

# WATER RIGHTS AND HISTORICAL SUPPLY PROFILE

Model Ditch Service Area — Purgatoire River Drainage, Las Animas County, Colorado

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**Prepared for:** Representative, Colorado State Land Board

**Subject:** Surface-water rights of record and historical supply analysis

**Primary source:** Colorado Division of Water Resources — CDSS (HydroBase) public records

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## 1. Purpose and Basis

This document summarizes the surface-water rights of record and the historical surface-water supply associated with the Model Ditch service area on the Purgatoire River in Las Animas County, Colorado. It is provided for informational purposes to support the recipient's independent due diligence.

The figures presented are drawn from the Colorado Division of Water Resources (DWR) Colorado Decision Support System (CDSS / HydroBase), including structure, net-amount (decree), annual diversion, reservoir stage-volume, and release records. Where a quantity originates from a record other than DWR — such as ditch-company ownership shares or on-the-ground operating practice — that origin is identified and flagged for confirmation. Reservoir operational accounting (daily contents and water-balance) is maintained by the U.S. Army Corps of Engineers (USACE), Albuquerque District, and the Purgatoire River Water Conservation District (PRWCD); the limitations this creates are set out in Section 8.

## 2. Service Area and Decreed Acreage

The subject lands lie approximately 18 miles northeast of Trinidad, in the vicinity of Model, and are served from the Purgatoire River through the Model Ditch (DWR structure WDID 1900552; Water Division 2, Water District 19). The subject property holds majority ownership of, and is the principal user of, the Model Ditch.

The underlying decree provided for the irrigation of **6,177 acres** (confirmed in the DWR net-amount record). Following the retirement (“dry-up”) of approximately 1,229 acres in connection with the storage and pooling arrangement described in Section 3, the currently irrigable acreage is approximately **4,948 acres**. The current-acreage and dry-up figures derive from property and ditch-company records and should be confirmed against those sources and the controlling change decrees.

## 3. Water Rights of Record (DWR-verified)

The following elements were confirmed against the Colorado DWR net-amount and structure records:

Element	Record of value
<b>Delivery structure</b>	Model Ditch — WDID 1900552 (type: ditch); Water Division 2, Water District 19; source: Purgatoire River
<b>Appropriation (priority) date</b>	January 22, 1908
<b>Decree (adjudication) date</b>	January 12, 1925
<b>Originating case (direct flow)</b>	CA6118
<b>Direct-flow right</b>	172 c.f.s. absolute (per DWR net-amount record) <sup>1</sup>
<b>Storage right</b>	20,000 acre-feet absolute — priority Jan. 22, 1908; decree Jan. 12, 1925; case CA19793
<b>Storage location / transfer</b>	Transferred from Model Reservoir to Trinidad Reservoir; DWR comment: “TF MODEL RESERVOIR ID 3797 WINTER STORAGE”
<b>Model Reservoir</b>	WDID 1903797 — status historical / inactive (consistent with the storage relocation)
<b>Trinidad Reservoir</b>	WDID 1903935 — status active
<b>Federal joint-use pool (separate)</b>	1989 joint-use capacity right: ≈ 72,378 a.f. absolute + 5,622 a.f. conditional (≈ 78,000 a.f.) — flood-control / conservation pool, distinct from the irrigation storage right above

The storage right is significant: the DWR record independently confirms the 20,000 acre-foot parent storage right, its 1908 priority and 1925 decree, and its case-documented transfer (CA19793) from Model Reservoir to Trinidad Reservoir. The historical/inactive status of Model Reservoir corroborates that relocation.

#### 4. Stored-Water Entitlement

The subject property’s pro-rata stored-water entitlement is approximately **4,800 acre-feet** — about 80% of a 6,000 acre-foot operating pool — drawn from the confirmed 20,000 acre-foot parent storage right. That share is internally consistent with the property’s majority (approximately 80%) ownership of the Model Ditch. The ownership-share basis is a ditch-company record and should be confirmed against Model Ditch Company books and any operating agreement with the PRWCD.

Operationally, the Model Ditch is entitled to one-third of off-season inflow (October 16 – April 1) accruing to the Trinidad Reservoir account, and stored water is available even when the ditch is out of priority during the irrigation season. The practical reliability of this entitlement in drought years is examined in Sections 6 and 7.

#### 5. Administration

The rights are administered through the Purgatoire River Water Conservation District (PRWCD), which manages the water rights within the Purgatoire River drainage. The Model Ditch is one of several structures administered under that system; the subject lands represent a substantial share of the irrigated acreage served.

## 6. Historical Surface-Water Diversion Record, 1995–2025

The following annual diversions were obtained from CDSS for the Model Ditch (WDID 1900552, “Total (Diversion)” water class), in acre-feet. The year **2015 has no diversion record** in CDSS; 30 reported annual values span the 31-year period.

Year	Diversion (a.f.)	Year	Diversion (a.f.)
1995	20,058	2011	283
1996	8,510	2012	4,441
1997	14,604	2013	3,197
1998	13,068	2014	236
1999	4,984	2015	no record
2000	10,974	2016	20,465
2001	7,544	2017	7,489
2002	1,661	2018	338
2003	2,276	2019	4,724
2004	10,574	2020	3,287
2005	11,768	2021	5,237
2006	3,627	2022	2,952
2007	14,210	2023	3,828
2008	14,091	2024	2,371
2009	10,720	2025	5,011
2010	12,308		

### Summary statistics

Period	Years	Avg (a.f.)	Range (a.f.)	Per irrigable acre
1995–2014	20	8,457	236 – 20,058	1.71 a.f./ac
2015–2025 (2015 absent)	10	5,570	338 – 20,465	1.13 a.f./ac
<b>1995–2025 (full record)</b>	<b>30</b>	<b>7,495</b>	<b>236 – 20,465</b>	<b>1.51 a.f./ac</b>

The record establishes three features of the supply. First, the supply is **highly volatile**: annual diversions range across roughly two orders of magnitude (236 a.f. in 2014 to 20,465 a.f. in 2016). Second, the distribution is right-skewed — the full-record median (5,237 a.f.) sits well below the mean (7,495 a.f.), indicating that a small number of wet years (notably 1995 and 2016) elevate the average above the typical year. Third, the period since 2014 has been materially drier: the 2015–2025 average (5,570 a.f.) is approximately 34% below the 1995–2014 average (8,457 a.f.), and per-acre supply over that decade falls to 1.13 a.f. per irrigable acre.

Three years — 2011 (283 a.f.), 2014 (236 a.f.), and 2018 (338 a.f.) — reflect near-complete failure of direct-flow supply.

## 7. Reservoir Storage and Release Behavior

The Trinidad Reservoir stage-volume record (1977–2010) shows observed contents ranging from approximately 474 acre-feet to approximately 61,500 acre-feet, indicating the active pool within which the storage account operates. Annual releases recorded in CDSS since 2011 are as follows (acre-feet):

Year	Release (a.f.)	Year	Release (a.f.)
2011	912	2020	20,240
2012	489	2021	30,054
2013	24	2022	42
2016	6	2023	11,500
2017	3	2024	10,272
2018	6	2025	8,273
2019	31		

The release record qualifies the reliability of the stored-water backstop. In the same regional drought years in which direct-flow diversions collapsed — 2011, 2013, and 2018 — reservoir releases were also negligible (912, 24, and 6 acre-feet, respectively). The larger releases (2020, 2021, 2023–2025) cluster in wetter years. This indicates that the direct-flow right and the stored-water account are **positively correlated**: the same basin-wide drought that reduces river flow also limits what the reservoir can release. The stored-water entitlement therefore moderates, but does not independently offset, dry-year shortfalls. Release data for 2014 and 2015 are not present in the record, so the minimum diversion year (2014) cannot be cross-checked against releases.

## 8. Data Limitations

1. DWR is not the system of record for Trinidad Reservoir's year-by-year contents. The dam is a USACE (Albuquerque District) project; authoritative daily contents and water-balance accounting are maintained by USACE and the PRWCD. CDSS contains no end-of-month contents time series for Trinidad since 1996, the stage-volume table ends in 2010, and release records are sparse before 2019. A complete year-by-year storage balance for the 4,800-acre-foot account cannot be reconstructed from DWR records alone and would require USACE/PRWCD accounting records.
2. The 2015 diversion value, and the 2014–2015 reservoir release values, are absent from CDSS.
3. The direct-flow right is shown as 172 c.f.s. absolute in the DWR net-amount record; certain secondary summaries reference 200 c.f.s. The controlling figure should be confirmed directly against the decree and any subsequent change proceedings.

4. Conveyance: water is delivered through approximately 29 miles of open ditch, with seepage and evaporation losses that reduce the volume available at the point of use. These losses are not quantified in the DWR record; any acreage-equivalent supply estimate based on a loss assumption is illustrative only.
5. Ownership-share and current-acreage figures (the approximately 80% Model Ditch ownership, the 4,800-acre-foot pro-rata entitlement, and the approximately 4,948 currently irrigable acres) derive from ditch-company and property records and should be confirmed against those sources.
6. For forward-looking planning, the recent-decade average (5,570 a.f.) is a more conservative basis than the longer-period average (8,457 a.f.).

## 9. Disclaimer

This document is an informational compilation of publicly available records and does not constitute a title opinion, water-rights abstract, water-rights determination, survey, or legal advice. No representation or warranty, express or implied, is made as to the accuracy, completeness, currency, or fitness for any particular purpose of the information presented. Water rights are subject to administration by the Division Engineer, to the priority system and curtailment (“calls”), to operational and conveyance losses, and to abandonment, change, and other proceedings that may alter the quantities or reliability described herein. Quantities and entitlements stated are nominal or decreed amounts and do not represent guaranteed deliveries in any given year.

Any party considering a transaction or commitment in reliance on these rights should independently verify all figures with the controlling decrees, the Office of the State Engineer / Division of Water Resources (Water Division 2), the Model Ditch Company, the Purgatoire River Water Conservation District, and the U.S. Army Corps of Engineers, and should obtain independent legal and technical counsel. Data are current as of the dates indicated in the respective source records.