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JUN 23 2010

DEPT. OF WATER RESOURCES
SOUTHERN REGION

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR PERMIT
To appropriate the public waters of the State of Idaho

1. Name of applicant Lava Lake Land & Livestock, LLC Phone (208) 788-1710
Mailing address P.O. Box 2249, Hailey, ID 83333

2. Source of water supply Springs which is a tributary of Copper Creek

3. Location of point of diversion is Township 1N Range 23E Sec. 27, in the $\frac{1}{4}$, NW $\frac{1}{4}$,
NW $\frac{1}{4}$, Govt. Lot , B.M., Blaine County; additional points of diversion, if any:
Portion of embankment is located in NENE Sec. 28, T.1N., R.23E.

4. Water will be used for the following purposes:

Amount 2.2 af for wildlife purposes from 1/1 to 12/31 (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

5. Total quantity being appropriated is (a) and/or (b) 2.2
cubic feet per second acre-feet per annum

6. Proposed diverting works:

a. Describe type and size of devices used to divert water from the source: Embankment across existing
spring channel.

b. Height of storage dam 9 feet; active reservoir capacity 2.2 acre-feet; total
reservoir capacity 2.2 acre-feet.

c. Proposed well diameter is inches; proposed depth of well is feet

d. Is groundwater with a temperature of greater than 85° degrees being sought?

e. If well is already drilled, when? ; Drilling firm ;
Well was drilled for (well owner) ; Driller Permit No.

7. Time required for completion of works and application of water to proposed beneficial use is 5 years (minimum 1 year)

8. Description of proposed uses (if irrigation only, go to item 9):

a. Hydropower; show total feet of head and proposed capacity in kW.

b. Stockwatering; list number and kind of livestock.

c. Municipal; show name of municipality.

d. Domestic; show number of households. ;

e. Other; describe fully. Wildlife habitat enhancement in pond at Site #3.

9. Description of place of use:

- a. If water is for irrigation, indicate acreage in each subdivision in the tabulation below.
- b. If water is used for other purposes, place a symbol of the use (example: *D* for Domestic) in the corresponding place of use below. See instructions for standard symbols.

TWP	RGE	SEC	NE				NW				SW				SE				TOTALS
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
1N	23E	27						W											
1N	23E	28	W																

W = Wildlife

Total number of acres to be irrigated _____

10. Describe any other water rights used for the same purposes as described above. None

11. a. Who owns the property at the point of diversion? Applicant

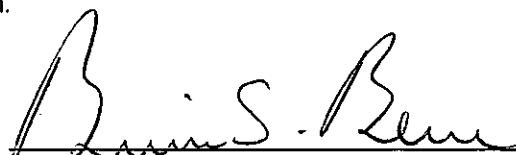
b. Who owns the land to be irrigated or place of use? Applicant

c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing: _____

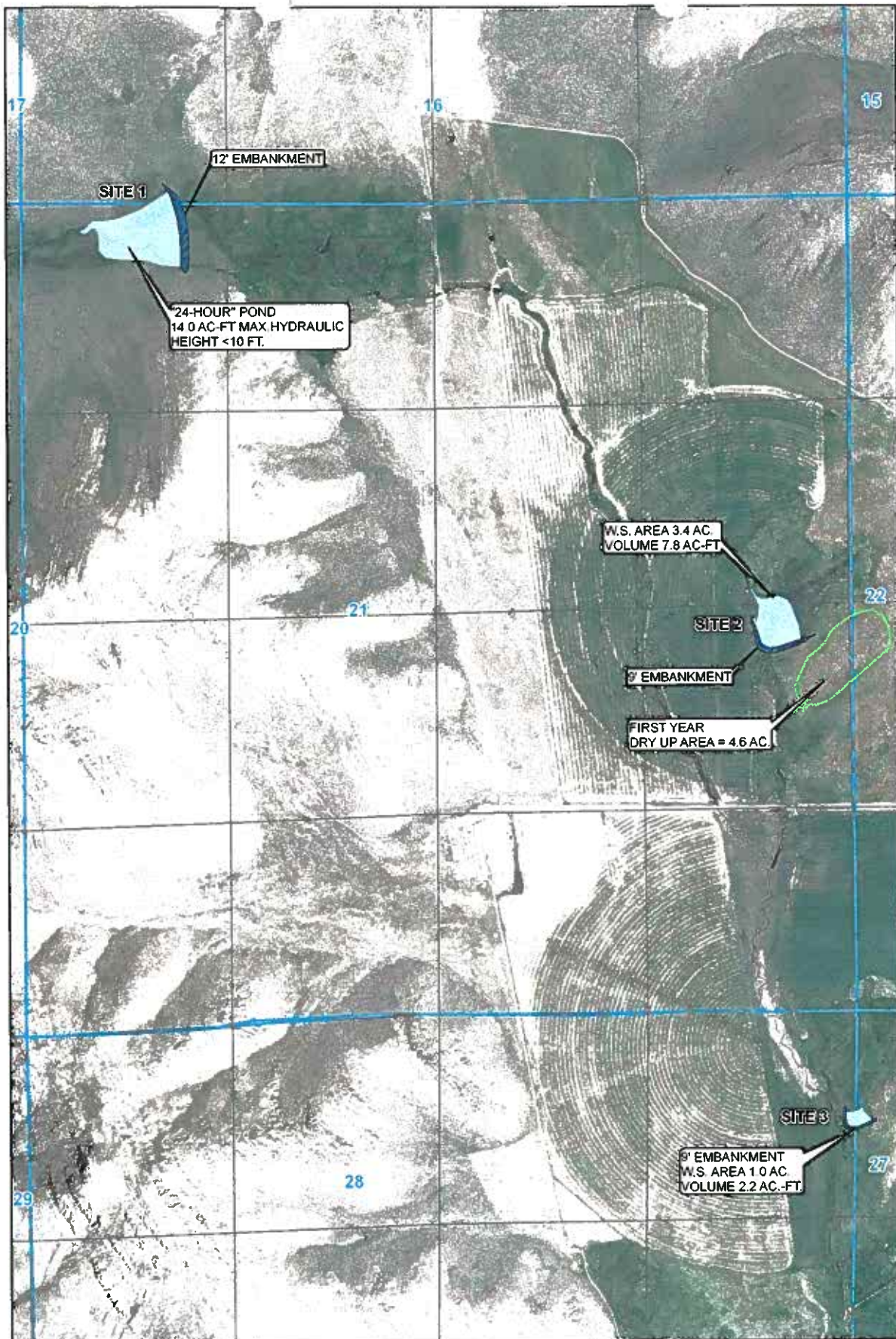
12.. Remarks: Pond footprint will be located within existing wetland area with actively-growing vegetation and/or open water. It is therefore assumed that no mitigation for evaporative losses will be required. First-year fill volume of 2.2 ac-ft will be provided by drying up for one year 1.0 acres of irrigated crop, based on Allen & Robison (2009) Pdf for alfalfa - less frequent cuttings, average of Arco and Picabo stations, equal to 2.17 ac-ft/ac/year. Area to be dried up in first year is identified on attached map.

13. MAP OF PROPOSED PROJECT REQUIRED – Attach an 8 ½ "x 11" map clearly identifying the proposed point of diversion, place of use, section #, township & range. (A photocopy of a USGS 7.5 minute topographic quadrangle map is preferred.)

BE IT KNOWN that the undersigned hereby makes this application for permit to appropriate the public waters of the State of Idaho as herein set forth.


Signature of Applicant (include title, if applicable.)

Received by JS Date 6/23/10 Time _____ Preliminary check by JC
Fee \$ 100.00 Received by JC # 50 31504 Date 6/23/10
Publication prepared by _____ Date _____ Published in _____
Publication approved _____ Date _____



**LAVA LAKE LAND & LIVESTOCK
WILDLIFE ENHANCEMENT AND IRRIGATION STORAGE PONDS
NAIP 2009 AERIAL**

BROCKWAY ENGINEERING, PLLC.
ALR - JUNE 11, 2010

Legend

- 101n23e
- EMBANKMENT
- WILDLIFE POND
- Proposed First Year Dry-Up Area

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Narrative in Support of Permit Applications for Wildlife Ponds Lava Lake Land & Livestock, LLC

Brockway Engineering, PLLC
June 22, 2010

Lava Lake Land & Livestock (Lava Lake) intends to create two (2) shallow ponds for the purposes of wildlife enhancement on its property located 10 miles east of Carey, Idaho. The location of the ponds is shown on the attached aerial map, denoted as Site #2 and Site #3. The pond at Site #1 is a proposed pond for irrigation storage and wildlife enhancement as described below.

Sites #2 and #3

The #2 and #3 ponds will be created within existing springhead areas which currently exhibit high groundwater or open water conditions, and support actively growing wetland vegetation. The growing vegetation is evident on the 2009 photos and has been confirmed by site inspection. The springs issue from the shallow alluvial aquifer system and are tributary to Copper Creek, which is tributary to Lava Lake. The springs discharge year-round but the flow is variable based on water supply conditions. The persistence of the spring discharge and the wetland areas is evident by their existence in essentially the same configuration on all historical aerial photos from 1957 through the present. Lava Lake is confined on the south end and is not tributary to any surface stream. In this sense, the Lava Lake basin is a hydrologically "closed" system, although subsurface interconnection with other waters may exist. Lava Lake is the only water user in the basin.

The ponds will be created by constructing low embankments across the depressions downstream of each of the springheads. The height of the embankments will be approximately 9 feet and the vertical elevation difference between the maximum water surface and the lowest channel elevation at the downstream toe will be 8 feet. The project is being funded in part by grants from IDEQ and the U.S. Fish & Wildlife Service. The USFWS engineering contractor has surveyed the proposed pond areas and developed topographic maps with a 1-foot contour interval. Using this topography, the following values were calculated:

	W.S. Elev	W.S. Area	Volume	Max Depth
Site #2	5234 ft	3.4 acres	7.8 acre-feet	7 feet
Site #3	5189 ft	1.0 acres	2.2 acre-feet	7 feet

The two ponds will have level control structures to maintain them at a completely full level year-round. The ponds will not be drained and the storage will not be utilized for other purposes. Since the springs flow year-round, the ponds should always remain full.

Based on current IDWR policy, it appears that no mitigation for evaporative losses will be required since the created water surface area lies within an area which has historically consisted of actively-growing vegetation fed by the same spring water or adjacent subsurface water.

Mitigation for first-year filling of the pond volume will be required by removing a certain number of acres from irrigation under the existing irrigation water rights during the first year only. The required acreage dry-up was calculated by determine the equivalent depletion from irrigated land using precipitation deficit values from Allen and Robison (2009). Lava Lake is situated about halfway between the Picabo NWS and Arco NWS stations. Pdef for "alfalfa – less frequent cuttings" for these stations is 661 and 664 mm, respectively. The average is 662.5 mm, or 2.17 afa. The total storage volume of 10.0 acre feet, divided by 2.17 afa, equates to 4.6 acres that must be not irrigated during the first year of pond construction. On the aerial map, these 4.6 acres are identified which are covered by valid irrigation water rights from both groundwater and surface water.

Site #1

This pond will be created by constructing an embankment across the channel of Payne Creek at the location shown. The embankment will be 12 feet in height. The embankment will be designed with a service spillway at an elevation less than 10.0 feet above the elevation of the channel bed at the downstream toe of the embankment. The maximum storage volume will be 14.5 acre-feet. Although the impoundment will not fall under the jurisdiction of the State of Idaho dam safety rules, the embankment, outlet gate, and spillway will be designed utilizing accepted engineering practices.

The Site #1 pond will be used as an irrigation buffering storage facility under the IDWR "24-hour rule". Water will be stored during the spring runoff period, and released for irrigation usage after July 1 each year. As an ancillary use, it will serve as a wildlife enhancement facility during the spring and early summer period until July 1.

To justify that the pond can meet the criteria for a 24-hour pond, the following analysis is offered:

Rights listing Payne Creek as the sole source:

37-1156	3.86 cfs	} Combined limit 5.06 cfs
37-2715	1.10 cfs	
37-11936	0.90 cfs	
37-22466	2.89 cfs	

Rights listing Payne Creek as a source with other sources:

37-2545A	9.30 cfs	} Combined limit 9.30 cfs
37-22467	1.97 cfs	

There is no diversion rate limit on the above two groups when used in combination, but all water rights on the Lava Lake land (including others from Lava Lake) in combination are limited to 11.79 cfs which is 0.02 cfs per acre on the entire irrigated area.

As currently structured, the water rights would allow at least 9.30 cfs to be diverted from Payne Creek, which equates to $9.30 \times 1.9835 = 18.4$ ac-ft of volume when run for 24 hours. The proposed 14.5 acre-foot pond equates to a 24-hour diversion rate of 7.3 cfs. Therefore, it appears that the proposed pond will meet the 24-hour rule.

