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APR 01 2010

WATER RESOURCES
WESTERN REGION

April 1, 2010

Mr. John F. Westra, PE
Regional Manager
Idaho Department of Water Resources
2735 Airport Way
Boise, ID 83705-5082

Re: Application for Permit #63-1220

Dear John-

This correspondence is in response to the Department's Final Void Order Application for Permit 63-12220, Avest Limited Partnership, dated March 12, 2010.

The Avest property, located near the northeast corner of the intersection of Fairview Ave. and Locust Grove Rd. lies in the SW¼, SW¼, Section 5, T3N, R1E, BM. The site is also within the ground water area designated as tributary to the Boise River upstream from the Star Bridge. (See Figures 1 and 2) The ground water boundary lies less than one-quarter mile south of the site.

Geographically, the site is southerly of the South Slough and northerly of Fivemile Creek. (See Figure 1.) The South Slough appears to merge with Fivemile Creek approximately two miles to the west of the site. Fivemile Creek after merging with Tenmile Creek returns to the Boise River approximately five miles downstream (westerly) of the city of Star. The Boise River is approximately 3.5 miles northerly of this site. Fivemile Creek is approximately 0.4 miles south of the project well site and the South Slough is approximately 0.6 miles to the north.

In 1992, Avest Plaza Subdivision was platted. Standard conditions of approval by the City of Meridian required the developer to provide irrigated landscaping in setback areas around the perimeter of the Lot 9, Block 1 (0.97 acres). Conditions also required the utilization of irrigation for these areas from a water source other than the city's potable water supply.

With the site improvements the owner installed a pumping system that utilized rights to Nampa & Meridian Irrigation District surface water. This surface water delivery was incompatible with the installed standard sprinkler system and the applicant elected to drill a shallow well (Drilling Permit # 12810, July 2000) to provide a compatible source of water. The landscaped area for this application's use is 42,000 square feet. (See Figure 3) Estimated peak irrigation water usage is 7,520 gallons per day (21 gpm over a six-hour irrigation cycle). The project is completed and no increased future irrigation demand is anticipated.

The Well Driller's Report indicated that the static water level was 10-feet below the ground. Water was initially encountered between 17 and 31 feet, followed by 46-46 feet, 66-70 feet and 83-99 feet. The production water bearing zone falls between 83 and 99 feet in depth. By inspection of the Well Driller's Report, the well is cased to 86 feet and draws from the deepest water bearing zone encountered.

Prior to the drilling of the Avest well, the same drilling company drilled a similar irrigation well in the same quarter-quarter as the Avest well (Well Driller's Report 63-95-W-0972). This first well encountered



static water level at 8-feet below ground and the producing zone was found to be between 102 and 120-feet. A pump test was conducted for this well over a period of 8-hours. Initial drawdown was 54.5 feet at 80 gallons per minute over a five hour period. The test report notes that "H2O came up to 25' FAST." Within nine minutes the static water level was reported at 9.5 feet, returning to 8.2 feet within a total of 20 minutes. Obviously, ground water responds very quickly at this site.

The May 3, 1995, Amended Moratorium Order for the Boise River drainage states "Applications which propose use of surface water upstream from the Star Bridge will be denied unless the applicant files an acceptable plan to mitigate or avoid any material injury to existing water rights." On behalf of the property owner, the contention is made that the use of ground water at this site will avoid any material injury to existing water rights, in part because this site does not communicate with the Boise River above Star, ID.

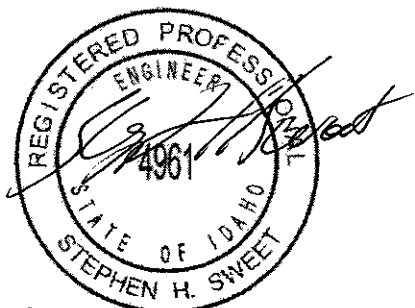
An earlier study prepared in cooperation with the Department by the Idaho Water Resources Research Institute concluded, "Shallow ground water levels...are controlled, in part, by elevations of surface water channels." and "shallow aquifer recharge may not have a substantial effect on shallow ground water levels until the water table elevation remains below those of nearby surface channels." (C.R. Petrich, 2004, Simulation of Ground Water Flow in the Lower Boise River Basin, Idaho Water Resources Research Institute, page 111.)

The static water level in the subject well is approximately at the level of both the South Slough and the Fivemile Drain. The rapid recovery, following an eight hour pump test by the nearby well, leads to the conclusion that the well has ties to the nearby South Slough and Fivemile Drain and does not communicate with the Boise River, over 4 miles to the north. This conclusion is appears to be confirmed by the IWRRI findings, also.

While the subject well may be argued to have an effect on either the South Slough or the Fivemile Drain, the well is anticipated to have no effect on waters tributary to the Boise River above the Star Bridge, as the confluence of these water bodies is approximately 5 miles westerly (downstream) of the city of Star. The Boise River water right holders above the Star Bridge will not be injured by this appropriation.

Therefore, on behalf of the Applicant, the request is made that the Department issues an approval for Application for Permit #63-12220.

Sincerely,
QUADRANT CONSULTING, INC.



April 1, 2010

Stephen H. Sweet, PE
Principal

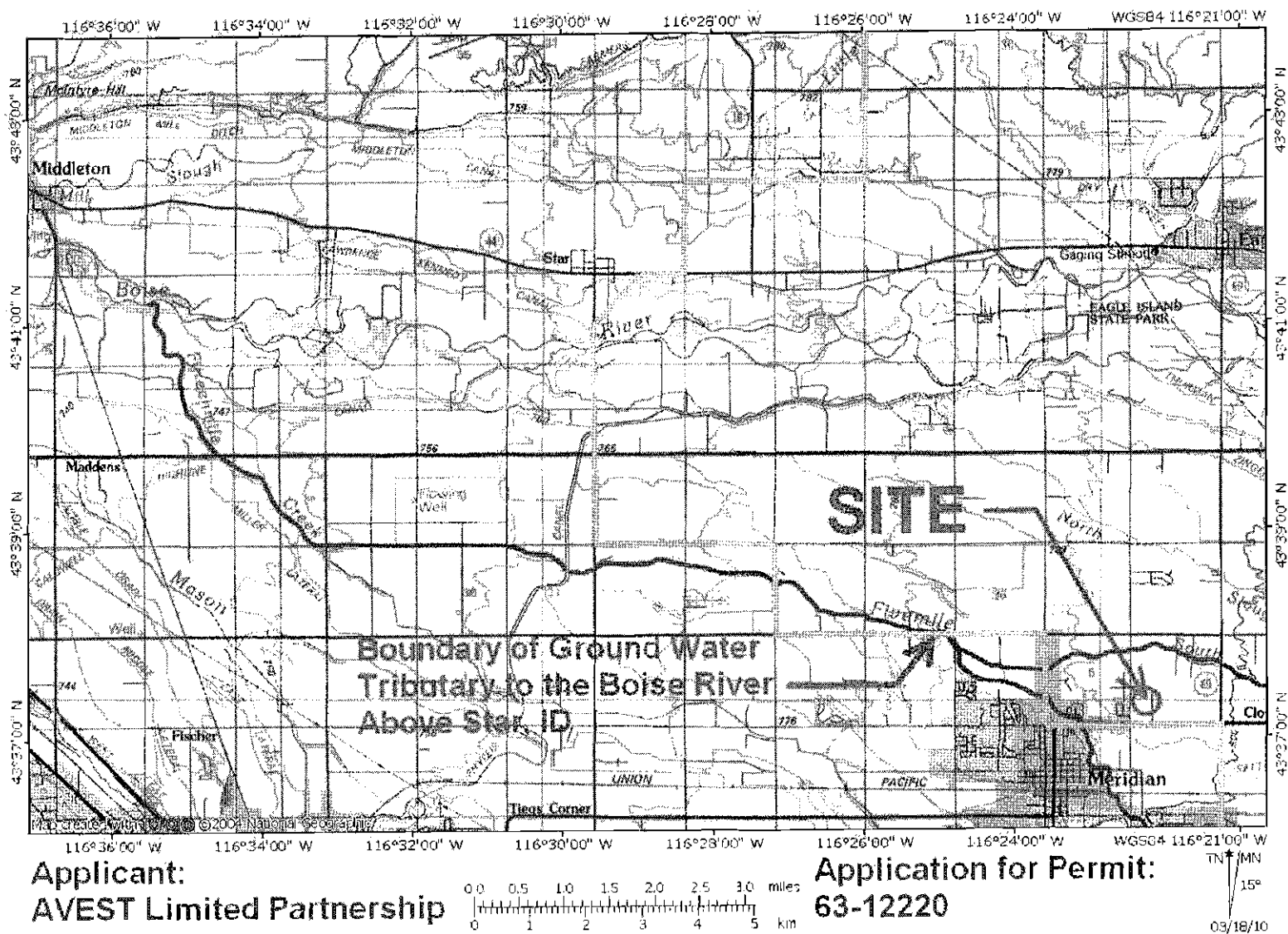


Figure 1. Site Vicinity Map

Map Depicting the Area in which Ground Water Shallower than 200 Feet Below Ground Surface is Tributary to the Boise River Upstream from Star Bridge.

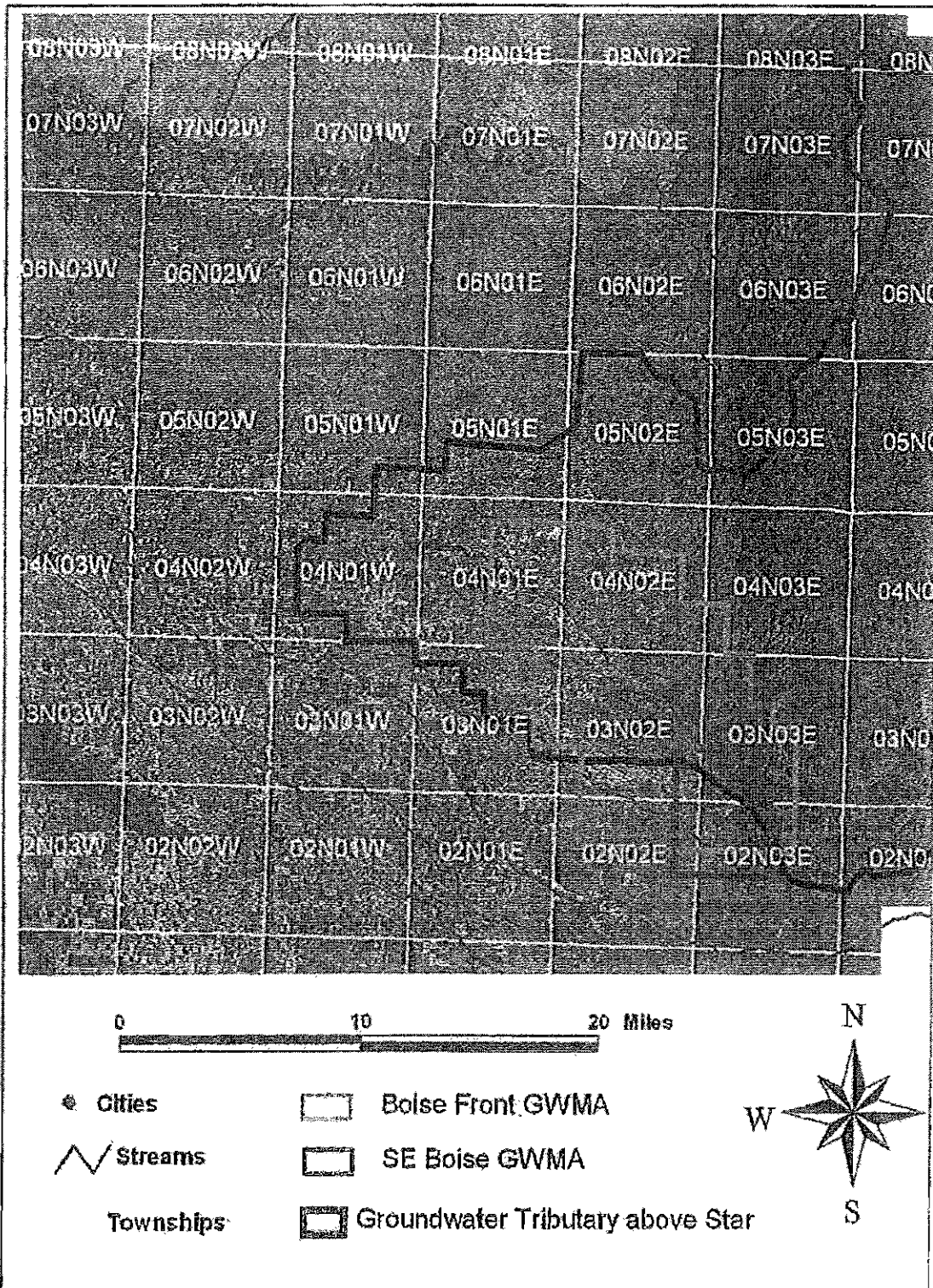


Figure 2. Ground water areas, tributary to the Boise River above Star, ID

FIGURE-3

IRRIGATED AREAS
42,225 SF

WELL



FIGURE-3

SHEET

DESIGNED BY:		CHECKED BY:	
DRAWN BY:			
DATE	BY	REVISION	CK'D APPR.

STOR-IT LOCUST GROVE
IRRIGATED AREAS

MERIDIAN

SCALE: NTS

PROJECT NO.
101-01

DRAWING FILE NAME:

IDAHO



Quadrant
Consulting, Inc.

1904 West Overland Road
Boise, Idaho 83705
(208) 342-0091 PHONE (208) 342-0092 FAX
CIVIL ENGINEERING-SURVEYING-CONSTRUCTION MANAGEMENT

Pg. 1 of 2

1. DRILLING PERMIT NO. 63-95-W-0972 000
Other IDWR No. _____

2. OWNER:

Name Fred Meyer (Contractors Northwest)
Address 7953 W Mossy Cup
City Boise State ID Zip 83709

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.



Twp. 3 North ☒ or South ☐
 Rge. 1 East ☒ or West ☐
 Sec. 5

Gov't Lot _____ County Ada

Address of Well Site 1850 E Fairview Av
 City Meridian

(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. PROPOSED USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK

☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD

☐ Mud Rotary ☐ Air Rotary ☒ Cable ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
bentonite	0	30	4 sk	slurry pit

Was drive shoe used? ~~Y~~ N ☒

Was drive shoe seal tested? Y ☐ N ☒ How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+1½	101	.250	steel	☒ X	☐	☒ X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 65 1/4" Length of Tailpipe 26 1/8"

9. PERFORATIONS/SCREENS

Perforations	Method
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
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97	97
98	98
99	99
100	100

☒ Screens Screen Type Houston stainless steel

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
102'	118'	20		6"	stainless	☐	☒ XX
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

8 ft. below ground Artesian pressure lb.

Depth flow encountered _____ ft. Describe access port or control devices: well seal

11. WELL TESTS:

☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
85	46	54	8 hr

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]

Completed Depth 120' (Measurable)

Date: Started 12/29/95 Completed 1/22/96

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 Ron Stevens Date 2/2/96

and _____

Supervisor or Operator: _____ Date: 11/1/05

(Sign once if Firm Official & Operator)

	time	GPM	SWL	
start pump	11:00	50	33.5'	water is dark
	11:10	50	33.5	"
	11:15	50	33.5	"
	11:20	48	33.5	"
	11:25	48	33.5	water is clear
	11:30	60	38'	
	11:35	60	41'	"
	11:40	60	42'	
	11:45	60	42'	
	11:50	60	42'	
	12:00	60	42'	
	12:05	75	50'	
	12:10	78	54'	
	12:15	80	54'	
	12:20	80	54.1	
	12:30	80	54.3'	
	1:00	80	54.4	
	1:30	80	54.4	
	2:00	80	54.5	
	2:30	80	54.5	
	3:00	80	54.5	
	3:30	80	54.5'	
	4:00	80	54.5	
	4:30	80	54.5	
	5:00	80	54.5	at 5:00 Shawn Clow from Intermountain
	5:30	80	54.5	Testing Inc. came by & checked SWL
	6:00	80	54.5	& GPM & looked at driller's notes
	6:30	80	54.5	376-8203
	7:00	80	54.5	

turn off pump

recovery time

7:05	25'	H2O came up to 25' FAST
7:06	14'	
7:07	12'	
7:08	11'	
7:09	9.5'	
		7:10 8.5'
		7:12 8.4'
		7:20 8.2'
		7:30 8.2'

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FEB 07 1996

WATER RESOURCES
WESTERN REGION

SIMULATION OF GROUND WATER FLOW IN THE LOWER BOISE RIVER BASIN

Prepared by

Christian R. Petrich

Idaho Water Resources Research Institute
University of Idaho – Boise

Prepared for and in cooperation with

Idaho Department of Water Resources
1301 North Orchard Street
Boise, ID



FEBRUARY 2004

**IDAHO WATER RESOURCES RESEARCH INSTITUTE
RESEARCH REPORT**

IWRRI-2004-02

 **University of Idaho**



12. CONCLUSIONS AND RECOMMENDATIONS

A numerical model was constructed to simulate regional-scale, steady-state, ground water flow in the Treasure Valley of southwestern Idaho. Conclusions from simulations using this model consist of the following:

1. PEST-calibrated parameter values indicate relatively higher K_h values in the uppermost aquifer zones, corresponding with known areas of coarser-grained sediments. PEST-calibrated parameter values also indicate relatively higher K_h and K_v values in areas of the eastern and central portion of the valley associated with fluvial deltaic deposition.
2. Simulated fluxes between model layers in the base calibration indicates a relatively small amount of water moving vertically between model layers, especially in the lower layers. Based on simulation results, most recharge occurring in shallow aquifer zones does not reach lower zones.
3. A 10% increase or decrease in recharge led to minimal changes in water levels or parameter value estimates. ~~This is because shallow ground water levels in central portions of the basin are controlled in part by elevations of surface water channels.~~ Decreased or increased recharge resulted in changes in the rates of water discharging to model drain, general head boundary (Lake Lowell), constant head (Snake River), and river (Boise River) cells.
4. Underflow does not appear to be consistently distributed along the Boise Front. The model experienced difficulty in applying rates as high as 8,000 ft³/day/cell (similar to water budget estimates) in some model areas, especially in the far eastern portions of the model domain.
5. Simulated minimum water levels (maximum impact) indicated that some ground water level declines might occur with a 20% increase over 1996 levels. Simulated modest declines were observed in the Boise area in layers 1 and 2. Greater simulated declines were observed in the central portion of the valley (especially in the Lake Lowell area) in layers 3 and 4. Simulated water level declines and/or changes in mass balance components reflect a combination of parameter uncertainty and response to a changed hydraulic stress.
6. The simulated 20% increase in ground water withdrawals resulted in increased losses from the Boise River (23%), decreased discharge to agricultural drains (62%), and decreased discharge to the Snake River (9%). Again, simulated water level declines and/or changes in mass balance components reflect a combination of parameter uncertainty and response to a changed hydraulic stress.
7. Uncertainty in the model calibration limits a more precise description of responses to changes in recharge and/or withdrawals.
8. ~~Changes in land use that lead to decreases in shallow aquifer recharge may not have a substantial effect on shallow ground water levels until the water table elevations remain below those of nearby surface channels.~~