PLEASE REFER TO FILE FOLDER NO. 9

FOR THE CONTINUATION OF THIS WATER RIGHT FILE No. 63-32089

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. _____
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041980
DRILLING PERMIT NO. 890994 - 835987
Water Right or Injection Well No. 63-32089 - 63-32090

2. OWNER:
Name CITY of EAGLE
Address P.O. Box 1520
City EAGLE State ID Zip 83616

3. LOCATION OF WELL by legal description: LEGACY WELL #1
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11 ____ 1/4 SE 1/4 (10 acres) NW 1/4 (160 acres)
Gov't Lot ____ County ADA
Lat: : : Long: : :
Address of Well Site QUARTER CIRCLE D RANCH, WEST OF EAGLE ROAD City EAGLE
(Own or most name of road + Distance to field or LANDMARK)
Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other TEST

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
CEMENT GROUT	0	272	24 gem	PUMPED BOTTOM TO TOP
BENTONITE	360	415	12,000	DRY POUR

Was drive shoe used? ☐Y ☒N Shoe Depth(s): ____
Was drive shoe seal tested? ☐Y ☒N How? ____

8. CASING/LINER: 16" X 12" REDUCER @ 180' TO 181'

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16	+4	180	.375	STEEL	☒	☐	☒	☐
12	18½	282	.375	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe 5'
Packer ☐Y ☒N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
282	352	.030		12	S.S.	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	(Weight) Volume	Placement Method
#8-12 SAND	272	360	24,000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure 6 lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____
FLANGED CAP W/ 1¼" PIPE PLUG

12. WELL TESTS:
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
1300 gpm	149'	135'	4½ hrs

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
24	0	4	TOP SOIL		
	4	7	CLAY		
	7	11	SAND		
	11	28	SAND, RIVER GRAVELS		
	28	60	BRN CLAY		
	60	63	SAND		
	63	72	BRN CLAY		
	72	92	SAND		
	92	94	BRN CLAY		
	94	166	SAND W/BRN CLAY STREAKS		
	166	174	CLAY		
	174	178	SAND		
	178	181	CLAY		
	181	183	SAND, CLAY STREAKS		
	183	257	SAND		
	257	264	CLAY		
	264	274	SAND W/CLAY STREAKS		
	274	353	SAND		
	353	360	BLUE CLAY		
20	360	384	BLUE CLAY		
20	384	387	SAND		
	387	419	BLUE-GRAY CLAY		
	419	444	SAND		
	444	459	BLUE-GRAY CLAY		
	459	493	SAND W/ CLAY LAYERS		
	493	501	BLUE-GRAY CLAY		
	501	505	CEMENTED SAND		
	505	513	BLUE-GRAY CLAY		
			NOTE: BORE HOLE ABANDONMENT FROM 415' TO 513' WITH DRILL CUTTINGS		

Completed Depth 351' (Measurable)
Date: Started 1-24-06 Completed 4-17-06

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name RIVERSIDE INC Firm No. 333
Principal Driller [signature] Date 5-15-06
and
Driller or Operator II ____ Date ____
Operator I [signature] Date 5-15-06

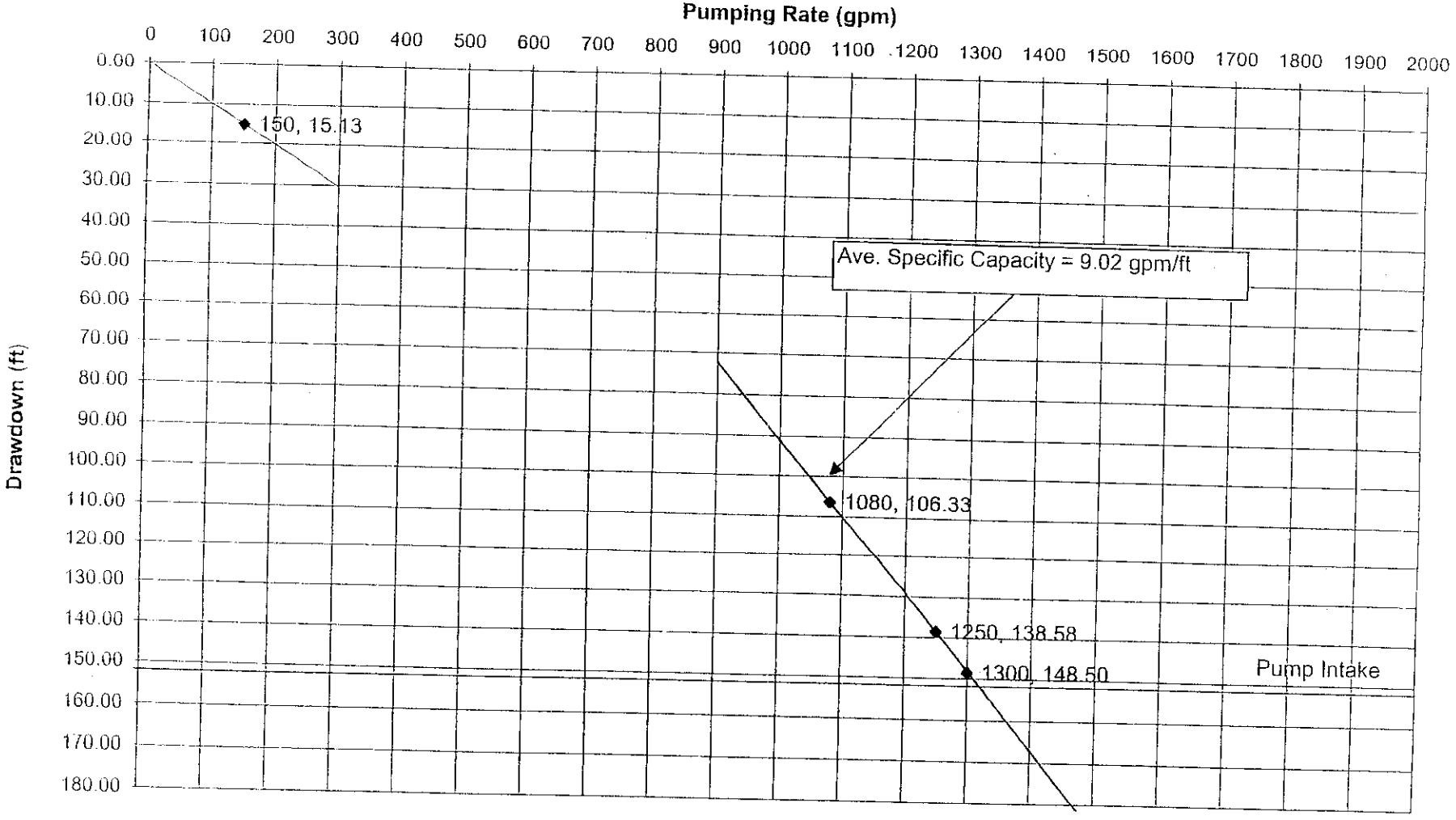
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

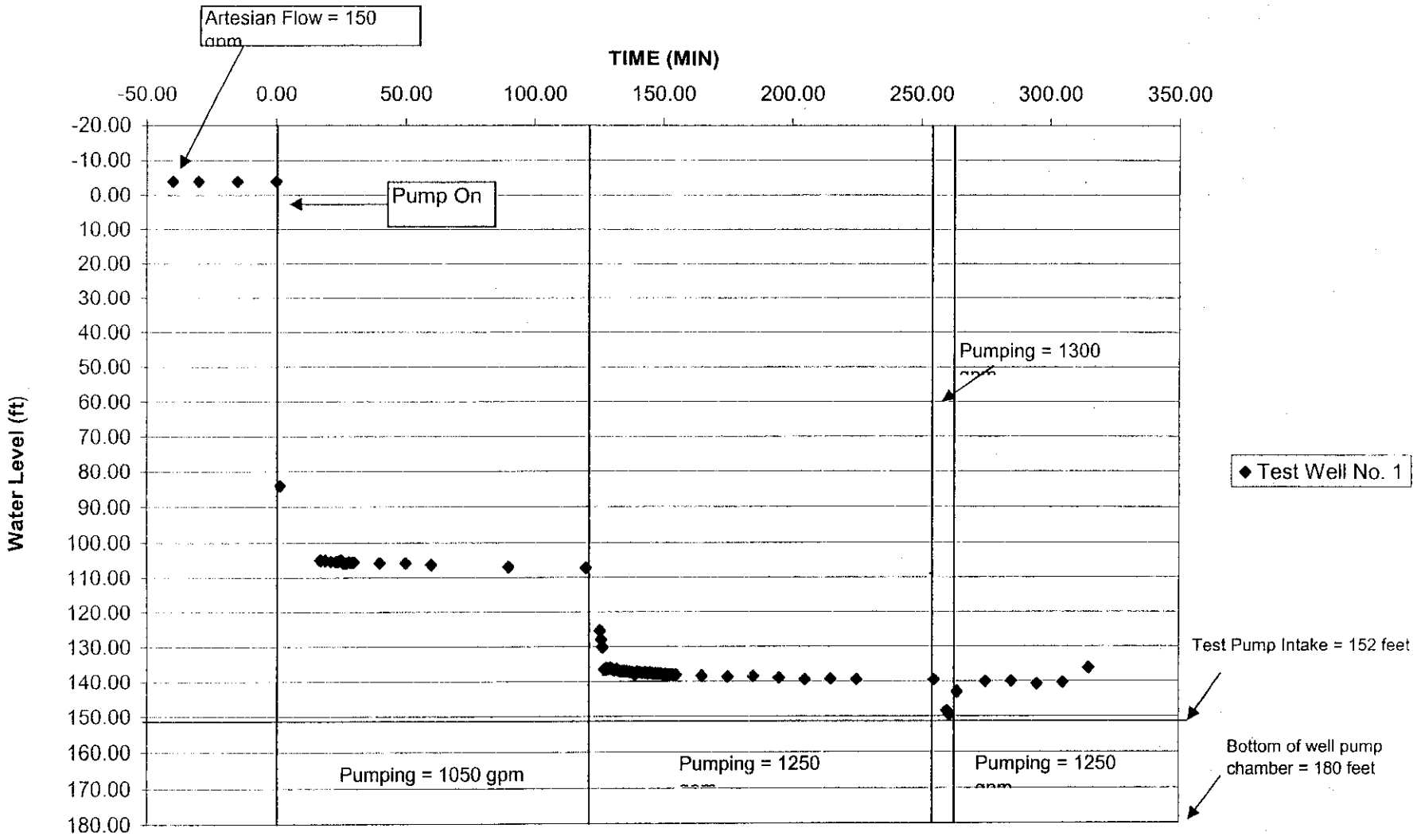
TEST WELL #1

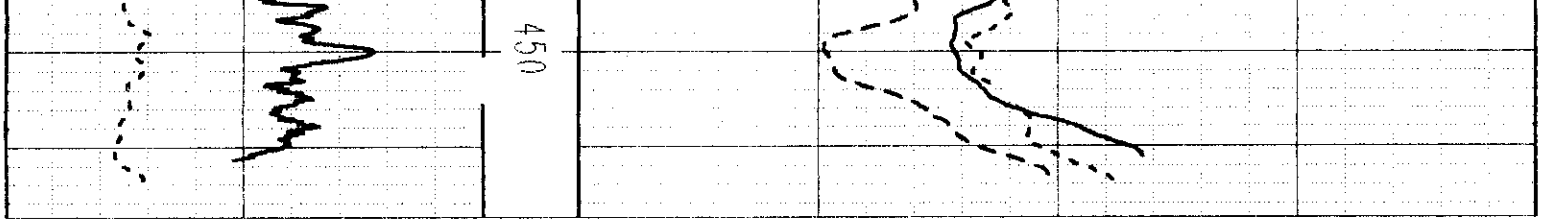
TEST WELL #1

STEP PUMP TEST of TEST WELL No.1 (Legacy)
March 24th 9:15am to 2:30 pm
Specific Capacity



STEP PUMP TEST of TEST WELL No.1 (Legacy)
March 24th 9:15am to 2:30 pm
WATER LEVEL





NATURAL GAMMA
0 API UNITS 150

SPONTANEOUS POTENTIAL
-240 mV -180

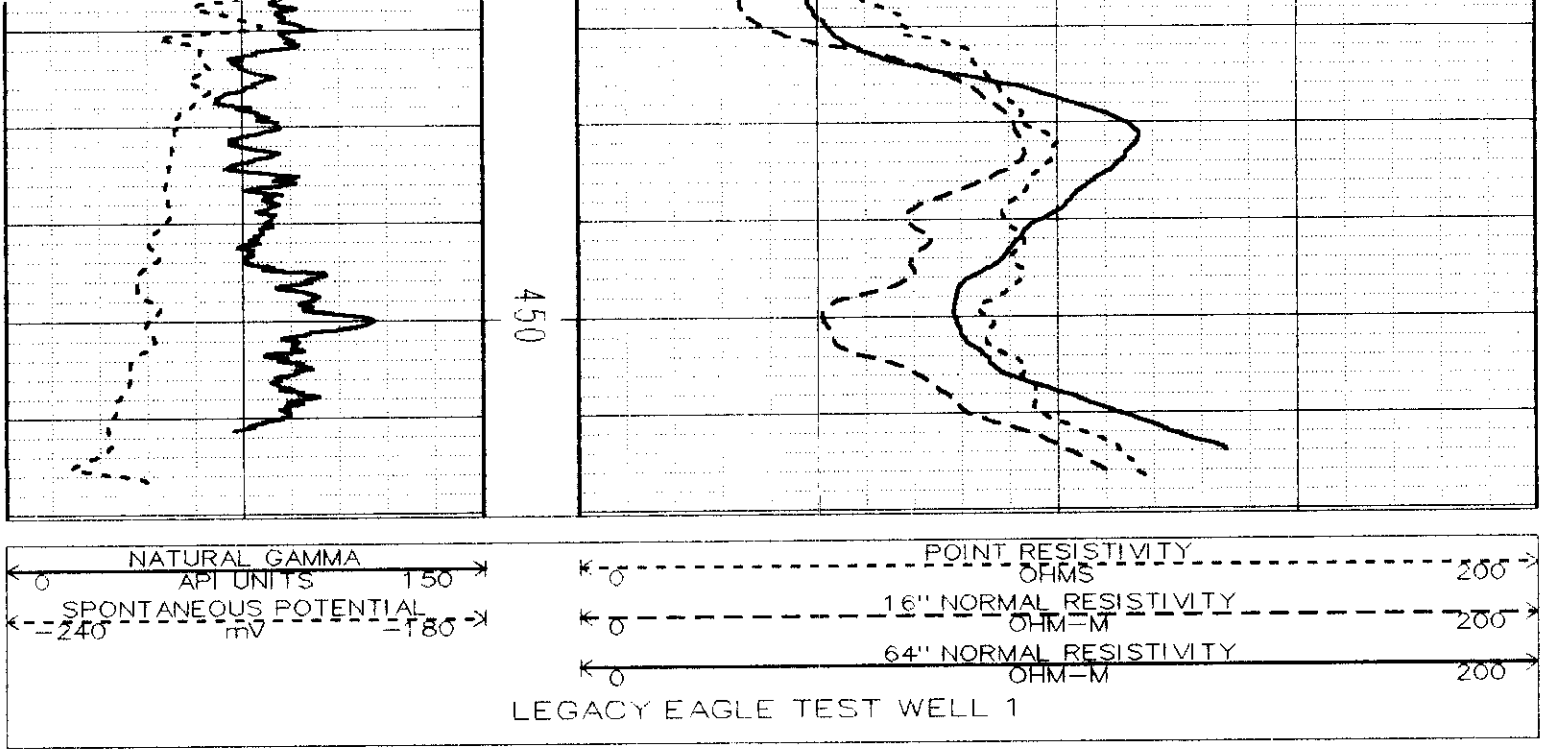
POINT RESISTIVITY
0 OHMS 200

16" NORMAL RESISTIVITY
0 OHM-M 200

64" NORMAL RESISTIVITY
0 OHM-M 200

LEGACY EAGLE TEST WELL 1

COMPANY	RIVERSIDE, INC.	DRILLER T.D.	465'
WELL	LEGACY EAGLE TEST WELL 1	LOG F.R.	464'
AREA	CITY OF EAGLE	LOG T.D.	465'
COUNTY	ADA	ELEVATIONS:	
STATE	IDAHO	G.L. 2520'	T.O.C.



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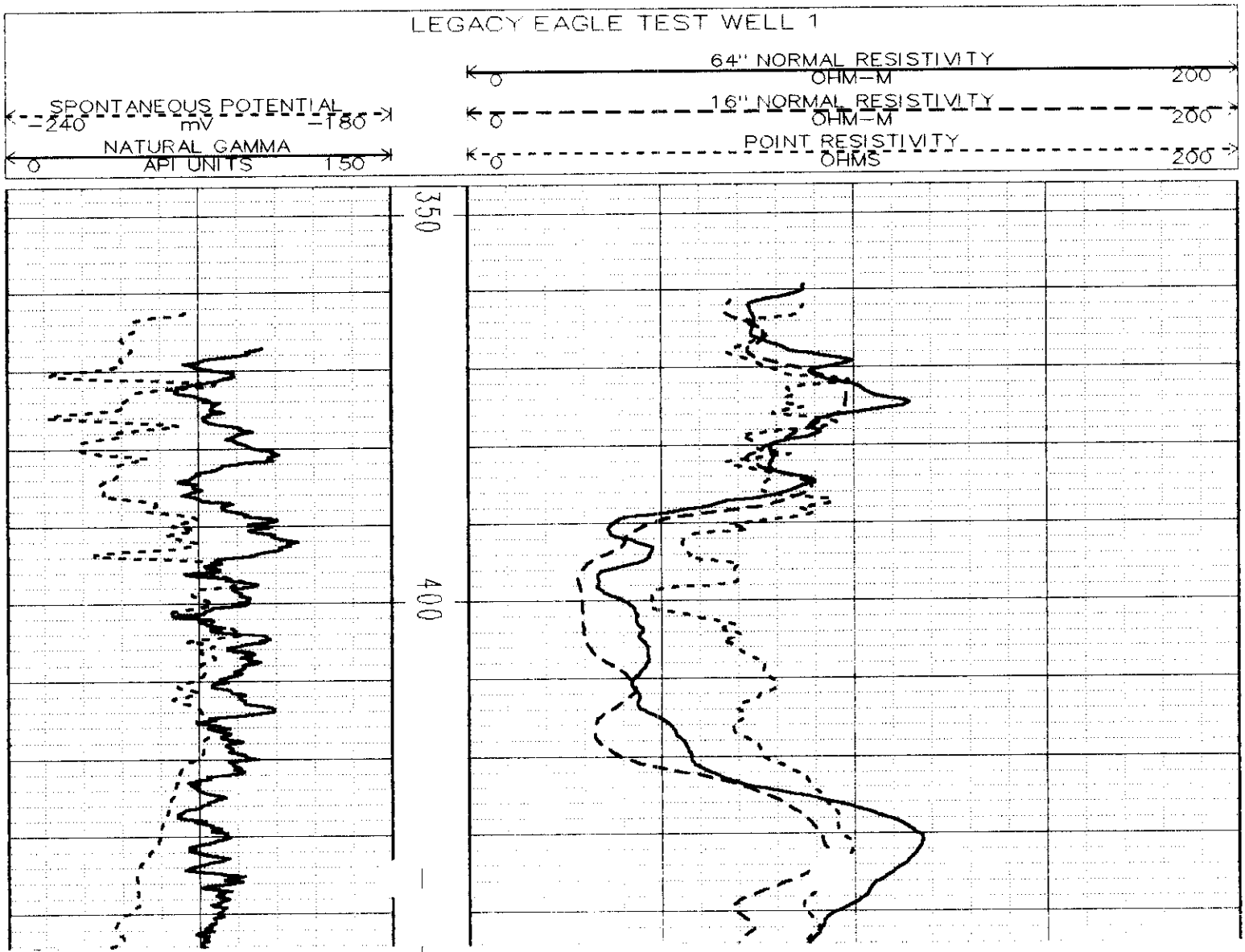
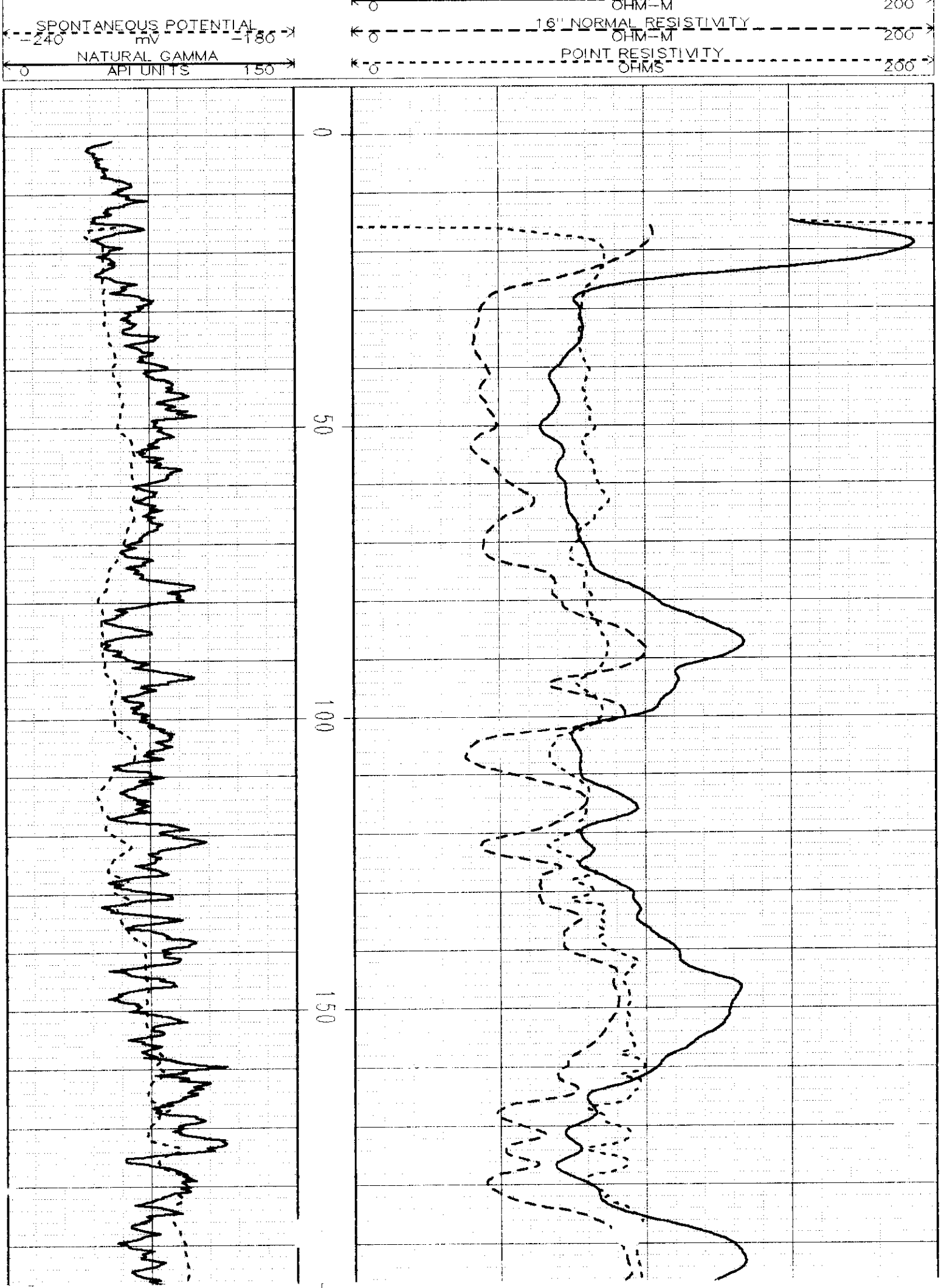


200
250
300
350
400


SPONTANEOUS POTENTIAL
−240 mV −180
NATURAL GAMMA
0 API UNITS 150
0 OHM-M 200
16" NORMAL RESISTIVITY
0 OHM-M 200
POINT RESISTIVITY
0 OHMS 200
0
50
100
150

STRATA DATA INC.

NATURAL GAMMA/SP
64 INCH NORMAL RESISTIVITY
16 INCH NORMAL RESISTIVITY
POINT RESISTIVITY LOG

FILE NO. 2328

COMPANY: RIVERSIDE, INC.

WELL: LEGACY EAGLE TEST WELL 1

FIELD: CITY OF EAGLE

COUNTY: ADA STATE: IDAHO

G.P.S.: 43.70215 N, 116.42629 W

LOCATION: SE NW

SEC: 11 TWP: 4N RGE: 1 W

OTHER LOGS:

NONE

PERMANENT DATUM: GROUND LEVEL

ELEVATION: 2520'est.

LOG MEASURED FROM: GROUND LEVEL

RUN NO.	ONE			
DATE	02/03/06			
DRILLER:	RIVERSIDE, INC.			
BIT SIZE @ DEPTH	20" 8' to 465'			
BIT SIZE @ DEPTH				
CASING SIZE @ DEPTH	32" 8'			
CASING SIZE @ DEPTH				
LOGGER:				
DEPTH	465'			
CASING DEPTH	8'			
BOT LOG INTERVAL	755'			
TOP LOG INTERVAL	0'			
TYPE FLUID IN HOLE	MUD			
Rm @ TEMP	N/A			
SAMPLE SOURCE	N/A			
FLUID LEVEL	FULL			
TIME SINCE CIRC.	N/A			
RECORDED BY:	Oneyear			
WITNESSED BY:	Mr. Duncan			

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	EQUIPMENT PROBE S.N.	EQUIPMENT UPHOLE S.N.	LOGGING DIGINT FEET	LOGGING SPEED FT./MIN	DETECTOR TYPE	SPACING Tx-Rx FEET	SPACING Rx-Rx FEET	SOURCE TYPE	SOURCE SIZE CURIE	LOGGED INTERVAL FROM	LOGGED INTERVAL TO	LOGGED INTERVAL INT. FEET
Gamma	One	ALP	1440	1480	0.2	30	1"X4" Sont	N/A	N/A	N/A	N/A	461'	1'	460'
16"& 64" N	One	GOIRLP	0001	1480	0.2	50	N/A	N/A	N/A	N/A	N/A	465'	15'	450'
S.P.&Pt.Res	One	GOIRLP	0001	1480	0.2	50	N/A	N/A	N/A	N/A	N/A	465'	15'	450'

CALIBRATION FACTOR(S):Downhole and shop calibration.

DIGITAL FILE NAME(S):1.LOG

REMARKS:

MSI Acquire Type 3

Gamma calibrated with 120 API Standard.

LEGACY EAGLE TEST WELL 1

64" NORMAL RESISTIVITY

Analytical Laboratories, Inc.

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Date Report Printed: 4/4/2006 8:40:48
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0608752

Attn: CHRIS DUNCAN
HOLLADAY ENGINEERING CO
32 N MAIN
PO BOX 235
PAYETTE, ID 83661

Collected By: C DUNCAN
Submitted By: B TOMISSER

Source of Sample:
TEST WELL #1 (GROUNDWATER)

Time of Collection: 10:30
Date of Collection: 3/24/2006
Date Received: 3/24/2006
Report Date: 4/4/2006

PWS#:
PWS Name:

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Low	0.01	<0.005	mg/L	0.005	EPA 200.8	3/31/2006	JH
Iron, Fe	UR	0.08	mg/L	0.05	EPA 200.7	3/27/2006	KC
Magnesium, Mg	UR	4.97	mg/L	0.10	EPA 200.7	3/29/2006	KC
Manganese, Mn	UR	<0.05	mg/L	0.05	EPA 200.7	3/27/2006	KC
Nitrate (as N)	10	<0.2	mg/L	0.2	EPA 300.0	3/25/2006	BF
Nitrite (as N)	1.00	<0.01	mg/L	0.01	EPA 353.2	3/25/2006	BF
Fluoride, F	4.0	0.45	mg/L	0.1	EPA 300.0	3/28/2006	WW
Sulfate, SO4	UR	14	mg/L	1	EPA 300.0	3/28/2006	WW

Michael J Moore 4/4/06

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Analytical Laboratories, Inc.

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Date Report Printed: 9/12/2006 10:55:4
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0608753

Attn: CHRIS DUNCAN
HOLLADAY ENGINEERING CO
32 N MAIN
PO BOX 235
PAYETTE, ID 83661

Collected By: C DUNCAN
Submitted By: B TOMISSER

Source of Sample:
TEST WELL #1 (GROUNDWATER)

Time of Collection: 10:30
Date of Collection: 3/24/2006
Date Received: 3/24/2006
Report Date: 9/7/2006

PWS#:
PWS Name:

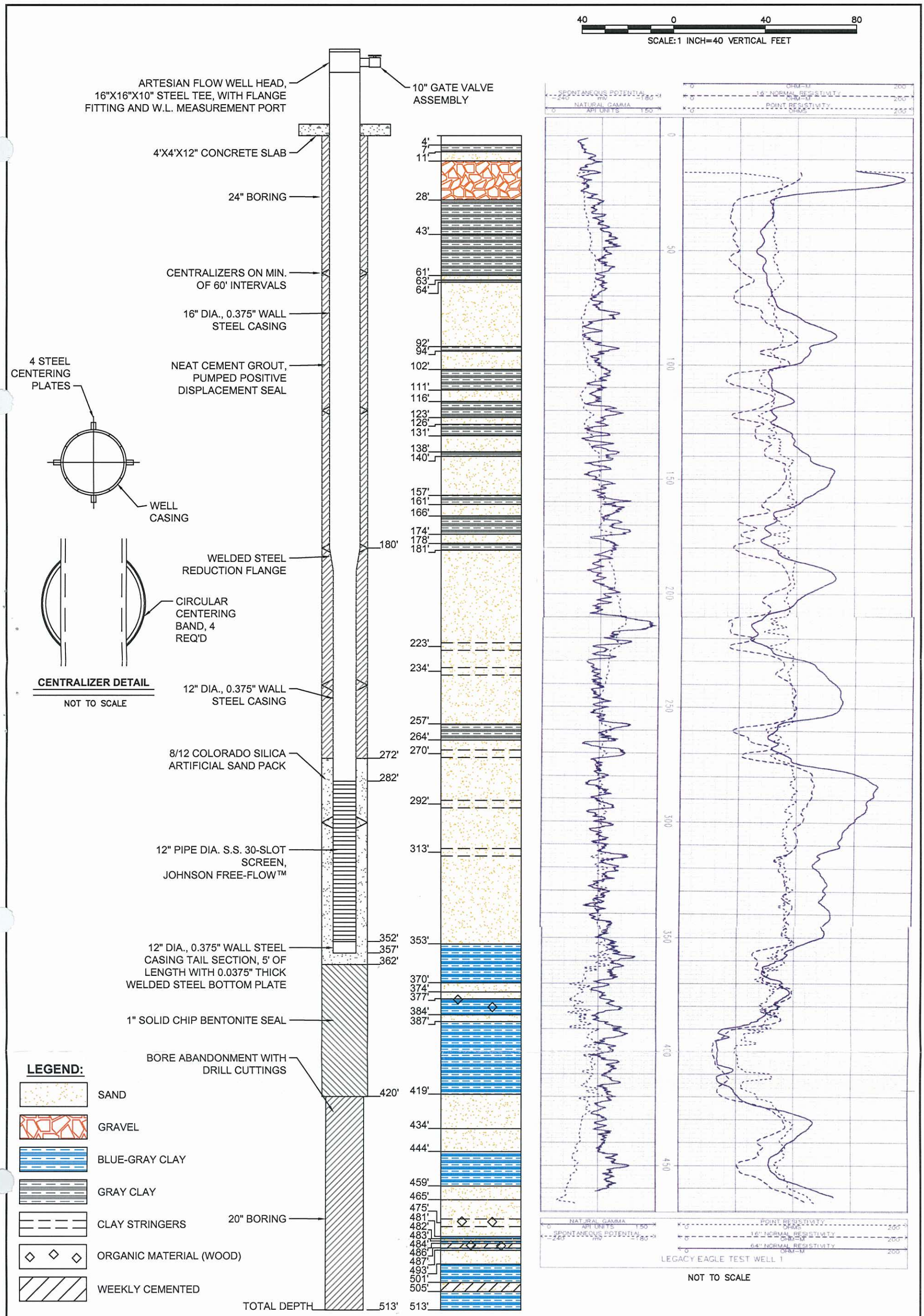
Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Gross Alpha		4.6+/-2.8	pCi/L		EPA 900.0	8/21/2006	IBOL
Gross Alpha testing by Idaho Bureau of Laboratories (IBOL).							
Gross Beta		3.9	pCi/L		EPA 900.0	8/21/2006	IBOL
Gross Beta testing by Idaho Bureau of Laboratories (IBOL).							

Michael Moore 9/13/06

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: **Michael Moore**

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated



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CADD FILE: EG\061204\As-Built\061204_TESTWELL
JOB NO: EG 061204
DATE: 2/10/06
REVISED: 3/13/06
PLOTTED: 8/30/06
DRAWN BY: MGM
CHECKED BY: CHD
SHEET

AS-BUILT 2-17-06
EAGLE TEST WELL NO. 1
CITY OF EAGLE, IDAHO

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 · FAX# (208) 642-2159
EMAIL: hec@holladayengineering.com

Form 238-7
6/02

[redacted] OF WATER RESOURCES

WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0042405
DRILLING PERMIT NO. 828605 - 837870
Water Right or Injection Well No. 63-32039, 63-32090

2. OWNER:
Name CITY OF EAGLE
Address 310 E. STATE ST.
City EAGLE State ID Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well. WELL #2 (EAGLEFIELD)
Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11 1/4 (To nearest) NW 1/4 (40 acres) SE 1/4 (10 acres)
Gov't Lot _____ County ADA
Lat: : : Long: : :
Address of Well Site 50' W OF INTERSECTION OF W TATLOCK AVE + N GOLDEN EAGLE DRIVE City EAGLE
(Give street name(s) and - Distance to Town or Landmark)
USGS Qtr. _____ Blk. R Sub. Name EAGLE FIELD ESTATES

4. USE:
☐ Domestic ☒ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other TEST

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
CEMENT GROUT	0	320	25 yds	PUMPED FROM BOTTOM TO TOP

Was drive shoe used? ☐Y ☒N Shoe Depth(s) _____
Was drive shoe seal tested? ☐Y ☐N How? _____

8. CASING/LINER: 280' 16"X 12" REDUCER.

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16	+5	280	.375	STEEL	☒	☐	☒	☐
12	281	345	.375	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe 5'
Packer ☐Y ☒N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method _____
Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
345	425	.020		12	S.S.	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#6-9 CSST SAND	320	430	30,000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
_____ ft. below ground Artesian pressure 9.1 lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____
FLANGE AND W/ 2-1¼" SIDE PLUGS

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
1125 gpm		45.2'	10 MIN

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
28	0	3	TOP SOIL		
	3	28	RIVER GRAVEL		
	28	48	TAN CLAY		
	48	56	SAND		
	56	63	RUSTY TAN CLAY		
	63	135	SAND W/SM TAN CLAY STREAKS		
	135	183	BRN CLAY W/SAND STREAKS		
	183	189	FINE - MED SAND		
	189	194	TAN CLAY		
	194	315	SAND SM GRAVEL		
	315	332	CLAY		
↓	332	290	SAND FINE - MED W/ BRN CLAY STREAKS		
20	290	297	SAND - FINE		
	297	339	BR RUSTY, GREEN + GRAY CLAY		
	339	436	COARSE SAND, SOME GRAVEL		
	436	444	BRN RUSTY CLAY		

Completed Depth 430' (Measurable)
Date: Started 3-21-06 Completed 5-2-06

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name RIVERSIDE INC Firm No. 333
Principal Driller [signature] Date 5-2-06
and
Driller or Operator II [signature] Date 5-22-06
Operator I _____ Date _____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

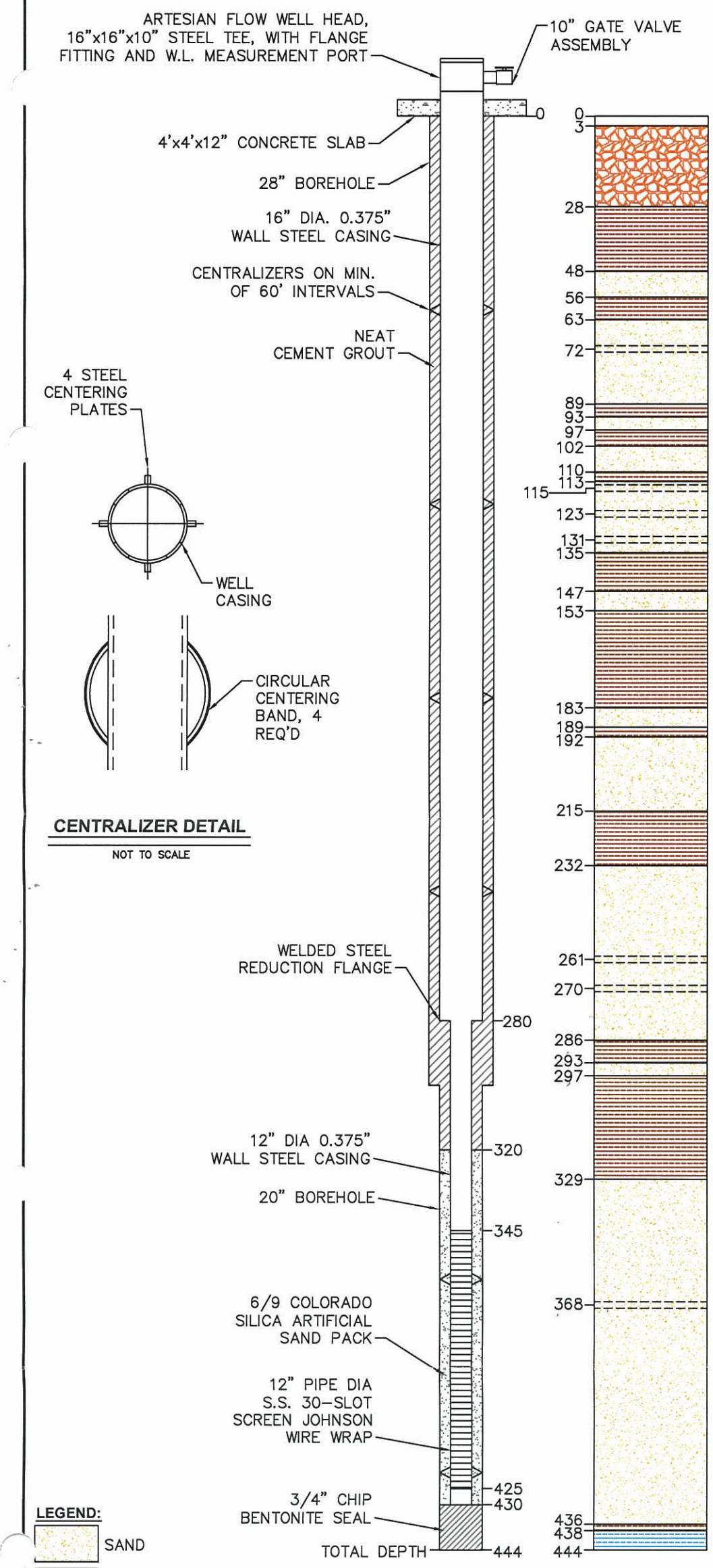
FORWARD WHITE COPY TO WATER RESOURCES

TEST WELL NO. 2

TEST WELL #2

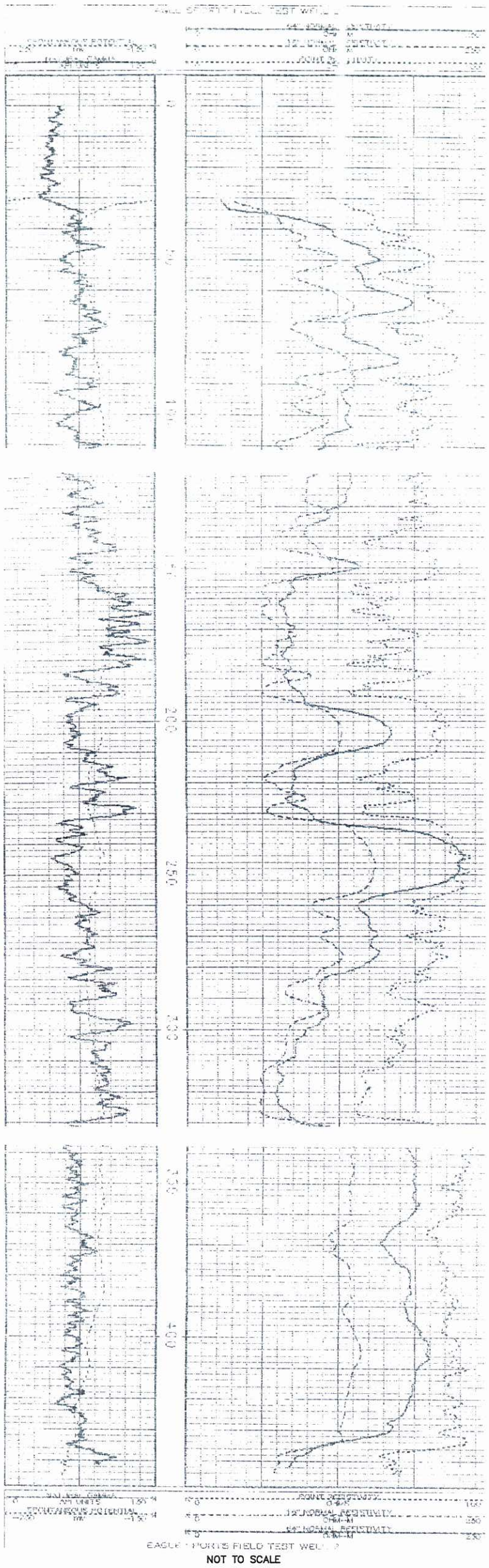
40 0 40 80

SCALE: 1 INCH=40 VERTICAL FEET



CENTRALIZER DETAIL

NOT TO SCALE



LEGEND:

- SAND
- GRAVEL
- BLUE-GRAY CLAY
- BROWN CLAY
- CLAY STRINGERS

NOTE: WELL CONSTRUCTION BY SPF WATER ENGINEERING

AS-BUILT
EAGLE TEST WELL NO. 2
CITY OF EAGLE, IDAHO

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 · FAX# (208) 642-2159
EMAIL: hec@holladayengineering.com

JOB NO. EG 061204
CADD FILE: G:\EAGLE\DWGS\eg061204_asbuilt.dwg
DATE: 11/09/06
REVISED 11/09/06
PLOTTED 11/09/06
DRAWN BY SDM
CHECKED BY CHD
SHEET

SPF Water Engineering, LLC
water resource consultants

April 8, 2006

Peter Harris
Eaglefield, LLC
6951 Duncan Lane
Boise, ID 83714

Subject: Final Design for Eaglefield Well No. 1 (City of Eagle Test Well 4)

Dear Peter:

Drilling of the municipal test well borehole at Eaglefield was completed to approximately 444 feet on April 7, 2006. The borehole is nominal 20-inch diameter and was advanced using the reverse rotary method. The drill cuttings consist primarily of brown sand, tan clay, and brown clay above 438 feet. Blue-gray clay was encountered from 438 to 444 feet.

Geophysical logging was conducted on April 7. Strata Data, Inc. from Casper, Wyoming, was the geophysical contractor. Logs run include natural gamma radiation, spontaneous potential, single point resistivity, 16-inch normal resistivity, and 64-inch normal resistivity.

Drill cuttings and geophysical logs document the presence of a potentially productive sand layer from 330 feet to 433 feet. This sand layer corresponds with the target interval for this well, and we propose completing the well with screens extending from 345 to 425 feet.

The completed well will include 16-inch casing from approximately 5 feet above ground surface to 280 feet, 12-inch casing from 280 feet to 345 feet, 12-inch well screen from 345 feet to 425 feet, and 12-inch tail pipe with plate bottom from 425 feet to 430 feet. A 16-inch by 12-inch welded reducer will be used to connect the 12-inch and 16-inch casing strings. The invert of the 10-inch artesian by-pass line will be approximately 2.5 feet above existing ground surface.

No. 6-9 Colorado Silica Sand filter pack will be installed in the borehole annulus from 320 to 430 feet. Estimated volume is approximately 5 cubic yards.

Bentonite chips will be used as surface seal material. The chips will extend from 320 feet to ground surface. Estimated volume is approximately 34 cubic yards. Prior to installation of casing and screen, the borehole from ground surface to 300 feet will be reamed to 28-inch diameter to facilitate installation of the bentonite surface seal.

We are still discussing well development options with Riverside. Our current thinking is to develop the well initially by bailing, air lifting, or pumping until artesian flow is

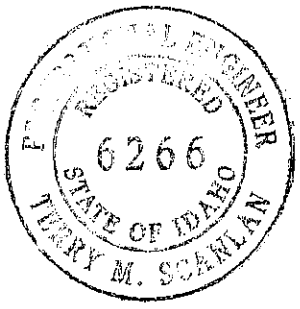
achieved. After the initial artesian flow clears, development will continue by shutting in the well, pressurizing the casing with compressed air, and then releasing pressure to allow artesian flow. This procedure can be repeated until the artesian flow clears. Air pressures should start low, and gradually increase up to 100 psi. The artesian flow rate and shut-in pressure following initial development will allow a preliminary determination of well capacity as soon as possible. Final development will be completed using the test pump.

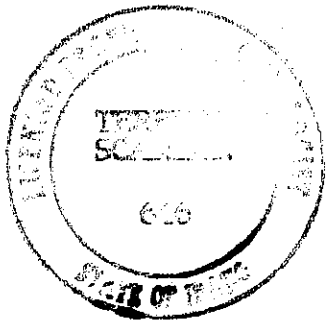
A well design schematic, drill log, and field geophysical logs are enclosed for your records.

Please contact me with any questions.

Sincerely,

Terry M. Scanlan, P.E., P.G.





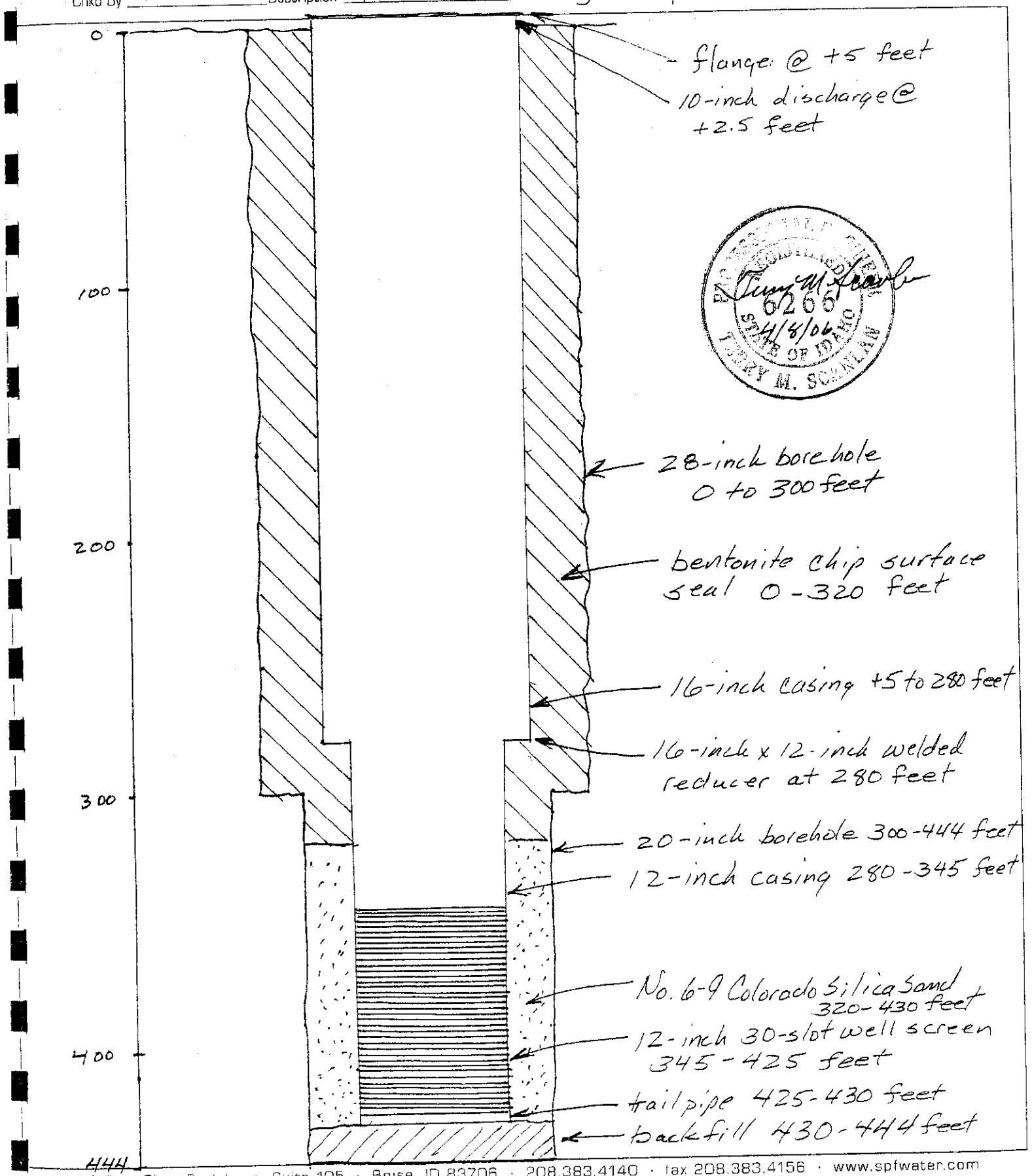
cc: Terry Daugherty – Riverside, Inc.
Rob Whitney – Idaho Department of Water Resources
Chris Duncan – Holladay Engineering

Attachments: Well Schematic
Drill Log
Geophysical Logs

SPF Water Engineering, LLC
water resource consultants

By TS Date 4/4/06 Client Eaglefield Sheet 1 of 1

Chkd By _____ Description Final Well Design - Eagle Well #4 Job No 421.00 10



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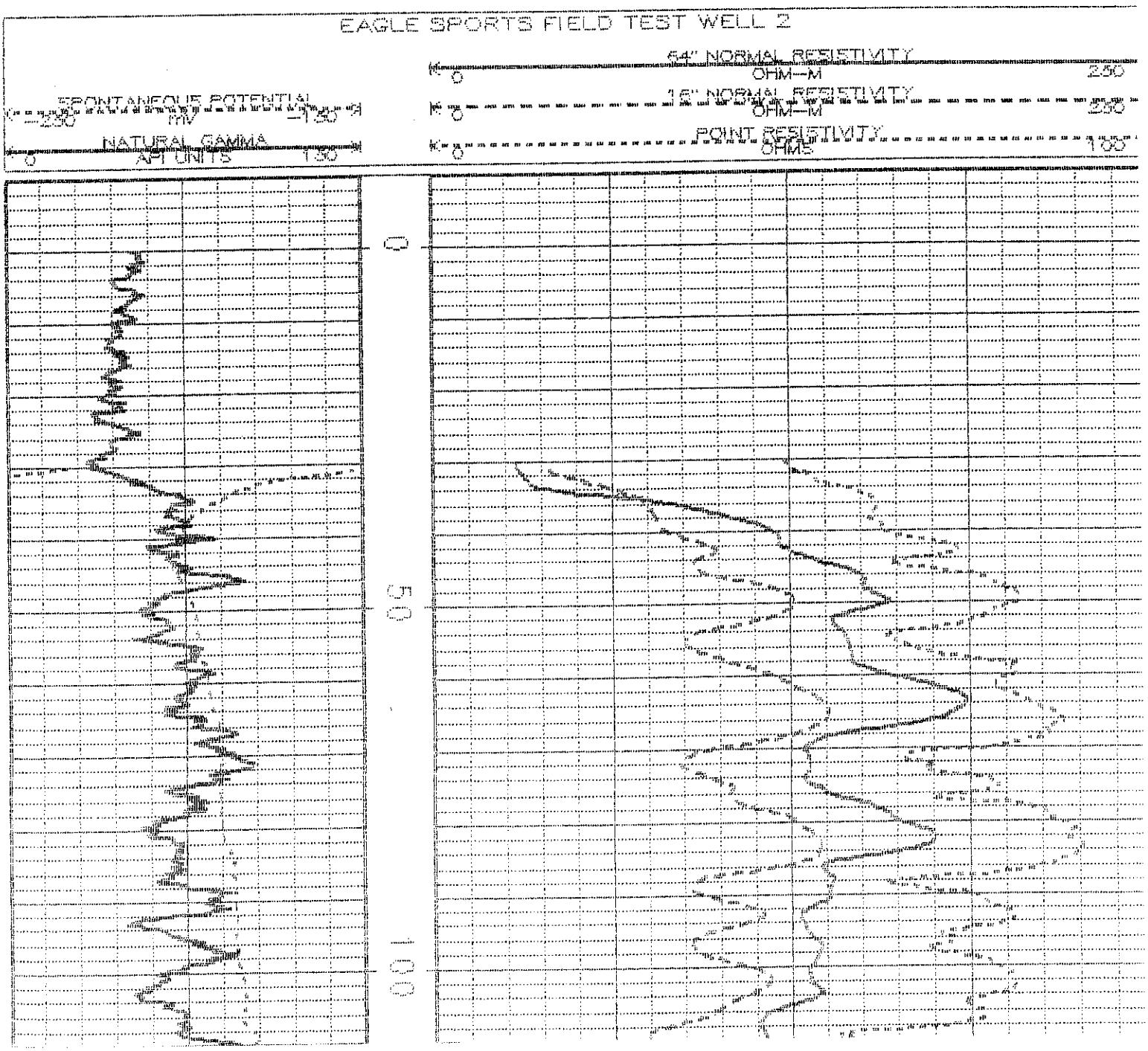

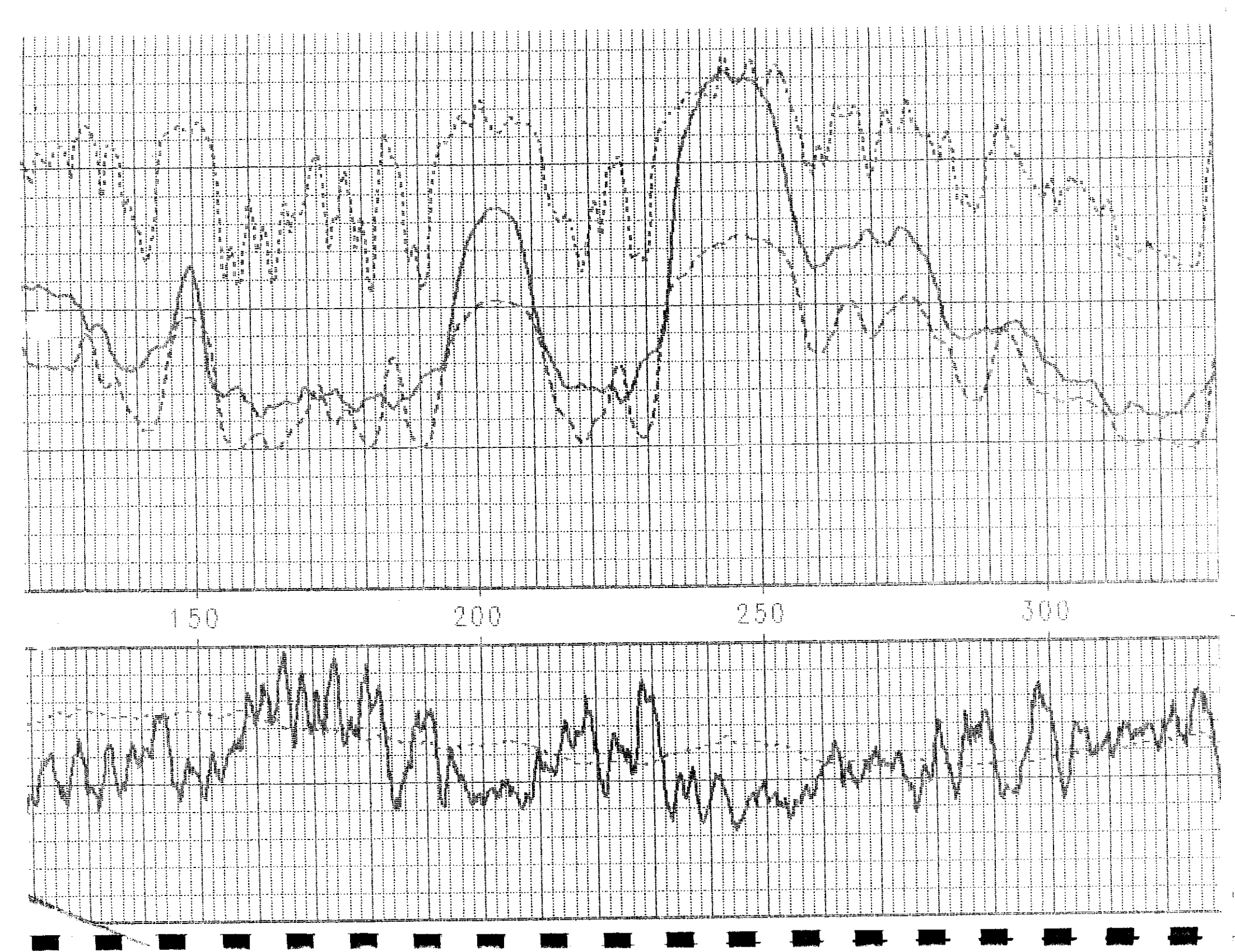
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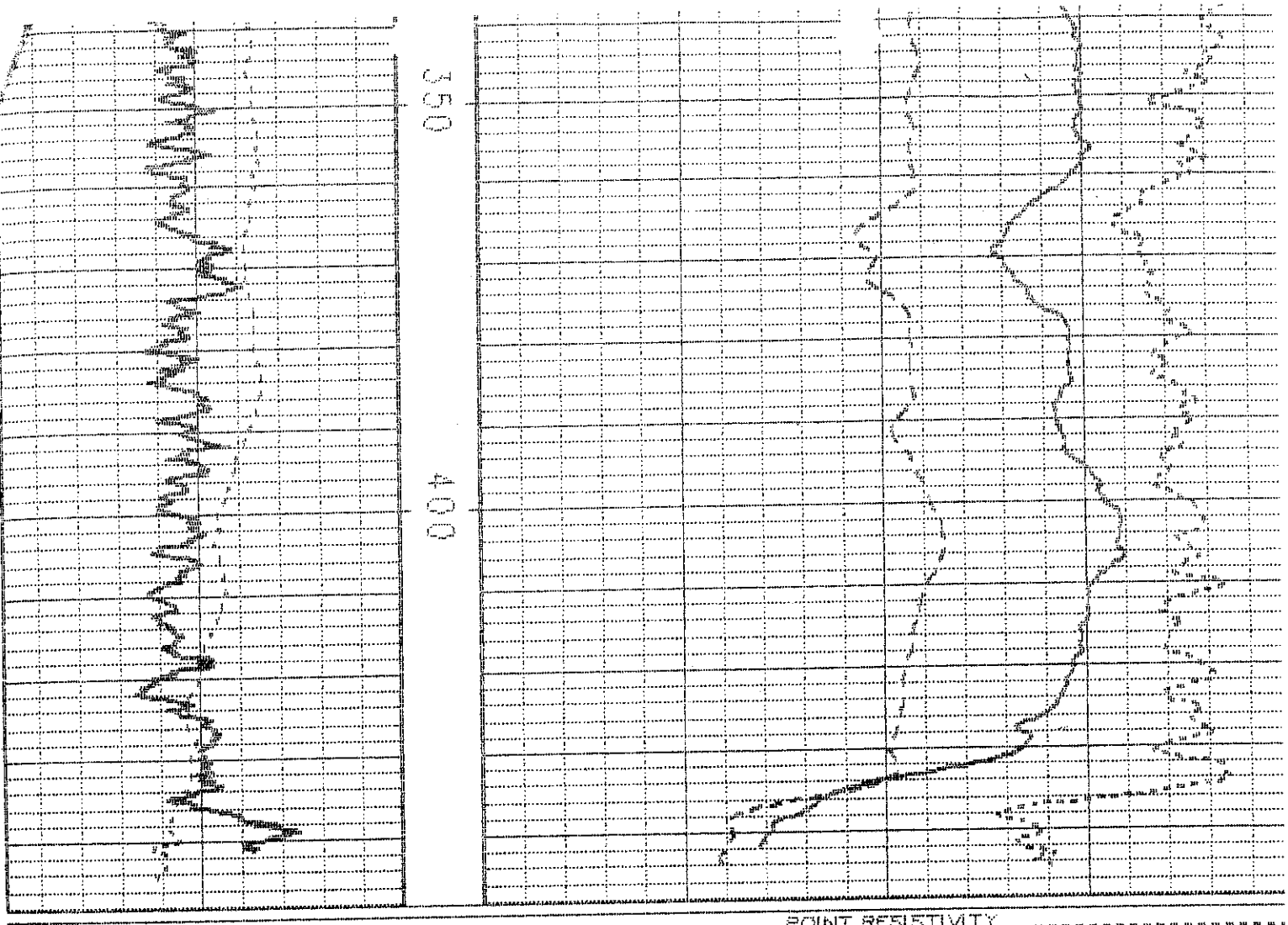

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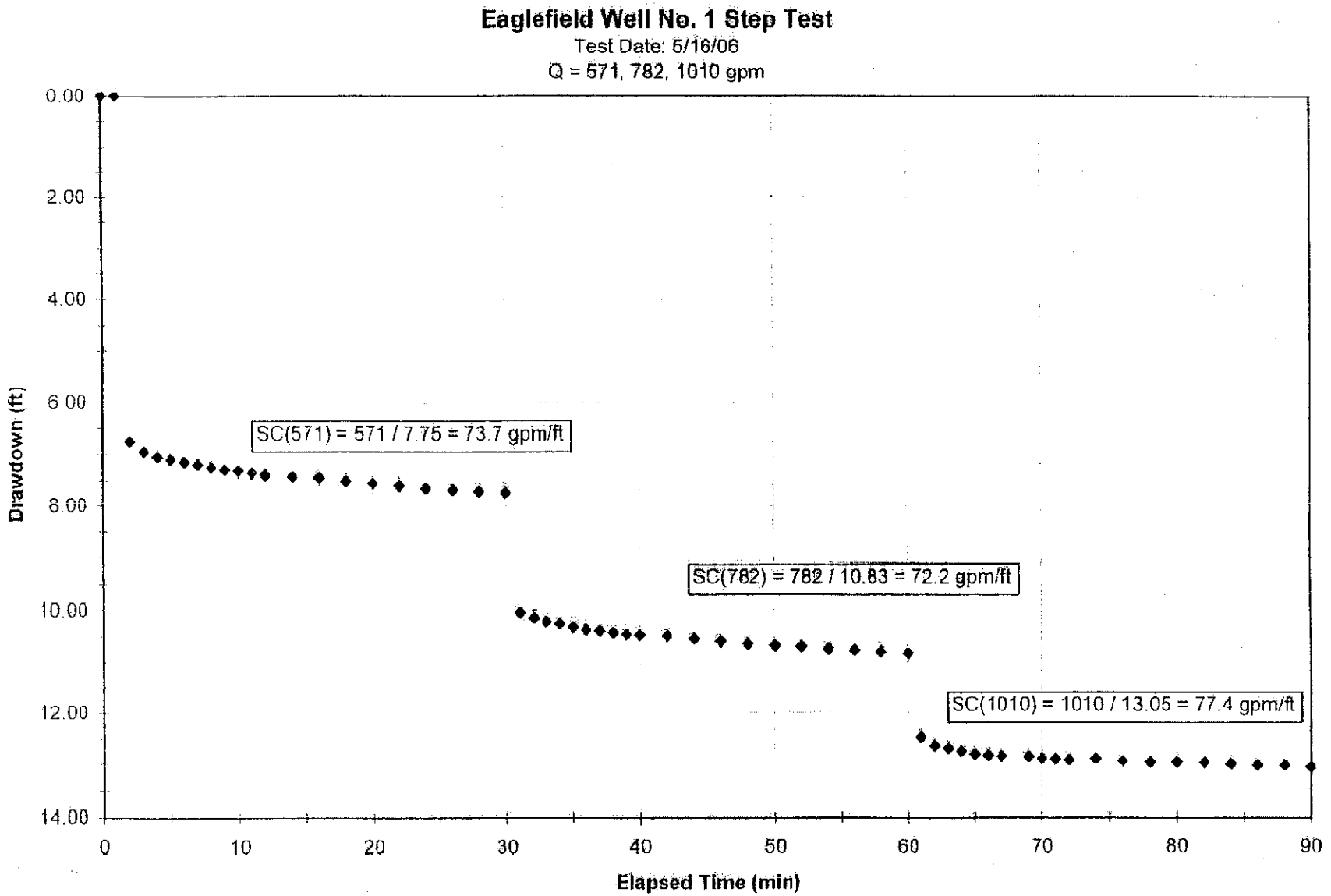

Eaglefield Well No. 1 Step Test
Test Date: 5/16/06
Q = 571, 782, 1010 gpm
Drawdown (ft)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
0
10
20
30
40
50
60
70
80
90
Elapsed Time (min)
SC(571) = 571 / 7.75 = 73.7 gpm/ft
SC(782) = 782 / 10.83 = 72.2 gpm/ft
SC(1010) = 1010 / 13.05 = 77.4 gpm/ft

Eaglefield Well No. 1 Step Test, Q = 571, 782, 1010 gpm					
Test conducted by: SPF Water					
Flow measured by: 10x7 orifice, h = 8, 15, 25-inches					
Water level measured by: manometer, all water levels above ground surface					
Date	Time	WL (ft)	Elapsed Time (min)	DD (ft)	Remarks
5/16	12:56	18.75			static
5/16	13:00		0	0.00	open gate valve
5/16	13:01	18.75	1	0.00	adjust h=8"
5/16	13:02	12.00	2	6.75	
5/16	13:03	11.80	3	6.95	
5/16	13:04	11.70	4	7.05	
5/16	13:05	11.65	5	7.10	
5/16	13:06	11.60	6	7.15	
5/16	13:07	11.55	7	7.20	
5/16	13:08	11.50	8	7.25	
5/16	13:09	11.45	9	7.30	
5/16	13:10	11.43	10	7.32	
5/16	13:11	11.39	11	7.36	
5/16	13:12	11.35	12	7.40	T=16.8, pH=7.44, EC/SC=208.1/244.0
5/16	13:14	11.32	14	7.43	
5/16	13:16	11.30	16	7.45	
5/16	13:18	11.23	18	7.52	T=15.9, pH=7.46, EC/SC=209.9/246.4
5/16	13:20	11.19	20	7.56	
5/16	13:22	11.14	22	7.61	
5/16	13:24	11.09	24	7.66	
5/16	13:26	11.06	26	7.69	
5/16	13:28	11.03	28	7.72	T=16.1, pH=7.45, EC/SC=209.9/246.4
5/16	13:30	11.00	30	7.75	increase h=15"
5/16	13:31	8.70	31	10.05	
5/16	13:32	8.60	32	10.15	
5/16	13:33	8.53	33	10.22	
5/16	13:34	8.49	34	10.26	
5/16	13:35	8.42	35	10.33	
5/16	13:36	8.38	36	10.37	
5/16	13:37	8.35	37	10.40	
5/16	13:38	8.31	38	10.44	
5/16	13:39	8.28	39	10.47	difficult to read manometer, behind duct
5/16	13:40	8.27	40	10.48	tape
5/16	13:42	8.25	42	10.50	
5/16	13:44	8.20	44	10.55	T=16.1, EC/SC=208.8/245.6
5/16	13:46	8.15	46	10.60	
5/16	13:48	8.10	48	10.65	
5/16	13:50	8.07	50	10.68	
5/16	13:52	8.05	52	10.70	
5/16	13:54	8.00	54	10.75	T=16.0, pH=7.38, EC/SC=208.2/245.4
5/16	13:56	7.98	56	10.77	
5/16	13:58	7.95	58	10.80	T=16.0, pH=7.37, EC/SC=208.0/244.9
5/16	14:00	7.92	60	10.83	
5/16	14:01	6.28	61	12.47	increase h=25"
5/16	14:02	6.11	62	12.64	

Date	Time	WL (ft)	Elapsed Time (min)	DD (ft)	Remarks
5/16	14:03	6.05	63	12.70	
5/16	14:04	6.00	64	12.75	
5/16	14:05	5.94	65	12.81	
5/16	14:06	5.92	66	12.83	
5/16	14:07	5.90	67	12.85	check on flow along discharge channel,
5/16	14:09	5.89	69	12.86	mised reading
5/16	14:10	5.85	70	12.90	adjust gate valve couple of turns
5/16	14:11	5.84	71	12.91	
5/16	14:12	5.83	72	12.92	
5/16	14:14	5.85	74	12.90	T=16.0, pH=7.43, EC/SC=208.6/245.6
5/16	14:16	5.81	76	12.94	
5/16	14:18	5.79	78	12.96	
5/16	14:20	5.79	80	12.96	T=16.0, pH=7.42, EC/SC=208.7/245.7
5/16	14:22	5.78	82	12.97	
5/16	14:24	5.75	84	13.00	
5/16	14:26	5.73	86	13.02	
5/16	14:28	5.73	88	13.02	
5/16	14:30	5.70	90	13.05	closed gate valve

Analytical Laboratories, Inc.

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Date Report Printed: 2/2006 5:21:05 PM

Attn: TERRY SCANLAN, P.E.,P.G.
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: M MARTIN
Submitted By: M MARTIN

Source of Sample:
EAGLE FIELD

Time of Collection: 14:45
Date of Collection: 5/16/2006
Date Received: 5/16/2006
Report Date: 6/2/2006

PWS:

Laboratory Analysis Report

Sample Number: 0614882

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Aluminum, Al		0.24	mg/L	0.10	EPA 200.7	5/18/2006	KC
Antimony Low		< 0.005	mg/L	0.005	EPA 200.8	5/19/2006	JH
Arsenic Low		< 0.005	mg/L	0.005	EPA 200.8	5/19/2006	JH
Barium, Ba		0.07	mg/L	0.05	EPA 200.7	5/18/2006	KC
Beryllium Low		< 0.0005	mg/L	0.0005	EPA 200.8	5/19/2006	JH
Cadmium Low		< 0.0005	mg/L	0.0005	EPA 200.8	5/19/2006	JH
Calcium Hardness		74.3	mg/L	0.25	EPA 200.7	5/19/2006	KC
Calcium, Ca		29.8	mg/L	0.10	EPA 200.7	5/19/2006	KC
Chromium Low		< 0.002	mg/L	0.002	EPA 200.8	5/19/2006	JH
Copper, Cu		< 0.01	mg/L	0.01	EPA 200.7	5/18/2006	KC
Iron, Fe		< 0.05	mg/L	0.05	EPA 200.7	5/18/2006	KC
Magnesium, Mg		5.22	mg/L	0.10	EPA 200.7	5/19/2006	KC
Manganese, Mn		< 0.05	mg/L	0.05	EPA 200.7	5/18/2006	KC
Mercury, Hg		< 0.0002	mg/L	0.0002	EPA 245.1	5/26/2006	KC
Nickel, Ni		< 0.02	mg/L	0.02	EPA 200.7	5/18/2006	KC
Potassium, K		1.7	mg/L	0.5	EPA 200.7	5/19/2006	KC
Selenium Low		< 0.005	mg/L	0.005	EPA 200.8	5/19/2006	JH
Silica		30.4	mg/L	0.25	EPA 200.7	5/18/2006	KC
Silver, Ag		< 0.005	mg/L	0.005	EPA 272.1	6/1/2006	JH
Sodium, Na		16.3	mg/L	0.10	EPA 200.7	5/19/2006	KC

MCL - Maximum Contamination Level
MDL - Method/Minimum Detection Limit
UR - Unregulated

Laboratory Analysis Report

Sample Number: 0614882

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Thallium Low		< 0.001	mg/L	0.001	EPA 200.8	5/19/2006	JH
Uranium, U		2	ug/L	1	EPA 200.8	5/26/2006	JH
Zinc, Zn		< 0.005	mg/L	0.005	EPA 200.7	5/18/2006	KC
Corrosivity		-0.9			Langelier	6/2/2006	WW
Calculated at room temperature, 20 deg C. Moderately aggressive.							
Nitrate (as N)		< 0.2	mg/L	0.2	EPA 300.0	5/16/2006	JT
Ammonia Direct (as N)		< 0.04	mg/L	0.04	EPA 350.1	5/24/2006	JT
Nitrite (as N)		< 0.01	mg/L	0.01	EPA 353.2	5/16/2006	JT
Alkalinity		110	mg/L Ca		SM 2320B	5/22/2006	JS
Chloride, Cl		3	mg/L	1	EPA 300.0	5/16/2006	JT
Conductivity		316	umhos	2	SM 2510B	5/16/2006	KC
Cyanide, Total		<0.005	mg/L	0.005	EPA 335.4	5/23/2006	WW
Fluoride, F		0.40	mg/L	0.10	EPA 300.0	5/16/2006	JT
pH		7.1	S.U.		EPA 150.1	5/16/2006	JS
Sulfate, SO4		16	mg/L	1	EPA 300.0	5/16/2006	JT
Turbidity		< 0.5	NTU	0.5	EPA 180.1	5/16/2006	KC
Sand		1	mg/L	0.600	EPA 160.2	5/19/2006	DLR
Surfactants		<0.01	mg/L	.01	SM 5540	5/26/2006	MDM
Total Dissolved Solids		114	mg/L	25	SM 2540C	5/23/2006	DLR

Michael Y Moore 6/5/2006

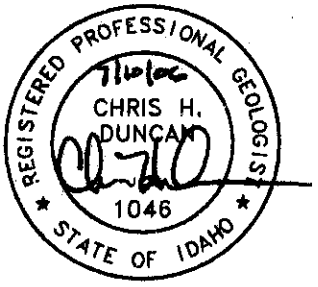
MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions concerning this report,
please contact: Michael Moore

CITY OF EAGLE, IDAHO

7-Day Aquifer Test

June 2006



EG061204

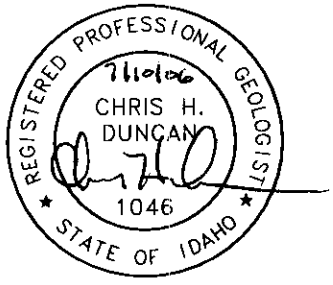
Prepared By

Holladay Engineering Company
Payette, Idaho

CITY OF EAGLE, IDAHO

7-Day Aquifer Test

June 2006



EG061204

Prepared By

Holladay Engineering Company
Payette, Idaho

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

INTRODUCTION

In May and June of 2006, the City of Eagle conducted a 7-day constant rate aquifer pump test of the lower Treasure Valley Aquifer system to determine site specific aquifer conditions under Idaho Department of Water Resource applications for water appropriation 63-32089 and 63-32090. The aquifer test site is located in the western portion of the City of Eagle on the former Quarter Circle D. J. Ranch and Eaglefield Development properties. The test site location is shown in Figure 1.

The aquifer test plan was reviewed and approved by the Idaho Department of Water Resources in December 2005 under drilling permit no. 835987 and drilling permit no. 837870. The aquifer test plan included construction of test well no. 1 located in the proposed Legacy development and test well no. 2 located in the Eaglefield development. Well construction and testing information for the wells are included in Appendix B. Holladay Engineering Company was contracted to conduct the aquifer test and provide engineering services for the project.

The aquifer test was composed of three groundwater monitoring and testing phases. Background monitoring (starting on May 25th) was performed for 7-days prior to the pump and test to evaluate water level tends in the aquifer system. A 7-day constant rate pump test was started on June 2nd and ending on June 9th using a single pumping well and eight monitoring wells (including pumping well) conducted at a pumping rate of 1580 gpm. Seven-days of water level recovery monitoring was performed, immediately following the pump test and ending on June 15th. Additional water level recovery data was collected to June 19th. A total of eight wells (including the pumping well) were used to monitor groundwater levels during the aquifer test. The monitoring well configuration and well completion information is shown in Figure 1.

The aquifer test generated approximately 300,000 water level measurements that were used to evaluate the aquifer system response to pumping. Transmissivity and storativity values were computed using the Theis Method from drawdown and recovery datasets of monitoring wells completed in the lower aquifer zone.

This report presents data and results from the aquifer test. The following sections describe test procedures, data collection, data corrections, results and analysis.

AQUIFER TEST PROCEDURES

The aquifer test was designed as a constant rate pump test using 8 wells available at the site (including pumping well) for groundwater level monitoring. The aquifer test project was performed in three phases; background monitoring, constant rate pumping test and recovery monitoring. Each phase was conducted for a minimum duration of 7-days. Background water level monitoring was performed to determine groundwater level trends prior to pump testing. The pump test phase was conducted primarily to determine transmissivity and storativity valves in the lower aquifer zone and groundwater responses to pumping at monitoring well locations across the site. The recovery monitoring phase was conducted to determine transmissivity and storativity valves in the lower aquifer zone during water level recovery and to characterize the recovery response to pumping at monitoring well locations across the site.

The aquifer test was performed according to the approved aquifer test plan. Two changes were made prior to the start of the test. The pumping well location was moved to test well no. 2 (Eaglefield well) due to the lower capacity of test well no. 1, measured at approximately 1,300 gpm. Well capacity testing and construction information is located in Appendix D. Access to the monitoring well no. 6 (Rick's well) was lost just prior to the start of the test. The City was able to gain limited use of the well during the aquifer test. The data set for monitoring well no. 4 shows limited background and recovery water level data.

Monitoring Wells

The monitoring wells (including the pumping well) used during the aquifer test are listed below and includes a description of well completion and monitoring configuration. Monitoring well locations are shown in Figure 1. Additional well construction information, well driller's reports and other available information for each monitoring well is located in Appendix B.

1. Monitoring well no. 2 (test well no. 2 - Eaglefield): 12- to 16-inch diameter production well with 12-inch well screens at a depth of 345 ft. to 425 ft. Total well depth is 430 ft. The well is located in the SE ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed location is shown on Figure 1. Surveyed ground surface elevation of 2514.15 ft. above mean sea level (amsl). Static water level is artesian. This well was used as the pumping well during the aquifer test. A line-shaft turbine pump (Lyane 12 TLC-4 bowl) was installed for the pump test with an intake depth of 111.22 ft. below ground surface and 100 h.p. 3-phase motor. Two 1-inch diameter pvc plastic sounder tubes were installed from the bottom of the pump column assembly to monitoring ports in motor flange. Water level was monitored with a pressure transducer (Instrumentation N.W. PS-9 with 0-

100 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 16 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.

2. Monitoring well no. 1 (test well no. 1 - Legacy): 12- to 16-inch diameter well completed with 12-inch diameter screens from a depth of 282 ft. to 352 ft. Total well depth is 362 ft. The well is located in the SW ¼ of the NE ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2512.97 ft. amsl. The distance from the pumping well is 1604.58 ft. Static water level is artesian. The wellhead was configured with two 1¼ -inch diameter monitoring ports located in the sealed flange plate cover. Water level was monitored with a pressure transducer (Instrumentation NW PT2X with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 16 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.

3. Monitoring well no. 4 (Quarter Circle D. J. Ranch well no. 4): 6-inch diameter irrigation production well completed with an open interval from 235 to 260 feet below ground surface. Total well depth is 260 feet. There is no pump present in the well. The IDWR well driller's report is not available. The well was video inspect using a down-hole camera to determine well completion. Well casing leaks at a constant rate measured at 11.8 gpm at the wellhead surface. Well is located in the SE ¼ of the SW ¼, Section 3, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2501.86 ft. amsl. The distance from the pumping well is 6276.65 ft. Static water level is artesian. The wellhead was configured with three 1¼ -inch diameter monitoring ports located in the flange plate cover. Water level was monitored with a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 6 foot sight tube at monitoring port no. 2. A 0-15 psi pressure gauge was installed in monitoring port no. 3. A drawing of the wellhead monitoring configuration is located in Appendix B.

4. Monitoring well no. 6 (Quarter Circle D. J. Ranch well no. 6): 16- to 10-inch irrigation production well with line-shaft turbine pump and completed with an open interval from 234 to 395 feet below ground surface. Total well depth is 406 feet. Water level is artesian. Well is located in the SE ¼ of the SW ¼, Section 2, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2525.84 ft. amsl. The distance from the pumping well is 3339.80 ft. Static water level is artesian. The wellhead was configured with two 1¼ -inch diameter monitoring ports located in motor support housing. Water level

was monitored with a pressure transducer (Instrumentation N.W. PS-9 with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 6 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.

5. Monitoring well no. 9 (Strata monitoring well no. 1): 1¼ - inch pvc plastic monitoring well completed from 45 to 55 feet below ground surface. Total well depth is 55 feet. Static water level is below ground surface. Well is located in the NW ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2510.52 ft. amsl. The distance from the pumping well is 3450.28 ft. The measuring point is located on north side of casing. Water level was monitored with a downhole pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) and measured by hand using a water level meter. A drawing of the wellhead monitoring configuration is located in Appendix B.

6. Monitoring well no. 10 (Strata monitoring well no. 1B): 1-inch pvc plastic monitoring well completed from 10 to 15 feet below ground. Total well depth is 15 feet. Static water level is below ground surface. Well is located in the NW ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2510.52 ft. amsl. The distance from the pumping well is 3425.35 ft. The well measuring point is located on north side of casing. Water level was monitored with a downhole pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) and measured by hand using a water level meter. A drawing of the wellhead monitoring configuration is located in Appendix B.

7. Monitoring well no. 11 (United Water Idaho monitoring well 1A, Hope Lutheran Church): 2-inch pvc plastic monitoring well (part of a nested monitoring well) completed at staggered screen intervals from 280 ft. to 380 ft. below ground surface. Total well depth is 380 feet. Well is located in the SE ¼ of the SE ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2518.83 ft. amsl. The distance from the pumping well is 2405.02 ft. Static water level is artesian. The wellhead was configured with an open ½-inch ball valve connected to a tee fitting used as two measuring ports. Port no. 1 was configured a sealed pressure chamber which housed a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor). A 0-15 psi pressure gauge was installed in port no. 2. Groundwater levels were measured by pressure transducer and by pressure gauge. A drawing of the wellhead monitoring configuration is located in Appendix B.

8. Monitoring well no. 12 (United Water Idaho monitoring well 1 B, Hope Lutheran Church): 2-inch pvc plastic monitoring well (part of a nested monitoring well) completed at staggered screen intervals from 400 ft. to 500 ft. below ground surface. Total well depth is 500 feet. Well is located in the SE ¼ of the SE ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2518.83 ft. amsl. The distance from the pumping well is 2405.02 ft. Static water level is artesian. The wellhead was configured with an open ½-inch ball valve connected to a tee fitting used as two measuring ports. Port no. 1 was configured a sealed pressure chamber which housed a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor). A 0-30 psi pressure gauge was installed in port no. 2. Groundwater levels were measured by pressure transducer and by pressure gauge. A drawing of the wellhead monitoring configuration is located in Appendix B.

Water Level Measurements

Water level measurements were computed from downhole pressure transducer data collected at each monitoring well location. Transducer pressure measurements were made using Instrumentation Northwest PT2X and PS-9 series transducers with built-in data loggers. PT2X transducers record absolute pressure using a 0-50 psi sensor. Absolute pressure measurements were converted to gauge pressure using direct barometric compensation by subtracting corresponding atmospheric pressure measurements for the same time interval. Barometric pressure was measured and recorded using an Instrumentation Northwest PT2X-BV barometric sensor and data logger unit. Barometric pressure corrections were processed with the Instrumentation Northwest Aqua4plus software. The PS-9 series transducers are designed to measure gauge pressure directly using an atmospheric pressure compensation tube built into the unit and cable assembly.

Monitoring well gauge pressure data was converted to feet of groundwater above the pressure transducer sensor. The data was then converted to depth of groundwater below the measuring point (MP) using the sensor depth setting.

Groundwater level elevation data was calculated using the measured distance of the MP from the surveyed land surface elevation at each monitoring location and depth to groundwater data below the MP. The land surface elevation and location of each monitoring well was surveyed. Survey data for monitoring wells is located in Appendix D. Groundwater measurements and data conversions are shown on the monitoring well data sheet located in Appendix A.

Water level measurements were collected on 1-minute intervals during the background monitoring phase of the test. During the pumping and recovery phases of the test, water level measurements were made on 30-second intervals for the first 2-hour period. After the second hour, measurements were made on 1-minute intervals for the remainder of the test period. Backup hand measurements were made at all monitoring well locations to provide redundancy in the event an electronic transducer failed.

Pumping Configuration and Discharge Measurements

Test well no. 2 (Eaglefield) was used as the pumping well for the aquifer test. A line-shaft turbine pump (Layne 12 TLC-4 bowl) was installed with an intake depth of 111.22 ft. below ground surface. The pump was driven by a 100 h.p. 3-phase G.E. motor powered by a Caterpillar diesel generator. Groundwater was discharged was controlled through an 8-inch diameter gate valve and piped approximately 330 feet to the northwest of the wellhead through 8-inch diameter portable aluminum irrigation pipe. Water flow was measured at the end of the pipeline using a 10-inch diameter circular orifice weir with 4-inch diameter constant discharge orifice plate and manometer tube. Water was discharged into the Middleton Irrigation Association canal system and flowed offsite.

AQUIFER TEST RESULTS

Barometric Pressure Monitoring

Barometric pressure measurement station was set up at the pumping well (test well no. 2) site. Barometric pressure measurements were performed on 1-minute intervals from May 24th to June 20th. The barometric data was use to correct PT2X transducer measurements. All barometric pressure corrections were processed with the Instrumentation Northwest Aqua4plus software.

Barometric data collected during the test is shown in the barometric data sheets located in Appendix A. A graph of barometric data collected during the test is located in Appendix C.

The pressure transducer data collected at the pumping well (test well no. 2) using an Instrumentation Northwest PS-9 gauge pressure transducer appears to be influenced by atmospheric pressure changes during the test. The water level elevation data graph of test well no. 2 shows a diurnal rise and fall in water level. The PS-9 transducer designed to operate with an atmospheric pressure compensation air tube. The transducer appears to have failed to fully compensate

for barometric pressure changes. The transducer data was not corrected and results presented as recorded.

Background Water Level Monitoring

Background water level monitoring started at 10:00 am on May 25, 2006, except at monitoring well no. 6 were the City did not gain well access until June 2, 2006. Background water level measurements were suspended at test well no. 2 during the installation of the pump on May 25th and 26th. The pump installation required discharge of artesian flow on May 26, 2006 from 12:30 am to 3:30 for a brief period at 5:15 pm to install the transducer. Artesian flow was discharged into the irrigation canal adjacent to the well site. The pumping system was also tested intermittently between 10:00 am and 12:00 pm on May 31, 2006, which affected water levels in the aquifer during this period.

Water level data collected at each monitoring well is shown on the observation well data sheets located in Appendix A. Background water level data and trends are shown in the monitoring well water level elevation graphs for individual monitoring wells are located in Appendix C.

Pump Test Water Level Monitoring

The phase of the aquifer test was started on June 1, 2006 at 10:00 am as scheduled. The pumping rate was adjusted quickly at the discharge gate valve and set to a constant flow rate of 1580 gpm during the test. The discharge flow rate was monitored continuously during start up and on a regular basis (approximately 1-hour intervals) during the later stage of the test. At 3:45 pm on June 1, pumping stopped due to a power failure. A field decision was made to restart the test on June 2 after the aquifer was allowed to recover overnight.

On June 2nd, at 10:00 am, the pump test was restarted for a 7-day period ending on June 9th at 10:00 am. At start up the pumping rate was adjusted at the discharge gate valve and set to a constant flow rate of 1580 gpm. The discharge flow rate was monitored continuously during start up and on a regular basis (approximately 1-hour intervals) during the later stage of the test. Two power failures occurred during the test on June 4th at 13:11 and June 6th at 18:51. In both cases, the pump was restarted immediately, resulting in only a few minutes of non-pumping time. Periodic flow adjustments were made at the discharge gate valve to maintain a constant flow rate of 1580 gpm. The flow rate was observed to drift up to approximately 1% before a flow adjustment was made. In the later portion of the pump test (June 8th and 9th), water levels in the well were observed to be fluctuating approximately 0.2 inches in the well while performing a hand measurements with an

e-tape. On June 9th at 10:00 am, the pump was stopped after seven continuous days of pumping.

Groundwater water level data collected during the test is shown in the observation well data sheets located in Appendix A. Water level elevation graphs for individual monitoring wells are located in Appendix C. Water level drawdown results for test well no. 1 (Legacy), test well no. 2 (Eaglefield), monitoring well 11 (UWI 1A), and monitoring well 12 (UWI 1B) are shown on semi-log plots located in Appendix C.

Recovery Water Level Monitoring

The aquifer recovery period started immediately following the end of pumping on June 9th at 10:00 am and continued for seven days to June 16 at 10:00 am. Monitoring well transducers recorded data to June 19th until the time each transducer was removed from the well, with the exception of monitoring well no. 6 (Rick's irrigation well) and the pumping well (Test well no. 2). The additional data collected from June 16th to June 19th was processed and included in the recovery data set.

Several events occurred during the recovery monitoring period. The transducer at monitoring well no. 6 was removed on June 10th at 7:39 am. Monitoring well no. 6, an irrigation production owned by Tom Rick, was pumped for irrigation on June 10th from approximately 9:15 am to 5:00 pm at an estimated flow rate of 1000 gpm. On June 13th, the artesian discharge valve at the pumping well (Test well no. 2) was opened from 10:30 am to 1:08 pm to allow removal of the line-shaft turban pump assembly. The transducer was removed and continued to record measurements while out of the well. The open artesian discharge produced approximately 1000 gpm during this period. Water was discharge into the irrigation canal adjacent to the well site.

Groundwater water level data collected during the test is shown in the observation well data sheets located in Appendix A. Water level elevation graphs for individual monitoring wells are located in Appendix C. Water level recovery results for test well no. 1 (Legacy), test well no. 2 (Eaglefield), monitoring well 11 (UWI 1B), and monitoring well 12 (UWI 1B) are shown on semi-log plots located in Appendix C.

AQUIFER TEST DATA ANALYSIS

Water level data collected from the pumping and recovery periods of the aquifer test from monitoring well no. 1 (test well no. 1), monitoring well 11 (UWI 1A), monitoring well no. 12 (UWI 1B) and the pumping well (test well no. 2) was plotted as drawdown and recovery semi-log and log-log scale graphs. Monitoring well

drawdown and recovery graphs are located in Appendix C. The drawdown and recovery data sets were analyzed using the Theis Method, based on a confined to semi-confined lower aquifer conceptual model for the test site. Transmissivity and storativity values computed from type curve matching of each data set using the Theis Method in AquiferTest 4.0 (Waterloo Hydrogeologic, Inc) computer software and results are listed below in Table 1.

Table 1
Computed Transmissivity and Storativity Values

Monitoring Well	Data Set	Transmissivity (ft^2/day)	Storativity
Test well no. 1 (Legacy)	Drawdown	2.01×10^4	1.30×10^{-2}
Test well No. 2 (pumping well)	Drawdown	2.00×10^4	---
Monitoring well no. 11 (UWI 1A)	Drawdown	1.85×10^4	6.62×10^{-4}
Monitoring well no. 12 (UWI 1B)	Drawdown	1.80×10^4	8.00×10^{-4}
Test well no. 1 (Legacy)	Recovery	1.95×10^4	1.58×10^{-2}
Test well No. 2 (pumping well)	Recovery	1.75×10^4	---
Monitoring well no. 11 (UWI 1A)	Recovery	1.77×10^4	7.80×10^{-4}
Monitoring well no. 12 (UWI 1B)	Recovery	1.80×10^4	7.90×10^{-4}
Average Value	Test	1.87×10^4	5.31×10^{-3}

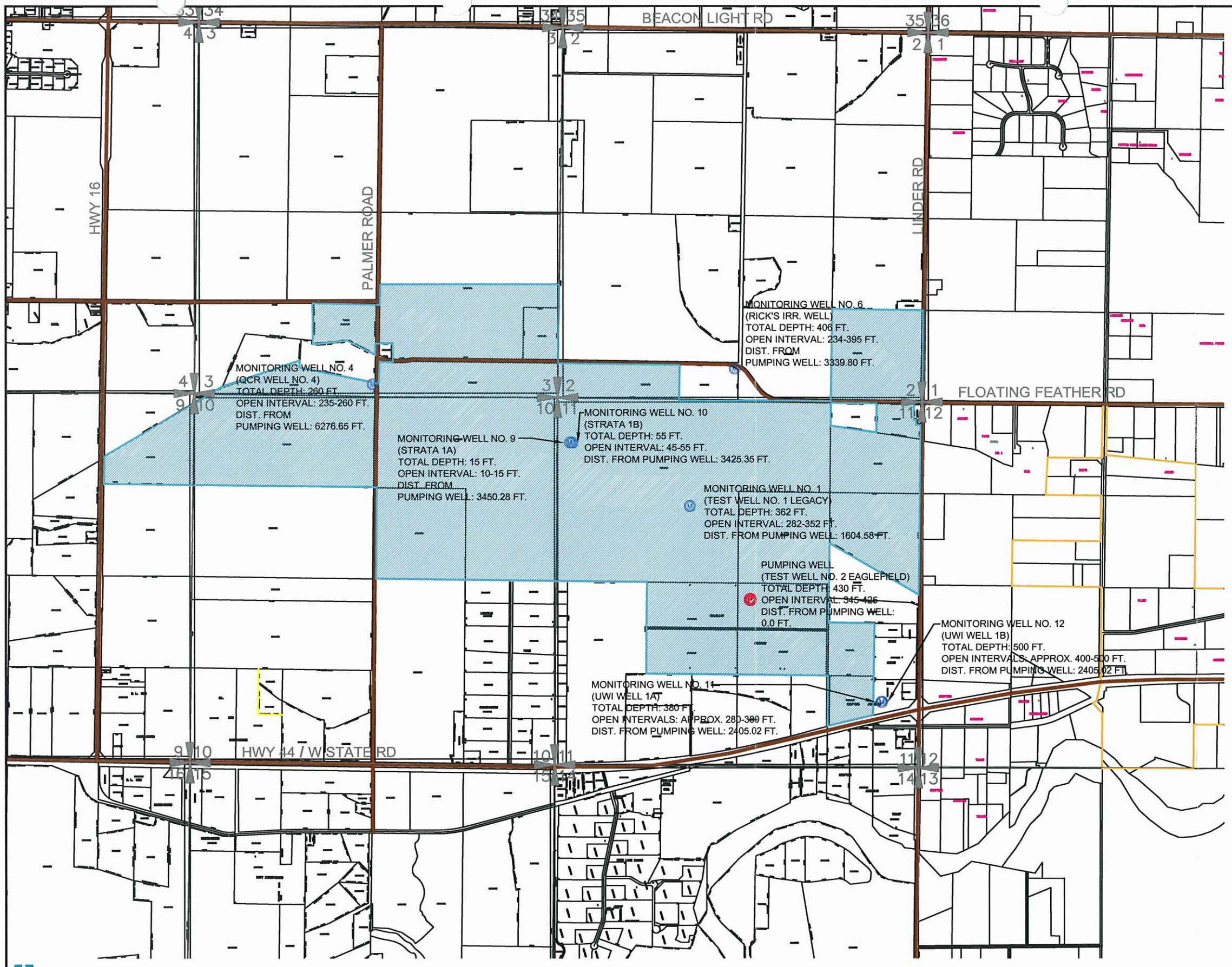
Water level data collected from the pumping and recovery periods of the aquifer test from monitoring well no. 1 (test well no. 1), monitoring well 11 (UWI 1A), monitoring well no. 12 (UWI 1B) and the pumping well (test well no. 2) was plotted as drawdown and recovery semi-log and log-log scale graphs. Monitoring well drawdown and recovery graphs are located in Appendix C. The drawdown and recovery data sets were analyzed using the Theis Method, based on a confined to semi-confined lower aquifer conceptual model for the test site. Transmissivity and storativity values computed from type curve matching of each data set using the Theis Method in AquiferTest 4.0 (Waterloo Hydrogeologic, Inc) computer software and results are listed below in Table 1.

In the Theis analysis type curve fit, data points influenced by well interference or discharge of artesian flow were given a lower weighted valve or excluded from the data set to obtain a more representative type curve fit. The Theis analysis graphs showing calculated transmissivity and storativity valves for each data set are located in Appendix C. The computed average valve for transmissivity is 1.87×10^4 ft^2/day (139,886 gal/day/ft). The average value for storativity is 5.31×10^{-3}.

CITY OF EAGLE

AQUIFER TEST WELL MAP

FIGURE - 1



LEGEND:

PROPERTY OWNERSHIP

PROPOSED DEVELOPMENT

AQUIFER TEST WELLS

MONITORING WELL

PUMPING WELL

ROADS

PARCEL LINES

SECTION LINES

SECTION CORNERS

1500 0 1500 3000

SCALE:1 INCH=1500 FEET

NOTE:

1) BASEMAP IS ADA AND CANYON COUNTY. (2005)

This map represents a compilation of public information from diverse records gathered by the City of Eagle and Holladay Engineering Company. The purpose for which this map is prepared is an overall general representation of positional relationships, and not a definitive description of location of any class of objects or conditions. Hence, no responsibility for errors can be or is assumed. The City of Eagle and Holladay Engineering Company CANNOT AND DO NOT GUARANTEE the absence of errors or the corrections of all information furnished to them for the preparation of this map.

REVISED JUNE 27 2006

HOLLADAY ENGINEERING CO.

G:\Eagle\081204\SURVEY'S PROJECT\DWG\081204 EAGLE layout

APPENDIX A

(Computer Disk Enclosed)

MONITORING WELL WATER LEVEL DATA

1. Test Well 2 (Eaglefield)(Pumping Well)
2. Test Well 1 (Legacy)
3. Monitoring Well 4 (QCR 4)
4. Monitoring Well 6 (Rick's)
5. Monitoring Well 9 (Strata 1A)
6. Monitoring Well 10 (Strata 1B)
7. Monitoring Well 11 (UWI 1A)
8. Monitoring Well 12 (UWI 1B)
9. Barometer

Appendix A

Monitoring Well Water Level Data
EG061204

Holladay Engineering, Co.

APPENDIX B

MONITORING WELL INFORMATION

1. Test Well 2 (Eaglefield)(Pumping Well)
2. Test Well 1 (Legacy)
3. Monitoring Well 4 (QCR 4)
4. Monitoring Well 6 (Rick's)
5. Monitoring Well 9 (Strata 1A)
6. Monitoring Well 10 (Strata 1B)
7. Monitoring Well 11 (UWI 1A)
8. Monitoring Well 12 (UWI 1B)

Appendix B.1

TEST WELL 2 (Eaglefield)(Pumping Well)

Form 238-7
6/02

[redacted] OF WATER RESOURCES

WELL DRILLER'S REPORT

[redacted]

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0042405
DRILLING PERMIT NO. 8926005 - 837870
Water Right or Injection Well No. 63-32089, 63-32090

2. OWNER:
Name CITY OF EAGLE
Address 310 E. STATE ST.
City EAGLE State ID Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well. WELL #3 (EAGLEFIELD)
Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11 1/4 NW 1/4 SE 1/4
Gov't Lot _____ County ADA
Lat: : : Long: : :
Address of Well Site 50' W OF INTERSECTION OF W TATLOCK DR + W GOLDEN EAGLE WAY City EAGLE
US84 Blk. 8 Sub. Name EAGLEFIELD ESTATES

4. USE:
☐ Domestic ☒ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other TEST

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
CEMENT GROUT	0	320	2½ YDS	PUMPED FROM BOTTOM TO TOP

Was drive shoe used? ☐Y ☒N Shoe Depth(s) _____
Was drive shoe seal tested? ☐Y ☐N How? _____

8. CASING/LINER: 280' 16"X18" REDUCER.

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16	+5	280	.375	STEEL	☒	☐	☒	☐
18	281	345	.375	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe 5'
Packer ☐Y ☒N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method _____
Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
345	425	.030		18	S.S.	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#6-9 COSS SAND	320	425	30,000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
_____ ft. below ground Artesian pressure 8.1 lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____
FLANGE AND (2) 1¼" BRASS PLUGS

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
1123 gpm		45.2'	10 min

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
28	0	3	TOP SOIL		
	3	28	RIVER GRAVEL		
	28	48	TAN CLAY		
	48	56	SAND		
	56	63	RUSTY TAN CLAY		
	63	135	SAND W/SM TAN CLAY STRKS		
	135	183	BRN CLAY W/SAND STRKS		
	183	189	FINE - MED SAND		
	189	194	TAN CLAY		
	194	315	SAND SM GRAVEL		
	315	232	CLAY		
↓	232	290	SAND FINE - MED W/SM CLAY STRKS		
20	290	297	SAND - FINE		
	297	339	BR RUSTY, GREEN + GREY CLAY		
	339	436	COARSE SAND, SOME GRAVEL		
	436	444	BRN RUSTY CLAY		

Completed Depth 430' (Measurable)
Date: Started 3-21-06 Completed 5-2-06

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name RIVERSIDE INC Firm No. 333
Principal Driller [signature] Date 5-22-06
and
Driller or Operator II [signature] Date 5-22-06
Operator I _____ Date _____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

SPF Water Engineering, LLC
water resource consultants

April 8, 2006

Peter Harris
Eaglefield, LLC
6951 Duncan Lane
Boise, ID 83714

Subject: Final Design for Eaglefield Well No. 1 (City of Eagle Test Well 4)

Dear Peter:

Drilling of the municipal test well borehole at Eaglefield was completed to approximately 444 feet on April 7, 2006. The borehole is nominal 20-inch diameter and was advanced using the reverse rotary method. The drill cuttings consist primarily of brown sand, tan clay, and brown clay above 438 feet. Blue-gray clay was encountered from 438 to 444 feet.

Geophysical logging was conducted on April 7. Strata Data, Inc. from Casper, Wyoming, was the geophysical contractor. Logs run include natural gamma radiation, spontaneous potential, single point resistivity, 16-inch normal resistivity, and 64-inch normal resistivity.

Drill cuttings and geophysical logs document the presence of a potentially productive sand layer from 330 feet to 433 feet. This sand layer corresponds with the target interval for this well, and we propose completing the well with screens extending from 345 to 425 feet.

The completed well will include 16-inch casing from approximately 5 feet above ground surface to 280 feet, 12-inch casing from 280 feet to 345 feet, 12-inch well screen from 345 feet to 425 feet, and 12-inch tail pipe with plate bottom from 425 feet to 430 feet. A 16-inch by 12-inch welded reducer will be used to connect the 12-inch and 16-inch casing strings. The invert of the 10-inch artesian by-pass line will be approximately 2.5 feet above existing ground surface.

No. 6-9 Colorado Silica Sand filter pack will be installed in the borehole annulus from 320 to 430 feet. Estimated volume is approximately 5 cubic yards.

Bentonite chips will be used as surface seal material. The chips will extend from 320 feet to ground surface. Estimated volume is approximately 34 cubic yards. Prior to installation of casing and screen, the borehole from ground surface to 300 feet will be reamed to 28-inch diameter to facilitate installation of the bentonite surface seal.

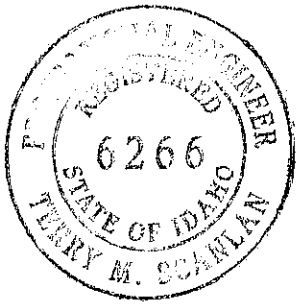
We are still discussing well development options with Riverside. Our current thinking is to develop the well initially by bailing, air lifting, or pumping until artesian flow is

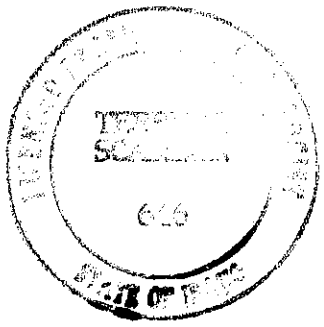
achieved. After the initial artesian flow clears, development will continue by shutting in the well, pressurizing the casing with compressed air, and then releasing pressure to allow artesian flow. This procedure can be repeated until the artesian flow clears. Air pressures should start low, and gradually increase up to 100 psi. The artesian flow rate and shut-in pressure following initial development will allow a preliminary determination of well capacity as soon as possible. Final development will be completed using the test pump.

A well design schematic, drill log, and field geophysical logs are enclosed for your records.

Please contact me with any questions.

Sincerely,





Terry M. Scanlan, P.E., P.G.

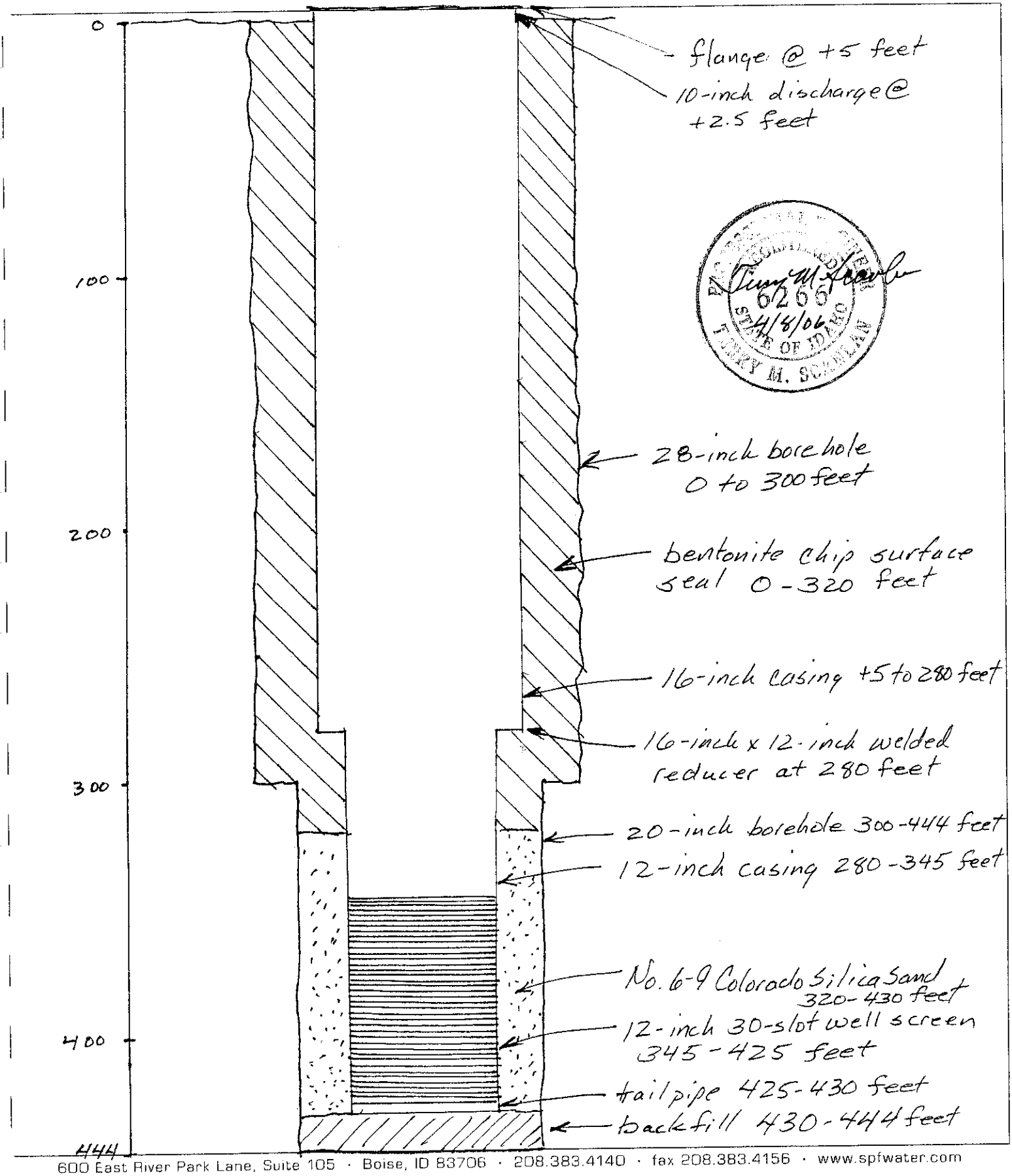
cc: Terry Daugherty – Riverside, Inc.
Rob Whitney – Idaho Department of Water Resources
Chris Duncan – Holladay Engineering

Attachments: Well Schematic
Drill Log
Geophysical Logs

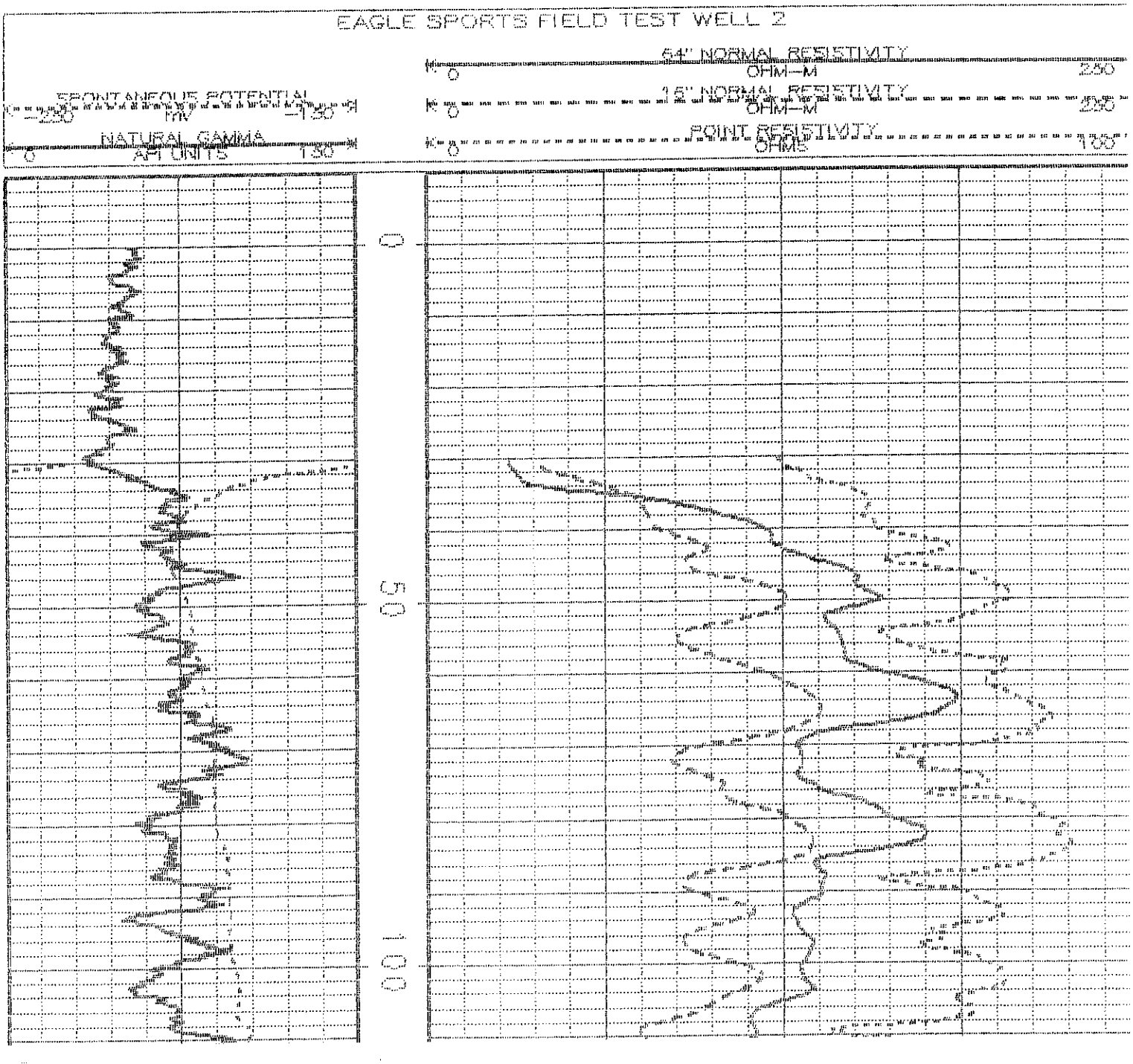
SPF Water Engineering, LLC
water resource consultants

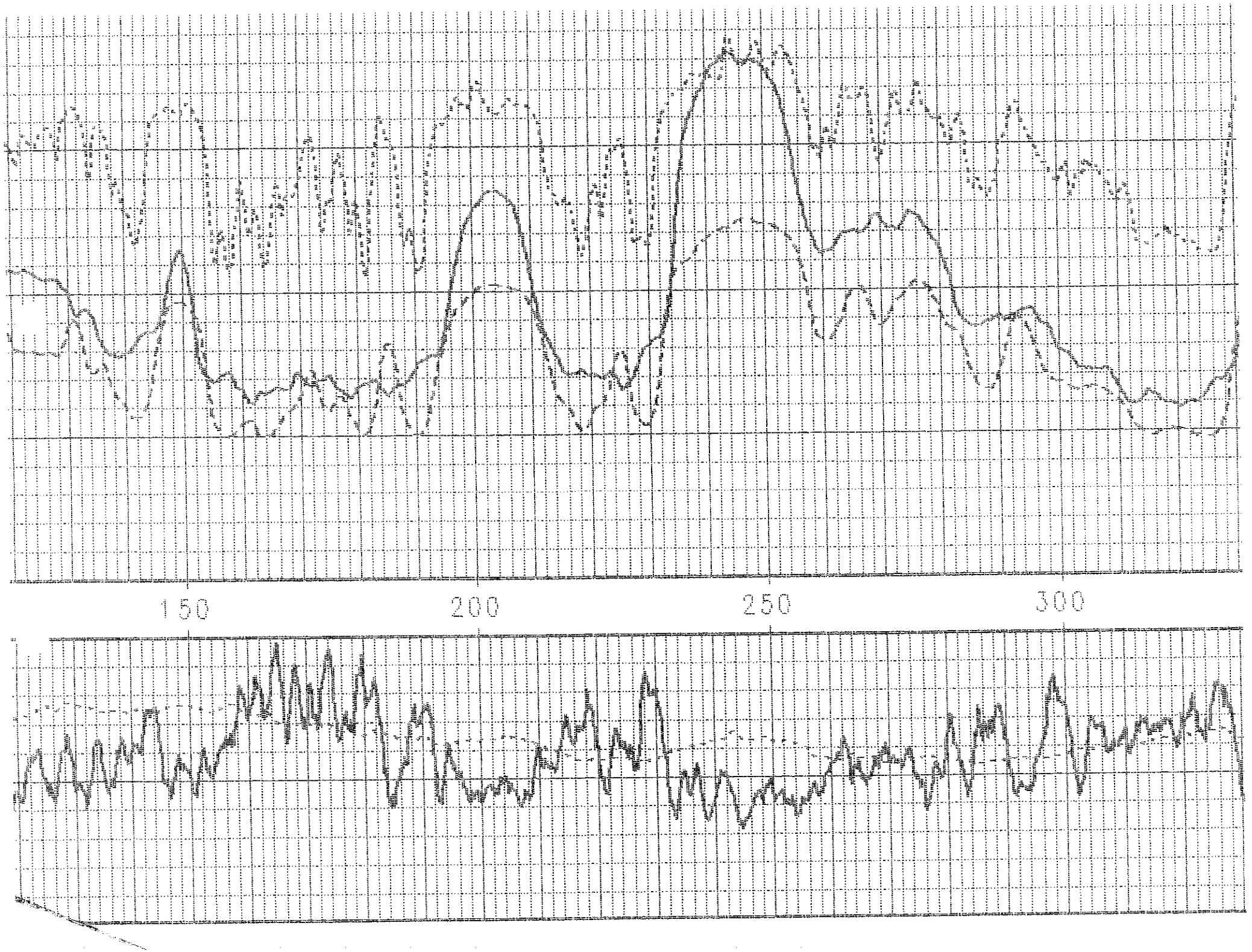
By TS Date 4/4/06 Client Eaglefield Sheet 1 of 1

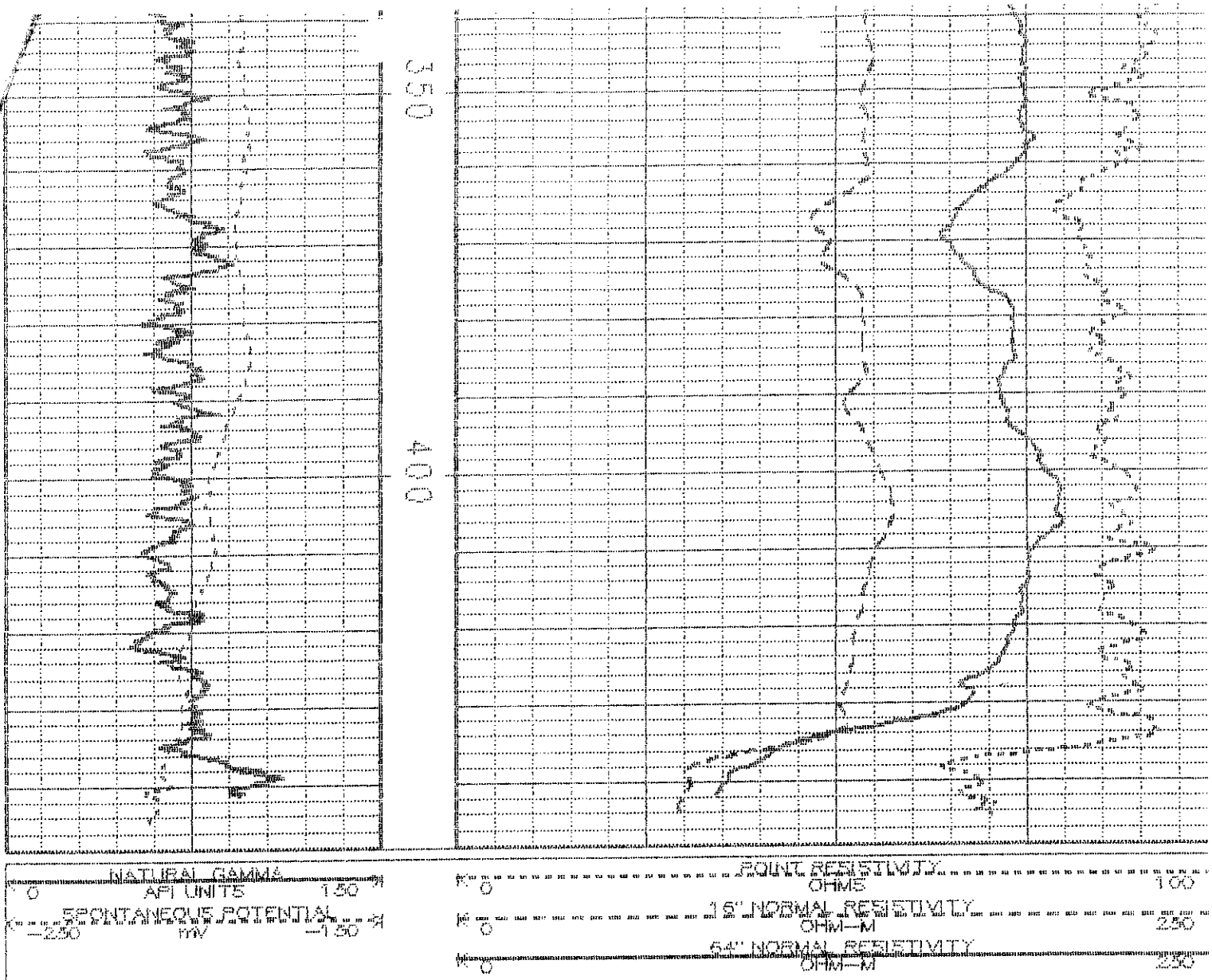
Chkd By _____ Description Final Well Design - Eagle Well #4 Job No 421.0010



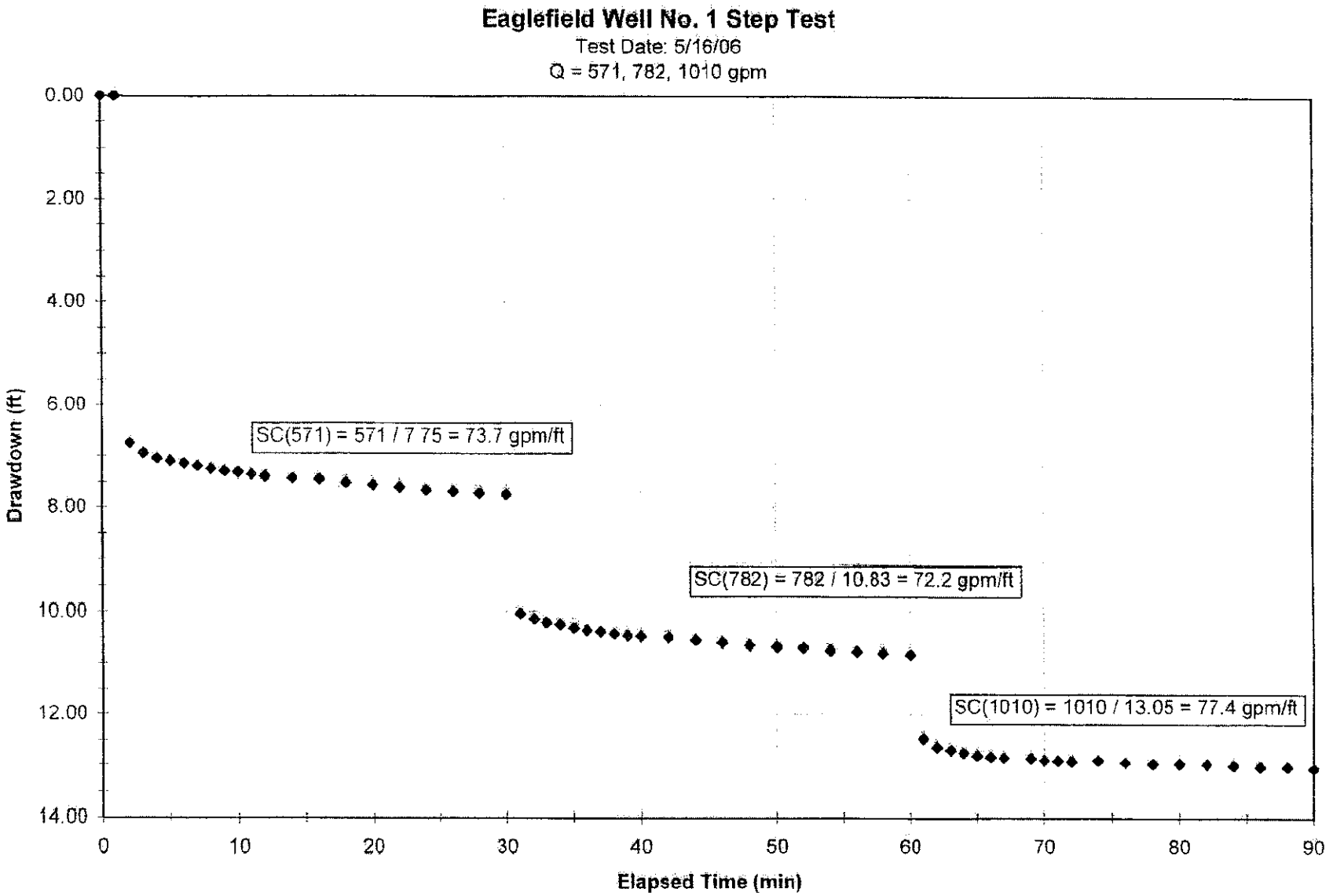
600 East River Park Lane, Suite 105 · Boise, ID 83706 · 208.383.4140 · fax 208.383.4156 · www.spfwater.com


EAGLE SPORTS FIELD TEST WELL 2
SPONTANEOUS POTENTIAL
MV
NATURAL GAMMA
API UNITS
64" NORMAL RESISTIVITY
OHM-M
16" NORMAL RESISTIVITY
OHM-M
POINT RESISTIVITY
OHM
0
-50
-100


150
200
250
300



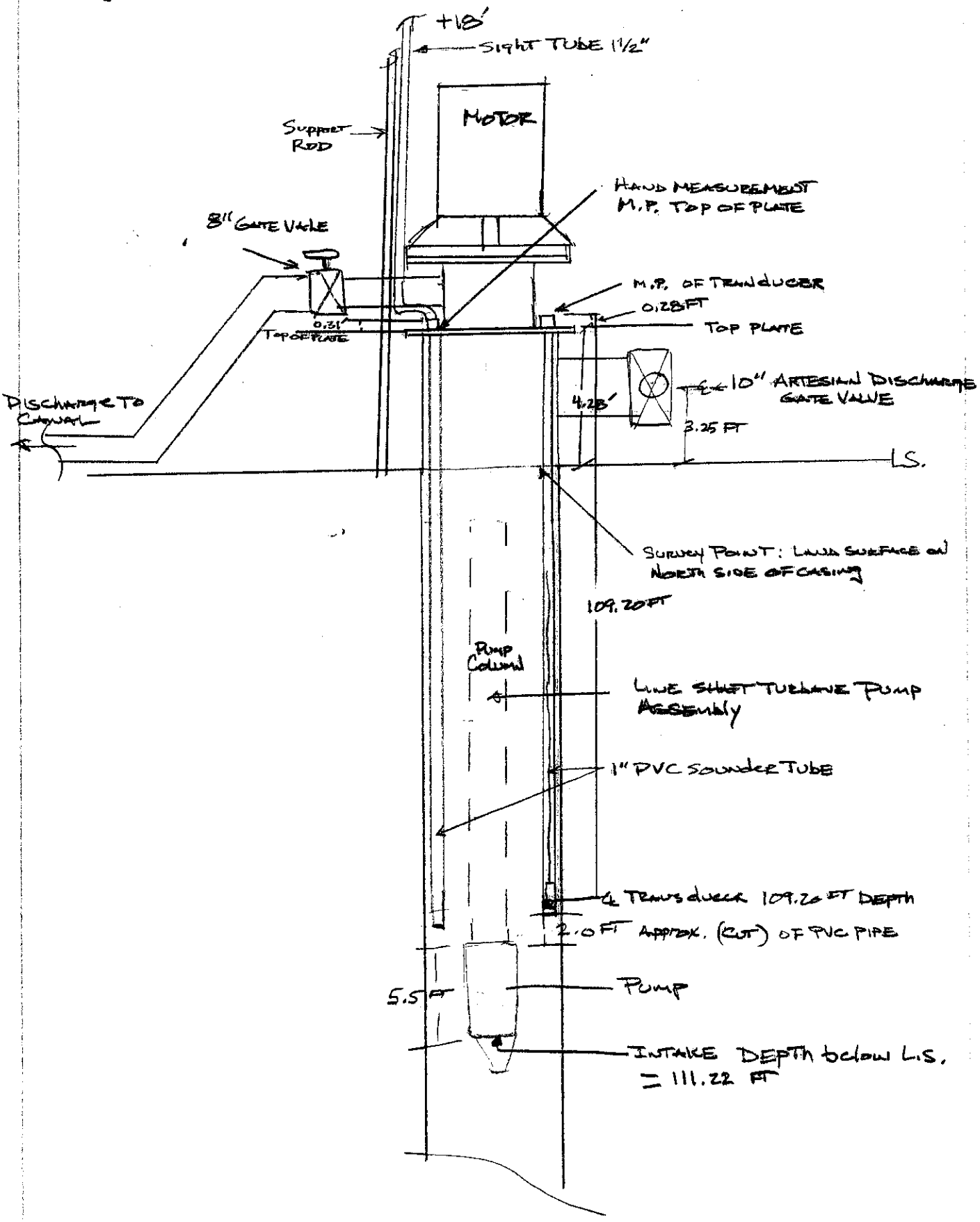
EAGLE SPORTS FIELD TEST WELL 2


Eaglefield Well No. 1 Step Test
Test Date: 5/16/06
Q = 571, 782, 1010 gpm
Drawdown (ft)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
0
10
20
30
40
50
60
70
80
90
Elapsed Time (min)
SC(571) = 571 / 7 75 = 73.7 gpm/ft
SC(782) = 782 / 10.83 = 72.2 gpm/ft
SC(1010) = 1010 / 13.05 = 77.4 gpm/ft

Eaglefield Well No. 1 Step Test, Q = 571, 782, 1010 gpm					
Test conducted by: SPF Water					
Flow measured by: 10x7 orifice, h = 8, 15, 25-inches					
Water level measured by: manometer, all water levels above ground surface					
Date	Time	WL (ft)	Elapsed Time (min)	DD (ft)	Remarks
5/16	12:56	18.75			static
5/16	13:00		0	0.00	open gate valve
5/16	13:01	18.75	1	0.00	adjust h=8"
5/16	13:02	12.00	2	6.75	
5/16	13:03	11.80	3	6.95	
5/16	13:04	11.70	4	7.05	
5/16	13:05	11.65	5	7.10	
5/16	13:06	11.60	6	7.15	
5/16	13:07	11.55	7	7.20	
5/16	13:08	11.50	8	7.25	
5/16	13:09	11.45	9	7.30	
5/16	13:10	11.43	10	7.32	
5/16	13:11	11.39	11	7.36	
5/16	13:12	11.35	12	7.40	T=16.3, pH=7.44, EC/SC=208.1/244.0
5/16	13:14	11.32	14	7.43	
5/16	13:16	11.30	16	7.45	
5/16	13:18	11.23	18	7.52	T=15.9, pH=7.46, EC/SC=209.9/246.4
5/16	13:20	11.19	20	7.56	
5/16	13:22	11.14	22	7.61	
5/16	13:24	11.09	24	7.66	
5/16	13:26	11.06	26	7.69	
5/16	13:28	11.03	28	7.72	T=16.1, pH=7.45, EC/SC=209.9/246.4
5/16	13:30	11.00	30	7.75	increase h=15"
5/16	13:31	8.70	31	10.05	
5/16	13:32	8.60	32	10.15	
5/16	13:33	8.53	33	10.22	
5/16	13:34	8.49	34	10.26	
5/16	13:35	8.42	35	10.33	
5/16	13:36	8.38	36	10.37	
5/16	13:37	8.35	37	10.40	
5/16	13:38	8.31	38	10.44	
5/16	13:39	8.28	39	10.47	difficult to read manometer, behind duct
5/16	13:40	8.27	40	10.48	tape
5/16	13:42	8.25	42	10.50	
5/16	13:44	8.20	44	10.55	T=16.1, EC/SC=208.8/245.6
5/16	13:46	8.15	46	10.60	
5/16	13:48	8.10	48	10.65	
5/16	13:50	8.07	50	10.68	
5/16	13:52	8.05	52	10.70	
5/16	13:54	8.00	54	10.75	T=16.0, pH=7.38, EC/SC=208.2/245.4
5/16	13:56	7.98	56	10.77	
5/16	13:58	7.95	58	10.80	T=16.0, pH=7.37, EC/SC=208.0/244.9
5/16	14:00	7.92	60	10.83	
5/16	14:01	6.28	61	12.47	increase h=25"
5/16	14:02	6.11	62	12.64	

Date	Time	WL (ft)	Elapsed Time (min)	DD (ft)	Remarks
5/16	14:03	6.05	63	12.70	
5/16	14:04	6.00	64	12.75	
5/16	14:05	5.94	65	12.81	
5/16	14:06	5.92	66	12.83	
5/16	14:07	5.90	67	12.85	check on flow along discharge channel,
5/16	14:09	5.89	69	12.86	mised reading
5/16	14:10	5.85	70	12.90	adjust gate valve couple of turns
5/16	14:11	5.84	71	12.91	
5/16	14:12	5.83	72	12.92	
5/16	14:14	5.85	74	12.90	T=16.0, pH=7.43, EC/SC=208.6/245.6
5/16	14:16	5.81	76	12.94	
5/16	14:18	5.79	78	12.96	
5/16	14:20	5.79	80	12.96	T=16.0, pH=7.42, EC/SC=208.7/245.7
5/16	14:22	5.78	82	12.97	
5/16	14:24	5.75	84	13.00	
5/16	14:26	5.73	86	13.02	
5/16	14:28	5.73	88	13.02	
5/16	14:30	5.70	90	13.05	closed gate valve

TEST WELL No. 2 (EAGLEFIED)
Pumping Well
EAGLE 7-DAY AQUIFER TEST



Appendix B.2

TEST WELL 1 (Legacy)

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No.
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041980
DRILLING PERMIT NO. 890994 - 835981
Water Right or Injection Well No. 63-32089, 63-32090

2. OWNER:
Name CITY OF EAGLE
Address P.O. Box 1520
City EAGLE State ID Zip 83616

3. LOCATION OF WELL by legal description: LEGACY WELL #1
You must provide address or Lot, Blk, Sub, or Directions to well.
Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11 ____ 1/4 SE 1/4 (10 acres) NW 1/4 (160 acres)
Gov't Lot ____ County ADA
Lat: : : Long: : :
Address of Well Site QUARTER CIRCLE DJ RANCH, WEST OF EAGLE ROAD City EAGLE
(Give at least names of road + Direction to Head or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other TEST

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
CEMENT GROUT	0	272	24 yds	PUMPED BOTTOM TO TOP
BENTONITE	360	415	12,000	DRY POUR

Was drive shoe used? ☐Y ☒N Shoe Depth(s): ____
Was drive shoe seal tested? ☐Y ☒N How? ____

8. CASING/LINER: 16" X 12" REDUCER @ 180' TO 181'

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16	+4	180	.375	STEEL	☒	☐	☒	☐
12	181	282	.375	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe 5'
Packer ☐Y ☒N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
282	352	.030		12	S.S.	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	(Weight) Volume	Placement Method
#8-12 SAND	272	360	24,000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure 6 lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____
FLANGED CAP W/ 1 1/4" PIPE PLUG

12. WELL TESTS:
☒ Pump ☐ Baller ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
1300 gpm	149'	135'	4 1/2 hrs

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
24	0	4	TOP SOIL		
	4	7	CLAY		
	7	11	SAND		
	11	28	SAND, RIVER GRAVELS		
	28	60	BRN CLAY		
	60	63	SAND		
	63	72	BRN CLAY		
	72	92	SAND		
	92	94	BRN CLAY		
	94	166	SAND W/BRN CLAY STREAKS		
	166	174	CLAY		
	174	178	SAND		
	178	181	CLAY		
	181	183	SAND, CLAY STREAKS		
	183	257	SAND		
	257	264	CLAY		
	264	274	SAND W/CLAY STREAKS		
	274	353	SAND		
↓	353	360	BLUE CLAY		
20	360	384	BLUE CLAY		
20	384	387	SAND		
	387	419	BLUE-GRAY CLAY		
	419	444	SAND		
	444	459	BLUE-GRAY CLAY		
	459	493	SAND W/ CLAY LAYERS		
	493	501	BLUE-GRAY CLAY		
	501	505	CEMENTED SAND		
↓	505	513	BLUE-GRAY CLAY		
			NOTE: BORE HOLE ABANDONMENT FROM 4/5" TO 5/3" WITH DRILL CUTTINGS		

Completed Depth 351' (Measurable)
Date: Started 1-24-06 Completed 4-11-06

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name RIVERSIDE INC Firm No. 333
Principal Driller [signature] Date 5-15-06
and
Driller or Operator II ____ Date ____
Operator I Jeff Hash Date 5-15-06

Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

40 0 40 80

SCALE: 1 INCH=40 VERTICAL FEET

ARTESIAN FLOW WELL HEAD, 16"X16"X10" STEEL TEE, WITH FLANGE FITTING AND W.L. MEASUREMENT PORT

10" GATE VALVE ASSEMBLY

4'X4'X12" CONCRETE SLAB

24" BORING

CENTRALIZERS ON MIN. OF 60' INTERVALS

16" DIA., 0.375" WALL STEEL CASING

4 STEEL CENTERING PLATES

NEAT CEMENT GROUT, PUMPED POSITIVE DISPLACEMENT SEAL

WELL CASING

WELDED STEEL REDUCTION FLANGE

CIRCULAR CENTERING BAND, 4 REQ'D

CENTRALIZER DETAIL

NOT TO SCALE

12" DIA., 0.0375" WALL STEEL CASING

8/12 COLORADO SILICA ARTIFICIAL SAND PACK

12" PIPE DIA. S.S. 30-SLOT SCREEN, JOHNSON FREE-FLOW™

12" DIA., 0.0375" WALL STEEL CASING TAIL SECTION, 5' OF LENGTH WITH 0.0375" THICK WELDED STEEL BOTTOM PLATE

1" SOLID CHIP BENTONITE SEAL

BORE ABANDONMENT WITH DRILL CUTTINGS

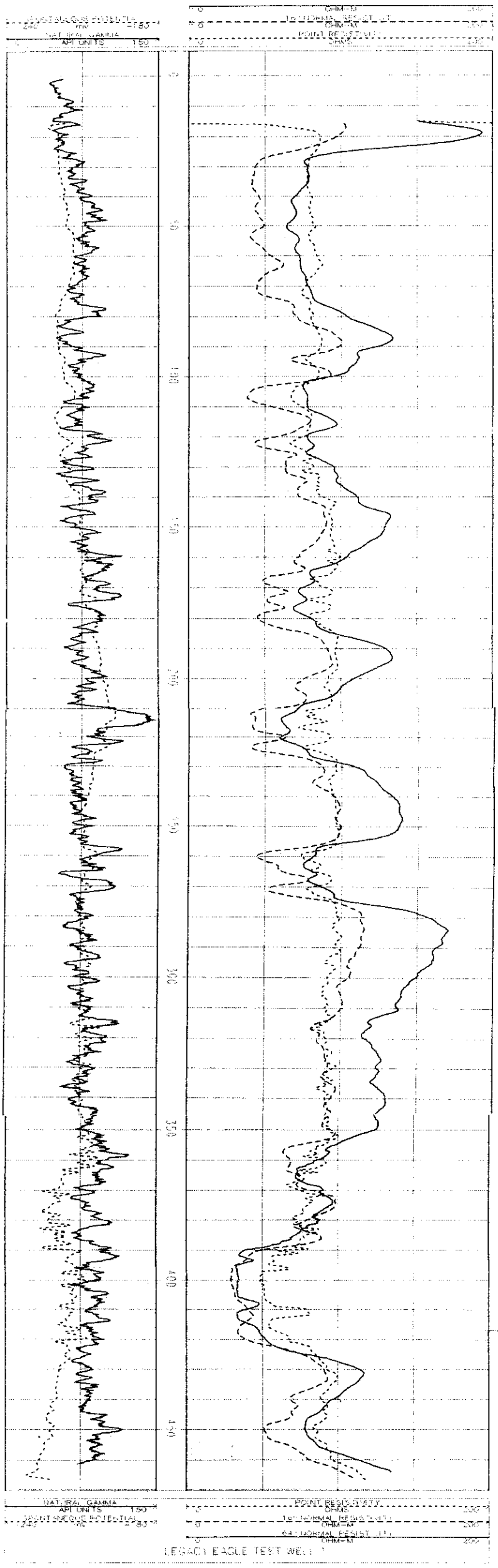
20" BORING

TOTAL DEPTH 513'

4'	
7'	
11'	
28'	
43'	
61'	
63'	
64'	
92'	
94'	
102'	
111'	
116'	
123'	
126'	
131'	
138'	
140'	
157'	
161'	
166'	
174'	
178'	
181'	
	180'
223'	
234'	
257'	
264'	
270'	
	272'
	282'
292'	
313'	
	352'
353'	
	357'
	362'
370'	
374'	
377'	
384'	
387'	
419'	
	420'
434'	
444'	
459'	
465'	
475'	
481'	
482'	
483'	
484'	
486'	
487'	
493'	
501'	
505'	
513'	

LEGEND:

- SAND
- GRAVEL
- BLUE-GRAY CLAY
- GRAY CLAY
- CLAY STRINGERS
- ORGANIC MATERIAL (WOOD)
- WEEKLY CEMENTED



AS-BUILT 2-17-06
EAGLE TEST WELL NO. 1
CITY OF EAGLE, IDAHO

JOB NO:	EG 06204
CADD FILE:	
DATE:	2/10/06
REVISED:	3/13/06
PLOTTED:	3/13/06
DRAWN BY:	MGM
CHECKED BY:	CHD
SHEET	

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 · FAX# (208) 642-2159
EMAIL: hec@holladayengineering.com

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: TEST WELL No. 1 (LEGACY) PROJECT NO.: EG061204 PAGE: 1 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32088 AND WR 63-32076 LOCATION: QUARTER CIRCLE DJ RANCH EAGLE, ID SITE LOCATION: SE, NW, S.11, T.4N, R.1W

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE, INC. (JEFF HASH) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
0-4	1/20/06	Med-DK. Brown	LOAM SOIL. Approx. 40% SILT, 30% SAND, 20% CLAY AND 10% ORGANIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	MUD 9/3 MIX, BARAID 18" BIT, WASHED SAMPLE 8 lbs. MUD (DRILLER)
4-7	1/20/06	DK. Brown	SILTY CLAY. Approx 40% SILT, 50% CLAY 10% SAND. SOFT		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
7-11	1/23/06	TAN/IGH-GRAY	SILTY SAND. Approx. 20% SILT AND 80% V. FINE TO COARSE SAND. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPL
11-13	1/23/06	TAN/IGH-GRAY	SANDY GRAVEL. Approx. 60% FINE-V. COARSE SAND, 40% FINE-COARSE GRAVEL AND 10% COBBLE ANGULAR TO WELL ROUNDED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	DIFFICULT DRILL, BIT BOUNCE, WASHED SAMPLE, BORING ENLARGEMENT, COBBLE SPINNING
13-18	1/23/06	TAN/IGH-GRAY	SANDY GRAVEL. Approx. 30% MED-V. COARSE SAND, 40% F.-C. GRAVEL 20% COBBLE, WELL ROUNDED GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	DRLG BIT BOUNCE, SLOW DRILLING, WASHED SAMPLE, BORING ENLARGEMENT.
18-28	1/24/06	TAN/IGH-GRAY	SANDY GRAVEL. Approx. 60% MED-V. COARSE SAND 40% F.-C. GRAVEL MINOR COBBLE. WELL ROUNDED GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE BORING ENLARGEMENT.
28-43	1/24/06	TAN	SANDY SILTY CLAY. Approx 10% FINE SAND, 30% SILT AND 60% CLAY, STICKY, Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
43-60	1/25/06	TAN	SILTY CLAY. Approx. 30% SILT AND 70% CLAY. STICKY, Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	20" BIT AT 53 FT, WASHED SAMPLE
60-63	1/26/06	TAN	CLAYEY SANDY SILT. Approx. 15% CLAY, 20% FINE SAND AND 65% CLAY. STICKY Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
63-64	1/26/06	ORANGISH-TAN	SILTY CLAY. Approx. 30% SILT AND 70% CLAY. STICKY, Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL No. 1 PROJECT NO.: EG 061204 PAGE: 2 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32089 WR 63-32090 LOCATION: QUARTER CIRCLE D.J. RANCH, EAGLE, ID SITE LOCATION: SE, NW, S.11, T.4N, R.1W

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE, INC. (JEFF HASH) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
64-72	1/26/06	TAN	SILTY CLAY. APPROX. 30% SILT AND 70% CLAY. STICKY & GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
72-74	1/27/06	TANNISH-GRAY	SILTY SAND. APPROX. 30% SILT AND 70% FINE-MED. SAND. POORLY SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE, MUD TESTED AT 9 lbs. MIX.
74-92	1/27/06	TANNISH-GRAY	SAND. FINE TO COARSE GRAINED. WELL SORTED, GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
92-94	1/27/06	TAN	SILTY CLAY. APPROX. 50% SILT AND 50% CLAY. STICKY. MOD. RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
94-102	1/27/06	TANNISH-GRAY	SAND, FINE TO COARSE GRAINED, WELL SORTED, GRANITIC		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
102-104	1/27/06	TAN	SILTY CLAY. APPROX. 60% SILT AND 40% CLAY. MOD. RIBBON. STICKY.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
104-109	1/27/06	TAN	SILTY CLAY. APPROX. 40% SILT AND 60% CLAY. GOOD RIBBON. STICKY.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
109-111	1/27/06	TAN	CLAYEY SILT. APPROX. 20% CLAY AND 70% SILT. POOR - NO RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
11-116	1/27/06	TANNISH-GRAY	SAND. FINE - V. COARSE GRAINED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
116-123	1/27/06	TAN	CLAY. APPROX. 20% SILT AND 80% CLAY. STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL No. 1 PROJECT NO.: EG06-1204 PAGE: 3 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32089 WR 63-32090 LOCATION: QUARTER CIRCLE D.J. RANCH SITE LOCATION: SE, NW, S.11, T.4N, R.1W

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE, INC. (JEFF HANSEN) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
123-126	1/27/06	TAN/ISH-GRAY	SAND. FINE TO V. COARSE SAND. WELL SORTED. GRANITIC,		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE,
126-131	1/27/06	TAN	SILTY CLAY. APPROX. 50% SILT AND 50% CLAY, STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
131-134	1/27/06	TAN/ISH-GRAY	SAND. FINE TO COARSE GRAINED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
134-140	1/27/06	TAN	SILTY CLAY. APPROX. 60% SILT AND 40% CLAY. MOD. RIBBON. STICKY.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
140-157	1/27/06	TAN/ISH-GRAY	SAND. FINE - COARSE GRAINED. GRANITIC		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
157-161	1/28/06	TAN	SILTY CLAY. APPROX. 50% SILT AND 50% CLAY. SOFT. STICKY GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
161-166	1/28/06	TAN/ISH - GRAY	SAND. FINE-TO-COARSE WELL SORTED, GRANITIC,		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
166-174	1/28/06	TAN	CLAY, APPROX. 30% AND 70% CLAY. SOFT. STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
174-181	1/28/06	TAN	SANDY SILTY CLAY. APPROX. 10% FINE SAND, 30% SILT AND 60% CLAY. SOFT. STICKY. MOD. RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
181-191	1/28/06	TAN/ISH - GRAY	SILTY CLAYEY SAND. APPROX. 10% CLAY, 30% SILT AND 60% SAND, V. FINE TO COARSE, POORLY SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL No.1 PROJECT NO.: EG 061204 PAGE: 4 of 6

PROJECT NAME: CITY OF EAGLE LOCATION: QUARTER CIRCLE D.J. RANCH SITE LOCATION: SE, NW, S.11, T.4N. R.1W
WR 63-32089
WR 63-32090

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE INC. (JEFF HASH) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
191-203	1/28/06	TAN/GRAY	SAND. FINE TO COARSE GRAINED. MOD. SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
203-221	1/28/06	TAN/GRAY	CLAYEY SILTY SAND. APPROX. 10% CLAY, 20% SILT AND 70% V. FINE TO MED. SAND. POORLY SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
221-223	1/28/06	TAN	SILTY CLAY. APPROX. 60% SILT AND 40% CLAY. MOD. RIBBON		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. NOTE: REPORT AS STRINGERS, BASED ON DRILL RATE.
223-257	1/28/06	TAN/GRAY	SAND, FINE TO MED. GRAINED SAND. WELL SORTED. SUBANGULAR, GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. NOTE: CLAY STRINGERS AT 234 FT. REPORTED BY DRILLER.
257-264	1/28/06	TAN	CLAY. APPROX. 10% SILT AND 90% CLAY. SOFT, STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE NOTE: SAND STRINGER REPORTED BY DRILLER AT 260 FT.
264-320	1/28/06	TAN/GRAY	SAND. V. FINE TO MED. GRAINED. WELL SORTED. SUBANGULAR. GRANITIC		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. NOTE: CLAY STRINGER REPORTED BY DRILLER AT 292 FT. AND 315 FT.
320-353	1/30/06	TAN/GRAY	SAND GRADING TO SILTY SAND. APPROX. 20% SILT AND 80% V. FINE TO MED. SAND. MODERATELY SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
353-370	1/30/06	BLUE-GRAY	SANDY SILTY CLAY. APPROX. 20% V. FINE SAND, 20% SILT AND 60% CLAY. SOFT. POORLY SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
370-377	1/30/06	TAN/GRAY	SILTY SAND. APPROX. 10% CLAY, 20% SILT AND 70% V. FINE TO COARSE SAND. POORLY SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. 9.0 LBS MUD (DRILLER)
377-384	1/30/06	BLUE-GRAY	SANDY SILTY CLAY. APPROX. 20% V. FINE TO FINE SAND, 20% SILT AND 60% CLAY. SOFT, STICKY MOD. RIBBON, 5% CARBON WOOD.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL No. 1 PROJECT NO.: EG 061204 PAGE: 5 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32089 WR 63-32090 LOCATION: QUARTER CIRCLE D. J. RANCH SITE LOCATION: SE, NW, S. 11, T. 4N, R. 1W

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE INC. (JEFF HASH) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
384-387	1/30/06	TANNISH-GRAY	SAND. Approx. 90% V. FINE TO MED. SAND AND 10% SILT. WELL SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
387-419	1/30/06	BLUE-GRAY	CLAY. Approx 80% CLAY AND 20% SILT. SOFT. Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
419-434	1/30/06	LT. GRAY	SAND. Approx. 15% SILT AND V. FINE TO V. COARSE SAND, MINOR Pebbles. Mod. SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
434-444	1/30/06	LT. GRAY	CLAYEY SILTY SAND. Approx. 20% CLAY, 40% SILT AND 40% V. FINE TO MED. SAND. POORLY SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
444-459	1/30/06	BLUE-GRAY	SILTY CLAY. Approx. 60% SILT AND 40% CLAY. SOFT. Mod. Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
459-465	1/30/06	GRAY	CLAYEY SILTY SAND. Approx. 10% CLAY, 20% SILT AND 70% V. FINE TO MED. SAND, POORLY SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. STOPPED DRILLING BY ENGINEER.
465-481	1/31/06	LT. GRAY	SAND, FINE TO MED. SAND. WELL SORTED. GRANITIC. Clay String 6" AT 475'. CARBONIZED WOOD (475-480').		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. RESUMED DRILLING BY ENGINEER. MUD 9.7 lbs (DRILLER)
481-482	1/31/06	BLUE-GRAY	SILTY CLAY. Approx. 60% SILT AND 40% CLAY. SOFT. Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
482-483	1/31/06	LT. GRAY	CLAYEY SILT SAND. Approx. 10% CLAY, 30% SILT AND 60% FINE TO COARSE SAND POORLY SORTED, CARBONIZED Wood Frag.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
483-484	1/31/06	BLUE-GRAY	SILTY CLAY. Approx. 40% SILT AND 60% CLAY. 5-10% Carbonized Wood Frag.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL No. 1 PROJECT NO.: EG061204 PAGE: 6 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32089 WR 63-32090 LOCATION: QUARTER CIRCLE D.J. RANCH SITE LOCATION: SE, NW, S. 11, T. 4N, R. 1W

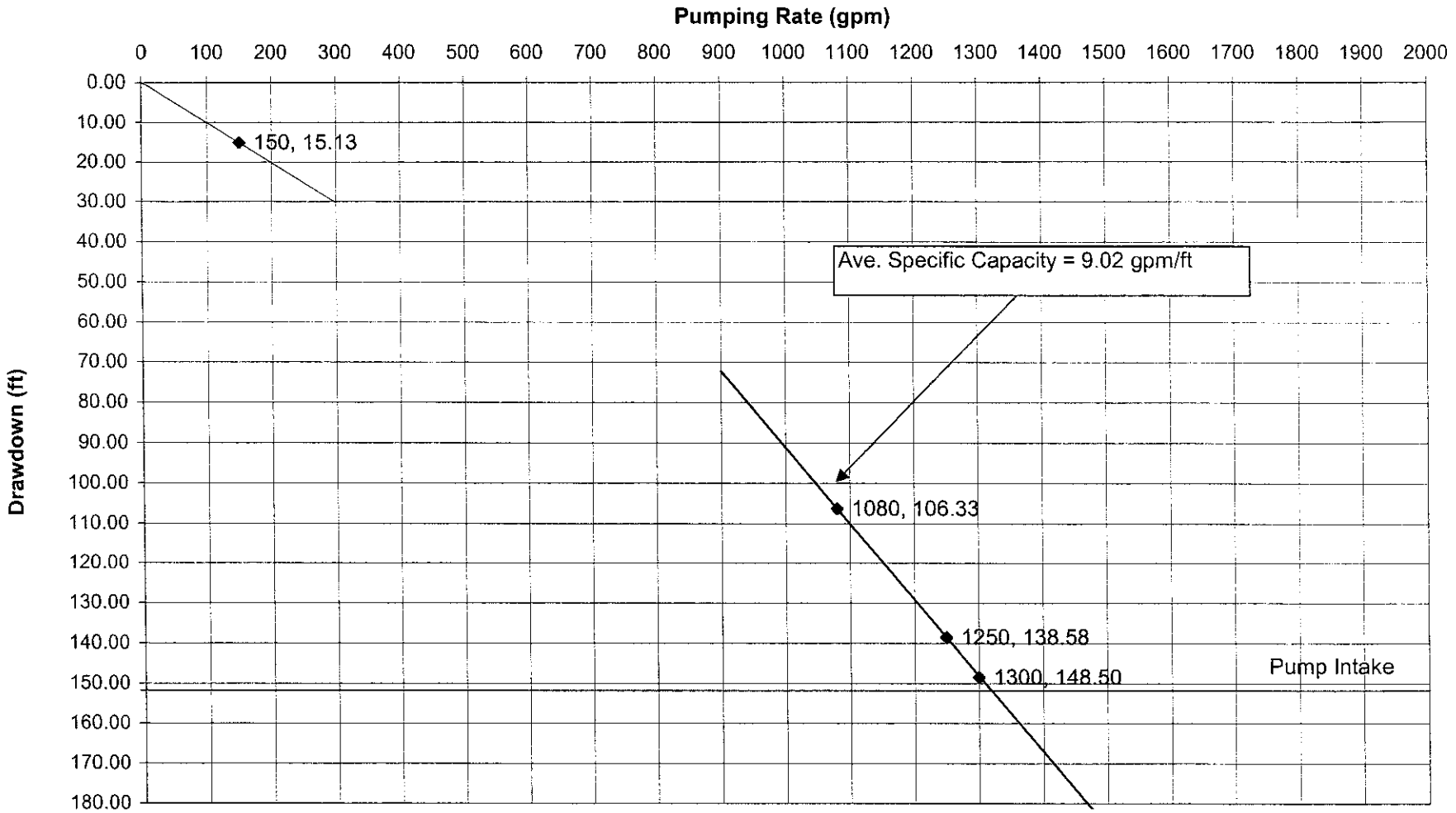
COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18" 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE INC. (JEFF HASH) STATIC WATER DEPTH: _____

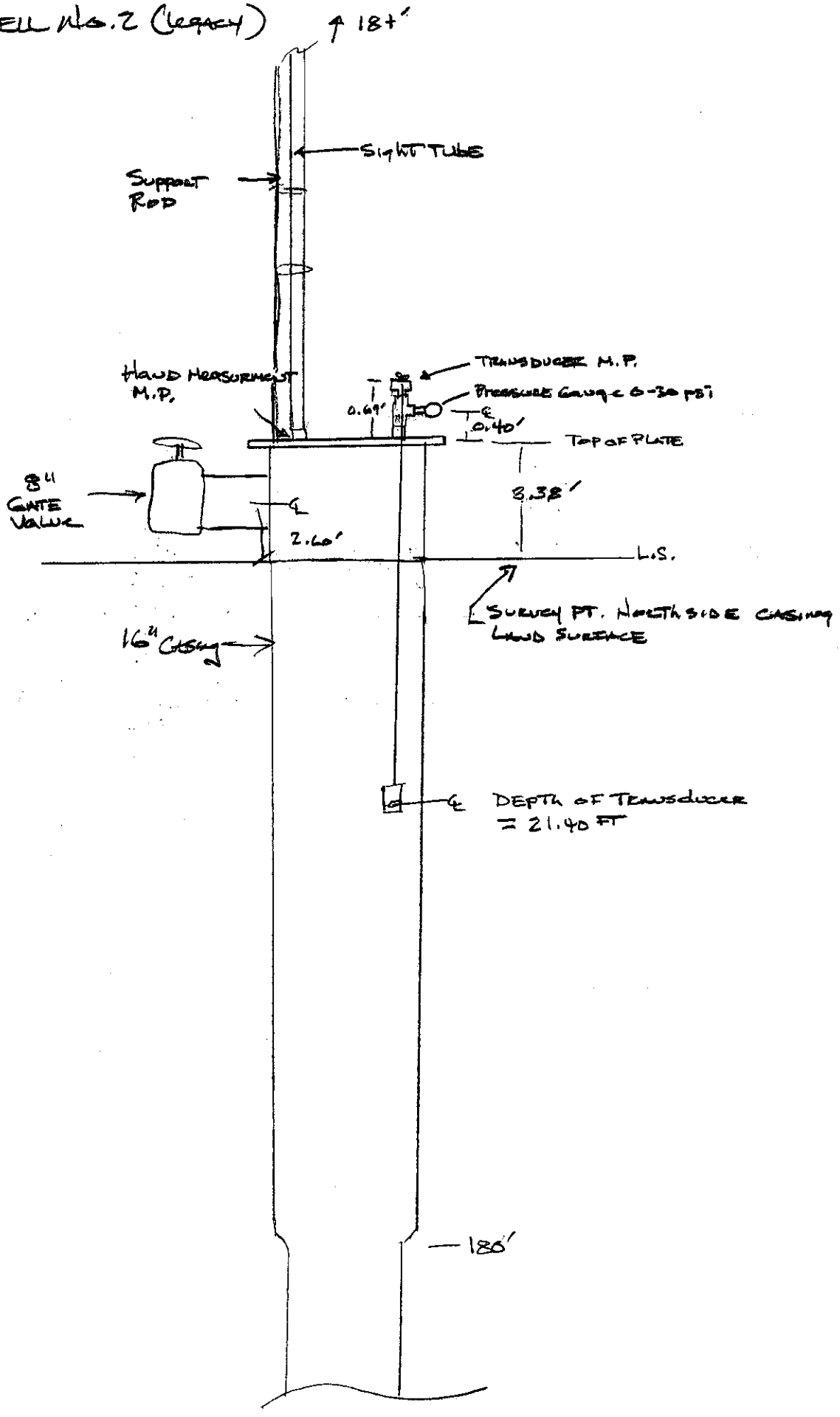
Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
484-486	1/31/06	LT. GRAY	SAND. FINE-MED, SAND, WELL SORTED, WEAKLY CEMENTED Carbonite? WELL SORTED, GRANITIC. DRY; SED, Frags Carbonized wood. Frag.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. HARDER DRILLING.
486-487	1/31/06	BLUE-GRAY	CLAY, SOFT. STICKY. Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
487-489	1/31/06	LT. GRAY	SAND, MED. TO COARSE SAND AND MINOR FINE SAND. WELL SORTED. GRANITIC,		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
489-493	1/31/06	LT. GRAY	SAND, MED, TO V. COARSE SAND AND 10% pebbles. SUBANGULAR. MOD. SORTED. GRANITIC,		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
493-501	1/31/06	DK. GRAY TO BLUE-GRAY	CLAY. STIFF. Good Ribbon. GRADING IN COLOR FROM DK. GRAY TO BLUE-GRAY.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. DRILL RIG BOUNCE.
501-505	1/31/06	WEAK BLUE-GRAY TO GRAY	CLAYEY SILTY SAND. APPROX. 10% CLAY, 40% SILT, AND V. FINE TO FINE SAND. POORLY SORTED. WEAKLY CEMENTED CARBONATE		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. HARDER DRILLING.
505-513	1/31/06	BLUE-GRAY	CLAY, MOD. STIFF. STICKY. Good RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. T.D. 513' ENGINEER STOPPED DRILLING.

STEP PUMP TEST of TEST WELL No.1 (Legacy)
March 24th 9:15am to 2:30 pm
Specific Capacity



EAGLE 7-DAY AQUIFER TEST

TEST WELL No. 2 (LEGACY)



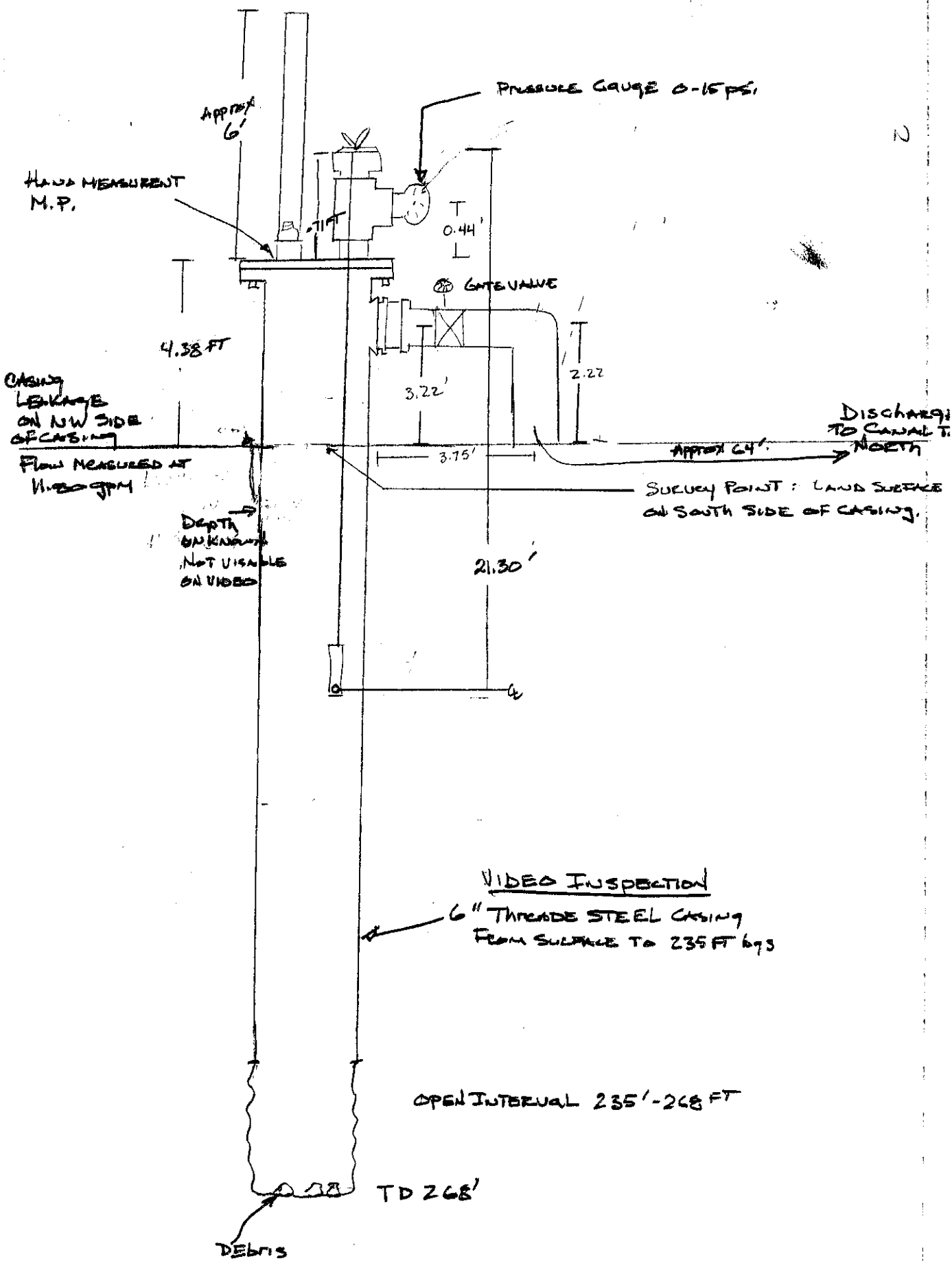
Appendix B.3

MONITORING WELL 4 (QCR 4)

CITY OF EAGLE -DAY AQUIFER TEST

QUARTER CIRCLE WELL NO. 4

MONITING WELL NO.4 (QCR4)



Appendix B.4

MONITORING WELL 6 (Rick's)

USE TYPEWRITER OR BALL POINT PEN

S. Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Quarter Circle D J Ranch

Address Star, Idaho (Home Place)

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 16 inches Total depth 406 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	16 inches	0 18" feet	253 feet
.250 inches	10 inches	223 feet	406 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☒ Factory ☐ Knife ☐ Torch

Size of perforation 3/16 inches by 3 inches

Number	From	To
5,152 perforations	234 feet	395 feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☒ Yes ☐ No Size of gravel 3/8 minus 30 yds.

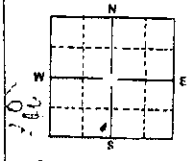
Placed from 223 feet to 406 feet

Surface seal depth 22 Material used in seal ☒ Cement grout ☐ Puddling clay ☐ Well cuttings

Sealing procedure used ☐ Slurry pit ☒ Temporary surface casing ☐ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name

Lot No. Block No.

County Ada

S/E ¼ S/W ¼ Sec. 2, T. 4 N/S, R. 1 E/W

7. WATER LEVEL

Static water level feet below land surface

Flowing? ☒ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☒ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG 40055

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
16"	0	3	Top Soil		X
"	3	12	light clay and sand		X
"	12	27	Fine sand, some clay	X	
"	27	105	Blue clay		X
"	165	240	Sand with clay binder	X	
"	240	260	Sticky brown clay		X
"	260	295	Sand, some small layers of clay	X	
"	295	318	Sticky brown clay		X
"	318	380	Sand, some small layers of clay	X	
"	380	404	Sand, some clay	X	
"	404	406	Sticky light brown clay		X
			Gravel pack		
			30 yds. of 3/8 minus gravel		
			10" shoe on top of liner		
			15" shoe on bottom of liner		
			NOT TESTED AS OF 2/20/74		

10. Work started Nov. 28/73 finished Dec. 30, 73

11. DRILLERS CERTIFICATION

Firm Name W. E. Stevens & Sons Firm No. 153

Address 3709 Hawthorne Drive Date 12/30/73

Signed by (Firm Official) Wayne E. Stevens

and

(Operator) Lonnie

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

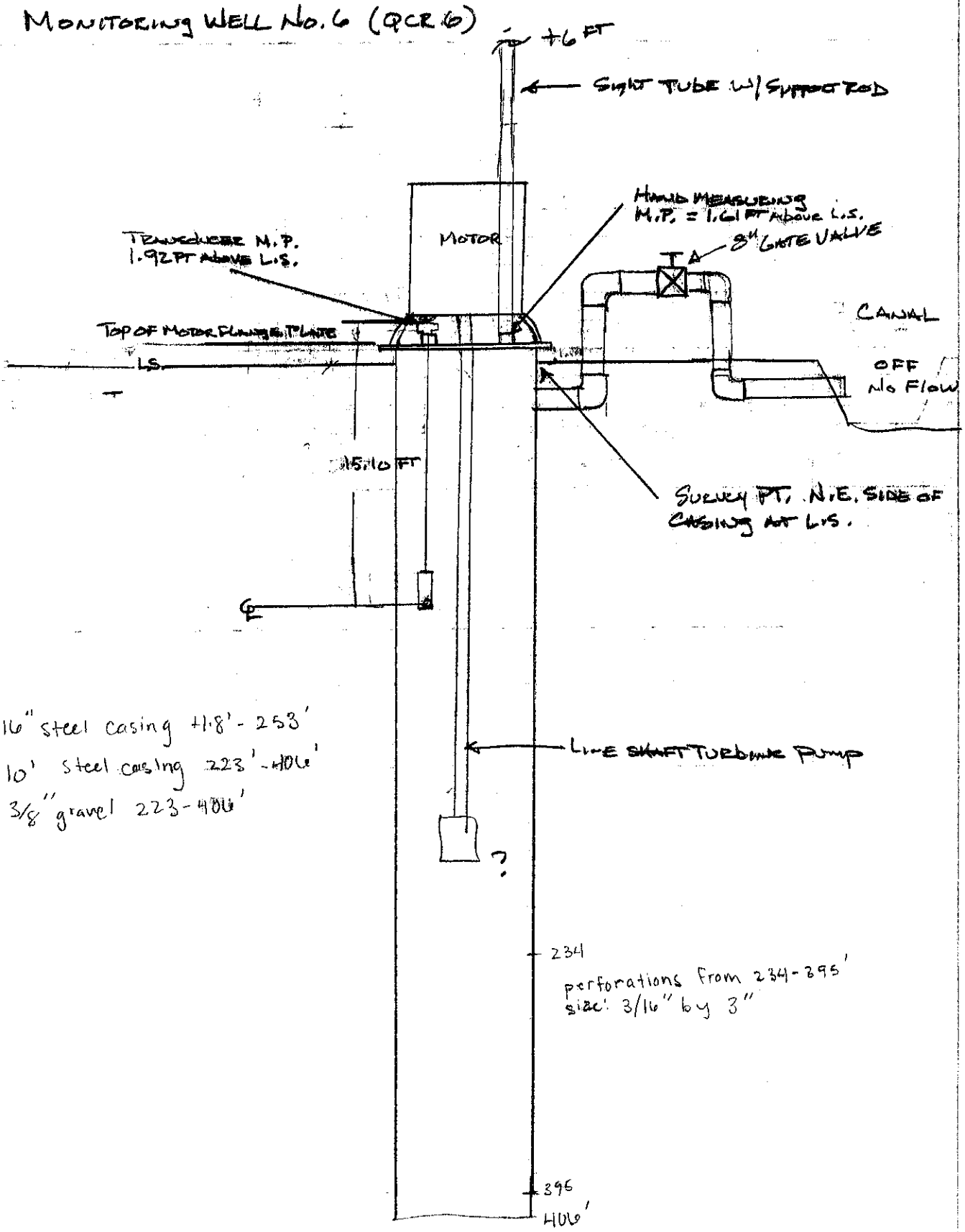
MICROFILMED

CITY OF EAGLE 1-DAY AQUIFER TEST

QUARTER CIRCLE WELL NO. 6

(RICK'S IRRIGATION WELL)

MONITORING WELL NO. 6 (QCR 6)



Appendix B.5

MONITORING WELL 9 (Strata 1A)

Draft

Boring No. 1a Subsurface Soil Description Top of Casing Elevation = Ground Surface Elevation =	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Sandy SILT (Native) – tan, very stiff, moist.	1	ML							Trace vegetation and organics observed to 3 inches BGS.
CLAY with SAND – brown, soft to stiff, moist to saturated.	2 3 4 5 6	CL							Top of protective steel casing above ground = 2.8 feet. Bentonite Seal from 0 to 10 feet 1 1/4 inch ø PVC Well
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated. *Reading on 9-7-2005 = 7.1 feet	7 8 9 10 11 12 13 14 15	GP ▽ * ▽							Sand pack from 10 to 15 feet 1 1/4 inch ø PVC screened well from 10 to 15 feet Standpipe piezometer installed to 15 feet.
Boring terminated at 15 feet BGS.	16 17 18 19 20								

File: EAGSPO	Boring Number: B-1a
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-81	Boring Diameter: 8 inch
Depth to Groundwater: 6.5'	Logged By: AM

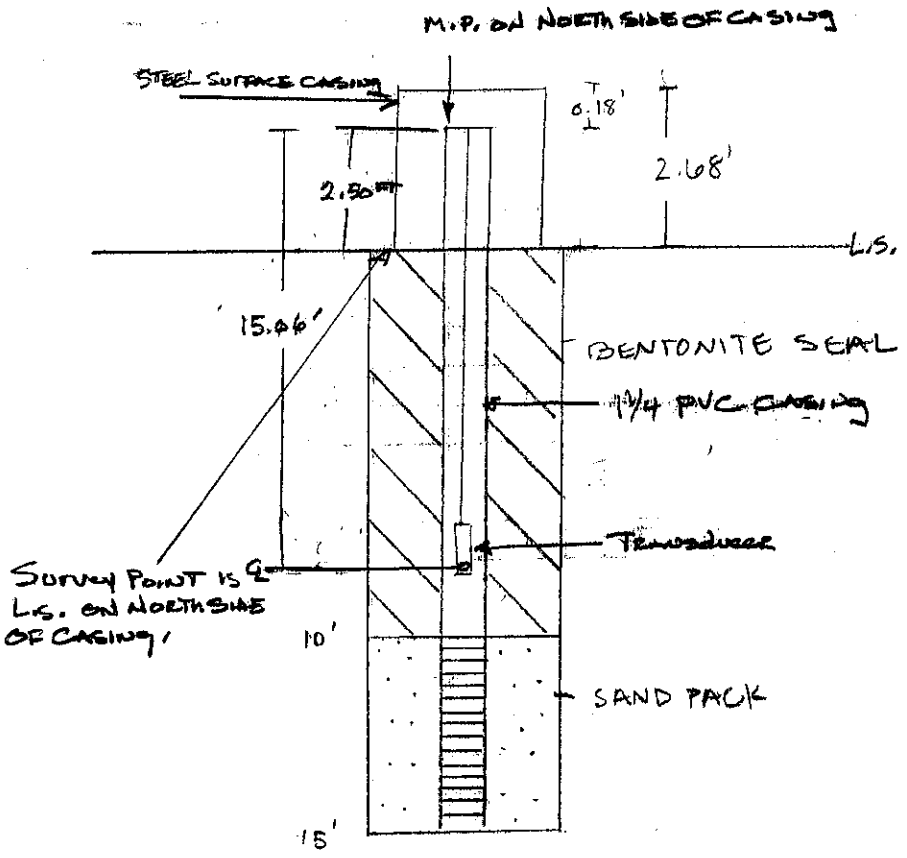
STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Integrity from the Ground Up

EXPLORATORY BORING LOGS

F:\Projects\EagSpo\B05188a\dwg\B05188a-bl 1-2.dwg 9/19/2005 6:13:07 PM MDT

CITY OF EAGLE 7-DAY AQUIFER

MONITORING WELL NO. 9 (STRATA 1A)



Appendix B.6

MONITORING WELL 10 (Strata 1B)

Draft

Boring No. 1 Subsurface Soil Description Top of Casing Elevation = Ground Surface Elevation =	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Sandy SILT (Native) – tan, very stiff, moist.	0	ML							Trace vegetation and organics observed to 3 inches BGS.
CLAY with SAND – brown, soft to stiff, moist to saturated.	1 2 3 4 5 6	CL			1 1 2 2 6 10	3 16	0.75 1.0 1.25		Top of protective steel casing above ground = 3.1 feet. Passing #200 screen = 78%. BG Liquid Limit (LL) = 30. Plastic Index (PI) = 11. Moisture Content = 24.9%. BG
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated. *Reading on 9-7-2005 = 6.8 feet	7 8 9 10 11 12 13 14 15 16 17 18 19 20	GP			32 25 38 4 15 27	38 26			BG Bentonite Seal 1 inch ø PVC Well Heaved sand from 15 to 16 feet. BG BG

File: EAGSPO	Boring Number: B-1
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-81	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Integrity From the Ground Up

EXPLORATORY BORING LOGS

Sheet 1 of 3

F:\Projects\EagSpo\B05188a\dwg\B05188a-bl 1-2.dwg 9/19/2005 51600 PM MDT

Draft

Boring No. 1 Subsurface Soil Description	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per foot	POCKET Penetro-meter(tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated.	21	GP			7 39 32	43			BG Heaved sand from 20 to 21 feet.
	22								
	23								
Fat CLAY – dark gray, hard to very stiff, wet.	24	CL							
	25				26 34 42	61			BG Minimal recovery, possible rock at bottom of spoon.
	26								
	27								Passing #200 screen = 96%.
	28				11 15 26	31	>4.5 4.0 3.5		BG RG RG Liquid Limit (LL) = 58. Plastic Index (PI) = 31.
	29								
	30				10 13 20	33	3.0 3.5		BG
	31								
	32								Bentonite Seal
	33								1 inch ø PVC Well
	34								
	35				7 12 17	29	1.5 3.0		BG
...except light brown at 36.5 feet.	36								
	37								
Clayey SAND – light brown, dense, saturated.	38	SC							
	39								
	40								

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File: EAGSPO	Boring Number: B-1
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-81	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Integrity From the Ground Up

EXPLORATORY BORING LOGS

Draft

Boring No. 1 Subsurface Soil Description	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Clayey SAND – light brown, dense, saturated.	41	SC			27 30 41	47			Trace orange staining observed in sample. BG RG RG Bentonite Seal from 0 to 45 feet 1 inch ø PVC Well
	42								
	43								
	44								
Poorly–Graded medium SAND – light brown, very dense, saturated.	45	SP			29 56 60	69			RG Sand pack from 45 to 55 feet
	46								
	47								
	48								
	49								1 inch ø PVC screened well from 45 to 55 feet
	50				33 59 62	71			RG BG
	51								
	52								
	53								
	54								Standpipe piezometer installed to 55 feet.
Boring terminated at 55 feet BGS.	55								
	56								
	57								
	58								
	59								
	60								

File: EAGSPO	Boring Number: B–1
Project No.: B05188A	Date Drilled: 8–30–2005
Drill Rig: BK–81	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Integrity from the Ground Up

EXPLORATORY BORING LOGS

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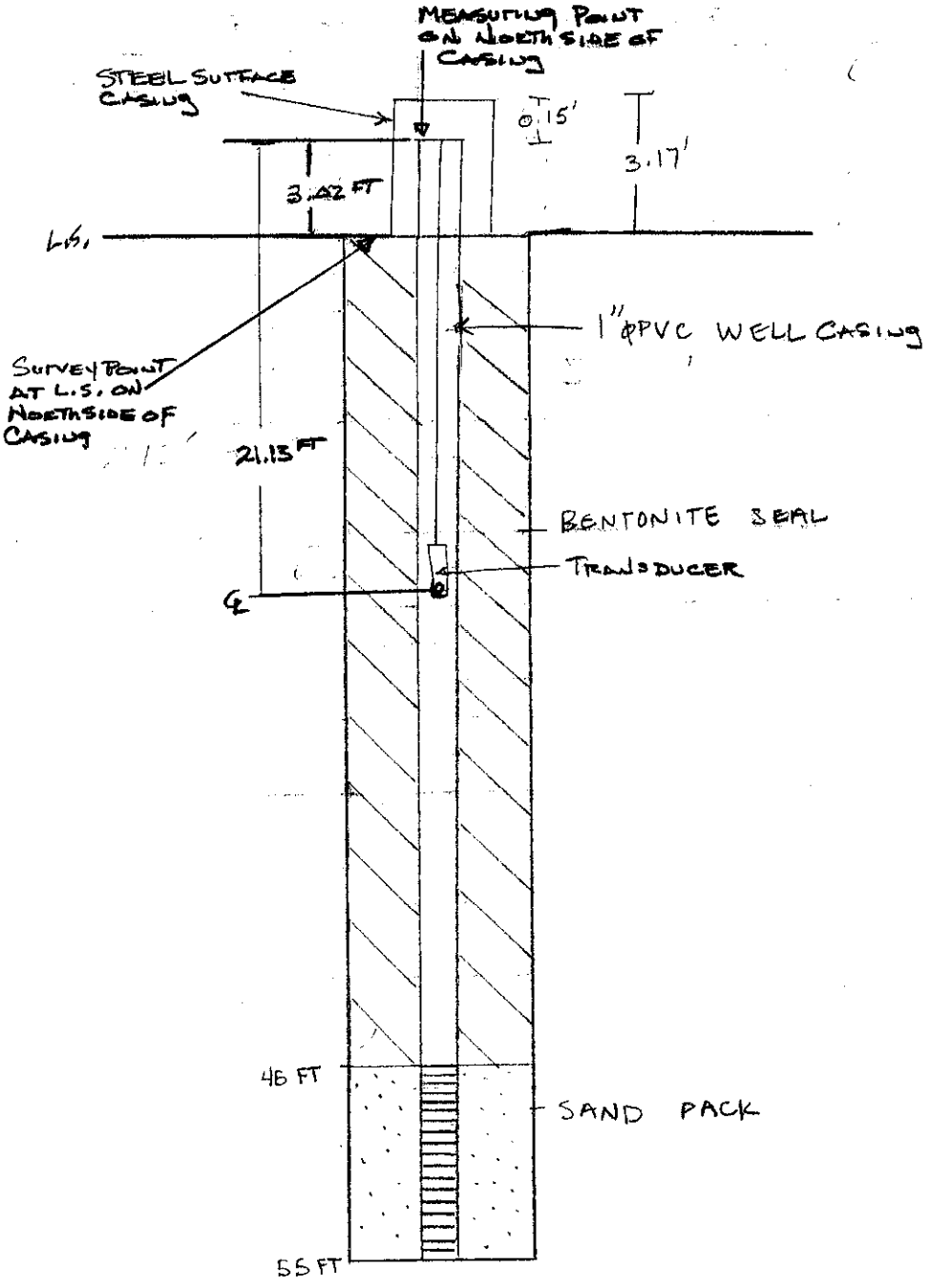
CITY OF EAGLE ~~&~~ AQUIFER TEST

MONITORING WELL NO. 10 (STRATIA 1B)



Appendix B.7

MONITORING WELL 11 (UWI 1A)

RECEIVED
OCT 28 1997
Department of Water Resources

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Tag #000019

67930

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-W-0633-801
Other IDWR No. _____

2. OWNER: Hope Lutheran Church
Name United Water Corp
Address PO Box 7488
City Boise State ID Zip 83707

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11, NE 10 acres 1/4 SE 40 acres 1/4 ____ 160 acres 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site State St & Linder (Hope Luth Church)
City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. 7 Blk. 1 Sub. Name Brush Acres

4. USE:
☐ Domestic ☐ Municipal ~~☒ Monitor~~ ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Test well

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable ☒ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
_____ ft. below ground Artesian pressure 6 lb.
Depth flow encountered 212 ft. Describe access port or control devices: caps

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☒ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	1	6	topsoil		X
	6	31	sand & gravel		X
8	31	43	sand & sandy clay	X	
	43	68	cemented sand	X	
	68	71	clay		X
	71	93	sand	X	
	93	103	clay		X
	103	125	sand	X	
	125	140	clay		X
	140	200	sand & clay streaks	X	
	200	205	sand	X	
	205	212	clay		X
	212	485	sand	X	
	485	513	sand & cemented sand streaks	X	
	513	540	sand	X	
	540	845	blue clay		X
			~~see drawing for pipe information~~		

RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION
MICROFILMED
JAN 09 1998

Completed Depth 845 (Measurable)
Date: Started 9/25/97 Completed 10/13/97

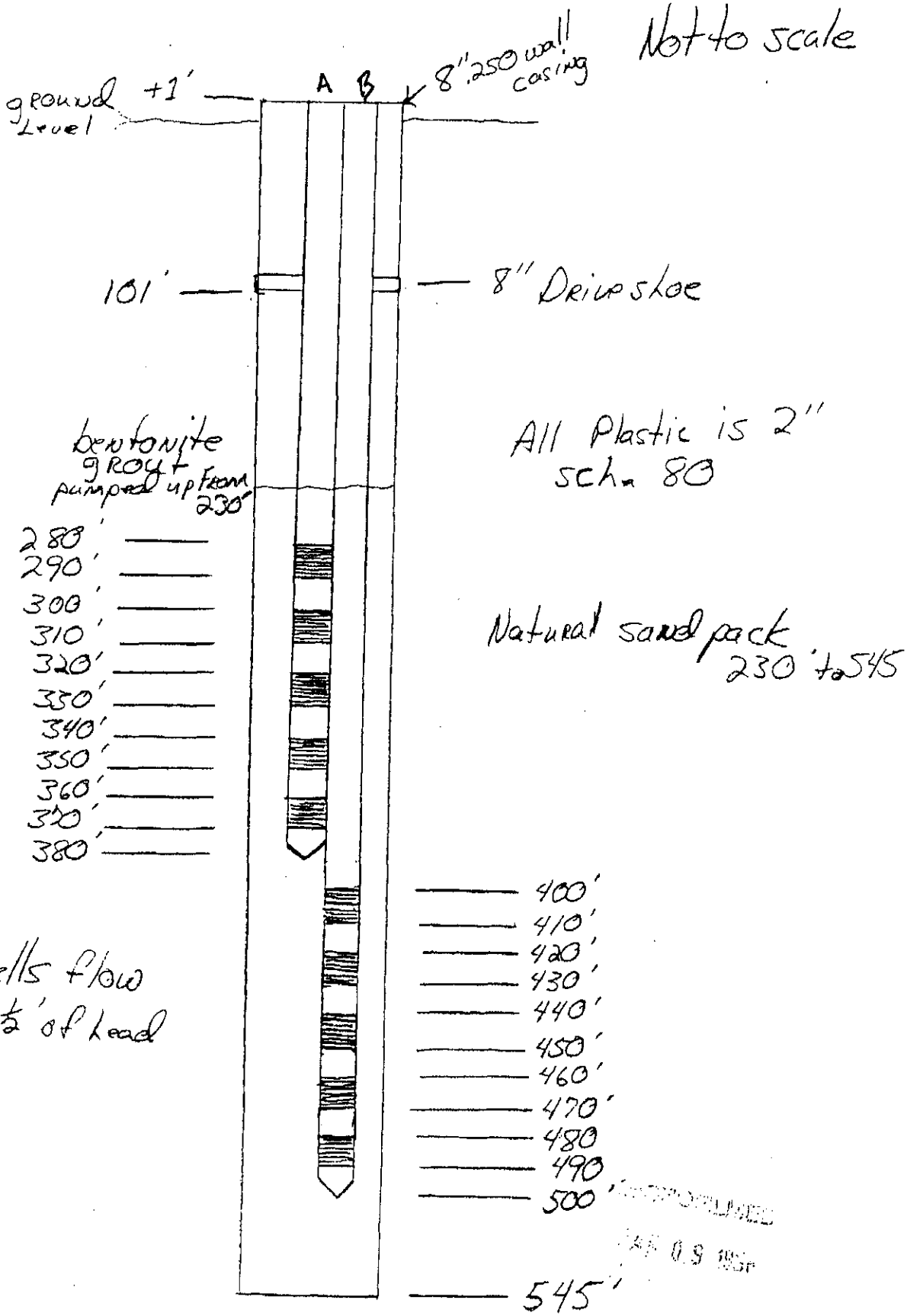
13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Stevens & Sons Firm No. 153
Firm Official _____ Date _____
and
Supervisor or Operator Ron Stevens Date 10/20/97
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Unit 2 Water State & Line e 63-97-W-0633-801
test Well #1
67931

Not to scale



All Plastic is 2" sch. 80

Natural sand pack 230' to 545

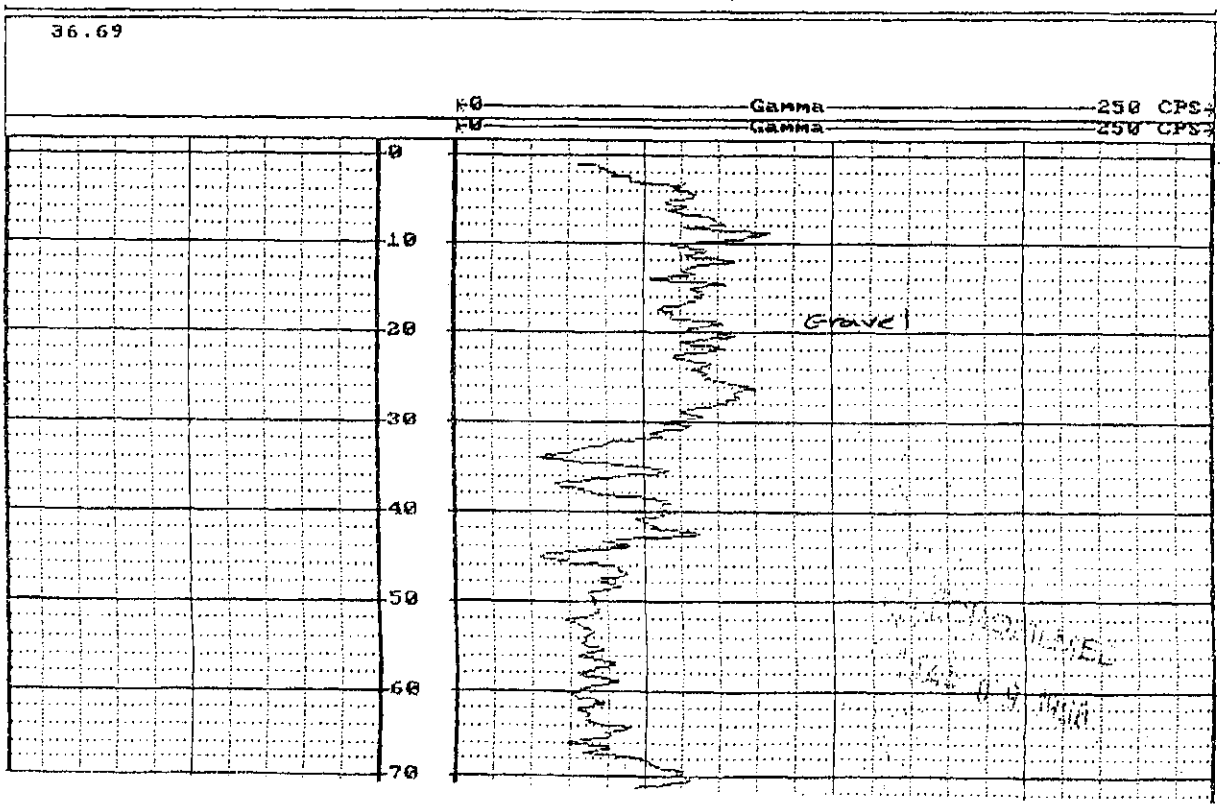
Both Wells flow under 14½' of head

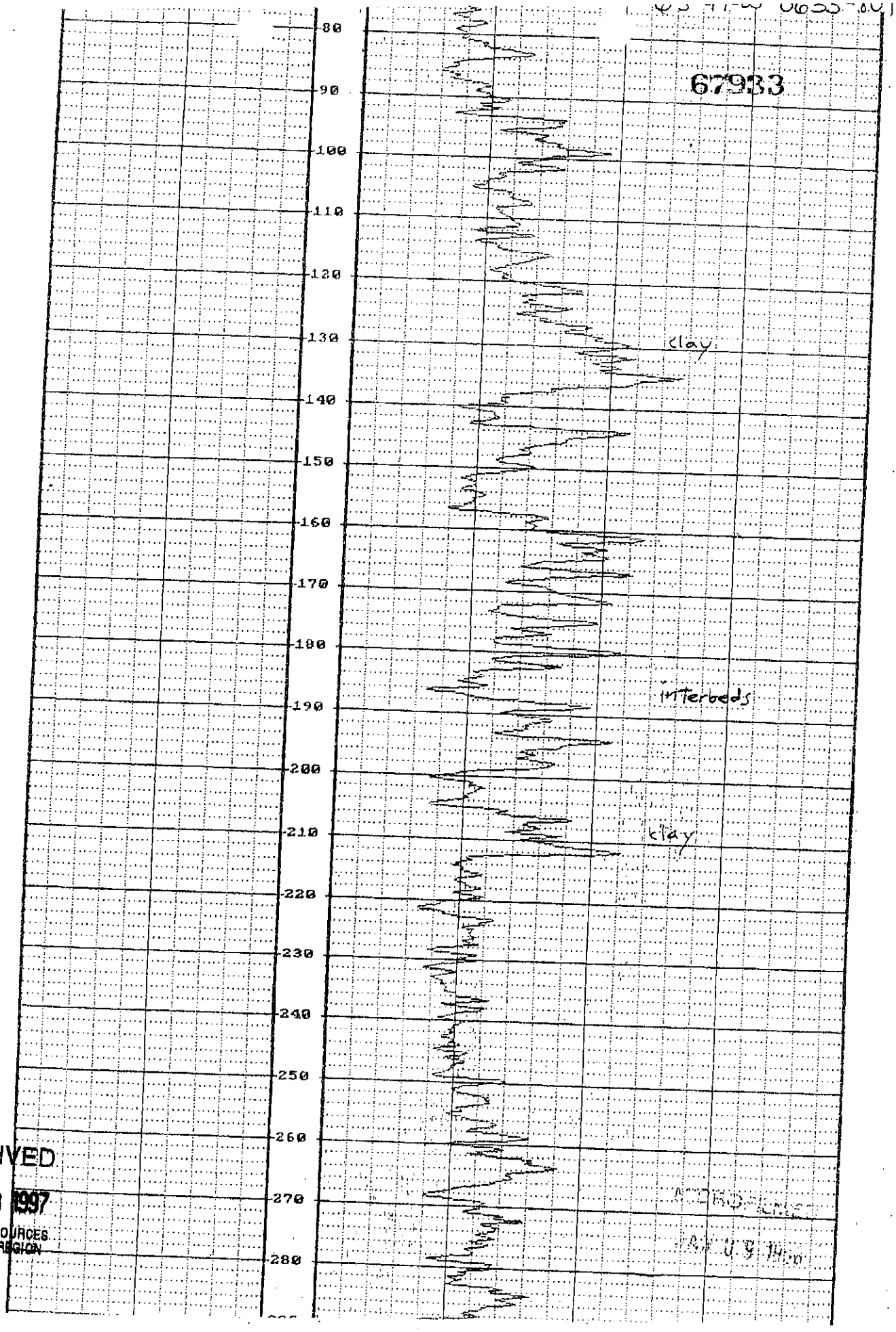
RECEIVED
OCT 23 1997
WATER REBOURCES
WESTERN REGION

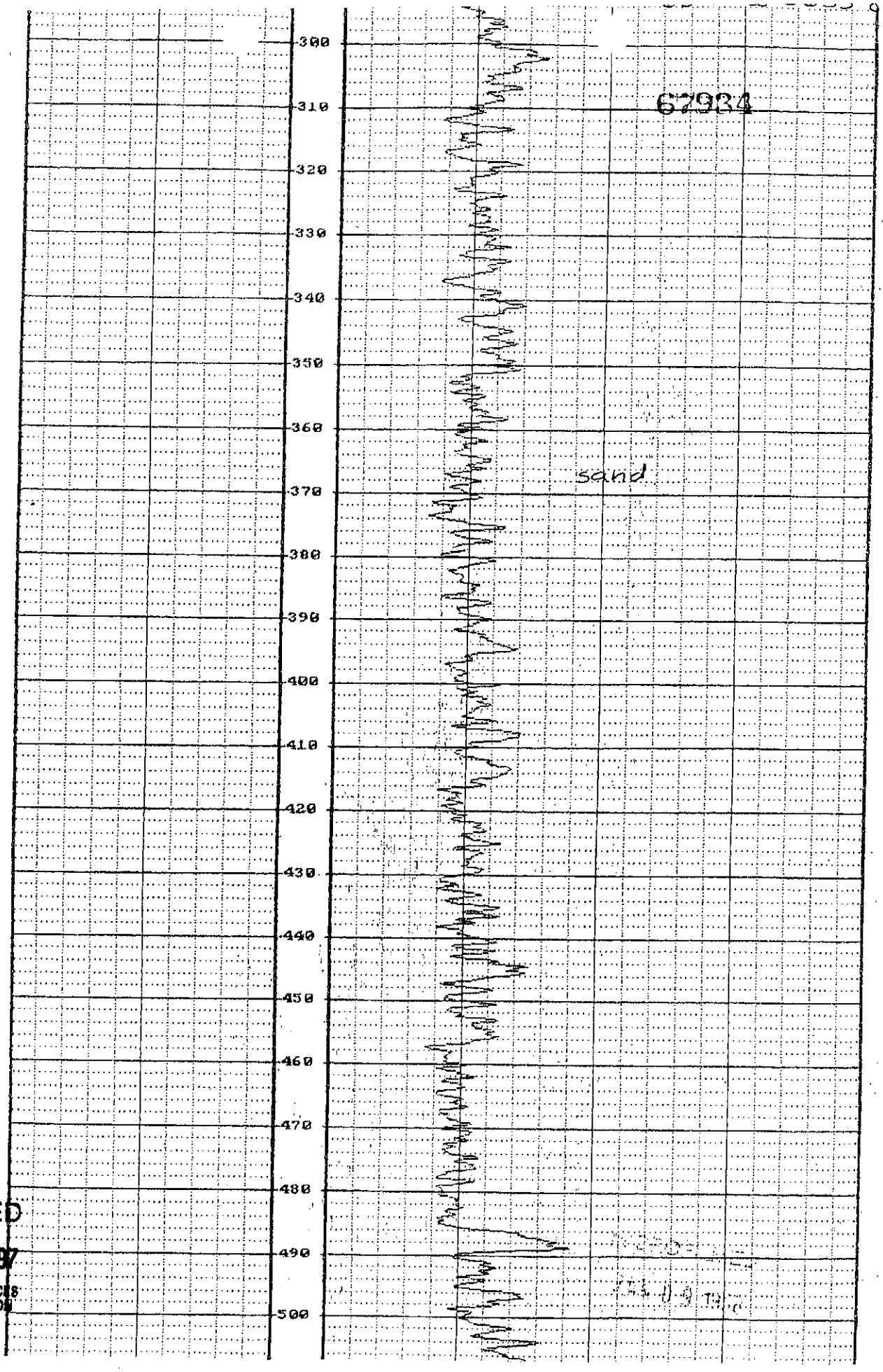
63-97-W-0633-80.1

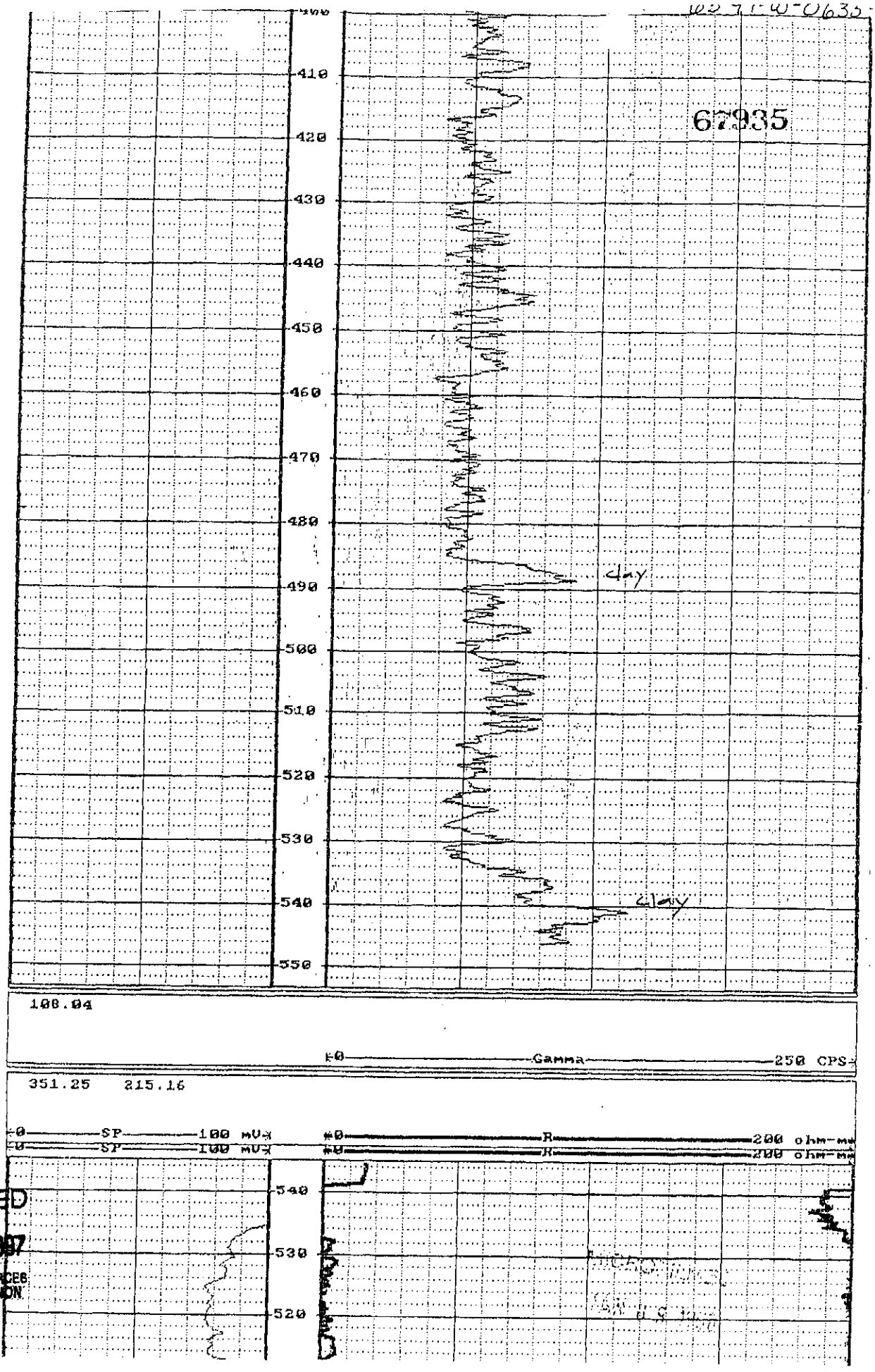
67932

State # Linder Test Well



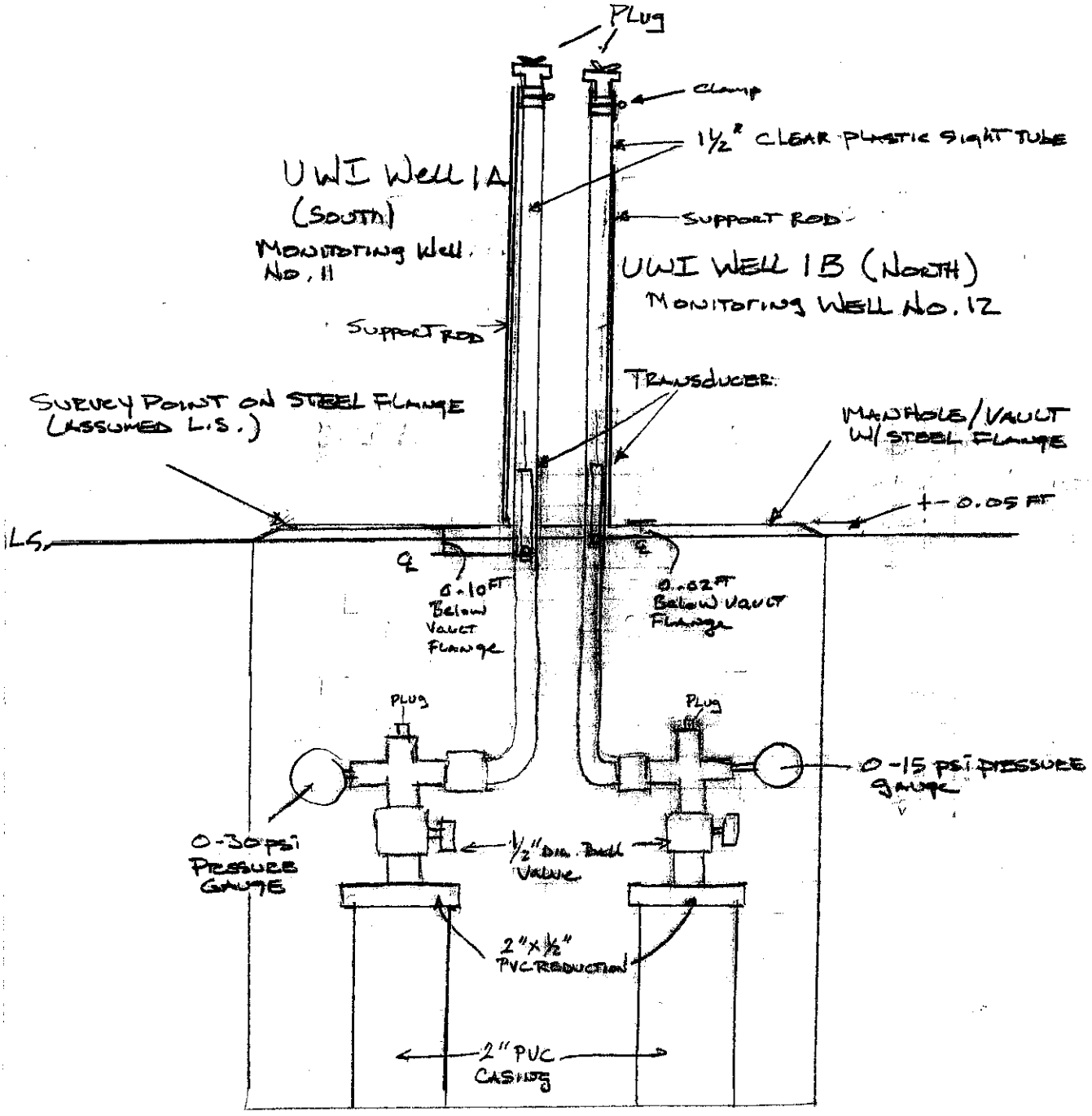






City of Eagle 1-Day Aquifer Test

Monitoring Well No. 11 (UWI 1A) and
Monitoring Well No. 12 (UWI 1B)



Appendix B.8

MONITORING WELL 12 (UWI 1B)

RECEIVED
OCT 2 8 1997
Department of Water Resources

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Tag #000019

67930

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-W-0633-801
Other IDWR No. _____

2. OWNER: Hope Lutheran Church
Name United Water Corp
Address PO Box 7488
City Boise State ID Zip 83707

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp 4 North ☒ or South ☐
Rge 1 East ☐ or West ☒
Sec 11, NE 1/4 (10 acres) SE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: : :

Address of Well Site State St & Linder
(Hope Luth Church) City Eagle
(Give at least name of road + Distance to Road or Landmark)

Lt. 7 Blk. 1 Sub. Name Brush Acres

4. USE:
☐ Domestic ☐ Municipal ~~☐ Monitor~~ ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Test well

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable ☒ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
_____ ft. below ground Artesian pressure 6 lb.
Depth flow encountered 212 ft. Describe access port or control devices: caps

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☒ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
_____ Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	1	6	topsoil		X
	6	31	sand & gravel		X
8	31	43	sand & sandy clay	X	
	43	68	cemented sand	X	
	68	71	clay		X
	71	93	sand	X	
	93	103	clay		X
	103	125	sand	X	
	125	140	clay		X
	140	200	sand & clay streaks	X	
	200	205	sand	X	
	205	212	clay		X
	212	485	sand	X	
	485	513	sand & cemented sand streaks	X	
	513	540	sand	X	
	540	845	blue clay		X
			see drawing for pipe information		

RECEIVED
OCT 2 3 1997
WATER RESOURCES
WESTERN REGION

MICROFILMED
JAN 0 9 1998

Completed Depth 560 (Measurable)
Date: Started 9/25/97 Completed 10/13/97

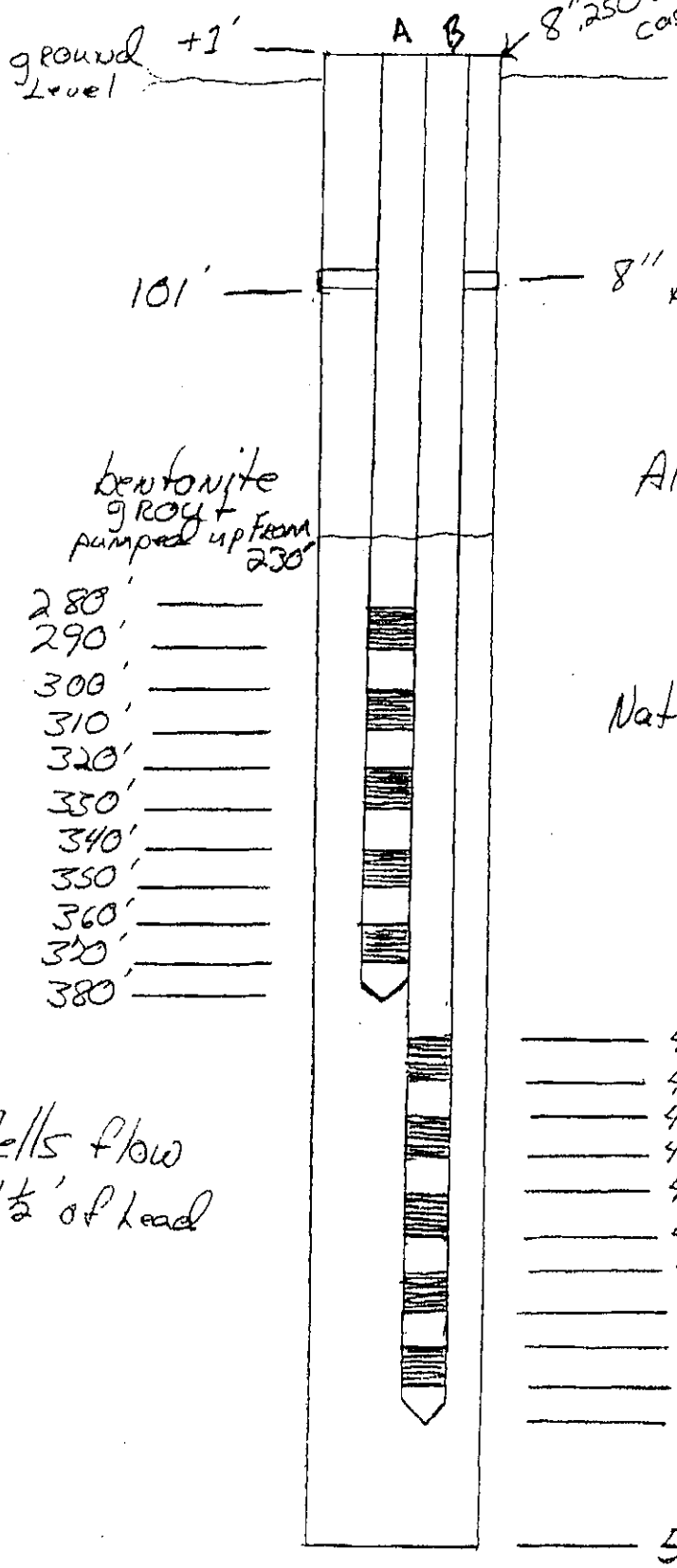
13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Stevens & Sons Firm No. 153
Firm Official _____ Date _____
and
Supervisor or Operator Ron Stevens Date 10/20/97
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

United Water State # Line R 63-97-W-0633-801
test Well #1
67931

Not to scale



All Plastic is 2" sch. 80

Natural sandpack 230' to 545

Both Wells flow under 14½' of head

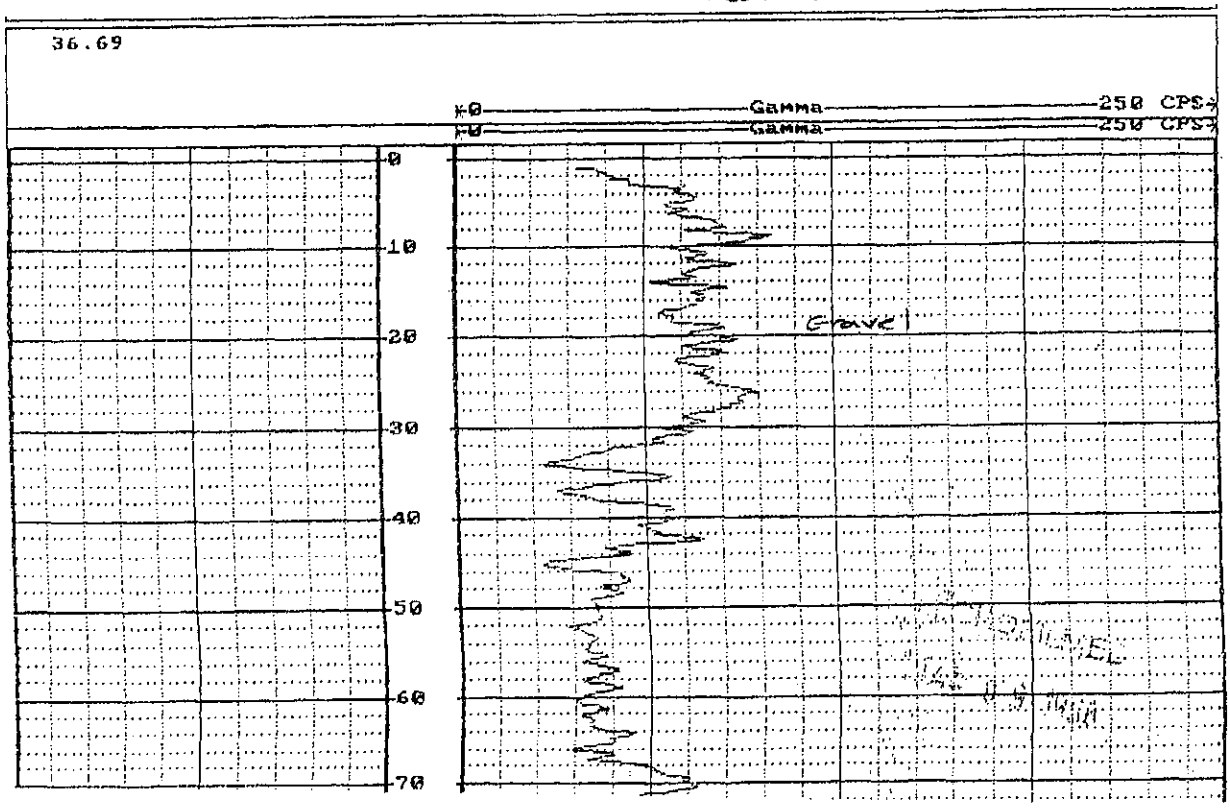
RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION

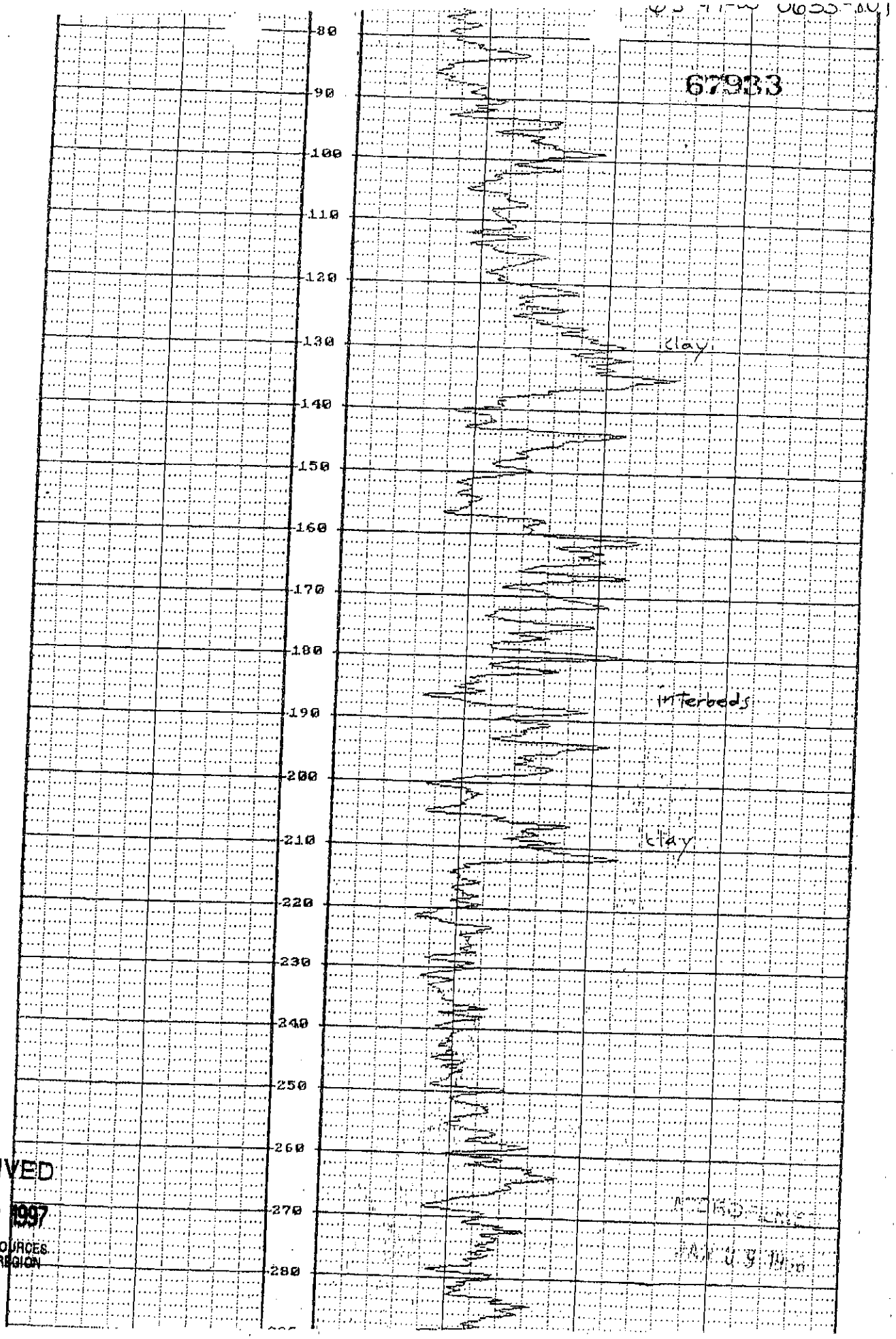
63-97-W-0633-80.

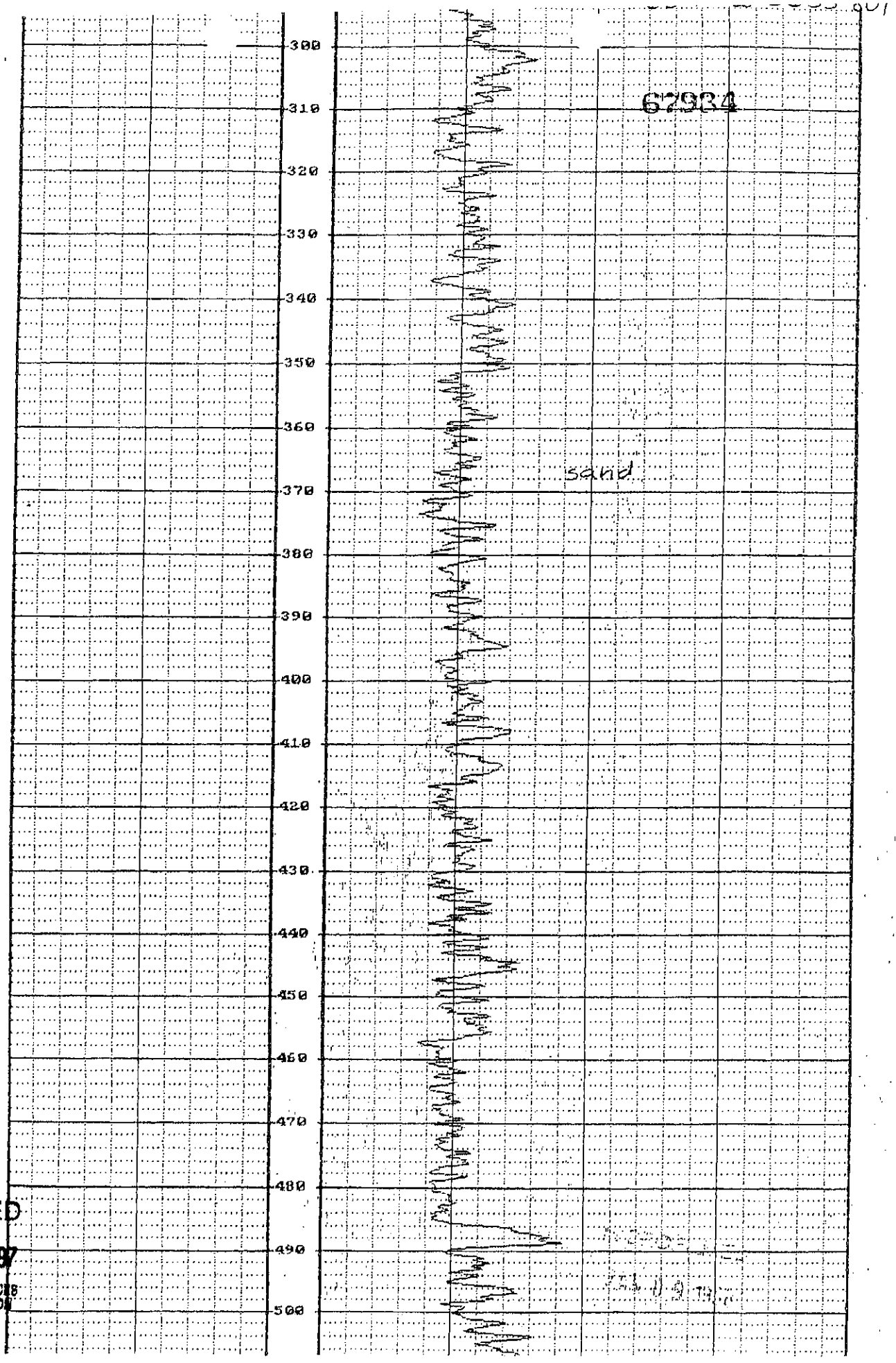
67932

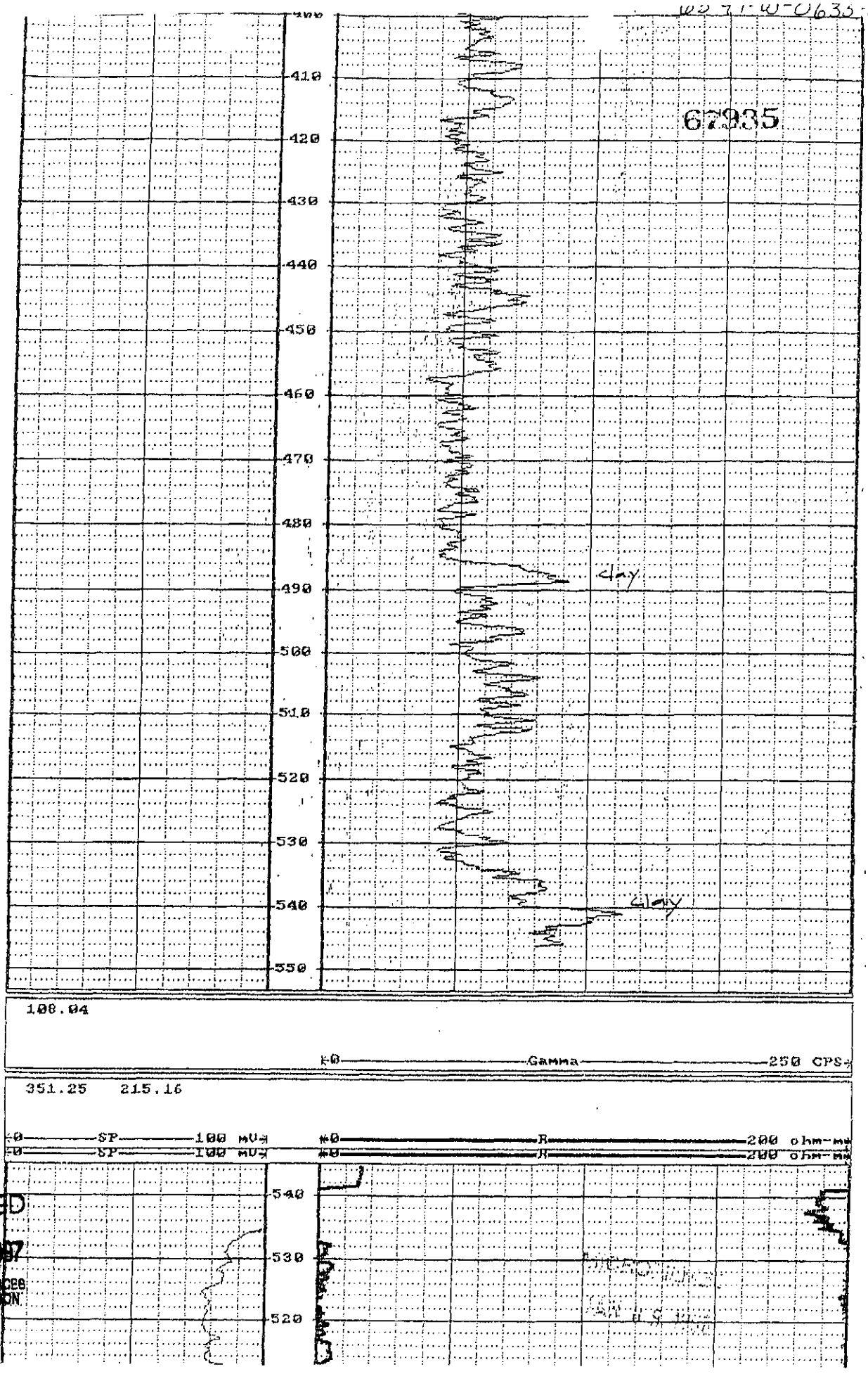
RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION

State # Linder Test Well



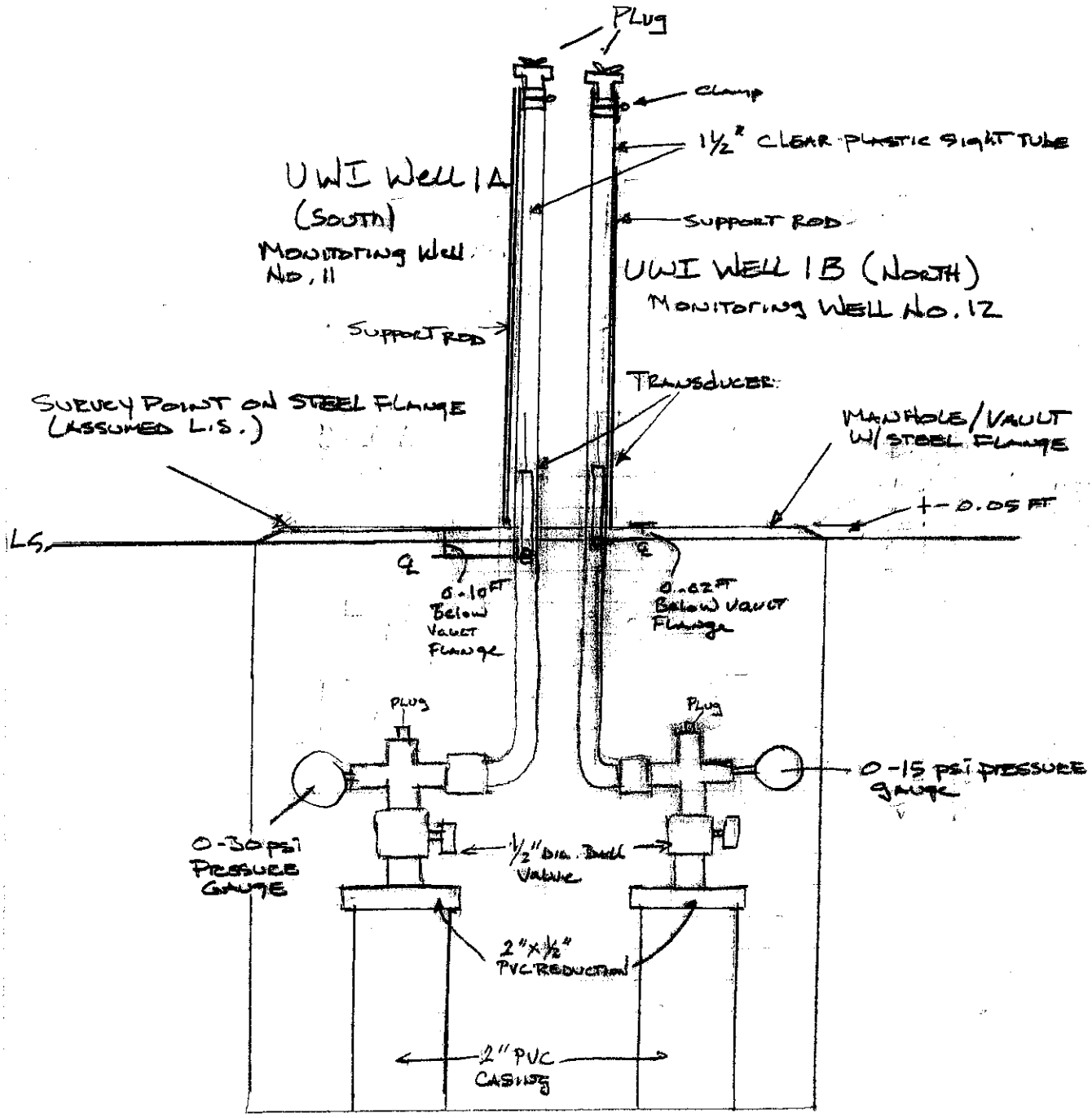






CITY OF EAGLE 7-DAY AQUIFER TEST

MONITORING WELL NO. 11 (UWI 1A) AND
MONITORING WELL NO. 12 (UWI 1B)



APPENDIX C

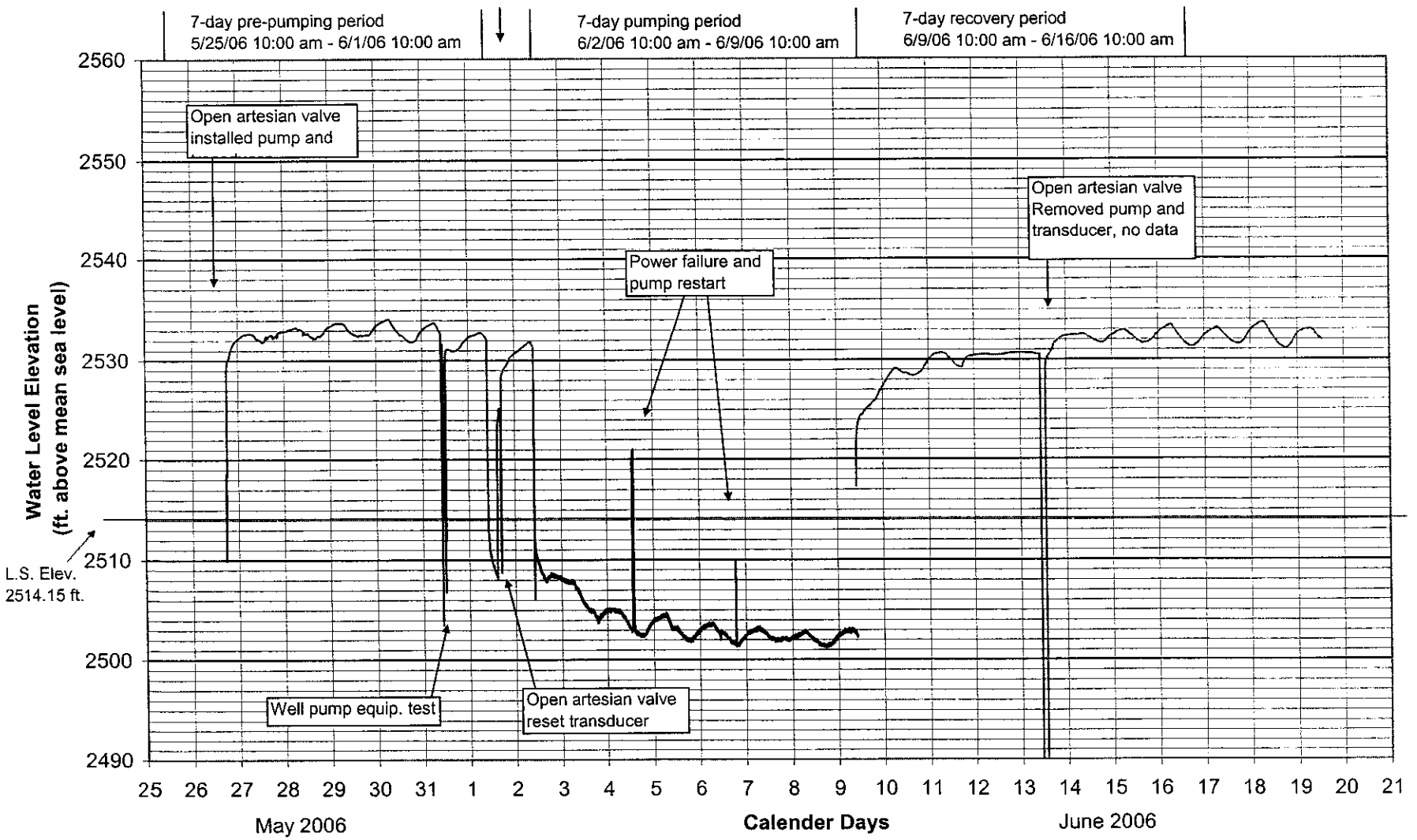
MONITORING WELL DATA GRAPHS

1. Test Well 2 (Eaglefield)(Pumping Well)
2. Test Well 1 (Legacy)
3. Monitoring Well 4 (QCR 4)
4. Monitoring Well 6 (Rick's)
5. Monitoring Well 9 (Strata 1A)
6. Monitoring Well 10 (Strata 1B)
7. Monitoring Well 11 (UWI 1A)
8. Monitoring Well 12 (UWI 1B)
9. Barometer

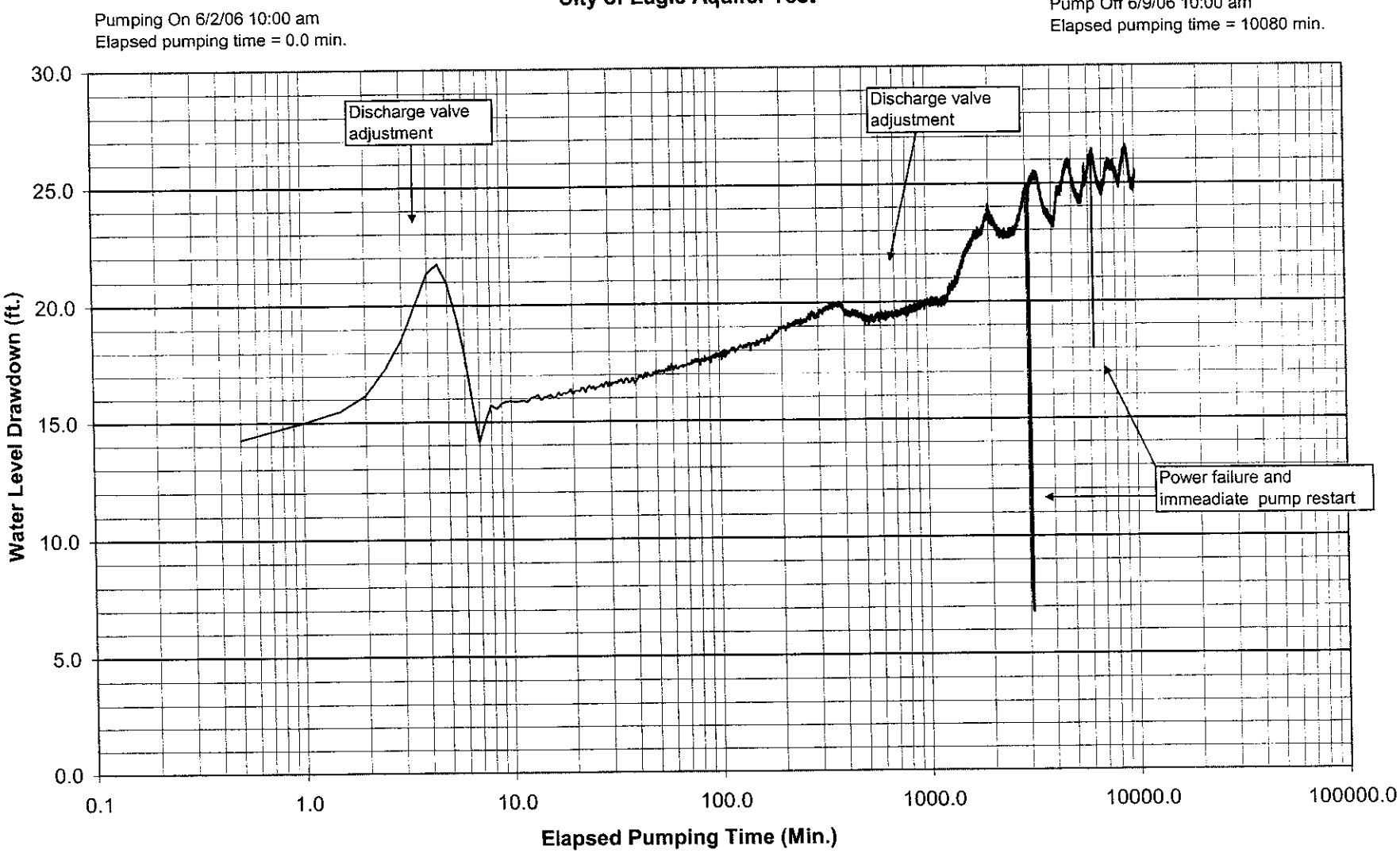
Appendix C.1

TEST WELL 2 (Eaglefield)(Pumping Well)

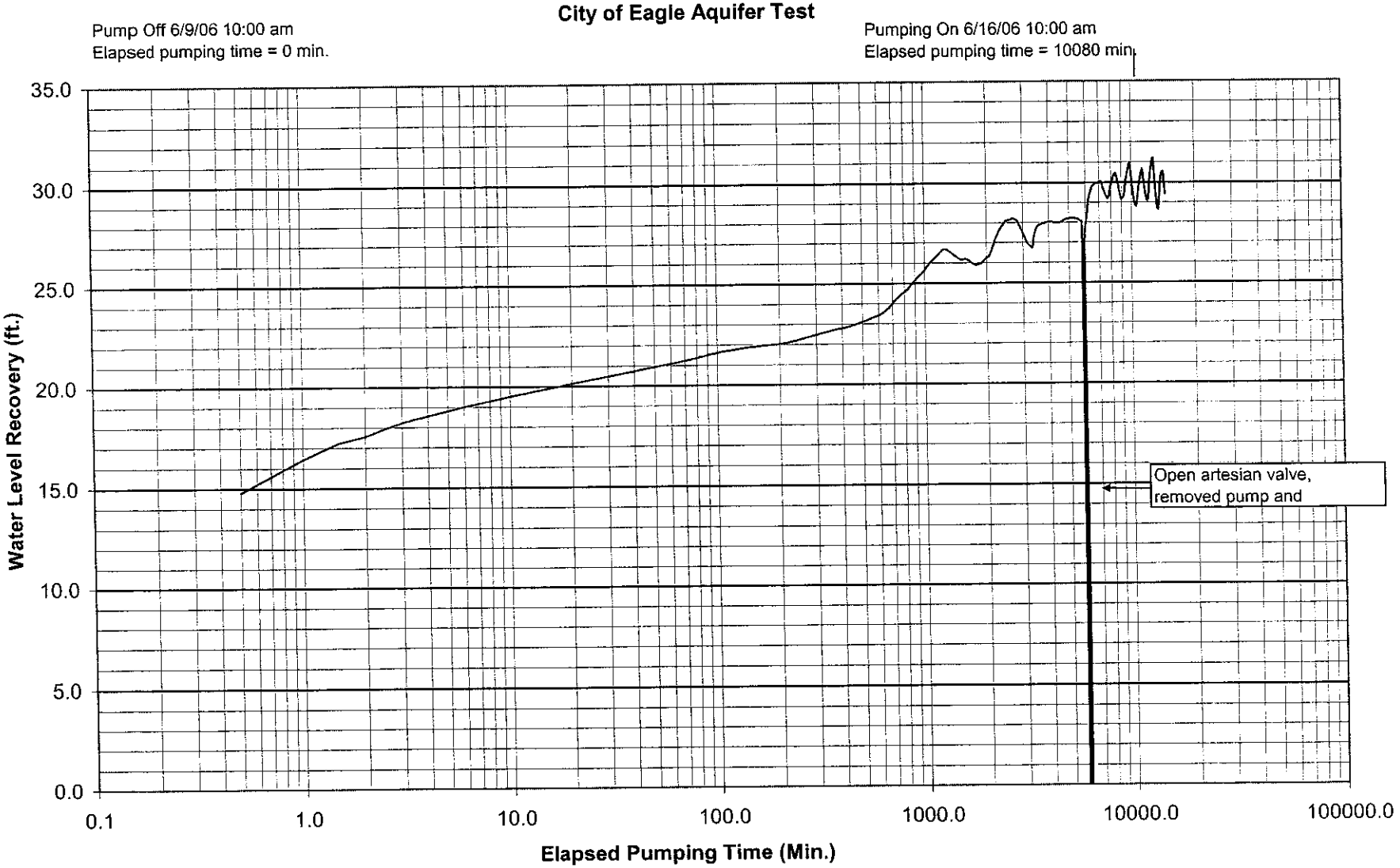
Pumping Well Test Well No. 2 (Eaglefield Development)
Water Level Elevation
City of Eagle Aquifer Test



Pumping Well Test Well No. 2 (Eaglefield Development)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

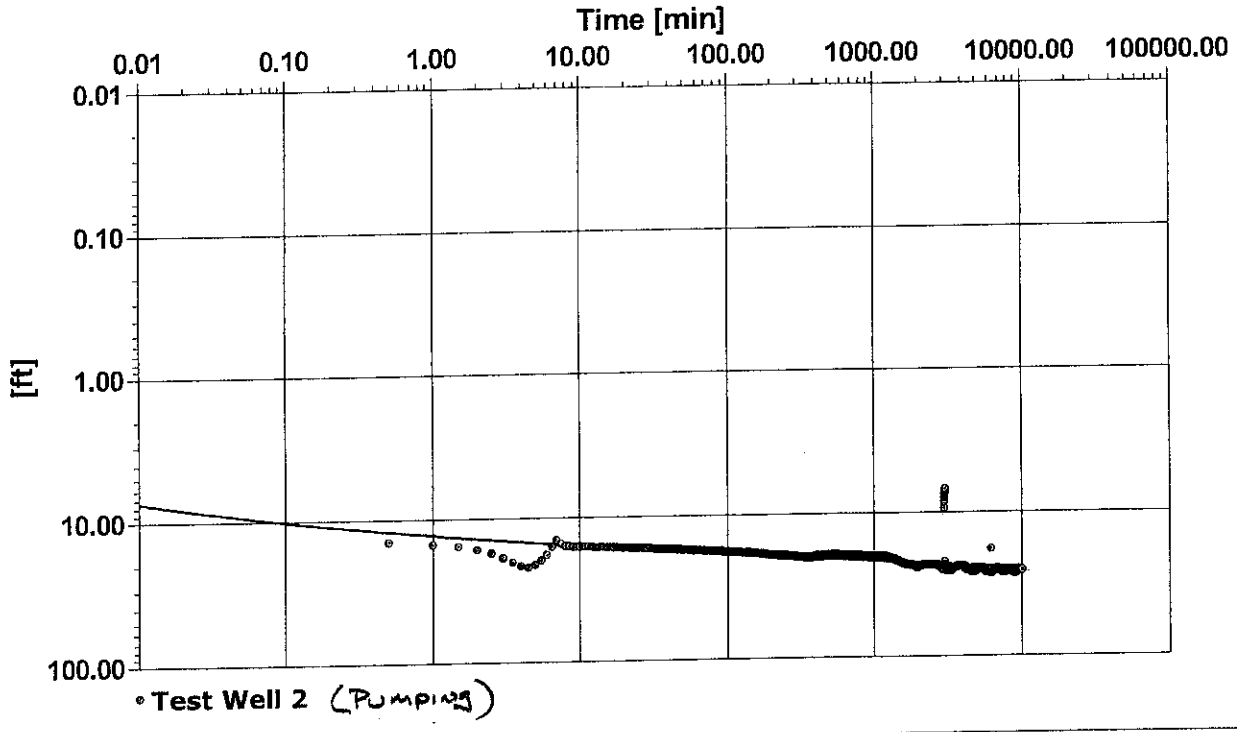


Pumping Well Test Well No. 2 (Eaglefield Development)
Recovery Semi-log Plot
City of Eagle Aquifer Test



City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Pumping Test 1	Pumping well: Test Well 2
Test conducted by:		Test date: 6/29/2006
Analysis performed by:	New analysis 1	Date: 6/29/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

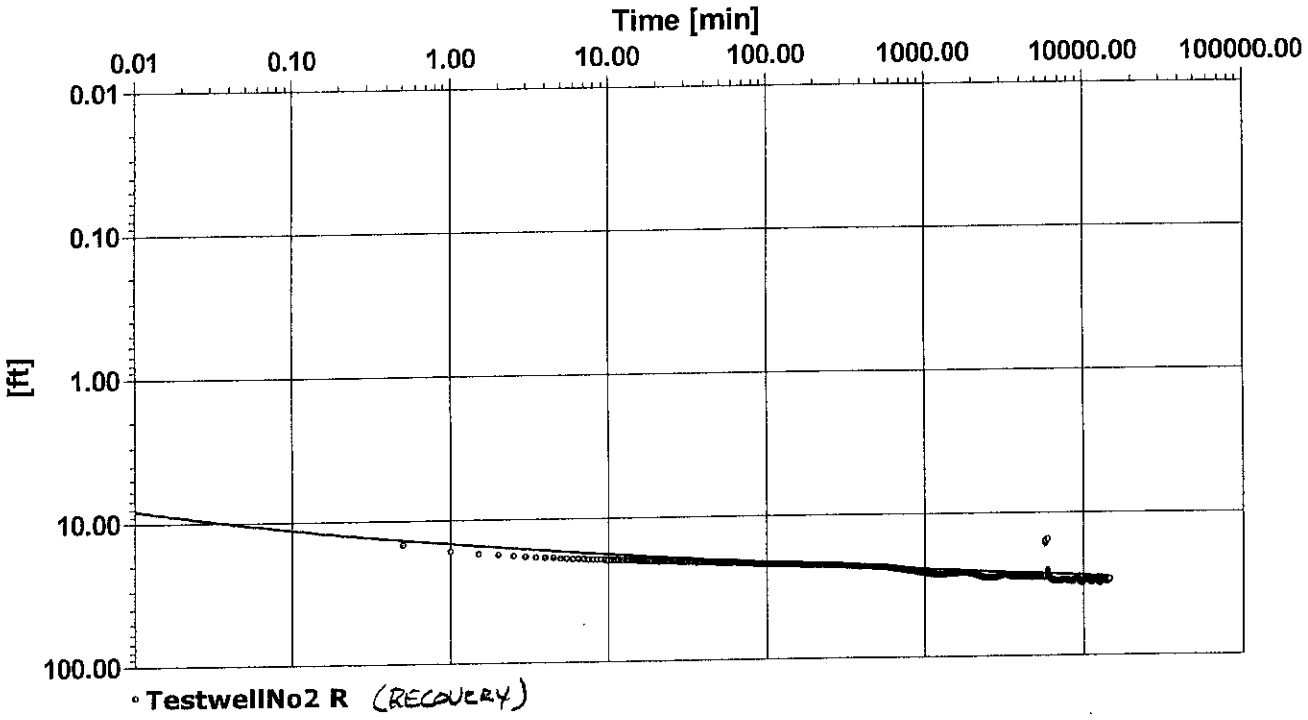


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
Test Well 2	2.00×10^{4}	2.00×10^{2}	2.93×10^{-3}	0.5	

City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Recovery Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

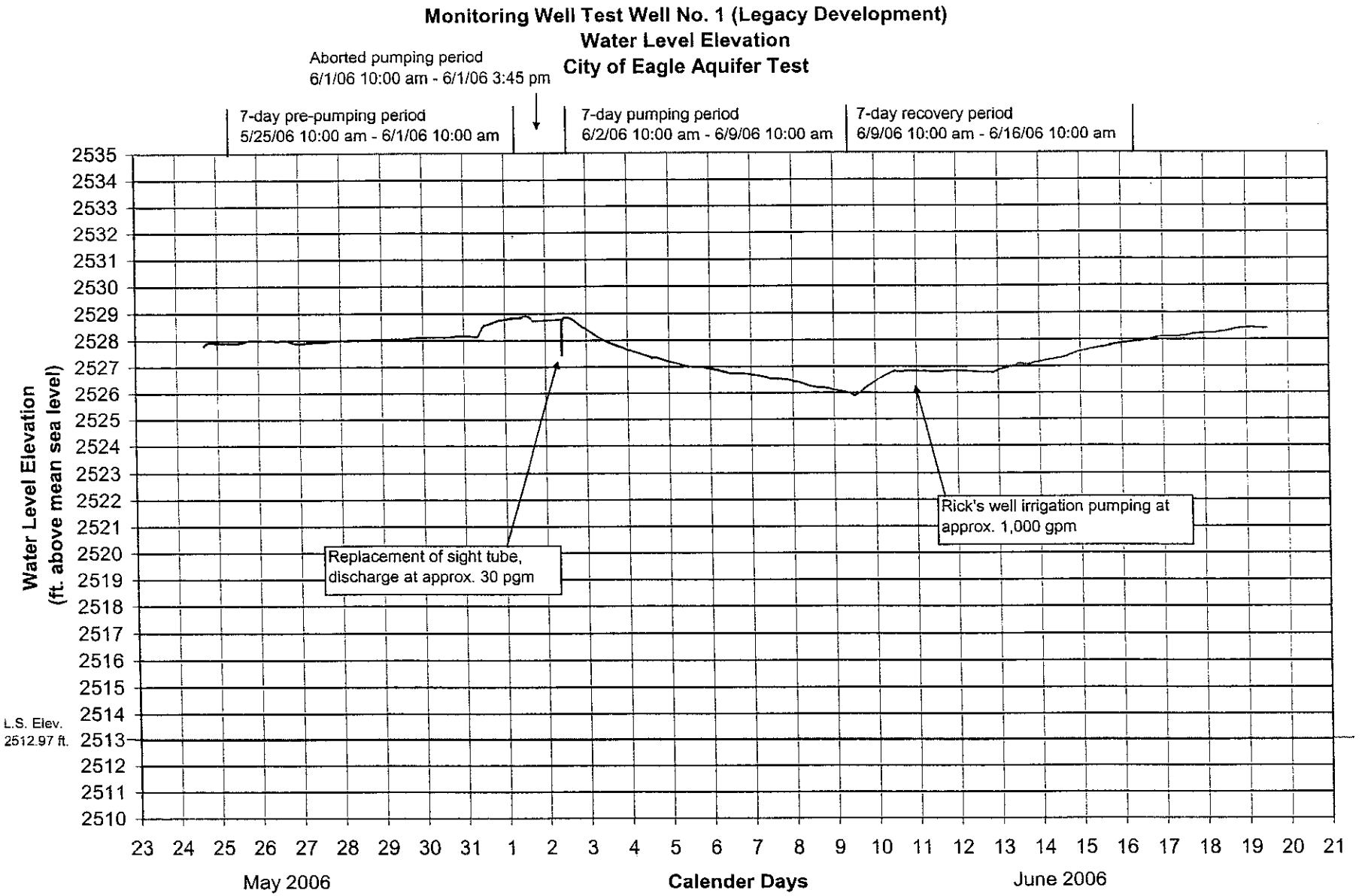


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
TestwellNo2 R	1.75×10^4	1.75×10^2	3.00×10^{-3}	0.5	

Appendix C.2

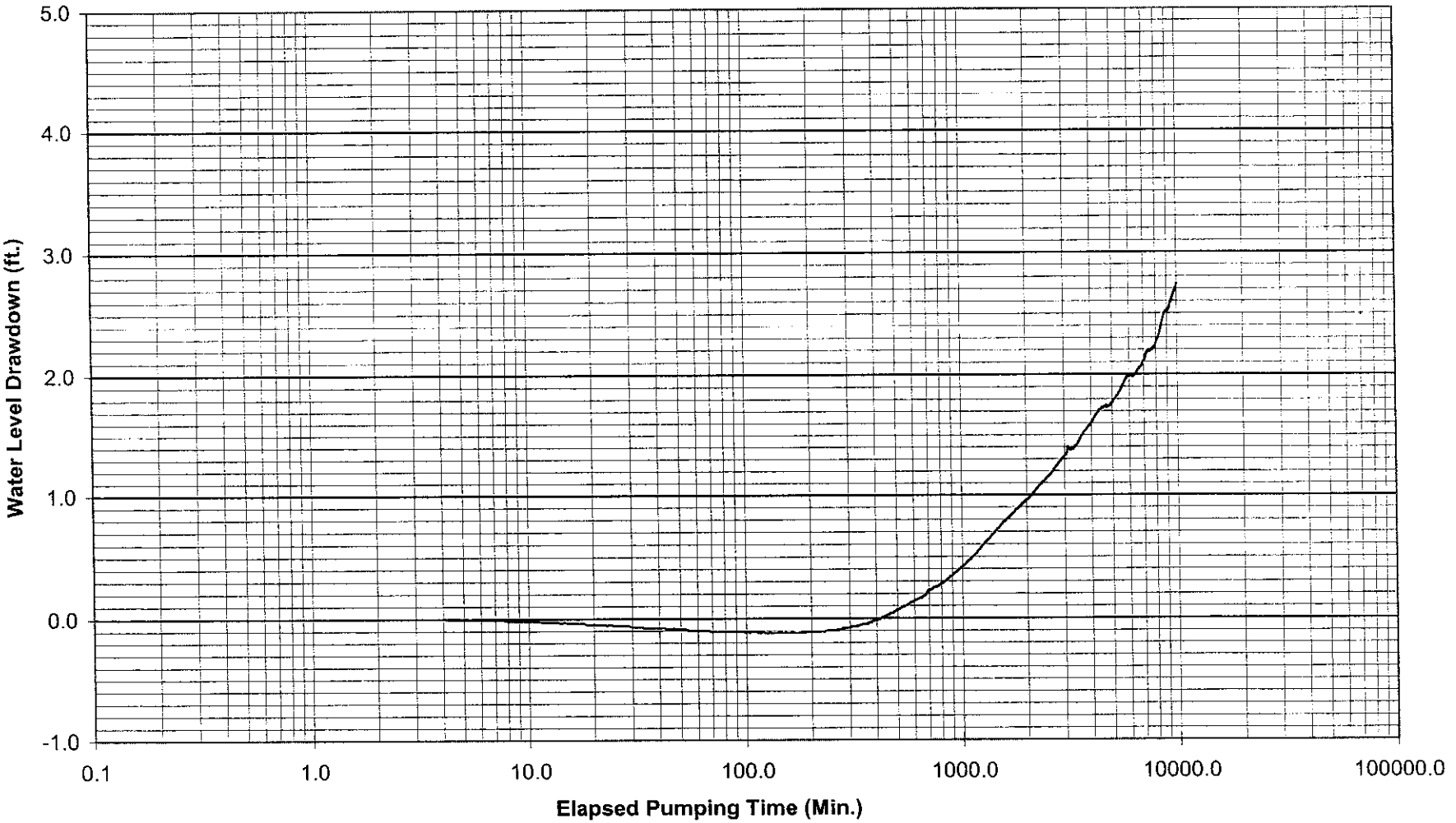
TEST WELL 1 (Legacy)


Monitoring Well Test Well No. 1 (Legacy Development)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Water Level Elevation
(ft. above mean sea level)
2535
2534
2533
2532
2531
2530
2529
2528
2527
2526
2525
2524
2523
2522
2521
2520
2519
2518
2517
2516
2515
2514
2513
2512
2511
2510
L.S. Elev.
2512.97 ft.
Replacement of sight tube,
discharge at approx. 30 pgm
Rick's well irrigation pumping at
approx. 1,000 gpm
23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

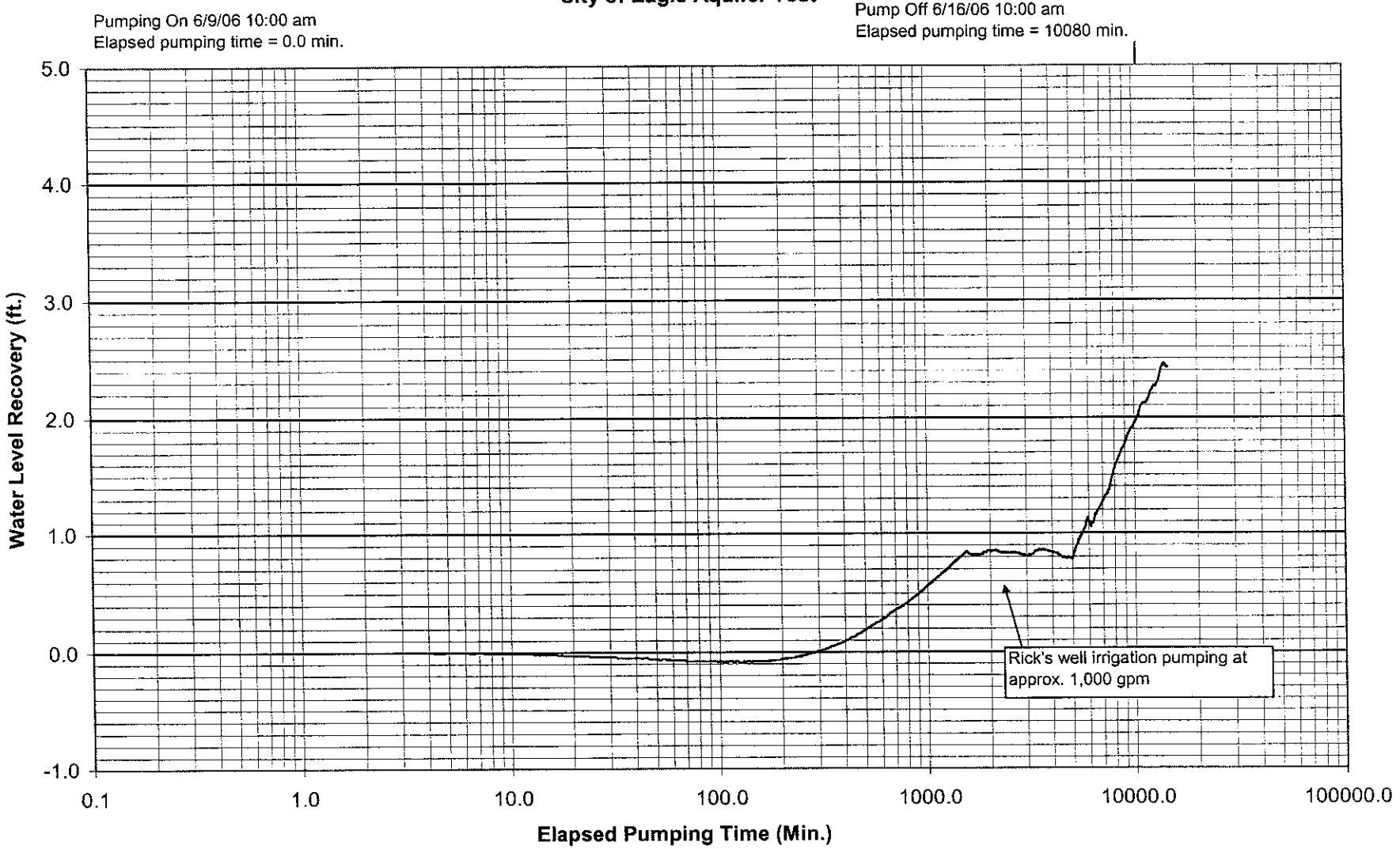
Monitoring Well Test Well No. 1 (Legacy Development)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.

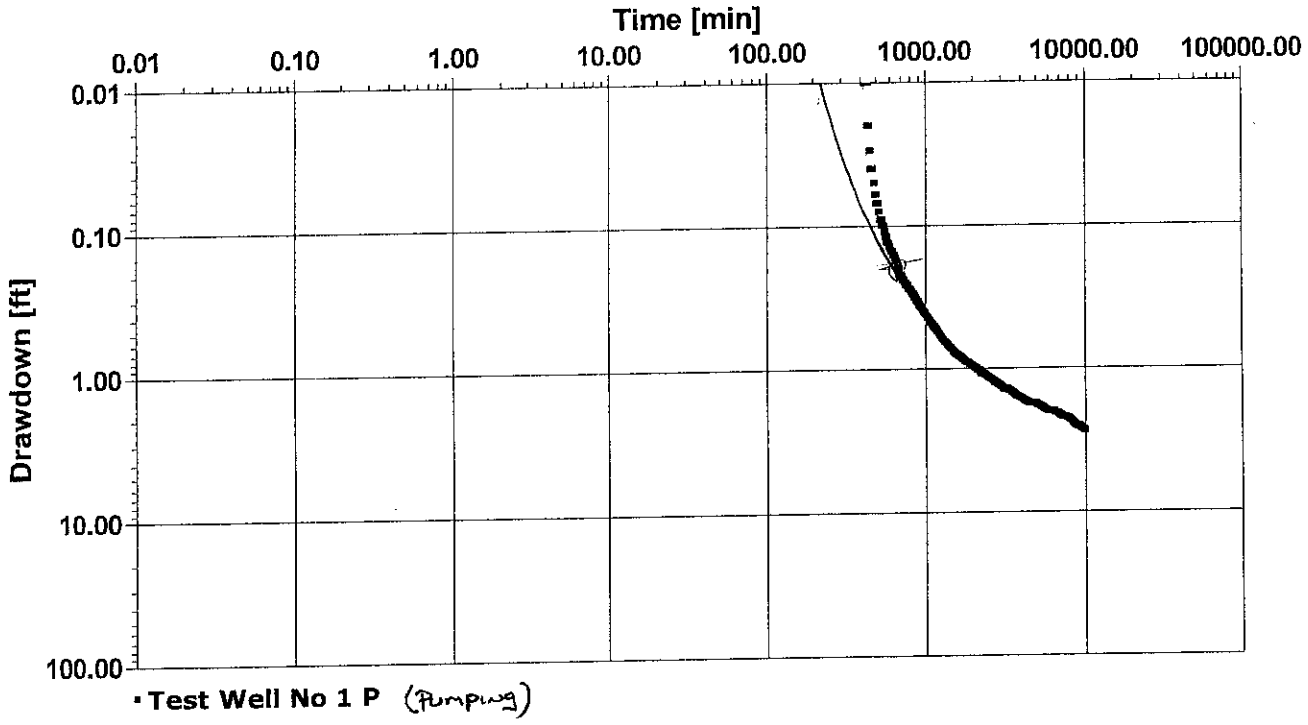


Monitoring Well Test Well No. 1 (Legacy Development)
Recovery Semi-log Plot
City of Eagle Aquifer Test



City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Drawdown	Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	New analysis 1	Date: 6/30/2006
Aqulfer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

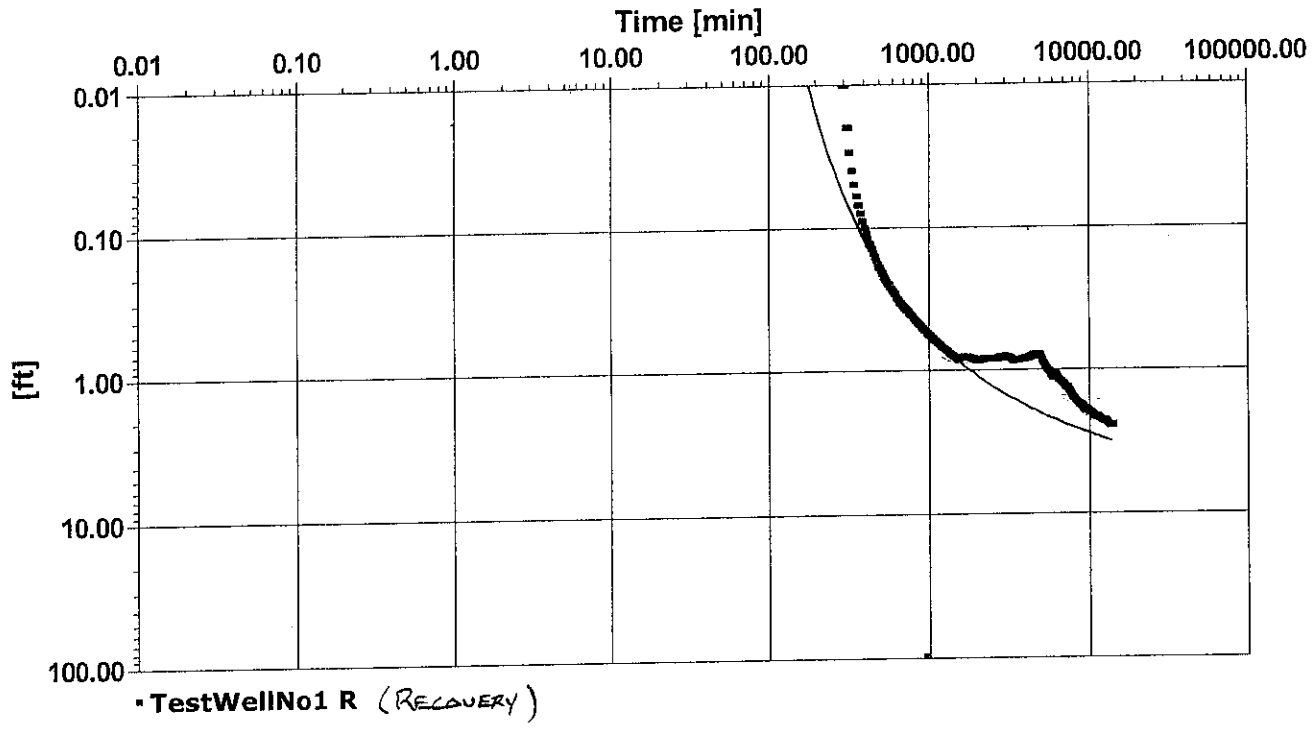


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
Test Well No 1 P	1.95×10^{4}	1.95×10^{2}	1.58×10^{-2}	1604.58	

City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Recovery Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

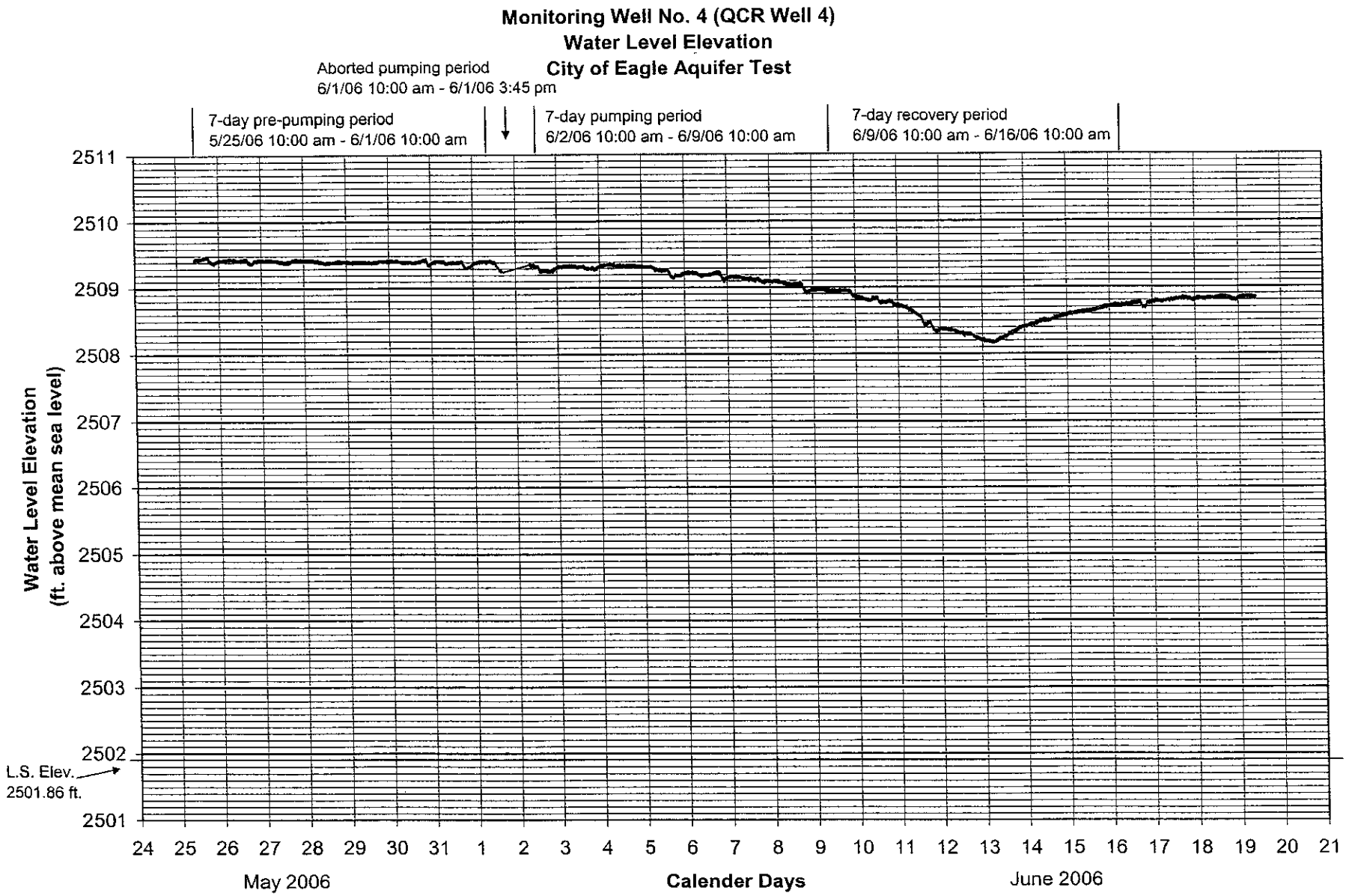


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
TestWellNo1 R	2.01×10^{4}	2.01×10^{2}	1.30×10^{-2}	1604.58	

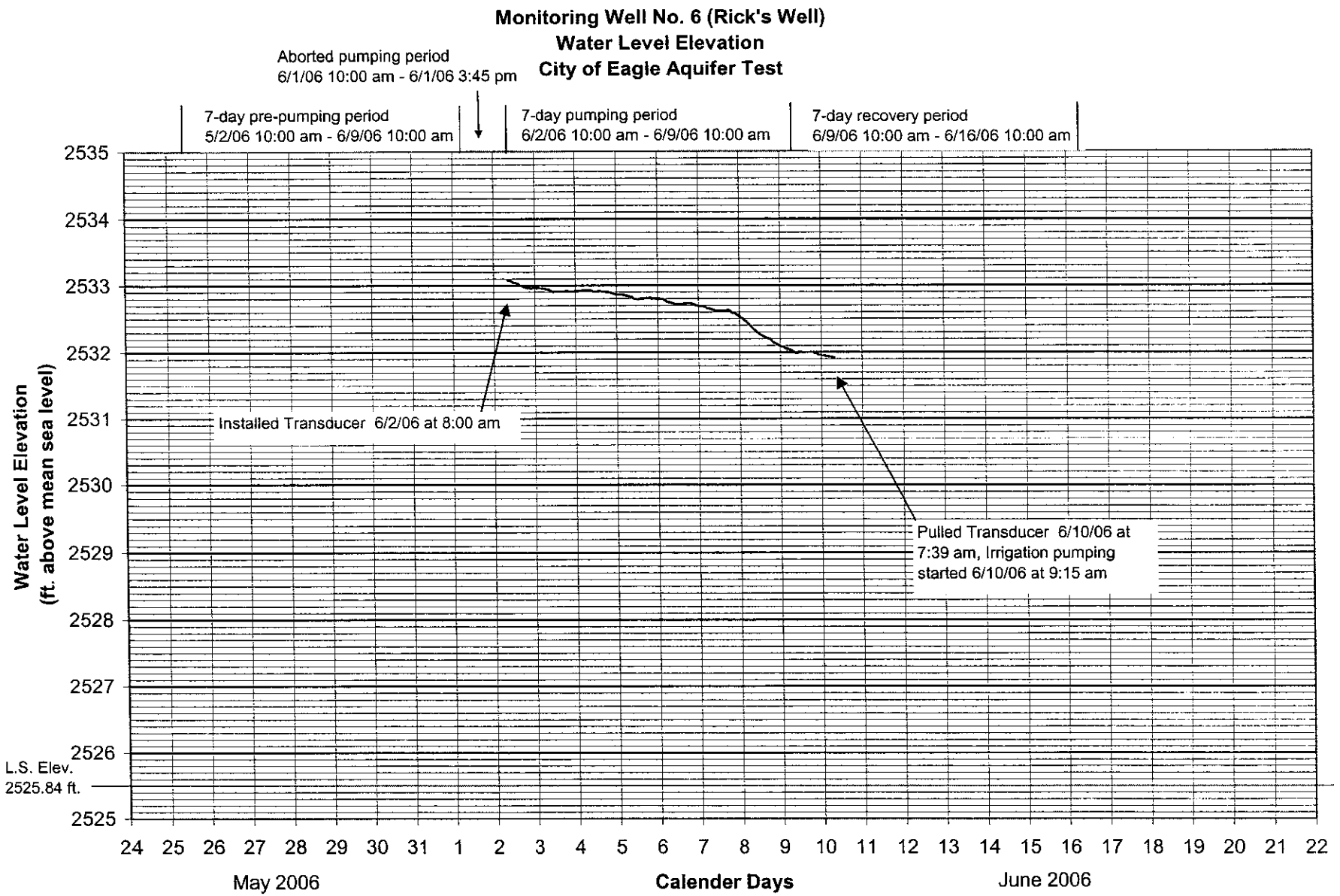
Appendix C.3

MONITORING WELL 4 (QCR 4)


Monitoring Well No. 4 (QCR Well 4)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Water Level Elevation
(ft. above mean sea level)
2511
2510
2509
2508
2507
2506
2505
2504
2503
2502
2501
L.S. Elev.
2501.86 ft.
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

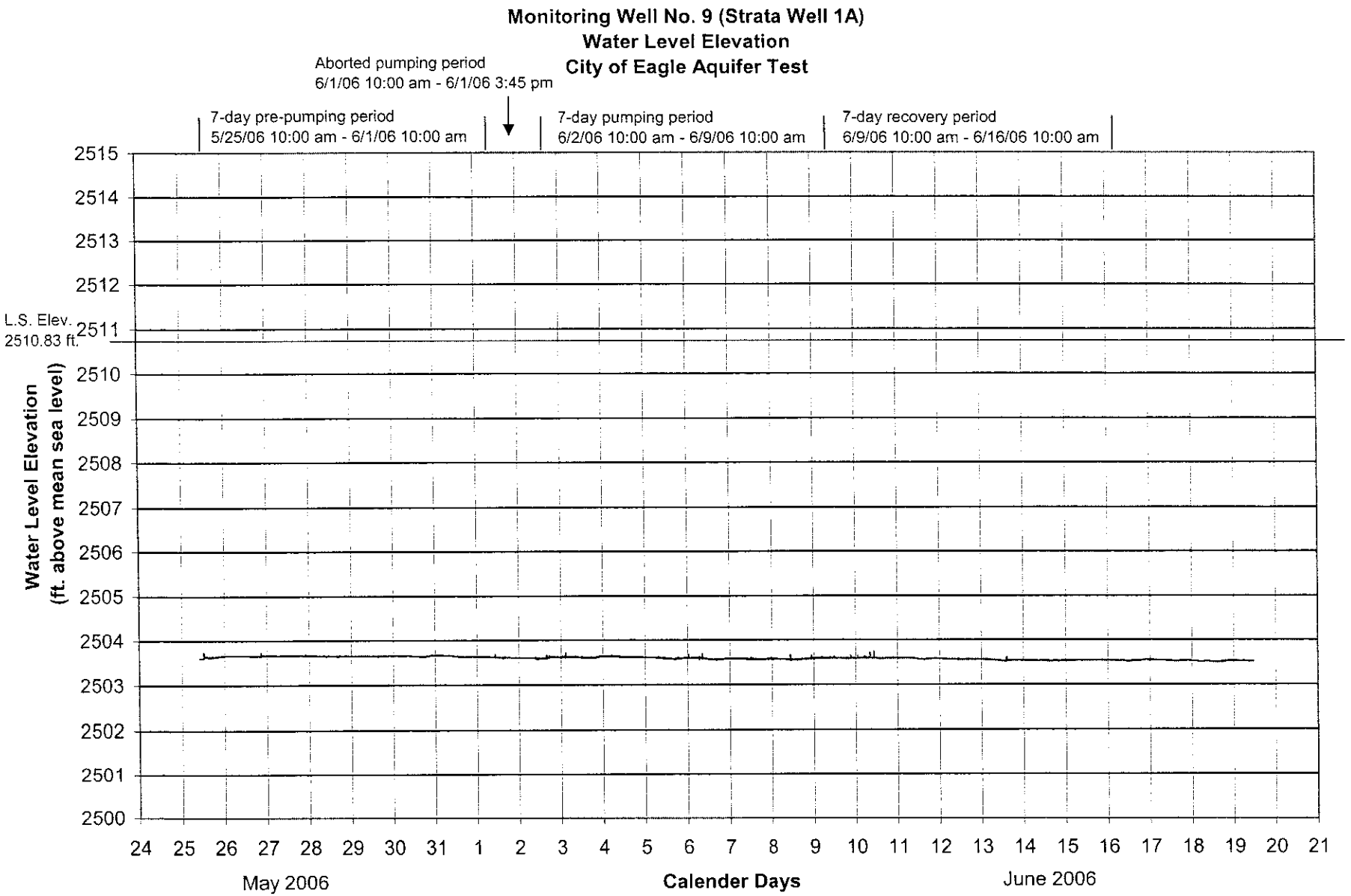
Appendix C.4

MONITORING WELL 6 (Rick's)


Monitoring Well No. 6 (Rick's Well)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/2/06 10:00 am - 6/9/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Water Level Elevation
(ft. above mean sea level)
2535
2534
2533
2532
2531
2530
2529
2528
2527
2526
2525
L.S. Elev.
2525.84 ft.
Installed Transducer 6/2/06 at 8:00 am
Pulled Transducer 6/10/06 at
7:39 am, Irrigation pumping
started 6/10/06 at 9:15 am
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
May 2006
Calender Days
June 2006

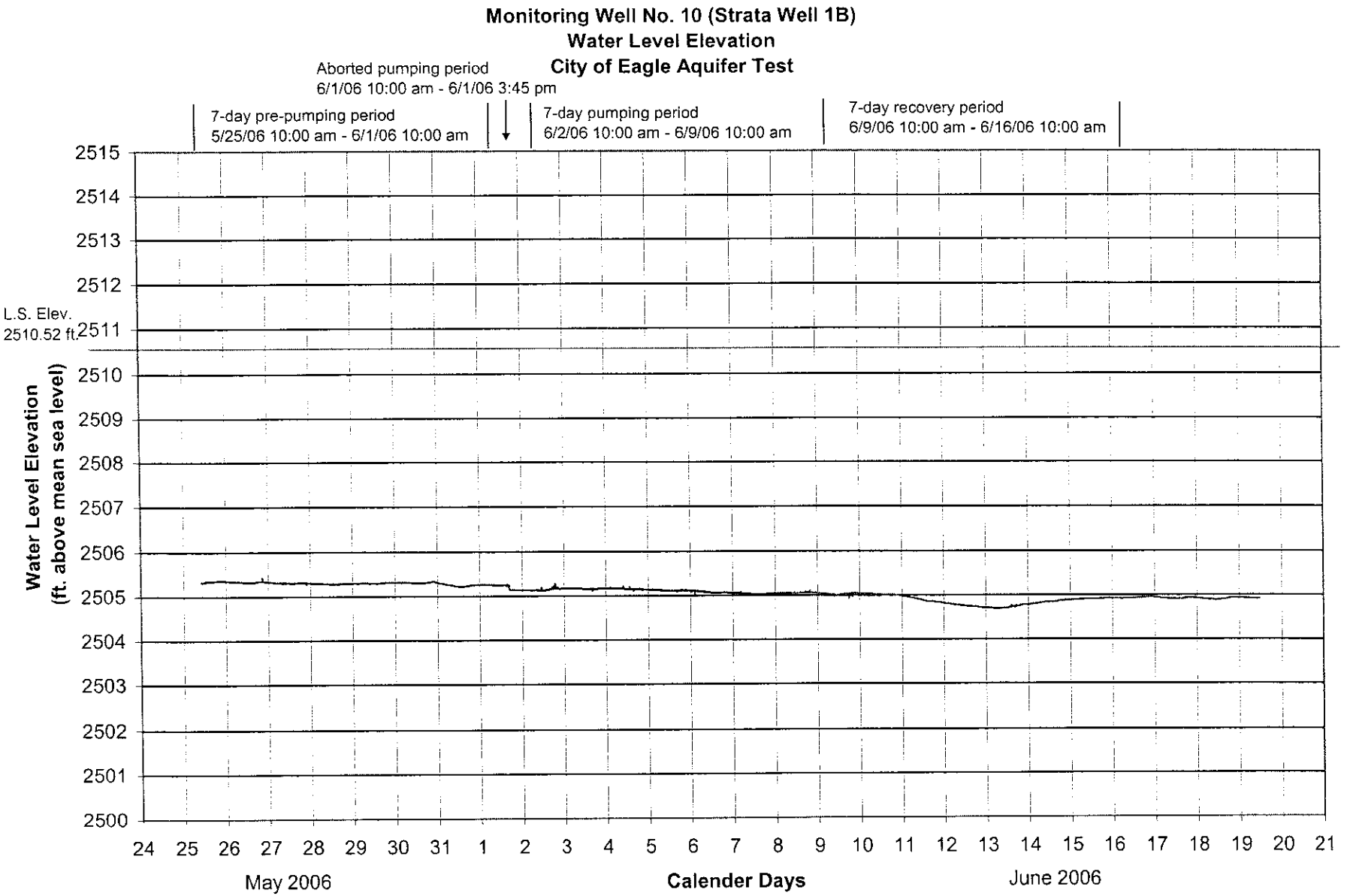
Appendix C.5

MONITORING WELL 9 (Strata 1A)


Monitoring Well No. 9 (Strata Well 1A)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
L.S. Elev.
2510.83 ft.
Water Level Elevation
(ft. above mean sea level)
2515
2514
2513
2512
2511
2510
2509
2508
2507
2506
2505
2504
2503
2502
2501
2500
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

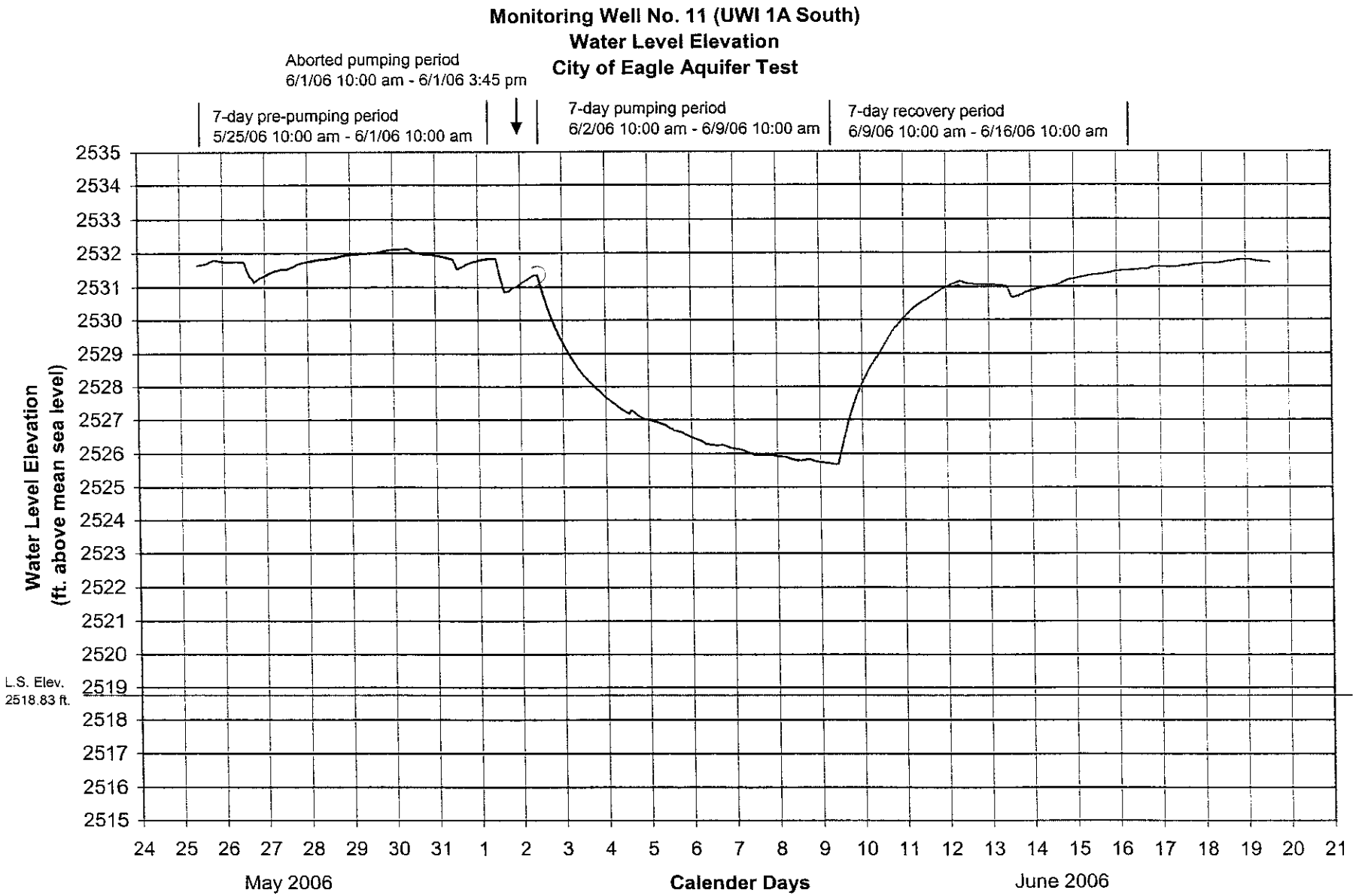
Appendix C.6

MONITORING WELL 10 (Strata Well 1B)


Monitoring Well No. 10 (Strata Well 1B)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
L.S. Elev.
2510.52 ft.
Water Level Elevation
(ft. above mean sea level)
2515
2514
2513
2512
2511
2510
2509
2508
2507
2506
2505
2504
2503
2502
2501
2500
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

Appendix C.7

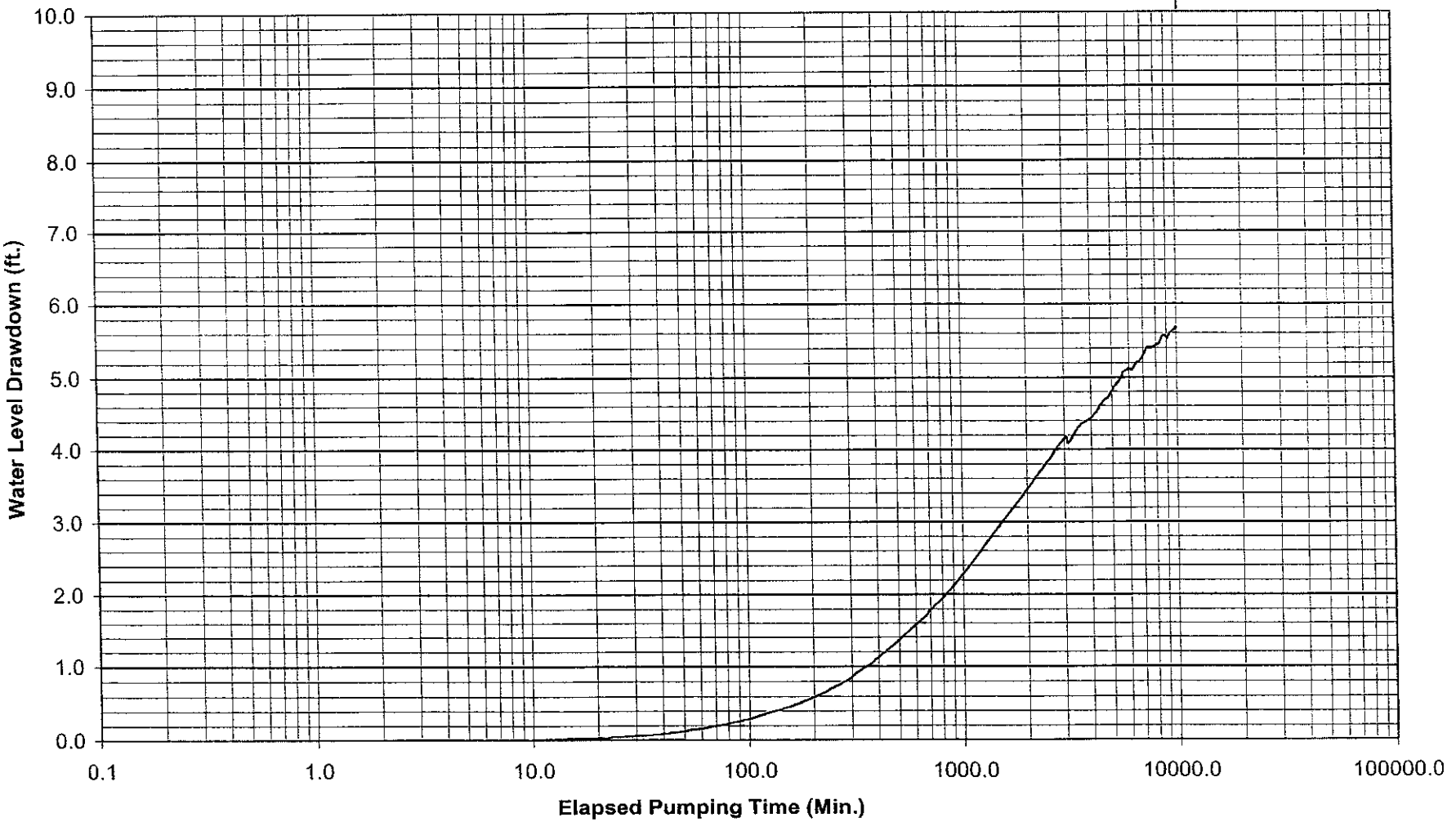
MONITORING WELL 11 (UWI 1A)


Monitoring Well No. 11 (UWI 1A South)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Water Level Elevation
(ft. above mean sea level)
2535
2534
2533
2532
2531
2530
2529
2528
2527
2526
2525
2524
2523
2522
2521
2520
2519
2518
2517
2516
2515
L.S. Elev.
2518.83 ft.
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

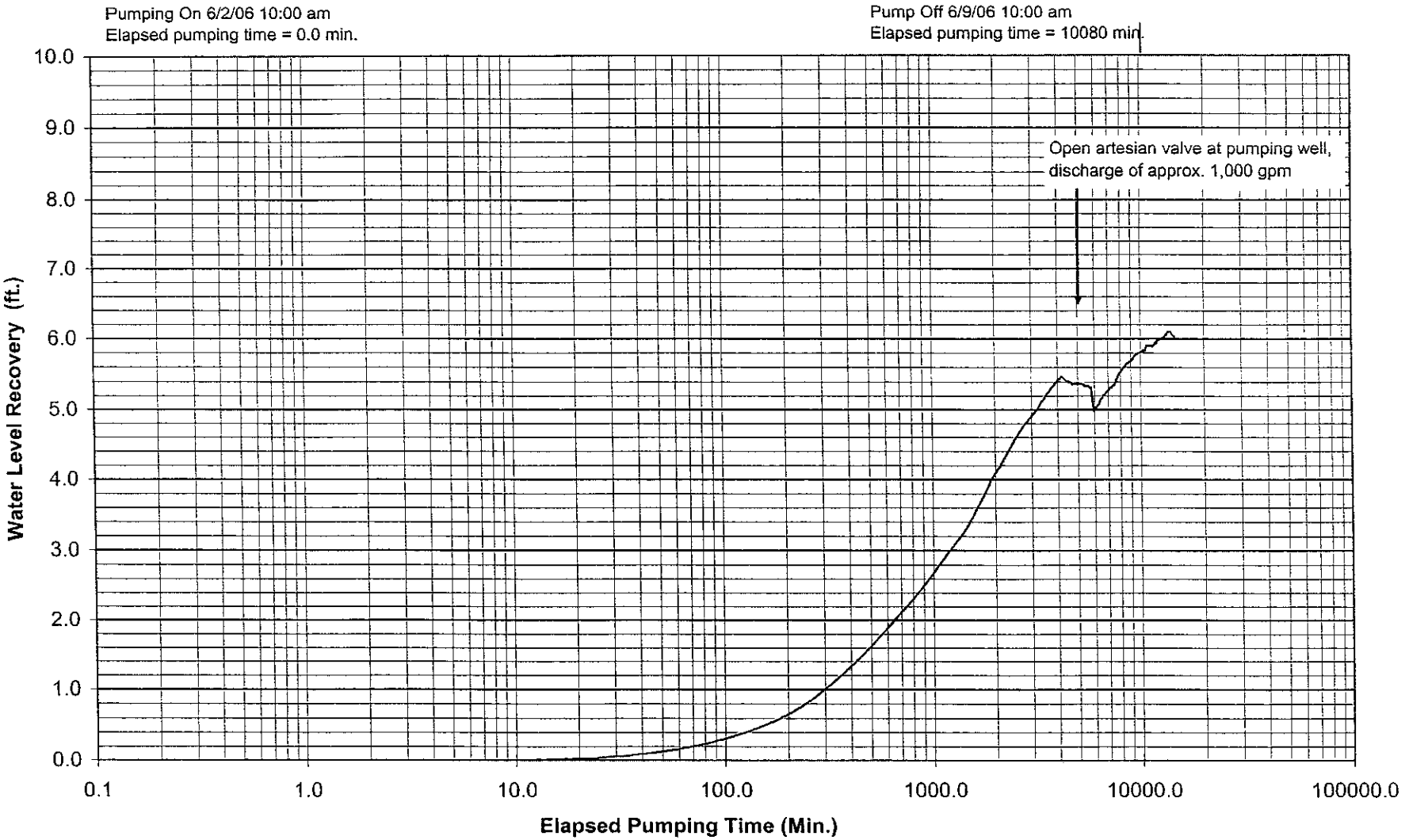
Monitoring Well No. 11 (UWI 1A South)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.

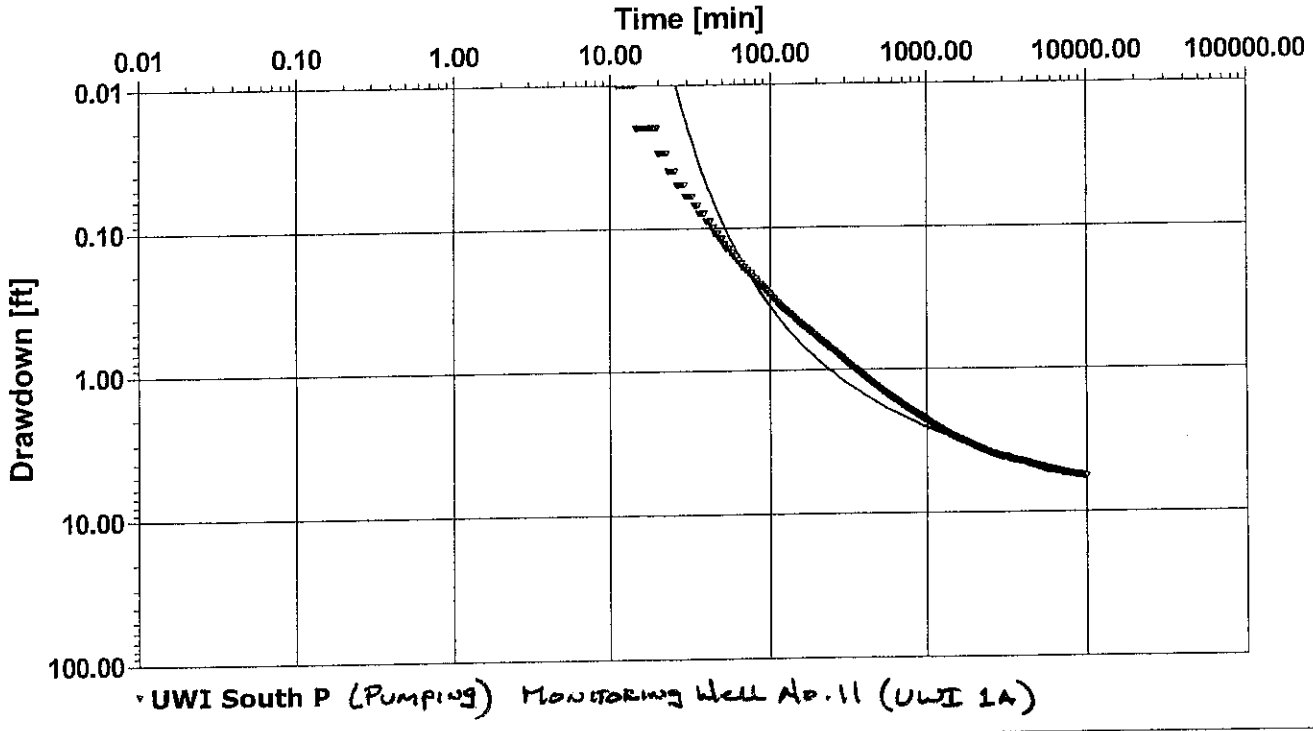


Monitoring Well No. 11 (UWI 1A South)
Recovery Semi-log Plot
City of Eagle Aquifer Test



City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Drawdown	Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	New analysis 1	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

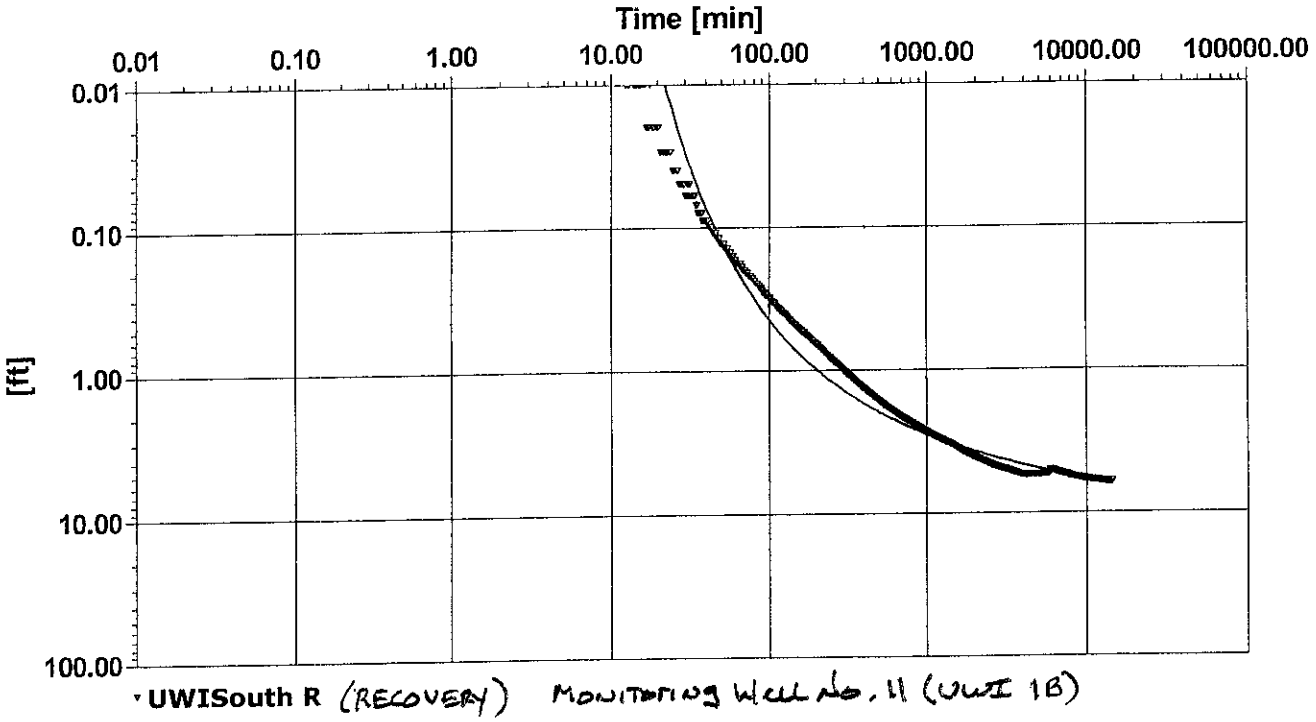


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
UWI South P	1.85×10^4	1.85×10^2	7.80×10^{-4}	2405.68	

City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Recovery Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	



Calculation after Theis

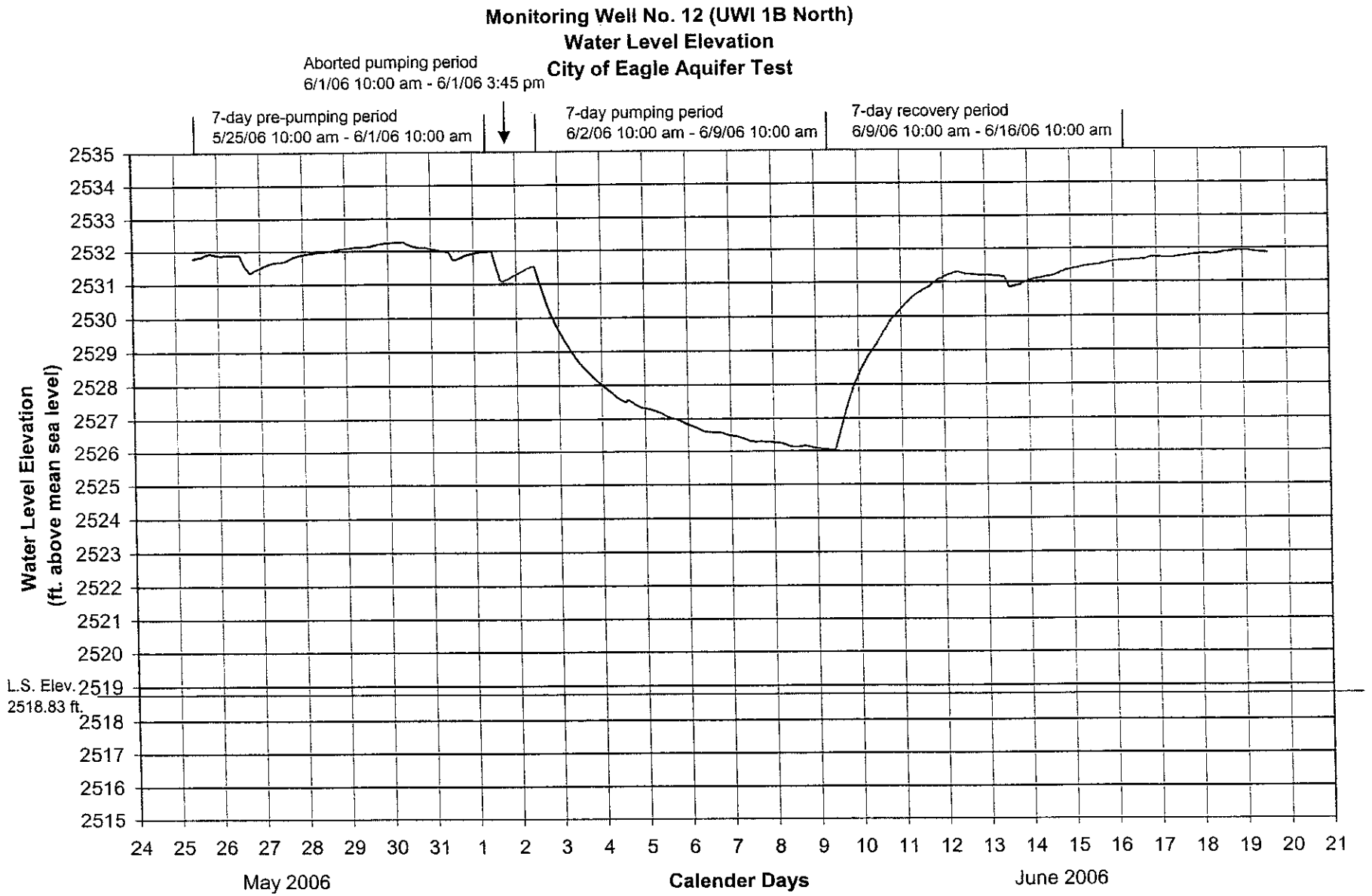
Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
UWISouth R	1.77×10^4	1.77×10^2	6.62×10^{-4}	2405.68	

Exclusion of Points
$t = 2000$ to $t = 4257$

COMPUTER FIT

Appendix C.8

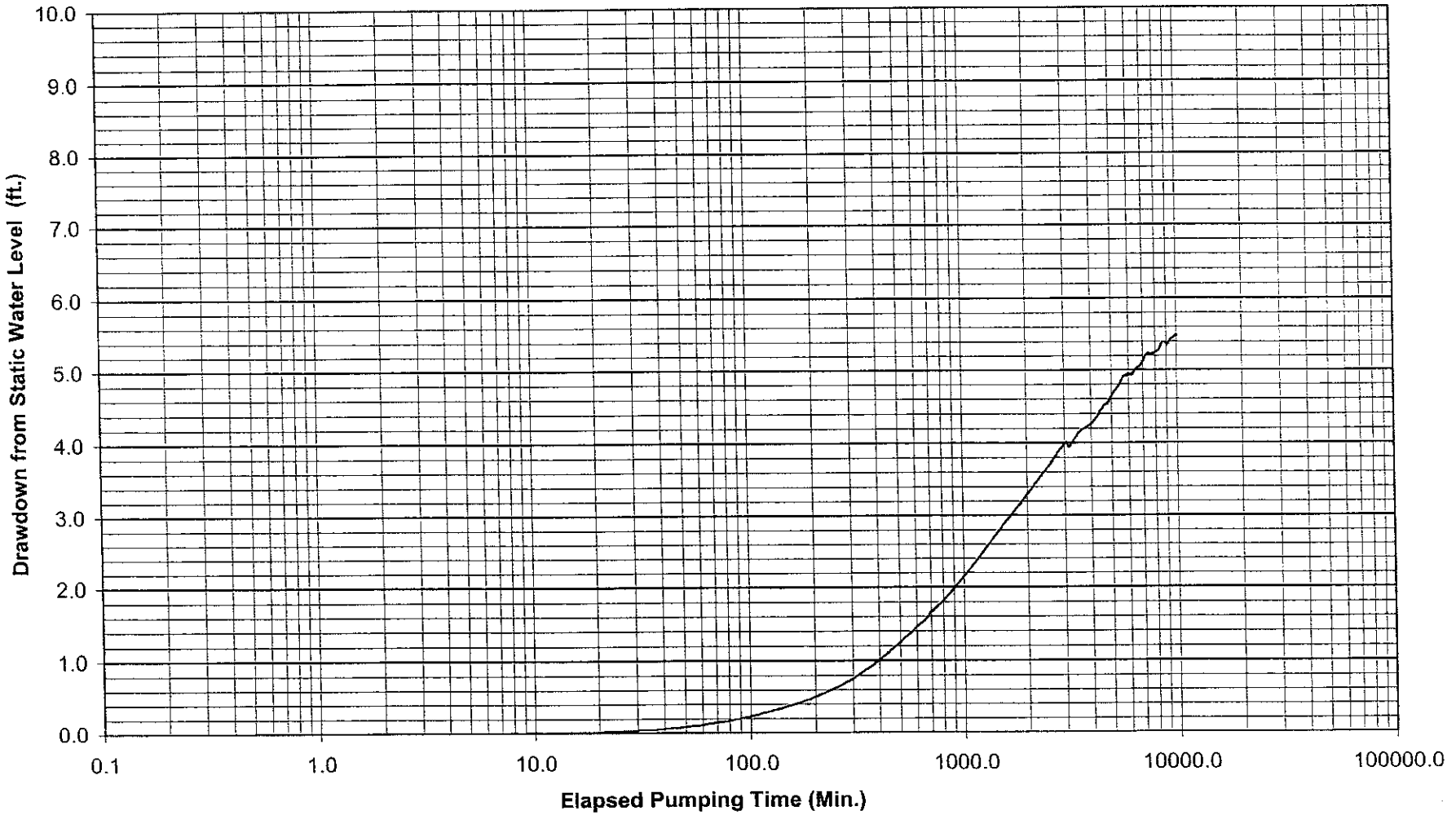
MONITORING WELL 12 (UWI 1B)


Monitoring Well No. 12 (UWI 1B North)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Water Level Elevation
(ft. above mean sea level)
2535
2534
2533
2532
2531
2530
2529
2528
2527
2526
2525
2524
2523
2522
2521
2520
L.S. Elev.
2518.83 ft.
2519
2518
2517
2516
2515
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

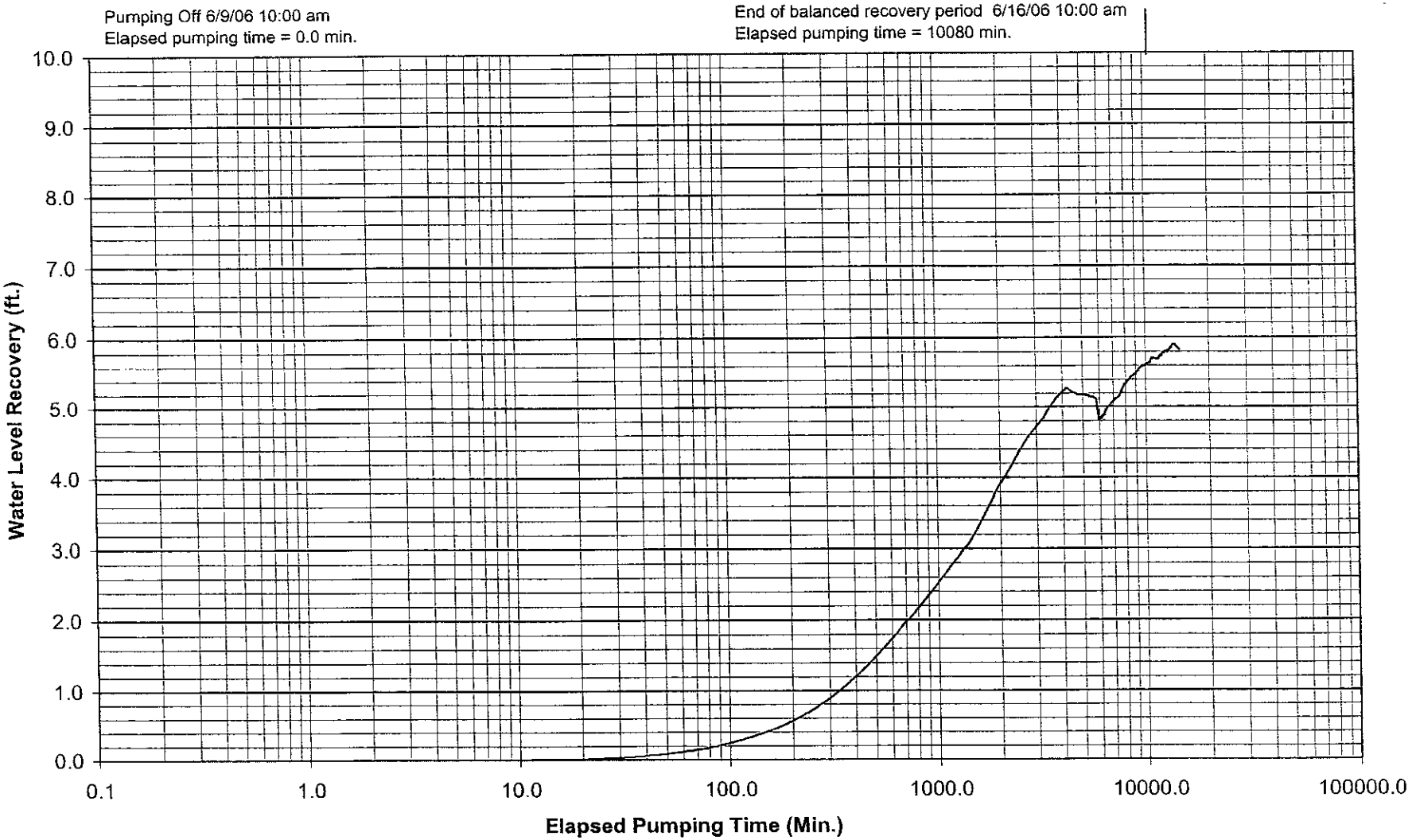
Monitoring Well No. 12 (UWI 1B North)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.

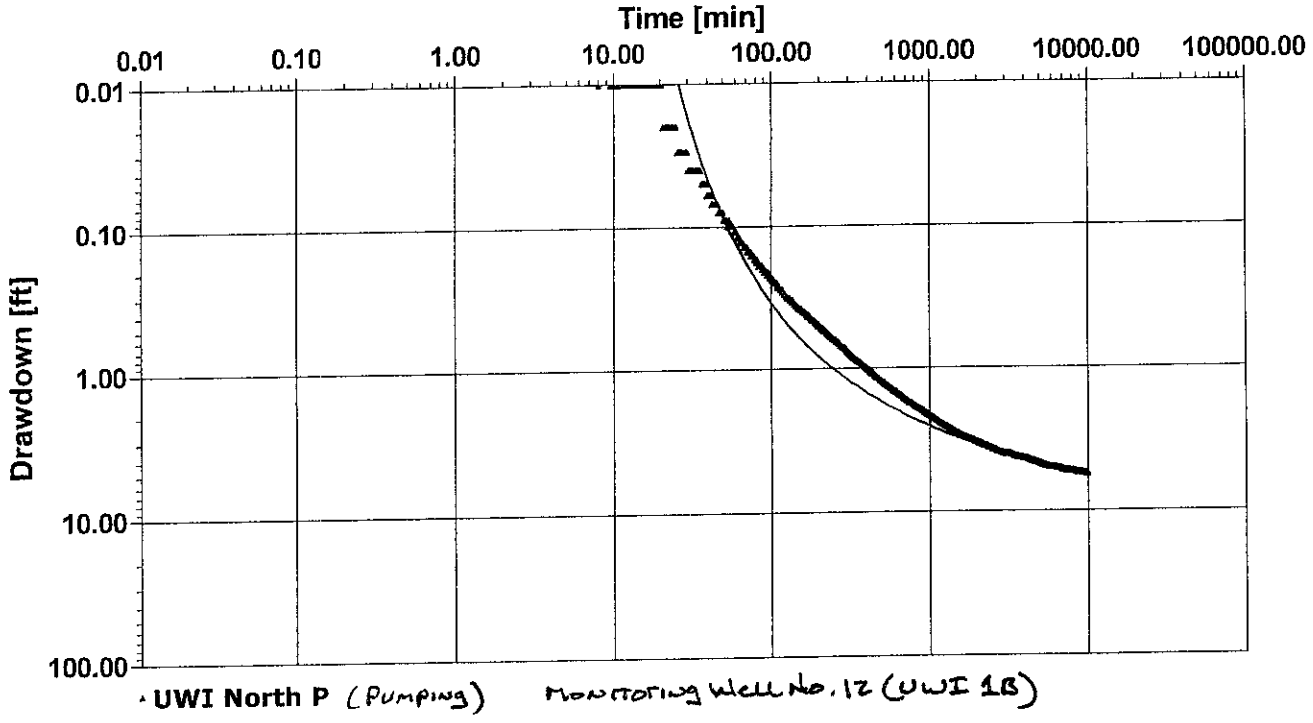


Monitoring Well No. 12 (UWI 1B North)
Recovery Semi-log Plot
City of Eagle Aquifer Test



City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Drawdown	Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	New analysis 1	Date: 6/30/2006
Aqulfer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

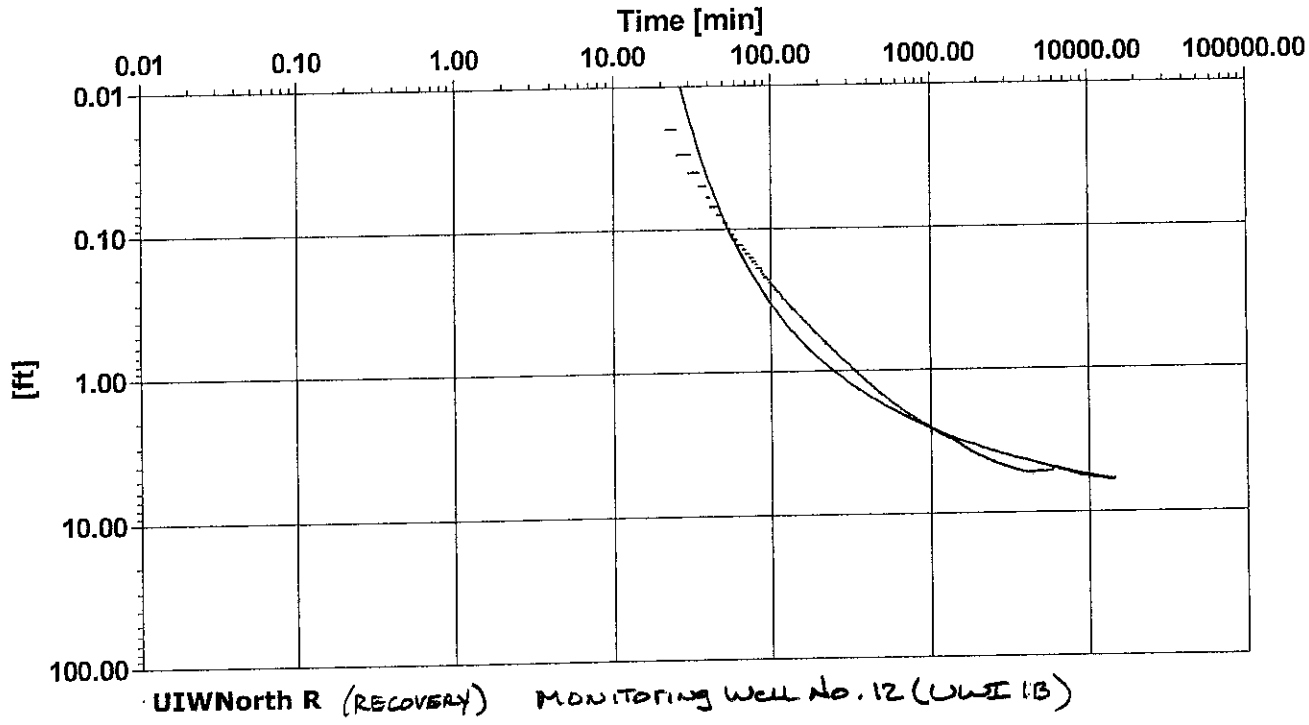


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
UWI North P	1.80×10^{4}	1.80×10^{2}	7.90×10^{-4}	2405.68	

City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Recovery Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aqulfer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

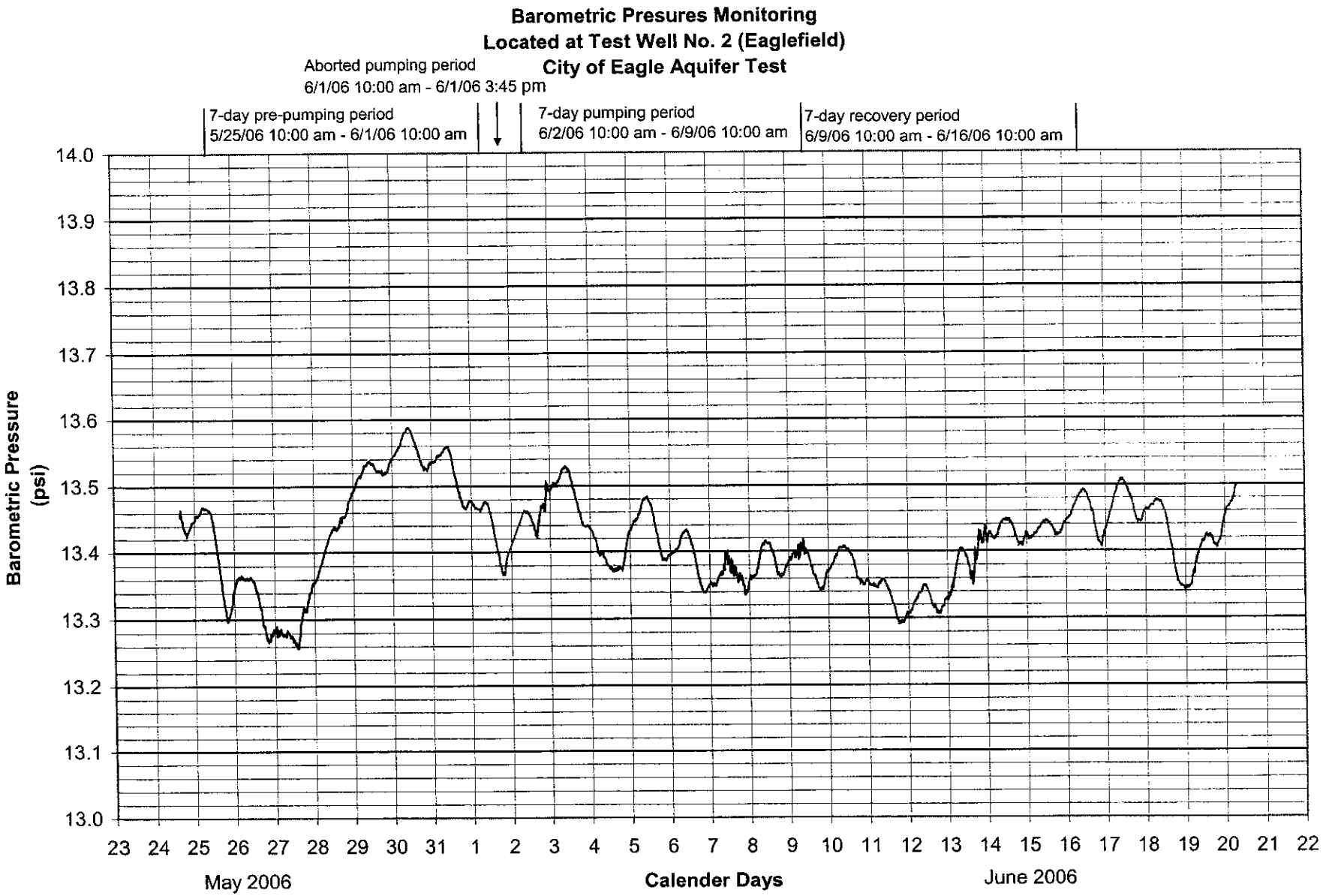


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
UIWNorth R	1.80×10^{4}	1.80×10^{2}	8.00×10^{-4}	2405.68	

Appendix C.9

BAROMETER


Barometric Presures Monitoring
Located at Test Well No. 2 (Eaglefield)
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Barometric Pressure (psi)
14.0
13.9
13.8
13.7
13.6
13.5
13.4
13.3
13.2
13.1
13.0
23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
May 2006
Calender Days
June 2006

APPENDIX D

MONITORING WELL SURVEY DATA

HOLLADAY ENGINEERING COMPANY
32 N. MAIN PAYETTE, ID 83661 (208) 642-3304 FAX (208)642-2159 email: hec@holladayengineering.com

MONITORING WELLS

OWNER : CITY OF EAGLE — DATE: 6/27/06
PROJECT : MONITORING WELL ELEVATIONS — PROJECT: EG061204
AREA : T.4N., R.1W., S. 11 — PAGE:

COORDINATES:

SURVEY PT. NO.	WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELLIP.
1001	MW4	744362.8	2441586.0	43° 42' 24.54111" N	116° 26' 37.01283" W	2445.52
1002	MW6	744588.6	2446816.4	43° 42' 27.19661" N	116° 25' 25.84087" W	2469.58
1006	MW7	744008.1	2447329.0	43° 42' 21.50594" N	116° 25' 18.79939" W	2464.49
1010	MW9	743615.2	2445294.5	43° 42' 16.44486" N	116° 25' 58.13148" W	2454.54
1011	MW10	743595.6	2445295.1	43° 42' 16.45073" N	116° 25' 57.67684" W	2454.22
1012	MW11	739778.3	2448944.4	43° 41' 39.86635" N	116° 24' 56.34880" W	2462.67
1015	MW12	739778.3	2448944.4	43° 41' 39.86635" N	116° 24' 56.34880" W	2462.67
1008	TW1	742602.3	2446166.4	43° 42' 07.53036" N	116° 25' 34.46777" W	2456.70
1007	TW2	741256.3	2447040.0	43° 41' 54.30943" N	116° 25' 22.42992" W	2457.89

ELEVATIONS: GROUND ELEVATIONS (NOT TOP CASING ELEVATIONS)

WELL	ELEVATION	DESC.
MW4	2501.86	(N) HUB
MW6	2525.84	(E) HUB
MW7	2520.74	(NW) HUB
MW9	2510.83	(N) HUB
MW10	2510.52	(N) HUB
MW11	2518.83	EAST (N) RIM
MW12	2518.83	EAST (N) RIM
TW1	2512.97	(N) HUB
TW2	2514.15	-

GENERAL NOTES:

VERTICAL: NAVD88 - BASED ON MEASURED ELLIPSOID HEIGHT AND CALCULATED GEOID SEPARATION (GEOID 03).

HORIZONTAL:

IDAHO STATE PLANE GRID (IDAHO WEST ZONE - NAD83) - GROUND DISTANCES SHOWN
USING AVERAGE COMBINED FACTOR OF 0.99986746067
TO CONVERT GRID TO GROUND DISTANCES