

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 37-22777

Exam Date: 6/21/2012

1. Current Owner: AUBREY SPRING RANCH LLC

~~8836 N HESS ST STE D~~
HAYDEN ID 83835
~~(208) 762-5534~~

2. Accompanied by: Stephen Barnard

Phone No: (650) 644-9516

Address: 130 Treasure Lane, Hailey ID 83333

Relationship to Permit Holder: Current Owner

- 3.
- SOURCE**

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 37-252; 37-348; 37-349; 37-354; 37-712; 37-1071A; 37-2575

2. Other water rights with the same point of diversion: 37-2553A; 37-8571

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

GROUND WATER	NW1/4NW1/4	Sec. 24, Twp 01S, Rge 19E, B.M.
BLAINE County	(Rediversion)	
GROUND WATER	SE1/4NE1/4	Sec. 14, Twp 01S, Rge 19E, B.M.
BLAINE County		
GROUND WATER	SW1/4SW1/4	Sec. 13, Twp 01S, Rge 19E, B.M.
BLAINE County	(Injection)	

Method of Determination: Waypoints were collected with a Garmin GPSmap 60CSx receiver and downloaded into an ArcMap shapefile that corresponds with 2009 and 2011 aerial photography and verified the points of diversion are located as recorded. See attached map.

2.

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01S 19E 13							10.0		10.0	36.0	30.0	1.6					87.6
01S 19E 14				3.2												3.1	6.3
01S 19E 23	36.0			29.0													65.0

Total Acres: 158.9

Method of Determination: Tracks were collected with a Garmin GPSmap 60CSx receiver and downloaded into an ArcMap shapefile that corresponds with 2009 and 2011 aerial photography and verified the place of use is located as recorded. See attached map.

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

4.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
		40			

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
Flow Meter	Sonic	Fuji	Portaflow	7K0085TB		April 2012
Pressure gauge						
Micrometer Flow Meter at the Lazy Triple J indicated 553 gpm or 1.2 cfs						

2. Measurements: Flow meter measured a rate **2451.5 gpm or 5.46 cfs** from the well.

Irrigation was estimated using a pressure gauge, counting the number of sprinklers and verifying the nozzle diameter used. On Aubrey Spring Ranch seven wheel lines and three hand lines were in operation with 228 impact sprinklers equipped with 1 1/64 brass nozzles. The irrigation system on the Lazy Triple J Ranch utilizes 2 wheel lines with a total of 66 impact sprinklers equipped with 13/64 brass nozzles. Results are as follows:

# of Sprinklers	@ PSI	Estimated GPM per Nozzle	Total GPM
8	64	6.84	54.72
38	56	6.46	245.48
60	60	6.70	402.00
25	55	6.40	160.00
22	56	6.46	142.12
28	62	6.71	187.88
6	66	6.96	41.76
3	73	7.32	21.96
38	60	6.70	254.6
			1510.52 GPM or 3.4 CFS
Lazy Triple J Ranch			
34	40	7.60	258.4
32	37	7.30	233.6
			492 or 1.1 cfs

E. FLOW CALCULATIONS None**F. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 158.9 \times 3.5 = 556.15 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 3.18 \times 200 \times 1.9835 = 1261.5 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 556.15 \text{ AF}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

This permit was split from 37-7810.

Application for permit 37-7810 was submitted by Kenneth Hellyer on 12/5/1979. The Permit was assigned to William A. and Laura L. McMahan on 2/3/1982 and then assigned to William McMahan on 7/30/1985. An application for amendment was submitted by Mr. McMahan on 07/14/1992, and proof of beneficial use was submitted on 9/9/1993. Permit was then assigned to Aubrey Springs Ranch LLC on 10/23/1996.

System consists of a well with a 40 Hp pump that discharges well water into a 6' wide culvert where water can be distributed to a pump for irrigation and/or delivered to a pond system (Wildlife, covered under 37-8571). Surface water from Loving Creek can also be diverted into this culvert through an underground pipe connected to the point of diversion on Loving Creek. Just south of the well in a wooded area there are two ponds with an estimated storage of 6.6 acre feet. On the south outlet from the ponds a stilling well was constructed in a 6' culvert and contains a 6' sharp crested weir. Below the weir overflow from the ponds can be diverted either into a recirculation pump to return water to the distribution culvert near the well on the north end of the ponds, or it can be injected into Loving Creek. The water that is injected into Loving creek can then be rediverted to another property south of the ranch (Lazy Triple J Ranch) where it is used to irrigate 65.0 acres using two wheel lines (see Attachment 1 for a system diagram). On the Aubrey Springs Ranch the irrigation system consists of 5 wheel lines and 4 hand lines that provide irrigation for 193.9 acres under this permit and under water right 37-2553A at 0.02 cfs per acre (actual acres irrigated were determined from the site visit and using aerial and satellite imagery in ArcMap). Typically, the ground water is pumped and delivered to the ponds continually and irrigation pumps are run as needed. Surface water hasn't been comingled or used on the property for an undetermined length of time as it led to problems with algal blooms in the ponds. In fact, the surface water diversion on Loving Creek was in disrepair and a dead calf was discovered in the diversion when we visited it.

Well production was measured at 5.46 cfs using a Fuji Portaflow sonic flow meter. See attachment 2 for log results. Two of the log entries recorded as abnormal, but the flow rates were in the same range as the normal log entries, so all data collected was utilized to determine production from the well. Measurements earlier this summer using a pressure gauge and counting sprinkler heads while running the entire irrigation system on the Aubrey Spring Ranch yielded a total flow of 3.4 cfs at the sprinkler lines and it was noted that at that time that 1.74 cfs was observed flowing over the weir that discharges water into Loving Creek for further rediversion and irrigation use on the Lazy Triple J Ranch to the south. Combining the 3.4 cfs and 1.74 cfs results in a total of 5.14 cfs which is very close to the 5.46 cfs measurement obtained using a Fuji Portaflow sonic flow meter. Note that these amounts are even closer if allowances are made for leaks in the irrigation lines and possible losses in the ponds upstream of the weir that discharges water into Loving Creek.

Irrigation on the southerly Lazy Triple J Ranch was measured using a pressure gauge and counting sprinkler heads and was measured at 1.1 cfs. The system there consists of a pump in Loving Creek and two wheel lines. There is a Micrometer flow meter on the line from the pump and a timed measurement of the meter indicated 1.2 cfs was being diverted for irrigation. In July of 1993 Mr. McMahan filed an application for amendment to provide water from his well to this ranch under a five year lease agreement. When Aubrey Spring Ranch LLC purchased the ranch to the north, they extended the agreement and water from the well has been delivered to the Lazy Triple J on a yearly basis since 1993. Based on these findings, the 65.0 acres irrigated under this permit on the Triple Lazy J Ranch will be recommended for licensing.

Several surface water rights 37-2575, 37-712, 37-252, 37-354 overlap the place of use for this right and ground water rights 37-2553A, 37-2686D and 37-7598D are diverted on the property and overlap with the surface water rights. Condition R63 limiting all combined rights to 0.02 cfs per acre and 3.5 afa at the field headgate will be placed on the license to clarify the maximum diversion rate and volume allowed. The following rights appear to be historical irrigation rights that overlap with the place of use, research indicates none were renumbered or split and/or were claimed in the SRBA: 37-349; 37-348; 37-350;

37-1071A; and 37-1093. One of the historical rights, 37-443, has been claimed and recommended in the SRBA, but the recommended place of use does not overlap with this right's place of use.

A maximum application rate of 0.02 cfs per acre applied to 158.9 acres which includes 65 acres on the Lazy Triple J Ranch and 93.9 acres on the Aubrey Spring Ranch yields a rate of 3.18cfs. Combine this with the other irrigation right from the well, 37-2553A for 2.0 cfs, and together they yield 5.18 cfs of ground water. The measured yield of 5.46 cfs from the well demonstrates the well provides the maximum allowable 3.18 cfs for licensing this permit.

Recommend licensing 3.18 cfs for the irrigation of 158.9 acres with an annual volume of 556.2 acre feet.

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>
IRRIGATION	04/15 to 10/15	3.180 CFS	556.2
<u>Totals:</u>		3.180 CFS	556.2

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

I. AUTHENTICATION

Field Examiner's Name Bill Miller Date 12-10-12

Reviewer Chris Martin Date 1/14/13

Attachment 1: System Diagram:

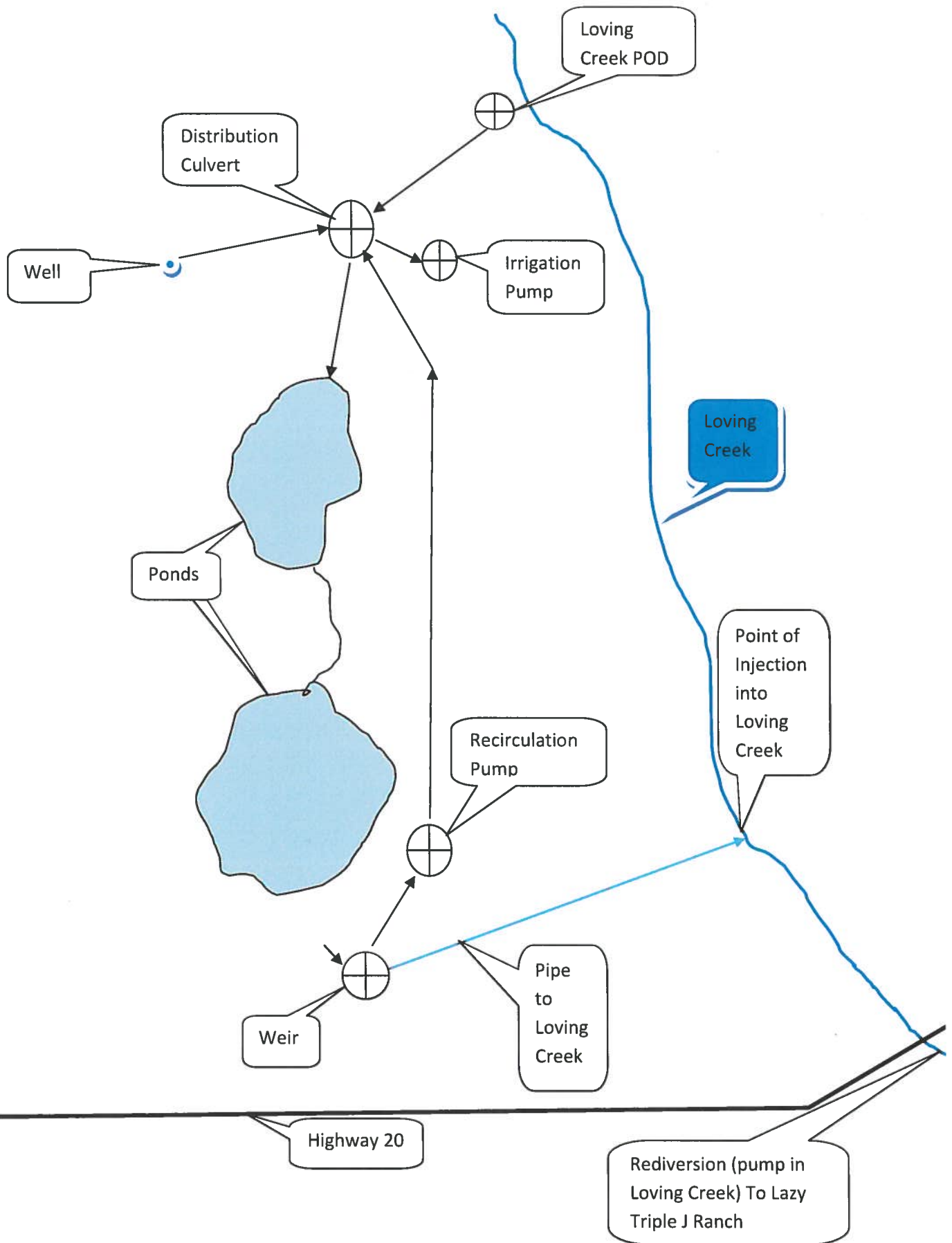




Figure 1: 40 Hp pump motor on well



Figure 2: 6' sharp crested weir below ponds



Figure 3: Upper pond



Figure 4: Lower pond



Figure 5: Point of injection on Loving Creek



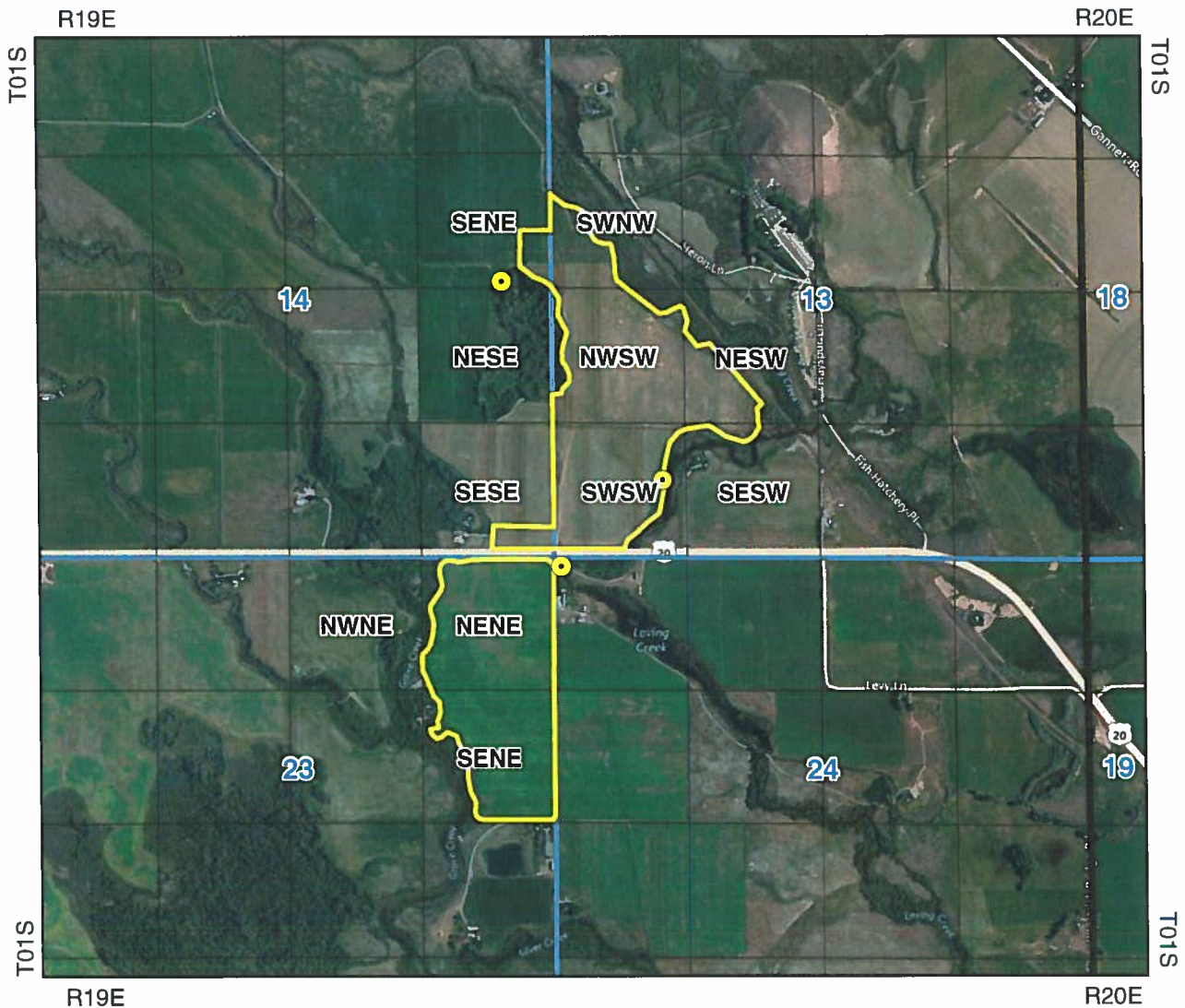
Figure 6: Wheel line on ranch

State of Idaho
Department of Water Resources

Attachment To Water Right License

37-22777

This map depicts the IRRIGATION 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.



0 0.2 0.4 0.8 Miles

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



Attachment # 2

LD10
No. 10
LOG NAME:ASR
START :11-14 14:10
END :11-14 14:20
INTERVAL:00:01:00

11-14 14:10:00
+6.799E+0 ft/s
+2.400E+3 gal/m
+TOTAL 0000000 gal
NORMAL

11-14 14:11:00
+6.915E+0 ft/s
+2.442E+3 gal/m
+TOTAL 0002474 gal
NORMAL

11-14 14:12:00
+6.977E+0 ft/s
+2.463E+3 gal/m
+TOTAL 0004934 gal
ABNORMAL

11-14 14:13:00
+6.928E+0 ft/s
+2.446E+3 gal/m
+TOTAL 0007211 gal
NORMAL

11-14 14:14:00
+6.734E+0 ft/s
+2.377E+3 gal/m
+TOTAL 0009825 gal
NORMAL

11-14 14:15:00
+6.912E+0 ft/s
+2.440E+3 gal/m
+TOTAL 0012409 gal
NORMAL

11-14 14:16:00
+7.087E+0 ft/s
+2.502E+3 gal/m
+TOTAL 0014867 gal
ABNORMAL

11-14 14:17:00
+6.969E+0 ft/s
+2.460E+3 gal/m
+TOTAL 0017253 gal
NORMAL

11-14 14:19:00
+6.809E+0 ft/s
+2.404E+3 gal/m
+TOTAL 0019612 gal
NORMAL