

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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DEPARTMENT OF
WATER RESOURCES

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. 63-329121. Owner Tree Top Ranches LPPhone No. 208-377-0998Current address PO Box 8126, Boise, 837022. Examiner's name Scott King, P.E. (Examiner No. 133)EXAM DATE November 29, 20173. Accompanied by William MulderEmail wjmulder@treetopranches.comAddress same as aboveRelationship to permit holder Manager

Phone No. _____

4. Source Sand Hollow Creektributary to Snake River**B. OVERLAP REVIEW**

63-21530 (irrigation)

1. Other water rights with the same place of use 63-32467, 63-32462, 63-32912 (permits for wildlife use)2. Other water rights with the same source and point of diversion None**C. DIVERSION AND DELIVERY SYSTEM**

1. Point(s) of Diversion:

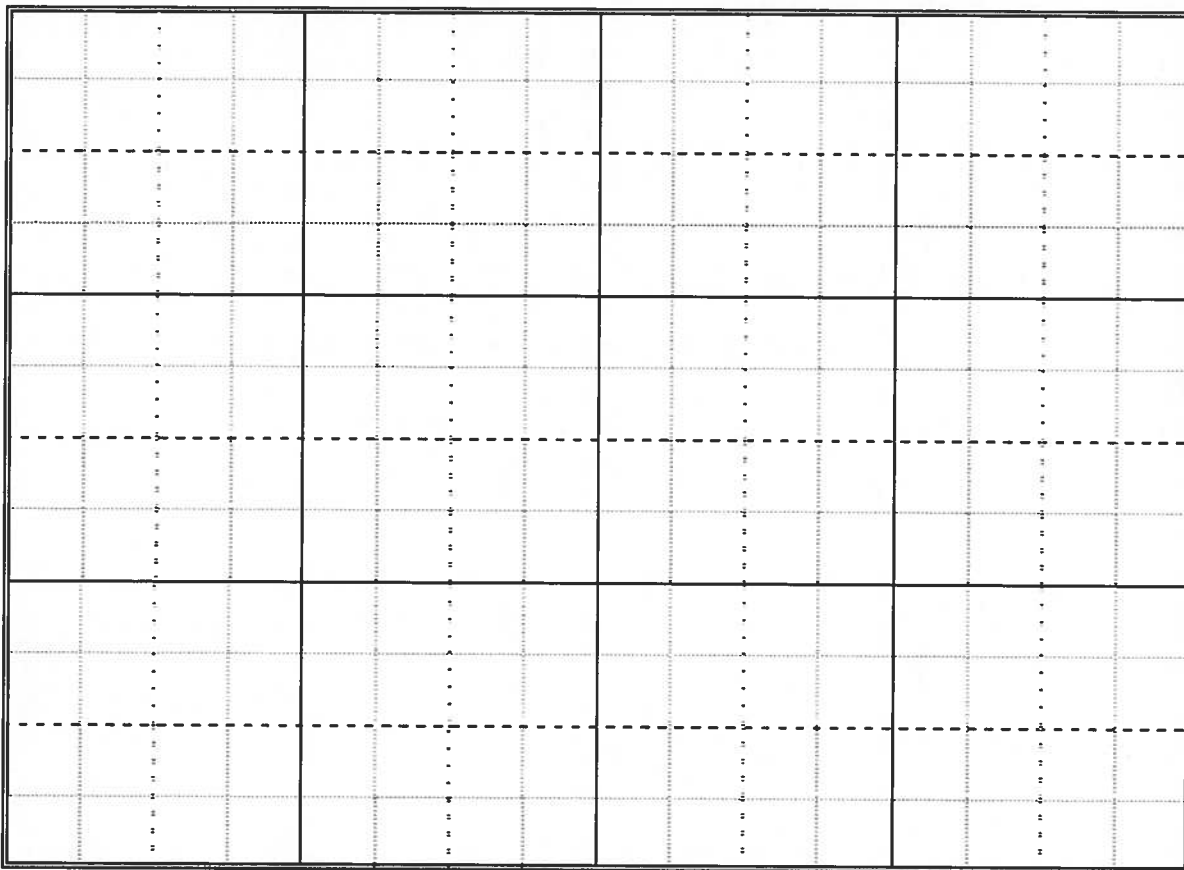
Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
Pump 1			SW	SE	15	5N	5W	Canyon	GPS, Exam
Pump 2			SW	SE	15	5N	5W	Canyon	GPS, Exam

2. Place(s) of Use: Method of determination Exam, 2015 Arial Photo

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
5N	5W	22		X			X												

"X" = Wildlife and Wildlife Storage

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
Pump 1	John Deer	200	PE4045H459537	Cornell	145393
Pump 2	Perkins	200	unknown	Cornell	169883

*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
Portable Flowmeter	Ultrasonic	GE	PT878	7140	various	3/27/17

2. **Measurements:** _____

Discharge was measured with portable flowmeter on 8-inch plastic pipe.

E. NARRATIVE/REMARKS/COMMENTS

Two portable pumps withdraw water from the Sand Hollow Creek. Flow is piped from the pump discharge into ditches where it gravity flows to ponds and flooded areas for wildlife use. The pumps were supplied by Rain for Rent and are standard model DV200c with stated design capacity of 4,600 gpm (10 cfs) each. Pump spec sheets are included in Attachment B.

Prior to being installed at the Sand Hollow Creek location for this exam, the portable pumps were located at the 63-32911 Boise River point of diversion and flow measured from Pump 1 at 8.35 cfs and Pump 2 at 8.92 cfs. The pumps were moved from the Boise River point of diversion to the Sand Hollow Creek location. Pump 1 was fully connected and flow measured at 8.8 cfs, with the 5% increase in flow being attributed to a lesser lift from the creek to the pump intake. Pump 2 was not measured at the Sand Hollow Creek location but is expected to provide the same flow, or a little more due to lesser lift, as the 8.92 cfs measured earlier on the same day at the Boise River site.

The pump pipelines and ditches provide the straight lengths of pipe and ditches required for measurement.

See Attachment C for flow measurements and storage volume calculations.

Exam Attachments

Attachment A: Field Exam Maps

Attachment B: System Components and Diagrams

Attachment C: Flow Rate and Volume Calculations

Attachment D: Exam Photos

Attachment E: Proof of Beneficial Use

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?

Conditions provide for up to 6 ponds, natural swales, and/or agricultural fields that will be flooded that together shall not exceed 63 surface acres and a storage volume of 181.5 afa when combined with 63-32911. These limits have been met (see Beneficial Use Field Report for 63-32911 and attached volume calculations).

F. FLOW CALCULATIONS☒ Additional computation sheets attached

Measured Method:

Pump 1 = 8.8 cfs

Pump 2 = 8.92 cfs

Total = 17.72 cfs

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:

Per the operator, peak use during the development period for the Sand Hollow Creek pump system is operating for 10 hours per day, 21 days per season at an average flow of 8.8 cfs.

 $8.9 \text{ cfs} \times 1.9835 \times 21 \text{ days} \times 10/24 = 154.5 \text{ af.}$

Storage volume = 57.6 af (see attached)

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Wildlife	11/15	3/1	17.72	154.5
Wildlife Storage	11/15	3/1		57.6
Diversion to Storage	11/15	3/1	17.72	154.5
Totals:			17.72	212.1

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. AUTHENTICATION**

Field Examiner's Signature

Scott N. King

Date

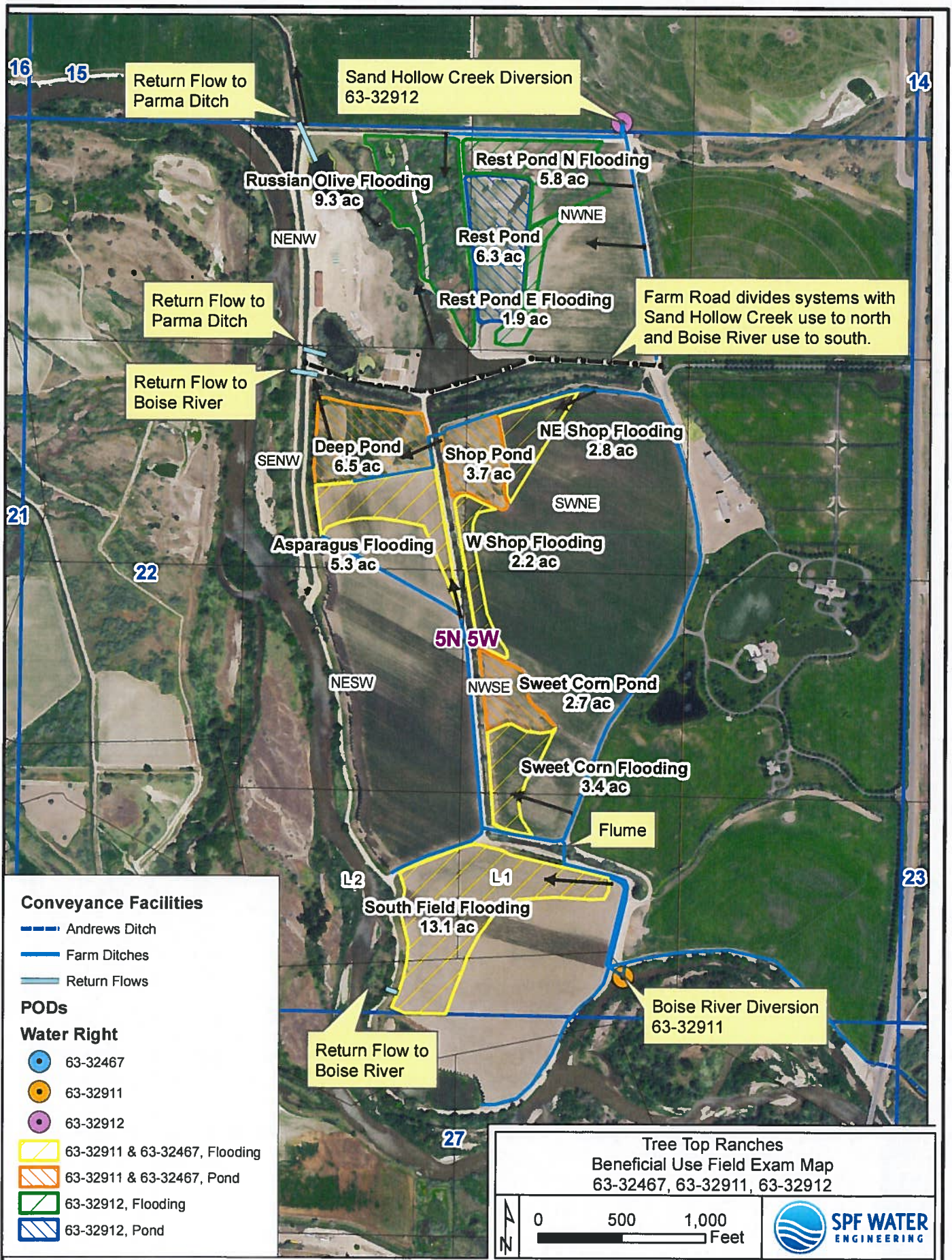
12/1/2017

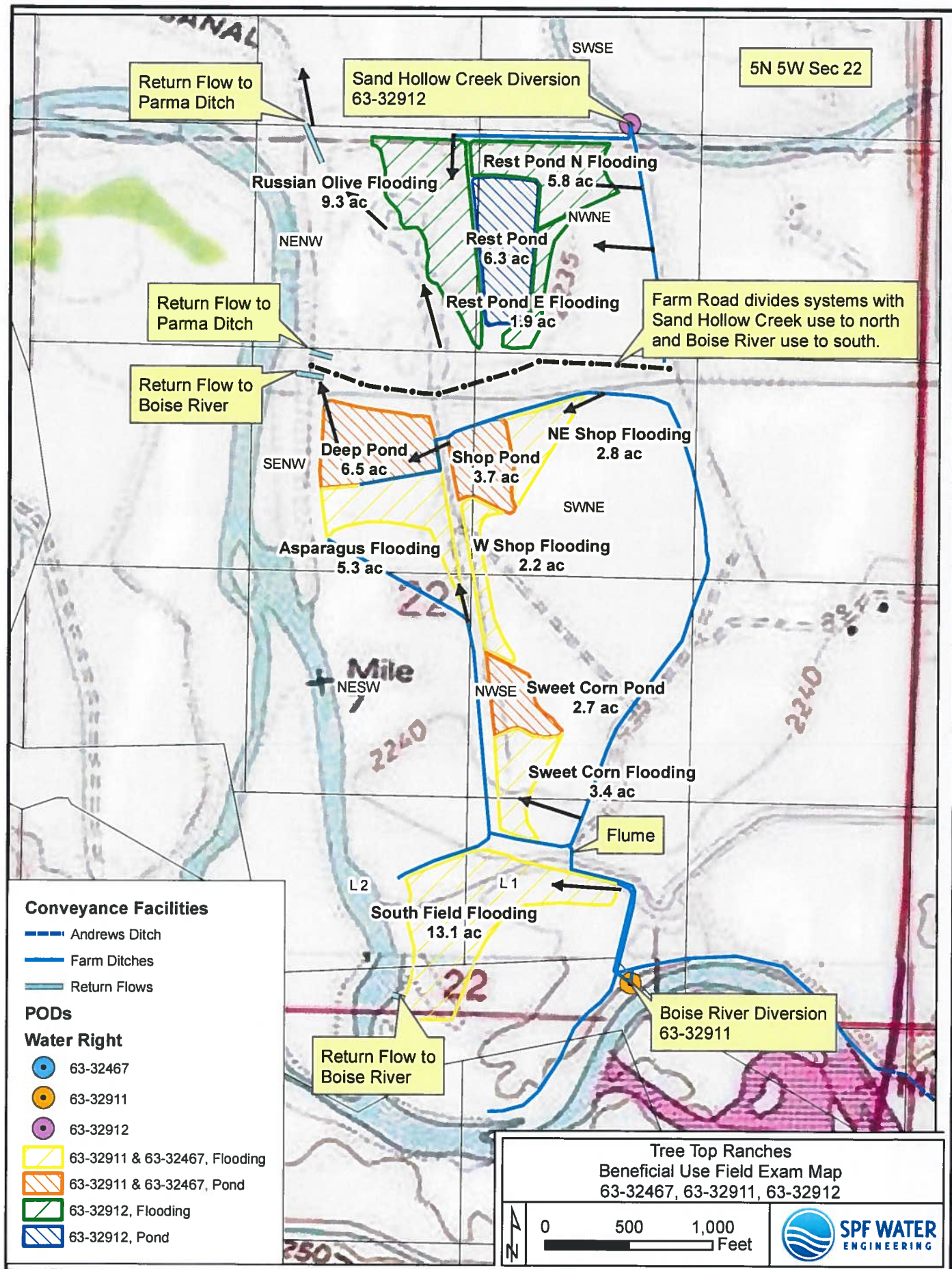
Reviewer

Date



Attachment A
Field Exam Map





Attachment B

System Components and Diagrams

Sewage and Trash Pump

DV200c

Overview:

The 12" suction x 8" discharge self-priming centrifugal DV200c trash pump provides up to a maximum of 4,600 gallons per minute pumping and up to 260 feet of head. This pump is usually mounted on a trailer and features the standard PowerPrime Clean Prime Venturi priming system which allows it to run continuously, unattended and even run dry.

Features:

- Continuous self-priming
- Runs dry unattended
- 12 volt, electric start with auto-start capable control panel
- Flex coupled to diesel engine
- 24-hour minimum capacity fuel tank
- Compressor fitted to operate the air-ejector priming system
- Cast iron wet end with open impellers
- Replaceable wear plates
- SAE Mounted
- Suction lift up to 28ft.

Specs:

Maximum Flow	4,600 GPM
Maximum Head	260 feet
Pump Size	12" x 8"
Maximum Solids Handling	3.375 inches
Dry weight	5,560 lbs.
Footprint: Trailer mounted model	150" x 78"
Fuel tank	190 gallon
Fuel consumption	7 gph @ 1,800 RPM



SA Option Available: 70dB(A) @ 30'

Accessories:

- Spillguard
- Suction and Discharge Hoses
- Fuel Nurse Tank



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Liquid Ingenuity.
800-742-7246
rainforrent.com



Rain For Rent

CURVE: 01-0133-02-16

PUMP : **DV-200c**

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SUCTION
12"

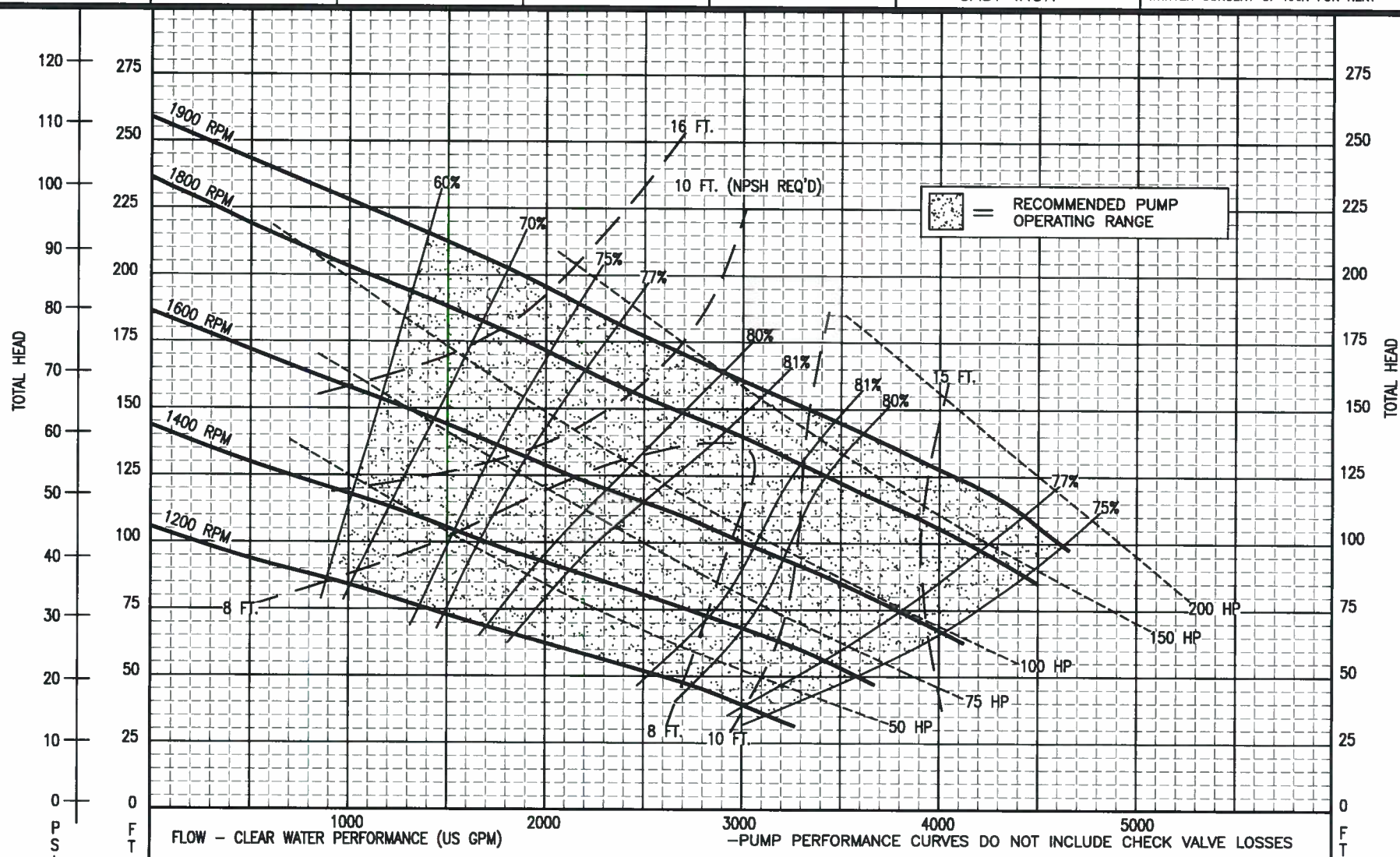
DISCHARGE
8"

MAX. SPHERE
3.375"

IMPELLER
2 VANE

IMPELLER
14.00"

IMPELLER &
WEAR RINGS
CAST IRON



FLOW - CLEAR WATER PERFORMANCE (US GPM)

CONFIDENTIAL

-PUMP PERFORMANCE CURVES DO NOT INCLUDE CHECK VALVE LOSSES

-POWER CURVES DO NOT INCLUDE PRIMING SYSTEM POWER CONSUMPTION

Attachment C

Flow Rate and Volume Calculations

Permit: 63-32912
 Owner: Tree Top Ranches LP
 Site Name: Andrews Ditch Pump 1
 POD Location: 5N 5W 15 SWSE
 Tag No: none
 Meter: GE TransPort PT878
 Type: Portable Ultrasonic Time Flight Liquid Flow Meter
 Serial Number: 7140
 Calibration Date: March 27, 2017
 Operator: Scott King

Date/Time	Volume (gal/m)	(+)Total (gal)	(-)Total (gal)	Error #
11/29/2017 3:51	3940	42970	0	0
11/29/2017 3:52	3974	46788	0	0
11/29/2017 3:53	3901	50820	0	0
11/29/2017 3:54	3948	54819	0	0
11/29/2017 3:55	3951	58707	0	0
11/29/2017 3:56	3976	62702	0	0
11/29/2017 3:57	3960	66614	0	0
11/29/2017 3:58	3950	70429	0	0
11/29/2017 3:59	3899	74499	0	0
11/29/2017 4:00	3879	78317	0	0
11/29/2017 4:01	3981	82378	0	0

Time	10 minutes
Volume	39408 gallons
Rate	3947 gpm
Rate	8.80 cfs

Permit: 63-32911
 Owner: Tree Top Ranches LP
 Site Name: Boise River Pump 2
 POD Location: 5N 5W 22 Lt 1 (SWSE)
 Tag No: none
 Meter: GE TransPort PT878
 Type: Portable Ultrasonic Time Flight Liquid Flow Meter
 Serial Number: 7140
 Calibration Date: March 27, 2017
 Operator: Scott King

Date/Time	Volume (gal/m)	(+)Total (gal)	(-)Total (gal)	Error #
11/29/2017 3:00	3990	43908	0	0
11/29/2017 3:01	4027	47933	0	0
11/29/2017 3:02	4015	52010	0	0
11/29/2017 3:03	3964	55873	0	0
11/29/2017 3:04	3960	59970	0	0
11/29/2017 3:05	3922	63842	0	0
11/29/2017 3:06	3967	67943	0	0
11/29/2017 3:07	4028	72073	0	0
11/29/2017 3:08	3992	75952	0	0
11/29/2017 3:09	4011	79808	0	0
11/29/2017 3:10	3956	83924	0	0

Time	10 minutes
Volume	40016 gallons
Rate	4002 gpm
Rate	8.92 cfs

Note: This discharge measurement was made when the pump was located at the Boise River site. The pump is expected to produce the same volume, or slightly more due to lower lift, at the Sand Hollow Creek site, and is used for the 63-32912 Beneficial Use Field Report.

Tree Top Ranches
Parma Lodge & Stables
Wildlife Permit Information

Water Body	Flooded Area No.	Ac.	Depth	AF	Source	Permits
Rest Pond	1	6.3	4.5	28.4	Sand Hollow Creek	63-32912
Rest Pond North Flooding	1	5.8	1.5	8.7	Sand Hollow Creek	63-32912
Rest Pond East Flooding	1	1.9	1	1.9	Sand Hollow Creek	63-32912
Russian Olive Flooding	2	9.3	2	18.6	Sand Hollow Creek	63-32912
Total		23.3		57.6		
Deep Pond	3	6.5	5.5	35.8	Boise River	63-32467 & 63-32911
Asparagus Flooding	3	5.3	2	10.6	Boise River	63-32467 & 63-32911
Shop Pond	4	3.7	4.5	16.7	Boise River	63-32467 & 63-32911
NE Shop Flooding	4	2.8	1	2.8	Boise River	63-32467 & 63-32911
West Shop Flooding	4	2.2	1.5	3.3	Boise River	63-32467 & 63-32911
Sweet Corn Pond	5	2.7	4.5	12.2	Boise River	63-32467 & 63-32911
Sweet Corn Flooding	5	3.4	1.5	5.1	Boise River	63-32467 & 63-32911
South Field Flooding	6	13.1	2	26.2	Boise River	63-32467 & 63-32911
Total		39.7		112.6		
Grand Total		63		170.1		
Permit Limit		63		181.5		

Attachment D
Exam Photos



Figure 1: Pump 1 diverting from Sand Hollow Creek.



Figure 2: Pump 1 discharging into ditch flowing west towards Russian Olive area.

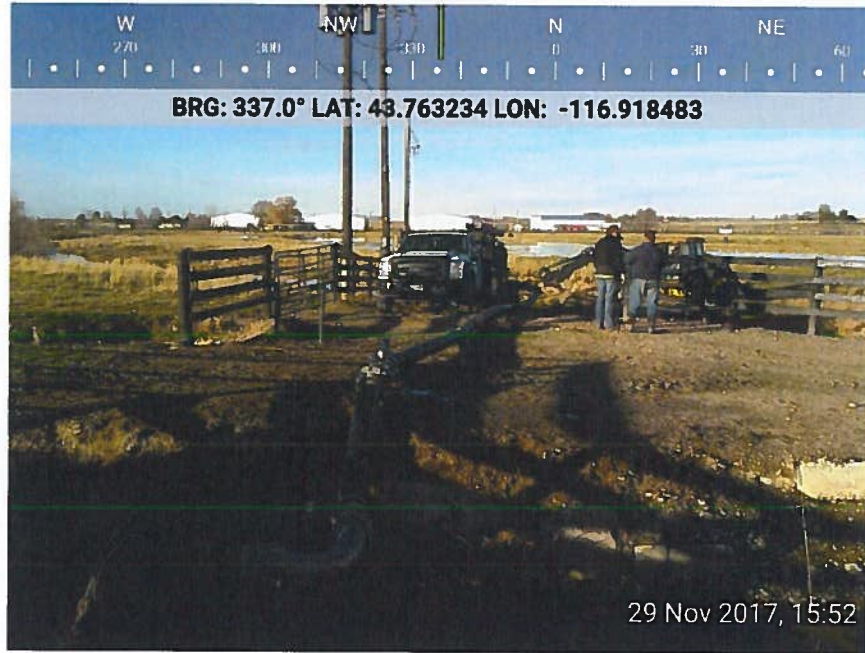


Figure 3: Pump 1 flowmeter installation on pipe in front of truck.



Figure 4: Pump 2 in position in foreground with Pump 1 in background.



Figure 5: Pump 2 discharge pipe set to discharge into ditch feeding Rest Pond area.



Figure 6: Southern end of Rest Pond area.



Figure 7: Rest Pond.



Figure 8: Flow checked to discharge into Russian Olive area. Pump station in far background.



Figure 9: Northeastern corner of Russian Olive area.

Attachment E
Proof of Beneficial Use