

OFFICE USE ONLY

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TEST HOLE REPORT

LAYNE Western, a Div. of
LAYNE Christensen
Wichita, Kansas

Contract Name: Wichita ASR	Test Hole No. RRW3 MN1
	Date: August 30, 2006
	Driller: Randy Crowl

Location of Test Hole:	Elevation of Test Hole:
	Static Water Level:
Page 1 of 3	Measured Hours After Completion

From	To	Description of Strata
0	5	brown, gray silty sandy clay, low to medium plastic
5	10	brown sandy silty clay, medium plastic
10	15	orange, gray silty sand, fine to coarse with gravel, clay lens
15	20	orange, gray silty sand, fine to coarse with gravel, clay lens
20	25	orange, olive sandy silty clay, medium plastic, sand lens
25	30	orange, olive sandy silty clay, medium plastic, sand lens
30	35	orange, olive sandy silty clay, medium plastic, sand lens
35	40	orange, olive sandy silty clay, medium plastic, sand lens
40	45	orange silty clayey sand, fine to coarse with gravel, clay lens
45	50	orange silty clayey sand, fine to coarse with gravel, clay lens
50	55	orange, olive silty clayey sand, fine to coarse with gravel
55	60	orange silty clayey sand, fine to coarse with gravel, clay lens
60	65	orange, olive silty sand, fine to coarse with gravel, clay lens
65	70	orange silty clayey sand, fine to coarse with gravel, clay lens
70	75	orange, olive silty sand, fine to coarse with gravel, clay lens
75	80	orange silty sand, fine to coarse with gravel, slight clay
80	85	orange, olive silty sand, fine to coarse with gravel, clay lens
85	90	orange, olive silty sand, fine to coarse with gravel, clay lens
90	95	olive silty sand, fine to coarse with gravel, clay lens

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Page 2 of 3	Measured Hours After Completion

From	To	Description of Strata
95	100	olive silty sand, fine to coarse with gravel
100	105	olive silty sand, fine to coarse with gravel, slight clay
105	110	olive silty sand, fine to coarse with gravel, slight clay
110	115	olive silty sand, fine to coarse with gravel, slight clay
115	120	olive silty sand, fine to coarse with gravel, slight clay
120	125	olive silty clayey sand, fine to coarse with gravel, medium plastic
125	130	olive silty clayey sand, fine to coarse with gravel, medium plastic
130	135	olive silty clayey sand, fine to coarse with gravel, medium plastic
135	140	olive silty clayey sand, fine to coarse with gravel, medium plastic
140	145	olive, gray silty sand, fine to coarse with gravel, clay lens
145	150	olive, gray silty sand, fine to coarse with gravel, clay lens
150	155	olive, gray silty sand, fine to coarse with gravel, clay lens
155	160	olive, gray silty sand, fine to coarse with gravel, clay lens
160	165	olive, gray sandy silty clay, medium plastic, sand lens
165	170	olive, gray sandy silty clay, medium plastic, sand lens
170	175	olive, gray sandy silty clay, medium plastic, sand lens
175	180	olive, gray sandy silty clay, medium plastic, sand lens
180	185	olive, gray sandy silty clay, medium plastic, sand lens
185	190	olive, gray red sandy silty clay, medium plastic

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Page 3 of 3	Measured Hours After Completion

From	To	Description of Strata
190	195	olive gray red sandy silty clay, medium plastic
195	200	olive gray red sandy silty clay, medium plastic
200	205	olive, red silty sand, fine to coarse with gravel, clay lens
205	210	olive, red silty sand, fine to coarse with gravel, clay lens
210	215	olive, red silty sand, fine to coarse with gravel, clay lens
215	220	olive, red silty sand, fine to coarse with gravel, clay lens
220	225	olive, gray silty sand, fine to coarse with gravel, clay lens
225	230	olive, gray silty sand, fine to coarse with gravel, slight clay
230	235	olive silty sand, fine to coarse with gravel
235	240	olive silty sand, fine to coarse with gravel, slight clay
240	245	olive silty sand, fine to coarse with gravel, slight clay
245	250	olive silty sand, fine to coarse with gravel, slight clay
250	255	olive, gray weathered shale to shale
255	260	shale



K A N S A S

RODERICK L. BREMBY, SECRETARY

DEPARTMENT OF HEALTH AND ENVIRONMENT

KATHLEEN SEBELIUS, GOVERNOR

August 17, 2006

Burns McDonnell
Patrick Higgins
9400 Ward Parkway
Kansas City, MO 64114-3319

Re: Waiver request for flush mount monitoring well for **City of Wichita ASR Project**.
Located in the NE 1/4 of the SE 1/4 of the SE 1/4 of the SE 1/4 of Section 23,
Township 23 South, Range 3 West, Reno County.

Dear Mr. Higgins:

In accordance with Kansas Administrative Regulations (**K.A.R.**) **28-30-9**, appealing regulations as stated in Article 30, your request for an exception to **K.A.R. 28-30-6(b)(1) and (e)** for authorization of **1** geotechnical wells to be constructed less than 12 inches above the **finished ground level** and less than 20 feet of grout if ground **water encountered less than 20' below the surface**, at the above-mentioned site is hereby granted subject to the following stipulations:

1. Monitoring wells included in this request will be grouted from a maximum of two feet below a ground surface to within one foot above the screened section.
2. The wellhead will be encased in an approved water resistant/proof manhole. The manhole will be encased in cement, which is to be domed or sloped to allow drainage away from the manhole, (refer to the attached diagram page 2).

DIVISION OF ENVIRONMENT

Bureau of Water

CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE 420, TOPEKA, KS 66612-1367

Voice 785-296-5500

Fax 785-296-0086

<http://www.kdhe.state.ks.us>

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August 17, 2006
Page two

3. The casing of the monitoring well will be sealed with an approved water- tight lock able monitoring well caps (refer to the attached diagram).
4. A copy of this KDHE letter, approving your request for waiver of **K.A.R. 28-30-6(e)**, will be sent to KDHE attached to the water well record (WWC-5 Form) of the first well drilled under the granted waiver.
5. Upon completion of the project the wells covered by the waiver shall be plugged in accordance with **K.A.R. 28-30-7 (d)**.

The decision to grant this waiver is based almost entirely on the data provided in your request. This waiver is to cover only the 1 wells mentioned and reportedly will be drilled by **Layne**. Kansas Water Well Contractor License **Number 102**. This waiver will become null and void if any of the information submitted in the request is found to be false or if the wells are not constructed in strict conformity to Kansas rules and regulations and the above mentioned, stipulations. Please contact Don Taylor, (785) 296-5522, if you have any questions or concerns pertaining to this matter.

Sincerely,



Don Taylor
Environmental Technician
Bureau of Water
Geology Section

DT: jf

cc: Cochran/Harper 1
South Central District Office

Wichita ASR

Site RRW3 Date Drilled August 30, 2006
 Boring RRW3MN1 Driller Randy Crowl
 Company Layne Christensen Company

