



Surface Water Applications

Wyoming State Engineer's Office

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307-777-6475

Submitting a Reservoir Application (Hardcopy)

October 2019

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Reservoir Applications

A reservoir application must be filed for any constructed facility used to store water. Reservoir applications are submitted on the S.W.3 form, which may be downloaded from the Wyoming State Engineer Office (SEO) website. <http://seo.wyo.gov/applications-forms#Surface>. **Reservoir Enlargements** applications are also submitted on the S.W. 3 form.

Note: A reservoir that meets the following requirements is considered a **Special Application**:

- 1) Reservoirs that do not exceed 20 acre-feet in capacity or 20 feet in dam height.
- 2) Floodwater detention reservoirs that do not exceed 50 acre-feet in capacity, 20 feet in height, or 20 acre-feet of inactive capacity (providing the dam has a low-level outlet with a minimum of 18 inches in diameter).

Reservoir Special Applications are submitted on the S.W.3 with the S.W. 3A form, which may be downloaded from the Wyoming State Engineer Office (SEO) website.

If you prefer to submit your application online, please see e-Permit Submittal Instructions. <http://seo.wyo.gov/regulations-instructions#Surface>.

Requirements for plans of dams

- 1.) For earthen dams, the slope must not be less than 3 to 1 for the front or water side and 2 to 1 for the back side (dry side) unless conditions justify steeper slopes. In this case, engineering data must be submitted in support of steeper slopes than these maximums. The top width must be at least 1/5 of the height plus 4 feet, and in no case less than 8 feet for dams 10 feet or more in height.
- 2.) A minimum freeboard (the distance from the top of the dam to the bottom of the spillway) of 5 feet is required on all earth dams. This minimum may be reduced, but only when specifically requested and prior approval is granted by the State Engineer. Justification for reducing the freeboard requirement below 5 feet must be submitted along with the application and should include information on the conditions, size and characteristics of the drainage area above the reservoir, the locations of buildings, roads, and other structures downstream from the dam, the effect of wave action on the face of the dam at maximum water level, and any other information concerning the conditions of the dam site. Waivers will not typically be granted for new construction with freeboard less than 3 feet.
- 3.) For reservoirs with a dam height greater than 20 feet or reservoirs with a storage capacity greater than 50 acre-feet or reservoirs located in an area where extensive property damage or loss of life might result from over-topping or failure of the dam. Contact Safety of Dams (SOD) for design specifications.

1.0 Completing a Reservoir Application

The instructions below describe how to complete each item of the application.

Facility name: provide a name for the reservoir in space provided. Short, distinct names are preferred. This must match the facility name provided on the map that accompanies the application.

Items 1-3 (Figure 1):

- 1) Item 1 and 2: Provide the name, mailing address, phone number, and email address of the applicant and agent. This must match the information provided on the map. The applicant is the individual or entity applying for the water right and the agent is the point of contact. Write "Same as above" in Item 2 if the agent and applicant are the same.
- 2) Write the type of beneficial use to which the water will be applied. Types of beneficial use include: irrigation, industrial pollution control, power, mining, manufacturing, milling, refining, snow making, reclamation, domestic, fish propagation, flood control, recreation, stock, wetlands, wildlife, municipal, and commercial.
 - a. If more than one beneficial use is applied for, specify the volume (acre-feet) allocated to each use. Only under inactive capacity may multiple uses be allocated to a single volume.
 - b. Provide the surface area (acre) of the reservoir at the high water line.
 - c. Specify the total capacity (acre-feet) of the reservoir at the high water line.
 - d. If the application is for an enlargement of an existing reservoir, specify the volume (acre-feet) of the enlarged portion.

Figure 1. Application Items 1-3

<u>THE</u>	<u>Crow</u>	<u>RESERVOIR</u>
1. Name(s), mailing address and phone no. of applicant(s) is/are <u>Reservoir Company, c/o Rez Ervore</u>		
<u>799 Swanton Ave., Thermopolis, WY 82443</u>		
<u>Ph: 777-777-7777; Email: diversionco@email.com</u>		
E-mail address: _____		
<small>(if more than one applicant, designate one to act as Agent for the others)</small>		
2. Name & address of agent to receive correspondence and notices <u>Same as above</u>		
E-mail address: _____		
3. The use to which the water is to be applied is <u>Fish propagation and recreation</u>		
(a) If more than one beneficial use of water is applied for, the reservoir capacity must be allocated in acre-feet to the various uses:		
<u>Active Capacity</u>	<u>Inactive Capacity</u>	
<u>Fish Propagation = 10.00 AF</u>	_____	
<u>Recreation = 9.33 AF</u>	_____	
_____	_____	
(b) The area of the high water line of the reservoir is <u>5.80</u> acres.		
(c) The total available capacity of the reservoir is <u>19.33</u> acre-feet.		
(d) If enlargement, the capacity of this enlargement is <u>-</u> acre-feet.		

Items 4-7 (Figure 2):

- 3) Write the name of the stream that is supplying the reservoir. Leave blank if unknown. If the reservoir is off-channel and supplied by a ditch, pipeline, or well, a separate application for the supply facility must be submitted and the name and permit number (if known) must be specified here.
- 4) Provide the survey tie from an established BLM corner monument to the reservoir outlet. If there is no outlet, the point of intersection between the natural stream bed and the dam, or natural overflow point, must be substituted. Following the survey tie information, specify the legal description and geographic coordinates of the point of diversion. The legal description may be found on your property deed.
- 5) Specify the legal description and owner of any state or federally-owned lands that are covered by the proposed reservoir.
- 6) Dam Details:
 - a. If no dam is constructed, write "Not Applicable – Pit Reservoir". Otherwise, describe the method of construction or type of dam. If an earthen dam is constructed, provide the volume of fill material used (yd³).
 - b. State the method and/or material used to protect the dam face from erosion.
 - c. Provide the dam height, measured as the distance between the dam crest elevation and the elevation of downstream toe at the lowest point.

Figure 2. Application Items 4-6

4. The source of the proposed appropriation is (<i>stream, ditch, well, etc.</i>) <u>Crow Draw via Jones Ditch (P9964.0D)</u>
5. The outlet of the proposed reservoir is located <u>N 45° 11' 56" W 1750</u> feet distant from the <u>E ¼</u> corner of Section <u>8</u> T. <u>44</u> N., R. <u>97</u> W., and is in the <u>NWNE</u> of Section <u>8</u> T. <u>44</u> N., R. <u>97</u> W. Lot _____ Block _____ Subdivision Name _____ Latitude <u>44.562981</u> Longitude <u>-109.564871</u>
6. Are any of the lands covered by the proposed reservoir owned by the State or Federal government? If so, describe lands and designate whether State or Federally owned. <u>State: NWNE Sec. 8, T.44N, R.97W</u> <u>Federal (BLM): SENE Sec. 8, T.44N, R.97W</u>
7. (a) The dam is to be constructed as follows: <u>Earthen embankment</u> _____ contents = <u>4750</u> cubic yards.
(b) The water face of the dam is to be protected from wave action in the following manner: <u>Rock Riprap</u>
(c) The dam height, as measured by the dam crest elevation minus the lowest downstream toe elevation is <u>15</u> feet.

1.10 Reservoir Enlargements

For reservoir enlargements, the name must follow the format “Jones Enlargement of the Model Reservoir (P1234.0R)”.

Previous instructions given for reservoir applications and original water right applications will apply.

*Consent to Enlarge must be requested from all owners of reservoirs described in existing water rights, permits or applications for permits for the facility to be enlarged before the State Engineer will consider approval of the application. Where the reservoir operator is an incorporated company or irrigation district, consent may be made on behalf of the individual owners by that entity where the consent is an excerpt of meeting minutes showing approval and authority for the individual signing for the company or district to act in such capacity. Consent to Enlarge Reservoir forms are available on the State Engineer’s website or may be obtained from the State Engineer’s Office.

For additional information regarding requirements for Reservoir Enlargement applications, see Surface Water *Regulations & Instructions* Chapter 5 – Reservoirs and Chapter 8-Maps located on the State Engineer’s Webpage. <http://seo.wyo.gov/regulations-instructions#Surface>

2.0 Certified Map

For applications that do not meet special application requirements, a map certified by a Wyoming licensed engineer or surveyor is required. *If the application meets special application requirements, see instructions for Reservoir Special Applications located on the SEO website.* The map must follow SEO Regulations and Instructions to be acceptable, which can be found on the SEO website. <http://seo.wyo.gov/regulations-instructions>

The list below provides a description of the primary requirements to consider when preparing a map.

- 1) **Title Block:** provide a title block in the lower right corner of the map.
 - a. Label the title “Map to Accompany Application for (insert Facility Name as written on the application)”
 - b. Include the applicant name and address.
- 2) **Scale:** show the scale for each drawing on the map, which must not be less than:
 - a. Location/Contour Map: 1” = 400’
 - b. Dam Profile: 1” = 200’
 - c. Dam Cross-Section: 1” = 20’
 - d. Detailed Plans: 1” = 4’
- 3) **Location Map/Plan View:**
 - a. **Point of Outlet (POO):** the reservoir outlet must be identified by a symbol within the most current BLM survey boundaries and accompanied by geographic coordinates and a survey tie from a BLM corner. If there is no outlet, the point of intersection between the natural stream bed and the dam, or natural overflow point, must be substituted.

- i. Show the entire section or resurvey tract in which the outlet is located.
 - ii. The BLM survey boundaries must be subdivided into quarter-quarters, resurvey tracts, and/or resurvey lots.
 - iii. Label the datum to which the coordinates are associated (e.g. NAD 83).
 - b. **Points/Areas of Storage (POS):** the reservoir high water line must be shown within the most current BLM survey boundaries.
 - i. Where the high water line touches a section or resurvey tract, show the entire section or tract.
 - ii. The BLM survey boundaries must be subdivided into quarter-quarters, resurvey tracts, and/or resurvey lots.
 - iii. For reservoir enlargements, show the high water line of the reservoir as it exists prior to the enlargement in addition to the high water line of the enlarged reservoir.
 - c. **Existing Water Rights:** within BLM subdivisions that are affected by the reservoir high water line, all existing surface and groundwater rights must be shown.
 - i. Each existing water right must be shown with distinct cross-hatching.
 - ii. For irrigated lands, the amount of irrigated acres within each subdivision must be labeled and cross-hatched.
 - d. **Spillway Location:** show the location and extent of the primary and emergency spillway (as applicable), including the bottom width.
 - e. **Elevation Contours:** draw and label the elevation contours of the submerged ground surface at vertical intervals of five feet or less.
 - f. **Stream Source:** show the name, location, and flow direction of the source of supply.
- 4) **Capacity Table:** provide a table showing the active and/or inactive capacity of the reservoir and the type of beneficial use.
- a. Active capacity is defined as the amount of storage above the lowest outlet. Inactive capacity is defined as the amount of storage below the lowest outlet, or the entire capacity for reservoirs that do not have an outlet.
 - b. For reservoirs with multiple uses, specify the type of beneficial use associated with each portion of the reservoir.
 - c. The same base elevation and contours must be used for the contour map, dam profile, and capacity table.
 - d. For reservoir enlargements, show the capacity of previous appropriations under individual permits and the capacity of the proposed enlargement.
- 5) **Dam Profile:** show a profile of the dam along the centerline and label the elevations at the dam crest, high water line, and reservoir floor. Also, show the outlet and spillway location, as applicable. For pit reservoirs, show a cross-section of the pit and label the ground surface elevation and pit floor.

- 6) **Dam Cross-Section:** show the maximum cross-section and label the elevations at the dam crest and downstream toe, face slopes (horizontal : vertical), top width, and freeboard distance. Waivers must be requested if:
 - a. Upstream slope is steeper than 3:1
 - b. Downstream slope is steeper than 2:1
 - c. For dam height (H) less than 10', top width $< 1/5 * H + 4$
 - d. For dam height of at least 10', the top width $<$ the greater of 8' or $1/5 * H + 4$
 - e. Freeboard $< 5'$
- 7) **Spillway Cross-Section:** show the cross-section, hydraulic specifications, and flow rate formula.
- 8) **Outlet Works:** show the device used to release and regulate water flow from the dam in detail and include hydraulic specifications and flow rate formula.
- 9) **Supply Facilities:** show all man-made conveyance facilities used to supply the reservoir. A separate application (e.g. S.W.1, S.W.2, or groundwater well) must be submitted for each supply facility. All map requirements that apply to S.W.1 and/or S.W.2 applications are required for reservoir supply facilities.
- 10) **Legend:** provide a legend identifying map symbols, cross-hatching, and water rights.
- 11) **North Arrow:** provide an arrow indicating the north direction.
- 12) **Engineer or Surveyor Stamp/Certification:** The map must be stamped and signed by a Wyoming licensed engineer or surveyor and include a certification statement.
- 13) Room for the State Engineer's Office to add a Signature Block.

Appendix

(Large Figures)

