

OPERATIONS REPORT – NEVADA DIVISION

April 2013 Report to the City of Nevada

OPERATING DIVISIONS

MISSOURI

Bonne Terre

Bowling Green

Buchanan County #1

Cameron

Cape Girardeau

East Central Missouri
Water & Sewer
Authority

Elsberry

Franklin County #1

Franklin County #3

Henry County
Water Company

Henry County #3

Lake Ozark/
Osage Beach

Lincoln County #1

Nevada

Parkville

Phelps County #2

Platte County #C-1

Ralls County #1

Russellville

St Charles County #2

St Genevieve

Sedalla

Versailles

IOWA

Maquoketa

Tipton

Water Treatment Plant Operations & Maintenance

- Staff removed abandoned pipe and conduit in the primary odor scrubber room.
- Staff changed out failed light bulbs in the RO room.
- Issues with #2 well were addressed by KCP&L. No apparent damage to well components has been found.
- Staff replaced the sodium hypochlorite feed pump and placed in service.
- Lightning during mid-month caused minor issues at the plant, but reset ok with no apparent damage.
- Staff replaced the sump float assembly on the primary odor scrubber.
- High chlorine residuals were noticed during routine testing, and addressed to lower residuals to acceptable levels within a few hours of identifying the problem.

Waste Water Treatment Plant Operations & Maintenance

- Staff replaced failed transducer control box at the effluent pump station which had failed.
- The plant experienced high flows for most of the month due to saturated ground and rain events.
- Staff made operational adjustments to meet demands of high flows by manually increasing UV intensity, operating both channels as flows increase, and making D.O. adjustments for aeration.
- A broken pump guide was replaced on #2 pump at lift station #1.
- Lightning during mid-month caused a power failure at the plant. The standby generator did not activate automatically due to communication issues and had to be manually started. Manufacturer's rep (Cummins) made repairs to the generator under warranty.
- The bench top D.O. meter could not be calibrated for reading weekly B.O.D.₅ results. Staff will use the portable meter as a backup until issues can be resolved.
- Semi-annual pre-treatment inspection reports were submitted to industries.

Waste Water Collection / Water Distribution

- Staff worked with a directional boring contractor to expose areas where they would cross City utilities to prevent damage from the boring process.
- Staff continued research of sewer mains under street improvement projects.
- AWR staff met with City staff and the local MoDOT engineer to discuss a sewer main replacement on Wight Street crossing BB Hwy. A construction permit application has been submitted to MoDOT for review.
- Four SSO events were reported per DNR guidelines; three were due to saturated ground and rain, one was a result of sewer main blockage.

OPERATIONS REPORT – NEVADA DIVISION

- Staff performed routine preventive maintenance on the mini-excavator in accordance with manufacturer's recommendations.

Recommendations

- Change language of City code Sec. 40-4 and 40-11 to minimize possible liability. Responsibility should be from the water main to the first point of shut off, whether it is a corporate shut off (curb stop) or inside the meter box.
- Replace jetter truck due to major repairs that are needed and undersized brake system for the existing chassis.

OPERATIONS REPORT – NEVADA DIVISION

WATER TREATMENT PLANT PERFORMANCE

4 Log Sampling

| Parameter | Monthly Average |
|---------------------------------|-----------------|
| pH | 8.77 |
| Temperature | 20.4 |
| Lowest Cl ₂ residual | 1.86 |

Bacteriological Results

| Date | Results (<u>A</u> bsent or <u>P</u> resent) |
|---------|--|
| 4/9/13 | A |
| 4/23/13 | A |

Flow Totals (Million Gallons per Day)

| Meter | Average Daily Flow | Total Monthly Flow |
|--------------|--------------------|--------------------|
| Feed | 0.72 MGD | 21.71 MG |
| Product | 0.59 MGD | 17.69 MG |
| Blend | 0.21 MGD | 6.21 MG |
| Brine | 0.19 MGD | 5.78 MG |
| Distribution | 0.78 MGD | 23.45 MG |

OPERATIONS REPORT – NEVADA DIVISION

WASTE WATER TREATMENT PLANT PERFORMANCE

NPDES Effluent Limits

| Parameter | Monthly Average | Permit Limit |
|--------------------|-----------------------|--------------|
| pH | 6.7 min. and 6.9 max. | 6.5 - 9.0 |
| TSS | 7 mg/L | 20 mg/L |
| BOD ₅ | 5 mg/L | 20 mg/L |
| NH ₃ -N | 0.75 mg/L | 1.40 mg/L |
| E. coli | 80 #/100mL | 206 #/100mL |
| Oil & Grease | 2.5 mg/L | 10 mg/L |

Flow Totals (Million Gallons per Day)

| Average Daily Flow | Total Monthly Flow |
|--------------------|--------------------|
| 3.03 MGD | 90.92 MG |

Biosolids

| | Report Period | Year to Date |
|------------------|-----------------|-----------------|
| Quantity Applied | 0 dry tons | 0 dry tons |
| Acres Applied | 0 acres applied | 0 acres applied |

OPERATIONS REPORT – NEVADA DIVISION

April 2013 Customer Service Work Orders

| Action | Completed This Period | Completed Year to Date |
|----------------|------------------------------|-------------------------------|
| Connect | 64 | 151 |
| Disconnect | 55 | 117 |
| Cut Off | 0 | 0 |
| Meter Info | 76 | 395 |
| Meter Change | 21 | 109 |
| OCC Change | 83 | 206 |
| Reinstate | 74 | 182 |
| Service Change | 0 | 0 |
| Miscellaneous | 54 | 80 |
| TOTALS | 427 | 1240 |

Utility Locates for the month: 114

OPERATIONS REPORT – NEVADA DIVISION

Water Loss

| | Total Water Delivered | Identified Water Loss | Billed Consumption | Unidentified Water Loss | Water Loss % |
|------------------|-----------------------|-----------------------|--------------------|-------------------------|--------------|
| April '12 | 31,797,000 | 39,500 | 21,686,200 | 10,071,300 | 31.7% |
| May '12 | 31,000,000 | 2,145,000 | 19,733,143 | 9,121,857 | 29.4% |
| June '12 | 29,080,000 | 47,000 | 20,157,450 | 8,875,550 | 30.5% |
| July '12 | 33,760,000 | 87,500 | 23,220,550 | 10,451,950 | 31.0% |
| August '12 | 31,430,000 | 546,000 | 23,162,673 | 7,721,327 | 24.6% |
| September '12 | 26,559,000 | 2,458,000 | 15,157,800 | 8,943,200 | 33.7% |
| October '12 | 22,500,000 | 37,000 | 17,340,780 | 5,122,220 | 22.8% |
| November '12 | 22,498,000 | 69,000 | 16,399,140 | 6,055,460 | 26.9% |
| December '12 | 21,410,000 | 43,400 | 15,399,715 | 5,966,885 | 27.9% |
| January '13 | 21,080,000 | 375,000 | 16,483,785 | 4,221,215 | 20.0% |
| February '13 | 23,510,000 | 76,000 | 14,269,000 | 9,164,920 | 39.0% |
| March '13 | 23,508,000 | 79,000 | 14,986,330 | 8,442,670 | 35.9% |
| YTD Total | 318,132,000 | 6,002,400 | 217,996,646 | 94,132,954 | 29.6% |

Identified Water Loss Detail

| | Leaks | Flushing | Fire Dept | Other | Total |
|------------------|----------------|------------------|----------------|----------------|------------------|
| April '12 | 25,000 | 2,000 | 12,500 | 0 | 39,500 |
| May '12 | 100,000 | 1,970,000 | 75,000 | 0 | 2,145,000 |
| June '12 | 20,000 | 2,000 | 25,000 | 0 | 47,000 |
| July '12 | 25,000 | 2,500 | 60,000 | 0 | 87,500 |
| August '12 | 135,000 | 1,000 | 60,000 | 350,000 | 546,000 |
| September '12 | 56,000 | 2,387,000 | 15,000 | 0 | 2,458,000 |
| October '12 | 21,000 | 1,000 | 15,000 | 0 | 37,000 |
| November '12 | 12,000 | 7,000 | 50,000 | 0 | 69,000 |
| December '12 | 6,000 | 2,400 | 35,000 | 0 | 43,400 |
| January '13 | 35,000 | 0 | 40,000 | 300,000 | 375,000 |
| February '13 | 0 | 1,000 | 75,000 | 0 | 76,000 |
| March '13 | 4,000 | 0 | 75,000 | 0 | 79,000 |
| YTD Total | 439,000 | 4,375,900 | 537,500 | 650,000 | 6,002,400 |

OPERATIONS REPORT – NEVADA DIVISION

March 2013 Water Loss Detail Explanation

Leaks: This column is an estimation of leaks that were known during the reporting period. During the month an estimated 4,000 gallons were lost from service and main leaks throughout the system.

Flushing: The Flushing column reflects an estimation of water lost from the routine flushing of dead end mains in the system, or if a customer had a dirty water complaint, the area may get flushed if it appears to be from the distribution system. There was no flushing during March.

Fire Dept: The column represents water used by the Fire dept for fighting fires and training exercises. This month approximately 75,000 gallons were used by the Fire department.

Other: This is a miscellaneous column to catch out of the ordinary water uses. There was use in this category for March.

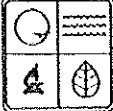
| | |
|-------------------|------------------|
| 4,000 | Leaks |
| 0 | Flushing |
| 75,000 | Fire Dept |
| + 0 | Other |
| <u> </u> | |
| = 79,000 | Total |

Water Loss Calculation

Water Loss %: The water loss is calculated by subtracting the “Identified Water Loss” (79,000) and the “Billed Consumption” (14,986,330) from the “Total Water Delivered” (23,508,000) to come up with the “Unidentified Water Loss” (8,442,670). To calculate the “Water Loss %”, divide “Unidentified Water Loss” by the “Total Water Delivered”.

$$23,508,000 - (79,000 + 14,986,330) = 8,442,670$$

$$8,442,670 / 23,508,000 = 0.359 \text{ or } 35.9\%$$



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
MONTHLY COMPLIANCE MONITORING REPORT FOR GROUNDWATER SYSTEMS

PUBLIC WATER SYSTEM NAME: City of Nevada, MO PUBLIC WATER SYSTEM ID NUMBER: MO5010562 COUNTY: Vernon

| 4/2013 Month/ Year | Minimum Residual _____ 4-log Sample Location | | | Minimum Residual _____ 4-log Sample Location | | | Minimum Residual _____ 4-log Sample Location | | |
|--------------------------|---|---------|-----------------------------|---|---------|-----------------------------|---|---------|-----------------------------|
| | pH | Temp °C | Lowest Free Chlorine (mg/l) | pH | Temp °C | Lowest Free Chlorine (mg/l) | pH | Temp °C | Lowest Free Chlorine (mg/l) |
| 1. | 8.36 | 20.6 | 1.8 | | | | | | |
| 2. | 8.64 | 20.2 | 1.8 | | | | | | |
| 3. | 8.51 | 20.1 | 2.0 | | | | | | |
| 4. | 8.74 | 20.1 | 1.9 | | | | | | |
| 5. | 8.74 | 21.3 | 2.1 | | | | | | |
| 6. | 8.73 | 20.3 | 2.1 | | | | | | |
| 7. | 8.63 | 20.2 | 2.0 | | | | | | |
| 8. | 8.85 | 20.3 | 1.7 | | | | | | |
| 9. | 8.53 | 20.4 | 1.7 | | | | | | |
| 10. | 8.68 | 20.3 | 1.7 | | | | | | |
| 11. | 8.61 | 20.2 | 1.8 | | | | | | |
| 12. | 8.78 | 21.1 | 1.8 | | | | | | |
| 13. | 9.08 | 20.4 | 1.4 | | | | | | |
| 14. | 8.61 | 20.0 | 1.7 | | | | | | |
| 15. | 8.82 | 20.3 | 1.7 | | | | | | |
| 16. | 8.92 | 20.6 | 2.0 | | | | | | |
| 17. | 8.74 | 20.3 | 2.0 | | | | | | |
| 18. | 8.85 | 20.3 | 1.9 | | | | | | |
| 19. | 8.82 | 20.8 | 2.1 | | | | | | |
| 20. | 8.83 | 20.2 | 2.1 | | | | | | |
| 21. | 8.83 | 20.0 | 1.8 | | | | | | |
| 22. | 8.72 | 20.7 | 1.8 | | | | | | |
| 23. | 8.91 | 20.9 | 1.9 | | | | | | |
| 24. | 8.84 | 19.9 | 2.1 | | | | | | |
| 25. | 8.88 | 20.3 | 1.9 | | | | | | |
| 26. | 8.99 | 21.0 | 1.9 | | | | | | |
| 27. | 8.97 | 20.2 | 1.8 | | | | | | |
| 28. | 8.93 | 20.0 | 1.6 | | | | | | |
| 29. | 8.92 | 21.1 | 1.8 | | | | | | |
| 30. | 8.69 | 20.7 | 1.9 | | | | | | |
| 31. | | | | | | | | | |

Was the disinfectant residual ever less than the State required level for 4-log inactivation of viruses at this entry point?
 Yes No

If so, did the water system collect grab samples every four hours until the disinfectant residual was above the State required level?
 Yes No (If you answer yes to this question, attach the results of the grab samples to this form).

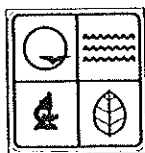
(For systems serving more than 3,300) Did continuous monitoring equipment fail at any time during this reporting period?
 Yes No

(For systems serving more than 3,300) If monitoring equipment failed, were grab samples collected every 4 hours until the continuous monitoring equipment was returned to service?
 Yes No (Attach grab sample results to this form)

NAME OF PERSON PREPARING REPORT
 Joseph Tipper

SIGNATURE OF RESPONSIBLE PARTY: *Joseph Tipper* DATE: 05/01/2013

Mail completed form to:
 Missouri Department of Natural Resources
 Public Drinking Water Branch - Monitoring
 P.O. Box 176
 Jefferson City, MO 65102-0176
 Phone 800-361-4827 or 573-751-5331
 Fax 573-751-3110



Missouri Department Of Natural Resources
Public Drinking Water Branch
P.O. Box 176
Jefferson City, MO 65102
(573)751-5331



Public Water System Bacteriological Report

PWS Name : NEVADA
Mail to : JOSEPH TIPPER
1300 W CHERRY
NEVADA, MO 64772

PWS ID : MO5010562

County : VERNON

Please notify us of any
name and address changes

| | | | |
|------------------|----------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/09/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 13546 | 71 HWY N | NEVADA4 | A |

Coliform absent. Sample considered safe.

| | | | |
|------------------|----------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/09/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 13548 | 120 S ASH | NEVADA3 | A |

Coliform absent. Sample considered safe.

| | | | |
|------------------|--------------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/09/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 13549 | COUNTRY CLUB DRIVE | NEVADA7 | A |

Coliform absent. Sample considered safe.

| | | | |
|------------------|----------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/09/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 13550 | 1300 W CHERRY | NEVADA1 | A |

Coliform absent. Sample considered safe.

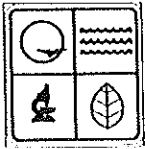
| | | | |
|------------------|-----------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/09/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 13547 | 501 S JEFFERSON | NEVADA5 | A |

Coliform absent. Sample considered safe.

Note to Public Water Systems:

Routine samples must be taken from the distribution system. Routine samples collected at the well will be invalidated, possibly resulting in your system receiving a monitoring violation for failure to collect enough valid routine samples.

Monday, April 15, 2013



Missouri Department Of Natural Resources
Public Drinking Water Branch
P.O. Box 176
Jefferson City, MO 65102
(573)751-5331



Public Water System Bacteriological Report

PWS Name : NEVADA
Mail to : JOSEPH TIPPER
1300 W CHERRY
NEVADA, MO 64772

PWS ID : MO5010562
County : VERNON
Please notify us of any
name and address changes

| | | | |
|------------------|--------------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/23/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 15334 | 500 W HIGHLAND AVE | NEVADA8 | A |

Coliform absent. Sample considered safe.

| | | | |
|------------------|--------------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/23/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 15337 | COUNTRY CLUB DRIVE | NEVADA7 | A |

Coliform absent. Sample considered safe.

| | | | |
|------------------|----------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/23/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 15336 | 120 S ASH | NEVADA3 | A |

Coliform absent. Sample considered safe.

| | | | |
|------------------|----------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/23/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 15333 | 71 HWY N | NEVADA4 | A |

Coliform absent. Sample considered safe.

| | | | |
|------------------|----------------|---------------|---------------|
| Date Collected : | Collector : | Sample Type : | |
| 04/23/2013 | MF | Routine | |
| Lab Sample ID : | Location Name: | Location ID: | Lab Results : |
| 15335 | 1300 W CHERRY | NEVADA1 | A |

Coliform absent. Sample considered safe.

Note to Public Water Systems:

Routine samples must be taken from the distribution system. Routine samples collected at the well will be invalidated, possibly resulting in your system receiving a monitoring violation for failure to collect enough valid routine samples.

Monday, April 29, 2013

LABORATORY TEST REQUIRED FOR "ACTIVATED SLUDGE" PROCESSES

| DATE | Aeration Basin, O-Ditch, Etc. | | | | | Outside Ambient Temperature °F | Weather | Time | Sludge Disposal | |
|------|-------------------------------|----------------|----------------------------|-------------|--------|--------------------------------|---------|-------|-----------------|-------------|
| | DO East mg/l | MLSS East mg/l | MIXED LIQUOR Settleability | | Temp c | | | | Gallons | Lbs Dry Wt. |
| | | | 30 min E ml | 30 min W ml | | | | | | |
| 1 | 8.5 | 400 | 80 | | 10.7 | 42 | PC | 8:00 | | |
| 2 | 9.4 | 600 | 80 | | 10.3 | 36 | OC | 9:30 | | |
| 3 | 10.9 | 660 | 100 | | 10.7 | 36 | PC | 8:00 | | |
| 4 | 4.9 | 1,120 | 150 | | 10.8 | 40 | PC | 8:00 | | |
| 5 | 8.7 | 1,410 | 200 | | 11.3 | 41 | C | 8:00 | | |
| 6 | | | | | | 58 | PC | 8:00 | | |
| 7 | | | | | | 52 | C | 8:00 | | |
| 8 | 9.2 | 1,210 | 140 | | 12.3 | 61 | PC | 8:00 | | |
| 9 | 2.0 | 2,180 | 220 | | 13.3 | 65 | PC | 8:00 | | |
| 10 | 2.2 | 2,340 | 300 | | 13.2 | 46 | OC | 8:00 | | |
| 11 | 7.0 | 1,310 | 140 | | 10.9 | 34 | OC | 8:00 | | |
| 12 | 4.1 | 1,860 | 200 | | 11.7 | 33 | C | 8:00 | | |
| 13 | | | | | | 47 | C | 9:00 | | |
| 14 | | | | | | 69 | C | 10:00 | | |
| 15 | 1.6 | 2,040 | 250 | | 13.3 | 51 | OC | 8:00 | | |
| 16 | 2.2 | 2,160 | 320 | | 12.3 | 46 | OC | 8:00 | | |
| 17 | 5.1 | 1,970 | 240 | | 12.6 | 59 | OC | 8:00 | | |
| 18 | 7.7 | 1,680 | 150 | | 12.3 | 45 | OC | 8:00 | | |
| 19 | 10.7 | 1,150 | 180 | | 11.5 | 33 | C | 8:00 | | |
| 20 | | | | | | 41 | C | 8:00 | | |
| 21 | | | | | | 59 | OC | 8:30 | | |
| 22 | 7.9 | 1,970 | 250 | 200 | 12.9 | 50 | PC | 8:00 | | |
| 23 | 4.6 | 1,800 | 210 | 220 | 12.5 | 47 | OC | 8:00 | | |
| 24 | 4.6 | 1,670 | 180 | 150 | 11.8 | 32 | C | 8:00 | | |
| 25 | 5.6 | 1,180 | 140 | 200 | 12.9 | 43 | C | 8:00 | | |
| 26 | 5.4 | 1,240 | 150 | 200 | 13.6 | 48 | OC | 8:00 | | |
| 27 | | | | | | 50 | OC | 7:00 | | |
| 28 | | | | | | 54 | C | 8:00 | | |
| 29 | 5.6 | 1,040 | 150 | 200 | 14.4 | 59 | C | 8:00 | | |
| 30 | 5.9 | 870 | 140 | 200 | 15 | 68 | C | 8:00 | | |
| 31 | | | | | | | | | | |

COMMENTS: Pace Analytical performed tests for Total Phosphorus, Total Nitrogen, E.coli, Chloride and Oil & Grease GGA results on 4/24/13 were 140 mg/L
4/24/13 high flow from I&I.

| | | |
|---|---------------------------|----------------|
| TESTS PERFORMED BY <i>Mark Mendenhall</i> | TITLE PLANT SUPERVISOR | DATE 5/7/13 |
| REPORT APPROVED BY <i>Shawn Widdendorf</i> | TITLE LOCAL MANAGER | DATE 5/7/13 |

In the weather column use the following symbols: R-rain, S-snow, C-clear, PC-partly cloudy, O-overcast