WELL COMPLETION REPORT

MAYFIELD IRRIGATION WELL NO. 1

MCCALLUM MAYFIELD RANCH
ELMORE COUNTY, IDAHO

Report Prepared for
Farwest, LLC

PROFESSIONAL ENGINEER
REGISTERED
7914
STATE OF IDAHO
SCOTT N. KING
4/11/07

Submitted By
SPF Water Engineering, LLC

April 11, 2007

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INTRODUCTION

An irrigation well was completed in January 2007 for Farwest LLC and ARK Properties, LLC. This report provides a summary of permitting, construction, and testing for this well.

Project Location

The project site is located in the SW ¼ of the SW ¼ of Section 24, Township 1 North, Range 4 East, approximately 2 miles southwest of Mayfield in Elmore, Idaho. Figure 1 shows the location of the well site.

Permitting

The well will divert water under water right permit 63-12447. The well was constructed under drilling permit 897529-843964. Permit documents are provided as Attachment A.

DRILLING AND CONSTRUCTION

Well drilling and testing began on December 4, 2006 and was completed January 23, 2007. Riverside, Inc. was the drilling and testing contractor.

Pilot Borehole Drilling

As the first step in the well construction process, a 12-inch pilot borehole was completed to a total depth of 690 feet on December 11 using the reverse-rotary method. The drilling fluid consisted of water mixed with bentonite and well cuttings.

The borehole penetrated alternating layers of gravel, sand and clay to total depth. Samples were collected at each material change and at approximate 10-foot intervals within sand layers. A copy of the driller's borehole log is included in Attachment B.

Geophysical Logging

Borehole geophysical logging was conducted on December 11, 2006 by Materials Testing & Inspection. The borehole surveys consisted of 16-inch, 32-inch, and 64-inch normal resistivity, point resistivity, spontaneous potential, natural gamma, and temperature. Total depth logged was 684 feet. A copy of the geophysical log is provided in Attachment B. Bottom hole temperature was approximately 62 degrees F, suggesting that the borehole temperature had not equilibrated to formation temperatures at the time of logging.

Well Construction and Development

The borehole subsequently was reamed to 24-inch diameter from ground surface to 440 feet and reamed to 19-inch diameter from 440 feet to 640 feet. The pilot borehole is backfilled from 640 to 690 feet. The well is constructed with 100 feet of 10-inch well screen staggered between 432 to 622 feet. The 16-inch well casing (0.375-inch wall thickness) extends from +2 to 431

feet, and 10-inch blank casing is staggered between 462 feet and 627 feet. No. 8-12 Colorado Silica Sand filter pack was installed from the bottom of the borehole to approximately 574 feet and No. 6-9 Colorado Silica sand was installed from 574 feet to 394 feet. An as-built construction schematic and well driller's report are provided in Attachment C.

A bentonite chip surface seal extends from 394 feet to ground surface. Installation of the surface seal was witnessed by Jason Thompson on December 21, 2006. Notes from inspection of the surface seal installation are included in Attachment C.

Well development was accomplished by surging the well (rawhiding) with the test pump.

Figure 1: Well Site Location (T01N R04E Section 24 SWSW)

TEST PUMPING

Test pumping occurred on January 19 and 22, 2006. Test pumping equipment consisted of a diesel powered test pump with right-angle gear head, and a line-shaft turbine test pump set at 416 feet. Discharge was measured using a 10x8 orifice weir. Water levels were measured with an electric line well sounder. The measurement point was 2.21 feet above ground surface. Water was discharged to a pond located west of the well site.

Step-Rate Testing

Step-rate test pumping was conducted on Friday January 19. Static water level prior to testing was 243.17 feet below ground surface. The water level had not recovered from development pumping on the previous day. The well was pumped for 30-minute steps at approximate rates of 475 gpm, 900 gpm, 1280 gpm, and 1800 gpm. Specific capacity at the end of each step was essentially constant, ranging from 29 gpm/ft to 20 gpm/ft.

Constant-Rate Testing

An 8-hour constant-rate pumping test was began at 9:23 am Monday, January 22 at a target discharge rate of 1,700 gpm, and actual discharge fluctuating between 1,650 gpm and 1,750 gpm. Static water level at the beginning of the test was 237.83 feet. Pumping water level at the end of the test was 371.00 feet, for a total drawdown of 133.17 feet and a specific capacity of approximately 12.5 gpd/ft after 8 hours of pumping.

The well produced trace amounts of fine sand during the constant rate test. Significant sand pumping is not anticipated under sustained pumping conditions.

Water levels in the nominal 1,300-foot deep Ken Owings well, located approximately 2600 feet north of the pumping well, were monitored during the constant rate pumping test. Water levels in the Owings well remained constant at 174.7 feet below top of casing.

Analysis of water-level responses for both the drawdown and recovery portions of the constant-rate test indicates a bounded aquifer response, with near well transmissivity of approximately 25,000 gpd/ft. Due to the presence of aquifer boundaries (typically geologic discontinuities such as faults), the apparent transmissivity decreases by approximately 50% after 20 minutes of pumping, and decreases by 50% again after approximately 200 minutes of pumping.

Given the bounded response to test pumping, it is difficult to predict the sustainable yield from the well. Existing data suggest that the well should be equipped with a pump capable of producing a maximum of 1,000 gpm from a pumping water level of 400 feet.

WATER QUALITY

Water quality samples were collected during the constant rate pumping test, and submitted to Analytical Laboratories for analysis.

As described below, the results of this analysis show that water quality from the well meets primary drinking water standards, and therefore is acceptable for public water system use. Overall quality of the water is excellent.

- The water has low concentrations of arsenic (0.005 mg/L), nitrate (0.8 mg/L), iron (0.12 mg/L), and manganese (<0.05 mg/L).

- The water has low concentrations of radiological contaminants, with concentrations of 1.63+/-0.88 pCi/L gross alpha, <3.24 pCi/L gross beta, <1 µg/L uranium, <0.73 pCi/L radium 226 and 0.35+/-0.59 pCi/L radium 228.
- The water has low total dissolved solids (166 mg/L), and is moderately aggressive, with a Langelier index of -1.3.
- Electrical conductivity and specific conductance were measured in the field at 175 µS and 187 µS, respectively. Laboratory conductivity was 205 uS. Temperature was measured in the field at 21.8 degrees C (71.2 degrees F), while pH was measured at 7.4 to 7.5 in the field and 6.9 in the laboratory.
- There was no reported odor and no measurable sulfide.
- Aluminum is slightly elevated at 0.40 mg/L, and color was measured at 5 color units.
- The sand concentration was 16.2 mg/L. Sand concentration is expected to diminish with extended pumping.

Samples for coliform bacteria were not collected.

Laboratory reports are provided as Attachment E.

CONCLUSIONS AND RECOMMENDATIONS

1. Mayfield Irrigation Well No. 1 can produce short-term yields of greater than 1,700 gpm. Maximum sustained yields from the well are anticipated to range from 800 gpm to 1,100 gpm.

2. The quality of the water produced from the well is excellent for municipal or irrigation use.

3. The well should be equipped with a pump rated to produce 1,000 gpm from a pumping water level of 400 feet. Potential pumps include:
   a. 9-stage Layne 11BEH
   b. 17-stage Layne 10THC
   c. 9-stage Verti-Line 11GHEH
   d. 11-stage Verti-Line 12RL
   e. 17-stage Verti-Line 10CHCC

   The 9-stage Layne 11BEH and 9-stage Verti-Line 11GHEH have very similar performance curves and are recommended for this project. Outfit the pump with a 200-hp motor.

4. Sufficient three-phase power is not currently available within a reasonable distance. The pump will be operated with a diesel-driven engine until electric power is available. Two options are available to drive the pump with a diesel engine. The first

is a direct connection from the engine to the pump using a right-angle drive unit. This option will have lower initial cost, but once electricity is available, the engine and right-angle drive will no longer be needed. The second option is to equip the pump with an electric motor and drive the motor with a diesel-powered generator set. This option has higher initial cost, but the generator will be useful and required in the future for a back-up power supply when the well is used for a public water supply.

5. The pump should be operated for a full irrigation season to stress the aquifer. Water levels and pumping rates (totalized volumes) should be monitored throughout the irrigation season to evaluate the sustainable capacity of the well and aquifer.

6. A second well is needed to fully develop the allowable diversion capacity under water right permit 63-12447. The second well should be designed and constructed following one season of pumping and monitoring Mayfield Irrigation Well No. 1.

ATTACHMENT A
PERMITS

63

Form 235-1
1/31/03

Drilling Permit No. 897529-8439604
Drilling Permit I.D. Tag No. D0047651
Water Right Permit No. 63-12447
Injection Permit No. _____

APPLICANT'S COPY

State of Idaho
Department of Water Resources

RECEIVED
NOV 24 2006
WATER RESOURCES
WESTERN REGION

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): Ark Properties LLC

2. Mailing Address: 11204 N Bar 21 Dr

City: Glenns Ferry State: ID Zip Code: 83623 Telephone (208) 366-7931

3. Proposed Well Location: Twp. 01N, Rge. 04E, Sec. 24, ____ 1/4 SW 1/4 SW 1/4;

Gov't Lot No. ____ County Elmore Lat. 43 : 24 : 6 Long.. 115 : 56 : 6

Street Address of Well Site ½-mile east, ¼-mile south of Indian Creek Rd / Slator Creek Rd intersection City Mayfield
Give at least name of road + Distance to Road or Landmark

Lot, block and subdivision n/a

4. Proposed Use of Well:

☐ DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock and for any other purpose in connection therewith, including irrigation of up to % acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd. Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: ☒ Irrigation ☐ Injection ☐ Livestock No. Head Type: ☐ Municipal ☐ Test ☐ Industrial ☐ Other _____ (Describe)

☐ MONITORING: A well bore schematic and map is required for each blanket permit. No. of proposed wells: _____

5. Well Construction Information:

A. ☒ New well ☐ Modify ☐ Replace

B. Proposed Casing Diameter 16-inch Proposed Maximum Depth 1000-feet

C. Anticipated bottom hole temperature:
☒ 85 F or less (Cold Water Well) ☐ 85F to 212F (Low Temp. Geothermal Well) ☐ 212 F. or more (Geothermal Well)

6. Construction Start Date: November 28, 2006

7. Anticipated Well Driller: Riverside Inc. Driller's Lic. No. 333
NOTE: The actual well driller must be identified prior to drilling.

8. Applicant's Signature: _____ Date 11-22-06

Address (if different than owner): P.O. Box 220

City: Parma State: Id Zip Code: 83660 Telephone 208-722-6731

Title: Vice President
(Owner, Firm Representative, Other)

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This Permit is Approved. Date 11-30-06

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. **READ CAREFULLY!**

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one(1) year from the approval date for completion of the well unless an extension has been granted.

2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare, which may be required before construction of the well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.

3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.

4. Approval of this drilling permit does not authorize trespass on the land of another party.

5. This permit does not constitute other local, county, state or federal approvals, which may be required for construction of a well.

6. This drilling permit does not represent a right to divert and use the water of the State of Idaho. If the well being drilled is associated with approved water right(s) use of the well must comply with conditions of said water right(s).

7. If a bottom hole temperature of 85 or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.

8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or his contractors to contact "Digline" (DigLine is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "DigLine" Number for your area is 1-800-342-1585.

9. Please be advised that this drilling permit should be considered and treated as a preliminary permit. If you are in disagreement with this preliminary permit you have fourteen (14) days of the service date of this permit to petition the Department for reconsideration pursuant to Section 67-5243, Idaho Code.

10. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.

SPECIFIC CONDITIONS: Plans and Specifications For Final well design Shall be Submitted to IDWR For review prior to well Completion.

Signature of Authorized Department Representative

Sr WR Agent
Title

Receipt No. W034907 Receipted by DB Fee $200- Date 11-27-06

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____

IDAHO DEPARTMENT OF WATER RESOURCES

Water Permit Report 63-12447

WATER RIGHT NUMBER: 63-12447

Owner Type	Name and Address
Current Owner	ARK PROPERTIES LLC 11204 N BAR 21 DR GLENNS FERRY, ID 83623-5033 (208)366-7931
Original Owner	SAND SPRINGS RANCH & CO PO BOX 873340 VANCOUVER, WA 98687-3340 (360)883-0630
Attorney	BEEMAN & ASSOCIATES 409 W JEFFERSON ST BOISE, ID 83702 (208)331-0950

Priority Date: 04/28/1998

Basis:

Status: Active

Source	Tributary
GROUND WATER	

Beneficial Use	From To	Diversion Rate	Annual Volume
IRRIGATION	3/15 to 11/15	4.000 CFS	
	Total Diversion:	4.000 CFS	

Location of Point(s) of Diversion

GROUND WATER	NW1/4SW1/4	Sec. 24,	Twp 01N,	Rge 04E, B.M.
ELMORE County				
GROUND WATER	SW1/4NE1/4	Sec. 24,	Twp 01N,	Rge 04E, B.M.
ELMORE County				
GROUND WATER	SW1/4SW1/4	Sec. 24,	Twp 01N,	Rge 04E, B.M.
ELMORE County				
GROUND WATER	L2 (SW1/4NW1/4)	Sec. 19,	Twp 01N,	Rge 05E, B.M.
ELMORE County				
GROUND WATER	SE1/4SE1/4	Sec. 24,	Twp 01N,	Rge 04E, B.M.
ELMORE County				

Place of Use

IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01N	04E	24	30.0	20.0	40.0	40.0					40.0	30.0	30.0	30.0	40.0	40.0	20.0	20.0	380.0

IDAHO DEPARTMENT OF WATER RESOURCES

Water Permit Report 63-12447

01N 05E	18											10.0 L 4	30.0	30.0	10.0	30.0	10.0		120.0
01N 05E	19	40.0	40.0	40.0	40.0	40.0	40.0 L 1	40.0 L 2	40.0	20.0	20.0 L 3	20.0 L 4	20.0	20.0	20.0	20.0	20.0		480.0

Total Acres: 980

Conditions of Approval:

1. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code, any any specific well construction requirements of the drilling permit.
   This right is limited to the irrigation of 200 acres within the place of use described above in a single irrigation season.
   Water bearing zone to be is between 400 and 1000 feet.
2. 01M After specific notification by the department, the right holder shall install a suitable measuring device or shall enter into an agreement with the department to determine the amount of water diverted from power records and shall annually report the information to the department.
3. R64 This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.0 afa per acre at the field headgate for irrigation of the lands above.
4. 120 The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary for this purpose will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.
5. 26A Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which permit holder had no control.

Remarks:

Comments:

1. dgibson 8/9/2004 Extension of Time
Comment: Request for Extension of Time receive 5/4/2004 (exactly 60 days from the date of the mailing of the Lapse Notice). Permit reinstated with a new priority date of 7/1/1998. Extension granted for 5 years, until 3/1/2009. Josephine Beeman appears on behalf of Sand Springs Ranch. All future correspondence is to go to Beeman.

IDAHO DEPARTMENT OF WATER RESOURCES

Water Permit Report 63-12447

Dates and Other Information:

Permit Proof Due Date: 3/1/2009
Permit Proof Made Date:
Permit Approved Date: 3/10/1999
Permit Moratorium Expiration Date:
Enlargement Use Priority Date:
Enlargement Statute Priority Date:
Field Exam Date:
Date Sent to State Office:
Date Received at State Office:
State or Federal:
Owner Name Connector:
Water District Number:
Generic Max Rate Per Acre:
Generic Max Volume Per Acre:
Swan Falls Trust or Nontrust:
Swan Falls Dismissed:
DLE Act Number:
Carey Act Number:
Mitigation Plan: False

Combined Use Limits:

Water Supply Bank:

ATTACHMENT B
PILOT BOREHOLE DRILL LOG AND GEOPHYSICAL LOG

CUSTOMER _____

ADDRESS _____

DRILLER Mack

HOLE SIZE _____" CASING SIZE _____"

SCREENS OR PERFORATIONS _____"

Riverside, Inc.

- Electrical Apparatus - Sales & Repairs
- All type pumps - Sales & Repair
- Complete machine shop
- Design & installations
- Well drilling

DATE STARTED 12-4-06

DATE COMPLETED _____

HELPER Jim DRILL USED Schramm T-450

WATER LEVEL AT _____ FT.

TIME	STEM #	DEPTH FROM	DEPTH TO	FORMATION
		0	3	Top soil
		3	5	clay
		5	8	loose coarse sand.
		8	40	coarse sand - soft sandstone
12-5		40	45	" " → sandy brn clay (mix mud 2nd at End)
12-6		45	134	decomposed granite
		134	178	Brown clay
		178	182	decomposed granite
		182	184	Brn clay
		184	165	Granite E.O.
12-7		165	168	Brn clay
		168	186	fine sand some mud some clay
		186	189	coarse sand & small gravel
		189	194	sandy w/ brn clay
		194	212	fine sand some clay
		217	221	Brown clay
		221	223	coarse sand
		223	345	Brown clay

CUSTOMER _____

ADDRESS _____

DRILLER _____

HOLE SIZE_____" CASING SIZE_____"

SCREENS OR PERFORATIONS _____"

Riverside, Inc.

- Electrical Apparatus - Sales & Repairs
- All type pumps - Sales & Repair
- Complete machine shop
- Design & installations
- Well drilling

DATE STARTED _____

DATE COMPLETED _____

HELPER_____ DRILL USED_____

WATER LEVEL AT_____FT.

TIME	STEM #	DEPTH FROM	DEPTH TO	FORMATION
		245	265	Sand Fine with mud in places
		265	273	Gravel
		273	285	clay Brown
		285	305	Brown clay with small Sand Layers
12/8/06		305	333	Brown clay sandy with Layers
		333	343	Gravel Decomposed
		343	350	Brown clay with sand
		350	358	Gravel Decomposed
		358	386	Brown clay with small Sand layers Fine Sand
		386	396	Black clay
		396	404	Brown clay with Sand Layers Fine
		404	410	Fine Sand
		410	414	Brown clay
		414	433	white clay wet Sand stiff
		433	451	Coarse Sand with small clay layers
		451	463	Light Brown clay with Fine Sand
		463	483	Course Sand with small clay layers
		483	505	clay light Brown with sand.

CUSTOMER _____

ADDRESS _____

DRILLER _____

HOLE SIZE _____" CASING SIZE _____"

SCREENS OR PERFORATIONS _____"

Riverside, Inc.

- Electrical Apparatus - Sales & Repairs
- All type pumps - Sales & Repair
- Complete machine shop
- Design & installations
- Well drilling

DATE STARTED _____

DATE COMPLETED _____

HELPER _____ DRILL USED _____

WATER LEVEL AT _____ FT.

TIME	STEM #	DEPTH FROM	DEPTH TO	FORMATION
12-9-06		503	513	fine white sand some sandy clay
		513	523	Brn sticky clay with seems of fine sand
		523	541	Blue clay ~~with some fine sand~~ (to gray clay 526')
		541	544	Blue sand (Bird shot)
		544	548	Brn sand coarse with pea gravel
		548	552	fine to med sand some coarse some clay
		552	554	yellow clay
		554		fine to some coarse sand a little clay heavy in places
			565	& small gravel
		565	574	fine to coarse sand
		574	577	Golden & Brn clay with fine sand
		577	580	sand & small gravel
		580	590	fine to coarse sand & pea gravel
		590	606	Blue sand & some sandy clay
		606	610	Brn clay (gray clay 608') back to Brn. 610'
		610	613	Brn sand (Bird shot) & soft sandstone
		613	622	fine sand some sandy clay.
		622	626	Brn clay & fine sand

CUSTOMER _____

ADDRESS _____

DRILLER _____

HOLE SIZE_____" CASING SIZE_____"

SCREENS OR PERFORATIONS _____"

Riverside, Inc.

- Electrical Apparatus - Sales & Repairs
- All type pumps - Sales & Repair
- Complete machine shop
- Design & installations
- Well drilling

DATE STARTED _____

DATE COMPLETED _____

HELPER_____ DRILL USED_____

WATER LEVEL AT_____FT.

TIME	STEM #	DEPTH FROM	DEPTH TO	FORMATION
		626	636	gray clay some fine sand
		636	641	fine B/he sand some sandy clay
R-11		641	652	Gray clay
		652	655	Blue sand (Bird shot)
		655	657	Brn clay & fine sand
		657	668	fine white sand some sandy clay
		668	674	" " " & Brn clay mix
		674	677	Brn & gray clay
		677	686	sandstone & siltstone & fine sand (hard)
		686	690	Blue clay

Materials Testing & Inspection

Natural Gamma
16" & 64" Normal Resistivity
Spontaneous Potential
Single Point Resistivity
Temperature

CO Riverside Inc.
WELL Mayfield Well
FLD
CTY Mayfield
STE
FILING No B61960e

COMPANY Riverside
WELL ID Mayfield Well
FIELD
COUNTRY US STATE Idaho

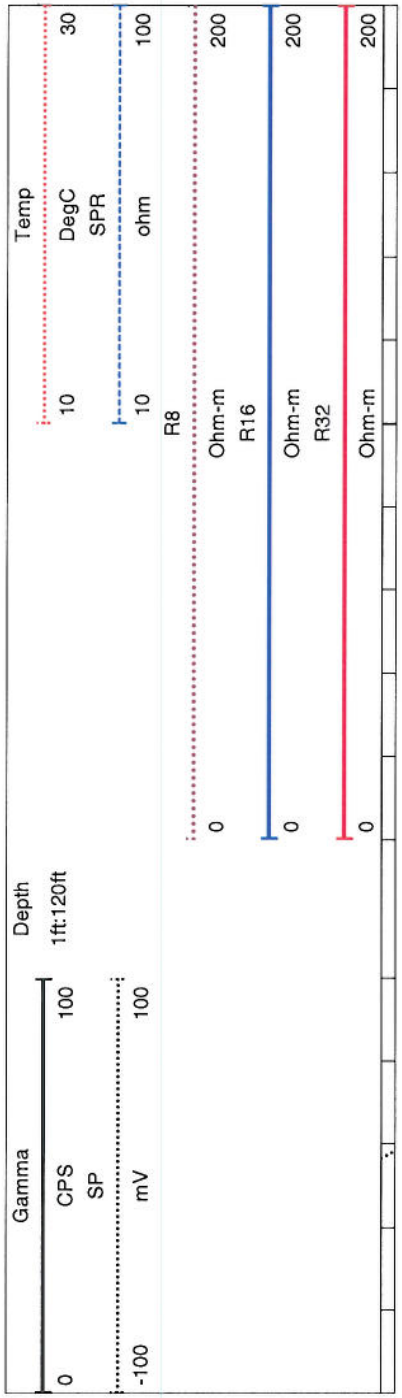
LOCATION

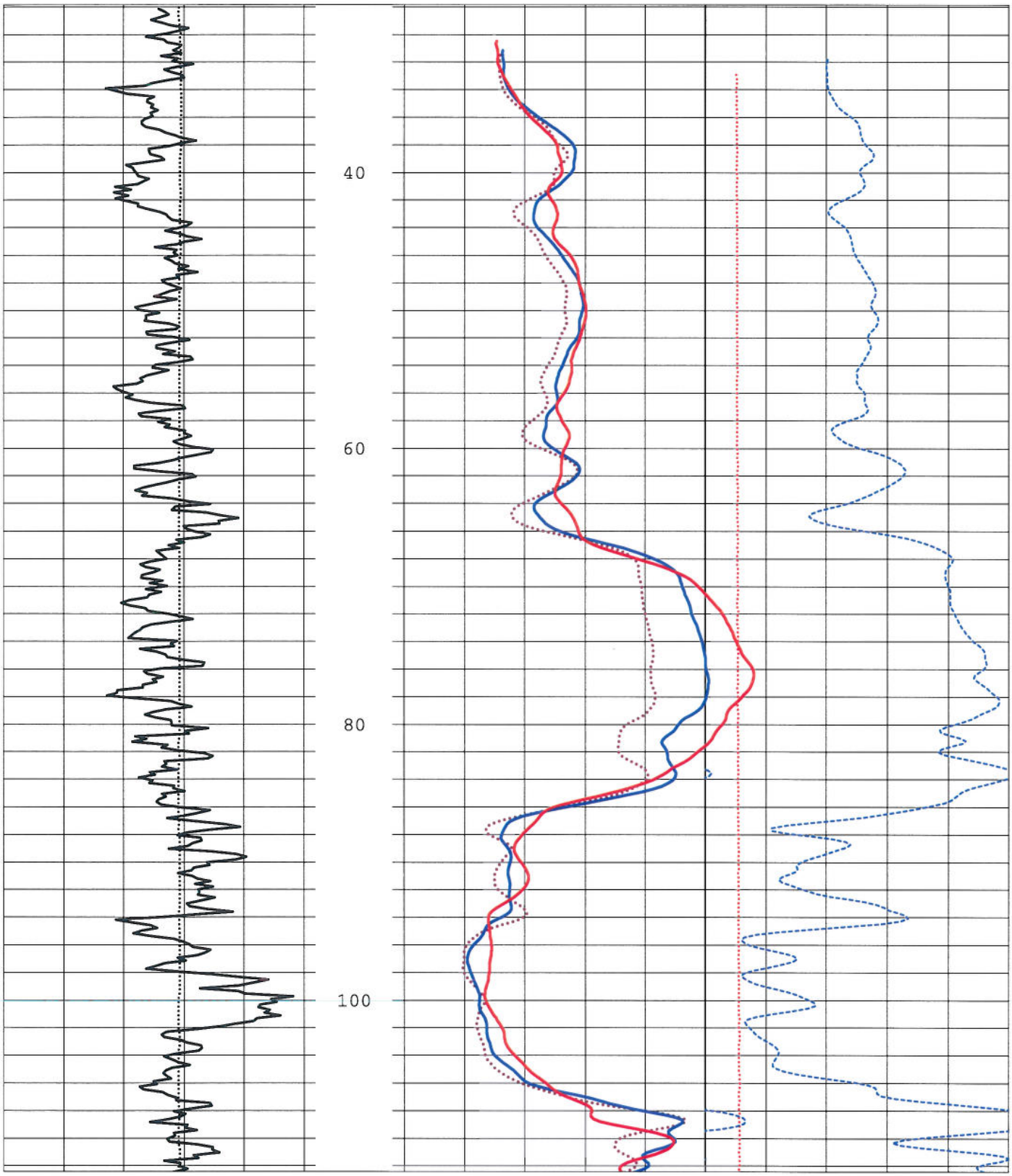
SEC TWP RGE

OTHER SERVICES

PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM		ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM			G.L.
DATE	12/11/2006	TYPE FLUID IN HOLE	mud
RUN No	1	SALINITY	
TYPE LOG	all	DENSITY	
DEPTH-DRILLER	690 feet	LEVEL	
DEPTH-LOGGER	685 feet	MAX. REC. TEMP.	
BTM LOGGED INTERVAL			
TOP LOGGED INTERVAL			
OPERATING RIG TIME			
RECORDED BY	J McCabe		
WITNESSED BY	Tim		

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO

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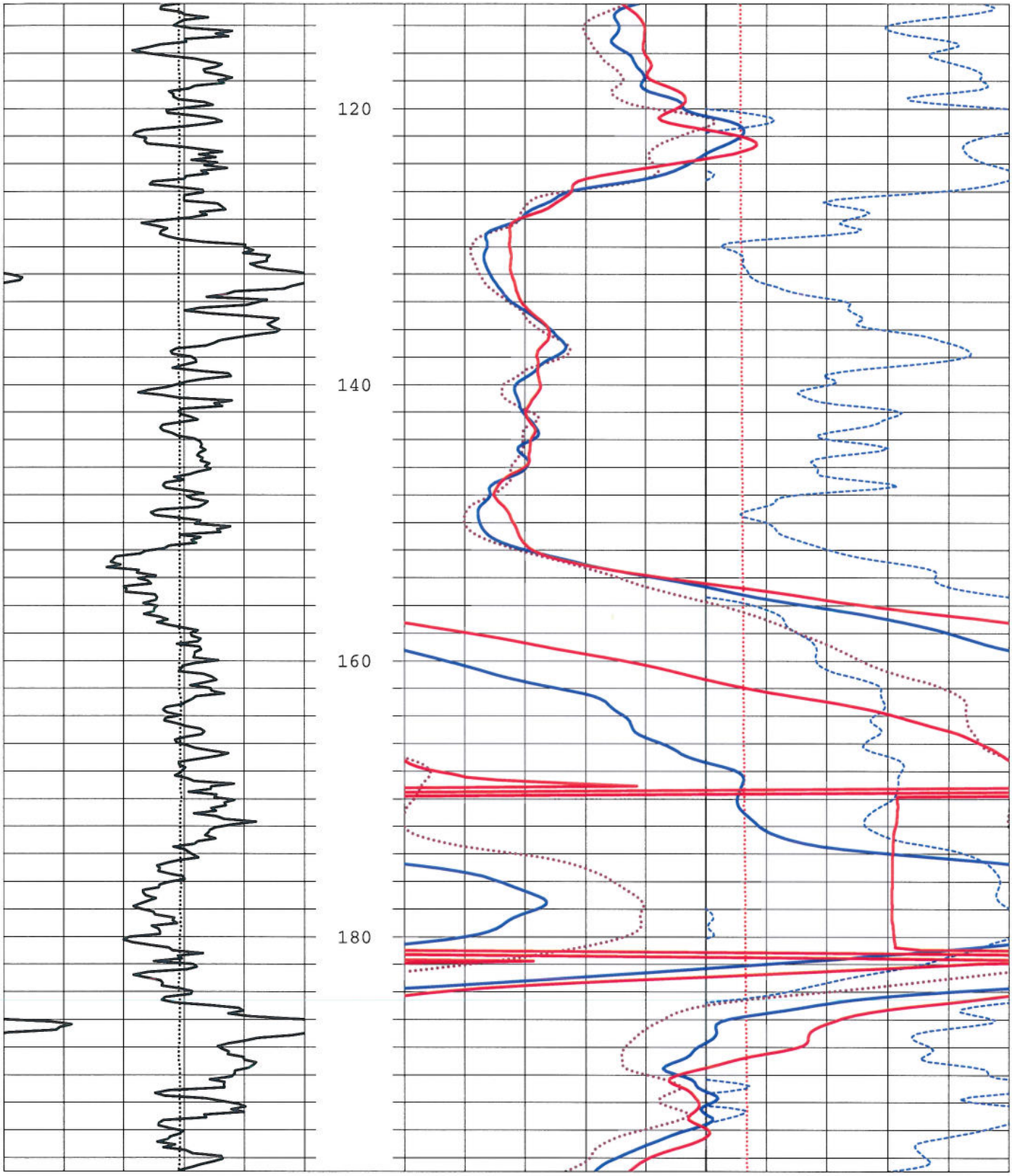
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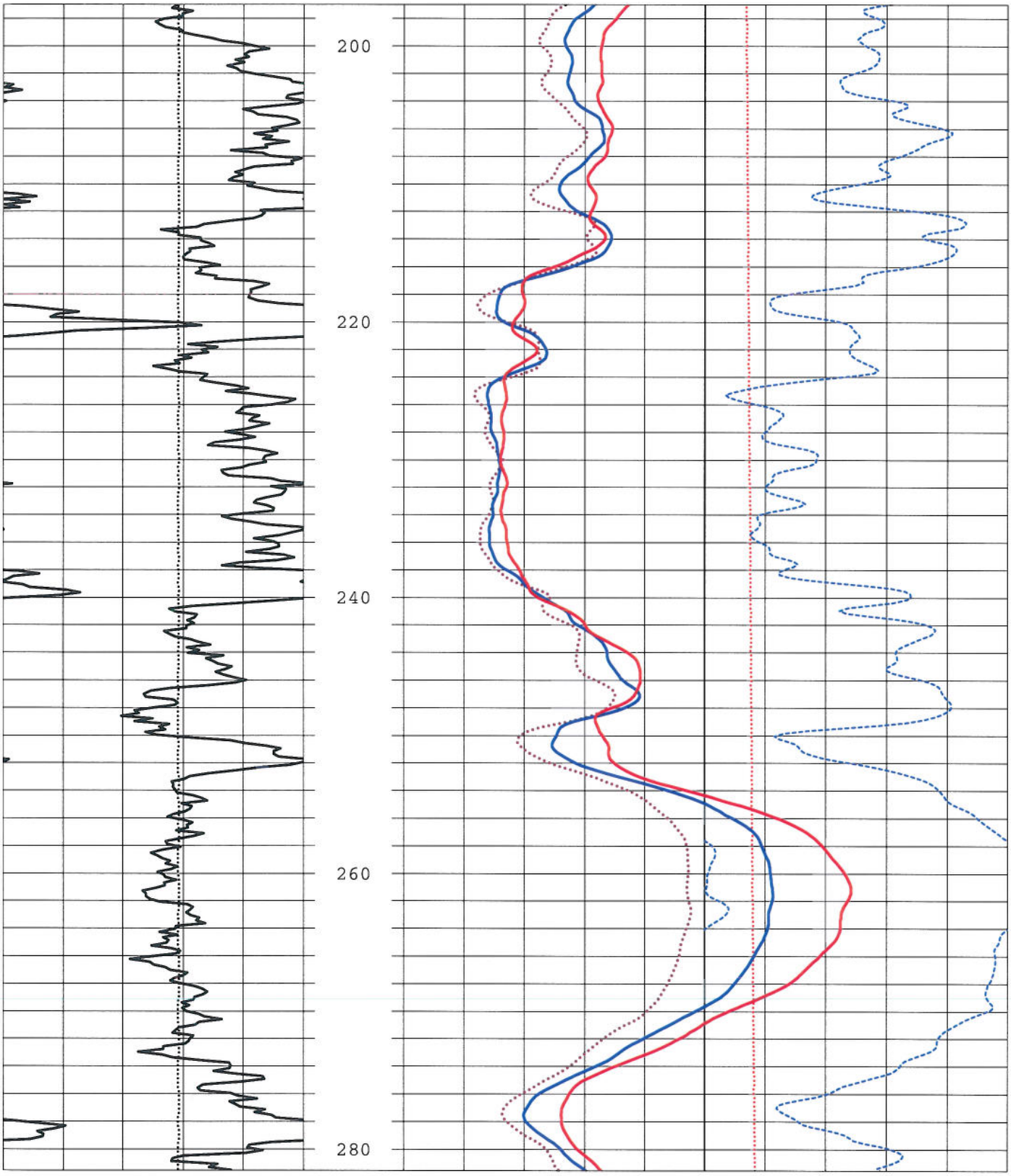
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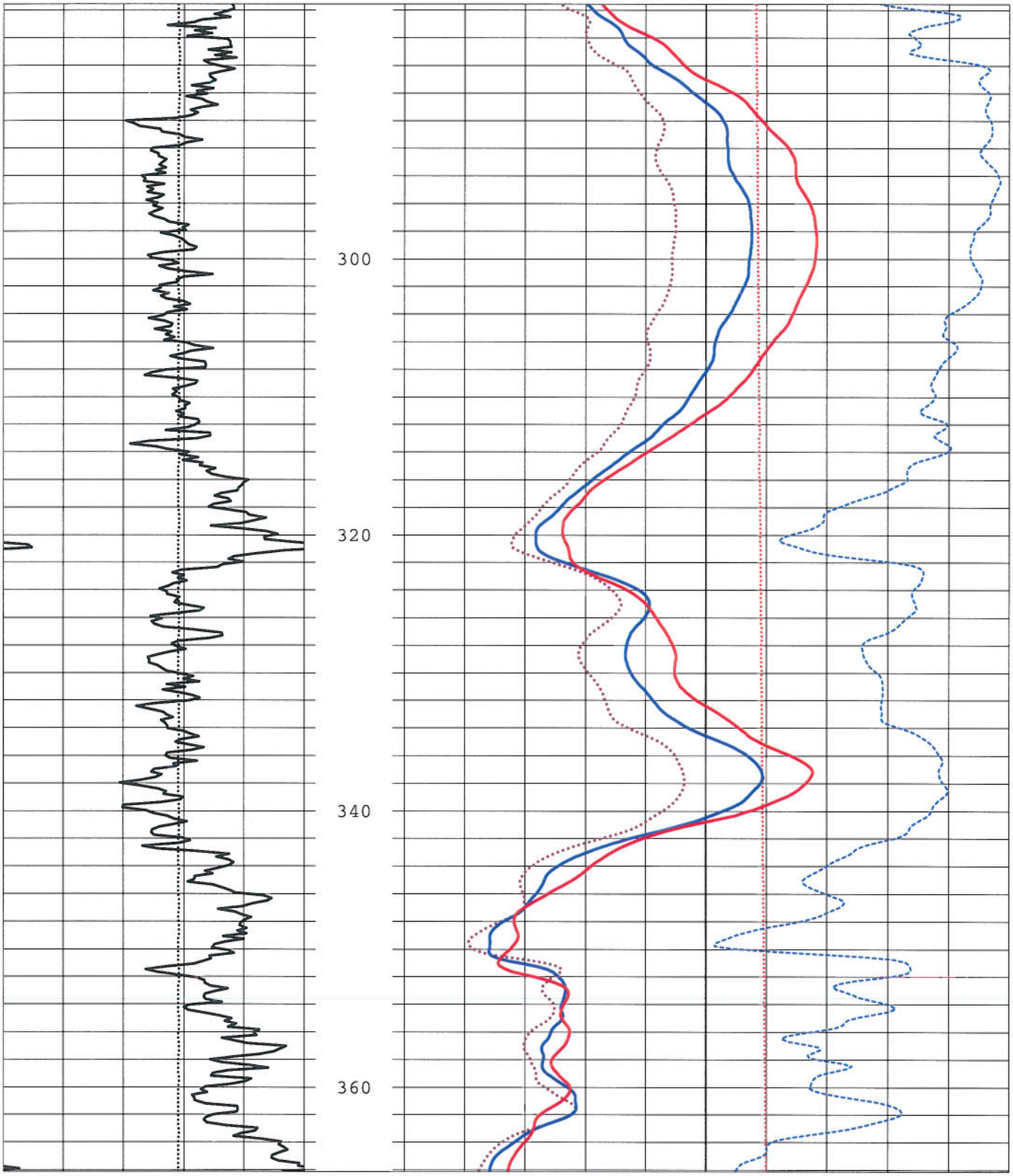
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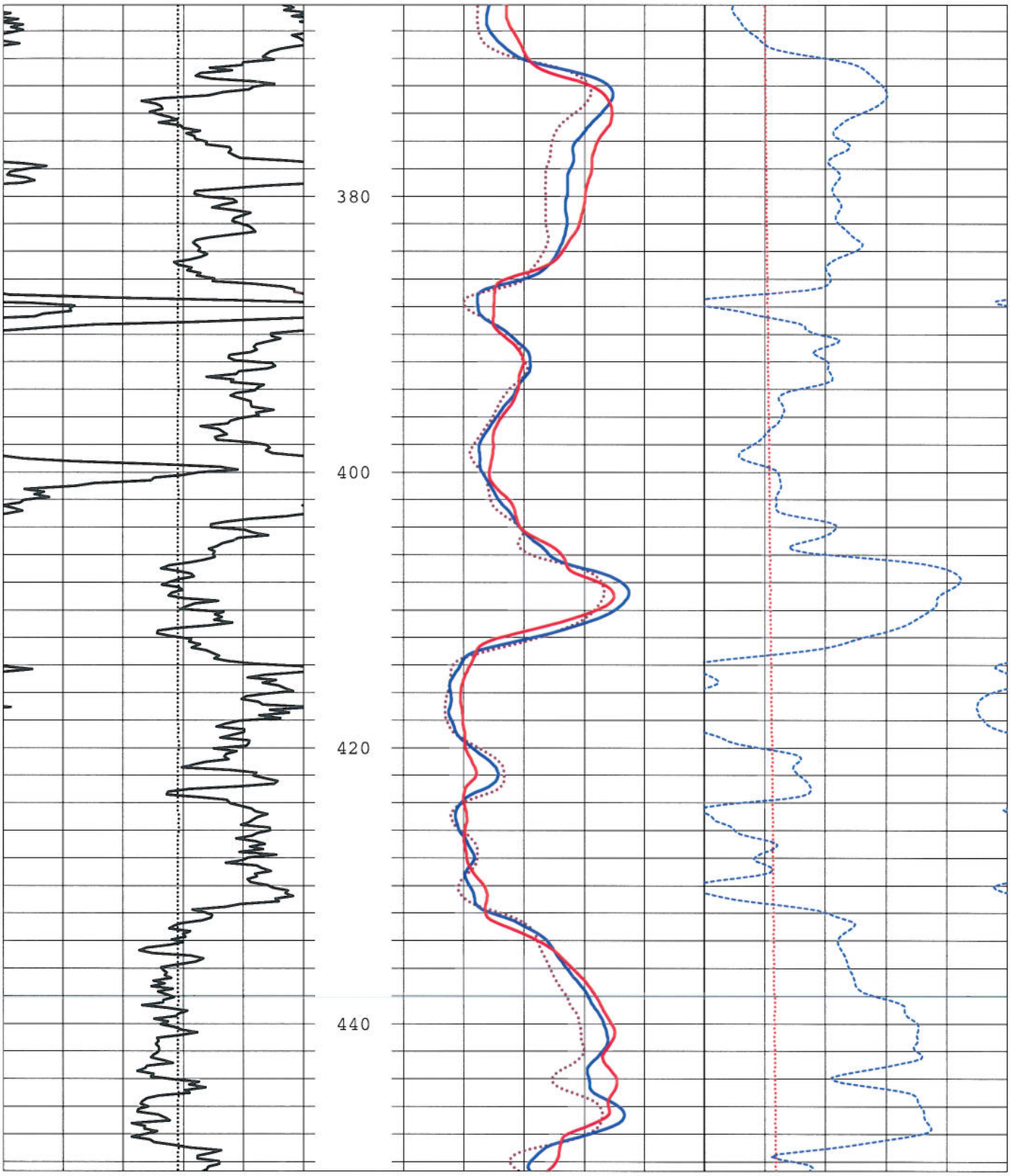
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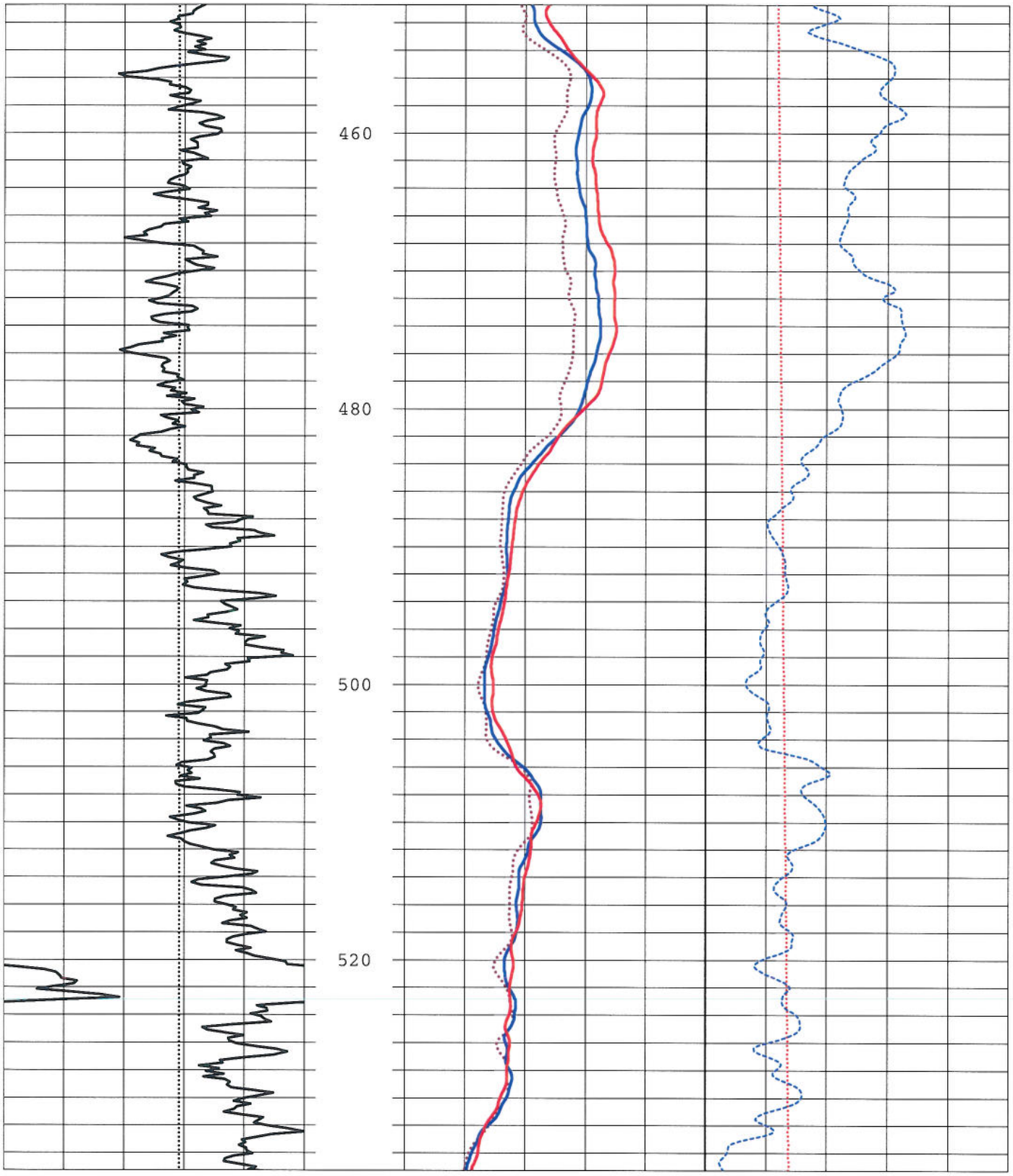
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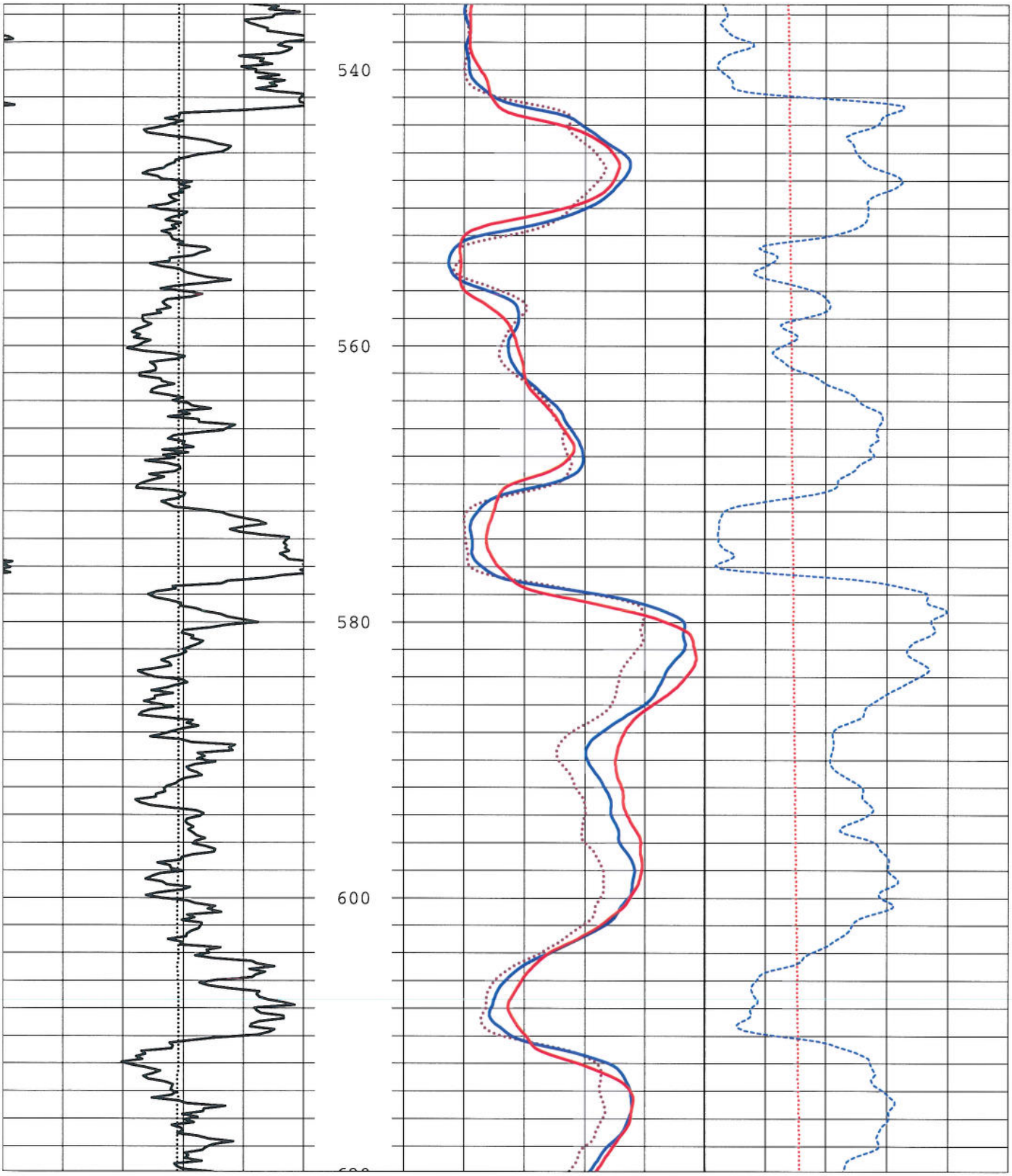
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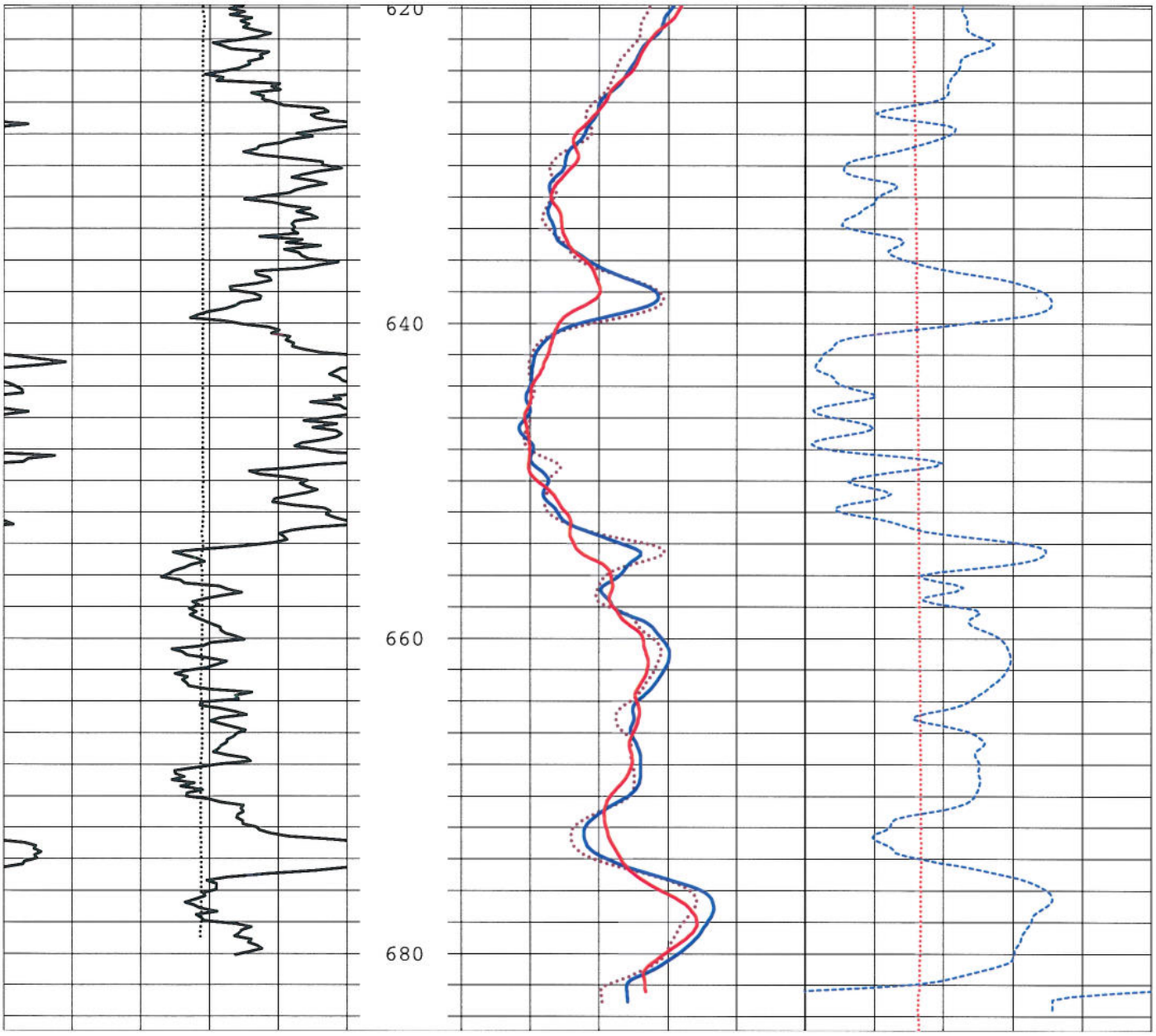
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ATTACHMENT C
WELL CONSTRUCTION DATA

Pg #1

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 0047651
DRILLING PERMIT NO. 897529-843964
Water Right or Injection Well No. 63-12447

2. OWNER:
Name ARK PROPERTIES LLC
Address 11204 N BAR 21 DR
City GLENNS FERRY State ID Zip 83623

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 4 North ☒ or South ☐
Rge. 11 East ☒ or West ☐
Sec. 24 ____ 1/4 (10 acres) SW 1/4 (40 acres) SW 1/4 (160 acres)
Gov't Lot ____ County ELMORE
Lat: 43 : 24 : 6 Long: 115 : 56 : 6
Address of Well Site 1/2 MI EAST, 1/4 MI SOUTH OF INDIAN CREEK RD & SLATOR CREEK RD INTERSECTION City MAYFIELD
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name N/A

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

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
1" BENTONITE	0	394	37.000	DRY POUR
1" BENTONITE	630	650	5.000	DRY POUR

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

8. CASING/LINER: 16" X 10" REDUCER @ 431'

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16	+2	431	.375	STEEL	☒	☐	☒	☐
10	462	468	.365	STEEL	☒	☐	☒	☐
10	478	542	.365	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
432	462	.030		10	S.S.	☒	☐
468	478	.030		10	S.S.	☒	☐
542	582	.030		10	S.S.	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#6-9 SAND	394	574	27.000	DRY POUR
#8-12 SAND	574	640	13.000	" "

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
229 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____
1½" PIPE ON SIDE

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

Yield gal./min.	Drawdown	Pumping Level	Time
1700gpm	142	371	8 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	3	TOP SOIL		
	3	5	CLECAE		
	5	45	COARSE SAND		
	45	168	DECOMPOSED GRANITE W/SOME CLAY LAYERS		
	168	212	FINE - COARSE SAND		
	212	221	BRN CLAY		
	221	223	COARSE SAND		
	223	245	BRN CLAY		
	245	265	FINE - MED SAND		
	265	273	GRANITE		
	273	335	BRN CLAY W/SAND LAYERS		
	335	343	DECOMPOSED GRANITE		
	343	404	CLAY W/SOME DECOMPOSED GRANITE LAYERS		
	404	410	FINE SAND		
	410	419	BRN CLAY		
	419	440	WHITE CLAY W/COARSE SAND LAYER		
19	440	483	COARSE SAND W/SOME CLAY LAYERS		
	483	513	SAND W/SOME CLAY		
	513	541	BRN CLAY, SOME BLUE CLAY		
	541	622	FINE - COARSE SAND W/SOME CLAY LAYERS		
	622	636	CLAY W/SOME FINE SAND		
	636	641	FINE BLUE SAND		
	641	657	CLAY W/SOME SAND LAYER		
	657	674	FINE WHITE SAND SOME CLAY		
	674	690	CLAY W/ SAND STONE LAYER		

Completed Depth 627' (Measurable)
Date: Started 12-6-06 Completed 1-23-07

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 and Driller or Operator II ____ Date 2-8-07
Operator I ____ Date 2-8-07
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

#2

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 0047651
DRILLING PERMIT NO. 89758-84396
Water Right or Injection Well No. 63-12447

2. OWNER:
Name ARK PROPERTIES LLC
Address 11304 N BAR 21 DR
City GLENNS FERRY State ID Zip 83623

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. ____ North ☐ or South ☐
Rge. ____ East ☐ or West ☐
Sec. ____ 1/4 (10 acres) ____ 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County ____
Lat: : : Long: : :
Address of Well Site ____
(Give at least name of road + Distance to Road or Landmark) City ____
Lt. ____ Blk. ____ Sub. Name ____

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

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 Material	From	To	Weight / Volume	Seal Placement 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
10	532	562	.365	Steel	☒	☐	☒	☐
10	573	577	.365	Steel	☒	☐	☒	☐
10	606	610	.365	Steel	☒	☐	☒	☐

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

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation SLOTTED CASING

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
562	573	.030		10	SS	☒	☐
577	606	.030		10	SS	☒	☐
610	627	.030		10	SS	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____

12. 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 Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

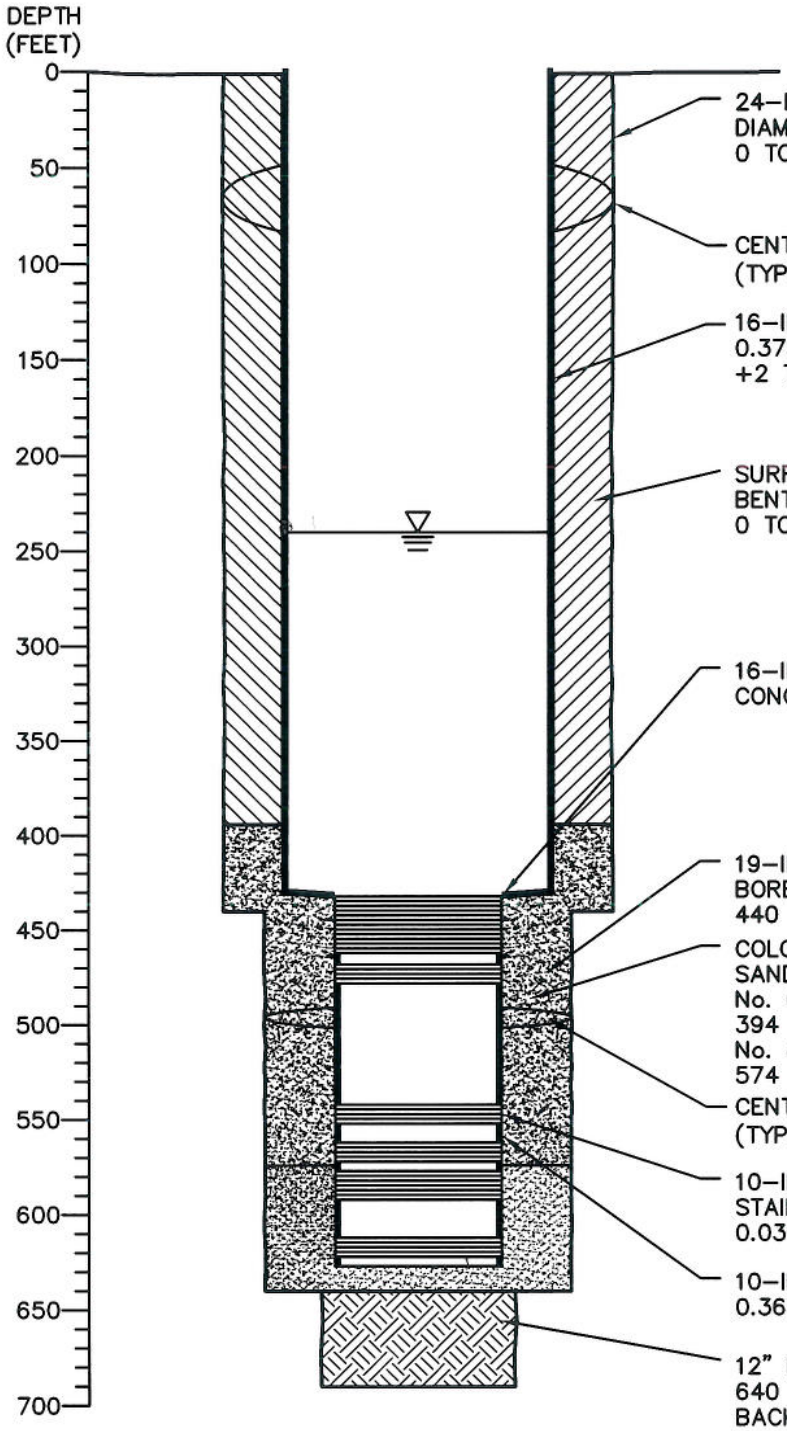
Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N

Completed Depth 627' (Measurable)
Date: Started ____ Completed ____

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 ____ Firm No. ____
Principal Driller ____ Date ____
and
Driller or Operator II ____ Date ____
Operator I ____ Date ____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES



SCREEN PLACMENT
432 TO 462 FEET
468 TO 478 FEET
542 TO 552 FEET
562 TO 572 FEET
577 TO 602 FEET
612 TO 622 FEET

10–INCH WELL CASING PLACMENT
462 TO 468 FEET
478 TO 542 FEET
552 TO 562 FEET
572 TO 577 FEET
602 TO 612 FEET
622 TO 627 FEET

PROFESSIONAL ENGINEER
REGISTERED
7914
STATE OF IDAHO
SCOTT N. KING
3/29/07

SPF Water Engineering, LLC
water resource consultants
600 East River Park Lane, Suite 105, Boise, Idaho 83706
Tel (208) 383-4140 Fax (208) 383-4156

WELL No. 1
FARWEST MAYFIELD
AS–BUILT

SCALE: NTS
DRAWN BY: SDC

FIGURE 1

Proj. #310.0060

SPF Water Engineering, LLC
water resource consultants

Memorandum

DATE: December 21, 2006

TO: Scott King, P.E.

FROM: Jason Thompson

CC:

RE: 310.0060 Mayfield Well No. 1 Seal

Jason Thompson of SPF observed the placement of the annular seal of the Mayfield Well No. 1 on December 21, 2006. Seal placement was performed by Riverside, Inc.

The seal was placed in a 24-inch diameter borehole, around 16-inch O.D. casing. The top of the filter pack is at a depth of approximately 394 feet below ground surface (BGS). The seal was installed by pouring a total of 13 2,500-pound bags of 5/8-inch bentonite chips, for a total of 32,500 pounds of bentonite. When I left the site, the annulus was filled with bentonite chips to an approximate depth of 25 feet (BGS). After I left, the driller removed the 25-foot long starter pipe and filled the remaining annulus with bentonite chips to ground surface.

Given a borehole diameter of 24 inches, a casing diameter of 16 inches, and a seal depth of 394 feet, the total volume filled with bentonite was 688 cubic feet. The resulting average seal density is 47 pounds of dry bentonite per cubic foot of annulus.

A table detailing the installation is attached for documentation.

600 East River Park Lane, Suite 105, Boise, Idaho 83706 Tel: 208-383-4140 Fax: 208-383-4156

Table 1. Annular seal placement at Mayfield Well No. 1.

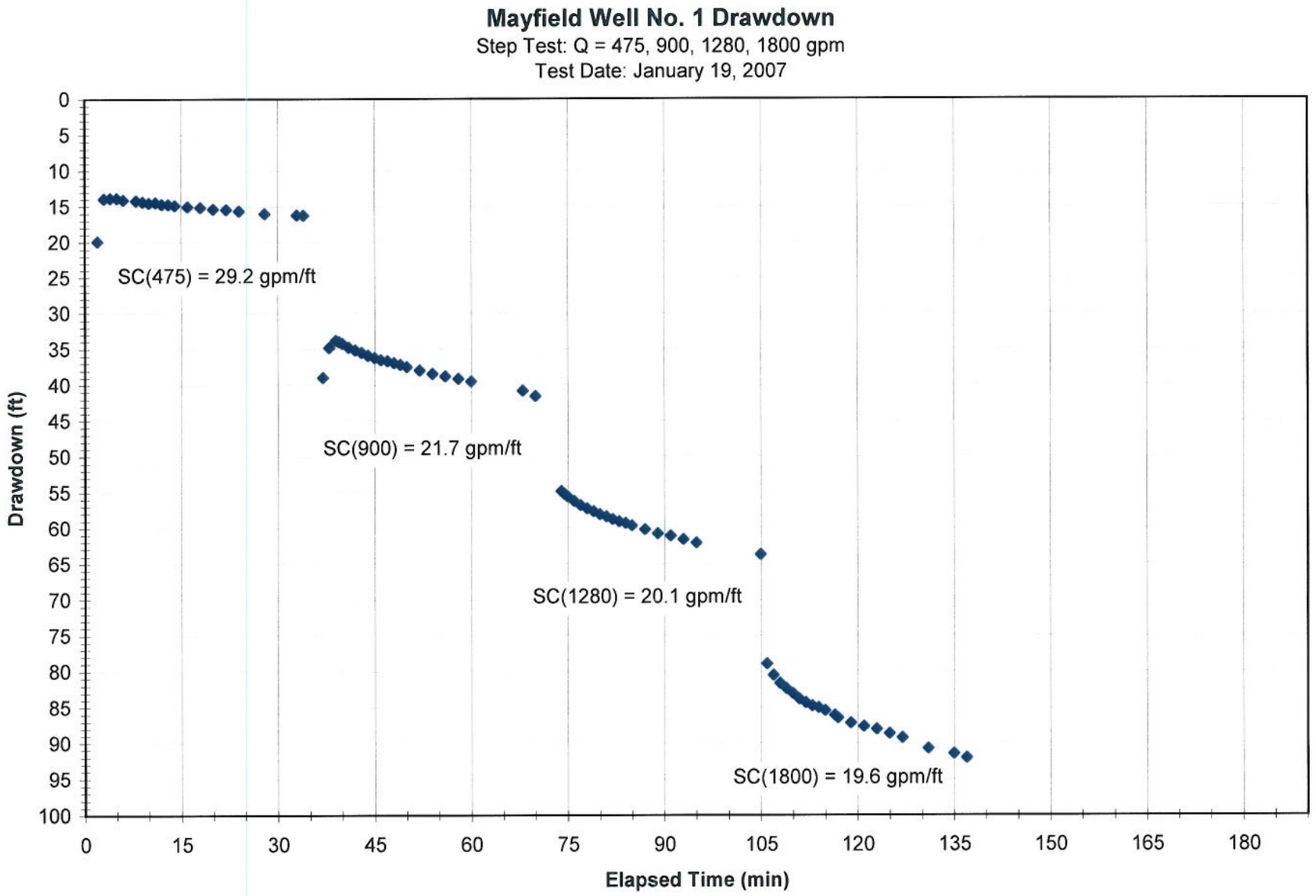
Date	Time Start	Time End	Material	Bag	Quantity (pounds)	Depth (feet, BGS)	Interval Filled (feet)	Time Depth Measured
			Top of filter pack		N/A	394		
12/20/2006			5/8 inch bentonite	1	2,500	359	35	
12/21/2006	10:17	10:24	5/8 inch bentonite	2	2,500	329	30	10:31
12/21/2006	10:46	10:54	5/8 inch bentonite	3	2,500	307	22	10:57
12/21/2006	10:57	11:05	5/8 inch bentonite	4	2,500	282	25	11:08
12/21/2006	11:09	11:15	5/8 inch bentonite	5	2,500	250	32	11:17
12/21/2006	11:19	11:26	5/8 inch bentonite	6	2,500	215	35	11:29
12/21/2006	11:30	11:40	5/8 inch bentonite	7	2,500	184	31	11:41
12/21/2006	11:42	11:51	5/8 inch bentonite	8	2,500	148	36	11:52
12/21/2006	11:53	12:03	5/8 inch bentonite	9	2,500	117	31	12:05
12/21/2006	12:06	12:14	5/8 inch bentonite	10	2,500	87	30	12:16
12/21/2006	12:18	12:25	5/8 inch bentonite	11	2,500	55	32	12:31
12/21/2006	12:33	12:42	5/8 inch bentonite	12	2,500	25	30	12:45
12/21/2006			5/8 inch bentonite	13	2,500	0	25	

ATTACHMENT D
TEST PUMPING DATA

Mayfield
Well No. 1 Step Test

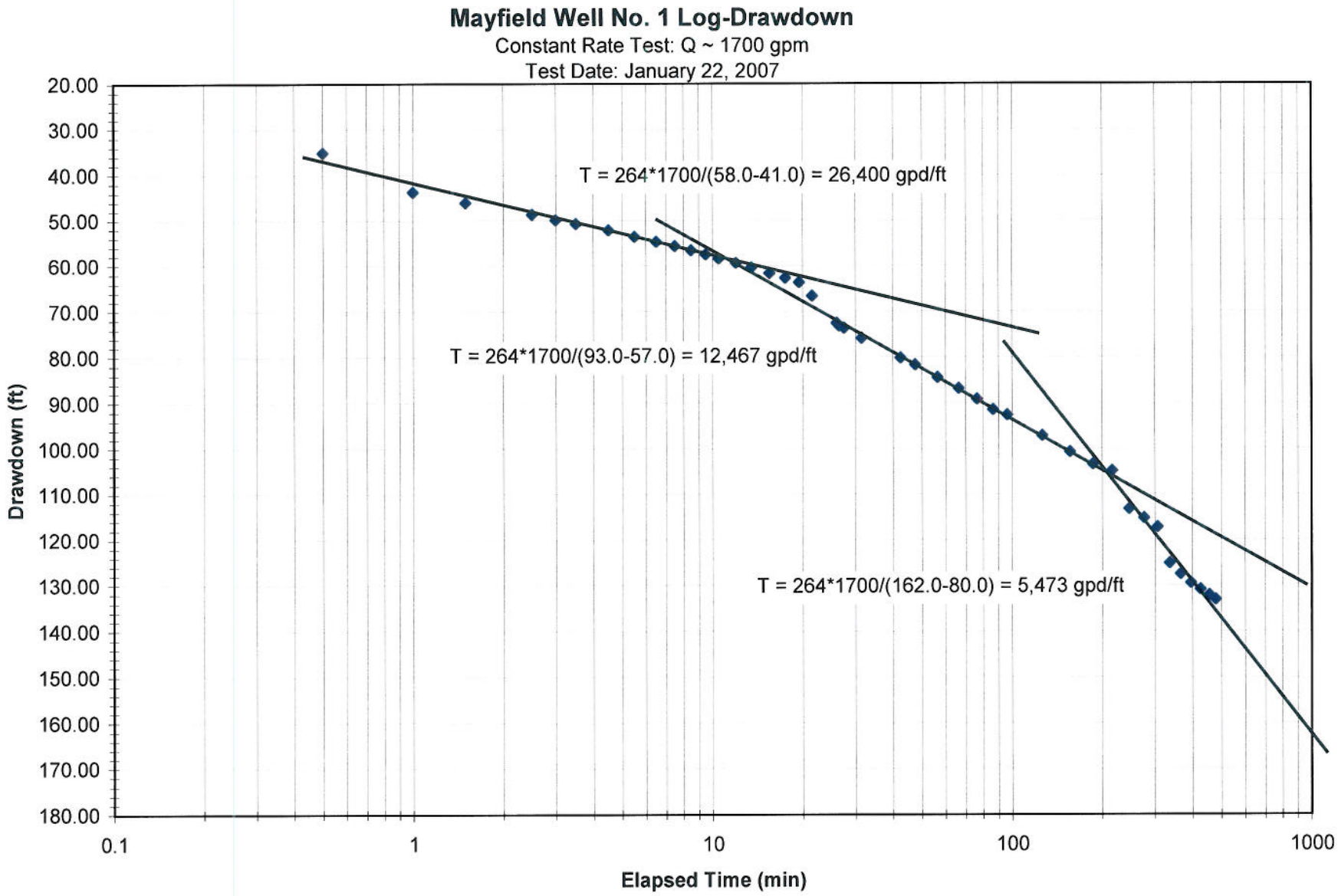
Turbine pump set at 416 feet; diesel motor							
Flow measured with pipe orifice (10x7), Q = 475, 900, 1280, and 1800 gpm							
Water level measured with electric well sounder							
Measurement point 2.85 feet above ground surface (casing + tubing)							
Date	Time	t (min)	t' (min)	t/t'	DTW (ft bgs)	Drawdown (ft)	Remarks
1/19/2007	10:55				243.17		static water level
1/19/2007	11:00	0					pump on
1/19/2007	11:02	2			263.08	19.91	adjusting Q
1/19/2007	11:03	3			257.08	13.91	adjusting Q
1/19/2007	11:04	4			257.00	13.83	Q set @ 475 gpm
1/19/2007	11:05	5			257.00	13.83	
1/19/2007	11:06	6			257.25	14.08	
1/19/2007	11:07	7					
1/19/2007	11:08	8			257.35	14.18	
1/19/2007	11:09	9			257.52	14.35	
1/19/2007	11:10	10			257.69	14.52	
1/19/2007	11:11	11			257.62	14.45	
1/19/2007	11:12	12			257.86	14.69	
1/19/2007	11:13	13			257.92	14.75	
1/19/2007	11:14	14			258.06	14.89	
1/19/2007	11:16	16			258.21	15.04	
1/19/2007	11:18	18			258.32	15.15	
1/19/2007	11:20	20			258.57	15.40	
1/19/2007	11:22	22			258.62	15.45	
1/19/2007	11:24	24			258.82	15.65	
1/19/2007	11:28	28			259.22	16.05	
1/19/2007	11:33	33			259.41	16.24	
1/19/2007	11:34	34			259.44	16.27	
1/19/2007	11:36	36					increase Q
1/19/2007	11:37	37			282.14	38.97	adjusting Q
1/19/2007	11:38	38			278.00	34.83	adjusting Q
1/19/2007	11:39	39			277.00	33.83	adjusting Q
1/19/2007	11:39:30	39.5			277.18	34.01	Q set @ 900 gpm
1/19/2007	11:40	40			277.40	34.23	
1/19/2007	11:41	41			277.95	34.78	
1/19/2007	11:42	42			278.33	35.16	
1/19/2007	11:43	43			278.67	35.50	
1/19/2007	11:44	44			279.09	35.92	
1/19/2007	11:45	45			279.38	36.21	
1/19/2007	11:46	46			279.71	36.54	
1/19/2007	11:47	47			279.84	36.67	
1/19/2007	11:48	48			280.10	36.93	
1/19/2007	11:49	49			280.35	37.18	
1/19/2007	11:50	50			280.66	37.49	
1/19/2007	11:52	52			281.14	37.97	
1/19/2007	11:54	54			281.62	38.45	
1/19/2007	11:56	56			281.96	38.79	
1/19/2007	11:58	58			282.31	39.14	
1/19/2007	12:00	60			282.68	39.51	
1/19/2007	12:04	64					T = 20.7 C (69.3 F), EC = 173.7, SC = 184.8
1/19/2007	12:08	68			284.00	40.83	
1/19/2007	12:10	70			284.73	41.56	
1/19/2007	12:13	73					increase Q
1/19/2007	12:14	74			298.00	54.83	adjusting Q
1/19/2007	12:14:30	74.5			298.40	55.23	Q set @ 1280 gpm
1/19/2007	12:15	75			298.75	55.58	

Date	Time	t (min)	t' (min)	t/t'	DTW (ft bgs)	Drawdown (ft)	Remarks
1/19/2007	12:16	76			299.40	56.23	
1/19/2007	12:17	77			299.98	56.81	
1/19/2007	12:18	78			300.44	57.27	
1/19/2007	12:19	79			300.83	57.66	
1/19/2007	12:20	80			301.25	58.08	
1/19/2007	12:21	81			301.56	58.39	
1/19/2007	12:22	82			301.95	58.78	
1/19/2007	12:23	83			302.25	59.08	
1/19/2007	12:24	84			302.50	59.33	
1/19/2007	12:25	85			302.83	59.66	
1/19/2007	12:27	87			303.37	60.20	
1/19/2007	12:29	89			303.95	60.78	
1/19/2007	12:31	91			304.26	61.09	
1/19/2007	12:33	93			304.78	61.61	
1/19/2007	12:35	95			305.26	62.09	
1/19/2007	12:39	99					T = 20.7 C (69.3 F), EC = 174.3, SC = 185.6
1/19/2007	12:43	103					
1/19/2007	12:45	105			306.91	63.74	increase Q
1/19/2007	12:46	106			322.14	78.97	adjusting Q
1/19/2007	12:47	107			323.70	80.53	Q set @ 1800 gpm
1/19/2007	12:48	108			324.84	81.67	
1/19/2007	12:49	109.00			325.55	82.38	
1/19/2007	12:50	110.00			326.23	83.06	
1/19/2007	12:51	111			327.00	83.83	
1/19/2007	12:52	112			327.51	84.34	
1/19/2007	12:53	113.00			327.94	84.77	
1/19/2007	12:54	114.00			328.20	85.03	
1/19/2007	12:55	115.00			328.61	85.44	
1/19/2007	12:56:30	116.50			329.26	86.09	
1/19/2007	12:57	117			329.65	86.48	
1/19/2007	12:59	119.00			330.36	87.19	
1/19/2007	13:01	121			330.82	87.65	
1/19/2007	13:03	123			331.20	88.03	
1/19/2007	13:05	125			331.83	88.66	
1/19/2007	13:07	127			332.41	89.24	
1/19/2007	13:11	131			333.90	90.73	
1/19/2007	13:15	135			334.64	91.47	
1/19/2007	13:17	137			335.22	92.05	pump off


Mayfield Well No. 1 Drawdown
Step Test: Q = 475, 900, 1280, 1800 gpm
Test Date: January 19, 2007
Drawdown (ft)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
SC(475) = 29.2 gpm/ft
SC(900) = 21.7 gpm/ft
SC(1280) = 20.1 gpm/ft
SC(1800) = 19.6 gpm/ft
0
15
30
45
60
75
90
105
120
135
150
165
180
Elapsed Time (min)

Mayfield
Well No. 1 Constant Rate Test

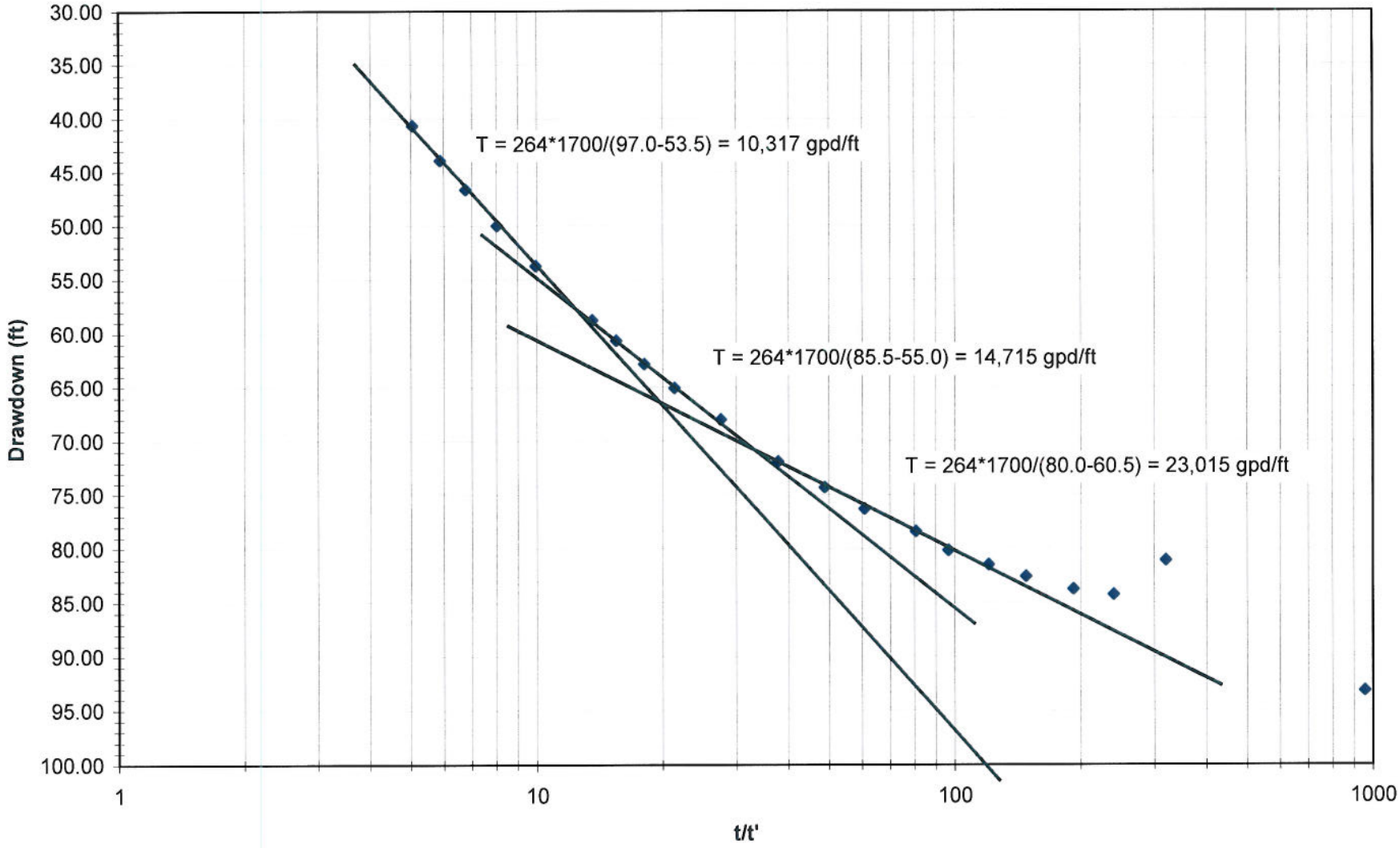
Turbine pump set at 416 feet; diesel motor							
Flow measured with pipe orifice (10x8), Q = 1600-1700 gpm							
Water level measured with electric well sounder							
Measurement point 2.21 feet above ground surface (casing + tubing)							
Date	Time	t (min)	t' (min)	t/t'	DTW (ft)	Drawdown (ft)	Remarks
1/22/2007	9:22:00 AM				237.83		static water level; Non-pumping well DTW = 174.73 ft
1/22/2007	9:23:30 AM	0			267.00	29.17	pump on
1/22/2007	9:24:00 AM	0.5			273.00	35.17	
1/22/2007	9:24:30 AM	1			281.58	43.75	
1/22/2007	9:25:00 AM	1.5			283.92	46.08	
1/22/2007	9:25:30 AM	2					Q set @ 1700 gpm
1/22/2007	9:26:00 AM	2.5			286.50	48.67	
1/22/2007	9:26:30 AM	3			287.75	49.92	
1/22/2007	9:27:00 AM	3.5			288.58	50.75	
1/22/2007	9:28:00 AM	4.5			290.00	52.17	
1/22/2007	9:29:00 AM	5.5			291.42	53.58	
1/22/2007	9:30:00 AM	6.5			292.50	54.67	
1/22/2007	9:31:00 AM	7.5			293.50	55.67	
1/22/2007	9:32:00 AM	8.5			294.42	56.58	
1/22/2007	9:33:00 AM	9.5			295.33	57.50	
1/22/2007	9:34:00 AM	10.5			296.25	58.42	
1/22/2007	9:35:30 AM	12			297.25	59.42	
1/22/2007	9:37:00 AM	13.5			298.25	60.42	
1/22/2007	9:39:00 AM	15.5			299.50	61.67	
1/22/2007	9:41:00 AM	17.5			300.50	62.67	
1/22/2007	9:43:00 AM	19.5			301.50	63.67	small upward throttle adjustment
1/22/2007	9:45:00 AM	21.5			304.50	66.67	
1/22/2007	9:49:30 AM	26			310.42	72.58	small upward throttle adjustment
1/22/2007	9:50:00 AM	26.5			311.00	73.17	
1/22/2007	9:51:00 AM	27.5			311.50	73.67	
1/22/2007	9:55:00 AM	31.5			313.75	75.92	
1/22/2007	10:06:00 AM	42.5			318.00	80.17	
1/22/2007	10:11:00 AM	47.5			319.50	81.67	
1/22/2007	10:20:00 AM	56.5			322.25	84.42	10:15 - took 1L sand sample in Imhoff cone, few particles
1/22/2007	10:30:00 AM	66.5			324.67	86.83	
1/22/2007	10:40:00 AM	76.5			327.00	89.17	
1/22/2007	10:50:00 AM	86.5			329.33	91.50	
1/22/2007	11:00:00 AM	96.5			330.46	92.63	
1/22/2007	11:30:00 AM	126.5			335.00	97.17	
1/22/2007	12:00:00 PM	156.5			338.54	100.71	
1/22/2007	12:30:00 PM	186.5			341.29	103.46	
1/22/2007	1:00:00 PM	216.5			342.75	104.92	
1/22/2007	1:30:00 PM	246.5			351.08	113.25	
1/22/2007	2:00:00 PM	276.5			353.08	115.25	
1/22/2007	2:30:00 PM	306.5			355.08	117.25	
1/22/2007	3:00:00 PM	336.5			363.00	125.17	
1/22/2007	3:30:00 PM	366.5			365.42	127.58	3:35 pm: Imhoff cone sample: cloudy with a fine particles settling (<0)
1/22/2007	4:00:00 PM	396.5			367.33	129.50	3:45 pm: T=21.8, pH=7.4-7.5, EC/SC=175.0 / 187.2
1/22/2007	4:30:00 PM	426.5			368.75	130.92	4:13 pm: Imhoff cone sample: 10-20 particles per sec falling to bottom
1/22/2007	5:00:00 PM	456.5			370.00	132.17	Q @ 1680 gpm (water level about 1" below 1710 gpm mark)
1/22/2007	5:22:00 PM	478.5			371.00	133.17	pump off
1/22/2007	5:22:30 PM	479	0.5	958.00	331.00	93.17	unsure of this value, originally wrote 311 ft
1/22/2007	5:23:30 PM	480	1.5	320.00	318.92	81.08	
1/22/2007	5:24:00 PM	480.5	2.0	240.25	322.08	84.25	
1/22/2007	5:24:30 PM	481	2.5	192.40	321.58	83.75	
1/22/2007	5:25:15 PM	481.75	3.3	148.23	320.42	82.58	
1/22/2007	5:26:00 PM	482.5	4.0	120.63	319.33	81.50	
1/22/2007	5:27:00 PM	483.5	5.0	96.70	318.00	80.17	
1/22/2007	5:28:00 PM	484.5	6.0	80.75	316.25	78.42	
1/22/2007	5:30:00 PM	486.5	8.0	60.81	314.17	76.33	
1/22/2007	5:32:00 PM	488.5	10.0	48.85	312.17	74.33	
1/22/2007	5:35:00 PM	491.5	13.0	37.81	309.75	71.92	
1/22/2007	5:40:00 PM	496.5	18.0	27.58	305.83	68.00	
1/22/2007	5:45:30 PM	502	23.5	21.36	302.92	65.08	
1/22/2007	5:50:00 PM	506.5	28.0	18.09	300.67	62.83	
1/22/2007	5:55:00 PM	511.5	33.0	15.50	298.50	60.67	
1/22/2007	6:00:00 PM	516.5	38.0	13.59	296.58	58.75	
1/22/2007	6:15:30 PM	532	53.5	9.94	291.58	53.75	
1/22/2007	6:30:00 PM	546.5	68.0	8.04	287.83	50.00	
1/22/2007	6:45:00 PM	561.5	83.0	6.77	284.50	46.67	
1/22/2007	7:00:00 PM	576.5	98.0	5.88	281.75	43.92	
1/22/2007	7:20:00 PM	596.5	118.0	5.06	278.50	40.67	end recovery; Non-pumping well DTW = 174.75 ft


Mayfield Well No. 1 Log-Drawdown
Constant Rate Test: Q ~ 1700 gpm
Test Date: January 22, 2007
T = 264*1700/(58.0-41.0) = 26,400 gpd/ft
T = 264*1700/(93.0-57.0) = 12,467 gpd/ft
T = 264*1700/(162.0-80.0) = 5,473 gpd/ft
Drawdown (ft)
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
100.00
110.00
120.00
130.00
140.00
150.00
160.00
170.00
180.00
0.1
1
10
100
1000
Elapsed Time (min)

Mayfield Well No. 1 Log-Recovery

Constant Rate Test: Q ~ 1700 gpm

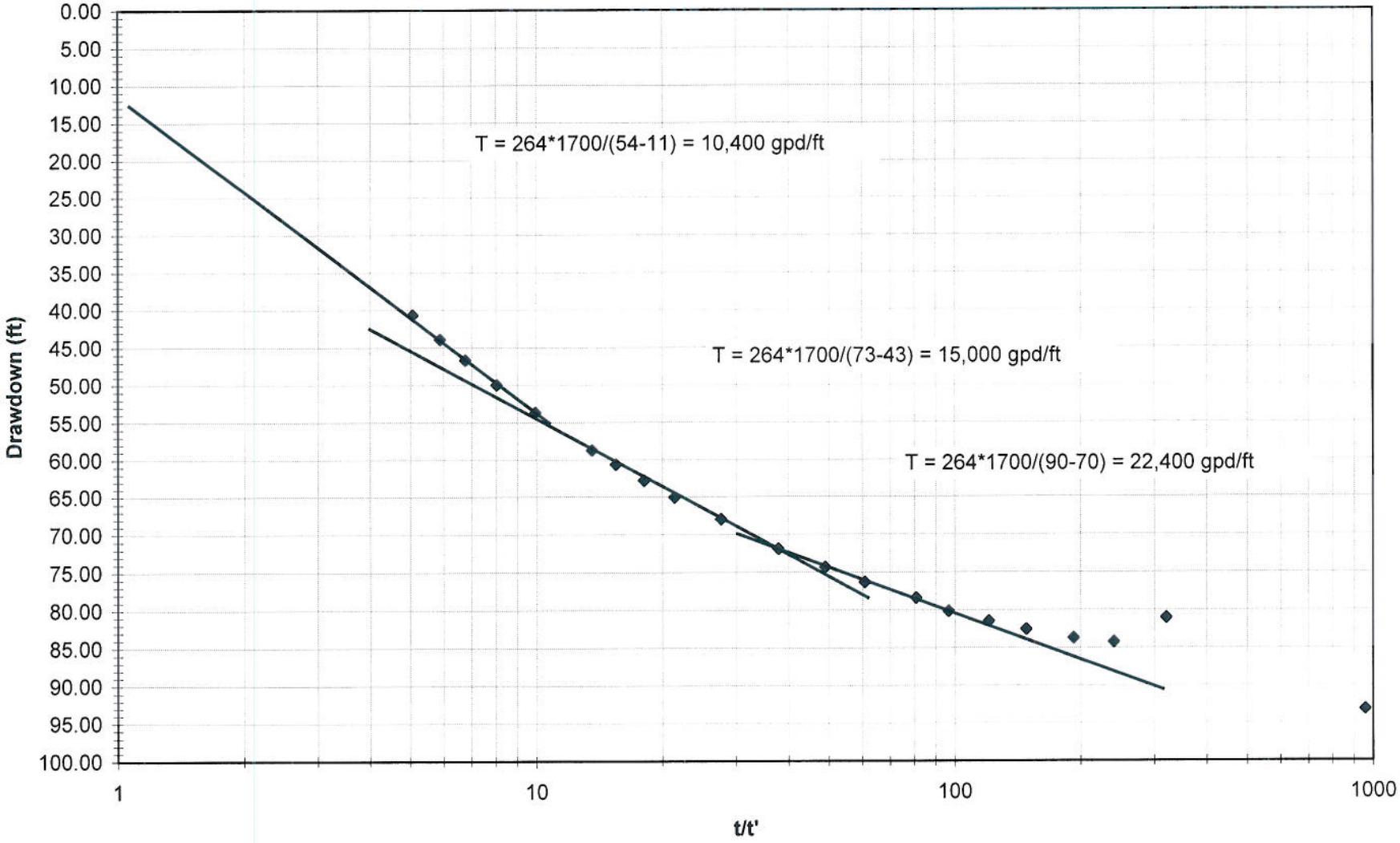
Test Date: January 22, 2007



Mayfield Well No. 1 Log-Recovery

Constant Rate Test: Q ~ 1700 gpm

Test Date: January 22, 2007



ATTACHMENT E
WATER QUALITY REPORTS

Analytical Laboratories, Inc.

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

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: S KING
Submitted By: S KING

Source of Sample:
FARWEST MAYFIELD WELL

Time of Collection: 16:00
Date of Collection: 1/22/2007
Date Received: 1/23/2007
Report Date: 2/9/2007

PWS: **PWS Name**

Laboratory Analysis Report

Sample Number: 0702238

FIELD TEMP=21.7*C

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Low		0.005	mg/L	0.005	EPA 200.8	1/24/2007	JH
Sodium, Na		12.9	mg/L	0.10	EPA 200.7	1/30/2007	KC
Barium, Ba		<0.05	mg/L	0.05	EPA 200.7	1/24/2007	KC
Cadmium Low		<0.0005	mg/L	0.0005	EPA 200.8	1/24/2007	JH
Chromium Low		<0.002	mg/L	0.002	EPA 200.8	1/24/2007	JH
Mercury, Hg		<0.0002	mg/L	0.0002	EPA 245.1	1/30/2007	KC
Selenium Low		<0.005	mg/L	0.005	EPA 200.8	1/24/2007	JH
Nickel, Ni		<0.02	mg/L	0.02	EPA 200.7	1/24/2007	KC
Lead Low		<0.005	mg/L	0.005	EPA 200.8	1/24/2007	JH
Copper, Cu		<0.01	mg/L	0.01	EPA 200.7	1/24/2007	KC
Antimony Low		<0.005	mg/L	0.005	EPA 200.8	1/24/2007	JH
Beryllium Low		<0.0005	mg/L	0.0005	EPA 200.8	1/24/2007	JH
Thallium Low		<0.001	mg/L	0.001	EPA 200.8	1/24/2007	JH
Aluminum, Al		0.40	mg/L	0.10	EPA 200.7	1/24/2007	KC
Calcium, Ca		20.9	mg/L	0.10	EPA 200.7	1/30/2007	KC
Iron, Fe		0.12	mg/L	0.05	EPA 200.7	1/24/2007	KC

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

Date Report Printed: 2/9/2007 5:21:16 PM

Laboratory Analysis Report

Sample Number: 0702238

FIELD TEMP=21.7*C

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Magnesium, Mg		3.47	mg/L	0.10	EPA 200.7	1/30/2007	KC
Manganese, Mn		<0.05	mg/L	0.05	EPA 200.7	1/24/2007	KC
Potassium, K		1.6	mg/L	0.5	EPA 200.7	1/30/2007	KC
Silica		53.1	mg/L	0.25	EPA 200.7	1/29/2007	KC
Zinc, Zn		<0.005	mg/L	0.005	EPA 200.7	1/24/2007	KC
Uranium, U		<1	ug/L	1	EPA 200.8	1/24/2007	JH
Corrosivity		-1.3			Langelier	2/7/2007	WW
Moderately aggressive.							
Nitrite (as N)		<0.01	mg/L	0.01	EPA 353.2	1/23/2007	MMM
Ammonia Direct (as N)		<0.04	mg/L	0.04	EPA 350.1	1/26/2007	WW
Nitrate (as N)		0.8	mg/L	0.2	EPA 300.0	1/23/2007	WW
Alkalinity		86.1	mg/L Ca		SM 2320B	2/2/2007	JS
Chloride, Cl		2	mg/L	1	EPA 300.0	1/23/2007	WW
Sulfate, SO4		5	mg/L	1	EPA 300.0	1/23/2007	WW
Conductivity		205	umhos	2	SM 2510B	1/23/2007	WW
pH		6.9	S.U.		EPA 150.1	1/23/2007	WW
Cyanide, Total		<0.005	mg/L	0.005	EPA 335.4	1/30/2007	WW
Hardness		62.5	mg/L	5	SM 2340	1/28/2007	MMM
Total Dissolved Solids		166	mg/L	25	SM 2540C	1/26/2007	CC
Sulfide		<0.05	mg/L	0.05	SM 4500-S2 D	1/25/2007	DLR
Surfactants		<0.01	mg/L	.01	SM 5540	1/31/2007	MDM
Sand		16.2	mg/L	0.600	EPA 160.2	1/26/2007	DLR
Color		5	C.U.	5	SM 2120	1/29/2007	MDM
Threshold Odor		N.O.D.	T.O.N.		EPA 140.1	1/29/2007	MDM

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

Michael Moore 2/11/2007

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

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Analytical Laboratories, Inc.

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

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: S KING
Submitted By: S KING

Source of Sample:
FARWEST MAYFIELD WELL

Time of Collection: 16:00
Date of Collection: 1/22/2007
Date Received: 1/23/2007
Report Date: 2/9/2007

PWS: **PWS Name**

Laboratory Analysis Report

Sample Number: 0702238

FIELD TEMP=21.7*C

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Low		0.005	mg/L	0.005	EPA 200.8	1/24/2007	JH
Sodium, Na		12.9	mg/L	0.10	EPA 200.7	1/30/2007	KC
Barium, Ba		<0.05	mg/L	0.05	EPA 200.7	1/24/2007	KC
Cadmium Low		<0.0005	mg/L	0.0005	EPA 200.8	1/24/2007	JH
Chromium Low		<0.002	mg/L	0.002	EPA 200.8	1/24/2007	JH
Mercury, Hg		<0.0002	mg/L	0.0002	EPA 245.1	1/30/2007	KC
Selenium Low		<0.005	mg/L	0.005	EPA 200.8	1/24/2007	JH
Nickel, Ni		<0.02	mg/L	0.02	EPA 200.7	1/24/2007	KC
Lead Low		<0.005	mg/L	0.005	EPA 200.8	1/24/2007	JH
Copper, Cu		<0.01	mg/L	0.01	EPA 200.7	1/24/2007	KC
Antimony Low		<0.005	mg/L	0.005	EPA 200.8	1/24/2007	JH
Beryllium Low		<0.0005	mg/L	0.0005	EPA 200.8	1/24/2007	JH
Thallium Low		<0.001	mg/L	0.001	EPA 200.8	1/24/2007	JH
Aluminum, Al		0.40	mg/L	0.10	EPA 200.7	1/24/2007	KC
Calcium, Ca		20.9	mg/L	0.10	EPA 200.7	1/30/2007	KC
Iron, Fe		0.12	mg/L	0.05	EPA 200.7	1/24/2007	KC

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

Date Report Printed: 2/9/2007 5:21:16 PM

Analytical Laboratories, Inc.

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

Date Report Printed: 2/13/2007 9:27:34
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0702239

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: S KING
Submitted By: S KING

Source of Sample:
FARWEST MAYFIELD WELL

Time of Collection: 16:00
Date of Collection: 1/22/2007
Date Received: 1/23/2007
Report Date: 2/13/2007

PWS#:
PWS Name:

Radiological testing by Benchmark Analytics.(BMA)

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Gross Alpha		1.63+/-0.88	pCi/L	2.42	EPA 900.0	2/5/2007	BMA
Gross Beta		<3.24	pCi/L	3.24	EPA 900.0	2/5/2007	BMA
Radium 226		<0.73	pCi/L	0.73	EPA 903.0	2/10/2007	BMA
Radium 228		0.35+/-0.59	pCi/L	0.57	EPA 904.0	2/8/2007	BMA

Michael D. Moore 2/15/2007

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

Laboratory Analysis Report

Sample Number: 0702238

FIELD TEMP=21.7*C

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Magnesium, Mg		3.47	mg/L	0.10	EPA 200.7	1/30/2007	KC
Manganese, Mn		<0.05	mg/L	0.05	EPA 200.7	1/24/2007	KC
Potassium, K		1.6	mg/L	0.5	EPA 200.7	1/30/2007	KC
Silica		53.1	mg/L	0.25	EPA 200.7	1/29/2007	KC
Zinc, Zn		<0.005	mg/L	0.005	EPA 200.7	1/24/2007	KC
Uranium, U		<1	ug/L	1	EPA 200.8	1/24/2007	JH
Corrosivity		-1.3			Langelier	2/7/2007	WW
Moderately aggressive.							
Nitrite (as N)		<0.01	mg/L	0.01	EPA 353.2	1/23/2007	MMM
Ammonia Direct (as N)		<0.04	mg/L	0.04	EPA 350.1	1/26/2007	WW
Nitrate (as N)		0.8	mg/L	0.2	EPA 300.0	1/23/2007	WW
Alkalinity		86.1	mg/L Ca		SM 2320B	2/2/2007	JS
Chloride, Cl		2	mg/L	1	EPA 300.0	1/23/2007	WW
Sulfate, SO4		5	mg/L	1	EPA 300.0	1/23/2007	WW
Conductivity		205	umhos	2	SM 2510B	1/23/2007	WW
pH		6.9	S.U.		EPA 150.1	1/23/2007	WW
Cyanide, Total		<0.005	mg/L	0.005	EPA 335.4	1/30/2007	WW
Hardness		62.5	mg/L	5	SM 2340	1/28/2007	MMM
Total Dissolved Solids		166	mg/L	25	SM 2540C	1/26/2007	CC
Sulfide		<0.05	mg/L	0.05	SM 4500-S2 D	1/25/2007	DLR
Surfactants		<0.01	mg/L	.01	SM 5540	1/31/2007	MDM
Sand		16.2	mg/L	0.600	EPA 160.2	1/26/2007	DLR
Color		5	C.U.	5	SM 2120	1/29/2007	MDM
Threshold Odor		N.O.D.	T.O.N.		EPA 140.1	1/29/2007	MDM

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

Michael DeMoore 2/11/2007

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

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