

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-13800

Exam Date: 9/19/2007

1. Current Owner: MOUNTAIN SHADOWS HOMEOWNERS ASSN
C/O BOARD OF DIRECTORS
3837 N HOLL DR
EAGLE ID 83616
(208) 938-5117
2. Accompanied by: Larry Hellhake
Phone No: (208) 938-5117
Address: 3837 N HOLL DR, EAGLE, ID 83616
Relationship to Permit Holder: Subdivision Developer and former member of HOA

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: permit no. 65-22701
2. Other water rights with the same point of diversion: permit no. 65-22701

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE¼NE¼ Sec. 16, Twp 09N, Rge 04E, B.M. BOISE County
GROUND WATER NE¼NE¼ Sec. 16, Twp 09N, Rge 04E, B.M. BOISE County

Method of Determination: GIS, Satellite Imagery, Subdivision Plat Maps, Visual Inspection

2.

PLACE OF USE: MUNICIPAL

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
09N 04E 16		X	X		X		X	X	X		X			X	X		

Method of Determination: GIS, Satellite Imagery, Subdivision Plat Maps, Visual Inspection

3. X Delivery System Diagram Attached (required). SEE ATTACHMENTS A - F, Plat Maps
Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required).
Scale must be 1:24,000 or greater. SEE ATTACHMENT G
- X Aerial Photo Attached (required for irrigation of 10+ acres). SEE ATTACHMENT G
- X Photo of Diversion and System Attached. SEE ATTACHMENTS H - L

4.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
Well No. 1	unknown	10	unknown	Goulds	6RALC, 9-stage
Well No. 2	unknown	5	unknown	Goulds	33GS50, 22-stage

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
_____	_____	_____	_____	_____	_____	_____

2. Measurements:

No direct flow measurements were completed. The system configuration would not allow use of the TyneFlyte polysonic flow meter since no section of pipe provided the length necessary to secure the sensor.

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method:

Narrative from Operation and Maintenance Manual, Mountain Shadows Subdivision, Units 1 and 2

Attachment M provided by Clint Worthington, PE, of Civil Survey Consultants, Inc., describes the two wells providing water to the Mountain Shadows development project. In the narrative, it is indicated that Well No. 1 produces 48 gpm while Well No. 2 produces 30 gpm. The combined flow of 78 gallons per minute converted to cubic feet per second is **0.174 cfs**.

Pump Curves from Operation and Maintenance Manual, Mountain Shadows Subdivision, Units 1 and 2

Attachment N provides a pump curve for Well No. 1 and attachment O provides a pump curve for Well No. 2. Based on the curves, the operating point for Well No. 1 is 53 gpm while the operating point for Well No. 2 is 26 gpm. The combined flow of 79 gallons per minute is equivalent to **0.176 cfs**.

Theoretical Discharge Computation

The following equation is used to compute theoretical discharge from the two wells:

$$Q = (8.8 \times \text{pump efficiency} \times \text{hp}) / (\text{pumping water level} + (2.31 \times \text{psi}))$$

The theoretical discharge for Well No.1 was computed using the following parameters:

$$(8.8 \times 0.65 \times 10) / (263 + (2.31 \times 93)) = 0.12 \text{ cfs}$$

The efficiency was derived from the pump curve, the pumping water level was taken from the well driller's pump test, and the pressure was observed during the field exam.

The theoretical discharge for Well No.2 was computed using the following parameters:

$$(8.8 \times 0.68 \times 5) / (255 + (2.31 \times 93)) = 0.06 \text{ cfs}$$

The efficiency was derived from the pump curve, the pumping water level was taken from the data provided in Attachment P, and the pressure was observed during the field exam at Well No. 1 and assumed to be similar to the operating pressure at Well No. 2.

The theoretical discharge capacity for the two wells combined is **0.18 cfs**.

Sensus W-350 Flow Meters

Attachments H and I provide photographs of the Sensus W-350 flow meters installed on the mainline at each well. At the time of examination, the flow meter at Well No. 1 was reading 10 gpm while the flow meter at Well No. 2 was reading 91 gpm. Neither reading seems reasonable to me nor to Clint Worthington based on the other evidence available.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Uses: **MUNICIPAL**

Permit 65-13800 authorizes water for domestic purposes for 100 homes, in-house use only.

The actual developed use was 0.18 cfs for municipal purposes to provide water for 87 platted lots that have been verified to have services stubbed in. The Department standard for volume of water allocated for in-house use only is 0.6 acre-feet per home.

$$0.18 \text{ cfs} \times 1.9835 \text{ AF/cfs-day} \times 365 \text{ days} = 130.3 \text{ acre-feet}$$

$$87 \text{ lots} \times 0.6 \text{ acre-feet per lot} = \mathbf{52.2 \text{ acre-feet}}$$

G. NARRATIVE/REMARKS/COMMENTS

At the time of examination, phases 1, 2, and 3 were platted and completed with services to all 87 lots with homes constructed on 20 of those lots (see attachments A – F). This permit allows the use of water for domestic purposes to serve up to 100 homes and was conditioned not to include “lawn, garden, landscape, or other types of irrigation.” Permit no. 65-22701 was issued to provide water for irrigation purposes associated with the Mountain Shadows Subdivision. However, the two uses authorized under separate permits are indistinguishable within the diversion and delivery system established for the subdivision. Therefore, an amendment is recommended to change the nature of use under this right (65-13800) from domestic to municipal.

I confirmed Public Water Supply No. 4080100 with the Idaho Department of Environmental Quality. The permit holder qualifies as a “Municipal Provider” pursuant to Section 42-202B(5)(c), Idaho Code.

The flow rate authorized under this permit is 0.24 cfs. Proof of beneficial use was submitted and paid for a rate of 0.20 cfs. The capacity of the system, as described in the “Flow Calculations” section of this report, is determined to be 0.18 cfs. Therefore, the license for this right will be limited by the flow rate.

Three (3) 25,000 gallon storage tanks are in place as part of the water distribution system for a total of 0.23 acre-feet (see attachments E, F, and K). A continuous flow of 0.18 cfs provides a total 0.35 acre-feet in one day. Since the flow can fill the volume of the storage tanks in less than one day, a storage component does not need to be described under this right. This is consistent with the Department’s “24-hour rule” as described in Administrator’s Memorandum, Application Processing No. 67.

Since the permit authorizes water for domestic purposes for in-house use only, a volume limitation should be applied to this right. There are 87 lots platted and provided with water service in the subdivision. Since the permit authorized water for in-house use only, the volume limitation should provide water for the number of lots with service using the Department’s standard of 0.6 acre-feet per year per residence for in-house use.

A combined total of approximately 1.0 acre of land was irrigated at the time of examination within the subdivision. Figures 16 and 17 of Attachment L illustrate the largest contiguous areas irrigated within the subdivision.

Have conditions of permit approval been met? X *Yes No

*Provided that the change in nature of use from domestic to municipal is accomplished through an amendment that would allow the use of water for lawn, garden, landscape, or other types of irrigation.

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
MUNICIPAL	01/01 to 12/31	0.18 CFS	52.2 AF
	<u>Totals:</u>	0.18 CFS	52.2 AF

2. Recommended Amendments

☒ Change P.D. as reflected above ☒ Add P.D. as reflected above ☐ None

☒ Change P.U. as reflected above ☒ Add P.U. as reflected above ☒ Other: Change in Nature of Use

I. AUTHENTICATION

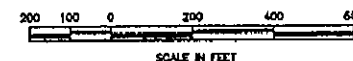
Field Examiner's Name Aaron Marshall Date 04/25/08

Reviewer _____ Date _____

PLAT OF MOUNTAIN SHADOWS SUBDIVISION NO.1

LOCATED IN SECTION 16, T.9N., R.4E., S.M.,
BOISE COUNTY, IDAHO

1999



LEGEND

- Subdivision Boundary Line
- Existing Right-of-Way
- Easement Line, use as designated
- Egress/Egress, Access, Public Utilities Easement (Private Road)
- Lot Line

- Set 5/8"x30" Rebar & Plastic Cap at REAL POINT OF BEGINNING
- Set 5/8"x30" Rebar with Plastic Cap
- Set 1/2"x24" Rebar with Plastic Cap
- Found 5/8" Rebar
- Witness Corner, Set 1/2"x24" Rebar on 33' Right of Way Line of Private Road
- Point Not Set

NOTE: Lot Dimensions are from Property Corner to Property Corner, not to Witness Corner

NOTES

1. THE DEVELOPER SHALL COMPLY WITH SECTION 31-3005, IDAHO CODE, RELATIVE TO TRANSFER OF WATER RIGHTS.
2. BOISE COUNTY ASSUMES NO RESPONSIBILITY FOR MAINTENANCE OF THE PRIVATE ROADS PLATTED HEREON, SUBJECT TO BOISE COUNTY SUBDIVISION GRADUANCE.
3. A 12-FOOT UTILITY AND DRAINAGE EASEMENT EXISTS INSIDE ALL LOT LINES ALONG ROADS AND ALONG THE SUBDIVISION BOUNDARY, AND A 12-FOOT EASEMENT WILL BE CENTERED ON ALL INTERIOR LOT LINES.
4. LOTS SHALL NOT BE REDUCED BY SIZE WITHOUT PRIOR APPROVAL OF APPROPRIATE HEALTH AUTHORITY AND THE BOISE COUNTY COMMISSIONERS.
5. ALL AREAS SHOWN HEREON ARE FOR TAX PURPOSES ONLY.
6. UTILITY AND DRAINAGE EASEMENTS ALONG ROADS MAY BE USED AS A ROAD RIGHT-OF-WAY EASEMENT AND FOR SNOW STORAGE.
7. NO COUNTY SERVICES (EXCEPT EMERGENCY IN NATURE) WILL BE PROVIDED FOR THE PRIVATE ROADS PLATTED HEREON.
8. BUILDING SETBACKS SHALL BE AT LEAST: FRONT-20' SIDE-10' REAR-20'
9. BOISE COUNTY AND THE IDAHO DEPARTMENT OF FISH AND GAME SHALL NOT BE LIABLE FOR DEGRADATION CAUSED BY WILDLIFE IN THIS SUBDIVISION.
10. MINERAL RIGHTS FOR THE LAND INCLUDED IN THIS SUBDIVISION ARE OWNED BY THE STATE OF IDAHO.
11. THE STORM DRAINAGE EASEMENT SHOWN IN LOTS 1, 2, 4, 5, 6 AND 11, BLOCK 1, IS CENTERED ON THE EXISTING FLOW LINE OF THE DRAIN CULVERTE PLACED IN THIS EASEMENT MUST BE A MINIMUM OF 30" IN DIAMETER. NO OTHER OBSTRUCTIONS OR ALTERATIONS TO THIS DRAINAGE WILL BE ALLOWED WITHOUT THE APPROVAL OF BOISE COUNTY.

CURVE TABLE

STATION	CHORD BEARING	CHORD	ARC	CHORD
C1	N 89°12'17" W	54.96	118.12	121.23
C2	S 89°12'17" E	54.96	118.12	121.23
C3	N 89°12'17" W	54.96	118.12	121.23
C4	S 89°12'17" E	54.96	118.12	121.23
C5	N 89°12'17" W	54.96	118.12	121.23
C6	S 89°12'17" E	54.96	118.12	121.23
C7	N 89°12'17" W	54.96	118.12	121.23
C8	S 89°12'17" E	54.96	118.12	121.23
C9	N 89°12'17" W	54.96	118.12	121.23
C10	S 89°12'17" E	54.96	118.12	121.23
C11	N 89°12'17" W	54.96	118.12	121.23
C12	S 89°12'17" E	54.96	118.12	121.23
C13	N 89°12'17" W	54.96	118.12	121.23
C14	S 89°12'17" E	54.96	118.12	121.23
C15	N 89°12'17" W	54.96	118.12	121.23
C16	S 89°12'17" E	54.96	118.12	121.23
C17	N 89°12'17" W	54.96	118.12	121.23
C18	S 89°12'17" E	54.96	118.12	121.23
C19	N 89°12'17" W	54.96	118.12	121.23
C20	S 89°12'17" E	54.96	118.12	121.23
C21	N 89°12'17" W	54.96	118.12	121.23
C22	S 89°12'17" E	54.96	118.12	121.23
C23	N 89°12'17" W	54.96	118.12	121.23
C24	S 89°12'17" E	54.96	118.12	121.23
C25	N 89°12'17" W	54.96	118.12	121.23
C26	S 89°12'17" E	54.96	118.12	121.23
C27	N 89°12'17" W	54.96	118.12	121.23
C28	S 89°12'17" E	54.96	118.12	121.23
C29	N 89°12'17" W	54.96	118.12	121.23
C30	S 89°12'17" E	54.96	118.12	121.23
C31	N 89°12'17" W	54.96	118.12	121.23
C32	S 89°12'17" E	54.96	118.12	121.23
C33	N 89°12'17" W	54.96	118.12	121.23
C34	S 89°12'17" E	54.96	118.12	121.23
C35	N 89°12'17" W	54.96	118.12	121.23
C36	S 89°12'17" E	54.96	118.12	121.23
C37	N 89°12'17" W	54.96	118.12	121.23
C38	S 89°12'17" E	54.96	118.12	121.23
C39	N 89°12'17" W	54.96	118.12	121.23
C40	S 89°12'17" E	54.96	118.12	121.23
C41	N 89°12'17" W	54.96	118.12	121.23
C42	S 89°12'17" E	54.96	118.12	121.23
C43	N 89°12'17" W	54.96	118.12	121.23
C44	S 89°12'17" E	54.96	118.12	121.23
C45	N 89°12'17" W	54.96	118.12	121.23
C46	S 89°12'17" E	54.96	118.12	121.23
C47	N 89°12'17" W	54.96	118.12	121.23
C48	S 89°12'17" E	54.96	118.12	121.23
C49	N 89°12'17" W	54.96	118.12	121.23
C50	S 89°12'17" E	54.96	118.12	121.23
C51	N 89°12'17" W	54.96	118.12	121.23
C52	S 89°12'17" E	54.96	118.12	121.23
C53	N 89°12'17" W	54.96	118.12	121.23
C54	S 89°12'17" E	54.96	118.12	121.23
C55	N 89°12'17" W	54.96	118.12	121.23
C56	S 89°12'17" E	54.96	118.12	121.23
C57	N 89°12'17" W	54.96	118.12	121.23
C58	S 89°12'17" E	54.96	118.12	121.23
C59	N 89°12'17" W	54.96	118.12	121.23
C60	S 89°12'17" E	54.96	118.12	121.23
C61	N 89°12'17" W	54.96	118.12	121.23
C62	S 89°12'17" E	54.96	118.12	121.23
C63	N 89°12'17" W	54.96	118.12	121.23
C64	S 89°12'17" E	54.96	118.12	121.23
C65	N 89°12'17" W	54.96	118.12	121.23
C66	S 89°12'17" E	54.96	118.12	121.23
C67	N 89°12'17" W	54.96	118.12	121.23
C68	S 89°12'17" E	54.96	118.12	121.23
C69	N 89°12'17" W	54.96	118.12	121.23
C70	S 89°12'17" E	54.96	118.12	121.23
C71	N 89°12'17" W	54.96	118.12	121.23
C72	S 89°12'17" E	54.96	118.12	121.23
C73	N 89°12'17" W	54.96	118.12	121.23
C74	S 89°12'17" E	54.96	118.12	121.23
C75	N 89°12'17" W	54.96	118.12	121.23
C76	S 89°12'17" E	54.96	118.12	121.23
C77	N 89°12'17" W	54.96	118.12	121.23
C78	S 89°12'17" E	54.96	118.12	121.23
C79	N 89°12'17" W	54.96	118.12	121.23
C80	S 89°12'17" E	54.96	118.12	121.23
C81	N 89°12'17" W	54.96	118.12	121.23
C82	S 89°12'17" E	54.96	118.12	121.23
C83	N 89°12'17" W	54.96	118.12	121.23
C84	S 89°12'17" E	54.96	118.12	121.23
C85	N 89°12'17" W	54.96	118.12	121.23
C86	S 89°12'17" E	54.96	118.12	121.23
C87	N 89°12'17" W	54.96	118.12	121.23
C88	S 89°12'17" E	54.96	118.12	121.23
C89	N 89°12'17" W	54.96	118.12	121.23
C90	S 89°12'17" E	54.96	118.12	121.23
C91	N 89°12'17" W	54.96	118.12	121.23
C92	S 89°12'17" E	54.96	118.12	121.23
C93	N 89°12'17" W	54.96	118.12	121.23
C94	S 89°12'17" E	54.96	118.12	121.23
C95	N 89°12'17" W	54.96	118.12	121.23
C96	S 89°12'17" E	54.96	118.12	121.23
C97	N 89°12'17" W	54.96	118.12	121.23
C98	S 89°12'17" E	54.96	118.12	121.23
C99	N 89°12'17" W	54.96	118.12	121.23
C100	S 89°12'17" E	54.96	118.12	121.23

SANITARY RESTRICTIONS

SANITARY RESTRICTIONS AS REQUIRED BY IDAHO CODE TITLE 50, CHAPTER 13, HAVE NOT BEEN SATISFIED AND ARE IN FORCE FOR THE FOLLOWING LOTS:
LOT 1, BLOCK 1 HAS NOT BEEN APPROVED FOR PUBLIC WATER AND INDIVIDUAL SEWAGE FACILITIES.
LOTS 2 THROUGH 26, BLOCK 1 HAVE NOT BEEN APPROVED FOR PUBLIC WATER FACILITIES.
NO OWNER SHALL CONSTRUCT ANY BUILDING, DWELLING OR SHELTER WHICH NECESSITATES THE SUPPLYING OF SEWAGE FACILITIES FOR PERSONS USING SUCH PREMISES UNTIL SANITARY RESTRICTIONS ARE SATISFIED AND LIFTED.



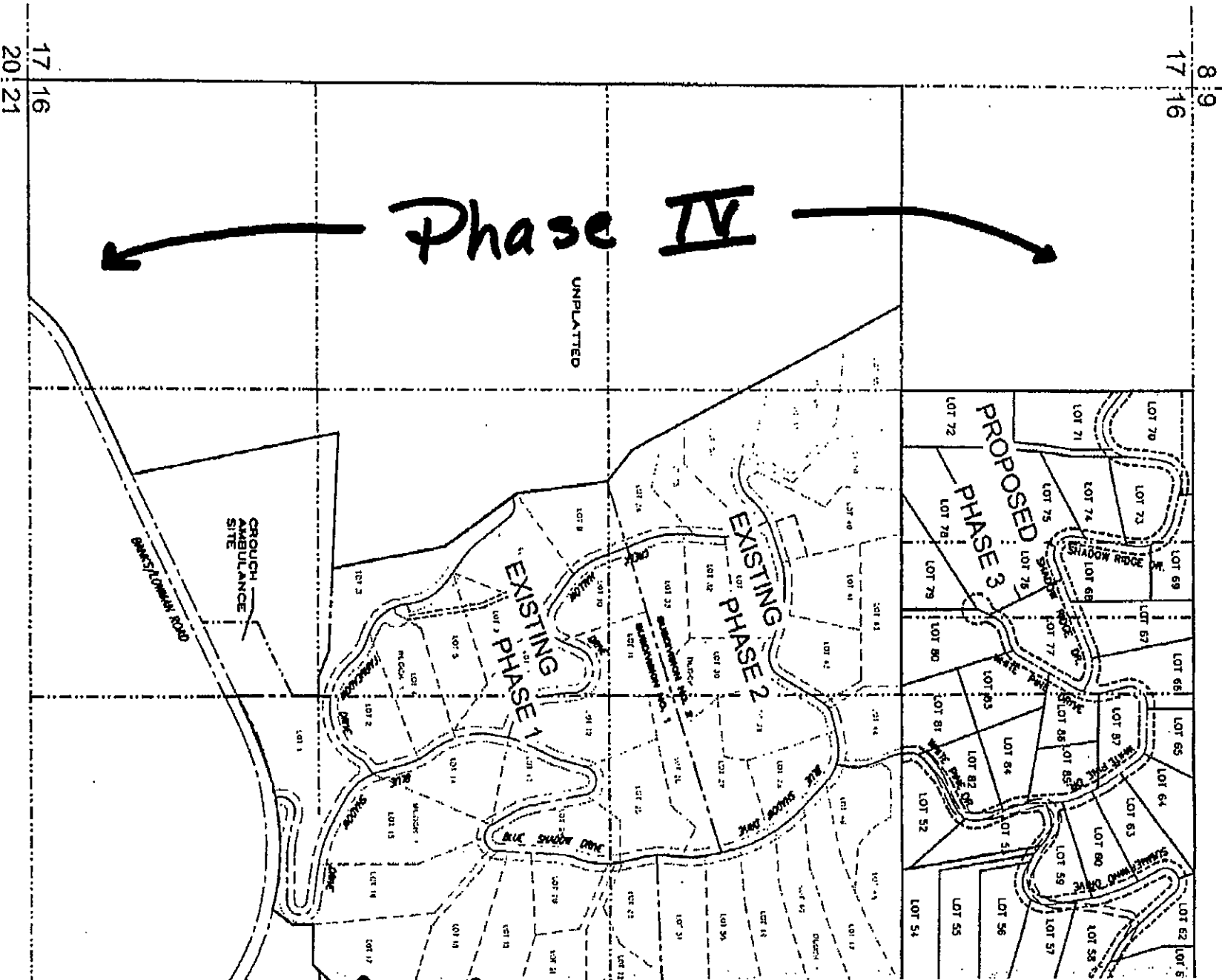
By *Theresa C. Schuch* CHS 5/23/97
CENTRAL DISTRICT HEALTH DEPARTMENT

MOUNTAIN SHADOWS
DEVELOPMENT COMPANY, L.L.C.
Developer
Boise, Idaho

BRIGGS ENGINEERING, INC.
Consulting Engineers
Boise, Idaho

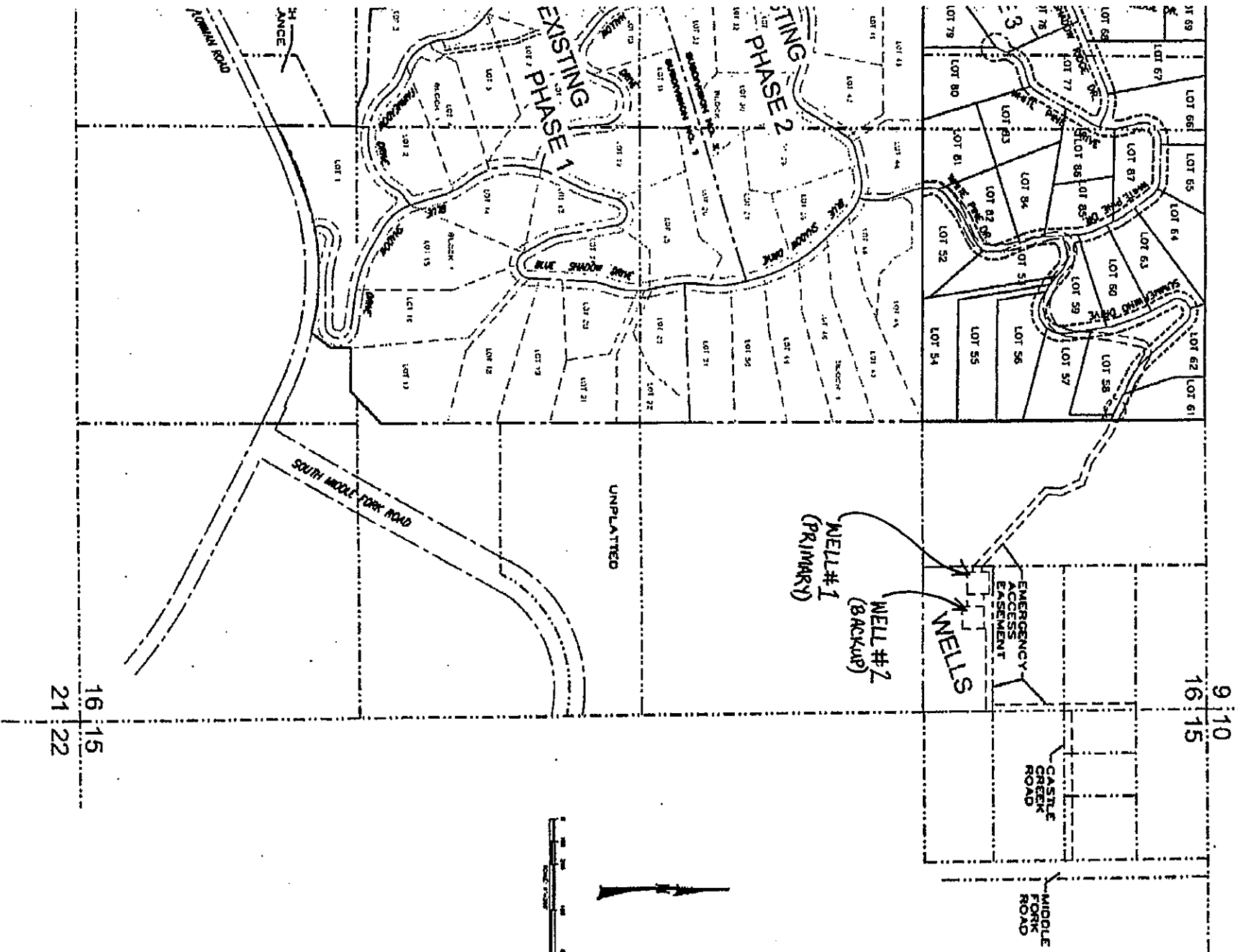
SHEET 1 OF 2
PLATTED 5/23/97

MOUNTAIN SHADOWS SUBDI



ATTACHMENT B

SHADOWS SUBDIVISION



ATTACHMENT C

17 16
20 21

Phase IV

50± lots
(prelim.)

BANKS-LOWMAN ROAD

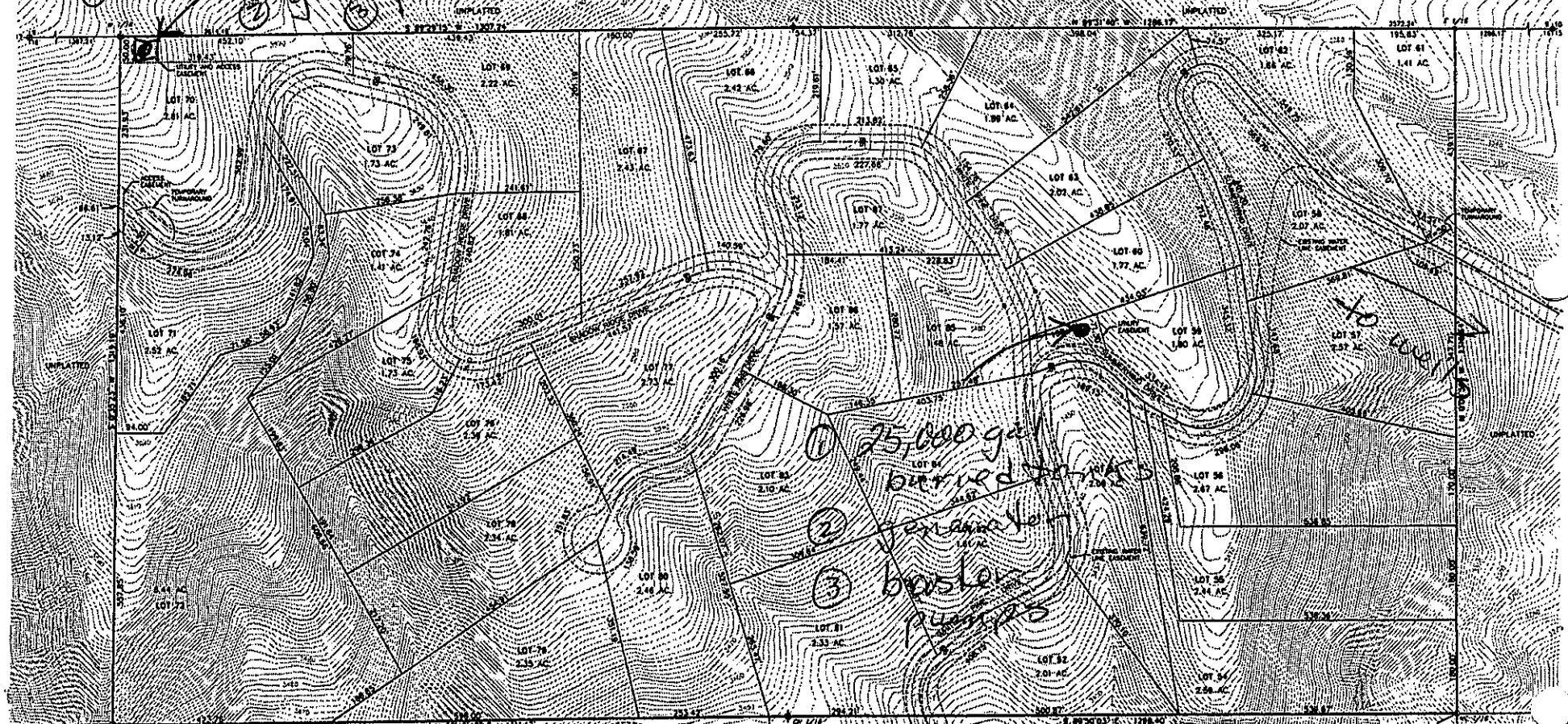
SE 1/4 SW 1/4

1/4 CORNER

ATTACHMENT D

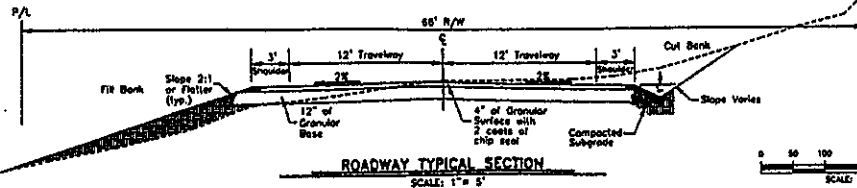
① 25,000 buried tank.
 ② generator
 ③ pressure pumps

PRELIMINARY PLAT OF MOUNTAIN SHADOWS SUBDIVISION PHASE 3



NOTES:

1. EACH LOT IS SUBJECT TO A 6 FOOT PUBLIC UTILITIES EASEMENT ALONG EACH SIDE AND BACK LOT LINE. ALL OTHER EASEMENTS ARE AS SHOWN AND DESCRIBED.
2. ALL DRAINAGE WAYS ARE SUBJECT TO A 30 FOOT DRAINAGE EASEMENT CENTERED ALONG THE CENTER OF THE DRAINAGE.

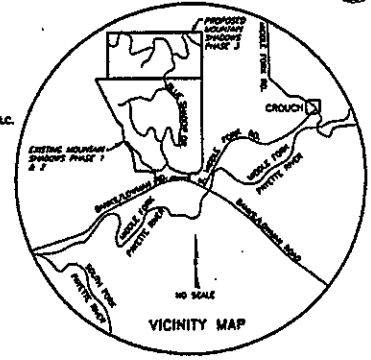


- LEGEND**
- FOUND 5/8" IRON PIN
 - SET 5/8" IRON PIN
 - FOUND 1/2" IRON PIN
 - ◆ FOUND ALUMINUM CAP MONUMENT
 - EASEMENT LINE
 - PROPERTY LINE
 - CULVERT CROSSING

OWNER: MOUNTAIN SHADOWS DEVELOPMENT CO., LLC.
 DEVELOPER: LARRY J. HELLWAGE
 3837 N. HOLL DRIVE
 EAGLE, IDAHO 83616
 830-5117

SURVEYOR: GLENN H. BOWNETT, PLS
 CIVIL SURVEY CONSULTANTS, INC.
 100 SOUTH ADAMS WAY, SUITE 101
 MERIDIAN, IDAHO 83642
 888-43312

POTABLE WATER: CENTRAL WATER SYSTEM
 SANITARY SEWER: INDIVIDUAL SEPTIC SYSTEMS
 AREA: 78 ACRES
 NUMBER OF LOTS: 36
 BUILDING SETBACKS: FRONT - 30 FEET
 BACK - 30 FEET
 SIDE - 10 FEET
 LAND CLASSIFICATION: TIMBERLAND



ATTACHMENT E

PLAT OF MOUNTAIN SHADOWS SUBDIVISION NO.2

LOCATED IN SECTION 16, T.9N., R.4E., B.M.,
BOISE COUNTY, IDAHO

1999

100 0 200 400 600

SCALE IN FEET



LEGEND

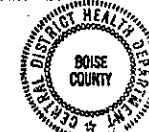
- Subdivision Boundary Line
- Existing Right-of-Way
- Easement Line, use as designated
- Ingress/Egress, Access, Public Utilities Easement (Private Road)
- Lot Line
- REAL POINT OF BEGINNING Found 5/8"x30" Rebar with Plastic Cap
- Set 5/8"x30" Rebar with Plastic Cap
- Set 1/2"x24" Rebar with Plastic Cap
- Found 5/8" Rebar
- WC • Witness Corner, Set 1/2" x 24" Rebar on 33' Right-of-Way Line of Private Road
- Point Not Set
- ⊙ Found Aluminum Cap

NOTE: Lot Dimensions are from Property Corner to Property Corner, not to Witness Corner

SANITARY RESTRICTIONS

SANITARY RESTRICTIONS AS REQUIRED BY IDAHO CODE TITLE 50, CHAPTER 13, HAVE NOT BEEN SATISFIED AND ARE IN FORCE FOR THE FOLLOWING LOTS:

LOTS 27 THROUGH 51, BLOCK 1 HAVE NOT BEEN APPROVED FOR PUBLIC WATER FACILITIES. NO OWNER SHALL CONSTRUCT ANY BUILDING, DWELLING OR SHELTER WHICH NECESSITATES THE SUPPLY OF WATER OR SEWAGE FACILITIES FOR PERSONS USING SUCH PREMISES UNTIL SANITARY RESTRICTION REQUIREMENTS ARE SATISFIED AND LIFTED.

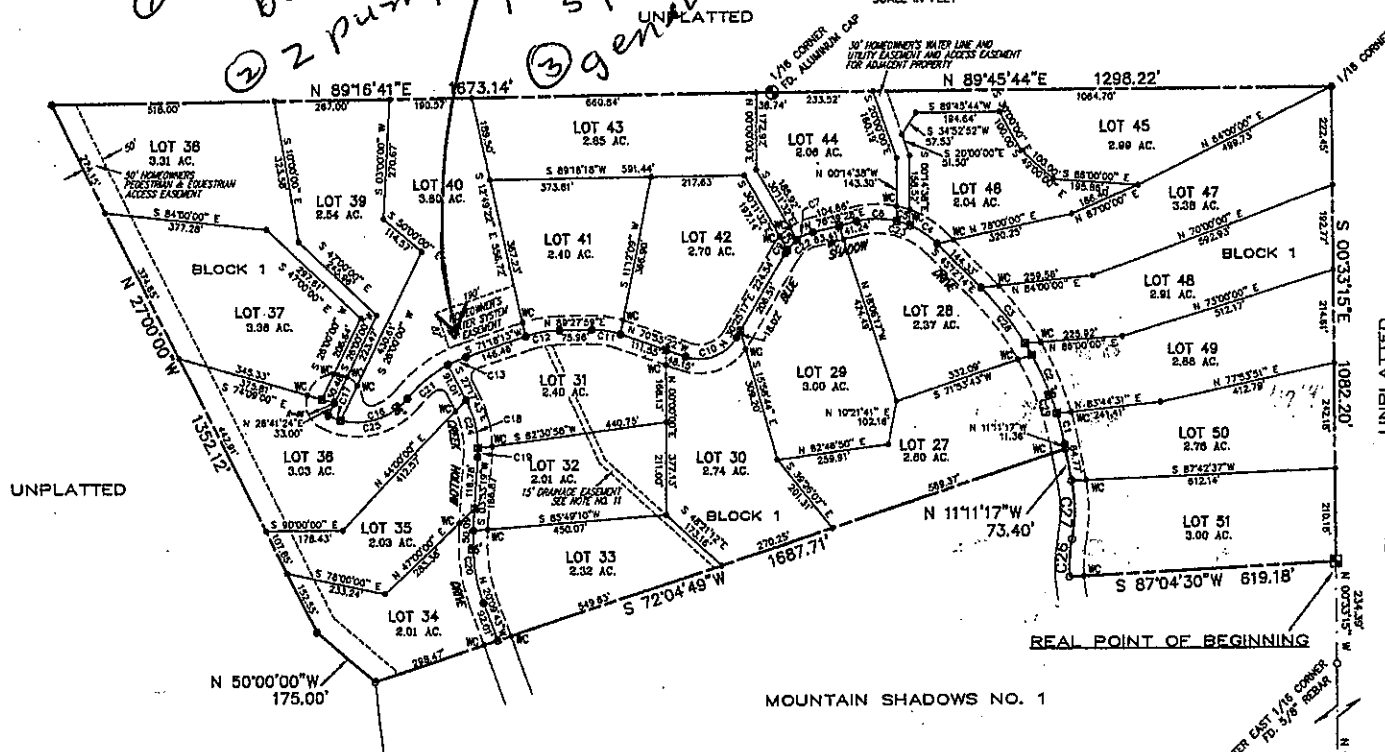


**MOUNTAIN SHADOWS
DEVELOPMENT COMPANY, L.L.C.**
Developer
Boise, Idaho

BRIGGS ENGINEERING, INC.
Consulting Engineers
Boise, Idaho

SHEET 1 OF 2
PROJECT VAP/PL 000 5/28/99

① 25,000 gal buried tank,
② 2 pumps to pressure system,
③ generator



MOUNTAIN SHADOWS NO. 1

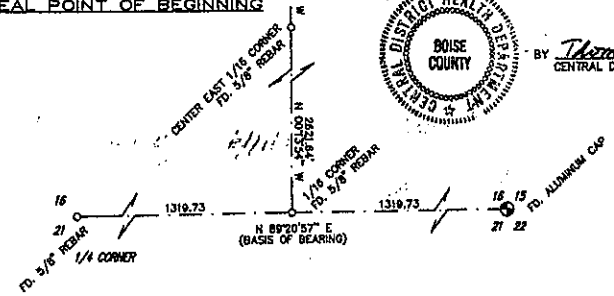
NOTES

1. THE DEVELOPER SHALL COMPLY WITH SECTION 31-3805, IDAHO CODE, RELATING TO TRANSFER OF WATER RIGHTS.
2. BOISE COUNTY ASSUMES NO RESPONSIBILITY FOR MAINTENANCE OF THE PRIVATE ROADS PLATTED HEREON, SUBJECT TO BOISE COUNTY SUBDIVISION ORDINANCE.
3. A 12-FOOT UTILITY AND DRAINAGE EASEMENT EXISTS INSIDE ALL LOT LINES ALONG ROADS AND ALONG THE SUBDIVISION BOUNDARY, AND A 12-FOOT EASEMENT WILL BE CENTERED ON ALL INTERIOR LOT LINES.
4. LOTS SHALL NOT BE REDUCED BY SIZE WITHOUT PRIOR APPROVAL OF APPROPRIATE HEALTH AUTHORITY AND THE BOISE COUNTY COMMISSIONERS.
5. ALL AREAS SHOWN HEREON ARE FOR TAX PURPOSES ONLY.
6. UTILITY AND DRAINAGE EASEMENTS ALONG ROADS MAY BE USED AS A ROAD RIGHT-OF-WAY EASEMENT AND FOR SNOW STORAGE.
7. NO COUNTY SERVICES (EXCEPT EMERGENCY IN NATURE), WILL BE PROVIDED FOR THE PRIVATE ROADS PLATTED HEREON.
8. BUILDING SETBACKS SHALL BE AT LEAST: FRONT-20' SIDE-10' REAR-20'
9. BOISE COUNTY AND THE IDAHO DEPARTMENT OF FISH AND GAME SHALL NOT BE LIABLE FOR DEPRECIATION CAUSED BY WILDLIFE IN THIS SUBDIVISION.
10. MINERAL RIGHTS FOR THE LAND INCLUDED IN THIS SUBDIVISION ARE OWNED BY THE STATE OF IDAHO.
11. THE STORM DRAINAGE EASEMENT SHOWN IN LOTS 31, 32 AND 33, BLOCK 1 IS CENTERED ON THE EXISTING FLOW LINE OF THE DRAIN. CULVERTS PLACED IN THIS EASEMENT MUST BE OF A MINIMUM OF 36" IN DIAMETER. NO OTHER OBSTRUCTIONS OR ALTERATIONS TO THIS DRAINAGE WILL BE ALLOWED WITHOUT THE APPROVAL OF BOISE COUNTY.

CURVE TABLE

CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD	CHORD BRG
C1	05°57'48"	700.00	72.65	36.46	72.62	S 14°10'11"E
C2	14°36'26"	700.00	178.40	89.69	177.92	N 24°27'08"W
C3	13°27'05"	700.00	164.32	82.54	163.93	N 38°39'44"W
C4	22°04'36"	200.00	77.09	39.02	76.59	N 58°14'33"W
C5	09°04'06"	200.00	31.85	15.86	31.82	N 71°56'54"W
C6	26°59'34"	200.00	94.22	48.00	93.35	N 89°50'45"W
C7	23°33'18"	200.00	41.11	23.85	40.62	N 64°52'48"E
C8	17°53'06"	100.00	31.28	15.77	31.18	S 44°08'24"W
C9	04°45'22"	100.00	8.30	4.15	8.30	S 32°47'58"W
C10	78°39'21"	100.00	137.28	81.93	128.73	S 69°44'58"W
C11	19°36'31"	200.00	88.45	34.37	88.12	N 89°23'41"W
C12	16°09'46"	250.00	78.25	38.96	78.92	N 80°23'08"E
C13	08°35'58"	300.00	45.02	22.55	44.98	S 87°00'15"W
C14	NOT USED					
C15	NOT USED					
C16	60°36'19"	150.00	171.84	86.74	162.60	S 72°11'33"W
C17	11°40'42"	150.00	30.37	15.34	30.32	N 89°08'57"W
C18	26°37'01"	250.00	116.14	59.14	115.10	N 13°59'13"W
C19	04°34'02"	250.00	18.93	9.97	19.92	S 01°58'18"W
C20	24°03'02"	400.00	187.80	95.21	186.67	N 08°00'12"E
C21	23°19'53"	300.00	122.16	61.94	121.32	S 31°02'20"W
C22	48°14'11"	100.00	80.70	42.69	78.53	S 53°32'23"W
C23	58°08'19"	200.00	202.84	111.18	194.35	S 74°18'23"E
C24	31°11'03"	250.00	138.07	69.78	134.59	S 11°42'12"E
C25	77°18'00"	150.00	202.41	119.59	197.40	N 78°01'34"E
C26	13°58'50"	350.00	65.40	42.81	65.19	N 03°38'31"E
C27	21°47'12"	350.00	133.09	67.36	132.28	N 00°17'40"W
C28	18°01'18"	700.00	198.74	98.51	195.10	S 37°11'36"E
C29	17°59'41"	700.00	219.85	110.94	218.94	S 20°11'07"E

REAL POINT OF BEGINNING



ATTACHMENT F

ATTACHMENT G

Mountain Shadows Subdivision

Well No. 1
Well No. 2

LEGEND



Wells



Service Area Boundary



Sections



0 250 500 1,000 1,500 2,000
Feet

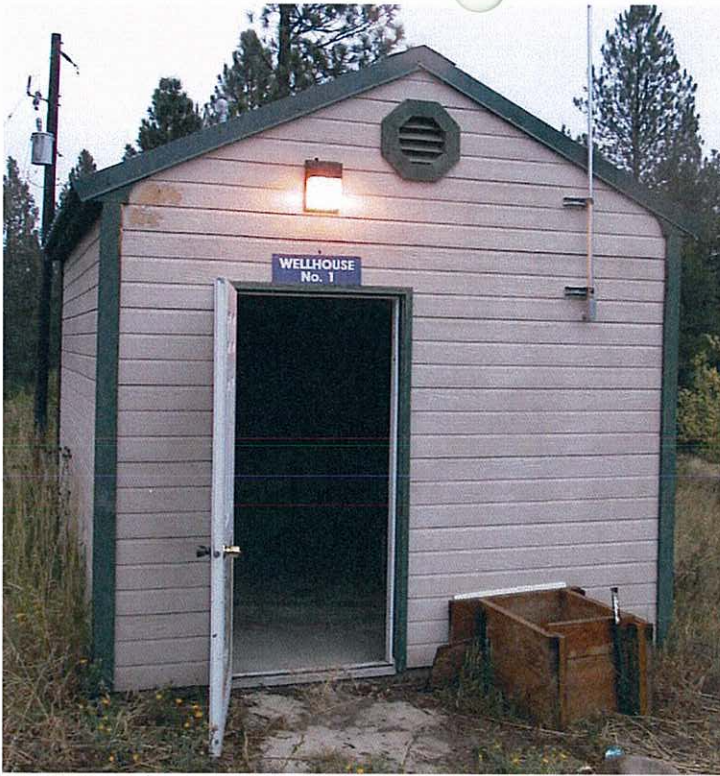


Figure 1



Figure 2



Figure 3

ATTACHMENT H

Photos of Well House No. 1 (from top left): Well House No. 1 contains the backup well, Well No. 2. Well No. 2 controlling works with water level datalogger affixed to wall. Mainline with Sensus W-350 inline flow meter. Close-up view of flow meter gage display indicating 91 gpm. Close-up of well head and water depth measuring tape stuck in well.



Figure 4



Figure 5



Figure 6



Figure 7

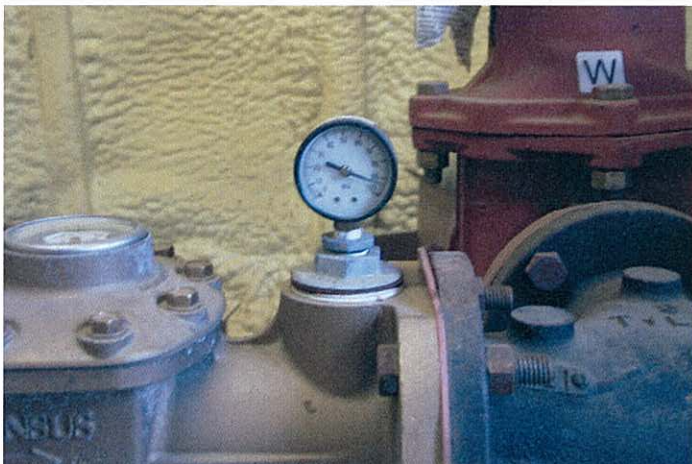


Figure 8

ATTACHMENT I

Photos of Well House No. 2 (from top left): View facing east of Well House No. 2 with Well House No. 1 in background. Well House No. 2 contains the primary well, Well No. 1. Well No. 1 mainline, Sensus W-350 inline flow meter, and pressure gage. Close-up view of pressure gage display reading 93 psi. Close-up view of flow meter gage display indicating 10 gpm.



Figure 9

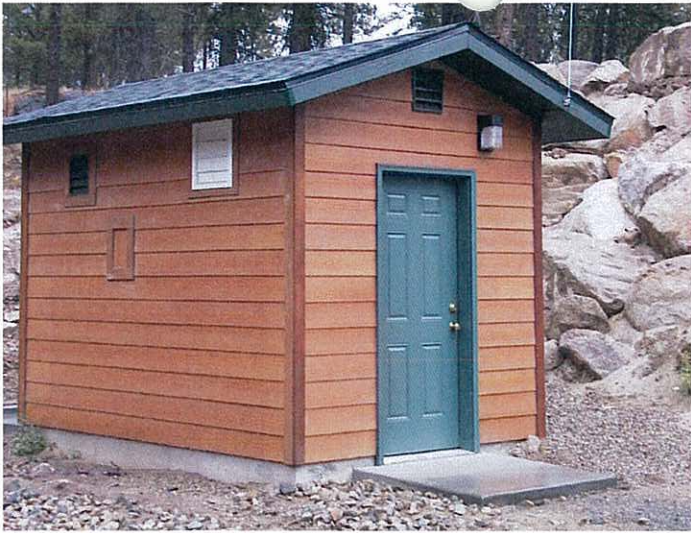


Figure 10



Figure 11



Figure 12

ATTACHMENT J

Photos of water distribution system enclosure (from top left): Exterior view of enclosure adjacent to buried storage tanks in background. Interior view of line coming in from storage tanks to pressure tank, filtration system, and booster pumps. Close-up view of pressure tank. Close-up view of system controls.

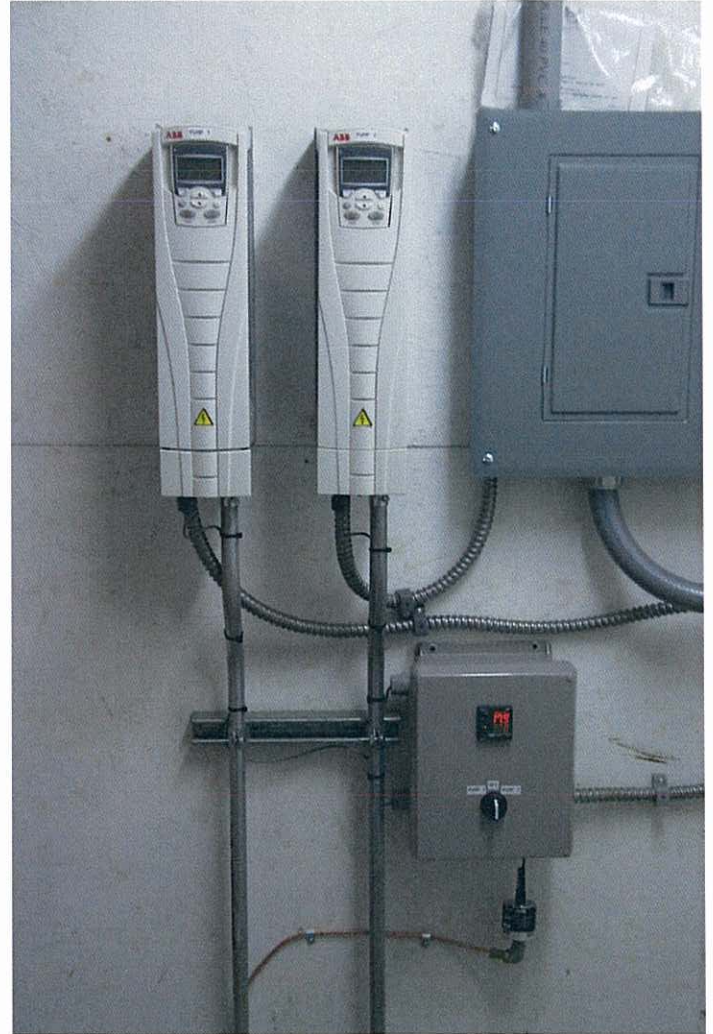


Figure 13

ATTACHMENT K

Photos of storage tank system



Figure 14



Figure 15

ATTACHMENT L

Photos of irrigated areas: View facing east of entrance to development with small waterfall and pond. Typical home completed in development irrigating a small lawn and native tree species.



Figure 16



Figure 17

Section 2 – Supply Wells and Pumps

Well No. 1 is designed to be the principal source. The output for this well is about 48 gallons per minute. The well is constructed with 8-inch casing. Total depth of the well is depth of 350 feet. Six-inch slotted stainless well screen extends 23-feet below the casing (with 3-feet of blank casing between two 10-foot sections). The well pump is set at 280 feet. The pump is a Goulds 6RALC, 9 Stage, 10 Horsepower, operating at 3450 rpm. Voltage is 480 volt, three phase. A rotary phase converter, housed in Well No. 2 is employed. Idaho Power Company supplies single phase current to the site.

Well No. 2 (Goulds 33GS50, 5 HP) produces 30 gallons per minute from a 4-inch submersible pump, in a 6-inch casing. The No. 2 well house contains the electrical gear for both pumps.

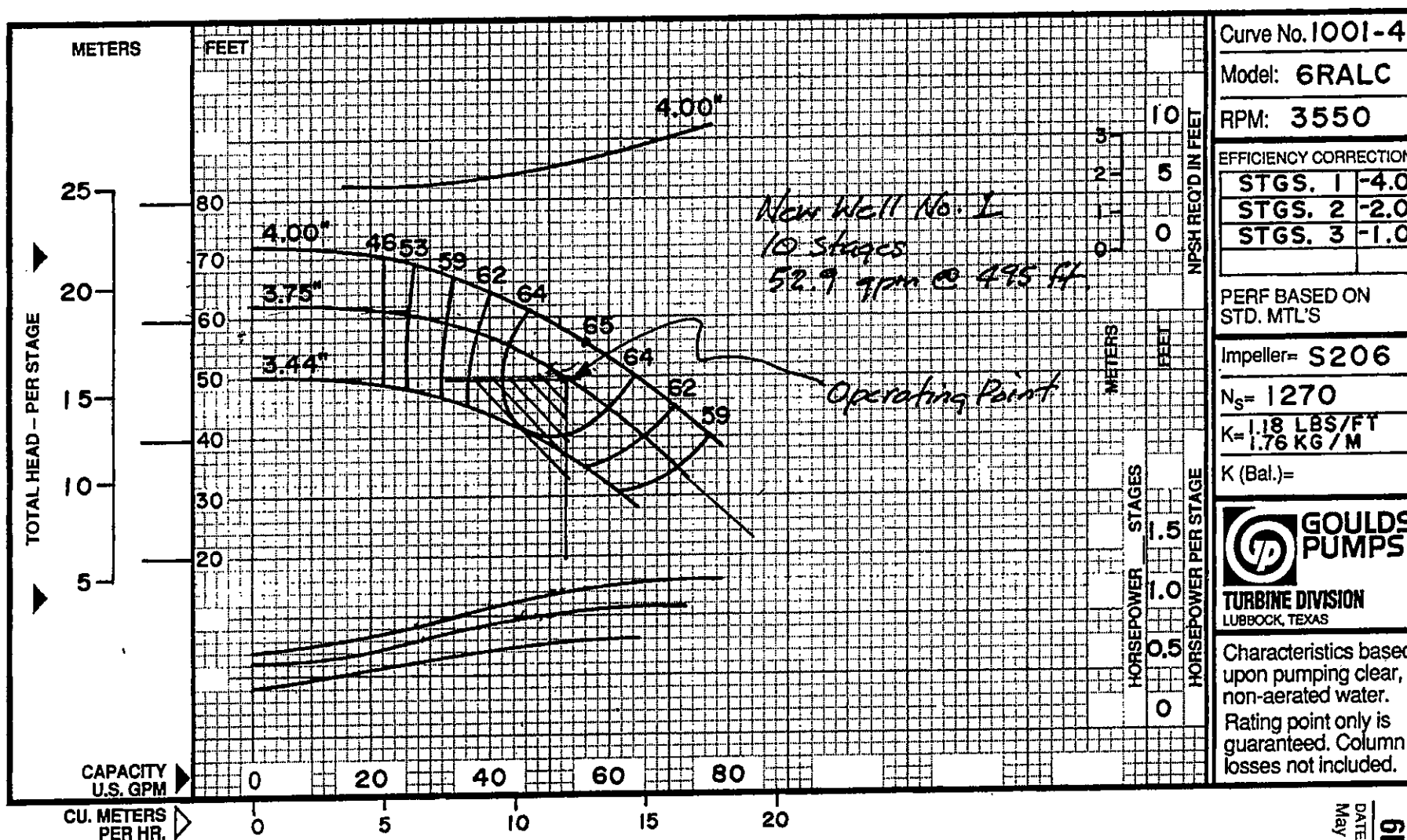
Performance of the wells should be evaluated at least once each two years. More frequent assessments should be made if a reduction of 10 percent in specific capacity is observed. (Changes in specific capacity between 15 and 25 percent are indicative that the pump needs to be removed for maintenance.) The following check list should be used to evaluate performance of the supply wells:

- ✓ What is the static water level?
- ✓ What is the pumping rate after a specified period of continuous pumping?
- ✓ What is the pumping water level after a specified period of continuous pumping?
- ✓ What is the specific capacity after a period of continuous pumping?
- ✓ What is the discharge pressure, or total head developed by the pump?
- ✓ What is the sand content in a water sample after a period of continuous pumping?
- ✓ What is the total depth of the well?
- ✓ What is the efficiency of the well?
- ✓ What is the normal pumping rate, and how many hours a day does it operate?
- ✓ What has been the general trend in water wells in the area?
- ✓ How much drawdown is created in the well because of pumping of nearby wells?

A significant change in any of the first eight items listed above indicates that a well or pump is in need of attention. Pumps which have been in service for 10 years without maintenance should be pulled for inspection or replacement.

Pump Field Efficiency (PFE) is a useful measure of performance. Procedure for calculating this value is included in the Appendix. PFE of 55 or less indicates that a pumping unit should be replaced.

GOULDS PROPOSAL NO.	GOULDS S.O. NO.	INQUIRY NO.	CUSTOMER P.O. NO.	P.O. DATE	ITEM NO.	CUSTOMER		
PROJECT			SERVICE		GPM CAPACITY	F.T. TDH	% EFFICIENCY	RPM



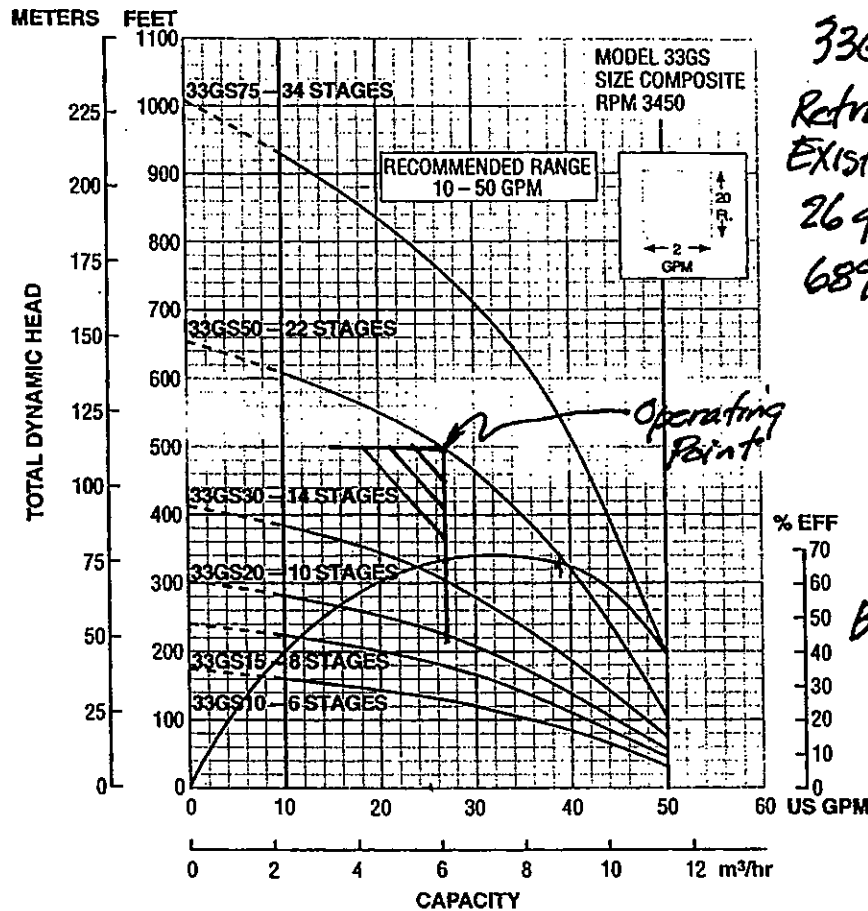
C6RALC.1

MODEL
6RALC
 DATE
 May 1990

ATTACHMENT N

Model 33GS

GOULDS PUMPS
ITT Industries

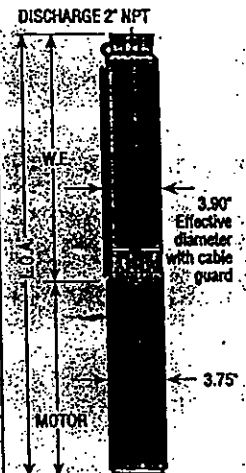


33GS50
Retrofit
Existing Well No. 2
26 gpm @ 495 ft.
68% Efficiency

BETTER
CURVE!

DIMENSIONS AND WEIGHTS

HP	Stages	W.E. Order No.	Motor Order No.	PH	Motor Volts	Motor Length	W.E. Length	L.O.A. @	W.E. and Motor Weight
1	6	33GS10	S06940	1	230	9.5	14.2	23.7	32
			S06978*	3	200	11.8	14.2	26	33
			S06970		230				
			S06975		460				
1½	8	33GS15	S07940	1	230	13.6	16.6	30.2	37
			S07978	3	200	11.8	16.6	28.4	32
			S07970		230				
			S07975		460				
			S07979*		575				
2	10	33GS20	S08940	1	230	19.1	15.1	34.2	40
			S08978	3	200	19.1	13.6	32.7	38
			S08970		230				
			S08975		460				
			S08979		575				
3	14	33GS30	S09940	1	230	23.5	24	47.5	65
			S09978	3	200	20.6	24	44.6	56
			S09970		230				
			S09975		460				
			S09979		575				
5	22	33GS50	S10940	1	230	29.5	35.2	64.7	88
			S10978	3	200	23.6	35.2	58.8	72
			S10970		230				
			S10975		460				
			S10979*		575				
7½	34	33GS75	S119784	3	200	29.6	49.6	79.2	92
			S119704		230				
			S119754		460				



NOTES:
For complete pump, order water end and motor.
① W.E. = water end or pump without motor.
② L.O.A. = length of assembly - complete pump - water end and motor.
* Non-stock motors have a 6 week lead time.

N/480V Phase Converter.

ATTACHMENT O



ERO Resources Corp.
3314 Grace Street
Boise, ID 83703-5836
(208) 373-7983
Fax: 373-7985
Denver • Boise • Durango
www.eroresources.com
eroboise@eroresources.com

August 22, 2007

Larry Hellhake
3837 N. Holl Dr.
Eagle, ID 83616

RE: Aquifer Level Monitoring

Dear Larry:

On August 9, 2007, I traveled to Crouch to download the dataloggers that were installed in four wells you are using to monitor aquifer levels. The four dataloggers are located in the following wells:

- Mr. and Mrs. Peterson's domestic well
- Mr. Rodes' domestic well
- Mountain View Subdivision's backup well
- Mountain Shadows Subdivision #2 (backup)

The data loggers were operating correctly, except the one installed in the Peterson well. I removed the instrument from the Peterson well and returned it to the manufacturer for repairs or replacement.

The data collected are shown on the attached figure. I also included a graph showing the data collected from just the Mountain Shadows well to show more detail.

I am planning the next download event for fall 2007.

If you have any questions, please call.

Regards,

Steven R. Hannula

P
ATTACHMENT

1

Figure 2 Ground Water Levels in the Vicinity of Mountain Shadows Subdivision

