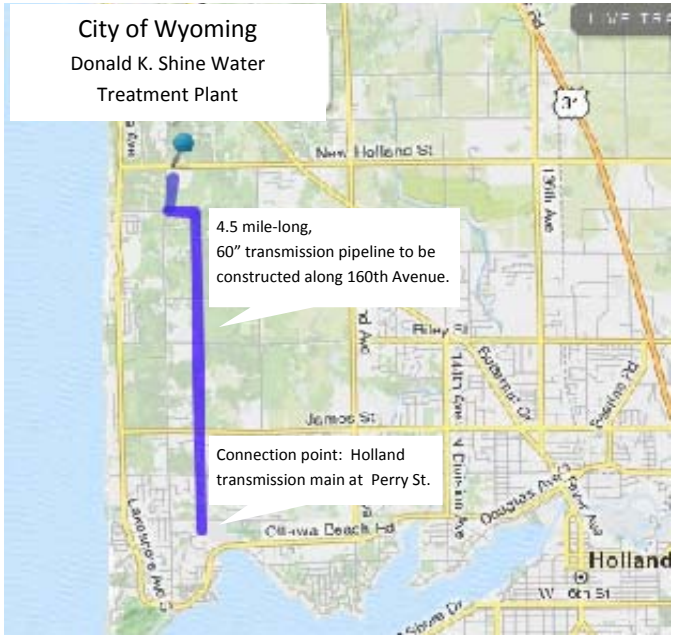
# Capital Improvements

### Holland/Wyoming Emergency Interconnect

In April, Wyoming entered into an agreement with the City of Holland to construct an emergency interconnect water-main between their two water systems. Prein and Newhof, primary engineer for the City of Holland, estimated total project costs at $6.9M, with Wyoming's share approximately $2.8M (Ottawa County to provide 43% of that amount) after debt forgiveness in the State Revolving Fund. A pre-bid meeting was held in mid-June at the Wyoming WTP.

The approximate construction timeline and transmission main route are shown below:

- *Review and award of construction bids, Summer 2011*
- *Construction to begin at late 2011 or early 2012*
- *Testing and final completion, Fall 2012*




### *City Budget for Fiscal Year 2012*

***City Council approved utility rate increases this quarter:***

*New Wyoming residential water/sewer rates = $1.20/$2.10*

*Wholesale sewer customers were notified of service contract increases ranging from 8—10%. Water contract discussions continued throughout the spring quarter.*

### *Award of Utility Bids This Quarter:*

- **WTP - Slow Mix Sedimentation Basin and Water Collection System Renovation, NTF,**
  Allied Mechanical Services of Hudsonville: $1.85M
- **CWP - Primary Pump Houses, Painting Project,**
  Bissell Painting Co.: $12K
- **CWP - Cathodic Protection Systems Installation,**
  Four sewer lift stations (1st of three-phase corrosion control plan.),
  Corrpro Companies Inc.: $35.6K
- **CWP - Roof Safety Railings,**
  Agile Safety: $37.8K
- **CWP and WTP- System Control and Data Acquisition (SCADA) Software Support,**
  Wonderware: $28K
- **CWP and Meter Shop Lawn Care Services,**
  Endless Summer: $9.1K (per year/3 year contract)

# GVRBA

**Segment 4 Improvements Project**

HVAC upgrades were scheduled to continue as planned to ensure air quality in the dewatering facility.

Cover modifications, centrifuge operation and performance, ventilation and odor control systems, as well as polymer feed valve repair and replacement were considered in on-going "betterment" efforts.

Project Manager Dave Harris welcomed Wyoming CWP Operator Jon Burke to the Operations Team.

Air handling performance improvements were reported after the carbon was replaced in the odor control system at Segment 4 (below).

Centrifuge performance was to include testing at various loading rates through-out the quarter. Authority partners continued to fine-tune facility operations and maintenance procedures.

GRAND VALLEY REGIONAL BIOSOLIDS AUTHORITY

Wyoming Michigan CITY OF GRAND RAPIDS

*The GVRBA is a cooperative effort between the Cities of Grand Rapids and Wyoming to manage wastewater biosolids on a regional basis*

# Meter Shop and Cross–Connection Team

**Aaron Vis, Environmental Services Inspector and Tom Engelsma, Cross-Connection Inspector**, at ElectroChem Finishing Co.

## Improved Efficiencies

An "integrated inspector" effort continues with cross-training for Inspectors Tom Engelsma and Aaron Vis, who have each attended training sessions to complement their current areas of expertise. As they gain field experience, the Utility benefits by having two "interchangeable" inspectors and will be able to streamline the inspection process to one site visit for both IPP and cross-connection inspections. Previously, industries could expect to have separate annual inspections from multiple departments.

With the Meter Shop Foreman position vacant as of the end of June, Public Works Supervisor Shimo Svabic will begin to job shadow and work with Meter Shop personnel later this summer. Deputy Director of Public Works Tom Kent continues to oversee the Meter Shop work group during the transition.

**Meter Shop Activity This Quarter:**

304 Meter Replacements

23 New Meter Installations

# Utility Department Staff

**Training**

**Lynn Kukin**, Lab Tech II, cross-trained with the Operations work group at the Clean Water Plant through the end of June.

**Wil Fleming**, UMIII began cross-training with the WTP Operations work group.

**Aaron Vis**

**Grand Valley State University's Outstanding Student Award**

On April 11, 2011, Aaron Vis, CWP Environmental Services Inspector received the GVSU honor, recognizing exceptional academic achievement in Public Administration.

## Summer Interns

**Dan Kneibel** (seated) and **Joshua Uitvlugt** (standing) began work this summer with the CWP Environmental Services staff to map storm-water outfall sites and to catalog GIS data on manhole locations throughout the City. They are also using GIS to locate water service "stop box" locations.

Dan, a returning Utility Department Intern, performed and "Inflow and Infiltration Study" in 2010.


May 2011 Employee Service Awards program. Utility staff awardees, left to right: Jeff VanHaitsma, Ken Lawrence, Steve Pucilowski, Tom Engelsma, Karen Horning, Dan Schuitman.

**Gregg Bloemers, WTP Shop Foreman**

Gregg retired after 36 years of service at the Drinking Water Treatment Plant, where he first started as a CETA Program Intern in 1975.

**Ron Elenbaas** was selected to fill Gregg's position. Ron has served as CWP Shop Foreman since 2007.

**Roger Jones - New CWP - UMI**
With six years of experience at the City of East Lansing's Wastewater Treatment Plant, Roger holds a State of Michigan Mechanical License and an EPA Type 1 and 2 (refrigeration) License.

**Seasonal Maintenance**
Jeff Bylsma, Dan Joslin and Jon Groeneveld supplement building and grounds maintenance at the Clean Water Plant from May through August.

Max Vanderbroek (not pictured) returned to provide summer grounds maintenance at the WTP.

# Community Outreach

## Facility Tours

***Clean Water Plant***

***Total: 120***

***students and visitors***

***Drinking Water Treatment Plant:***

***Total: 90 students***

***Schools served:***

***Calvin College***

***Godfrey***

***Byron Center Charter***

***Potters House***

***Also***

***Various Residents,***

***Boy Scouts of America***

***Plumbing Engineers***

**Michigan Fluoridation Advisory Committee**

Earlier this year, the WTP hosted members of the state's Fluoridation Advisory Committee meeting. On-going discussions about community water fluoridation included the new EPA recommendations to adjust fluoride concentrations in community water supply systems. The group was particularly interested in water treatment fluoride feed methods at the City of Wyoming's WTP.

**Environmental Services staff (right) distributed program information to area residents at the Public Works Department Annual Open House in May.**

# Utility Staff *continued*

## WTP Hosted State Certification Exams

The City of Wyoming's WTP Training Room was the testing site for over 80 water treatment plant personnel from across the state this spring. Among them, the following Utility Department employees successfully completed various State Certification Exams:

**Jaime Halm, Dan Crouse, Wil Fleming, David Munch, Tim Zingler Trent Stockman, Mary Marchwinski, Lisa Medukas**

Steve Smith, right, was promoted to Utility Operator II, having attained the State F-2 License.

**CWP Staff Pass Michigan Water Environment Association Exams:**

**Dave Bartz: Maintenance Level 1**
**Blues Heintzelman: Maintenance Level 2**

## Internship

**Alyssa Baragar,** a Junior at Calvin College majoring in biology and psychology, will conduct a series of analytical methods studies for microbiology at both of the Utility laboratories. Alyssa will spend the first half of the summer at the WTP and the second half at the CWP.

Alyssa is from Wyoming, MI and is also a high jumper for Calvin's track and field team.

# Laboratory Services

(left to right) Chemist Jim Tardani, Lab Tech II Kelly Vandyke-Williams, WTP Lab Supervisor Jaime Halm

## Perfect Score on State Water Sample Study

One of the many requirements for obtaining and maintaining drinking water laboratory certification in the State of Michigan, is the successful completion of an annual "Water Sample Study".

This involves testing samples for each of the certified laboratory methods (microbiological, metals, chlorine, etc.). Water samples for this study are provided by an outside vendor and are "blind" samples (the analyst does not know the actual concentration of the analyte in the sample). The results of the test must fall within a certain range of the actual concentration to be considered passing.

The Drinking Water Treatment Plant laboratory and operations personnel who participated in this year's study achieved perfect passing marks, demonstrating outstanding analytical skills.

## Disinfection Monitoring

Lab staff at the WTP also took an active role this quarter in the calibration of on-line analyzers throughout the plant. A number of treatment confluence points were identified for additional sampling locations in the new South Treatment Plant. Nearly three dozen turbidity meters and chlorine residual monitors are required to ensure that the Drinking Water Treatment Plant is meeting regulatory disinfection levels and for process control.


## Clean Water Plant Staff Assist in NASA Sponsored Competition

Clean Water Plant Lab Tech II Katie Erickson, assisted Lamont Christian's 5th and 6th grade science students with water analysis to verify the effectiveness of a prototype "lunar outpost water recycling system". The Coopersville area students' project for the "Waste Limitation Management and Recycling Design Challenge" was to design and demonstrate a water filtering system which could be used on the moon. The National Aeronautics and Space Administration (NASA) sponsored the national science competition.

In late 2010, Coopersville area science teacher Brent Siene toured the Clean Water Plant with his students. Learning about the Utility's laboratories services and numerous community partnerships, he later sought assistance with the classroom water analysis needs.

In mid-March, the school learned that Mr. Seinen's "Team H2O" had been selected as one of 20 teams to move on in the national competition. Students were required to submit a formal evaluation of their project's success and present a scientific/business presentation to explain and promote the system.

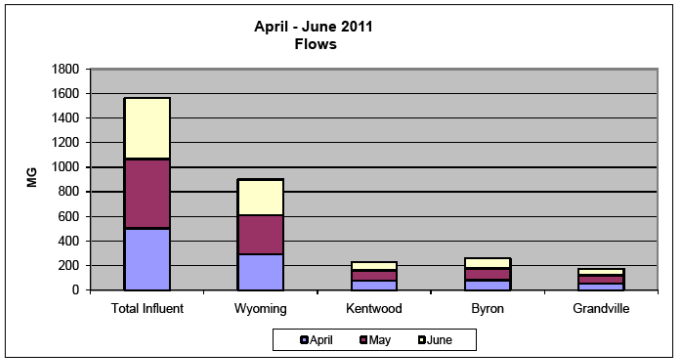
Ultimately, Lamont Christian's project took an Honorable Mention Award, as one of only 6 schools in the finals.

**Sewer Service Area:**
Approximately 21,000 sanitary sewer connections in Wyoming. The system's wholesale customer communities include: Byron and Gaines Townships, and portions of the cities of Kentwood and Grandville.

**Capacity:**
24 million gallons per day advanced secondary treatment extended aeration, biological phosphorus removal, and chlorine disinfection.

**Collection system:**
14 pump stations
1 mile of force main
271 miles of gravity main
5671 sanitary sewer manholes

# Clean Water Plant




Slightly higher flow levels this quarter could be attributed in part, to infiltration and inflow from wet weather events in May and June.

**HAZMAT training at the Clean Water Plant** - May

Industrial Pretreatment staff and other area Utility staff attended the 2-day "24-Hour Hazardous Waste" training.

CWP Maintenance personnel mobilized (above left) to sort and place various roof railing parts on appropriate roof levels of the main plant facility. Completed railings assembled and installed, above right. Staff will gradually purchase and install similar MIOSHA required fall safety railings on all remaining CWP facility roof areas. Cost of this phase of the project was just over $38K.

***Maintenance and Operations staff worked throughout the quarter to resolve equipment issues related to:***

- ***Moyno Pump operation***
- ***Air-quality (dust) in the thickener building***
- ***Standby-power generator start-up—imbalance issues***
- ***Seasonal boiler and HVAC adjustments***
- ***Valve changes to effluent water lines used in the lawn sprinkling system***

# Environmental Services

## Clean Water Plant Honors

In May, the Clean Water Plant was formally recognized as the first Michigan municipal treatment facility to achieve "Clean Corporate Citizen" certification. This state program, also known as the "C3 program", is built on the concept that when establishments such as the Clean Water Plant, consistently demonstrate environmental stewardship and pollution prevention, they can be relied upon to carry out their environmental protection responsibilities without rigorous oversight.

Traveling from Lansing along with other MDEQ representatives, newly appointed Director Dan Wyant conferred the "C3" certification honors with a speech, followed by a small reception at the Clean Water Plant. Mayor Jack Poll, several councilmembers and city staff also attended.

**(left to right) Director of Public Works Bill Dooley, CWP Superintendent Craig Smith, Environmental Services Supervisor Dave Oostindie, MDEQ Director Dan Wyant, Deputy Director of Public Works Tom Kent, Environmental Services staff: Aaron Vis, Dan Schuitman and Shane Sosnowski**


**Environmental Services Supervisor Dave Oostindie filmed a public service announcement for local television station WZZM, to promote responsible prescription drug disposal in Kent County.**

## DEA sponsored "Drug-Take-Back Day"

In April, the City of Wyoming Police Department and ES staff joined law enforcement agencies throughout the State to collect a total of 400 lbs. of unwanted or expired prescription drugs from residents in Kent County. Approximately 65 Wyoming households participated in this one-day event.

Overall, Michigan collected 6,600 lbs from the 224 participating locations. Nationwide that number reached 188 tons (376,593 lbs) of unwanted drugs collected from 5,361 locations. This was a 55% increase from the first one-day collection held last September.

In May, Dave also traveled to Wisconsin to participate in Great Lakes Pharmaceutical Project planning. Dave continues to provide leadership and program expertise, fostering drug-take-back programs throughout the Great Lakes region.

# Drinking Water Treatment Plant

**Seasonal Water Demand**

Another unusually wet spring resulted in lower than normal seasonal water demands this quarter. The first significant increase in water production occurred in June when pumpage climbed to an average daily high of 54 MG.

**Equipment Repairs**

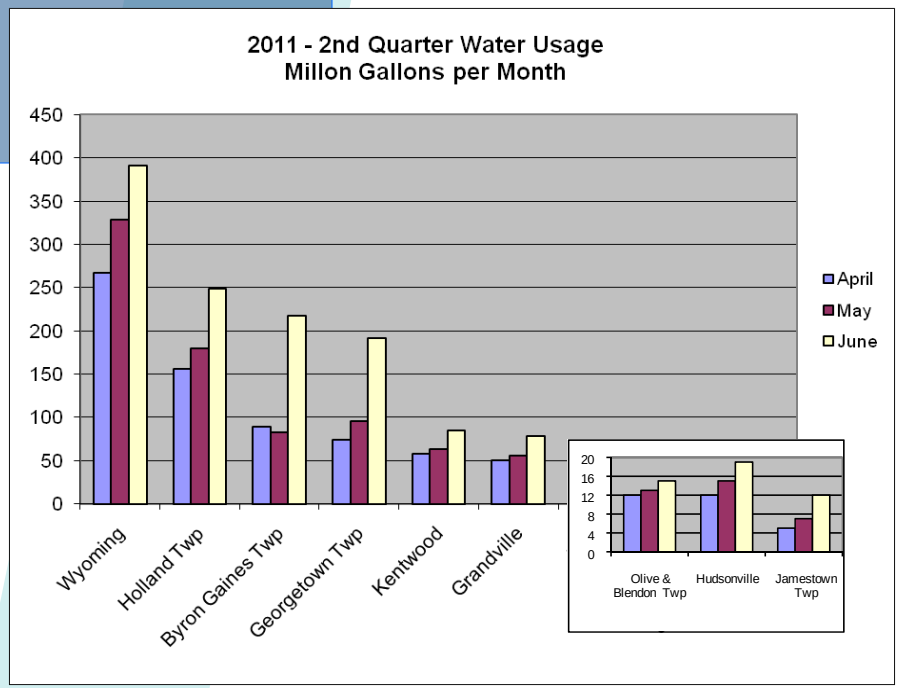
WTP Maintenance staff completed re-installation of High Service Pump #10 (near right) following repairs.

Repairs to fluoride injector piping involved draining the NTF settling basin and secondary rapid mix chamber

A wash water valve also failed in June, causing a slight upset to two of the filters. Staff removed 10-12 yards of displaced anthracite from filter troughs and continue to evaluate the damage to the filter beds before returning the filters to service.

The STF's dehumidification unit overheated and was taken out of service. Repairs to this unit were expected to be in the range of $70K.

**High Service Pumps in the North Treatment Facility**




**STF-Centrifuges**

The centrifuge manufacturer's representative from Westphalia was on site in June for on-going performance testing. A field re-design of the screw mechanism (welding procedure shown above) seemed to improve equipment performance.

**Raw Water Line**

Above, another WTP Maintenance project involved replacement of a cracked valve actuator on the raw water line.

# Drinking Water Treatment Plant continued

### Intake Pipeline Inspection

Pictured above, a professional diver from SeaBrex Marine, Inc. prepares to enter the raw water intake pipe at the Low Service Pump Station.

Annual inspection of the quarter-mile-long pipe into Lake Michigan showed that the structure is in good repair. Effectiveness of the zebra mussel control system is also visually inspected. In recent years, the more aggressive quagga mussel has overtaken the invasive species population in the Great Lakes.

Quagga Mussels in Lake MI sediment

### Carbon Feed Facility

As seasonal lake water temperatures rise (at, or above 68 degrees), musty or moldy taste and odors are sometimes reported. The combination of warm water temperature, sunlight, and phosphorus or other natural or man-made fertilizer runoff from rivers and streams into Lake Michigan causes various types of algae and micro-organisms to develop in the Lake. The algae, though not harmful to human health, can cause drinking water to have an earthy smell. The addition of carbon greatly reduces this effect, improving the aesthetic qualities of Wyoming's drinking water.

The first 20-ton load of powdered activated carbon was delivered to the Carbon Feed Facility at the Water Plant's Low Service Pump Station this spring. The dry carbon was mixed with water, stored, and as needed, will be metered into the raw water transmission line which carries lake water to the Water Treatment Facility several blocks away.

### Shared Resources for Future Training

Old PLC and Logix software package (valued at $10K) was sent from the WTP to the CWP for future in-house training on SCADA communication hard-ware and software. In-house expertise will result in less dependency on third-party software support agreements.

### Drinking Water Storage Tank Inspection

***Last snowfall occurred April 1st as inspectors entered the 10 million-gallon storage tank at the Gezon Pump Station.***

Water storage tank inspection is periodically carried out to ensure structural integrity. Dixon Engineering inspected the 10 MG ground storage tank at the Gezon Pump Station. Plant staff were on hand to coordinate the draining, isolation and inspection of the tank interior.

The tank was found to be in excellent condition. Materials Testing Consultants also confirmed that a large soil void found outside the tank near the overflow spillway was not threatening to undermine the floor of the storage tank. Public Works crew filled the void to prevent continued erosion due to stormwater run-off.