Results of Aquifer Test Analysis

for the

Headwaters GCD

Monitoring Well No. 13

for

Headwaters Groundwater Conservation District

125 Lehmann Dr., Suite 100

Kerrville, TX 78028

WRGS Project No. 072-001-09

April 23, 2010

Wet Rock Groundwater Services, L.L.C.

Groundwater Specialists

TBPG Firm No: 50038

P.O. Box 163144

Austin, Texas 78716

Ph: 512-773-3226 Fax: 512-879-6809

www.wetrockgs.com

The seal appearing on this document was authorized on April 23, 2010 by:

Kaveh Khorzad, P.G.
License No. 1126

Wet Rock Groundwater Services, LLC
TBPG Firm Registration No. 50038

(This Page Left Blank Intentionally)

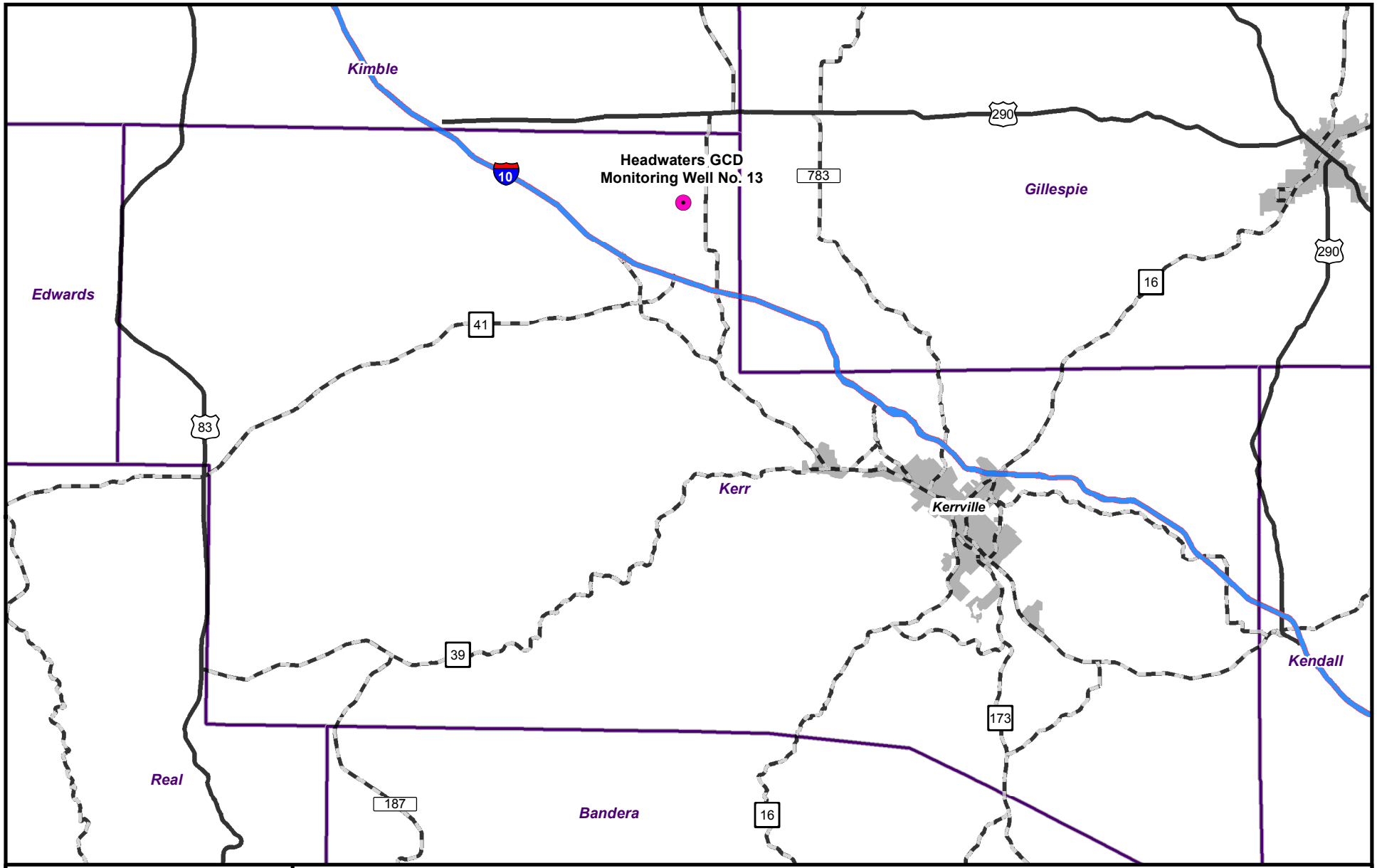
Wet Rock Groundwater Services, L.L.C.
Groundwater Specialists
TBPG Firm No: 50038
P.O. Box 163144
Austin, Texas 78716
Ph: 512-773-3226 Fax: 512-879-6809
www.wetrockgs.com

Headwaters Groundwater Conservation District
Monitoring Well No. 13
Trinity Aquifer

Contents

Attachment 1

Well Location Map



0 5 10 Miles

Headwaters GCD Monitoring Well No. 13 Location Map

DRAWN BY: CAM DATE: 4/10

REVISED BY: DATE:

PROJECTION: UTM NAD 83 Zone 14

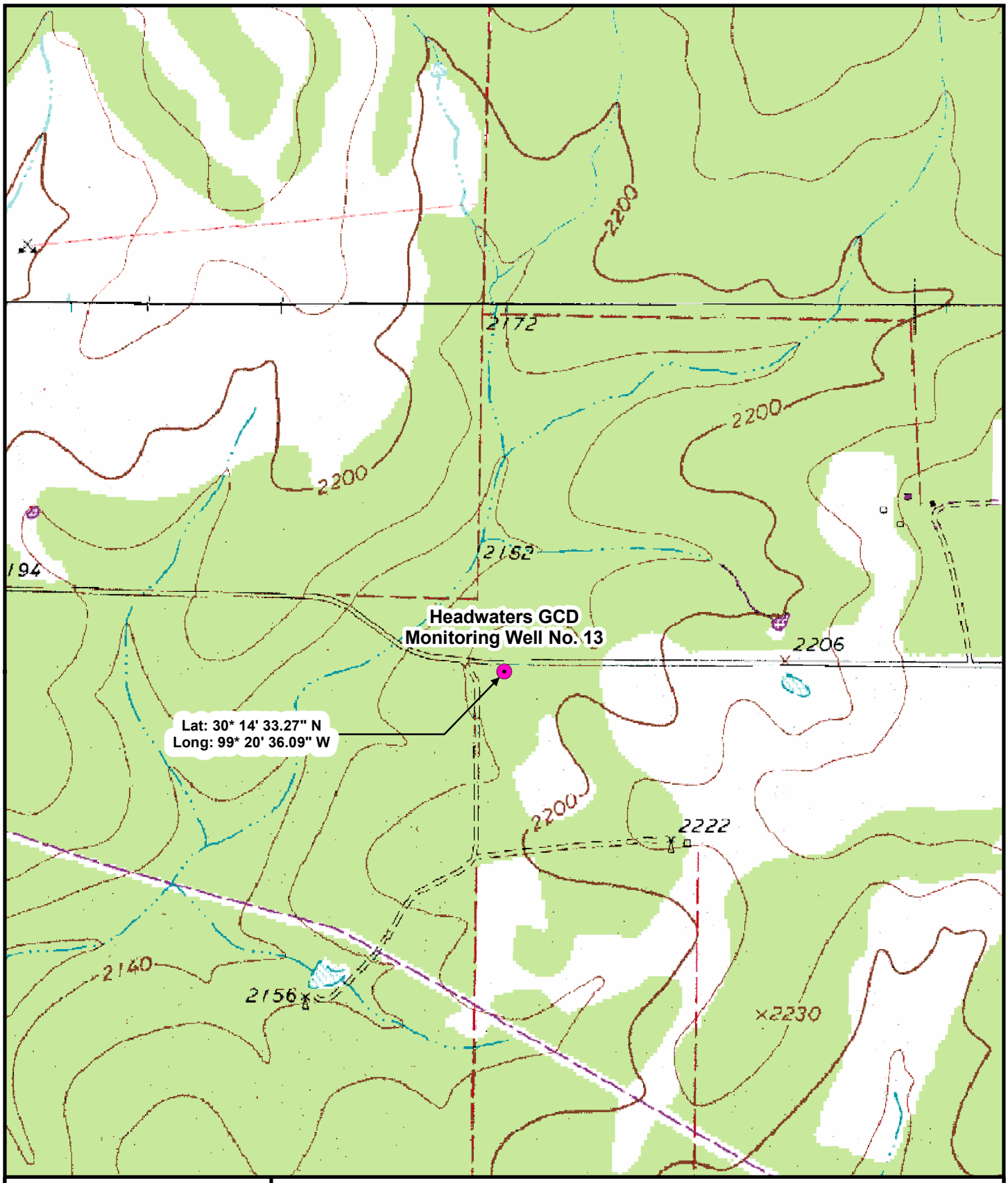
Headwaters GCD

Kerr County, Texas

Wet Rock Groundwater Services, L.L.C.
Groundwater Specialists
TBPG Firm No: 50038
P.O. Box 163144 Austin, Texas 78716
PH: 512-773-3226 FAX: 512-879-6809
www.wetrockgs.com

Attachment 2

U.S. Geological Survey Topographic Map



0 500 1,000 Feet

Headwaters GCD Monitoring Well No. 13 Topo Map

DRAWN BY: CAM DATE: 4/10

REVISED BY: DATE:

PROJECTION: UTM NAD 83 Zone 14

Headwaters GCD

Monitoring Well No. 13

Kerr County, Texas

Wet Rock Groundwater Services, L.L.C.
Groundwater Specialists
TBPG Firm No: 50038
P.O. Box 163144 Austin, Texas 78716
PH: 512-773-3226 FAX: 512-879-6809
www.wetrockgs.com

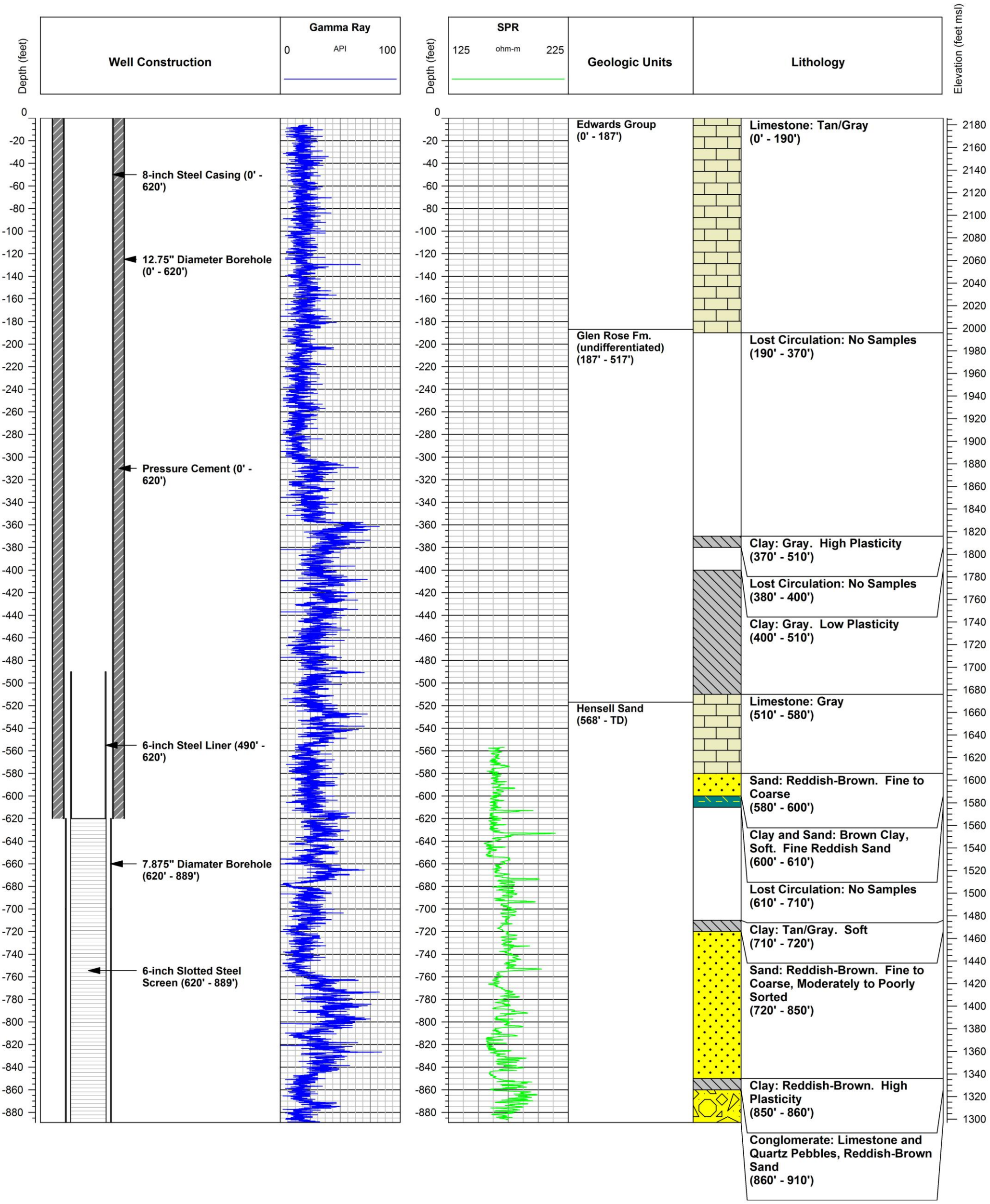
Attachment 3

Log Plot: Monitoring Well No. 13

Wet Rock Groundwater Services, LLC
Groundwater Specialists
P.O. Box 163144 Austin, TX 78716
Ph: 512.799.5875 Fax: 512.879.6809
www.wetrockgs.com

Headwaters GCD Monitoring Well No. 13

Client:	**Headwaters Groundwater Conservation District**	Location:	**Kerr County, TX**
Date Started:	**11-17-2009**	Elevation (Ground Surface):	**2186 ft**
Date Completed:	**1-26-2010**	Total Depth:	**889 ft**
Drilled By:	**Edmunds Drilling**	Latitude:	**30.24257**
Drilling Type:	**Air Rotary**	Longitude:	**-99.34336**



Attachment 4

State of Texas Well Report

Attention Owner: Confidentiality Privilege Notice on reverse side of owner's copy.

Texas Department of Licensing and Regulation

Water Well Driller/Pump Installer Section
P.O. Box 12157 Austin, Texas 78711 (512)463-7880 FAX (512)463-8616
Toll free (800)803-9202
Email address: water.well@license.state.tx.us Web address: www.license.state.tx.us

This form must be completed and filed with the department and owner within 60 days upon completion of the well.

WELL REPORT

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name: HGCD | Address: 125 LEHMANN STE 2 | City: KERRVILLE | State: TX | Zip: 78029

2) WELL LOCATION

Well # or # of wells drilled: MONITOR #B 1864 | County: KERR | Physical Address: LOWER RESURRATION RD | City: KERR CO.

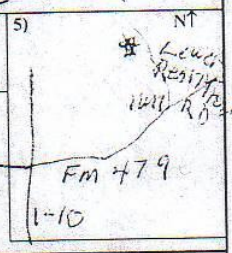
Lat. 30 . 01 - 33 . 2 | Long. -99 . 28 - 36 . 2 | Grid # 58-54-1

3) Type of Work

☑ New Well ☐ Reconditioning ☐ Replacement ☐ Deepening

4) Proposed Use (check) ☑ Monitor ☐ Environmental Soil Boring ☐ Domestic ☐ Extraction ☐ Industrial ☐ Irrigation ☐ Injection ☐ Closed-Loop Geothermal ☐ De-watering ☐ Testwell ☐ Rig Supply ☐ Stock ☐ Public Supply – If Public Supply, were plans approved? ☑ Yes ☐ No

5)



6) Drilling Date

Started 11 / 18 / 09

Completed 1 / 20 / 10

Diameter of Hole

Dia.(in)	From (ft)	To (ft)
12 1/4	Surface	620
7 7/8	620	960

7) Drilling Method (check)

☐ Driven ☑ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Hollow Stem Auger ☐ Reverse Circulation ☐ Other

From (ft)	To (ft)	Description and color of formation material
0	60	LIMESTONE (CHALK)
60	320	LIMESTONE
320	360	GREY SHALE - LIMESTONE
360	600	GREY SAND
600	960	RED - TAN SAND
		LOG TO 804

(Use reverse side of Well Owner's copy, If necessary)

8) Borehole Completion ☑ Open Hole ☐ Straight Wall ☐ Under-reamed ☑ Gravel Packed ☐ Other

Gravel packed interval from: 614 ft. to: 480 ft. Size: 3/8

Casing, Blank Pipe, and Well Screen Data

Dia. (in.)	New Or Used	Steel, Plastic, etc. Perf., Slotted, etc Screen Mfg., if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
8 5/8	New	Steel	0	614	
6 5/8	New	Steel .250	580	580	
6 5/8	"	"	580	960	Perf. Torch Cut

9) Annular Seal Data: i.e. (from 0 ft to 100 ft #sacks & material 13 cement)

from 0 ft. to 614 ft. #sacks & material 150 sx Cmt

from ____ ft. to ____ ft. #sacks & material ____

from ____ ft. to ____ ft. #sacks & material ____

Method Used TRIMMIE Performed By DRILLER

Distance to septic field or other concentrated contamination N/A ft.

Distance to Property Line N/A ft

Method Verified: ____

13) Plugged ☐ Well plugged within 48 hours

Casing left in well: | Cement/Bentonite placed in well:

From (ft)	To (ft)	From (ft)	To (ft)	# Sacks & Material used

10) Surface Completion (If steel cased, leave blank)

☑ Surface Slab Installed ☑ Surface Sleeve Installed ☐ Pitless Adapter Used ☐ Alternative Procedure Used

14) Type Pump

☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Other ____

Depth to pump bowls, cylinder, jet etc., ____ ft.

11) Water Level

Static level 580 ft. Date: 1 / 20 / 10

Artesian Flow ____ gpm

12) Packers:

Type	Depth	Type	Depth

15) Water Test

Type test ☐ Pump ☐ Bailer ☑ Jetted ☑ Estimated

Yield: 150 gpm with 0 ft. drawdown after 1 hrs.

16) Water Quality

Type of water ____ Depth of Strata: ____ Was a chemical analysis made? ☐ Yes ☐ No

Did you knowingly penetrate a strata which contains undesirable constituents? ☐ Yes ☒ No If yes, Continue:

Check One: ☐ Naturally poor-quality groundwater – type ____ ☐ Hydrocarbons (i.e. gas, oil, etc.) ☐ Hazardous material/waste contamination encountered ☐ Other (describe) ____

☐ *I certify that while drilling, deepening, or otherwise altering the above described well, undesirable water or constituents was encountered and the landowner was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.*

By signing this well report, I certify that I drilled or supervised the drilling of this well and that each and all of the statements herein are true and correct.

Company & Individual's Name: (type or print) EDMONDS DRILLING | Lic. No.: 54753

Address: 155 P.O. BOX | City: KERRVILLE | State: TX | Zip: 78029

Signature: [signature] | Date: 2 / 1 / 10 | Licensed Driller/Pump Installer

Signature: ____ | Apprentice | Apprentice Reg. Number

TDLR FORM 001WWD / 7-08 | TDLR (Original) | Landowner (copy) | Driller/Pump Installer (copy)

Attachment 5

Table 1 - Well Construction Summary
Table 2 - Aquifer Testing Summary
Table 3 - Summary of Aquifer Testing Analyses

Table 1 - Well Construction Summary

Well	Hole Diameter (inches)	From (ft)	To (ft)	Casing Type	Casing Diameter (inches)	From (ft)	To (ft)
Monitoring Well No. 13	12.75	0	620	Steel Casing	8	0	620
	7.875	620	889	SS Blank	6	490	620
				Steel Blank	6	620	889

Table 2 - Aquifer Testing Summary

Well	Static Water Level (ft MSL)	Q (gpm)	Drawdown (ft)	SC (gpm/ft)	Pumping Duration (minutes)	Δ t (°F)	T_{R90} (minutes)
Monitoring Well No. 13	1,628.9	70	21.6	3.24	1,455	0.32	629

Notes: Q = discharge; SC = specific capacity; r = distance from pumping well; Δt = change in temperature; T_{R90} = Time pumping well Recovered 90%

Table 3 - Summary of Aquifer Testing Analyses

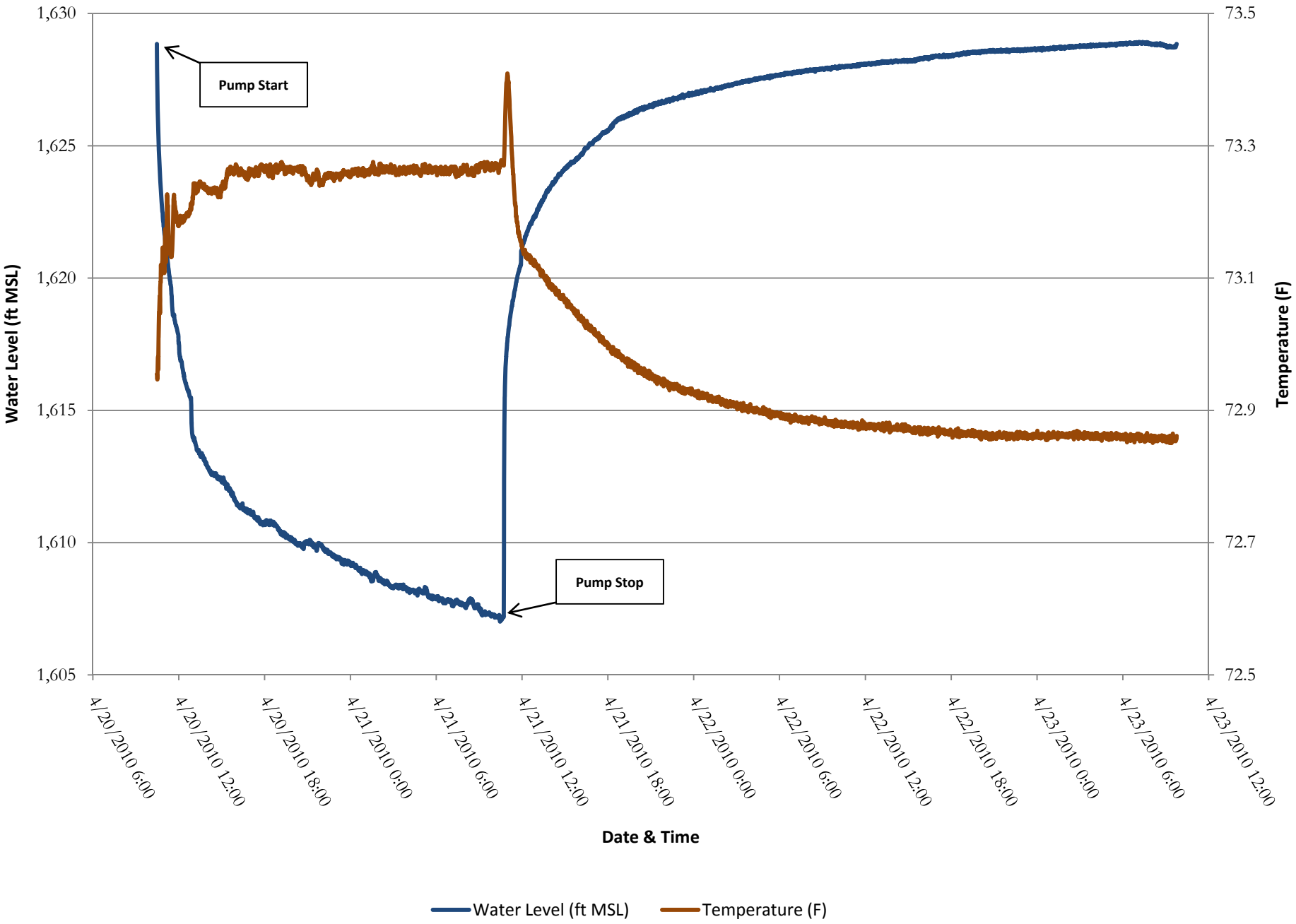
Well	Analysis	b (ft)	T (ft^2/day)	K
Monitoring Well No. 13	**Theis**	320	303	0.95
	Theis Recovery	320	345	1.08
	Average:	320	324	1.01

Notes: b = aquifer thickness; r = distance from pumping well; T = transmissivity; S = storativity; K = hydraulic conductivity

Attachment 6

Aquifer Test Drawdown and Temperature Curves

Headwaters GCD MW No. 13 - 4/20/2010



Attachment 7

Aquifer Test Analyses

Wet Rock Groundwater Services, LLC
Groundwater Specialists
P.O. Box 163144 Austin, Texas 78716
Ph: 512.773.3226 Fax: 512.879.6809
www.wetrockgs.com

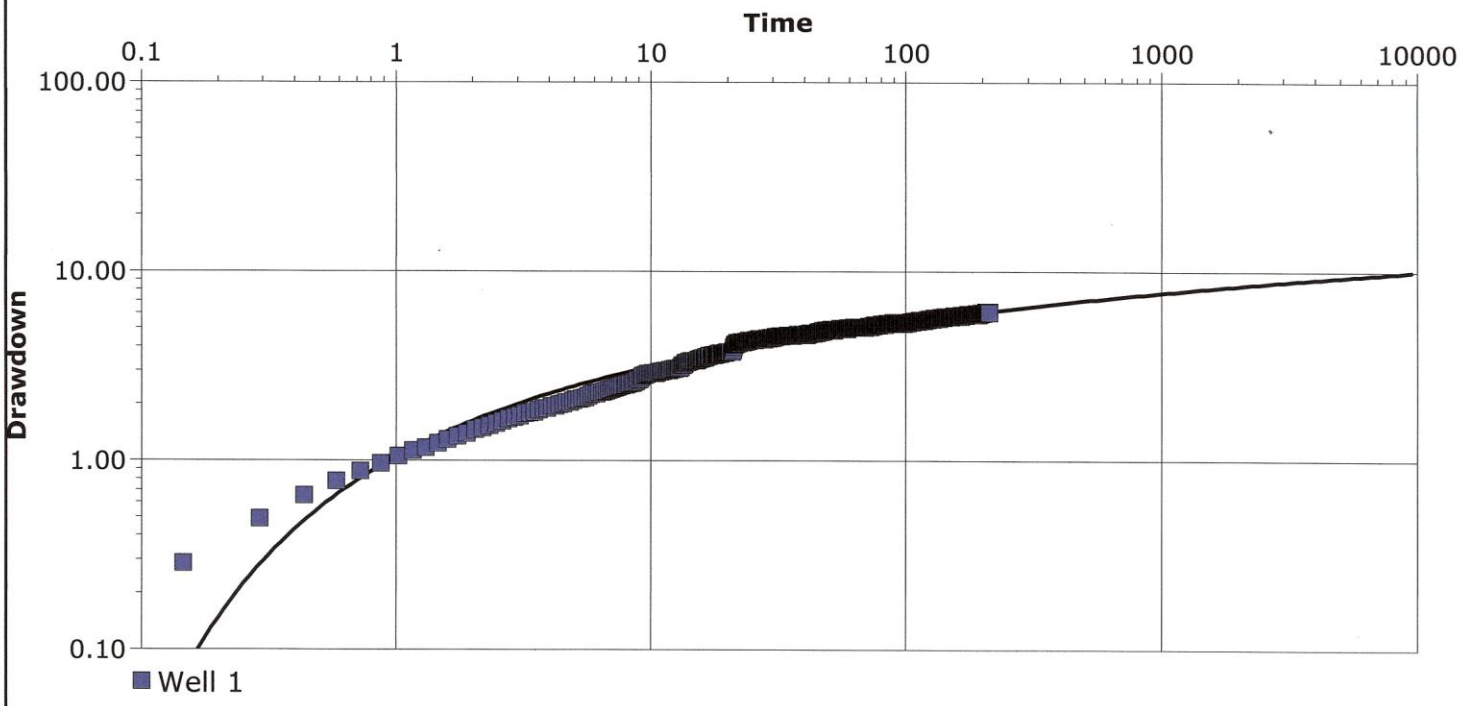
Pumping Test Analysis Report

Project: 0.3333

Number: 072-001-09

Client: Headwaters GCD

Location: Kerr County, Texas	Pumping Test: MW No. 13	Pumping Well: Well 1
Test Conducted by: Cassidy Miller		Test Date: 4/20/2010
Analysis Performed by: Cassidy Miller	Theis	Analysis Date: 4/23/2010
Aquifer Thickness:	Discharge: variable, average rate 70.064 [U.S. gal/min]	



Calculation after Theis

Observation Well	Transmissivity [ft²/d]	Storage coefficient	Radial Distance to PW [ft]	
Well 1	3.03×10^2			

Wet Rock Groundwater Services, LLC
Groundwater Specialists
P.O. Box 163144 Austin, Texas 78716
Ph: 512.773.3226 Fax: 512.879.6809
www.wetrockgs.com

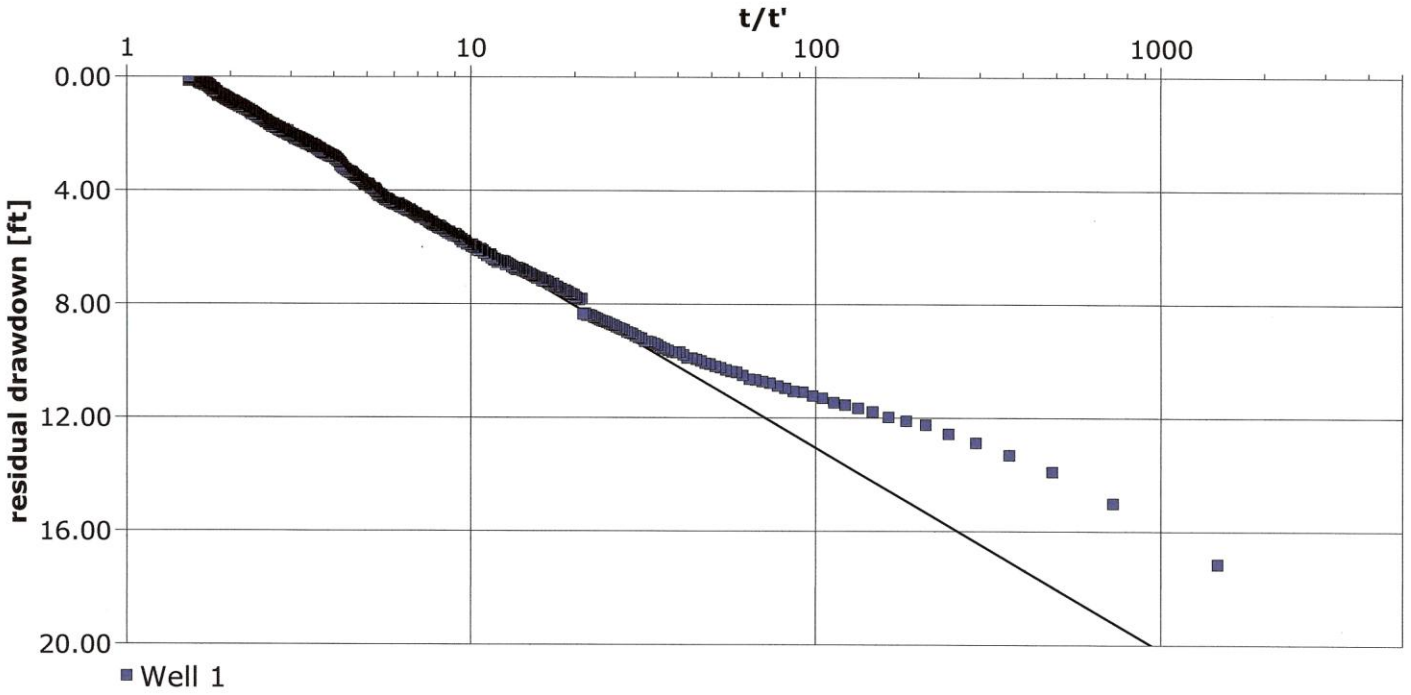
Pumping Test Analysis Report

Project: 0.3333

Number: 072-001-09

Client: Headwaters GCD

Location: Kerr County, Texas	Pumping Test: MW No. 13	Pumping Well: Well 1
Test Conducted by: Cassidy Miller		Test Date: 4/20/2010
Analysis Performed by: Cassidy Miller	Theis Recovery	Analysis Date: 4/23/2010
Aquifer Thickness:	Discharge: variable, average rate 70.064 [U.S. gal/min]	



Calculation after Theis & Jacob

Observation Well	Transmissivity [ft²/d]	Radial Distance to PW [ft]	
Well 1	3.45×10^2		

Attachment 8

Aquifer Test Data

HGCD MW No. 13 Pump Test Summary (4-20-2010)

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	Temp (F)	Water Level (ft bgs)	Water Level (ft MSL)	Drawdown (ft)	Pump Rate (gpm)	Specific Capacity (gpm/ft)	pH/Cond.	Comments
4/20/2010 10:28	0		72.95	557.15	1,628.85	0.00				Pump Start
4/20/2010 10:29	1		72.95	558.16	1,627.84	1.01	75	74.26	7.27/484	
4/20/2010 10:30	2		72.95	558.90	1,627.10	1.74				
4/20/2010 10:31	3		72.96	559.48	1,626.52	2.33				
4/20/2010 10:32	4		72.97	559.91	1,626.09	2.76				
4/20/2010 10:33	5		72.98	560.27	1,625.73	3.12	72	23.07	7.02/438	
4/20/2010 10:34	6		72.96	560.56	1,625.44	3.41				
4/20/2010 10:35	7		73.01	560.89	1,625.11	3.74				
4/20/2010 10:36	8		73.02	561.15	1,624.85	3.99				
4/20/2010 10:37	9		73.05	561.29	1,624.71	4.14				
4/20/2010 10:38	10		73.05	561.53	1,624.47	4.38	75	17.14		
4/20/2010 10:39	11		73.06	561.74	1,624.26	4.59				
4/20/2010 10:40	12		73.07	561.91	1,624.09	4.75				
4/20/2010 10:41	13		73.05	562.08	1,623.92	4.93				
4/20/2010 10:42	14		73.08	562.31	1,623.69	5.16				
4/20/2010 10:43	15		73.09	562.43	1,623.57	5.27	72	13.65	6.83/440	
4/20/2010 10:48	20		73.11	563.14	1,622.86	5.98	72	12.03		
4/20/2010 10:53	25		73.13	563.71	1,622.29	6.56	75	11.43		
4/20/2010 10:58	30		73.13	564.19	1,621.81	7.03	72	10.24	6.62/440	
4/20/2010 11:13	45		73.21	565.36	1,620.64	8.21			6.78/440	
4/20/2010 11:28	60		73.14	566.44	1,619.56	9.29			6.74/440	
4/20/2010 11:43	75		73.21	567.60	1,618.40	10.45			6.76/440	
4/20/2010 11:58	90		73.18	568.16	1,617.84	11.00			6.76/440	
4/20/2010 12:13	105		73.19	569.26	1,616.74	12.10			6.72/430	
4/20/2010 12:28	120		73.19	569.96	1,616.04	12.81			6.79/440	
4/20/2010 13:28	180		73.24	572.67	1,613.33	15.52				
4/20/2010 14:28	240		73.23	573.40	1,612.60	16.24				
4/20/2010 15:28	300		73.26	573.92	1,612.08	16.77				
4/20/2010 16:28	360		73.26	574.64	1,611.36	17.49				
4/20/2010 17:28	420		73.26	575.14	1,610.86	17.99				
4/20/2010 18:28	480		73.26	575.25	1,610.75	18.10				

Note: bgs = below ground surface Column Pipe Diameter = 2-inch Horsepower = 25 HP
MSL = Mean Sea Level Pump Setting = 735 feet bgs

HGCD MW No. 13 Pump Test Summary (4-20-2010)

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	Temp (F)	Water Level (ft bgs)	Water Level (ft MSL)	Drawdown (ft)	Pump Rate (gpm)	Specific Capacity (gpm/ft)	pH/Cond.	Comments
4/20/2010 19:28	540		73.26	575.81	1,610.19	18.66				
4/20/2010 20:28	600		73.27	576.11	1,609.89	18.95				
4/20/2010 21:28	660		73.25	576.08	1,609.92	18.93				
4/20/2010 22:28	720		73.26	576.38	1,609.62	19.22				
4/20/2010 23:28	780		73.26	576.65	1,609.35	19.50				
4/21/2010 0:28	840		73.26	576.93	1,609.07	19.78				
4/21/2010 1:28	900		73.26	577.41	1,608.59	20.26				
4/21/2010 2:28	960		73.26	577.49	1,608.51	20.34				
4/21/2010 3:28	1,020		73.27	577.67	1,608.33	20.52				
4/21/2010 4:28	1,080		73.26	577.85	1,608.15	20.70				
4/21/2010 5:28	1,140		73.27	578.07	1,607.93	20.92				
4/21/2010 6:28	1,200		73.26	578.25	1,607.75	21.10				
4/21/2010 7:28	1,260		73.26	578.27	1,607.73	21.11				
4/21/2010 8:28	1,320		73.27	578.28	1,607.72	21.12				
4/21/2010 9:28	1,380		73.27	578.70	1,607.30	21.55				
4/21/2010 10:28	1,440		73.27	578.93	1,607.07	21.77				
4/21/2010 10:43	1,455	0	73.27	578.79	1,607.21	21.64	70	3.24		Pump Stop
4/21/2010 10:44	1,456	1	73.28	574.29	1,611.71	17.13				
4/21/2010 10:45	1,457	2	73.29	572.17	1,613.83	15.02				
4/21/2010 10:46	1,458	3	73.30	571.05	1,614.95	13.90				
4/21/2010 10:47	1,459	4	73.31	570.46	1,615.54	13.31				
4/21/2010 10:48	1,460	5	73.33	570.03	1,615.97	12.87				
4/21/2010 10:49	1,461	6	73.34	569.71	1,616.29	12.56				
4/21/2010 10:50	1,462	7	73.36	569.39	1,616.61	12.24				
4/21/2010 10:51	1,463	8	73.37	569.27	1,616.73	12.11				
4/21/2010 10:52	1,464	9	73.38	569.13	1,616.87	11.97				
4/21/2010 10:53	1,465	10	73.39	568.95	1,617.05	11.80				
4/21/2010 10:54	1,466	11	73.40	568.81	1,617.19	11.65				
4/21/2010 10:55	1,467	12	73.40	568.71	1,617.29	11.56				
4/21/2010 10:56	1,468	13	73.40	568.62	1,617.38	11.47				
4/21/2010 10:57	1,469	14	73.40	568.46	1,617.54	11.31				

Note: bgs = below ground surface Column Pipe Diameter = 2-inch Horsepower = 25 HP
MSL = Mean Sea Level Pump Setting = 735 feet bgs

HGCD MW No. 13 Pump Test Summary (4-20-2010)

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	Temp (F)	Water Level (ft bgs)	Water Level (ft MSL)	Drawdown (ft)	Pump Rate (gpm)	Specific Capacity (gpm/ft)	pH/Cond.	Comments
4/21/2010 10:58	1,470	15	73.41	568.39	1,617.61	11.24				
4/21/2010 11:03	1,475	20	73.40	567.93	1,618.07	10.78				
4/21/2010 11:08	1,480	25	73.36	567.57	1,618.43	10.41				
4/21/2010 11:13	1,485	30	73.32	567.27	1,618.73	10.12				
4/21/2010 11:28	1,500	45	73.22	566.49	1,619.51	9.34				
4/21/2010 11:43	1,515	60	73.17	565.84	1,620.16	8.68				
4/21/2010 11:58	1,530	75	73.15	564.93	1,621.07	7.78				
4/21/2010 12:13	1,545	90	73.14	564.47	1,621.53	7.32				
4/21/2010 12:28	1,560	105	73.13	564.08	1,621.92	6.93				
4/21/2010 12:43	1,575	120	73.13	563.84	1,622.16	6.69				
4/21/2010 13:43	1,635	180	73.10	562.70	1,623.30	5.55				
4/21/2010 14:43	1,695	240	73.07	562.05	1,623.95	4.89				
4/21/2010 15:43	1,755	300	73.05	561.54	1,624.46	4.39				
4/21/2010 16:43	1,815	360	73.02	560.91	1,625.09	3.75				
4/21/2010 17:43	1,875	420	73.00	560.49	1,625.51	3.34				
4/21/2010 18:43	1,935	480	72.98	560.00	1,626.00	2.85				
4/21/2010 19:43	1,995	540	72.97	559.75	1,626.25	2.59				
4/21/2010 20:43	2,055	600	72.96	559.51	1,626.49	2.36				
4/21/2010 21:43	2,115	660	72.94	559.39	1,626.61	2.23				
4/21/2010 22:43	2,175	720	72.93	559.23	1,626.77	2.08				
4/21/2010 23:43	2,235	780	72.93	559.02	1,626.98	1.87				
4/22/2010 0:43	2,295	840	72.92	558.91	1,627.09	1.76				
4/22/2010 1:43	2,355	900	72.91	558.80	1,627.20	1.65				
4/22/2010 2:43	2,415	960	72.91	558.67	1,627.33	1.52				
4/22/2010 3:43	2,475	1,020	72.91	558.57	1,627.43	1.41				
4/22/2010 4:43	2,535	1,080	72.90	558.44	1,627.56	1.28				
4/22/2010 5:43	2,595	1,140	72.89	558.33	1,627.67	1.18				
4/22/2010 6:43	2,655	1,200	72.89	558.24	1,627.76	1.09				
4/22/2010 7:43	2,715	1,260	72.89	558.20	1,627.80	1.04				
4/22/2010 8:43	2,775	1,320	72.89	558.14	1,627.86	0.98				
4/22/2010 9:43	2,835	1,380	72.88	558.02	1,627.98	0.87				

Note: bgs = below ground surface Column Pipe Diameter = 2-inch Horsepower = 25 HP
MSL = Mean Sea Level Pump Setting = 735 feet bgs

HGCD MW No. 13 Pump Test Summary (4-20-2010)

Date and Time	Time Since Pump Start (min)	Time Since Pump Stop (min)	Temp (F)	Water Level (ft bgs)	Water Level (ft MSL)	Drawdown (ft)	Pump Rate (gpm)	Specific Capacity (gpm/ft)	pH/Cond.	Comments
4/22/2010 10:43	2,895	1,440	72.88	558.01	1,627.99	0.86				
4/22/2010 11:43	2,955	1,500	72.88	557.95	1,628.05	0.79				
4/22/2010 12:43	3,015	1,560	72.87	557.88	1,628.12	0.73				
4/22/2010 13:43	3,075	1,620	72.87	557.81	1,628.19	0.66				
4/22/2010 14:43	3,135	1,680	72.87	557.77	1,628.23	0.62				
4/22/2010 15:43	3,195	1,740	72.87	557.76	1,628.24	0.60				
4/22/2010 16:43	3,255	1,800	72.87	557.62	1,628.38	0.46				
4/22/2010 17:43	3,315	1,860	72.87	557.60	1,628.40	0.44				
4/22/2010 18:43	3,375	1,920	72.87	557.56	1,628.44	0.41				
4/22/2010 19:43	3,435	1,980	72.86	557.47	1,628.53	0.31				
4/22/2010 20:43	3,495	2,040	72.86	557.38	1,628.62	0.23				
4/22/2010 21:43	3,555	2,100	72.86	557.39	1,628.61	0.24				
4/22/2010 22:43	3,615	2,160	72.86	557.39	1,628.61	0.23				
4/22/2010 23:43	3,675	2,220	72.86	557.33	1,628.67	0.18				
4/23/2010 0:43	3,735	2,280	72.86	557.32	1,628.68	0.16				
4/23/2010 1:43	3,795	2,340	72.86	557.28	1,628.72	0.13				
4/23/2010 2:43	3,855	2,400	72.86	557.24	1,628.76	0.09				
4/23/2010 3:43	3,915	2,460	72.86	557.22	1,628.78	0.07				
4/23/2010 4:43	3,975	2,520	72.86	557.18	1,628.82	0.02				
4/23/2010 5:43	4,035	2,580	72.86	557.13	1,628.87	-0.02				
4/23/2010 6:43	4,095	2,640	72.86	557.15	1,628.85	0.00				
4/23/2010 7:43	4,155	2,700	72.86	557.13	1,628.87	-0.02				
4/23/2010 8:43	4,215	2,760	72.86	557.21	1,628.79	0.05				
4/23/2010 9:43	4,275	2,820	72.86	557.21	1,628.79	0.05				

Note: bgs = below ground surface Column Pipe Diameter = 2-inch Horsepower = 25 HP
MSL = Mean Sea Level Pump Setting = 735 feet bgs

Attachment 9

Water Quality Report

Lab Report

Upper Guadalupe River Authority

Date: *23-Apr-10*

125 Lehmann Dr. Suite 100, Kerrville, TX 78028
(830) 896-5445
TCEQ State Lab ID: 48145

CLIENT: Headwaters GCD
125 Lehmann
Kerrville , TX. 78028
gene@hgcd.org
Ph: 8308964110

Lab Order: 1004163

Project: Monitor Well #13
System ID No: Private

Lab ID: 1004163-001
Collection Date/Time: 4/21/2010 10:25:00 AM
Sample Site: Monitor Well No. 13
Source: GROUNDWATER
Sampled By: Roy Kauffman
Sample Type:
Free Cl2 Residual: N/A mg/L

Analyses	Result	LOQ	Qual	Units	DF	Date Analyzed
BACTERIA ANALYSIS		**Method : SM9223 B (N)**				
E. coli	Not found	1		P/A	1	4/21/2010 4:15:00 PM
Total coliforms (N)	Found	1		P/A	1	4/21/2010 4:15:00 PM
CHLORIDE		**Method : EPA300 (N)**				
Chloride	13	0.20		mg/L	1	4/21/2010
CONDUCTIVITY		**Method : M2510 B (N)**				
Conductivity	630	2.0		µmhos/cm	1	4/21/2010
FLUORIDE		**Method : E300 (N)**				
Fluoride	1.3	0.040		mg/L	1	4/21/2010
HARDNESS, TOTAL		**Method : M2340 C (N)**				
Hardness, Total	300	30		mg/L	1	4/21/2010
IRON, SOLUBLE		**Method : H8008**				
Iron	0.15	0.10		mg/L	1	4/21/2010 4:46:36 PM
NITRATE AS NITROGEN		**Method : E300 (N)**				
Nitrogen, Nitrate (As N)	0.30	0.040		mg/L	1	4/21/2010 5:42:00 PM
PH		**Method : M4500-H (N)**				
pH	7.5	1		pH units	1	4/21/2010 1:31:00 PM
SULFATE		**Method : E300 (N)**				
Sulfate	39	0.20		mg/L	1	4/21/2010

Quality Control sample results available upon request.

Suffix : (N) - NELAC Accredited Analysis

Qualifiers: S - Batch matrix spike is outside of acceptance criteria
D - Batch duplicate reproducibility sample is outside of acceptance criteria
Q - Test QC exceeded acceptance criteria

Upper Guadalupe River Authority

Date: *23-Apr-10*

125 Lehmann Dr. Suite 100, Kerrville, TX 78028
(830) 896-5445
TCEQ State Lab ID: 48145

CLIENT:	Headwaters GCD	**Lab Order:**	1004163
	125 Lehmann		
	Kerrville , TX. 78028		
	gene@hgcd.org		
	Ph: 8308964110		
Project:	Monitor Well #13		
System ID No:	Private		

TOTAL DISSOLVED SOLIDS **Method : M2540 C**

Solids, Total Dissolved	410	10	mg/L	1	4/21/2010

Signature:

Michelle L.Z. Carpenter, Ph.D., Lab Manager

Test Methods: Standard Methods for the Examination of Water and Wastewater, 21st edition 2005
EPA Methods for Water and Wastewater

NELAC Accredited by TCEQ – Certificate No: T104704283
Visit: www.ugra.org/geninfo.html for a list of Fields of Accreditation and current NELAC certificate

Confidentiality Statement: This is a confidential report for use by the addressed customer or authorized agent. The results contained in this report relate only to the samples tested. This report may not be reproduced except in full.

Quality Control sample results available upon request.

Suffix : (N) - NELAC Accredited Analysis

Qualifiers: S - Batch matrix spike is outside of acceptance criteria
D - Batch duplicate reproducibility sample is outside of acceptance criteria
Q - Test QC exceeded acceptance criteria

Upper Guadalupe River Authority

Date: *23-Apr-10*

CLIENT: Headwaters GCD
Project: Monitor Well #13
Lab Order: 1004163

CASE NARRATIVE

Sample was received at laboratory for pH analysis after the 15 minutes from collection holding time. (Sample Receipt @ 1:11 PM)