

**CORRECTION(S) TO WATER WELL RECORD (Form WWC-5)**

(to rectify lacking or incorrect information)

<b>LOCATION OF WATER WELL:</b> County: <u>Johnson</u>	Fraction <u>1/4 1/4 SE 1/4 SW 1/4</u>	Section <u>8</u>	Township T <u>13</u> S	Range R <u>22</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W
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**Owner:** USACE c/o Burns & McDonnell

**Location was listed as:**

Sec. \_\_\_\_\_ T \_\_\_\_\_ S R \_\_\_\_\_ E W

Fraction: \_\_\_\_\_

**Location changed to:**

Sec. \_\_\_\_\_ T \_\_\_\_\_ S R \_\_\_\_\_ E W

Fraction: \_\_\_\_\_

**Other changes:** Initial statements: HTW Drill Log Location: N 231837.3412 E 2855255.6158

Changed to: 38.950912868 -94.993336002

Comments: Converted State Plane 1501-Kansas North NAD 27 to Geographic Decimal Degrees NAD 83.

Verification method: Corpscon 6.0.1

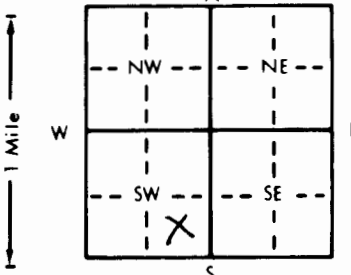
initials: df date: 04/14/2014

Submitted by: Kansas Geological Survey, Data Resources Library, 1930 Constant Ave., Lawrence, KS 66047-3726  
to: Kansas Dept of Health & Environment, Bureau of Water, 1000 SW Jackson, Suite 420, Topeka, KS 66612-1367.

1 LOCATION OF WATER WELL: County: **Johnson** Fraction:  $\frac{1}{4}$  **SE**  $\frac{1}{4}$  **SW**  $\frac{1}{4}$  Section Number: **8** Township Number: **T 13 S** Range Number: **R 22 EX**

Distance and direction from nearest town or city street address of well if located within city?  
**Well #96-60 at Sunflower AAP near DeSoto KS**

2 WATER WELL OWNER: **USACE 90 Burns & McDonnell**  
 RR#, St. Address, Box #: **9400 Ward Parkway** Board of Agriculture, Division of Water Resources  
 City, State, ZIP Code: **Kansas City MO 64114** Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:  

 4 DEPTH OF COMPLETED WELL: **20.1** ft. ELEVATION:  
 Depth(s) Groundwater Encountered 1. \_\_\_\_\_ ft. 2. \_\_\_\_\_ ft. 3. \_\_\_\_\_ ft.  
 WELL'S STATIC WATER LEVEL **20.1** ft. below land surface measured on mo/day/yr  
 Pump test data: Well water was \_\_\_\_\_ ft. after \_\_\_\_\_ hours pumping \_\_\_\_\_ gpm  
 Est. Yield \_\_\_\_\_ gpm: Well water was \_\_\_\_\_ ft. after \_\_\_\_\_ hours pumping \_\_\_\_\_ gpm  
 Bore Hole Diameter: **10** in. to **5.1** ft., and **6** in. to **20.5** ft.  
 WELL WATER TO BE USED AS:  
 1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)  
 2 Irrigation 4 Industrial 7 Lawn and garden only **10** Monitoring well  
 Was a chemical/bacteriological sample submitted to Department? Yes \_\_\_\_\_ **No** If yes, mo/day/yr sample was submitted  
 Water Well Disinfected? Yes \_\_\_\_\_ **No**

5 TYPE OF BLANK CASING USED:  
 1 Steel 3 RMP (SR) 5 Wrought iron 8 Concrete tile CASING JOINTS: Glued \_\_\_\_\_ Clamped \_\_\_\_\_  
**2** PVC 4 ABS 7 Fiberglass 9 Other (specify below) Welded \_\_\_\_\_  
 Blank casing diameter: **6** in. to **5.1\*** ft., Dia **2** in. to **+30" to 10** ft., Dia \_\_\_\_\_ in. to \_\_\_\_\_ ft.  
 Casing height above land surface: **30** in., weight \_\_\_\_\_ lbs./ft. Wall thickness or gauge No. **Sch 40**  
 TYPE OF SCREEN OR PERFORATION MATERIAL:  
 1 Steel 3 Stainless steel 5 Fiberglass **7** PVC 10 Asbestos-cement  
 2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 11 Other (specify) \_\_\_\_\_  
 12 None used (open hole)  
 SCREEN OR PERFORATION OPENINGS ARE:  
 1 Continuous slot **3** Mill slot 5 Gauzed wrapped 8 Saw cut 11 None (open hole)  
 2 Louvered shutter 4 Key punched 6 Wire wrapped 9 Drilled holes  
 7 Torch cut 10 Other (specify) \_\_\_\_\_  
 SCREEN-PERFORATED INTERVALS: From **10** ft. to **20** ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 From \_\_\_\_\_ ft. to \_\_\_\_\_ ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 GRAVEL PACK INTERVALS: From **6.8** ft. to **20.5** ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 From \_\_\_\_\_ ft. to \_\_\_\_\_ ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

6 GROUT MATERIAL: 1 Neat cement **2** Cement grout **3** Bentonite 4 Other \_\_\_\_\_  
 Grout Intervals: From **0** ft. to **5.1** ft., From **0** ft. to **6.8** ft., From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 What is the nearest source of possible contamination:  
 1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandoned water well  
 2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 15 Oil well/Gas well  
 3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer storage **16** Other (specify below)  
**Ammunition plant**  
 Direction from well? \_\_\_\_\_ How many feet? \_\_\_\_\_

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was **1** constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) **9/10/96** and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. **570** This Water Well Record was completed on (mo/day/yr) **11/27/96** under the business name of **AQUADRILL, INC.** by (signature) **Jeff Palm**

INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

OFFICE USE ONLY

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SEC.

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1/4

1/4

*\*Surface casing waiver approved by Don Taylor of KDHE on 9/6/96 at 1300 hr.*

HTW DRILLING LOG							HOLE NO. 96-6D	
1. COMPANY NAME BURNS & McDONNELL			2. DRILLING SUBCONTRACTOR AQUADRILL			SHEET 1 OF 4 SHEETS		
3. PROJECT 94-800-4-020-01 USSFRFI				4. LOCATION SUNFLOWER ARMY AMMUNITION PLANT				
5. NAME OF DRILLER Jay Joslyn, Rick Loun				6. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B-57				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		4.25" HSA		8. HOLE LOCATION		N-231837.3412 E-2855;255.6158		
		5 ft. Laskey Continuous Sampler		9. SURFACE ELEVATION		875.4		
		NO2 CORE BARREL		10. DATE STARTED		8-28-96		
		6" TRICONE ROTARY W/ASIK		11. DATE COMPLETED		9-10-96		
0 1/2" I.D. HSA; Kelly bit.								
12. OVERBURDEN THICKNESS 4.5'				15. DEPTH GROUNDWATER ENCOUNTERED none encountered				
13. DEPTH DRILLED INTO ROCK 16.0'				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 9-9-96 1123 6.76 ft. TOC (TD=6.94+TOC) after 20 min				
14. TOTAL DEPTH OF HOLE 20.5'				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) 9-12-96 1349 14.95 ft. TOC after installation				
18. GEOTECHNICAL SAMPLES NA		DISTURBED NA	UNDISTURBED NA	19. TOTAL NUMBER OF CORE BOXES 2				
20. SAMPLES FOR CHEMICAL ANALYSIS 1		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY 96%	
		X	TAL	SVOC, PEST, PCB	Explosives	cyanide SO4		
22. DISPOSITION OF HOLE Monitoring Well		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR <i>Thomas E. Bailey</i>			
			96-60/96-20					

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	1	CLAY, some silt, trace roots (10%), very dark grayish brown (10YR 3/2), damp, soft to medium consistency, low plasticity (CL) (TOPSOIL)	BH = oppm BZ = oppm S = oppm	NA	96-6D SRI 0-0.5'	1000	1000 Begin drilling
	2	CLAY, some silt (20%), trace roots (5%), dark brown (10YR 3/3), mottled with strong brown (7.5YR 5/6) speckles, damp, soft to medium consistency, low plasticity (CL) (Residuum)	LEL = oil O2 = 20.4%	NA	NA	4.2 4.5	1015 collected surface soil sample (0-0.5') 96-6DSRI 9-05-96 0826 Begin drilling at 8:11 1.0. HSA, 0827 Hit rock @ 4.5 ft. can't pull to 9' incl. 0837 at 5' HSA - pulling bit. 0841 TD Hole = 5.2' BES. Insert 7.2' of 6" dia. PVC Sch 40, Monohex, flush-threaded casing. 0928 pump 1 batch grout (3-916 bags cement, 21 gal H2O, 14.5 lb bentonite) 0932 check for plumbness.
	3	CLAY, reddish brown (5YR 4/3) mottled with black (5YR 2.5/1) speckles, damp, very stiff consistency, low plasticity (CL) (Residuum)	S = oppm	NA	NA	1005	
	4	Limestone, pale yellowish brown (10YR 6/6), moderately weathered, very strong, coarse crystals of calcite in vugs, mottled gray (N6)		NA	NA	1008	Limestone at 4.5 ft. Auger refusal at 4.7 ft 1010

# HTW DRILLING LOG

HOLE NO.  
96-6D

PROJECT  
94-800-4-020-01 USSRFI

INSPECTOR  
S. Bailey

SHEET 2  
OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	5	<p>CRACK</p> <p>LIMESTONE, pale yellowish brown (10YR 6/2) with dark yellowish orange (10YR 6/6) shale partings and weathered fractures, mottled with medium gray (N5), algal appearance to mottling, trace fossiliferous, crinoid stems, limestone is medium to thin bedded, even to wavy bedding. Fractures <del>have to be</del> occurring on shale partings. Extremely weathered limestone fragments, argillaceous, moderately strong to very weak, moderately to extremely weathered.</p> <p style="text-align: center;">[SPRING HILL LIMESTONE]</p>				<p>1127</p> <p>Run</p> <p>1</p> <p>9.2</p> <p>9.8</p>	<p>9-9-96</p> <p>1127 began coring at 4.5 ft bgs, Mobile B-57, NQ2 core barrel Jay Jashyn, Rick Low</p> <p>1206 end run at 14.8 ft.</p>
	9	<p>Limestone, dark yellowish orange (10YR 6/6), moderately strong to very weak, moderately weathered to extremely weathered, mottled with medium gray (N5) and light gray (N7), trace fossiliferous, crinoids, fusilirids, even to wavy bedded, medium bedded, shale partings occurring at fractures, fractures contain extremely weathered limestone fragments, argillaceous, sparry calcite with microcrystalline matrix, dendrites on weathered surface.</p> <p style="text-align: center;">[SPRING HILL LIMESTONE]</p>			<p>Fractures</p> <p>Fractured</p>		
	10						
	11						
	12						
	13						
	14						

# HTW DRILLING LOG

HOLE NO. 96-6D

PROJECT 94-800-4-020-01 USSFRFI

INSPECTOR SUZANNE BAILEY

SHEET 3 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	14	LIMESTONE, very pale orange (10YR 8/2), moderately weathered, moderately strong, fossiliferous, bryozoans (fenestrated),			Fractures	9.2 9.8	
	15	changing to medium gray (10YR 5/6) (NS) [SPRING HILL LIMESTONE]				1200 1343	end Run 1 at 14.9 ft logs
	16	SHALE, medium gray (NS), moderately weathered, very weak, fossiliferous, laminated to massive bedding, bryozoans, pelecypods, arcnoid fragments, calcareous. [HICKORY CREEK SHALE]			Fractures	Run 2 5.1 5.1	
	17	LIMESTONE, medium gray (NS) argillaceous, moderately strong, fresh, highly fossiliferous, bryozoans, brachiopods, arcnoid stems, thick bedding, mottled with medium dark gray (N4) patches of algae in origin					
	18	[MERRIAM LIMESTONE]					
	19	SHALE, medium dark gray (N4), moderately weathered, very weak, no fossils apparent, platy bedding			Machine Breaks		
	20	[BONNER SPRINGS SHALE]				1405	end Run 2 at 20.0 ft Recovered water used in coring
	21						Bottom of Hole @ 20.5' After REMAINING 9/10/96 9/10/96
	22						1540 BEGIN REAMING 96-6D 4 1/2" TRI-COVER ROLLER BIT
							1557 END REAMING TO 20.5' LOGS
							1620 BEGIN ADDING FILTER PACK
							1615 FILTER PACK @ 6.6' LOGS
							1617 BEGIN SURGING
	23						1627 FILTER PACK @ 6.8' END SURGING

# HTW DRILLING LOG

HOLE NO.  
96-6D

PROJECT  
94-800-4-020-01 USSRFI

INSPECTOR  
*Steve R. Hoffman*

SHEET 4  
OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
							<p>USED 2.75 10x16 BAGS NORTHERN GRAVEL (C. FILTER PACK)</p> <p>1630 ADD BENTONITE CHIPS (H<sub>2</sub>O IN BURLING)</p> <p>1633 TOP BENTONITE @ 2.3' bgs</p> <p>USED 1 5/16 246 ENVIRO PLUG</p> <p>1635 PUMPING OUT MUD TUB.</p> <p>1655 BAIL H<sub>2</sub>O FROM 96-6D</p> <p>CASING USED:</p> <p>0.10' END CAP ATTACHED USING STAINLESS STEEL SCREWS.</p> <p>10.00' 2" PVC 0.010" SLOTTED SCREEN</p> <p>12.55' 2" PVC RISER</p> <p>1907 MEASURE WL. WL 21.90 TO 22.57'</p>
		<p>NOT TO SCALE</p>					