

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 37-20552

Exam Date: 6/27/2012

1. Current Owner: BLACK BUTTE HILLS LLC
C/O GREGORY VIK
PO BOX 1607
BELLEVUE WA 98009
(425) 460-2542

2. Accompanied by: Ron Gonsales.

Address: 338 S. 600 W, Corral, ID 83322

Phone No: (208) 764-3904

Relationship to Permit Holder: Manager.

Email: camascreek@hughes.net

3. **SOURCE**

TRIBUTARY

GROUND WATER

B. OVERLAP REVIEW

1. **Other water rights with the same place of use:** None. 37-20561 is a different well.

2. **Other water rights with the same point of diversion:** None. 37-20559 is for irrigation of 0.5 acres, and 37-20561 is for irrigation for 1.0 acre.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER	NE1/4NE1/4	Sec. 33,	Twp 01S,	Rge 15E, B.M.	CAMAS County
GROUND WATER	NE1/4NE1/4	Sec. 33,	Twp 01S,	Rge 15E, B.M.	CAMAS County
GROUND WATER	NE1/4NE1/4	Sec. 33,	Twp 01S,	Rge 15E, B.M.	CAMAS County
GROUND WATER	SE1/4NE1/4	Sec. 33,	Twp 01S,	Rge 15E, B.M.	CAMAS County
GROUND WATER	SE1/4NE1/4	Sec. 33,	Twp 01S,	Rge 15E, B.M.	CAMAS County

Method of Determination: Garmin GPS Map 76S, ArcMap 2011 and esri Imagery

2.

PLACE OF USE:

Twp	Rge	Sec	STOCKWATER and STOCKWATER STORAGE												Totals				
			NE				NW				SW					SE			
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01S	15E	33	X																

<u>PLACE OF USE:</u>			<u>DIVERSION TO STORAGE</u>																
<u>Twp</u>	<u>Rge</u>	<u>Sec</u>	<u>NE</u>				<u>NW</u>				<u>SW</u>				<u>SE</u>				
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>Totals</u>
01S	15E	33				X													

E. FLOW CALCULATIONS

Measured Method:

None. There is no flow for the ponds, since the POD/groundwater source is the center of the stockwater storage ponds. The Ponds were dug from shallow groundwater sources.. Also, at the time of the field examination, no power was on running to the well.

F. VOLUME CALCULATIONS

1. Volume Calculations for Stockwater Storage ponds:

(0.3 acre total surface area X 6 ft average depth)= 1.8 + 0.0 seepage loss + 0.6 evaporation loss = 2.4 af (spreadsheet total was 2.5 af)

Condition #219 allows the permitted amount, and for evaporation.

See Attached Total Storage, Seepage Calculation and Evaporation Loss Calculation spreadsheets.

2. Volume Calculations for Other Uses:

Stockwater:

Vir = (1000 cattle X 12 gpd X 365 days)/325,850 = 13.4 af

Vdr = 0.04 cfs X 365 days X 1.9835 = 28.9 af

V = 13.4 af

Stockwater is limited by the 13,000 gpd condition on the approved permit, therefore no volume should be listed on the license.

Diversion to Storage:

No volume, per Beneficial Rules

RECOMMEND:

Stockwater Storage for 0.3 total surface area, **condition 219: 2.4 af total annual volume (1.8 af + 0.6 af evaporation loss)** *∴ not exceeding the permitted amount* *0.1*

Stockwater for 1000 head cattle: N/A (limited by 13,000 gpd condition on the permit)

Diversion to Storage: N/A

G. NARRATIVE/REMARKS/COMMENTS

Pictures of the system taken at the time of the field examination, were lost when my computer crashed and had to be rebuilt. Pictures from 6/27/2012 were not retrieved.

In section 33 is located a well that was drilled 10/19/2000 by Camas Well Drillers #275. It has a 6 inch casing, is 161 ft deep, 5 ft static, with an unknown make/model/size submersible pump, and unknown size discharge to 1 1/2 inch buried poly line that runs 1360 ft to the southeast to (3) 250 gallon stock tanks. At the time, there was no power, so no physical measurement could be collected, but there was evidence in the stock tanks that there had been water diverted, and evidence that cattle had been in the area. Directly north of the well is located Pond #1 (designated by Brockway Engineering), then moving further north is Pond #2, then moving northeast are located Ponds #5 and #6 (there are no ponds #3 and 4 on this system, nor were there in the drawings submitted by Brockway). The average depth of the ponds is 6 ft. The POD for the groundwater sources for these ponds is designated in the middle of the pond, since the ponds were dug from shallow groundwater sources. Beneficial use is Stockwater for 1000 head range cattle from the stock tanks and they can drink directly from the ponds; Stockwater Storage (the ponds), and Diversion to Storage (the stock tanks). Black Butte Hills, LLC owns all of the property where the POU's and POD's are located. The Common Name for this system is: Sage Hen Habitat.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
STOCKWATER	01/01 to 12/31	0.040 CFS	
STOCKWATER STORAGE	01/01 to 12/31		2.4 AF*
DIVERSION TO STORAGE	01/01 to 12/31	0.040 CFS	1.9 * SHT
		Totals:	0.040 CFS

*Add condition 219: 1.8 af plus 0.6 af for evaporation loss (there was no seepage loss found on the attached spread sheet; the numbers on the spreadsheet total 2.4 af, yet for the total the spreadsheet shows 2.5 af)

per the approved permitted amount. SHT

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

*The original application for permit pictures showed the same number of ponds and 1 well as found during the field examination. It described in the system narrative that each of the ponds were dug from shallow groundwater sources, and that the POD would be designated in the middle of each pond, but on the permit it only showed the 2 quarter-quarters that the PODs were located, instead of listing each of them individually. For this reason, each POD is being shown individually, since none of the ponds are interconnected.

I. AUTHENTICATION

Field Examiner's Name

John Hemminger

Date

2/13/2014

TOTAL STORAGE

FILE NUMBER	37-20552
REVIEWER	S. Hemenway
DATE	2/13/2014

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond

Surface Area (in Acres)	0.3	"Surface Area" depicts the actual surface area of the pond measured, determined by ArcMap, or estimated.
Average Pond Depth (in feet)	6	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated.
Pond Capacity (in acre feet)	1.8	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth.

Volume Needed Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (in acre feet)	0	The "Volume Needed Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). PLEASE NOTE: You must have a " From Storage " componet exceeding the intial fill on the permit to include a volume in this space.
Estimated Seepage Loss (in acre feet)	0.0	The "Estimated Seepage Loss" is automatically is automatically carried over from the Seepage Loss Sheet
Estimated Evaporation Loss (in acre feet)	0.6	The "Estimated Evaporation Loss" is automatically is automatically carried over from the Evaporation Loss Sheet
Total Volume Required (in acre feet)	2.5	"The Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Flow Rate Into Pond (in cfs)	0.00	The "Flow Rate" Into the Pond depicts the actual flow either measured or estimated into the pond.
Highest Daily Evaporation Rate From Evaporation Tab. (in mm/day)	4.31	To determine the "Highest Daily Evaporation Rate" go the the Evaporation Loss Sheet and enter in the highest number recorded in the Precipitation Deficit table.
Maximum Required Daily Maintenance Volume (in acre feet per day)	0.00	"Maximum Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year, and is caluated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by multiplying the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (in cfs)	0.00	The "Mininum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determine by dividing the "Daily Required Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	-416	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed.
Days Required to Fill the Pond at 13,000 gallons per day	51	The "Days Required to Fill the Pond at 13,000 gallons per day" is calculated converting the "Pond Capacity" and the "Maximum Daily Maintenance Volume" to gallons. The "Pond Capacity is then divided by 13,000 gallons minus the "Maximum Daily Maintenance Volume" in gallons to determine the number of days to fill pond.

SEEPAGE CALCULATIONS

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total annual seepage losses from a pond.

FILE NUMBER	37-20552
REVIEWER	Sandy Hemenway
DATE	2/13/2014

INPUTS

SQ. FT. Calculator Pond Surface area in acres
0.3

POND SURFACE AREA (SQ. FT.)	13068
-----------------------------	-------

SUGGESTED SEEPAGE RATE (FT/DAY)	0.0003
---------------------------------	--------

Use the table below to find the "SUGGESTED SEEPAGE RATES".

FORMULA: (Surface Area X Seepage Rate) / 7.48 = Gallons Per Day loss

CONVERT TO GPD	29	GPD
----------------	----	-----

TOTAL SEEPAGE LOSS (AFA)	0.0	AFA
--------------------------	-----	-----

SUGGESTED SEEPAGE RATES FOR DIFFERENT SOIL TYPES:
SM (silty sand, sand silt mixtures) = 0.20 ft per day
ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.016 ft per day
SC (clayey sands, sand clay mixtures) = 0.007 ft per day
CL (Low to medium plasticity clays) = 0.003 ft per day
CH (high plasticity clays) = 0.0003 ft per day
LINED PONDS (liners can be chemical, fabric, or bentonite) = 0 ft per day
Ponds Intercepting Groundwater (excavated ponds filled with shallow Ground Water) = 0 ft per day

PLEASE NOTE: Seepage Rates taken from Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at <X:\Spatial\Soils\USCS\PondSoils.lyr>. Use "0" if the ponds intersect the water table.

ALSO NOTE:

•Soil types **GW, GP, GM, GC, SW, and SP** are all sandy and gravel soils that most likely will not hold water. Any ponds developed in these soils should probably be lined unless they are part of a recharge water right. The maximum allowable seepage rate is 0.20 ft per day.

•Soil type **OL** is very similar to **ML**, so you should use 0.016 ft per day with this soil type.

•Soil types **MH, OH, and PT** are very similar to **CH**, so you should use 0.0003 when you encounter these soils.

Evaporation Loss Calculation

FILE NUMBER	37-20552
REVIEWER	S. Hemenway
DATE	2/13/2014

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

The acronyms used on the Kimberly Research Center website are defined below:

P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d =ET-P

USING THIS SPREADSHEET

To ascertain the evaporation from a pond, you will need to go to the Kimberley Research Center website. The link is found below. This web site provides the Precipitation Deficit for the area where the pond is located. The Precipitation Deficit is the total amount of free pan evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used, and the entire state is pretty much covered. IDWR staff can find the nearest site using ArcMap. The shape file containing the sites can be found at X:/Spatial/Climate/ETIdahostations.shp.

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/online.php>

Precipitation Deficit

Station: Twin Falls 2 NNE (NWS -- 109294)

Month	mm/day ¹	Days per month	mm/Month
Jan	0.00	31	0.00
Feb	0.00	28	0.00
March	0.42	31	13.02
April	1.82	30	54.60
May	2.92	31	90.52
June	3.63	30	108.90
July	4.31	31	133.61
August	3.73	31	115.63
September	2.55	30	76.50
October	1.76	31	54.56
November	0.00	30	0.00
December	0.00	31	0.00

PLEASE NOTE: We cannot use the season average, because there are several areas in Northern Idaho with a negative Precipitation Deficit. Therefore, we must enter each monthly deficit, and enter in a zero (0) for each negative month. The reason for this is that precipitation can only offset evaporation to the extent of the evaporation.

Please enter the daily average Precipitation Deficit as shown in the example below.

¹Negative monthly mean values should be entered in the above table as "0".

Total mm/year = 647.34

$[(\text{mm/yr}) \div (\text{convert to feet})] \times (\text{Surface area of pond, in acres}) = \text{Evaporation Loss in Acre Feet}$

(647.34 ÷ 304.8) X 0.30 = 0.6 AFA

ET_{Idaho} 2009: Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to robison@kimberly.uidaho.edu Copyright 2010, University of Idaho.

Fairfield (NWS --103108)

Statistics based on thirty

For a different land cover or crop click on the above link.

You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Open water - shallow systems (ponds, streams)															
Precipitation Deficit (Click here for a graph)															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean	mm/day												mm		
Monthly ^c	-1.43	-0.78	0.42	1.82	2.92	3.63	4.31	3.73	2.55	1.76	-0.83	-1.35	515	0	515
15-Day Moving Average ^d	-1.61	-1.10	0.39	1.90	2.85	3.64	4.41	3.64	2.43	1.73	-0.89	-1.39			
7-Day Moving Average ^e	-1.54	-0.93	0.41	1.85	2.88	3.61	4.38	3.72	2.47	1.72	-0.90	-1.39			
3-Day Moving Average ^f	-1.46	-0.78	0.42	1.84	2.91	3.63	4.32	3.73	2.52	1.75	-0.86	-1.34			
Standard Deviation	mm/day												mm		
Monthly	1.92	1.19	1.17	0.86	1.50	0.97	0.97	1.42	1.13	1.13	1.37	2.22	127	0	127
15-Day Moving Average	2.16	1.77	1.16	1.07	1.60	1.32	0.84	1.44	1.49	1.10	1.69	2.22			
7-Day Moving Average	2.80	2.48	1.52	1.60	1.99	1.84	1.24	1.63	1.85	1.62	2.19	2.86			
3-Day Moving Average	3.66	3.05	2.14	2.23	2.51	2.40	1.89	2.04	2.38	2.06	2.97	3.58			
20% Exceedance	mm/day												mm		
Monthly	-0.37	0.22	0.83	2.47	3.55	4.42	4.87	4.43	3.47	2.44	0.08	-0.36	594	0	594
15-Day Moving Average	0.59	0.93	1.67	3.34	4.65	5.15	5.33	4.77	4.00	2.94	1.06	0.52			
7-Day Moving Average	0.87	1.29	1.97	3.90	5.31	5.61	5.52	5.09	4.43	3.47	1.62	0.78			
3-Day Moving Average	0.97	1.50	2.47	4.77	5.76	6.05	5.82	5.36	4.68	3.94	2.03	1.04			

80% Exceedance	mm/day												mm		
Monthly	-2.40	-1.88	-0.28	0.88	2.31	2.67	3.72	3.42	1.22	0.97	-2.18	-2.93	399	0	399
15-Day Moving Average	-4.62	-3.77	-1.45	0.40	1.55	1.10	3.02	2.28	0.11	0.39	-4.01	-4.57			
7-Day Moving Average	-9.10	-7.95	-3.51	2.43	-0.22	1.36	1.37	0.75	2.21	3.19	-6.50	-6.87			
3-Day Moving Average	17.29	12.45	-7.66	6.53	-3.78	4.86	2.29	-1.91	6.30	6.15	11.23	11.05			
Ave Highest P_{def}	mm/day												--		
15-Day Moving Average ^g	0.30	0.49	1.29	2.79	3.85	4.58	4.95	4.28	3.20	2.59	0.54	0.26			
7-Day Moving Average ^h	0.68	1.03	1.74	3.46	4.72	5.29	5.29	4.83	3.94	3.12	1.09	0.60			
3-Day Moving Average ⁱ	0.86	1.33	2.18	4.10	5.31	5.78	5.64	5.12	4.40	3.54	1.64	0.82			
Ave Lowest P_{def}	mm/day												--		
15-Day Moving Average ^g	-2.90	-1.98	-0.48	1.02	1.95	2.70	3.74	3.03	1.55	0.92	-2.00	-2.74			
7-Day Moving Average ^h	-5.47	-4.14	-1.59	0.52	0.48	1.14	2.61	2.01	0.29	0.38	-3.68	-4.99			
3-Day Moving Average ⁱ	10.32	-7.27	-4.09	3.22	-2.07	1.27	0.50	0.04	2.18	2.46	-6.79	-8.89			
Special normal distribution parameters for monthly, seasonal, and annual intervals													--		
Skew	-0.40	-0.71	-0.28	0.24	-0.61	0.44	0.30	-0.65	0.88	0.03	-0.46	-0.52	0.00	0.00	0.00
Kurtosis	1.03	3.40	0.90	2.43	1.86	2.66	0.83	1.53	2.81	0.62	3.16	1.53	3.21	0.00	3.21

^a Growing Season: This is usually the time from green up or planting in the spring to a killing frost or harvest in the fall. It is not applicable for entries without a growing season and will be blank.

^b Nongrowing Season: This is usually the time from a killing frost or harvest in the fall to the of green up in the spring. It is not applicable for entries without a growing season.

^c Mean of the average daily value for month

^d Mean of the fourteen 15-day period averages contained in the month

^e Mean of the twenty three 7-day period averages contained in the month

^f Mean of the twenty seven 3-day period averages contained in the month

^g Mean of the highest/lowest 15-day period average in month

^h Mean of the highest/lowest 7-day period average in month

¹ Mean of the highest/lowest 3-day period average in month

This work and report were prepared by the University of Idaho Research and Extension Center at Kimberly, Idaho under contract with the Idaho Department of Water Resources. Work was supported by funding from IDWR and the Idaho Agricultural Experiment Station and Idaho Engineering Experiment Station. The authors gratefully acknowledge the long-term evapotranspiration data collection and long-standing advice provided by Dr. James L. Wright, USDA-ARS Kimberly (ret.), the more than two decades of high quality agricultural weather data collection by the U.S. Bureau of Reclamation AgriMet system, and the very long-standing, routine data collection by the hundreds of cooperative weather station volunteers across the state who, for more than one-hundred years, have faithfully observed daily air temperature and precipitation.

The citation for the evapotranspiration data used from this site should be: *Allen, Richard G. and Clarence W. Robison, 2009. Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho: Supplement updating the Time Series through December 2008, Research Technical Completion Report, Kimberly Research and Extension Center, University of Idaho, Moscow, ID.*

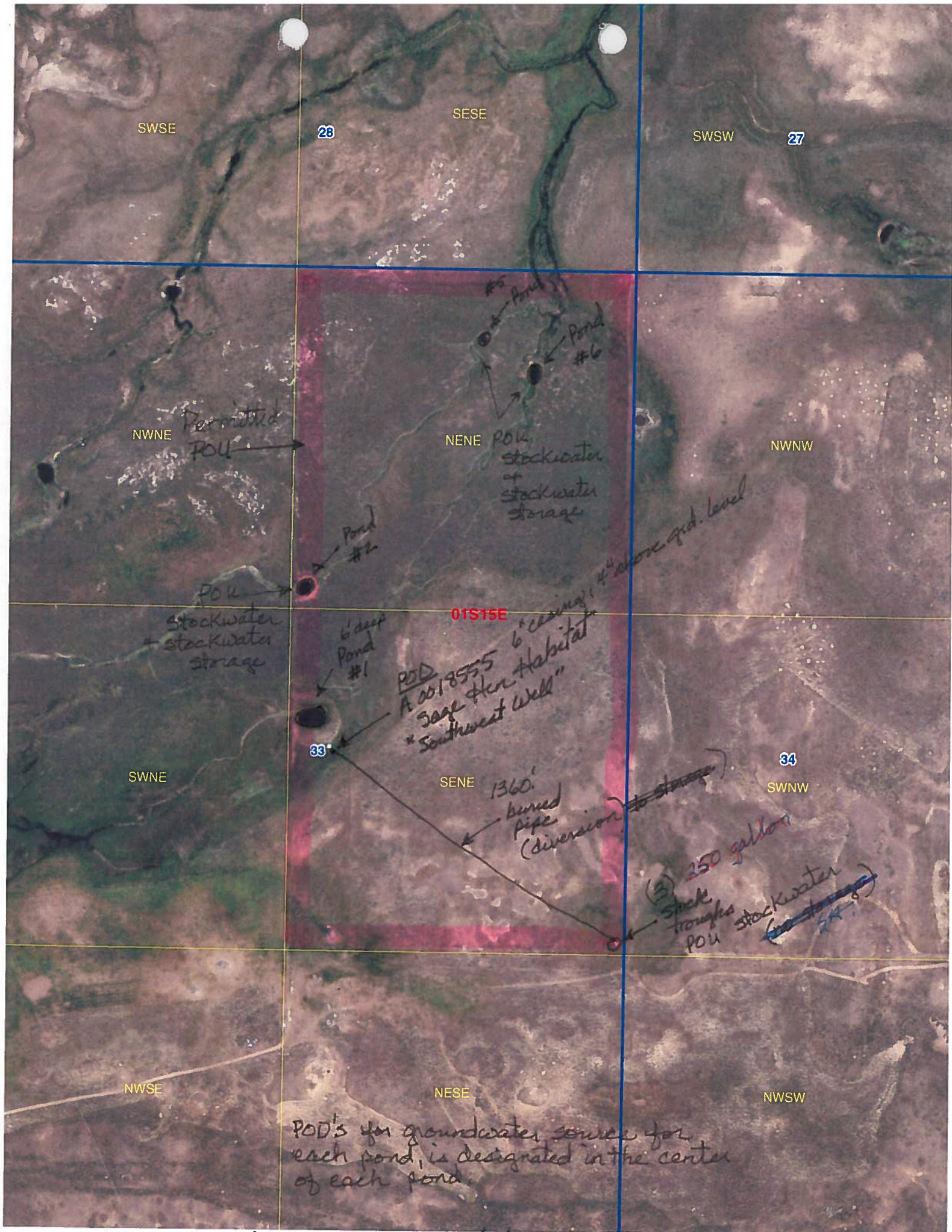
Questions regarding the data should be addressed to [Clarence W. Robison](#) or [Richard G. Allen](#), University of Idaho, Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, ID 83341. Telephone (208)-423-6610

University of Idaho
A LEGACY OF LEADING
Copyright 2010, University of Idaho.



37-20552

USDA FSA
← Home



POD's for groundwater source for each pond, is designated in the center of each pond.

37-20552 POD (well ID Tag #A0018555, 6 inch casing)

SENE

SWNW

33

01S15E

34

esri Imagery 1:1,500

37-20552 (3) 250 gallon stock tanks

NESE

NWSW

NWNE

NENE



37-20552 POU (Pond #2, per Brockway)

33

01S15E

SWNE

SENE



37-20552 POU (Pond #1, per Brockway)

Arc Map 2011 Imagery 1:879

37-20552

SESE

28

37-20552 POU (Pond #5, per Brockway)

37-20552 POU (Pond #6, per Brockway)

01S15E

NENE

33

Arc Map 2011 Imagery 1:879

IDaho DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. WELL TAG NO. D 0020038
 DRILLING PERMIT NO. 767-098
 Other IDWR No. _____

2. OWNER: Lonnie Leavell
Name PO BOX 54
Address GOODINE
City State ID Zip 83330

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
 W E S
 Twp. 1 North ☐ or South ☒
 Rge. 15 East ☒ or West ☐
 Sec. 33 SW 1/4 SE 1/4 NE 1/4
 Gov't Lot _____ County CAMAS
 Lat. : : Long. : :
 Address of Well Site 1/2 E, 1/4 N
SHEAR PLACE on OH "46" City FAIRFIELD
 (Give at least name of road + Distance to Road or Landmark)

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/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
BENTONITE	0	18'	5 SKS	TREMIE

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 22'
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Lin	Welded	Threaded
6"	+18"	22'	.25	STEEL	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 18" Length of Tailpipe

9. PERFORATIONS/SCREENS

Perforations	Method	
Screens	Screen Type	

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

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

5 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 7 ft. Describe access port or
control devices: WELL CAP

11. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
4.100 gpm			

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
9"	0	18	TOP SOIL & SILTY CLAY	X	
	18	22	BASALT		X
	22	28	CINDERS	X	
6"	28	51	BASALT		
	51	83	BROKEN BASALT & CINDERS		
	83	97	BASALT		
	97	115	CINDERS		
	115	127	BASALT		
	127	131	CINDERS		
	131	155	BASALT		
	155	161	CINDERS (MUCH WATER)	X	

RECEIVED

NOV 16 2000

~~Department of Water Resources~~

Completed Depth 161' (Measurable)
Date: Started 10/18/00 Completed 10/19/00

13. DRILLER'S CERTIFICATION

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

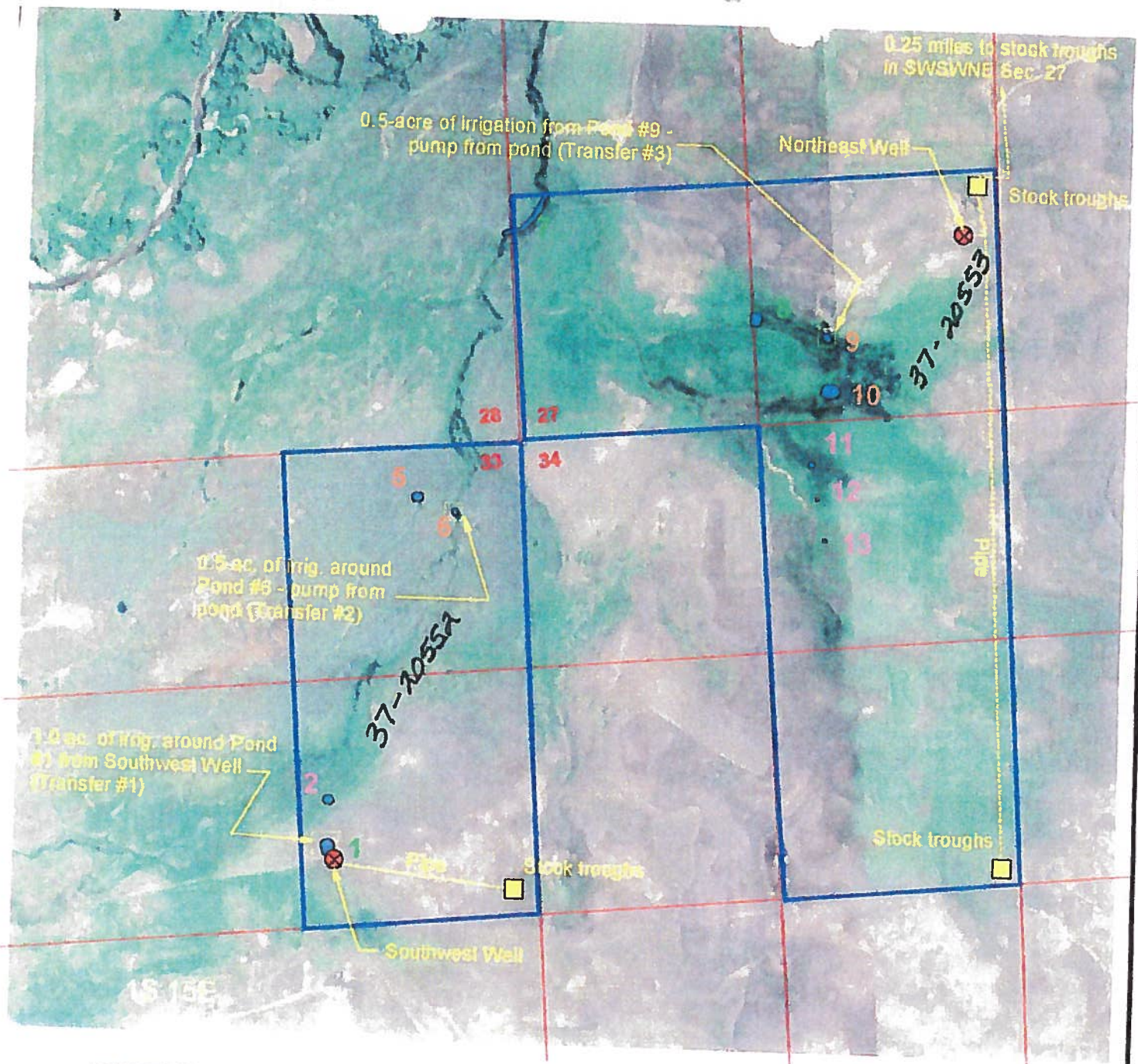
Company Name CAMAS WELL DRILLERS Firm No. 275

Firm Official E. Barron Date 10/29/00

and
Driller or Operator _____ Date _____

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES



EXPLANATION

Ponds are color-coded according to their hydrologic status:

New open water Ponds

Wetland to open conversion ponds

Ponds

Property boundary

Wells

SCALE: 1" = 800' (approx.)

N

Photo Date: 1999

Brockway Engineering June 4, 2001

Permit and Transfer Applications
Lonnie Leavell - Rock House Property