

## STATE WATER RESOURCES CONTROL BOARD

### DIVISION OF WATER RIGHTS

#### PROCESS FOR WATER RIGHT LICENSING

The water right process has three phases: (a) application, (b) permit, and (c) license. An application is a request that the Division of Water Rights (Division) consider authorizing development of a water diversion project. A permit is the legal authorization to divert water in accordance with conditions and within a time schedule, and develop the project. When project development is complete, the Division determines whether a water right license can be issued. The license is the final confirmation of the water right and remains effective as long as its conditions are fulfilled and beneficial use continues. The license is recorded in the County Recorder's Office.

This document describes the licensing process and identifies the information that the Division requires in order to license a water right. Due to limited resources, the Division is unable to promptly inspect all projects reported ready for licensing. Therefore, the Division will allow permittees to submit the information needed for licensing for the Division's review and evaluation. For reservoir projects, the Division will accept certified reservoir surveys prepared by a licensed land surveyor or registered engineer. For all projects, the calculations of diversion and beneficial use of water under the permit must be prepared by a qualified professional acceptable to the Division. In the event a submittal is determined to be unacceptable, the permittee will be required to either address deficiencies or wait until the Division conducts its own inspection of the project. In all cases, the Division will determine if a physical inspection of the project facilities is needed to obtain additional information or confirm the permittee's data and measurements. The Division may issue a license if the licensing requirements are met.

The following information is provided to assist with your determination of whether your water right permit is ready for water right licensing.

#### **AM I READY FOR A LICENSE?**

Water right permits issued by the State Water Board specify a development schedule to complete construction and beneficial use of water. When that development schedule elapses, a permittee should either: (1) request revocation of the permit if the project has been abandoned or cannot be diligently completed due to personal or financial reasons; (2) petition for an extension of time to extend the development schedule if the construction and use of water under the permit has been diligently pursued and additional time is necessary to complete full anticipated beneficial use of water; or, (3) notify the State Water Board that the permitted project is complete and ready for licensing.

**Note: A license can only be issued for the amount of water that has been placed to beneficial use during the authorized period and in compliance with all terms and conditions of the permit.**

Prior to the end of the permitted development schedule, a project may be ready for a water right license if construction and full beneficial use under the water right permit has been completed.

If you hold multiple water rights for the same facility or entity, it is possible that the most senior water right (oldest filing date) may be ready for a license even if the more junior water right is not yet ready.

### **WHAT IS INCLUDED IN A LICENSE?**

Using the permit conditions, calculations, conclusions from field data and measurements, the Division's records and pre-licensing submittals, the Division prepares a draft license.

The license reflects actual use in terms of source, amount, season, place of use, point(s) of diversion, and purpose(s) of use, by direct diversion and/or storage. The Division determines the amount of water beneficially used after taking the limitations of the right into consideration. When the Division licenses projects with multiple water rights, the conventional approach is to examine each water right individually since every water right has a specific priority relative to every other water right. If water from a reservoir with more than one right can be used only under one of the rights, the Division credits the use to that right. If it can be used under more than one of the rights, the Division credits the use first to the extent of the senior right and remaining excess use to the junior right. Licensing of multiple water right projects is also complicated by the individual projects' uses, seasons, diversion methods, and amounts, including amounts combined with other associated water rights.

### **WHAT IS THE TIME PERIOD FOR DETERMINING MAXIMUM USE?**

The Division usually uses either the initial permit's development schedule or the most recent development schedule authorized by the most recent time extension.

### **THE PERMIT DEVELOPMENT SCHEDULE HAS ELAPSED. WHAT DOES THAT MEAN?**

When a permit development schedule has elapsed, no further development of water use may occur. The permittee is limited to the maximum annual quantity put to use during the permit development schedule and any previous extensions approved by the Division.

### **THE PERMIT DEVELOPMENT SCHEDULE HAS ELAPSED, BUT THE PROJECT WAS NEVER BUILT. WHAT ARE THE OPTIONS?**

A license cannot be issued if the project was not built. The permittee should either submit a request for revocation or petition for an extension of time. Please note that time extension petitions are only approved when specific criteria are met. (Cal. Code Regs., tit. 23, § 844.)

### **THE PERMIT DEVELOPMENT SCHEDULE HAS ELAPSED, BUT ONLY SOME OF THE PROJECT FEATURES WERE BUILT OR FULL BENEFICIAL USE HAS NOT BEEN COMPLETED. WHAT ARE THE OPTIONS?**

A license can be issued for the project features that were built and the amount of water put to beneficial use. The remaining unused portion of the water right will be lost.

If the remaining project features will be built later and/or the permittee wants more time to complete full beneficial use, a license should not be requested. A petition for extension of time should be filed.

**THE PROJECT HAS BEEN COMPLETED, BUT IT WAS COMPLETED AFTER THE PERMIT DEVELOPMENT SCHEDULE HAD ELAPSED. DOES ANY ADDITIONAL WATER USE BEYOND THE END OF THE DEVELOPMENT SCHEDULE COUNT TOWARDS LICENSING?**

For some permittees, maximum beneficial use occurred prior to the request for a license, but after the end of the permit development schedule. In that case, permittees should file a petition for extension of time, but only to cover the period between the end of the beneficial use period in the permit and the date of full beneficial use. A license can be offered once the petition has been approved. A petition for extension of time can be processed concurrently with the licensing of a project.

**THE PROJECT HAS BEEN COMPLETED, BUT THE PROJECT WAS MODIFIED AFTER THE PERMIT WAS ISSUED. DOES THE WATER USED IN A DIFFERENT PLACE OF USE, FOR A NEW PURPOSE OF USE, OR IN ANOTHER MANNER NOT SPECIFIED IN THE PERMIT COUNT TOWARDS LICENSING?**

Only water used in accordance with the terms and conditions of the permit, and any changes authorized by the Division, counts toward licensing. The permittee must file a petition for change to amend the permit to reflect the project modifications. Once the petition for change is approved, a license can be offered. A petition for change can be processed concurrently with licensing of a project.

**WILL THE DIVISION CONSIDER ALL OF THE WATER IN MY RESERVOIR TO BE STORED WATER?**

Please refer to the Division's [Considerations for Reservoir Licensing](#) for more information.

**DO I GET CREDIT FOR REDUCING WATER DIVERSIONS?**

Water Code section 1010 et seq. protects a right holder's established beneficial uses of water from being lost or reduced as the result of either: (1) water conservation efforts; (2) use of groundwater (with exceptions); or, (3) use of recycled water, desalinated water, or water polluted by waste to a degree which unreasonably affects the water for other beneficial uses, in lieu of previously appropriated water. It does not provide that beneficial uses of water under a permit can be increased if an amount of water has never been initially diverted to beneficial use under the permit. Any established beneficial use of water under a permit, however, when ceased or reduced by this method would not result in a reduction in the licensing amount.

Permittees claiming the credit under Water Code section 1010 et seq. for licensing purposes must have previously documented the claimed credit on the annual water diversion progress reports submitted to the Division.

## **WHAT INFORMATION SHOULD I REVIEW TO DETERMINE IF THE PROJECT IS READY FOR LICENSING?**

1. Review the permit's complete use date and past orders extending the time to develop the project or granting modifications to the project.
2. Review the annual progress reports of permittee submitted to the Division.
3. Review any agreements or contracts affecting water diversion and use. For projects with multiple water rights, review the associated water rights to determine if more than one water right is ready for licensing.
4. Review aerial photos and compare the area where water is being used to the maps on file with the Division for the place of use.
5. Review compliance with permit terms and conditions.
6. If the water right permit requires authorization from other agencies, obtain a copy of all required authorizations for submittal to the Division (if the documents are not already in the Division's files).

## **WHAT FIELD DATA IS NEEDED FOR LICENSING?**

To offer a license, the Division must confirm the quantities of water diverted and put to beneficial use. The following is a list of field information. Data is required for all of the items listed below that are included in the water right permit.

- Amount of water diverted (taken from the source by direct diversion and/or collection to storage). Direct diversion rates should be reported in gallons per minute, gallons per day or cubic feet per second and should be reported using the smallest time interval possible (daily, weekly or monthly). Collection to storage should be reported in acre-feet. Diversion to offstream storage should be reported as a rate of diversion, with the maximum quantity collected to storage also reported.
- Quantity beneficially used is the quantity of water directly diverted for beneficial use (this includes water regulated by a reservoir, but not collected to storage in the reservoir) or released from storage and put to beneficial use.
- Reservoir water surface elevation (rated staff gages) changes during collection and use seasons. Document measuring device installation dates.
- Annual acreage on which water is applied and crop type.
- Irrigation schedule(s).
- Type and spacing of irrigation and frost protection equipment.
- Nozzle sizes and capacities of pumps, conduits, and delivery systems.

- Frost protection and heat control dates and times along with the acreage protected (acres).

*Persons lacking sufficient records may submit the following: (a) number of hours of frost or heat protection using a nearby climatological station for the basin (supporting data must be submitted), (b) photographic documentation that the frost or heat protection system is in place and that the pumps used for frost protection or heat protection are in place. Provide certification that the pumps are in working condition, (c) sprinkler spacing in the frost or heat protection area, (d) identification of the number of acres protected by frost or heat protection sprinklers, and (e) nozzle size, operating pressure, and output of sprinkler (for example, 1.8 gallons per minute per sprinkler using a 3/32" nozzle @ 50 psi).*

- Nature of industrial use.
- Number and type of animals for stockwatering use.
- Approximate population and delivery amounts for municipal use.
- Number of persons, area of garden, lawn, etc. used for domestic use.
- Installed capacity for power generation and daily diversions (KW, MW or hp).
- Types of recreational or wildlife enhancement uses such as boating, fishing, or wildlife use.
- Water conserved (acre-feet or gallons).
- Water reclaimed (acre-feet or gallons).
- Water conjunctively used (acre-feet or gallons).
- Document alternate water supply used during periods when diversion not allowed under permit. Provide receipts or contracts for water purchases.
- Pump test to document pump capacities. Provide power records or fuel use to correlate with pumping times or duration.
- Pump location, type, and specifications.
- Season of diversion and use.

Sometimes data may not be readily available for licensing purposes and water use must be estimated based on water duties. Calculations based on water duties will not be accepted in any circumstances where metered data or other data from better sources (such as power records, etc.) is available.

The following field measurements are needed:

- Survey of reservoir capacity by registered engineer or licensed land surveyor.

- Dam measurement (height, slope, crest width, freeboard) – determine existing conditions and if Dam Safety jurisdiction applies.
- Place of use (POU) acreage, location, and purpose of use.
- Weir or orifice dimensions.
- Location of point(s) of diversion and point(s) of rediversion.
- Stream flow measurements and bypass flow measurements, if needed.
- Pipe or channel flow measurements.
- Sprinkler head flow measurement and spacing.
- Photographic documentation of the project.
- Reservoir drawdown.
- Meter or gage accuracy.
- Water delivery systems (pipe or channel dimensions, rise and run, capacities, turnouts, nozzles, limitations, etc.).

## **FIELD DATA AND FIELD MEASUREMENTS – SUBMITTING THE INFORMATION TO THE DIVISION**

A report detailing the field information should be submitted to the Division. Partial or full reports may be attached to the annual electronic water use data submitted to the Division. Incomplete reports may be completed or amended at any time. Also, photographs or other materials may be attached to the electronic reporting data. If you intend to use information from an online web site maintained for this water right, submit the appropriate web site link. To prevent loss of monitoring data, we recommend that the data be provided as an attachment when it is first obtained. All reports should include the following:

- Reiteration of limitations, uses, season, place of use, points of diversion(s), owner(s), source(s), and special terms documented in the permit. Documentation of compliance with each permit condition.

For any condition related to installation or maintenance of equipment (such as a reservoir staff gage, stream gages, reservoir outlet pipes, etc.), include photographic documentation that the equipment has been installed, and documentation that the equipment has been calibrated and is operable. Such documentation should be prepared by a registered engineer, or other person acceptable to the Division.

For any permit condition related to bypass facilities, bypass flows, etc., include photographic documentation that the facilities have been installed, documentation that all facilities have been maintained in operable condition, and documentation that bypass flows, etc. have been met.

- Confirmation that all petitions for extension of time or change needed to modify the permit have been filed with the Division.
- Description of diversion system, major uses of water, and a detailed breakdown of the place of use.
- A copy of the reservoir survey, if applicable.
- Area/capacity curve with maximum drawdown for all consumptive reservoirs.
- Detailed sketches if appropriate.
- Photographic documentation of the project.
- License or project map. For more information regarding map requirements, please review the Division's [guidance for maps](#).
- Supporting calculations and documentation. Large storage projects may require the development of a hydrograph to determine storage, withdrawal, and direct diversion allocations of water use.

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### GUIDANCE FOR MAPS

Water right permits and licenses require the production of maps that include the point(s) of diversion, place of use description, and any other pertinent information. The Division prepares maps by downloading the initial data collected in the field onto the license map using ArcView software. Once the point of diversion and place of use data is incorporated as an overlay on a topographic layer, the map should be labeled and the subdivided sections shown. The sections underlying the place of use must be fully delineated. If the total number of place of use descriptions exceeds 16 individual listings, 40 acre subdivisions should be combined to 160 acre subdivisions ( $\frac{1}{4}$  section) descriptions.

#### **Background**

The Division uses the U.S. Geological Survey's (USGS) 1:24,000 quadrangle maps to describe the location of water right projects by referencing these sections in official documents such as applications, permits and licenses. These maps depict township and range lines, either on paper or electronically, as a dashed red line. Townships are approximately six miles by six miles square, and are further subdivided into approximate one-mile squares called sections. There are usually (but not always) 36 sections in a township. Sections are not always exactly one mile high or wide, and are not always perfect squares. For most of the State, the section corners have been "found" by the USGS and, until relatively recently, points of diversion and other features of a project have been referenced as some distance "x" and "y" from a section corner. With the development of GPS technology, the Division now uses California Coordinate System of 1983 to describe specific points, but it still uses sections, quarter-sections, and quarter-quarter sections to describe area features of a project (such as a vineyard or reservoir) as required by law. While most section corners have been "found," some water right projects are located in sections that have not been "found" by the USGS. In these cases, the section must be "projected" or estimated by Division staff.<sup>1</sup>

#### **Projecting Map Sections**

Division staff follows a number of uniform, but complicated, surveying rules when projecting (1) a section from an adjacent section, (2) a nearby, but not adjacent section or (3) a Township/Range line. For consistency, other persons working on a project located in the same area should use the existing map and/or the same process for projecting sections for their projects. If a project was recently licensed, the sections developed for the licensing map may potentially be used for the new map for the proposed license.

#### **General Requirements**

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<sup>1</sup> The Division's map storage room contains a limited number of paper "Oil & Gas" quad maps with projected sections for the San Francisco Bay area. While somewhat useful, these Oil & Gas maps have limited aerial coverage.



The requirements for permit or license maps are listed in California Code of Regulations, title 23, section 715 et seq. All projects must comply with the general requirements and also the requirements for minor projects or major projects. There are additional mapping requirements based on the type of water use. The information below and the example maps are provided solely to assist in map preparation. This information does not cover all of the requirements listed in the regulations. You should carefully review the regulations to make sure your map is adequate.

Here are some helpful tips for map preparation:

- The map must be overlain on a USGS quadrangle map.
- The section lines should be shown on the map. Also, the Township and Range should be identified. For irrigation projects, identify the number of irrigated acres in each  $\frac{1}{4}$  section (for irrigation of very large areas, the exterior boundaries of the irrigated area may be shown).
- The map scale should be reasonable, enabling a reader to easily make out the map features. Do not shrink the map to 8  $\frac{1}{2}$  inch by 11 inch size if that makes the map unreadable. Multiple map sheets may be used. The Division can accept maps up to 28 inches by 40 inches in size.
- The place of use should be clearly shown. The boundary line around the place of use should not be so thick that the reader cannot easily determine what land is inside the place of use, and what land is outside the place of use.
- A North arrow should be provided.
- The map should clearly identify the applicable application number(s).
- One original and one copy of the map is required for each right, regardless of whether multiple rights share the same place of use or diversion facilities. For major projects, the original should be rendered on mylar and the copy may be on paper. For minor projects, the original can be on paper.
- The point(s) of diversion and rediversion should be clearly identified and the coordinates provided. The coordinates should be provided by California Coordinate System (NAD 83) unless it is not possible to acquire them. This information can be provided in a table on the map. *Note: In the past, the Division allowed a single point of diversion for well fields (offset wells located close together), but now requires that each well be identified as a separate point of diversion. In most cases, this type of conversion will not require a petition for change of point of diversion or rediversion.*
- The water sources for each point of diversion and rediversion facility should be labeled. Please refer to the examples.
- A drawing of the reservoir(s) with the reservoir contours shown should be provided.

- Labeling should conform to the provided examples. The type of diversion works (pump, onstream well, offstream well, gravity flow, etc.) should be identified.
- The map should be dated.
- Maps for major projects must be prepared by a licensed engineer or licensed land surveyor. Maps prepared by a federal agency may not be required to comply with this requirement.
- Division staff cannot make edits to a map prepared by a licensed engineer or licensed land surveyor. If you intend to submit a change petition for a project that has this type of map, you will need to prepare an appropriate new map or have the engineer or surveyor modify the existing map, sign and date the modifications.

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#### CONSIDERATIONS FOR RESERVOIR LICENSING

Water in a reservoir may be considered either stored water, water that has been regulated, or water that is diverted by direct diversion. For the purposes of water right licensing, the definitions of when water is considered to have been stored versus regulated are set forth in California Code of Regulations, title 23, sections 657 and 658.

#### **Regulation of Water**

California Code of Regulations, title 23, section 657 states:

*Regulation of water means the direct diversion of water to a tank or reservoir in order that the water may be held for use at a rate other than the rate at which it may be conveniently diverted from its source. For licensing purposes, refill, in whole or in part, held in a tank or reservoir for less than 30 days shall be considered regulation of water.*

Regulation of water as stated above is considered direct diversion, not storage. This only applies to refill, not to initial storage. Initial storage can be withdrawn for use without regard to any specified time limit.

#### **Storage of Water**

California Code of Regulations, title 23, section 658 states:

*Storage of water means the collection of water in a tank or reservoir during a time of higher stream flow which is held for use during a time of deficient stream flow. For licensing purposes all initial collections within the collection season plus refill, in whole or in part, held in a tank or reservoir for more than 30 days shall be considered water diverted for storage except as provided in Section 735(c)<sup>2</sup>.*

If inflow is occurring at a reservoir and the water surface is rising, any withdrawal of water from the reservoir is considered direct diversion, not storage. If the total amount of inflow is bypassed through or around the reservoir and if water is taken from the reservoir for beneficial uses such that the water surface is falling, the withdrawal of water is considered withdrawal from storage<sup>3</sup>.

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<sup>2</sup> California Code of Regulations, title 23, section 735, subdivision (c) makes an exception for diversion of water during the spring frost season from March 15 to May 15 in the Napa River Valley.

<sup>3</sup> If the water surface in the reservoir subsequently rises, the 30-day rule determines if withdrawal of the re-storage is direct diversion or storage withdrawal. However, the Division will consider flow "spikes" that encroach into flood space determined by the U.S. Army Corps of Engineers as regulation of water when estimating the flow diverted to storage or withdrawn from storage. Flood space encroachment at the end-of-season may be used if authorized by the U.S. Army Corps of Engineers.

## **LIFO-FILO Methodology**

For licensing purposes, the Division uses a LIFO-FILO methodology for tracking different sources or types of reservoir storage, which was developed by interpreting California Code of Regulations, title 23, sections 657 and 658.

LIFO-FILO refers to “Last-In, First-Out” and “First-In, Last-Out” where the last volume of water that flows into a reservoir is assumed to be the first volume to flow out and, conversely, the first volume of water that flows into a reservoir is assumed to be the last volume to flow out. The LIFO-FILO methodology is used for the following situations: (1) reservoirs that serve as both water storage points and direct diversion points; and, (2) reservoirs from which water is pumped or released and then refilled to any extent by inflow or diversion from other sources. In general, initial pumping, or release, of water after the reservoir has initially filled is considered withdrawal from storage.

Any pumping or release of water from the reservoir within 30 days after the reservoir has been refilled is considered regulatory storage of water until the previous draw-down level is exceeded. Once the previous draw-down level is exceeded, the volume of water pumped, or released, beyond this level is withdrawal from initial storage.

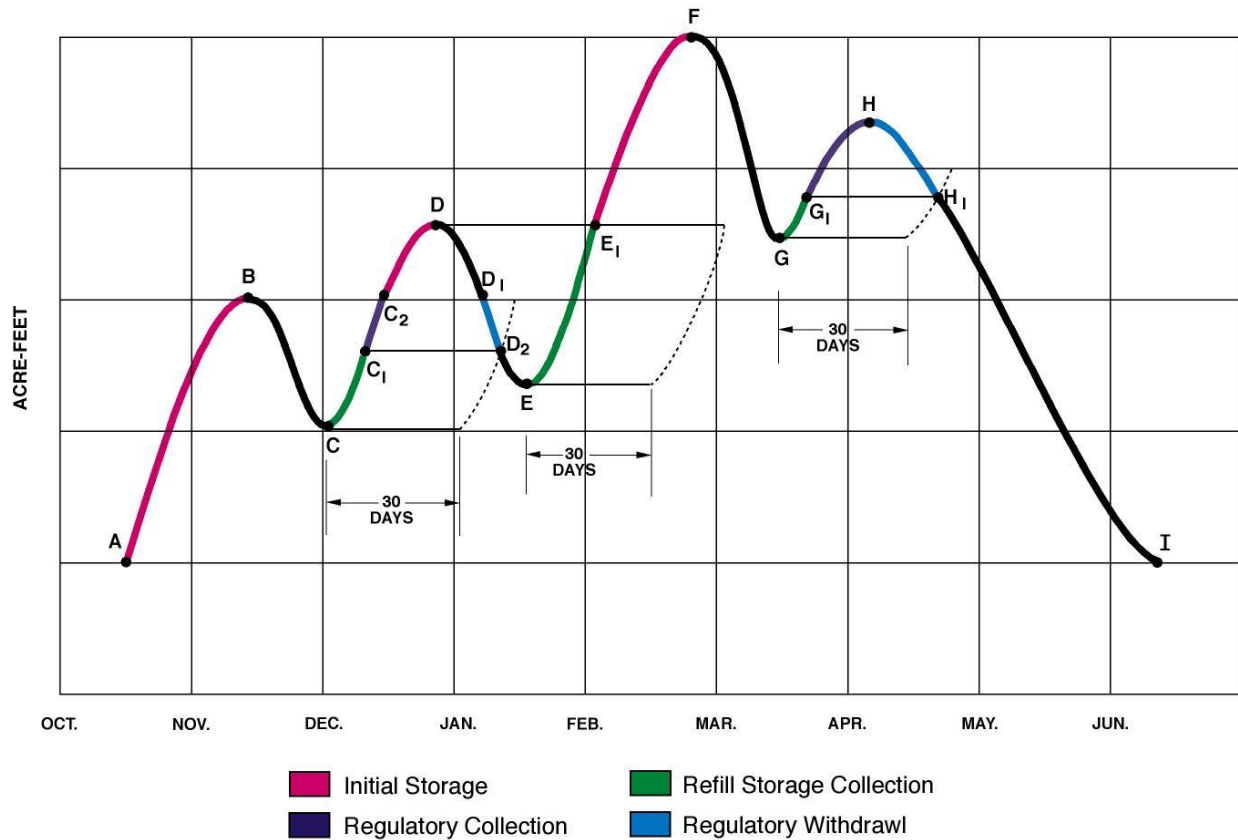
Long-term carryover reservoirs are usually sized to collect water in years of heavy runoff for use over several consecutive dry years. In such cases, the Division recognizes the maximum collection year, whenever it occurs for licensing. A license for a water storage project is segregated into two components.

Water that is held in a reservoir for over 30 days is considered storage, and a license is written in terms of acre-feet per annum collected and later put to beneficial use.

Water diverted by direct diversion or regulatory storage of less than 30 days is regarded as direct diversion, and the license is issued in terms of some unit of flow, such as cubic feet per second.

Please refer to the attached explanatory sample hydrograph and two example hydrographs for more information.

# SAMPLE HYDROGRAPH

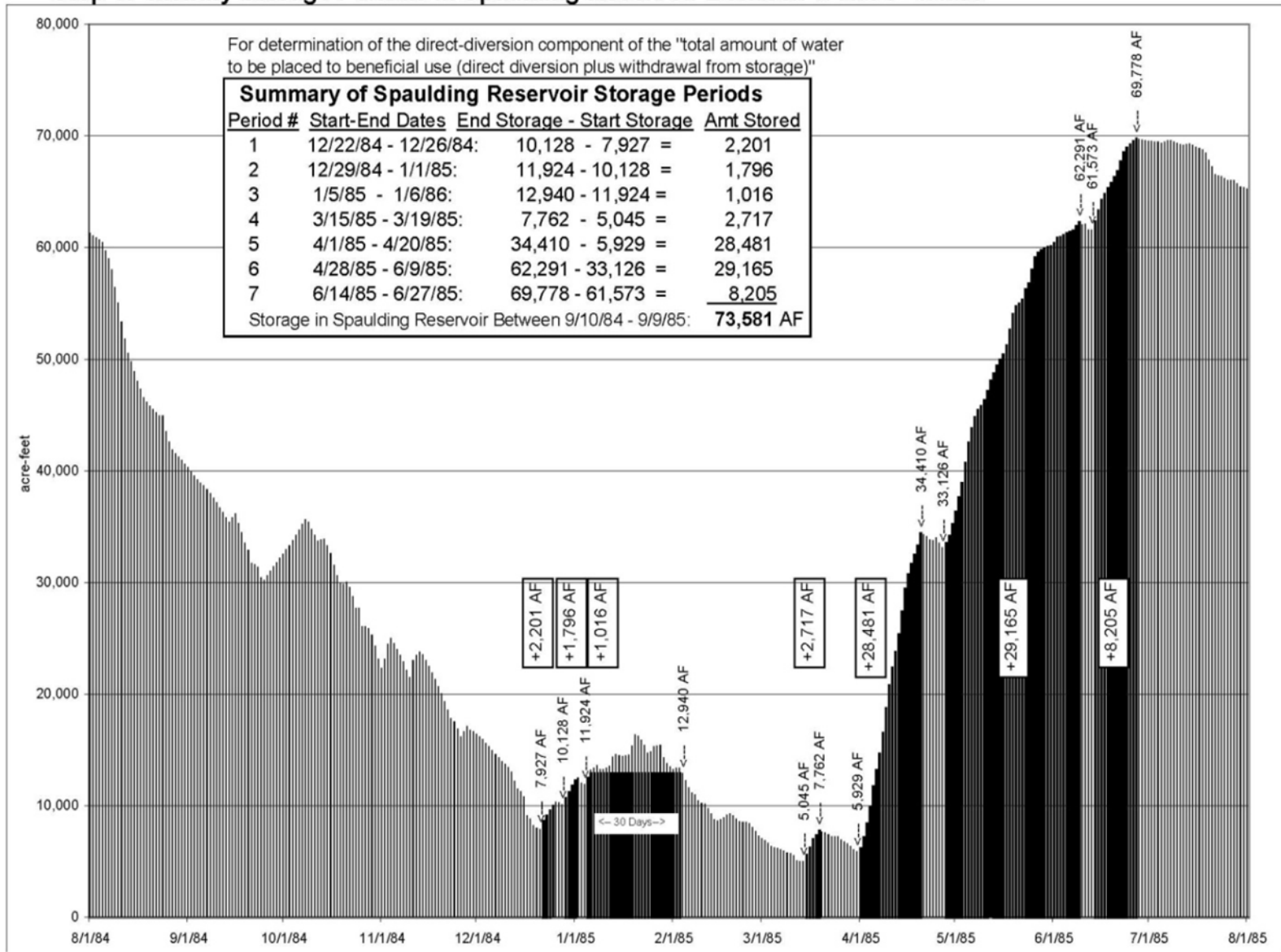


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1. **A-B**, **C2-D** and **E1-F** constitute initial collection to storage.
2. Refill of initial storage **C-C2**, **E-E1** and **G-H** must be analyzed to determine if all or part of refills were released within 30 days.
  - a. Withdrawal **D1-D2** occurred within 30 days, therefore **C1-C2** is considered regulatory. **C-C1** is determined to be collection to storage.
  - b. Analyzing **E-E1** results in no withdrawal of this water within a 30-day period. Therefore **E-E1** is considered collection to storage.
  - c. On analyzing **G-H**, it is determined that **G-G1** is held for 30 days or more and therefore is considered collection to storage. **H-H1** was withdrawn within a 30-day period. Therefore **G1-H** is considered regulatory storage.
3. The total storage is comprised of **A-B**, **C-C1**, **C2-D**, **E-E1**, **E1-F** and **G-G1**.

Since **C1-C2** (**D1-D2**) and **G1-H** (**H-H1**) are considered regulatory, the total withdrawal from storage is comprised of **B-C**, **D-D1**, **D2-E**, **F-G** and **H1-I**.

### Step 1: Identify Storage Periods in Spaulding Reservoir Between 9/10/84 - 9/9/85



### Bowman Reservoir

USGS Gage # 1145500

Year of Max "Taken from the Source" (Direct Diversion + Storage)

May 22, 1995 - May 21, 1996

#### Storage Periods (basis)

5/22/95 - 6/5/95:	9,500	(I.F.)
6/10/95 - 7/7/95:	10,600	(30-d + I.F.)
7/10/95 - 7/27/95:	6,100	(30-d + I.F.)
9/6/95 - 9/29/95:	1,300	(30-d (all J.M. restrg))
12/11/95 - 12/12/95:	1,700	(30-d)
1/16/96 - 4/8/96:	17,800	(30-d)
4/9/96 - 4/17/96:	1,500	(I.F.)
4/24/96 - 5/16/96:	12,310	(30-d + I.F.)
<b>Total:</b>	<b>60,810</b>	<b>AF</b>

