WELL RECORD FORM

emailed to DNR 2-11-17

w85507

PWSID# *or* PWTS No. 7785007 | PWTS Permit No. _____ | GeoSam WNumber *(IGS use only)* _____

Site Identification

Property owner West Des Moines Water Works Other ID #26

Address 1505 Railroad Ave City West Des Moines

Tenant _____

Well depth 2506 ft Date completed 3 / 8 / 2017

Location

County Polk

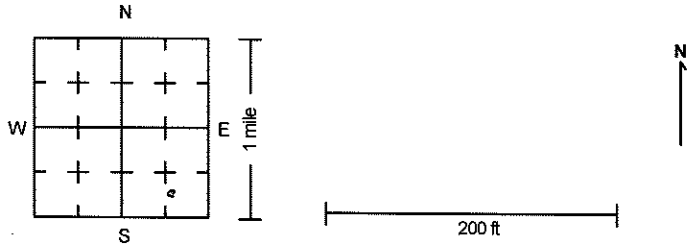
GPS coordinates (NAD83 datum)

41.5720644 Latitude -93.7175713 Longitude

☑ Decimal Degrees ☐ Degrees, Decimal Minutes ☐ Degrees, Minutes, Seconds

SE 1/4 of the SE 1/4 of the NW 1/4 of Sec 10 TWP 78 RNG 25 E W

Show exact location of well in section grid with a dot (•). Sketch map of well location on property.



Formation Log

From	To	Color	Hardness	Formation description
				See attached sheet
				(use additional sheets as needed)

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

Well Use

☐ Domestic ☑ Public supply ☐ Livestock

☐ Heat pump ☐ Commercial ☐ Irrigation

# of borehole(s) ____ ☐ Monitoring ☐ Other _____

Drill Method

☑ Rotary ☐ Auger ☐ Cable ☐ Other _____

Hole size

36 inch from 0 ft to 255 ft

28 inch from 255 ft to 600 ft

hole size continued

23 inch from 600 ft to 2070 ft

12.3 inch from 2070 ft to 2506 ft

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
30	steel	0	255	☐	☐	☐ slot size
24	stainless steel	+4	600	☐	☐	☐ slot size
18	stainless steel	600	2070	☐	☐	☐ slot size
				☐	☐	☐ slot size
				☐	☐	☐ slot size
☐ Gravel packed				amount ____ variety ____		
☐ Seals/packers				type ____		
☐ Bottom capped with ____						

Casing Grout

Placement method haliburton

Type	Depth Top	Depth Bottom	Amount (vol/wt)
neat cement	0	2070	

Pump Installation

Date ____/____/____

Type of pump _____ Depth to intake _____ ft

Pump diameter _____ in Rated capacity _____ GPM

Water Information

Date 5 / 9 / 2017

Static Water Level	Pumping Water Level	Yield	Duration
239 ft	308 ft	2060 GPM	72.00 hrs

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

Water yield measurement: ☐ Orifice ☑ Volumetric ☐ Estimate

Main water-supply zone from 2070 ft to 2506 ft below GL

Well Development

☐ Physical explain: _____

☑ Chemical explain: hydrochloric

Contractor

Company Grosch Drilling Co.

Address 114 N. 6th. St O'Neill NE 68763

Driller Scott Grosch Certification no. 6743

IGS IHR Hydroscience & Engineering

Mail form to **Iowa Department of Natural Resources**: 502 E. 9th St., Des Moines, IA 50319-0034

Or click here to e-mail form to: well.records@dnr.iowa.gov

DNR

DNR Form 542-8170

West Des Moines Well #26 Lithology Log

0-8 – Fat yellow clay
8-34 – Sand
34-58 – Soft Sticky gray clay
58-60 – Coal Black
60-78 – Mud Rock Black/Gray – hard/slow 1st foot
78-93 – Hard Mud Stone Black (rough)
93-126 – smoother drilling gray shale
126- 128 – Hard mud stone black rough – 115' rough & 126-128' rough
128-139 – Smoother Gray/Black Shale w/ small coal stringer
139-141 – Rougher – Hard Tan Siltstone
141-233 – Smoother black shale w/ some coal stringers & layers of fine sandstone
233-243 – Shaley Mud rock – drilled smooth
243-299 – Drilling Harder – limestone gray/white
299-333 – Hard Brown to gray limestone
333-336 – Hard & Slow White/Tan Chert
336-356 – Hard Brown-Gray Limestone
356-410 – Hard Brown/Gray Limestone layers of Gray Shale
410-470 – Hard Gray Limestone w/ Shale Layers & Traces of Calcite
470-480 – Hard Light Gray Limestone – some white, few shale layers – gray
480-494 – Smoother Gray Limestone w/ shale layers
494-517 – Harder Gray Limestone w/ few layers Gray Shale
517-522 – Soft Gray Shale
522-523 – Harder Drilling Limestone
523-574 – Gray Shale w/ Limestone & some calcite
574-616 – Hard Gray Limestone, some calcite & shale layers
616-655 – Hard Gray Dolomite?
655-716 – Smoother Gray Shale w/ Limestone layers
716-774 – Tan Dolomite
774-832 – Shale
832-878 – Gray Dolomite
878-935 – Gray Limestone w/ some green limestone
935-999 – Dark Brown dolomite w/ traces of Gypsum & Calcite
999-1008 – Gray Dolomite w/ traces of anhydrite gypsum
1008-1070 – Gray Dolomite
1070-1076 – Brown Dolomite w/ some anhydrite
1076-1222 – Dark Brown Dolomite w/ gypsum/Anhydrite w/ tan streaks
1222-1249 – Gray Shale w/ a lot of anhydrite/Gypsum & Gray Dolomite
1249-1306 – Gray Dolomite w/ Gray Shale & Anhydrite (Gray & Brown Dolomite)
1306-1358 – White Shale w/ Dark Brown Dolomite
1358-1383 – Gray Dolomite w/ white Chert or Limestone
1383-1423 – Gray Dolomite w/ white Chert & Gypsum
1423-1492 – Green & Brown Shale w/ Gray Dolomite
1492-1505 – Gray Shlae w/ layers of Gray Dolomite
1505-1554 – Dolomite & Shale Layers Gray some Brown

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1554-1590 – Gray Shale w/ Dolomite
1590-1676 – Dolomite w/ White Shale
1676-1694 – Gray & Brown Dolomite w/ Gray Shale
1694-1706 – Smoother Brown Dolomite w/ Chert
1706-1728 – Gray & Brown Dolomite
1728-1821 – Brown Dolomite, some Chert
1821-1848 – Harder Dolomite (Gelena?)
1848-1887 – Brown Dolomite w/ shale layers Blue & Gray (Sticky)
1887-1901 – Sticky Gray Shale w/ small layers of Dolomite (Slow)
1901-1914 – Dark Brown Dolomite w/ brown siltstone layers
1914-1920 – Gray Shale
1920-1952 – Tan Sandstone (St Peter)
1952-1987 – Gray & Brown Dolomite, Some white Shale
1987-2019 – Gray & Brown Dolomite w/ gray shale some Calcite
2019-2074 – Light gray & White Dolomite w/ some Anhydrite
2074-2212 – Brown Dolomite
2212-2311 – Light Gray Dolomite
2311-2314 – Soft Stone
2314-2363 – Darker Gray Dolomite w/ traces of white sand
2363-2377 – Brown Dolomite w/ traces of gray sand
2377-2506 – Gray Dolomite some Brown