

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 63-125071. Owner US DEPT OF AGRICULTUREPhone No. 208-373-4143Current address 1249 Vinnell Way Ste 200, Boise, Id 837092. Examiner's name Cody ParkerEXAM DATE 08/23/173. Accompanied by Terry HardyEmail thardy@fs.fed.usAddress sameRelationship to permit holder Watershed Program ManagerPhone No. 208-373-42354. Source Groundwatertributary to Boise River**B. OVERLAP REVIEW**1. Other water rights with the same place of use 63-152282. Other water rights with the same source and point of diversion 63-31367, 63-3231**C. DIVERSION AND DELIVERY SYSTEM**

1. Point(s) of Diversion:

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
			NE	SW	21	03N	04E	Ada	GPS, Digital PLS map, 3 wells

2. Place(s) of Use:

Method of determination Site visit, aerial imagery, digital PLS map

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N	04E	28						X											
03N	04E	29	X																

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.

Scale: 1" = _____

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well ID No. 371057		7.5		Grundfos	Prod No. 79355511
Well ID No. 347182		75		Grundfos	
Well ID No. 361552		60		Grundfos	

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: _____

Pop-up and stationary sprinklers run on 5 zones

Bunkhouse => 4 showers, 4 toilets, 2 sinks Warehouse => 1 sink, 1 toilet

Office => 4 showers, 4 toilets, 3 sinks

E. NARRATIVE/REMARKS/COMMENTS

See Attached

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

23 fixtures total x 5 gpm/fixture = 115 gpm = 0.26 cfs

Well 1 => $Q = 8.8 \times 7.5 \times 0.7 / (110 + (80 \times 2.31)) = 0.16$ cfs capacityWell 2 => $Q = 8.8 \times 75 \times 0.7 / 530 = 0.87$ cfs capacityWell 3 => $Q = 8.8 \times 60 \times 0.7 / 460 = 0.80$ cfs capacity**G. 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:

None required per BU Exam Rule 35.01.j.ii

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Domestic	01/01	12/31	0.08	
Totals:			0.08 cfs	

2. Recommended Amendments

- ☐ Change P.D. as reflected on page 1 ☐ Add P.D. as reflected on page 1 ☒ None
☐ Change P.U. as reflected on page 1 ☐ Add P.U. as reflected on page 1 ☐ Other

I. AUTHENTICATIONField Examiner's Signature Cody Ph Date 08/24/17Reviewer Angela M. Quinn Date 10/4/17

SEAL

STATE OF IDAHO
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NARRATIVE

Permit 63-12507 was approved on May 28, 1999 authorizing the diversion of 0.08 cfs for domestic use associated with an office, bunkhouse, and fire operations center at the Lucky Peak Nursery site. Proof of beneficial use was submitted on August 2, 2004. On August 23, 2017 I, WRA Cody Parker, visited the site as part of the field examination for this permit.

There are three points of diversion used to supply water to the system. The first POD is a 6" well completed to a total depth of 196'. GPS coordinates for the well are N 43°34'42.7" by W 115°59'20.3" which puts it in the NESW of Section 21, Township 03 North, Range 04 East, B.M. Water is diverted from the well using a 7.5-hp Grundfos pump. The well must have been deepened at some point after construction as a summary of the water system provided by the permit holder states that the pump was replaced in January of 1999. The summary states that the total well depth in 1999 was 210', the static water level was 120' below ground surface (BGS), and the pump was set to a depth of 200'. According to the GPS the ground surface elevation at the well is 3161'. Based on these parameters, and assuming an efficiency of 70% for the pump system, the maximum capacity of the well is approximately 0.16 cfs.

The second POD is located in the same QQ (from the well log). The system summary provided by the permit holders says the pump is a 75-hp submersible pump with a total dynamic head of 530 ft. The capacity of the well, assuming 70% efficiency, is 0.87 cfs.

The final POD is also located within the same QQ (well log and site visit, no GPS). Again the system summary shows a hp of 60 and a TDH of 460 ft. The theoretical capacity of this well comes out to 0.80 cfs.

Water is diverted from the wells at 80 psi through a 4" line to a 16,750-gallon tank (Cistern #1) at 3314' elevation. Water pumping is controlled by a float sensor in Cistern #1 which assures a constant water level in the tank. The water is then gravity fed downhill (west) through a 4" line to supply water to the nursery and to various office buildings and warehouses. The buried line then continues west uphill to a second storage tank (Cistern #2). The water surface in the second tank is at the same approximate elevation as water in the first tank due to gravity.

Water is supplied to the POU for this permit from the second tank. The POU includes an office building, a residential bunkhouse, and a warehouse. The POU is located in the NWNW of Section 28, Township 03N, Range 04 East, B.M. and in the NENE of Section 29 of the same Township and Range. Domestic use also includes less than ½ acre of irrigation of lawn and landscaping. Between all three buildings, there are 8 showers, 6 sinks, and 9 toilets. If all of these ran at once, and assuming an average of 5 gpm for each, the total diversion rate required would be 115 gpm or 0.26 cfs from the storage tank. It is unlikely that all of the fixtures would be running at once at any given time. The limiting diversion rate in this case is the permit, which authorizes a rate of 0.08 cfs. The domestic use does not require an annual volume limitation, but I should note that the facilities are used primarily by seasonal firefighters so the use will be considerably less through the winter.

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There are no other rights used to provide domestic water to this place of use. There is one other domestic right listed in the NWNW of Section 28, but the tax parcel identified in its conditions is nowhere near the place of use. The first point of diversion also provides water for commercial and domestic use for the nursery according to right no. 63-31367. The diversion rate authorized by 63-31367 is 0.19 cfs. The new right should include a combined use limit so that the two rates when combined do not exceed 0.19 cfs. The other two wells are also used for irrigation according to right 63-3231, which authorizes a diversion rate of 1.0 cfs. These two wells have sufficient capacity to cover both rights and no combined use limit is required.

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Figure 1 The pressure gauge at the westernmost well showing an operating pressure of 80 psi.

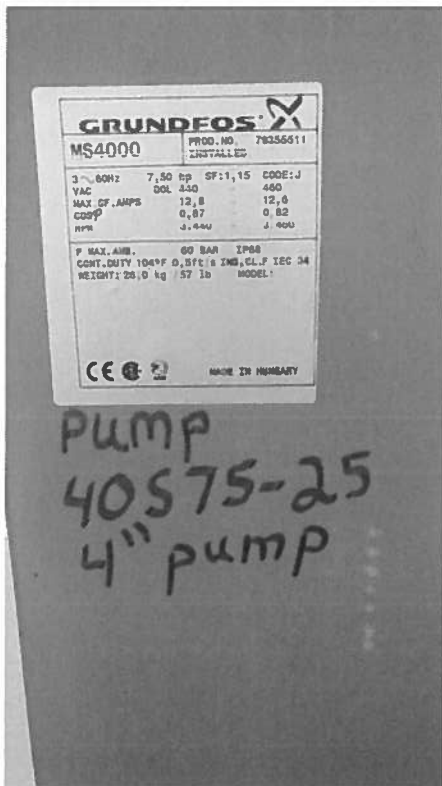
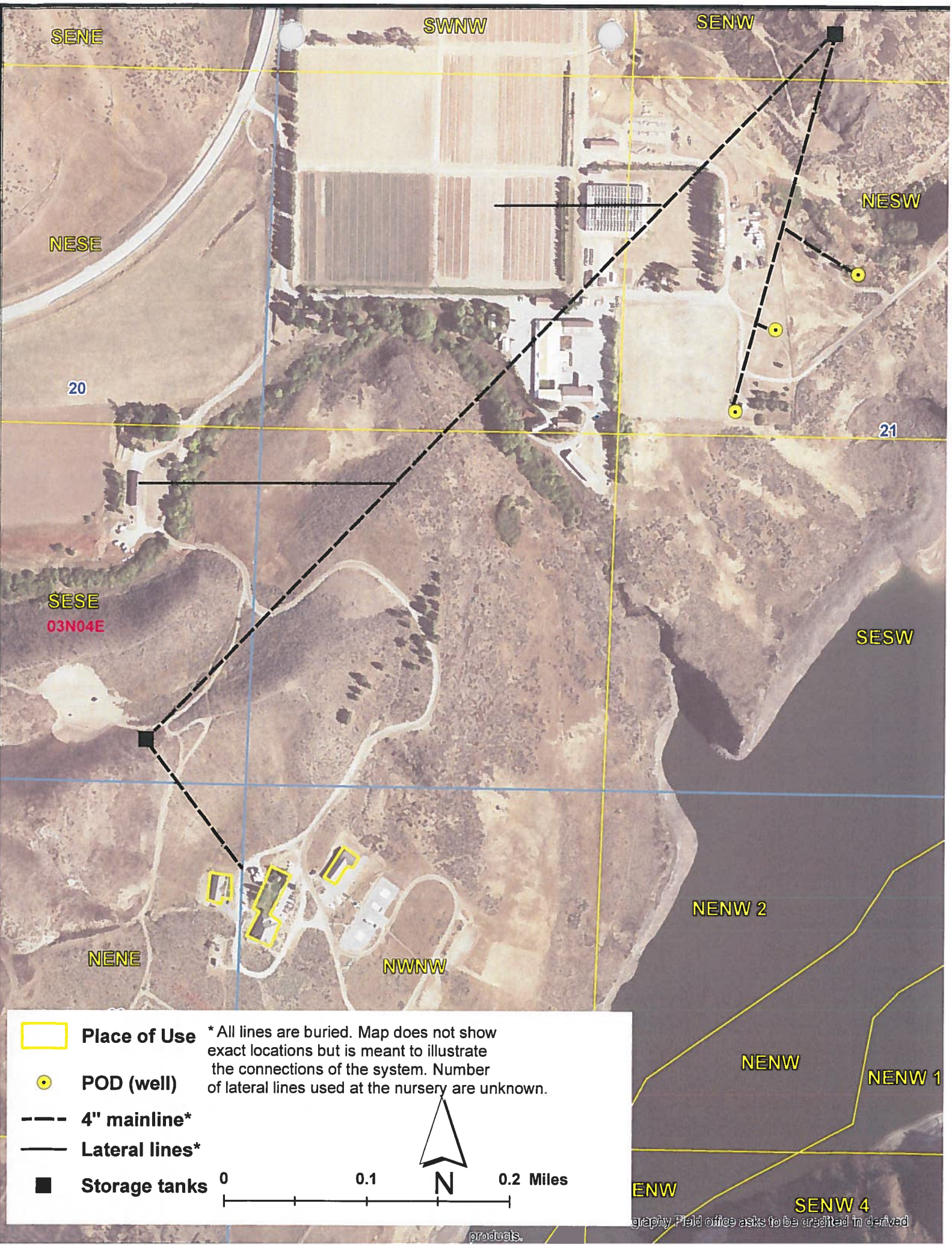


Figure 2 The pump specs on the control panel for the pump in the westernmost well, which serves as the primary water source to fill the 2 cisterns

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Figure 3 The control valve just below Cistern 1 which allows water to flow from Cistern 1 to the nursery and back uphill into Cistern 2.



Place of Use



POD (well)



4" mainline*



Lateral lines*



Storage tanks

* All lines are buried. Map does not show exact locations but is meant to illustrate the connections of the system. Number of lateral lines used at the nursery are unknown.

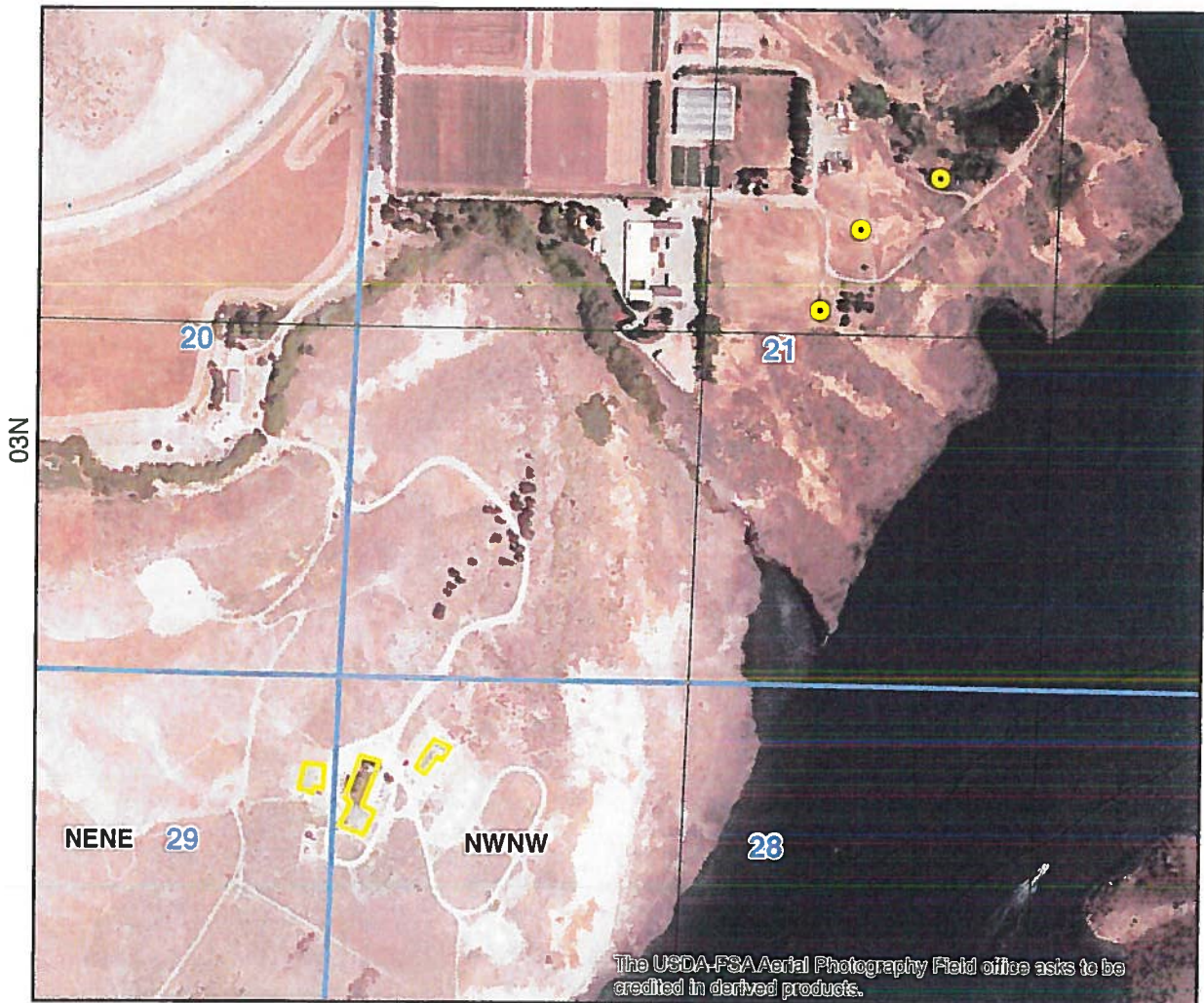


graphy Field office asks to be credited in derived products.

State of Idaho
Department of Water Resources
Attachment to Water Right License
63-12507

This map depicts the DOMESTIC place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

04E



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections

0 0.075 0.15 0.3 Miles



BasinSeq	Owner	Source	Use
63-12507	US DEPT O	GROUND W	DOMESTIC
63-23296A	STATE OF I	SPRINGS	STOCKWATER

NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	TotalAcres
X																
								X								

BasinSeq	Owner	Source	Use
63-12507	US DEPT O	GROUND V	DOMESTIC
63-15228	WARREN, J	GROUND V	DOMESTIC

[illegible]

USE TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer
within 30 days after completion or abandonment of the well.

RECEIVED
OCT 20 1970

1. WELL OWNER

Name Rock Peak Nursey Well
Address Basie Nat Forest Basie Idaho
Owner's Permit No. 220

7. WATER LEVEL

Static water level 93 feet below land surface
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Temperature _____ ° F. Quality _____
Artesian closed-in pressure _____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning)

8. WELL TEST DATA

☐ Pump ☐ Bailor ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test
☐ Municipal ☐ Industrial ☐ Stock

9. LITHOLOGIC LOG

Hole Diam.	Depth		Material	Water	
	From	To		Yes	No
16	0	24	top soil & gravel		
	24	26	Black Basalt		
	26	45	" " Broken		
	45	47	Hard Gray Basalt		
	47	57	" " "		
	57	65	" " "		
	65	82	" " "		
	82	97	" " "		
	97	105	Broken Black Basalt	X	
	105	112	Broken Rock just getting		
	112	133	" " "		
	133	137	Gray Basalt		
137	137	145	" " "		
	145	177	Gravel & Gravel	X	
	177	190	Gravel & Gravel		
	190	210	" " "		
	210	222	" " "		
	222	240	White Sandstone Hard		
	240	254	Gray Basalt		
	254	260	Gravel & Gravel	X	
	260	270	Gravel		

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 12 inches Total depth 251 feet
Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☐ No
Perforated? ☐ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches
Number _____ From _____ To _____

_____ perforations _____ feet _____ feet
_____ perforations _____ feet _____ feet
_____ perforations _____ feet _____ feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☐ No Size of gravel _____

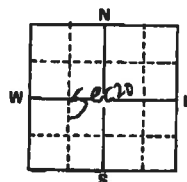
Placed from _____ feet to _____ feet

Surface seal? ☐ Yes ☐ No To what depth _____ feet

Material used in seal ☐ Cement grout ☐ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Ada County

NE 1/4 Sec. 20 T. 3 N. R. 4 E

10.

Work started July 3 finished Sept 15, 1970

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Elmer Well Drilling 31
Driller's or Firm's Name Number
Rt. 3 Twin Falls Idaho
Address
Arnold Elmer Sept 20, 1970
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

**WELL LOG AND REPORT TO THE
STATE RECLAMATION ENGINEER OF IDAHO**

024974

RECEIVED
JUN 2 01960

Log No. Department of Reclamation
Rec'd. _____, 19____
Well No. _____
Permit No. 9-29072

(DO NOT FILL IN)

Owner U.S. Forest Service Address _____
Driller Russel Oowe Address Boise Idaho Lic. No. 65
Location of Well: NE 1/4 SW 1/4 Sec. 21, T. 3 N1/4, R. 4 E1/4 Add County,
and 330 feet N1/4 and 640 feet E1/4 from SW Corner of NE 1/4 SW 1/4 Sec. 21
Size of Drilled Hole 12" Total depth of Well 201'
Give depth of standing water from surface 101' Water Temp. _____ °Fahrenheit
On pumping test delivery was 860 g g.p.m. or _____ c.f.s. Drawdown was 27' feet.
Size of pump and motor used to make the test 8" turbine pump
Length of time pumped during check was 24 hr., _____ minutes.
If flowing well, give flow in c.f.s. _____ or g.p.m. _____ and shut in pressure _____
If flowing well, describe control works _____ (TYPE AND SIZE OF VALVE, ETC.)
Water will be used for nursery Weight of casing per linear foot 38 lbs.
Thickness of casing .025 Casing material steel
E.G., PIPE, CONCRETE, WOOD.
Diameter, length and location of casing 18" above ground to 180' below
(CASING 12" IN DIAMETER AND UNDER GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER GIVE OUTSIDE DIAMETER.)
Number and size of perforations _____ located _____ feet to _____ feet
from surface of ground.
Other perforations _____
Date of commencement of well April 19, 1960 Date of completion of well June 8, 1960
Type of well rig cable tool rig

CASING RECORD

DIAM. CASING	FROM FEET	TO FEET	LENGTH	"REMARKS" -- SEALS, GROUTING, ETC.

GENERAL INFORMATION—Pumping Test, Quality of Water, Etc.

This well has 20' of well screen top 10' has 40 slot
bottom 10' has 20' slot Top of screen has 2 1/2 10" o.d. casing
with lead packer. Johnson Brass Screen

NE SW S. 21 3 N 4E

024975

WELL LOG

[illegible]

WELL DRILLERS STATEMENT

This well was drilled under my jurisdiction and the above information is true and correct to the best of my knowledge and belief.

Signed Russel Cowe

By

Dated June 7, 1960 License No. 65

License No. 63

WELL LOG AND REPORT TO THE STATE RECLAMATION ENGINEER OF IDAHO

024972

RECEIVED
MAR 29 1960

Log Department of Reclamation

Rec'd _____, 19____

Well No. _____

Permit No. 9-29575

(DO NOT FILL IN)

Owner U.S. Forrest Service Address Boise, Idaho
Driller Kenneth Witt Address Boise, Idaho Lic. No. 55
Location of Well: 1/4 1/4 Sec. 21, T. 3 N 4 R 4 E W Ada. County,
and feet N/S, and feet E/W from Corner of 1/4 1/4 Sec.
Size of Drilled Hole 6 in. Total depth of Well 196 ft.
Give depth of standing water from surface 144 Water Temp. °Fahrenheit
On pumping test delivery was 68 g.p.m. or c.f.s. Drawdown was 2' 6" feet.
Size of pump and motor used to make the test 3 in. Turbine
Length of time pumped during check was 10 hr., minutes.
If flowing well, give flow in c.f.s. or g.p.m. and shut in pressure
If flowing well, describe control works
(TYPE AND SIZE OF VALVE, ETC.)
Water will be used for Domestic Weight of casing per linear foot 18
Thickness of casing 5/16 Casing material steel
E.G., PIPE, CONCRETE, WOOD.
Diameter, length and location of casing 6 in. X 178
(CASING 12" IN DIAMETER AND UNDER GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER GIVE OUTSIDE DIAMETER.)
Number and size of perforations ARMCO iron screen located 182 feet to 192 feet
from surface of ground.
Other perforations None
Date of commencement of well Feb. 4, 1960 Date of completion of well March 11, 1960
Type of well rig Spudder

CASING RECORD

DIAM. CASING	FROM FEET	TO FEET	LENGTH	"REMARKS" -- SEALS, GROUTING, ETC.
6 "	0	178	180	

GENERAL INFORMATION—Pumping Test, Quality of Water, Etc.

S. 21 3N 4E

well

624973

WELL DRILLERS STATEMENT

Signed Kenneth Witt

Dated March 14, 1960.

License No. 55

Sanitary Survey
Lucky Peak Nursery & Helitack Area
Water System Number 0011110

Date of Survey: August 11 & 12, 1999

Survey Team: August 11 - Dale E. Swearingen, Maintenance Worker; Paul Werner, Water Testing Technician; and Kent Bingham; August 12 - Kent Bingham

Purpose: To evaluate an existing water system against current design criteria, and note deficiencies - especially those with potential for contaminating the system. Also, to comply with FSM 7421.23.2 which states that interval between surveys shall not exceed 5 years (**many years past due**). Also, to comply with FSM 7421.23.3 which states that a sanitary survey must be performed each time a repeat sample following a contaminated routine sample confirms contamination. Previous sanitary survey was voided by repeat sample of May 22, 1997, which followed unsatisfactory routine sample of May 19, 1997.

Location: The **water source**, which is on the Boise National Forest, is located in Ada County, Idaho, approximately 12 miles east of Boise (approximately 15 miles by road from Boise (along side of the Lucky Peak Reservoir at the confluence of Mores Creek and the Boise River) at an elevation of approximately 3159 feet. It is located in the SW 1/4 of Section 21, T3N, R4E (latitude 43°34'43"N, longitude 115°59'16"W). Hydrologic Unit Code 17050114, Watershed Code 038, Watershed Name: Boise. The **old storage tank** is located at approximately latitude 43°34'57"N, longitude 115°59'12"W). The **new storage tank** is located at approximately latitude 43°34'31"N, longitude 115°59'46"W). The site (well and storage tanks) location is shown on the Arrowrock Dam, Idaho, 7.5 minute USGS quadrangle sheet.

Dates of Past Surveys: Unknown

Source: Well drilled in 1962 or 1963. For additional information on well (as well as irrigation wells) see "History".

Disinfection: None

O&M Plan: Existing? Current? Used?

Bacteriological Sampling Plan: None

Cross-Connection Control Plan: None

Confined Space Plan: None

Class: Nonpublic Community & Public Noncommunity - transient

Bacteriological History of Record: Lucky Peak Nursery & Helitack Area (see following Contaminant Testing Data sheets).

Contaminant Testing: Water samples have been taken as follows:
 Lucky Peak Nursery & Helitack Area

Date Collected			06/12/80	09/30/82		08/04/86	06/09/87
Date Analyzed			06/18/80		08/13/84		06/10/87
Sample ID			CL006982	CL017331	CL029849	A0003440	EE003883
<u>Primary</u>	<u>MCL</u>	Units					
Arsenic	0.05	mg/l	<0.005		<0.010		<0.005
Barium	1.0	mg/l	<0.1		<0.1		<0.10
Cadmium	0.010	mg/l	<0.001		<0.001		<0.001
Chromium	0.05	mg/l	<0.001		<0.005		<0.010
Cyanide		mg/l	-		-		-
Fluoride	4.0	mg/l	0.19		0.22		0.16
Lead	0.05	mg/l	<0.005		<0.005		<0.005
Mercury	0.002	mg/l	<0.0005		<0.0005		<0.005
Nitrate	10.	mg/l	2.88		3.32		3.14
Nitrite	1.	mg/l	-		-		-
Nitrogen-Total	1.	mg/l	-		-		-
Selenium	0.01	mg/l	<0.005		<0.005		<0.005
Silver	0.05	mg/l	<0.005		<0.005		<0.005
Sodium	20.	mg/l				7.93	8.2
Turbidity	1.0	NTU		0.28	0.23		
<u>Secondary</u>							
Aluminum		mg/l					
Chloride	250.	mg/l		1.05	1.10		
Color	15.	units		<10.	5.00		
Copper	1.0	mg/l		<0.01	0.01		
Corrosivity	range	L.I.					
Iron	0.3	mg/l	<0.05		0.05		
Manganese	0.05	mg/l	<0.01		0.01		
Odor	3.	units		<5.			
pH	6.4 - 8.5	units		6.8	6.80		
Sulfate	250.	mg/l		4.	4.00		
Surfactants	0.5	mg/l				<0.010	
TDS	500.	mg/l		114.	114.0		
Zinc	5.0	mg/l		0.38	0.38		
<u>Other</u>							
Alkalinity		mg/l					
Ammonia		mg/l					
Calcium		mg/l					
Hardness		mg/l		56.2	56.2		
Magnesium		mg/l					
Phosphate		mg/l					
Potassium		mg/l					
Silica		mg/l					
SpecificCond		mg/l					

Sample ID prefix identification

A = Analytical Laboratories, Inc.

CL = Century Laboratories, Inc.

EE = Environmental Engineering Laboratories, Inc.

Contaminant Testing: Water samples have been taken as follows:
 Lucky Peak Nursery & Helitack Area

Date Collected		04/29/88	04/29/88	04/29/88	06/16/88	07/09/90
Date Analyzed		04/29/88	04/29/88	04/29/88	06/16/88	07/11/90
Sample ID		A8802890	A8802891	A8802892	A8804696	A008641
<u>Primary</u>	<u>MCL</u>	Units				
Arsenic	0.05	mg/l				<0.005
Barium	1.0	mg/l				0.92
Cadmium	0.010	mg/l				<0.0005
Chromium	0.05	mg/l				<0.002
Cyanide		mg/l			<0.005	-
Fluoride	4.0	mg/l				0.35
Lead	0.05	mg/l	<0.005	<0.005	<0.005	<0.002
Mercury	0.002	mg/l				<0.0005
Nitrate	10.	mg/l				2.73
Nitrite	1.	mg/l				-
Nitrogen-Total	1.	mg/l				-
Selenium	0.01	mg/l				<0.005
Silver	0.05	mg/l				<0.005
Sodium	20.	mg/l				7.0
Turbidity	1.0	NTU				
<u>Secondary</u>						
Aluminum		mg/l				-
Chloride	250.	mg/l				12.0
Color	15.	units				-
Copper	1.0	mg/l				0.01
Corrosivity	range	L.I.				-
Iron	0.3	mg/l				<0.05
Manganese	0.05	mg/l				<0.05
Odor	3.	units				-
pH	6.4 - 8.5	units				7.5
Sulfate	250.	mg/l				4.0
Surfactants	0.5	mg/l				<0.010
TDS	500.	mg/l				113.
Zinc	5.0	mg/l				0.119
<u>Other</u>						
Alkalinity		mg/l				
Ammonia		mg/l				
Calcium		mg/l				
Hardness		mg/l				
Magnesium		mg/l				
Phosphate		mg/l				
Potassium		mg/l				
Silica		mg/l				
SpecificCond		mg/l				

Sample ID prefix identification
 A = Analytical Laboratories, Inc.

Contaminant Testing: Water samples have been taken as follows:
 Lucky Peak Nursery & Helitack Area

Date Collected	08/13/91	07/13/94	10/25/94
Date Analyzed	08/14/91	07/15/94	10/27/94
Sample ID	H015757	H9417574	H9429042

<u>Primary</u>	<u>MCL</u>	Units			
Arsenic	0.05	mg/l			<0.005
Barium	1.0	mg/l			<0.05
Cadmium	0.010	mg/l			<0.0005
Chromium	0.05	mg/l			<0.002
Cyanide		mg/l	<0.005		-
Fluoride	4.0	mg/l			0.17
Lead	0.05	mg/l			<0.05
Mercury	0.002	mg/l			<0.0005
Nitrate	10.	mg/l		2.15	3.08
Nitrite	1.	mg/l		<0.01	<0.01
Nitrogen-Total	1.	mg/l			-
Selenium	0.01	mg/l			0.015
Silver	0.05	mg/l			<0.005
Sodium	20.	mg/l			9.70
Turbidity	1.0	NTU			-
<u>Secondary</u>					
Aluminum		mg/l		0.23	0.22
Chloride	250.	mg/l			1.
Color	15.	units			<5.
Copper	1.0	mg/l			0.01
Corrosivity	range	L.I.			-
Iron	0.3	mg/l			<0.05
Manganese	0.05	mg/l			<0.05
Odor	3.	units			ND
pH	6.4 - 8.5	units			8.0
Sulfate	250.	mg/l			4.
Surfactants	0.5	mg/l			<0.050
TDS	500.	mg/l			122.
Zinc	5.0	mg/l			0.013

Other

Alkalinity	mg/l
Ammonia	mg/l
Calcium	mg/l
Hardness	mg/l
Magnesium	mg/l
Phosphate	mg/l
Potassium	mg/l
Silica	mg/l
SpecificCond	mg/l

ND = none detected

Sample ID prefix identification

H = Hibbs Analytical Laboratories, Inc.

Bacteriological History of Record: Lucky Peak Nursery & Helitack Area

<u>1975</u> 9@0 1@1	<u>1976</u> 3@0	<u>1977</u> 4@0	<u>1978</u> 10@0	<u>1979</u> 5@0	<u>1980</u> 2@0	<u>1981</u> 8@0	<u>1982</u> 10@0	<u>1983</u> 9@0	<u>1984</u> 10@0
<u>1985</u> 13@0	<u>1986</u> 10@0	<u>1987</u> 12@0	<u>1988</u> 12@0	<u>1989</u> 9@0	<u>1990</u> 14@0	<u>1991</u> 12@A	<u>1992</u> 13@A	<u>1993</u> 13@A 2@P	<u>1994</u> 12@A
<u>1995</u> 12@A	<u>1996</u> 12@A	<u>1997</u> 10@A 3@P	<u>1998</u> NR 9@A 1@P	<u>1999</u> 12@A					

A = absence of coliform bacteria.

P = presence of coliform bacteria.

NR = no record of any bacteriological testing having been performed.

History:

There is a photo-copy of an oblique photograph of the site in the files looking west dated April 1969 on which four different well sites are noted (Well #1 located southwest of the tree farm (**presently abandoned**), Well #2 located east of the nursery headquarters, Well #3 located east of well #2, and well #4 (**culinary**) located south of well #2.

Culinary Well:

A letter of January 10, 1962 recommended that a design for a domestic water system be rushed to completion. A 6" diameter well was suggested near an existing 12" well. It recommended a storage tank on the lava butte to provide gravity flow for domestic water and fire protection purposes.

A 1963 contract specified a 3 phase, 60 hertz, 440 volt, 5 horsepower submersible pump capable of delivering 20 gpm to the storage tank under the following conditions: Install inside 5" screen. Depth of well 221 feet. Pump setting of 218 feet. 1533 feet of 4" diameter asbestos-cement pipe between well and storage tank. Vertical lift from top of well to top of storage tank of 174.23 feet. Tank inlet in bottom of tank. Size of tank: 30 feet long and 117" in diameter. A lightning arrester at the well. A liquid level switch in the well for protection of the pump in the event of excessive drawdown of the water level in the well. A cable from the well to a float switch in the storage tank. Well within a 48" diameter CMP well pit. A 6" diameter steel casing extends 12" above the bottom of the well pit.

A quote was received on a new pump on September 21, 1998. The one with a "*" was Grundfos, 40 gpm, 7.5 horsepower, 460 volt, 3 phase, 400 feet lift (46 gpm at 40 psi, with a shutoff of 139 ____).

A letter of January 29, 1999 from Adamson Pump & Drilling Company of Nampa, Idaho transmitted pump performance curves and technical data for a Grundfos pump and motor installed October 13, 1998 (there are 14 possible curves - **the one installed was not noted**). Bottom of well 210 feet. Static water level was 120 feet. Pump installed on 2" diameter galvanized steel pipe at depth of 200 feet. Pumped

for 2 hours at 40 gpm with a drawdown of 7 feet. Possibly a 5 horsepower, 460 volts, 3 phase, Model 40S, or a 7.5 horsepower, Model _____.

According to the Well Driller's Report, the well was drilled between A & B, 19__ to a depth of __ feet by __ of __ by the rotary air method. **No Well Driller's Report was found.** The following was obtained from the files.

Well #4 - 6" diameter domestic well

<u>Depth</u>	<u>Material</u>
0 - 11	top soil
11 - 17	clay & granite sand
17 - 20	clay & granite sand with some large boulders
20 - 37	decomposed granite
37 - 50	shattered lava
50 - 90	lava - creviced
90 - 101	solid lava
101 - 120	lava cinders
120 - 178	lava creviced
178 - 190	granite sand & gravel
190 - 202	cemented sand & granite
202 - 208	decomposed granite
208 - 217	solid granite
180 feet of 6" casing	
182 - 192 Armco iron screen	

Irrigation Wells:

The following was obtained from the files.

A test well was drilled between November 10 & 19, 1959 (12" irrigation well)

Well #_

<u>Depth</u>	<u>Material</u>
0 - 16	clay & large boulders
16 - 47	clay & large boulders
47 - 87	lava rock
87 - 90	lava rock
90 - 110	lava rock
110 - 113	lava rock
113 - 142	granite, sand and clay
142 - 150	granite
150 - 175	granite

A small gasp of water at 45 feet, this seep would yield approximately 7 gallons per hour. After a depth of 87 feet was reached, a 6" diameter pipe was placed in the hole.

Well test of June 8, 1960

Pumped for 24 hours, flow rate varied between 800 and 867 gpm

Water level went from 116 feet down to 127 feet (drawdown of 9 feet), recovery time of 6 minutes.

A specification attached to a letter of April 9, 1962 specified a submersible pump with approximately 380 feet of 6" discharge column be installed at the lower end of an existing inclined casing along the slope of Lucy Peak Reservoir. It specified an 8" diameter, 23 stage, 60 horsepower unit capable of discharging 400 gpm against a total dynamic head of 460 feet.

A visit to the site on April 10, 1969 with a follow-up report and sketch of April 14, 1969 and an accompanying oblique aerial photo (noted above) by Mineral Surveys, Inc of Salt Lake City, Utah indicated irrigation water for the nursery was provided by 3 wells plus a pipeline from the adjacent Lucky peak Reservoir. It indicated approximately 25 acres of land are under cultivation in 13 separate fields and a permanent sprinkler system is installed throughout.

The report indicated the irrigation wells within the nursery **are essentially tapping the reservoir** through the gravels lying on top of the granite. The granite is relatively impermeable, as is the basalt, and the only permeable material is the interformational sand and gravel. When the lake level is up to the level of the gravel in the wells, the wells yield water. When the lake level is below the level of the gravel in the wells, the wells do not yield water. The report indicated well logs were available at that time for well #1, 3 & 4. It indicated that well #3 yields 800 gallons per minute when the lake level is high.

An additional field study of May 6-8, 1969 resulted in a report dated June 6, 1969 which indicated that the best location for a new well would be "near the indicated axis of the buried Boise River Channel as shown on Plate III. This would be 150 feet north of station 20 on line 9. That is about 400 feet northeast of well #3. Since the location of the wells was taken from a sketch map provided by the writer, and has not been precisely tied in with the gravity grid, the well site should be located relative to station 9-20 on the gravity grid".

A March 31, 1970 letter in the files indicated there were 3 completed wells on site and that a test well recently drilled should be test pumped. The test well was cased with 10" diameter steel casing to 26 feet, 6" steel casing from 26 feet to 220 feet, and 5" diameter steel factory perforated (1/8"x3" slots) from 220 feet to 253 feet. It was noted that the top 18 feet of the well was not sealed in accordance with state standards. It stated the well log indicated an aquifer of approximately 60 feet depth was lying below a formation of hard lava rock and above a cemented gravel formation. The recommendations at that time were: The water level in the 3 other wells be monitored during the test. And the water level of Lucky Peak Reservoir should be recorded at intervals during the test.

A letter of August 6, 1970 in the files states that a 75 or 80 horsepower submersible pump with 8" diameter column piping with a performance of 450 gpm against a head of 530 feet was being approved.

A sketch in the files shows a 16" diameter hole to a depth of 147 feet with 12" diameter hole from 147 feet to 270 feet, with 12" diameter casing from surface to depth of 250 feet with 6 feet of strainer below pipe.

According to the Well Driller's Report, the well was drilled between A & B, 19__ to a depth of __ feet by __ of __ by the rotary air method (not enough information is available on any of the wells to provide this information).

The following was obtained from the files:

Well #__

<u>Depth</u>	<u>Material</u>
0 - 4	
4 - 14	
14 - 25	
25 - 140	
140 - 160	
160 - 200	
200 - 210	
210 - 223	
223 - 253	Cemented

223 - 253 drilled open hole then set 5" perforated line.

(Test well)

Well #__

<u>Depth</u>	<u>Material</u>
0 - 147	16" hole
147 - 224	sand & gravel
224 - 240	hard white sandstone
240 - 247	grey sandstone with some clay
247 - 254	grey basalt
254 - 260	cemented gravel & sand, but not firmly cemented
260 - 270	sand partially cemented

Well #3 - 12" irrigation well

<u>Depth</u>	<u>Material</u>
0 - 2	top soil
2 - 16	sand & gravel
16 - 152	lava rock - broken
152 - 176	gravel & sand mixed with clay
176 - 201	gravel with clean sand
201 -	granite bedrock

20 feet of well screen: Upper 10 feet 10 slot; Lower 10 feet 20 slot.

The following was obtained from a Drawing of Boise Nursery Well Logs dated December 7, 1961

Well #1 Surface elevation of 3225 feet. **Capped and not used.**

<u>Depth</u>	<u>Material</u>
0 - 47.5	clay with boulders
47.5 - 114	basalt
114 - 143	quartz monzonite, sand & clay
143 - 176	monzonite

Well #_ Surface elevation of 3147 feet

<u>Depth</u>	<u>Material</u>
0 - 4	topsoil
4 - 14	hard pan
14 - 25	dry gravel
25 - 140	hard lava rock
140 - 160	broken rock
160 - 200	coarse sand & gravel
200 - 210	boulders
210 - 223	sand & coarse gravel
223 - 253	cemented gravel

Pump installed in 1971. Pump replaced 2/17/84.

Static water level was 136 feet from the top of casing.

199 feet of pipe, 5.5 feet of pump & motor for total depth of 204.5 feet. Pump Model # SP4-36.

Electrodes for liquid level control: Bottom/Shut-off (1 foot above pump)
Top/Reset (15 feet above pump)

Pump repaired on 11/8/84. On 4/15/84 pump was moved from a depth of 247 feet to a depth of 237 feet.

Well #4 - Water level at 136 feet. Surface elevation of 3175 feet

<u>Depth</u>	<u>Material</u>
0 - 11	top soil
11 - 20	clay & gravel & sand
20 - 23	clay and gravel sand with large boulders
23 - 37	decomposed granite
37 - 178	basalt
178 - 190	monzonite sand with sand
190 - 217	monzonite

Well #2 Surface elevation of 3150 feet

<u>Depth</u>	<u>Material</u>
0 - 2	topsoil
2 - 16	sand & gravel
16 - 152	basalt
152 - 176	sand & gravel mixed with clay
176 - 201.5	gravel with clear sand
201.5 - 216	monzonite

From the data reviewed for wells, it is not known for sure to which existing well the data applies. Additional research is needed to sort out what actually exists for the wells.

Description of System/Comments:

When entering the nursery area, after turning off Idaho highway #21, go south approximately 700 feet. Where the paved road makes a 90° turn to the left (east to towards the nursery headquarters area), veer to the right and proceed south on a gravel road towards the west most nursery residence and two trailers (approximately 700 feet), then on farther along the road to the "Helitack area". From the turn, it is approximately 900 feet to the nursery headquarters area.

The culinary well is located approximately 730 feet east and 390 feet south of the northwest corner of the warehouse/shop building. The well is within an 8'2" square (outside) frame pumphouse which has a metal roof. There is no access through the roof through which to remove the pump.

There is a power pole approximately 6 feet northeast of the pumphouse. The power line runs north northeast approximately 175 feet then angles to the northeast approximately 140 feet to a pole (from which power is routed west southwest approximately 45 feet to a 75 horsepower Gould vertical turbine irrigation pump); then approximately 250 feet to a pole (from which power is routed to another irrigation pump); then the line goes northeast approximately ____ feet to a pole (from which power is routed to an inclined well {within a CMP down the side of the hillside into the reservoir} to another irrigation pump); then the line, which carries only control wires, angles uphill for approximately ____ feet to near a storage tank. From the pumphouse, existing plans show that a control circuit is routed via overhead wires on the power poles approximately ____ feet northeast, then approximately ____ feet north, then approximately ____ feet west (a total of approximately 2000 feet to a pole located ____ approximately ____ feet from the storage tank. There is reference to a 135 volt d-c control circuit; but at the site reference was made to a 24 volt a-c circuit. From weatherheads on the pole near the pumphouse, conduits (1/2" & 1") are routed downward into a Square "D" Well Guard pump control panel.

Centered in the pumphouse floor is a 48" diameter by 44" deep CMP well pit, which extends 2-1/2" above the floor. There was an inch or so of water ponded in the bottom of the well pit, which had saturated insulation material in the bottom. A 6" diameter steel casing extends 12" above the bottom of the well pit. The well casing is provided with an interior split type sanitary well seal. There are three openings in the well seal (1/2" hole for electrical control, 3/4" hole for electrical supply, 2" hole for riser pipe). From the pump control panel on the power pole, two conduits (1/2" & 3/4") are routed down to the ground and then routed to the pumphouse. About 23" below the top of the CMP, a 3/4" diameter rigid steel conduit enters the wet well to a flexible steel conduit which is routed to an adapter, nipple, conduit (wrapped with electrical tape for a cover), nipple, 3/4"x1/2" bell reducer, nipple, coupling, nipple into 1/2" diameter hole in sanitary well seal (low level shutoff & reset). About 23" below the top of the CMP, a 1" diameter rigid steel conduit enters the wet well to a flexible steel conduit which is routed to an adapter, nipple, conduit, nipple, 1"x3/4" bushing, nipple, coupling, nipple, into 3/4" hole in sanitary well seal (power).

The pipe from the submersible pump rises through the interior split type sanitary well seal to 2" tee "A". From the top of tee "A" is a 2"x1-1/2" bushing, 1-1/2"x1" bushing, nipple, 1" tee "B". From the side of tee "B" is a 1"x3/4" bushing, 3/4"x1/4" bushing, pressure gage. From the top of tee "B" is a 1"x3/4" bushing, nipple, 3/4" curb valve, nipple, pipe to hose adapter (with open hole upward). From the side of tee "A" is a 2"x1-1/2" bushing, nipple, 1-1/2" swing check valve, nipple, elbow (downward), nipple, union, nipple, elbow, nipple, 1-1/2" tee "C". From the side of tee "C" is a 1-1/2"x3/4" bushing, nipple,

3/4" elbow, nipple, 3/4" gate valve, then a 3/4" diameter steel drain pipe exits to the south. Once outside the pumphouse, the 3/4" diameter drainline is routed approximately 60 feet southeast to where a 3/4" diameter galvanized steel riser extends ___" above ground to a faucet located in the bottom of a cat-tail filled ditch adjacent to a red steel post. The riser to the faucet may be from a tee in the drainline, and the drain routed farther to an end; but the vertical riser to the faucet is believed to be the end of the drain. (Also, see "Vulnerability/Surface Water Assessment").

From the well pit, a 4" diameter asbestos-cement line is routed north approximately 390 feet to a point approximately 50 feet northeast of the northeast corner of the alfalfa field (beneath the east-west overhead powerline which supplies power to the pumps at 3 irrigation wells and the culinary water well), to 4" tee "D".

From tee "D", a 4" diameter asbestos-cement line is routed approximately 1118 feet northerly to a 4" gate (control) valve within a 55 gallon steel barrel type valve box provided with a clamp on type barrel lid which is nearly flush with the ground (we did not look inside). From the control valve, a 4" diameter galvanized steel line is routed approximately 25 feet uphill to a 16,750 gallon buried horizontal cylindrical steel storage tank. The top portion of the south end of the storage tank is exposed. The storage tank is provided with a 24" diameter manway which extends 4-1/2" above the storage tank to a flange with 38 holes. The manway is provided with a 28" diameter flat steel lid (no gasket) which is secured with only 8 bolts. Welded to the top of the access manway lid are two 3/4" angle iron which extend 24" high. A 6"x6" junction box is secured to the angle iron supports at the top. A 3/4" diameter steel conduit is routed from the wood pole, located approximately ___ feet to the east, to the storage tank where the conduit rises out of the ground near the manway. From there, the conduit is routed across the lid then upward to the bottom of the junction box. From the junction box, a 3/4" diameter flexible conduit is routed to a 3/4" diameter rigid steel conduit routed vertically downward into a threaded fitting through the lid into the storage tank (to a mercury float). Both ends of the flexible conduit are open and insects and any precipitation may enter into the storage tank.

The tank area is covered with sagebrush. Approximately ___ feet north of the access manway, there is a 2" diameter galvanized steel vent pipe which extends 30" above ground to a 2"x1-1/2" bell reducer, nipple, 1-1/2" tee with open ends with a window type screen wrapped over the entire tee and secured with wire. The storage tank is said to be cleaned and disinfected yearly.

From the south end of the storage tank, a 1-1/2" diameter galvanized steel overflow pipe is routed approximately 40 feet south southwest (to a point approximately 18 feet southwest of the main line control valve box) to where the last 24" is exposed on the hillside. On the end of the overflow pipe is an elongated cap with the bottom portion cut out (no screen). Insects, rodents, and snakes could enter the storage tank via the overflow pipe. There is a hinge mechanism welded to the cap which has an 8" diameter flat piece of metal (flag) on one end, and which has a 6" diameter by 8" deep bucket with a small drain hole in the bottom of the other end. When operating the pump manually, once overflow occurs, water from the overflow line fills the bucket, which lowers and in so doing raises the metal flag which can be seen from the office. This indicates the storage tank is full. When the pump is shut-off, the water ceases to enter the bucket. Then water drains from the bucket allowing the bucket to rise thus lowering the flag.

Water, from the storage tank, flows back through the supply pipe as far as tee "D". From tee "D", a 4" diameter asbestos-cement line is routed approximately 250 feet west just south of the east-west overhead powerline to 4"x4"x__" tee "E".

From the side of tee "E" is a nipple to a __" curb (**control** - hopefully not a stop & waste) **valve** (within a 6" diameter aluminum pipe type valve box which extends 2" above ground, covered with a coffee can). From the side of the valve, a __" diameter __ line is routed north under the road approximately __ feet to the east end of the pesticide building, then is routed into the **pesticide building**. It was **reported** there is a backflow preventer within the building plumbing.

From the end of tee "E", a 4" diameter asbestos-cement line is routed approximately 20 feet west to 4"x4"x2" tee "F". From the side of tee "F" is a nipple to a 2" curb (**control**) valve (within an 18" diameter CMP type valve box which extends 1" above ground provided with a flat plywood lid - there is a second plywood lid inside near the bottom - for frost protection), which is 26" below the top of the valve box. From the valve is a nipple, 2"x2"x1/2" tee "FA". From the side of tee "FA" is a nipple, 1/2" gate valve (**open end drain**) **in mud**. From the end of tee "FA" is a nipple, compression type coupling; then a 2" diameter galvanized steel lateral is routed north under the road along the east edge of the wide driveway toward the pesticide building approximately 45 feet to an elbow; then a 2" diameter galvanized steel pipe extends 27" above ground to the side of 2" tee "FB". From one end of tee "FB" is a 2"x3/4" bushing, faucet to a garden hose. From the other end of tee "FB" is a nipple, 2" ball valve, nipple, pipe to hose adapter to a **fire hose**.

From the end of tee "F", a 4" diameter asbestos-cement line is routed approximately 330 feet west, just south of the east-west overhead power line, to the west end of the parking/road area to a trash rack location. From the location of the trash rack, a 4" diameter asbestos-cement line is routed approximately 138 feet west, along the back (north) side of the warehouse/shop building, to 4"x3"x3" tee "G" located approximately 8 feet west of the west end of the warehouse/shop building. From the side of tee "G", a nipple is routed to a 3" gate (**control**) valve (within a 6" diameter asbestos-cement pipe type valve box which extends 3-3/4" above the asphalt pavement surface behind {north of} a steel supply rack) located approximately 8 feet west and 1 foot south of the northwest corner of the warehouse/shop building. There is **no lid** for the valve box - a tee type valve wrench was extending above the top of the valve box.

From the control valve, following the nipple from the side of tee "G", a 3" diameter asbestos-cement line is routed south to _____ buildings. **The layout (location, type, and sizes) of this piping is unknown.**

From the end of tee "G", a 3" diameter asbestos-cement line is routed west approximately 20 feet to a 3" gate (**control**) valve (within a 6" diameter asbestos-cement type valve box which extends 11" above ground, 18" above bottom of adjacent drain ditch) located approximately 28 feet west and 8 feet north of the northwest corner of the warehouse/shop building. There is **no lid** for the valve box - a tee type valve wrench was extending above the top of the valve box.

NOTE: The **drain ditch** is routed east-west along the side of the paved entrance road, along side the power line, and along side the north side of the warehouse/shop building to a trash rack previously mentioned. The trash rack is over the end of the entrance into an 18" diameter CMP which is routed under ground and exists approximately 225 feet east on the north side of the gravel road as an 8" diameter asbestos-cement pipe into a ditch which goes northeast.

From the valve, located 28 feet west and 8 feet north of the northwest corner of the warehouse/shop, a 3" diameter asbestos-cement line is **believed to be routed** approximately ___ feet southwest, to a point between the office building and the residence building to the south, to 3"x3"x_ tee "H". From the side of tee "H" is a **lateral to the office**. There is a thru-the-wall type frost free faucet approximately 2 feet south of the stoop at the east entrance to the office (with hose to sprinkler). Also, there is a thru-the-wall type frost free faucet approximately 4 feet north of the west stoop of the office building.

From the end of tee "H" is a nipple to 3"x3"x_ tee "I". From the side of tee "I" is a **lateral to the residence**. It was **not noted if** there were thru-the-foundation type frost free faucets at the adjacent residence. From the end of tee "I" is a nipple to 3"x3"x_ tee "J". From the side of tee "J" is a nipple to a point approximately 55 feet south and ___ feet west of the southeast corner of the office building to a 6" diameter 14" deep asbestos-cement pipe type valve box **without a lid** which extends 1" above ground. The end of the drain is **believed to be** slightly **below ground** level in a ditch on the hillside approximately 5 feet south southwest of the valve box.

In the vicinity of the office, there were many hydrants **reportedly** connected to the on-site irrigation systems. There were 3/4" diameter galvanized steel pipes which extend approximately 24" above ground to the side of tees (with nipple and faucet from each end) at the following:

Hydrant 40 feet south, 3 feet east of southeast corner of office; across parking area to west of location of a large septic tank between buildings on the east side of the parking area; and others). Approximately 95 feet west of the west side of the office building, just south of the paved road, is an 18" diameter 48" deep aluminum CMP type valve box which extends 7" above ground which is provided with a flat plywood lid. Inside at the bottom is a riser to an elbow, nipple, 1-1/4" curb valve, nipple, elbow, riser upward to 28" below the top of the CMP to an elbow, nipple, 1-1/4"x1-1/2" bell reducer, then 1-1/2" galvanized steel pipe exits to the southeast approximately 8 feet to a 3/4" riser 24" above ground to a tee (nipple and faucet - each side). Approximately 15 feet farther to the southeast is a 3/4" riser, which extends 21" above ground to a coupling, nipple, 3/4" ball valve, nipple, 3/4"x1/2" bell reducer, to a sprinkler head.

From south of the office, it is **unknown** if the 3" diameter asbestos-cement line is routed northwest approximately ___ feet, then approximately ___ feet west, then approximately ___ feet southeast to the rear of the west residence **along a fence line**; **OR** if the line is routed northwest approximately ___ feet to the edge of the entrance road, then approximately 375 feet west **along side the entrance road**, then approximately ___ feet southwest to the rear of the west residence (total of approximately ___ feet).

It is approximately 110 feet, south of the Nursery Site entrance road gate post, to the southeast corner of the west residence yard, then approximately 50 feet west southwest to the south end of a fence which goes north to a shed.

On the main line near the rear of the west residence is 3"x3"x_ tee "K". From the side of tee "K", a _" diameter ___ line is routed to the west residence. There is a thru-the-foundation type frost free faucet at both the front and rear of the west residence.

Around the west residence, there are many 3/4" diameter galvanized steel pipes which extend approximately 30" above ground to the side of tees (with nipple and faucet from each end) - all **said to be** supplied from the on-site irrigation systems. They are located at the following:

Hydrant located 20 feet south of gate post east of residence; 20 feet south southwest of southeast corner of residence yard; 20 feet south of fire hydrant (also 24"x60" watering trough); 80 feet north of southwest corner of residence yard.

From the end of tee "K" is a nipple to 3"x3"x__" tee "L". From the side of tee "L" is a nipple to a point located approximately 60 feet west of the south end of the fence line which connects to the shed, approximately 20 feet north of the rear fence line. At that point, there is a 5" diameter asbestos-cement pipe type valve box with a 7" diameter coupling at the top, which extends 9" above ground - no lid). From the valve is a nipple to a 2" diameter pipe riser (believed to be a stop & waste type valve - like old type yard hydrant without a nozzle) with a removable cover (filled with hornets) which extends __" above ground. From the stop & waste valve is a nipple to an elbow, then a 2" diameter galvanized steel pipe extends __" above ground to an elbow, nipple, pipe to hose adapter and cap. Adjacent is a fire hose cabinet secured to two unistrut posts. From a point south of the fire hydrant, it is roughly 80 feet south southwest to the southwest corner of the residence yard.

From the end of tee "L", located behind the west residence, the 3" diameter asbestos-cement line is believed to be routed southwest. The line is believed to intercept the road to the helitack area approximately 200 feet south from the gate near the beginning of the gravel road - but it could be as far as 350 feet. From the point of interception, the 3" diameter asbestos-cement line is routed up the gravel road approximately 425 feet (possibly 275 feet) southwest to 3" tee "M".

From the end of tee "M", the 3" diameter asbestos-cement line is believed to be routed a few feet to 3"x3"x__" tee "MA". From the side of tee "MA", a __" diameter galvanized steel lateral is routed to the old residence. It was not noted what type or how many yard hydrants were located around the residence. From the end of tee "MA", it is believed a 3" diameter asbestos-cement line is routed (west) a few feet to 3"x3"x__" tee "MB". From the end of tee "MB", it is believed a 3" diameter asbestos-cement line is routed (west) to a point roughly 20 feet just inside the fenced yard of the dwelling to a __" valve (within a 6" diameter concrete pipe type valve box {open top} which extends 6" above ground). From the valve is a nipple to a 2" diameter pipe riser (like an old style yard hydrant without a nozzle) believed to be a stop & waste type valve), which extends 28" above ground. From the stop & waste valve is a nipple to an elbow, then a 2" diameter galvanized steel pipe extends 44" above ground to an elbow, nipple, pipe to hose adapter and a cap. Adjacent is a fire hose cabinet secured to two unistrut posts.

From the side of tee "MB", it is believed a __" diameter __" line is routed southwesterly approximately __ feet to __" tee "MC". From the side of tee "MC", is a nipple to a __" curb valve located just south of the south fence of the old residence between a steel truck body used as a shed and a propane tank (within an 18" diameter, 36" deep CMP type valve box which extends 13" above ground provided with a flat plywood lid). There is a second plywood lid inside near mid-depth (for frost protection). This may be the line which supplies the old residence and not a line from tee "MA" as previously noted. From the end of tee "MC", it is believed a __" diameter __" line is routed westerly approximately 45 feet to __"x__"x__" tee "MD". From the end of tee "MD" is a nipple to a __" curb valve, located about 5 feet south of a power pole and 3 feet north from a large tree (within an 18" diameter 28" deep CMP type valve box with the top flush with the lawn provided with a flat plywood lid. From the curb valve following tee "MD", a __" diameter __" line is routed _____. From the side of tee "MD", it is believed a __" diameter __" line is routed southerly approximately 160 feet to __"x__"x__" tee "ME". From the side of tee "ME", a

__" diameter __ line is routed to the north trailer (under a shelter). The trailer has a thru-the-skirt frost free type faucet on both the west and east sides each located roughly 12 feet north of the south end.

NOTE: The sewer line for the north trailer is routed out the west (back) side near the location of the faucet; then is routed north to a septic tank located approximately 20 feet north and 8 feet west of the northwest corner of the trailer. From the septic tank, effluent is pumped southwest to a drainfield.

There is roughly 30 feet distance between the north and south trailers. From the end of tee "ME", a __" diameter __ line is routed approximately __ feet southerly to __"x__" tee "MF". From the side of tee "MF" is a __" diameter nipple to an Iowa-Woodford frost free type hydrant which extends 32" above ground, located approximately 50 feet north of the south end of, and approximately 15 feet east (in front of) the south trailer. On the end of the hydrant nozzle is a wye (**no vacuum breakers**) with two hoses attached. From the end of tee "MF" is a nipple to __"x__" tee "MG". From the side of tee "MG", a __" diameter __ line is routed to the south trailer.

NOTE: Approximately 150 feet south of the south trailer is a barn/storage shed (no water). The sewer line for the south trailer is routed out the __ side, then is routed south to a septic tank located approximately 60 feet south of the trailer (along a line between the trailer and barn). From the septic tank, the effluent is routed towards the barn to a drainfield.

From the end of tee "MG" is a nipple to a curb valve (within a 6" diameter aluminum pipe type valve box which extends 7" above ground) located 18" south from the Iowa-Woodford hydrant. From the curb valve following tee "MG", a __" diameter __ line is **said to be** routed easterly across the drainage bottom approximately 250 feet to a faucet at a corral. **None of this lateral was observed.** There has to be a drain for this line at the drainage bottom "low point" located _____. This line is **reportedly no longer used.**

From the side of tee "**M**" is a nipple, to a 3" gate (**control**) valve (within a 7" diameter buffalo type cast iron valve box which is flush with the gravel surface of the parking area) located approximately 20 feet west of the road, and approximately 20 feet east of the fence in front of the old residence in line with the south side of the old residence. From the end of the valve, following tee "M", is a steel to polyethylene adapter. From there, a 3" diameter high density polyethylene line is routed southerly.

NOTE: Approximately 80 feet south southwest of the control valve following tee "M" (approximately 25 feet south and 30 feet east of the 18" diameter CMP valve box following tee "MC" (by the truck body used as a shed) is a steel post through a rubber traffic cone which is said to be the location of the **septic tank** for the old residence - the location of the drainfield is **unknown**. The new 3" diameter polyethylene line for the helitack area was routed within approximately 15 feet below the septic tank - it may have disturbed effluent piping.

From the vicinity of the septic tank location, the new 3" diameter polyethylene line is routed southwesterly. It passed under the fence approximately 75 feet south southwest of the steel post. From there, the 3" diameter polyethylene line is routed southerly approximately __ feet to a "high-point", located roughly 15 feet east of the pole fence, east of the midpoint of the south trailer, to 3"x3"x1" tee "N".

From the side of tee "N", a 2" diameter galvanized steel line is routed a few feet to a 2"x1" bell reducer; then 1" diameter galvanized steel pipe is routed a few additional feet (total of approximately 15 feet) to a

frost free Iowa-Woodford hydrant which extends 36" above ground just east of the pole fence east of the mid-section of the south trailer house.

From the end of tee "N", a 3" diameter polyethylene line is routed approximately 140 feet southeast, where it crosses over the top of the west end of a 36"x66" arch CMP culvert (which goes under the road), to 3"x3"x₁" tee "O". From the side of tee "O", a ₁" diameter nipple is routed southwest to a ₁" curb valve (within a 4" diameter 18" deep galvanized steel pipe type valve box without a cap which extends 2" above ground at the edge of a loose gravel side slope, located 9 feet southeast of west end of the culvert. The valve box could easily be filled with gravel, which would require the box to be dug up to operate the valve. From the valve, a ₁" diameter galvanized steel drain line is routed a couple feet and terminates within gravel fill near the edge of the drainage bottom approximately ₁ feet south of the west end of the culvert.

NOTE: From the location of the drain valve following tee "O", roughly 100 feet north along the road approximately 8 feet east of the road is a 6" diameter steel casing which extends 14" above ground with a flat steel plate welded on top. This is Lucky Peak Nursery well (#), which is no longer used.

From the side of tee "O", a 3" diameter polyethylene line is routed southeasterly along the southwesterly side of the road approximately 80 feet to a fence line. From the fence location, a 3" diameter polyethylene line is routed up along side the inside shoulder of the road approximately 370 feet; then veers off the right then up along an access road approximately 690 feet to a polyethylene to steel adapter just prior to a 30" diameter 48" deep CMP type valve box, enclosure "AA", which extends ₁" above ground, and which is provided with a flat plywood lid.

Within enclosure "AA", a 3" diameter galvanized steel pipe connects to 3" tee "P", nipple, 3"x3"x1" tee "Q". From the top side of tee "Q" is a nipple, 1" ball valve, nipple, APCO #142 air & vacuum valve. From the top of the air & vacuum valve is a nipple, 1" elbow, 1" street elbow (downward) (no screen). The end of the vent pipe is 26" below the top of the CMP. From the side of tee "Q" is a nipple, 3" check valve. From the end of the check valve within enclosure "AA", a nipple exits the enclosure to a union, nipple, 3" tee "R".

Note: An air & vacuum valve will let air out while the line is filling, and will let air in when the line is draining; but it will not let air out, which accumulates while the system is in operation. That feature is accomplished by an air release valve. If both features are wanted, a combination air release valve is required.

From tee "R", a 3" diameter galvanized steel line is routed approximately 25 feet to a 15,000 gallon buried horizontal cylindrical stainless steel storage tank. The storage tank is provided with two 48" high 30" diameter steel manways with a flange at the top (with 27" diameter opening) which extends 43" above ground. Each manway is provided with a galvanized steel hatbox type lid (no gasket) with two handles with a 2-1/4" overhang. Each lid has a 1/2" diameter stud bolt welded in the top center upward. Each manway is provided with a locking mechanism which consists on one end of some ears with a hinge pin to which a 3-1/2"x1" channel locking bar is attached. On the other side of the manway are some ears with a bolt. The locking bar is suppose to lay across the top of the manway lid (the 1/2" bolt in the center projects through the locking bar to a wing nut which is tightened. As the wing nut is tightened, the lid is raised to the bar, rather than pushing the lid down to the top of the manway. The

end of the bar is then bolted down to the other ear. The south lid could not be removed so it is unknown if there are any problems other than no gasket. The north lid could not be secured in place because the ears on each side were welded onto the manway too high and the lid could not be lowered onto the manway.

Most of the tank is placed above natural ground level and mounded over, rather than all of the tank below ground level as is the normal practice. It was reported that the tank, up to the spring line (mid-depth), was lightly compacted, then above that the fill material was placed without any compaction other than that provided by the excavation equipment (normally very minimal compaction). As can be seen, it was poor improper compaction. There are cracks developing in the earth along the ends of, and sides of, the tank up to 3/4" wide.

The storage tank is provided with a 2" diameter aluminum vent pipe which extends 62" above ground to two 90° elbows welded together on top of vertical pipe to form a return bend (Alascop 2" sch 40S, WP-302L, LR90, A403 heat V81040367 - poor welds not fully sealed). There is a flat plate on the end of the return bend with many 1/8" diameter holes. At the point where the aluminum pipe is threaded into the stainless steel tank, it is a future cathodic corrosion problem.

Magnesium anodes (which are a sacrificial material) are normally attached to a steel storage tank to prevent, or at least reduce the rate of, corrosion (rusting). They are to be replaced periodically. It is not known if any magnesium anodes were installed at his site.

At the north end of the storage tank, the top edge of which is exposed, the overflow exists within inches of the top approximately 5" to a flange, flange, nipple, 3" elbow downward.

Approximately 12 feet north of the north manway (10 feet from the end of the exposed end of the storage tank) is a 5" diameter cast iron type valve box (with lid secured with a penta nut) which extends 4" above ground (over drain valve). From the storage tank is a 3" overflow and a 2" drain. The end of each is terminated at ground level approximately 65 feet north of the drain valve (22 feet north below the road to the powder "explosive" sheds to the northwest). On the end of the 2" diameter galvanized steel drain line is a 6" diameter, 4" long suction strainer (type with 3/8" diameter holes) covered with 1/4" mesh secured with hose clamps. On the end of the 3" diameter galvanized steel overflow line is a 7" diameter, 5" long suction strainer (type with 3/8" diameter holes) covered with 1/4" mesh secured with hose clamps. There was a discharge of roughly 1/4 gallon per minute going over overflow. When the new storage tank was installed, the overflow level of the tank was set at the same elevation as the overflow from the old storage tank.

From the storage tank, water is routed (supply and distribution are the same line) back to tee "R". From the side of tee "R" is a nipple, 3" tee "S". From the side of tee "S" is a nipple, bolted compression "dresser" type coupling, nipple, 3" gate valve (within enclosure "AA"), nipple, 3" elbow, nipple to side of tee "P". From the end of tee "S" is a nipple into enclosure "BB". Within enclosure "BB", the nipple enters to 3" gate valve, nipple, 3"x3"x1" tee "T". From the top side of tee "T" is a nipple, 1" ball valve, nipple, APCO #142 air & vacuum valve. From the top of the air & vacuum valve is a nipple, 1" elbow, 1" street elbow downward (no screen). The end of the vent pipe is 25" below the top of the CMP. From the end of tee "T" is a nipple, union, then 3" galvanized steel pipe exits enclosure "BB".

Adjacent to the two 30" diameter CMP enclosures "AA & BB" is an 18"x22" steel box with a 13"x18" flush steel lid secured with a hex head nut (splice box for electrical supply to the helitack area) which rises 4" above ground.

Once outside enclosure "BB", there is a steel to polyethylene adapter. From the adapter, a 3" diameter polyethylene line is routed southerly until it intercepts the new access road, then it follows down along the inside shoulder of the access road southerly to 3"x2"x2" tee "U" located at the upper southwest corner of the new helitack building pad area (a total of approximately ___ feet from tee "T" to tee "U"). From the side of tee "U" (within an excavation - **Point "A"**), is a nipple, 2" gate valve, nipple, union, with a buffalo type valve box and 2" single nozzle Eclipse **fire hydrant** laying nearby (52" from base of hydrant to 2" inlet at bottom; 67" inlet to nozzle). From the end of tee "U", a 2" diameter galvanized steel pipe is routed east southeast approximately ___ feet to 2"x2"x___ tee "V". From the side of tee "V", a ___" diameter ___ line is routed ___ approximately ___ feet (to a point approximately 50 feet east northeast of point "A") to a 1" galvanized steel riser which extends 22" above ground to union, nipple, 1"x3/4" bell reducer, then a threaded steel to copper adapter to underside of **trailer**.

Approximately 130 feet east southeast of point "A" is a pad mount electrical transformer.

Approximately 75 feet east southeast of the transformer is an excavation (**point "B"**). From the end of tee "V", a 2" diameter galvanized steel line is routed east southeast approximately ___ feet to 2" tee "W" located at point "B". From the side of tee "W" (within the excavation) is a nipple, 2" gate valve (with 7" diameter cast iron buffalo type valve box), nipple, union, nipple (with a 2" single nozzle Eclipse **fire hydrant** laying nearby). From the end of tee "W" is a nipple east southeast to 2" tee "X". From the side of tee "X" a ___" diameter galvanized steel line is routed ___ approximately ___ feet (to a point located approximately 12 feet south southeast of point "B") to an Iowa-Woodford frost free **hydrant** which extends 48" above ground.

From the end of tee "X", a 2" diameter galvanized steel pipe is routed east southeast about 105 feet (to a point approximately 20 feet north of the west end of an 18" diameter culvert under the road), then east about 220 feet (to a point in line with the road around the south end of the helipad area) to an elbow. From the elbow, the line is routed north approximately ___ feet to ___" tee "Y". From the side of tee "Y", is a nipple to an Iowa-Woodford frost free **hydrant** which extends 46" above ground (south hydrant located approximately 90 feet south of a pad mount transformer, 65 feet west of the center of the south helipad spot on the west side of the helipad area). The hydrant has a pipe to hose adapter on end (**no vacuum breaker**).

From the end of tee "Y", a ___" diameter ___ line is routed north approximately 180 feet to ___" tee "Z". From the side of tee "Z" is a nipple to an Iowa-Woodford frost free **hydrant** which extends 46" above ground (north hydrant located approximately 90 feet north of the pad mount transformer, 65 feet west of the center of the north helipad spot on the west side of the helipad area). The hydrant has a Watts 8A hose bibb vacuum breaker on the spout.

From the end of tee "Z", a ___" diameter ___ line is routed around the north end of the helipad area, approximately 145 feet from the north hydrant, to a ___" curb valve (6" below the top of a 2" diameter polyethylene valve box which extends 2" above ground, by a steel post, - **no lid**). About 15 feet east of the valve, a 1-1/2" diameter steel pipe is exposed for 8" to a 4-1/2" diameter by 3-1/2" long perforated strainer (type with 3/8" diameter holes covered with 1/4" mesh secured with hose clamps) at **ground level**.

Vulnerability/Surface Water Assessment:

It is not known if a contaminant subject to being tested (pesticides, VOC's, etc.) has been used, stored, or disposed of in the area, which contributes to the source. If one has, the source may be susceptible to contamination from that contaminant.

There is a drain ditch, which carries excess irrigation water from the fields to the north and west, which is routed south approximately 15 feet west of the pumphouse to a point 15 feet south of the pumphouse then is angled east southeast, then goes east approximately 25 feet south of the pumphouse toward the reservoir.

Cat-tails are in the drain ditch along the west side of the pumphouse for approximately 50 feet. At the north 20 feet of the cat-tails, on the west side of the ditch, there is a grassy meadow area in the alfalfa field, which extends approximately 375 feet west to the building area. The meadow area varies in width from 20 to 50 feet. The upper end of the meadow area is approximately directly east of the septic tank for the complex which is located in the grass area between the south building and the large main building. On west the side of the ditch, approximately 3 feet south of the north end of the cat-tails is a 2" diameter galvanized steel pipe which enters from the west from the alfalfa field (flowing approximately 1 gallon per minute). I was told by Dale Swearingen, there is an old hand-dug well (maybe 15 feet deep) which is buried, from which the pipe exits. It is not known how far west of the ditch the well is located. This situation is of some concern because of the potential for surface water to infiltrate and contaminant an inadequately grout sealed well.

There are no records which indicate whether the culinary well was grout sealed, or to what depth. It is unknown if the quality of the water is influenced by surface water.

Deficiencies/Recommendations: Placed at the first of the report.

Attachments:

References: Forest file records.



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region • 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

May 8, 2017

US DEPT OF AGRICULTURE
FOREST SERVICE
1249 VINNELL WAY STE 200
BOISE ID 83709

RE: Scheduling Field Exam for Water Right Permit No. 63-12507

Dear Permit Holder:

We are planning to conduct water right examinations in the vicinity of the above-referenced permit **this season**. An examination is needed to verify the water use in order to issue a water right license.

The above-referenced permit authorizes **0.08 cfs** of **GROUND WATER** for **domestic** use. **If you have developed a beneficial use and still own the place of use property, please contact me at your earliest convenience to schedule an examination.**

If you did not develop a beneficial use of water under the permit during the beneficial use period, a license cannot be issued and the permit should be relinquished. If that use was developed, but have ceased using the water and you currently carry no interest in it, please relinquish the permit by submitting the enclosed Relinquishment of Permit form (no fee required).

If you did develop a beneficial use of water under the permit, but you no longer own the place of use property identified in the permit, please submit the enclosed Assignment of Permit form with the applicable \$25 processing fee.

Please contact me within the next thirty (30) days at (208) 334-2190 to either schedule an examination or submit a relinquishment or assignment form. If you no longer own the place of use property and/or do not respond to this letter, the department will work with the current property owner to issue a license or void the permit.

Sincerely,

Cody Parker
Water Resource Agent

Enclosures: Relinquishment of Permit form
Assignment of Permit form
Water Permit Report and Map