Iowa Department of Natural Resources

WELL RECORD FORM

077074

Geological and Water Survey

PWTS No. or PWS No. 7736011 | PWTS Permit No. 2013-0270 W | GEOSAM Well No. (DNR use only)

Site Identification

Property owner City of Grimes | Other ID

Address 101 NE Harvey | City Grimes

Tenant

Well depth 2551 ft | Date completed 01/29/2014

Drill Method

☒ Rotary ☐ Auger ☐ Cable ☐ Other

Hole size

44 inch 0 to 36 ft.
34 inch from 36 ft to 360 ft
28 inch from 360 ft to 850 ft

hole size continued

22 inch from 850 ft to 2210 ft
16 inch from 2210 ft to 2551 ft

Location

County Polk

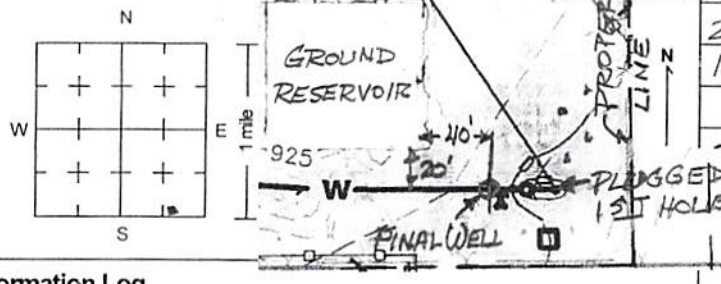
GPS coordinates (NAD83 datum)

41°42'11.1"N Latitude 93°47'20.7"W Longitude

☐ Decimal Degrees ☐ Degrees, Decimal Minutes ☒ Degrees, Minutes, Seconds

SW 1/4 of the SE 1/4 of the SW 1/4 of Sec 29 TWP 80 N RNG 25 E (W)

Show exact location of well in section property.



Casing or Loop Pipe

Record all depth measurements from ground level (GL). Use + for above GL measurements.

Size (in)	Material	Depth Top	Depth Bottom	Perforated	Slotted	Screen
36	Steel 0.375"	0	36'	☐	☐	☐ slot size
30	" 0.500"	+2'	360'	☐	☐	☐ slot size
24	" "	+2'	806'	☐	☐	☐ slot size
18	" "	806'	2210'	☐	☐	☐ slot size
				☐	☐	☐ slot size

Casing Grout

Placement method Pressurized Cement Tubing

Type	Depth top	Depth bottom
Neat Portland Cement	0	36'
" " "	0	360'
" " "	0	2210'
☐ Gravel packed variety		
☐ Seals/packers		

Formation Log

From	To	Color	Hardness	Formation description
				See Attached

(use additional sheets as needed)

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Pump Installation

Date / /

Type of pump | Depth to intake ft

Pump diameter 14 in | Rated capacity 1600 GPM

Water Information

Date 01/29/2014

Use + for above GL measurements.

Static Water Level	Pumping Water Level	Yield	Duration
322 ft	334 ft	1628 GPM	12 hrs

Water level measurement: ☐ Sonic ☐ Tape ☒ Airline ☐ E-line ☐ Estimate

Water yield measurement: ☒ Orifice ☐ Volumetric ☐ Estimate

Main water-supply zone from 2210 ft to 2551 ft below GL

Well Development

☒ Physical explain: Air Dual Wall Reverse Drilled + 2 Hours Air Lifting

☐ Chemical explain:

Remarks (including depth of lost drilling fluids, materials, or tools)

Original well hole plugged @ +1056' depth per IDNR - see Abandoned water well Plugging Record. Final well moved 35' West.

Contractor

Company Layne Christensen Company

Address 721 W. Illinois Ave., Aurora, IL 60506

Driller Derek Good | Certification no. 8012

Well Use

☐ Domestic ☒ Public supply ☐ Livestock
☐ Heat pump ☐ Commercial ☐ Irrigation
# of borehole(s) ___ ☐ Monitoring ☐ Other

Revision Date: 10/2011

Send form to **Iowa Department of Natural Resources – Geological and Water Survey**
109 Trowbridge Hall, Iowa City, IA 52242-1319 PH 319-335-1575 FAX 319-335-2754

Make photocopies for:
well contractor, customer, and county health department

WATER · MINERAL · ENERGY

WELL INFORMATION - ROCK WELLS

Layne Christensen Company

PROFESSIONAL SERVICES FOR WATER SYSTEMS

721 West Illinois Avenue • Aurora, Illinois 60506-2892 • Phone 630/897-6941
229 West Indiana Avenue • Beecher, Illinois 60401 • Phone 708/946-2244

Name Of Job CITY OF GRIMES Date FEBRUARY 10, 2014

City GRIMES State IOWA

Well No. "JORDAN" Drillers HAROLD WADDELL AND BOB ISSACSON. DEREK GOOD, TOOL PUSHER.

Well Location 1504 ft. (East) and 29 ft. (North) of the SW corner of

the SW 1/4 of Section 29 ,Twp. (80N), Range (25W) Polk County

Otherwise located as GRIMES WATER TREATMENT PLANT, 1801 N. JAMES STREET

Work Began: 10/17/13 Work Completed: 1/31/14

Casing Record:

Amount	Dia.	Wt. or Thickness	Material				
37'	36" O.D.	0.375"	Steel	with weld	joints from +2'	to	36'
362'	30" O.D.	0.500"	Steel	with weld	joints from +2'	to	360'
808'	24" O.D.	0.500"	Steel	with weld	joints from +2'	to	806'
2'	24" x 18"	0.500"	Swage	with weld	joints from 806'	to	808'
1,402'	18" O.D.	0.500"	Steel	with weld	joints from 808'		2,210'

Hole Record:

44	inch from	0	to 36'	
34	inch from	36'	to 360'	
28	inch from	360'	to 840'	
22	inch from	840'	to 2,210'	
16	inch from	2,210'	to 2,551	bottom of hole

Cementing Record: Cemented 36" Conductor: 36" to surface; cemented 30": 360' to surface; cemented 24" x 18": 2210' to surface; all with neat Portland cement grout.

Well Test Data: Static Level 322' ; pumping level 334' after 12 hours pumping at 1,628 g.p.m.

Length of test 12 hrs. See Well Test Data Sheet Dated January 29, 2014

Remarks Dual-wall air-reverse rotary drilling below casing with no bentonite. No chemical or explosive development.

Elevation: 925

Layne Job No. 24752B IDNR Well Permit No.: 2013-0270W. PWS I.D. No. 7736011

WELL LOG

Feet		Feet	Description
0	to	90	Clay
90	to	125	Gray-Black Shale
125	to	340	Tan Shale
340	to	400	Tan Sandy Lime
400	to	475	Shale
475	to	615	Gray Lime and Shale
615	to	695	Gray Lime
695	to	710	Red Shale
710	to	805	Gray Shale
805	to	865	Lime Tan
865	to	1405	Gray Lime
1405	to	1475	Brown Lime
1475	to	1580	Shale
1580	to	1645	Shale and Lime
1645	to	1665	Shale
1665	to	1765	Lime Gray
1765	to	1780	Dark Bluish Limestone
1780	to	1915	Tan Lime
1915	to	1985	Shaley Lime
1985	to	2000	Lime
2000	to	2030	Shale and Sand
2030	to	2225	Lime
2225	to	2275	Sandstone
2275	to	2335	Lime
2335	to	2350	Lime and Sand
2350	to	2395	Lime
2395	to	2455	Sandy Lime
2455	to	2505	Sandy Lime – Some Sandstone
2505	to	2551	Dark Lime