



**CONESTOGA-ROVERS
& ASSOCIATES**

1801 Old Highway 8 Northwest, Suite 114, St. Paul, Minnesota 55112
Telephone: 651-639-0913 Facsimile: 651-639-0923
www.CRAworld.com

December 16, 2011

Reference No. 019607

Mr. Hylton Jackson
IOWA DEPARTMENT OF NATURAL RESOURCES
Land Recycling Program
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319-0034

**CON 12-15
Doc # 26193**

Dear Mr. Jackson:

Re: Monitoring and Recovery Well Abandonment
Union Pacific Railroad Company
AST-UST Site - Oelwein, Iowa

This letter was prepared on behalf of Union Pacific Railroad Company (UPRR) by Conestoga-Rovers and Associates (CRA) to summarize the field activities related to the abandonment of the groundwater recovery and monitoring wells RW-1, MW-1U, MW-4U, MW-6U, MW-7U, MW-8U, MW-11L, and MW-11U at the UPRR Oelwein Railyard located near the intersection of West Charles Street and Fourth Avenue, in Oelwein, Iowa (Site). The work was completed in accordance with the letter work plan submitted on November 30, 2011. The wells that were abandoned are shown on Figure 1. The IDNR *Abandoned Water Well Plugging Record* (Form 542-1226) for each well is included as Attachment A.

RECOVERY WELL ABANDONMENT PROCEDURES

Following disconnection of the electricity and removal of the submersible pump and control panel, the UST area recovery well RW-1 steel box enclosure was removed. An updated well construction summary is provided in the table below:

RECOVERY WELL CONSTRUCTION SUMMARY	
Well Number	RW-1
Well Boring Diameter (inches)	30
Screen/Casing Diameter (inches)	30
Approximate Well Depth (feet BGS)	20
Screen Length (feet)	10
Casing Length (feet)	10
Stick-up (feet)	1
Static Water Level (feet BGS)	12.5

Notes: BGS - below ground surface

82631 AM 8:55 12/20/11

Equal
Employment
Opportunity Employer

REGISTERED COMPANY FOR
ISO 9001
ENGINEERING DESIGN



December 16, 2011

Reference No. 19607

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Since the recovery well was less than 100 feet deep and greater than 18-inches in diameter, it was classified under Iowa rules as a *Class I* well. The well was abandoned in accordance with Iowa Administrative Code (IAC) Chapter 39 (*Requirements for Properly Plugging Abandoned Wells*) by Matrix Environmental LLC of Osseo, Minnesota (Matrix) under well contractor certification #6603, with oversight provided by CRA. Well abandonment work was conducted December 6 and 7, 2011, with miscellaneous site grading and clean-up occurring on December 8, 2011.

As part of abandonment procedures, the well was checked to ensure there were no obstructions that would interfere with plugging operations. Clean filling materials and sealing (bentonite) products were poured from the top of the well to within 1-foot of the static water level. A bentonite grout seal was placed over those materials to approximately 4 feet below grade surface (BGS). Excavating equipment was then used to dig to 4-feet BGS and around the well casing so it could be cut off at that depth and removed for later disposal at a recycler. The concrete slab was also broken up during the excavation process and left on site for later disposal at a concrete recycler or to be crushed and used as backfill in accordance with Site building demolition specifications. The remediation system piping that was connected to the well was capped in place. The remaining casing was capped in place with a minimum 1-foot bentonite seal that extending greater than 6-inches beyond the outside diameter of the remaining well casing. The remaining void was backfilled with soil and graded such that surface storm water would not pond at the abandoned well location.

MONITORING WELL PLUGGING PROCEDURES

Monitoring wells MW-1U, MW-4U, MW-6U, MW-7U, MW-8U, MW-11L, and MW-11U were 2-inch diameter wells approximately 20-feet in depth that were all are "stick-up" wells, except for "flush-mount" wells MW-6U, MW-7U, and MW-8U. These wells were also abandoned in accordance with Iowa Administrative Code (IAC) Chapter 39 (*Requirements for Properly Plugging Abandoned Wells*) by Matrix, with oversight provided by CRA. The plugging of these wells was conducted on December 6, 2011.

The wells were checked for obstructions as part of well abandonment procedures. The protective well covers and bollards (if present), and well casing and screen were completely removed. The well borehole was backfilled to within 6-inches of the ground surface using bentonite chips. The remaining portion of the well borehole was backfilled with soil or concrete to match the existing grade. The IDNR *Abandoned Water Well Plugging Record* (Form 542-1226) for each well is included as Attachment A.



**CONESTOGA-ROVERS
& ASSOCIATES**

December 16, 2011

Reference No. 19607

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Should you have any questions or require additional information regarding the well abandonment, please contact me in our St. Paul office at (651) 639-0439 ext. 308.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

James M. Blumke
Iowa Certified Groundwater Professional #1962

JMB/sb/21
Encl.

cc: Jeff McDermott, UPRR (via email)
Joe Sanfilippo, IDNR (via email)
Catherine Miller, Fayette County Environmental Health (via email)
Victor Kane, City of Oelwein (via email)

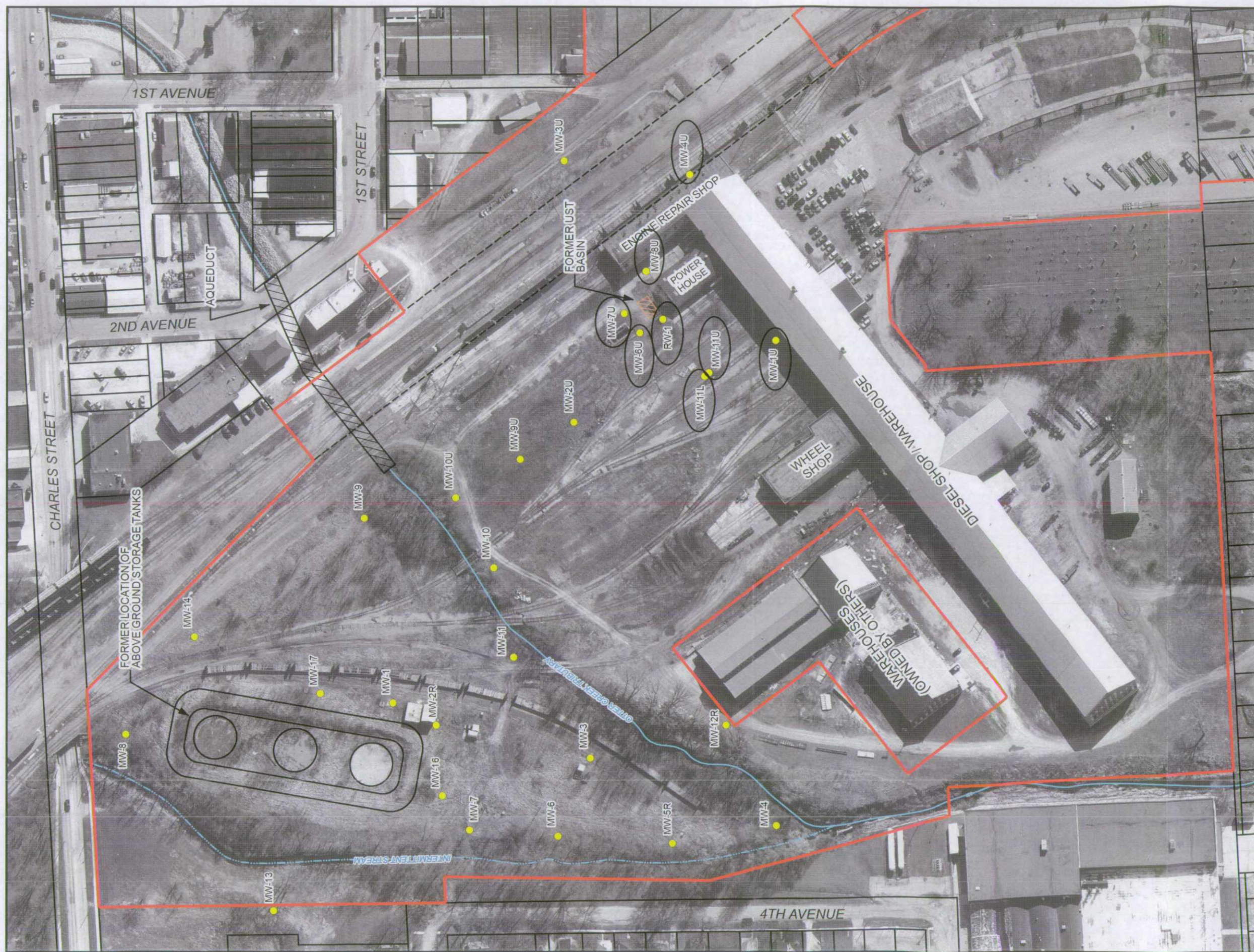
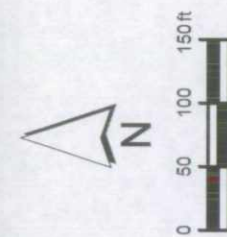






figure 1

ABANDONED WELL LOCATIONS
AST - UST SITE
UNION PACIFIC RAILROAD
Oelwein, Iowa



LEGEND

-  WELL ABANDONED 12/6/2011 - 12/7/2011
 MONITORING WELL LOCATION
 UPRR PROPERTY BOUNDARY
 PARCEL BOUNDARY



ATTACHMENT 1

ABANDONED WATER WELL PLUGGING RECORDS
MW-1U, MW-4U, MW-6U, MW-7U, MW-8U,
MW-11L, MW-11U, RW-1



IOWA DEPARTMENT OF NATURAL RESOURCES
**Abandoned Water Well
Plugging Record**

1. Owner:

Name: Union Pacific Rail Road Phone: 402-544-3675
Address: 1400 Douglas street stop 1030
City: Omaha 4 State: NE Zip: 68179

If this was a Public Water Supply Well, please provide:

PWSID Name: _____ PWSID Number: _____

2. Location of Well (Cistern):

_____ 1/4 of, NW 1/4 of, SW 1/4 of, Section 21, T 91 N, R 9 ☐ East ☒ West
County: Fayette Describe well location on property: East side
GPS Well Location: Latitude: _____ Longitude: _____

3. Well Description:

Well depth: 20 ft.
Depth to water: 12.5 ft.
Casing depth: 10 ft. Casing Material: ☐ Steel ☒ Plastic ☐ Concrete ☐ Clay ☐ Brick ☐ Stone
Casing diameter: 2 in.
Year or decade constructed: 1992 Type of Construction: ☐ Drilled ☐ Driven ☐ Bored ☒ Augured ☐ Dug
Is this a Monitoring Well? ☒ Yes ☐ No Well ID: MW-1U

Check if Cistern ☐ Depth: _____ ft. Diameter: _____ ft.

I certify this well has been plugged as required by rule 567-39.8 of the Iowa Administrative Code (IAC). I agree to provide any additional information the county or department may need concerning this well.

Signature of Owner: Jeffrey A. McDermott Date Plugged: 12-6-2011

If plugged by certified well contractor, complete this box:

I have plugged this well as required by rule 567-39.8 of the Iowa Administrative Code (IAC).

Signature of Contractor: [Signature] Cert No: 6603

OR, If plugged by well owner, complete this box:

The property owner has plugged this well following requirements in rule 567-39.8 of the Iowa Administrative Code (IAC) with the oversight and assistance of the designated county agent.

Signature of County Agent: _____ Date Approved: _____

Eligible for Grants-to-Counties cost share: ☐ Yes ☐ No (Determined by County Agent)

Complete one form for each well plugged and submit within 30 days to the local county agent:

OR, only if no county agent is available, to:

Water Supply Section
Iowa Department of Natural Resources
401 SW 7th St Ste M
Des Moines IA 50309-4611



IOWA DEPARTMENT OF NATURAL RESOURCES
**Abandoned Water Well
Plugging Record**

1. Owner:

Name: <u>Union Pacific Rail Road</u>	Phone: <u>402-544-3675</u>
Address: <u>1400 Douglas street stop 1030</u>	
City: <u>Omaha</u>	State: <u>NE</u> Zip: <u>68179</u>

If this was a Public Water Supply Well, please provide:

PWSID Name: _____	PWSID Number: _____
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2. Location of Well (Cistern):

_____ 1/4 of, <u>NW</u> _____ 1/4 of, <u>SW</u> _____ 1/4 of, Section <u>21</u> _____ T <u>91</u> _____ N. R. <u>9</u> _____ <input type="checkbox"/> East <input checked="" type="checkbox"/> West
County: <u>Fayette</u> Describe well location on property: <u>East side</u>
GPS Well Location: Latitude: _____ Longitude: _____

3. Well Description:

Well depth: <u>23</u> ft.	
Depth to water: <u>12.5</u> ft.	
Casing depth: <u>13</u> ft.	Casing Material: <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Clay <input type="checkbox"/> Brick <input type="checkbox"/> Stone
Casing diameter: <u>2</u> in.	
Year or decade constructed: <u>1992</u>	Type of Construction: <input type="checkbox"/> Drilled <input type="checkbox"/> Driven <input type="checkbox"/> Bored <input checked="" type="checkbox"/> Augured <input type="checkbox"/> Dig
Is this a Monitoring Well? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Well ID: <u>MW-4U</u>

Check if Cistern ☐ Depth: _____ ft. Diameter: _____ ft.

I certify this well has been plugged as required by rule 567-39.8 of the Iowa Administrative Code (IAC). I agree to provide any additional information the county or department may need concerning this well.

Signature of Owner Jeffrey D. McDermott Date Plugged: 12-6-2011

If plugged by certified well contractor, complete this box:

I have plugged this well as required by rule 567-39.8 of the Iowa Administrative Code (IAC).	
Signature of Contractor: <u>[Signature]</u>	Cert No: <u>6603</u>

OR, If plugged by well owner, complete this box:

The property owner has plugged this well following requirements in rule 567-39.8 of the Iowa Administrative Code (IAC) with the oversight and assistance of the designated county agent.

Signature of County Agent: _____ Date Approved: _____

Eligible for Grants-to-Counties cost share: ☐ Yes ☐ No (Determined by County Agent)

Complete one form for each well plugged and submit within 30 days to the local county agent:

OR, only if no county agent is available, to:

Water Supply Section Iowa Department of Natural Resources 401 SW 7th St Ste M Des Moines IA 50309-4611
--



IOWA DEPARTMENT OF NATURAL RESOURCES
**Abandoned Water Well
Plugging Record**

1. Owner:

Name: Union Pacific Rail Road Phone: 402-544-3675
Address: 1400 Douglas street stop 1030
City: Omaha State: NE Zip: 68179

If this was a Public Water Supply Well, please provide:

PWSID Name: _____ PWSID Number: _____

2. Location of Well (Cistern):

1/4 of, NW 1/4 of, SW 1/4 of, Section 21, T 91 N, R 9 ☐ East ☒ West
County: Fayette Describe well location on property: East side
GPS Well Location: Latitude: _____ Longitude: _____

3. Well Description:

Well depth: 20 ft.
Depth to water: 12.5 ft.
Casing depth: 10 ft. Casing Material: ☐ Steel ☒ Plastic ☐ Concrete ☐ Clay ☐ Brick ☐ Stone
Casing diameter: 2 in.
Year or decade constructed: 1992 Type of Construction: ☐ Drilled ☐ Driven ☐ Bored ☒ Augured ☐ Dug
Is this a Monitoring Well? ☒ Yes ☐ No Well ID: MW-6U

Check if Cistern ☐ Depth: _____ ft. Diameter: _____ ft.

I certify this well has been plugged as required by rule 567-39.8 of the Iowa Administrative Code (IAC). I agree to provide any additional information the county or department may need concerning this well.

Signature of Owner Jeffrey A. McJannett Date Plugged: 12-6-2011

If plugged by certified well contractor, complete this box:

I have plugged this well as required by rule 567-39.8 of the Iowa Administrative Code (IAC).

Signature of Contractor: [Signature] Cert No: 6603

OR, If plugged by well owner, complete this box:

The property owner has plugged this well following requirements in rule 567-39.8 of the Iowa Administrative Code (IAC) with the oversight and assistance of the designated county agent.

Signature of County Agent: _____ Date Approved: _____

Eligible for Grants-to-Counties cost share: ☐ Yes ☐ No (Determined by County Agent)

Complete one form for each well plugged and submit within 30 days to the local county agent:

OR, only if no county agent is available, to:

Water Supply Section
Iowa Department of Natural Resources
401 SW 7th St Ste M
Des Moines IA 50309-4611



IOWA DEPARTMENT OF NATURAL RESOURCES
**Abandoned Water Well
Plugging Record**

1. Owner:

Name: Union Pacific Rail Road Phone: 402-544-3675
Address: 1400 Douglas street stop 1030
City: Omaha a State: NE Zip: 68179

If this was a Public Water Supply Well, please provide:

PWSID Name: _____ PWSID Number: _____

2. Location of Well (Cistern):

_____ 1/4 of, nw 1/4 of, SW 1/4 of, Section 21 T 91 N. R 9 ☐ East ☒ West
County: Fayette Describe well location on property: East side
GPS Well Location: Latitude: _____ Longitude: _____

3. Well Description:

Well depth: 17 ft.
Depth to water: 12.5 ft.
Casing depth: 7 ft. Casing Material: ☐ Steel ☒ Plastic ☐ Concrete ☐ Clay ☐ Brick ☐ Stone
Casing diameter: 2 in.
Year or decade constructed: 1992 Type of Construction: ☐ Drilled ☐ Driven ☐ Bored ☒ Augured ☐ Dug
Is this a Monitoring Well? ☒ Yes ☐ No Well ID: MW-7U

Check if Cistern ☐ Depth: _____ ft. Diameter: _____ ft.

I certify this well has been plugged as required by rule 567-39.8 of the Iowa Administrative Code (IAC). I agree to provide any additional information the county or department may need concerning this well.

Signature of Owner Jeffrey B. McDermott Date Plugged: 12-6-2011

If plugged by certified well contractor, complete this box:

I have plugged this well as required by rule 567-39.8 of the Iowa Administrative Code (IAC).

Signature of Contractor: [Signature] Cert No: 6603

OR, If plugged by well owner, complete this box:

The property owner has plugged this well following requirements in rule 567-39.8 of the Iowa Administrative Code (IAC) with the oversight and assistance of the designated county agent.

Signature of County Agent: _____ Date Approved: _____

Eligible for Grants-to-Counties cost share: ☐ Yes ☐ No (Determined by County Agent)

Complete one form for each well plugged and submit within 30 days to the local county agent:

OR, only if no county agent is available, to:

Water Supply Section
Iowa Department of Natural Resources
401 SW 7th St Ste M
Des Moines IA 50309-4611



IOWA DEPARTMENT OF NATURAL RESOURCES
Abandoned Water Well
Plugging Record

1. Owner:

Name: Union Pacific Rail Road	Phone: 402-544-3675
Address: 1400 Douglas street stop 1030	
City: Omaha a	State: NE Zip: 68179

If this was a Public Water Supply Well, please provide:

PWSID Name:	PWSID Number:
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2. Location of Well (Cistern):

1/4 of, nw 1/4 of, SW 1/4 of, Section 21, T 91 N, R 9	<input type="checkbox"/> East <input checked="" type="checkbox"/> West
County: Fayette	Describe well location on property: East side
GPS Well Location: Latitude:	Longitude:

3. Well Description:

Well depth:	17	ft.	Casing Material: <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Clay <input type="checkbox"/> Brick <input type="checkbox"/> Stone
Depth to water:	12.5	ft.	
Casing depth:	7	ft.	
Casing diameter:	2	in.	
Year or decade constructed:	1992	Type of Construction:	<input type="checkbox"/> Drilled <input type="checkbox"/> Driven <input type="checkbox"/> Bored <input checked="" type="checkbox"/> Augured <input type="checkbox"/> Dug
Is this a Monitoring Well?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Well ID:	MW-8U

Check if Cistern ☐ Depth: _____ ft. Diameter: _____ ft.

I certify this well has been plugged as required by rule 567-39.8 of the Iowa Administrative Code (IAC). I agree to provide any additional information the county or department may need concerning this well.

Signature of Owner Jeffrey J. McDermott Date Plugged: 12-6-2011

If plugged by certified well contractor, complete this box:

I have plugged this well as required by rule 567-39.8 of the Iowa Administrative Code (IAC).

Signature of Contractor: [Signature] Cert No: 6663

OR, If plugged by well owner, complete this box:

The property owner has plugged this well following requirements in rule 567-39.8 of the Iowa Administrative Code (IAC) with the oversight and assistance of the designated county agent.

Signature of County Agent: _____ Date Approved: _____

Eligible for Grants-to-Counties cost share: ☐ Yes ☐ No (Determined by County Agent)

Complete one form for each well plugged and submit within 30 days to the local county agent:

OR, only if no county agent is available, to:

Water Supply Section
Iowa Department of Natural Resources
401 SW 7th St Ste M
Des Moines IA 50309-4611



IOWA DEPARTMENT OF NATURAL RESOURCES
**Abandoned Water Well
Plugging Record**

1. Owner:

Name: <u>Union Pacific Rail Road</u>	Phone: <u>402-544-3675</u>
Address: <u>1400 Douglas street stop 1030</u>	
City: <u>Omaha</u>	State: <u>NE</u> Zip: <u>68179</u>

If this was a Public Water Supply Well, please provide:

PWSID Name: _____	PWSID Number: _____
-------------------	---------------------

2. Location of Well (Cistern):

_____ 1/4 of, <u>nw</u> _____ 1/4 of, <u>sw</u> _____ 1/4 of, Section <u>21</u> , T <u>91</u> N, R <u>9</u> <input type="checkbox"/> East <input checked="" type="checkbox"/> West
County: <u>Fayette</u> Describe well location on property: <u>East side</u>
GPS Well Location: Latitude: _____ Longitude: _____

3. Well Description:

Well depth: <u>27.5</u> ft	
Depth to water: <u>12.5</u> ft	
Casing depth: <u>22</u> ft	Casing Material: <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Clay <input type="checkbox"/> Brick <input type="checkbox"/> Stone
Casing diameter: <u>2</u> in.	
Year or decade constructed: <u>2008</u>	Type of Construction: <input type="checkbox"/> Drilled <input type="checkbox"/> Driven <input type="checkbox"/> Bored <input checked="" type="checkbox"/> Augured <input type="checkbox"/> Dug
Is this a Monitoring Well? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Well ID: <u>MW-11L</u>

Check if Cistern ☐ Depth: _____ ft. Diameter: _____ ft.

I certify this well has been plugged as required by rule 567-39.8 of the Iowa Administrative Code (IAC). I agree to provide any additional information the county or department may need concerning this well.

Signature of Owner *Jeffrey D. McJannett* Date Plugged: 12-6-2011

If plugged by certified well contractor, complete this box:

I have plugged this well as required by rule 567-39.8 of the Iowa Administrative Code (IAC).

Signature of Contractor: *[Signature]* Cert No: 6603

OR, If plugged by well owner, complete this box:

The property owner has plugged this well following requirements in rule 567-39.8 of the Iowa Administrative Code (IAC) with the oversight and assistance of the designated county agent.

Signature of County Agent: _____ Date Approved: _____

Eligible for Grants-to-Counties cost share: ☐ Yes ☐ No (Determined by County Agent)

Complete one form for each well plugged and submit within 30 days to the local county agent:

OR, only if no county agent is available, to:

	Water Supply Section Iowa Department of Natural Resources 401 SW 7th St Ste M Des Moines IA 50309-4611
--	--



IOWA DEPARTMENT OF NATURAL RESOURCES
**Abandoned Water Well
Plugging Record**

1. Owner:

Name: Union Pacific Rail Road Phone: 402-544-3675
Address: 1400 Douglas street stop 1030
City: Omaha State: NE Zip: 68179

If this was a Public Water Supply Well, please provide:

PWSID Name: _____ PWSID Number: _____

2. Location of Well (Cistern):

_____ 1/4 of, NW 1/4 of, SW 1/4 of, Section 21, T 91 N, R 9 ☐ East ☒ West
County: Fayette Describe well location on property: East side
GPS Well Location: Latitude: _____ Longitude: _____

3. Well Description:

Well depth: 17 ft.
Depth to water: 12.5 ft.
Casing depth: 7 ft. Casing Material: ☐ Steel ☒ Plastic ☐ Concrete ☐ Clay ☐ Brick ☐ Stone
Casing diameter: 2 in.
Year or decade constructed: 2008 Type of Construction: ☐ Drilled ☐ Driven ☐ Bored ☒ Augured ☐ Dug
Is this a Monitoring Well? ☒ Yes ☐ No Well ID: MW-11U

Check if Cistern ☐ Depth: _____ ft. Diameter: _____ ft.

I certify this well has been plugged as required by rule 567-39.8 of the Iowa Administrative Code (IAC). I agree to provide any additional information the county or department may need concerning this well.

Signature of Owner Jeffrey D. McDermott Date Plugged: 12-6-2011

If plugged by certified well contractor, complete this box:

I have plugged this well as required by rule 567-39.8 of the Iowa Administrative Code (IAC).

Signature of Contractor: [Signature] Cert No: 6603

OR, If plugged by well owner, complete this box:

The property owner has plugged this well following requirements in rule 567-39.8 of the Iowa Administrative Code (IAC) with the oversight and assistance of the designated county agent.

Signature of County Agent: _____ Date Approved: _____

Eligible for Grants-to-Counties cost share: ☐ Yes ☐ No (Determined by County Agent)

Complete one form for each well plugged and submit within 30 days to the local county agent:

OR, only if no county agent is available, to:

Water Supply Section Iowa Department of Natural Resources 401 SW 7th St Ste M Des Moines IA 50309-4611



IOWA DEPARTMENT OF NATURAL RESOURCES
**Abandoned Water Well
Plugging Record**

1. Owner:

Name: Union Pacific Rail Road Phone: 402-544-3675
Address: 1400 Douglas street stop 1030
City: Omaha State: NE Zip: 68179

If this was a Public Water Supply Well, please provide:

PWSID Name: _____ PWSID Number: _____

2. Location of Well (Cistern):

County: Fayette Describe well location on property: East side
GPS Well Location: Latitude: _____ Longitude: _____

3. Well Description:

Well depth: 20 ft.
Depth to water: 12.5 ft.
Casing depth: 10 ft. Casing Material: ☒ Steel ☐ Plastic ☐ Concrete ☐ Clay ☐ Brick ☐ Stone
Casing diameter: 30 in.
Year or decade constructed: 1992 Type of Construction: ☐ Drilled ☐ Driven ☐ Bored ☐ Augured ☒ Dug
Is this a Monitoring Well? ☐ Yes ☒ No Well ID: RW1

Check if Cistern ☐ Depth: _____ ft. Diameter: _____ ft.

I certify this well has been plugged as required by rule 567-39.8 of the Iowa Administrative Code (IAC). I agree to provide any additional information the county or department may need concerning this well.

Signature of Owner: *Jeffrey D. McJannet* Date Plugged: 12-6-7-2011

If plugged by certified well contractor, complete this box:

I have plugged this well as required by rule 567-39.8 of the Iowa Administrative Code (IAC).

Signature of Contractor: *[Signature]* Cert No: 6603

OR, If plugged by well owner, complete this box:

The property owner has plugged this well following requirements in rule 567-39.8 of the Iowa Administrative Code (IAC) with the oversight and assistance of the designated county agent.

Signature of County Agent: _____ Date Approved: _____

Eligible for Grants-to-Counties cost share: ☐ Yes ☐ No (Determined by County Agent)

Complete one form for each well plugged and submit within 30 days to the local county agent:

OR, only if no county agent is available, to:

Water Supply Section
Iowa Department of Natural Resources
401 SW 7th St Ste M
Des Moines IA 50309-4611