

70894

Iowa Department of Natural Resources Geological Survey Bureau  
169 Trowbridge Hall Iowa City, Ia. 52242-1319 PH (319) 335-1575

## WELL RECORD

Permit No. 2009-15W

| <b>Site identification</b><br>Property Owner <u>Water Works</u> Well Number <u>34-08</u><br>Address <u>211 South First Street</u><br>Tenant <u>Oskaloosa, Iowa 52577</u><br>Well Depth <u>51</u> ft Date Completed <u>09 / 23 / 09</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |    |       |          | <b>Drill method</b> <input checked="" type="checkbox"/> rotary <input type="checkbox"/> auger <input type="checkbox"/> cable <input type="checkbox"/> other <u>Reverse</u><br>Hole size <u>40</u> inch from <u>0</u> ft to <u>51</u> ft<br>hole size continued _____ inch from _____ ft to _____ ft<br>_____ inch from _____ ft to _____ ft<br>_____ inch from _____ ft to _____ ft                                                                                                                                                                                                                                   |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------|----------|-----------------------|---|---|-----|--|--------------|---|----|-----|--|------------|----|----|------|--|------------|----|----|------|--|-------------------|----|----|------|--|-------------------|----|----|--|--|-------------|--|--|--|--|----------------|--|--|--|--|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| <b>Location</b> County <u>Mahaska</u><br>_____ mi. N and _____ mi. E of intersection of _____ and _____<br>SW 1/4 of the NW 1/4 of the SE 1/4 of Sec <u>25</u> TWP <u>67N</u> RNG <u>16</u> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">E<br/>W</span><br>Show exact location of well in section grid with a dot (•).<br><div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> </div> <div> <p>Sketch map of well location on property</p> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |       |          | <b>Casing</b> Drive shoe (yes/no) <input checked="" type="checkbox"/> Pitless adaptor (yes/no) <input checked="" type="checkbox"/><br>Size (ID/OD) Type / WT Depth top Depth bottom Amount (length)<br><u>24" OD</u> <u>140 lbs.</u> <u>+17</u> <u>36'</u> <u>53'</u><br><u>1/2" wall</u>                                                                                                                                                                                                                                                                                                                             |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| <input type="checkbox"/> upland <input type="checkbox"/> hillside <input type="checkbox"/> valley Elevation (if known) _____<br><b>Formation log</b><br><table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>From</th> <th>To</th> <th>Color</th> <th>Hardness</th> <th>Formation description</th> </tr> </thead> <tbody> <tr><td>0</td><td>5</td><td>Blk</td><td></td><td>Blk top soil</td></tr> <tr><td>5</td><td>15</td><td>Red</td><td></td><td>Sandy Clay</td></tr> <tr><td>15</td><td>26</td><td>Gray</td><td></td><td>Sandy Clay</td></tr> <tr><td>26</td><td>35</td><td>Gray</td><td></td><td>Fine sand, gravel</td></tr> <tr><td>35</td><td>49</td><td>Gray</td><td></td><td>Med. sand, gravel</td></tr> <tr><td>49</td><td>51</td><td></td><td></td><td>Med. gravel</td></tr> <tr><td></td><td></td><td></td><td></td><td>1 - 6" cobbles</td></tr> <tr><td></td><td></td><td></td><td></td><td>broken limestone</td></tr> </tbody> </table> |    |       |          | From                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | To | Color | Hardness | Formation description | 0 | 5 | Blk |  | Blk top soil | 5 | 15 | Red |  | Sandy Clay | 15 | 26 | Gray |  | Sandy Clay | 26 | 35 | Gray |  | Fine sand, gravel | 35 | 49 | Gray |  | Med. sand, gravel | 49 | 51 |  |  | Med. gravel |  |  |  |  | 1 - 6" cobbles |  |  |  |  | broken limestone | <b>Perforated or slotted casing?</b> (yes/no) <input checked="" type="checkbox"/><br>Perforated / slotted from _____ ft to _____ ft<br>Perforated / slotted from _____ ft to _____ ft |  |  |  |
| From                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | To | Color | Hardness | Formation description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5  | Blk   |          | Blk top soil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15 | Red   |          | Sandy Clay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 26 | Gray  |          | Sandy Clay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 35 | Gray  |          | Fine sand, gravel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 49 | Gray  |          | Med. sand, gravel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| 49                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 51 |       |          | Med. gravel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |       |          | 1 - 6" cobbles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |       |          | broken limestone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| <b>Casing grouted?</b> (yes/no) <input checked="" type="checkbox"/><br>Type Depth Top Depth Bottom Amount<br><u>Neat cement</u> <u>5'</u> <u>14'</u> <u>5 yards</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |       |          | <b>Well screen?</b> (yes/no) <input checked="" type="checkbox"/><br>Diameter Slot size Depth Top Depth Bottom Length Material<br><u>24</u> <u>.070</u> <u>36'</u> <u>51</u> <u>15'</u> <u>SS</u>                                                                                                                                                                                                                                                                                                                                                                                                                      |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| Bottom capped (yes/no) <input checked="" type="checkbox"/> with <u>SS plate</u><br>Seals / Packers (yes/no) <input checked="" type="checkbox"/> kind <u>Hole plug</u> depth <u>14' - 15'</u> ft<br>Gravel packed (yes/no) <input checked="" type="checkbox"/> from <u>15'</u> ft to <u>51'</u> ft<br>type <u>#2</u> amount <u>20,000 lbs.</u><br><u>5 super sacks</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |          | <b>Well developed?</b> (yes/no) <input checked="" type="checkbox"/><br>Explain <u>Double disc. swab</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| Pump installed? (yes/no) <input checked="" type="checkbox"/> Date <u>5 / 5 / 2010</u><br>Installer's name <u>Northway Well and Pump Company</u><br>Type of pump <u>Turbine</u> Depth to intake <u>56</u> ft<br>Pump diameter <u>10"</u> Rated capacity <u>500</u> GPM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |       |          | <b>Water information</b> Aquifer: <input checked="" type="checkbox"/> sand/gravel <input type="checkbox"/> limestone <input type="checkbox"/> sandstone<br>Main water supply zone from <u>36</u> ft to <u>51</u> ft<br>Final water level (static water level) <u>9</u> ft (below/above) GL.<br>Pumping water level <u>28</u> ft below GL; <input type="checkbox"/> tape <input type="checkbox"/> airline <input checked="" type="checkbox"/> line<br>At yield of <u>800</u> GPM: <input type="checkbox"/> orifice <input type="checkbox"/> volumetric <input type="checkbox"/> estimate Date <u>3-2-2010</u><br>Meter |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| Remarks (including depth of lost drilling fluids, materials, or tools)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |    |       |          | <b>Water quality test?</b> (yes/no) <input checked="" type="checkbox"/> Date tested _____ / _____ / _____<br>Tested by <u>Taken by Water Department</u><br>Test results _____                                                                                                                                                                                                                                                                                                                                                                                                                                         |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |
| <b>Well use</b><br><input type="checkbox"/> Domestic <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Industrial<br><input type="checkbox"/> Livestock <input type="checkbox"/> Public Supply <input type="checkbox"/> Monitoring<br><input type="checkbox"/> Test Well <input type="checkbox"/> Irrigation <input type="checkbox"/> Other _____ (explain) _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |    |       |          | Contractor <u>Northway Well and Pump Company</u><br>Address <u>4895 8th Avenue - Marion, Iowa 52302</u><br>Driller <u>Leon Carpenter</u> Certification no. <u>1822</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |       |          |                       |   |   |     |  |              |   |    |     |  |            |    |    |      |  |            |    |    |      |  |                   |    |    |      |  |                   |    |    |  |  |             |  |  |  |  |                |  |  |  |  |                  |                                                                                                                                                                                       |  |  |  |

white copy - Iowa DNR, Geological Survey Bureau

blue copy - Well Contractor

pink copy - Customer

yellow copy - County Health Officer

70894

# Northway Well and Pump Co.

4895 8th Avenue  
Marion, Iowa 52302  
319-377-6339  
1-800-747-6339

100 North 6th Street  
Waukee, Iowa 50263  
515-987-4575  
1-800-747-4575

## WELL TEST DATA REPORT

Customer City Water Works City Oskaloosa, Iowa  
Location North Water Plant Hwy. 63 Well No. 34-08  
Size Casing 24" Total Depth 51' Construction Stainless Steel Screen  
Make Pump Gould's Model No. 14CHC / 50 hp No. of Stages 2  
Diameter 12" Total Setting 35' Air Line Length 35'  
Meter Used Propeller - Sparling Static Level 7.8

| DATE   | TIME    | GPM | P.L.  | D.D.  | S.C.  | P.S.I. | TEMP DISCHARGE DESCRIPTION |
|--------|---------|-----|-------|-------|-------|--------|----------------------------|
| 3/2/10 | 9:00am  | 800 | 7.8   | 9.00  | 88.8  |        | Clear                      |
|        | 9:15    | 800 | 25.05 | 17.25 | 46.37 | 40     | Clear                      |
|        | 9:30    | 800 | 25.20 | 17.4  | 45.97 | 40     | Clear                      |
|        | 9:45    | 800 | 25.30 | 17.5  | 45.71 | 40     | Clear                      |
|        | 10:00   | 800 | 25.37 | 17.57 | 45.53 | 40     | Clear                      |
|        | 10:15   | 800 | 25.43 | 17.63 | 45.37 | 40     | Clear                      |
|        | 10:30   | 800 | 25.50 | 17.7  | 45.19 | 40     | Clear                      |
|        | 10:45   | 800 | 25.51 | 17.71 | 45.17 | 40     | Clear                      |
|        | 11:00   | 800 | 25.60 | 17.8  | 44.94 | 40     | Clear                      |
|        | 11:30   | 800 | 25.71 | 17.91 | 44.66 | 40     | Clear                      |
|        | 12:00pm | 800 | 25.85 | 18.05 | 44.32 | 40     | Clear                      |
|        | 12:30   | 800 | 25.90 | 18.1  | 44.19 | 40     | Clear                      |
|        | 1:00    | 800 | 26.03 | 18.23 | 43.88 | 40     | Clear                      |
|        | 1:30    | 800 | 26.09 | 18.29 | 43.73 | 40     | Clear                      |
|        | 2:00    | 800 | 26.15 | 18.35 | 43.59 | 40     | Clear                      |
|        | 2:30    | 800 | 26.24 | 18.44 | 43.38 | 40     | Clear                      |
|        | 3:00    | 800 | 26.26 | 18.46 | 43.33 | 40     | Clear                      |
|        | 3:30    | 800 | 26.34 | 18.54 | 43.14 | 40     | Clear                      |
|        | 4:00    | 800 | 26.40 | 18.6  | 43.01 | 40     | Clear                      |
|        | 4:30    | 800 | 26.50 | 18.7  | 42.78 | 40     | Clear                      |
|        | 5:00    | 800 | 26.55 | 18.75 | 42.66 | 40     | Clear                      |
|        | 5:30    | 800 | 26.63 | 18.83 | 42.48 | 40     | Clear                      |
|        | 6:00    | 800 | 26.70 | 18.9  | 42.32 | 40     | Clear                      |
|        | 6:30    | 800 | 26.70 | 18.9  | 42.32 | 40     | Clear                      |
|        | 7:00    | 800 | 26.74 | 18.94 | 42.23 | 40     | Clear                      |
|        | 7:30    | 800 | 26.78 | 18.98 | 42.14 | 40     | Clear                      |
|        | 8:00    | 800 | 26.80 | 19    | 42.10 | 40     | Clear                      |
|        | 8:30    | 800 | 26.86 | 19.06 | 41.97 | 40     | Clear                      |

70894

# Northway Well and Pump Co.

4895 8th Avenue  
Marion, Iowa 52302  
319-377-6339  
1-800-747-6339

100 North 6th Street  
Waukee, Iowa 50263  
515-987-4575  
1-800-747-4575

# WELL TEST DATA REPORT

PAGE -2-

Customer City Water Works City Oskaloosa, Iowa  
Location North Water Plant Hwy. 63 Well No. 34-08

| DATE   | TIME                | GPM | P.L.  | D.D.  | S.C.  | P.S.I. | TEMP DISCHARGE DESCRIPTION |
|--------|---------------------|-----|-------|-------|-------|--------|----------------------------|
|        | 9:00                | 800 | 26.92 | 19.12 | 41.84 | 40     | Clear                      |
|        | 9:30                | 800 | 27.03 | 19.23 | 41.6  | 40     | Clear                      |
|        | 10:00               | 800 | 27.10 | 19.3  | 41.45 | 40     | Clear                      |
|        | 10:30               | 800 | 27.10 | 19.3  | 41.45 | 40     | Clear                      |
|        | 11:00               | 800 | 27.18 | 19.38 | 41.27 | 40     | Clear                      |
|        | 11:30               | 800 | 27.20 | 19.4  | 41.23 | 40     | Clear                      |
| 3/3/10 | 12:00               | 800 | 27.23 | 19.43 | 41.17 | 40     | Clear                      |
|        | 12:30               | 800 | 27.25 | 19.45 | 41.13 | 40     | Clear                      |
|        | 1:00                | 800 | 27.25 | 19.45 | 41.13 | 40     | Clear                      |
|        | 1:30                | 800 | 27.27 | 19.47 | 41.08 | 40     | Clear                      |
|        | 2:00                | 800 | 27.27 | 19.47 | 41.08 | 40     | Clear                      |
|        | 2:30                | 800 | 27.29 | 19.49 | 41.04 | 40     | Clear                      |
|        | 3:00                | 800 | 27.32 | 19.52 | 40.98 | 40     | Clear                      |
|        | 3:30                | 800 | 27.35 | 19.55 | 40.92 | 40     | Clear                      |
|        | 4:00                | 800 | 27.38 | 19.58 | 40.85 | 40     | Clear                      |
|        | 4:30                | 800 | 27.40 | 19.6  | 40.81 | 40     | Clear                      |
|        | 5:00                | 800 | 27.40 | 19.6  | 40.81 | 40     | Clear                      |
|        | 5:30                | 800 | 27.43 | 19.63 | 40.75 | 40     | Clear                      |
|        | 6:00                | 800 | 27.44 | 19.64 | 40.73 | 40     | Clear                      |
|        | 6:30                | 800 | 27.48 | 19.68 | 40.65 | 40     | Clear                      |
|        | 7:00                | 800 | 27.51 | 19.71 | 40.58 | 40     | Clear                      |
|        | 7:30                | 800 | 27.53 | 19.73 | 40.54 | 40     | Clear                      |
|        | 8:00                | 800 | 27.60 | 19.8  | 40.40 | 40     | Clear                      |
|        | 8:30                | 800 | 27.63 | 19.83 | 40.34 | 40     | Clear                      |
|        | 9:00                | 800 | 27.70 | 19.9  | 40.20 | 40     | Clear                      |
|        | 9:30                | 800 | 27.74 | 19.94 | 40.12 | 40     | Clear                      |
|        |                     |     |       |       |       |        |                            |
|        |                     |     |       |       |       |        |                            |
|        | End of Pumping Test |     |       |       |       |        |                            |
|        |                     |     |       |       |       |        |                            |

## Northway Well and Pump Co.

4895 8th Avenue  
Marion, Iowa 52302  
319-377-6339  
1-800-747-6339

100 North 6th Street  
Waukee, Iowa 50263  
515-987-4575  
1-800-747-4575

# WELL TEST DATA REPORT

PAGE -3-

Customer City Water Works City Oskaloosa, Iowa  
Location \_\_\_\_\_ Well No. 34-08

[illegible]