MANAGEMENT PLAN

For the Designation of a Water Conservation Area (WCA)
Townsend WCA; Sherman County, KS
January 2018 through December 2022

In order to conserve and extend the productive life of the aquifer in our region and increase the value and viability of our water rights and water resources for future generations we, the undersigned water right owners propose the following management plan, pursuant to K.S.A. 82a-745 (WCA Law), to form the basis of a Consent Agreement and Order Designating a Water Conservation Area (WCA).

Expression of Conservation Goals
We, the water right owners desire to conserve and extend the productive life of the Ogallala Aquifer within Sherman County. The purpose of the Townsend WCA is to continue to manage and rotate crop types and varieties to maximize/maintain profitability while continuing to reduce water use over long term averages. We have been committed to these farm practices for an extensive time period and plan on continuing these practices while finding additional methods to reduce water use from long term averages.

We recognize the need to conserve the Ogallala Aquifer within Sherman County as water table declines continue at an unsustainable rate. We are committed to a reduction in water use from a long term average of 12.10 inches per acre to 11.80 inches per acre on our average irrigated acres of 3565. Our long-term average water use equals 3594 acre-feet per year and we are committed to reducing this to 3510 acre-feet per year on average over the period of this WCA. We propose a WCA term of 5-years commencing on January 1st, 2018 and ending on December 31st, 2022. The proposed reduction in water use equates to maximum 17550 acre-feet over the term of the WCA.

Based on the currently authorized Local Enhanced Management Area (LEMA) Plan all of the irrigation water rights are located in townships with 1-2% or greater decline and would receive 14.5 to 16.38 inches per irrigated acre. The LEMA plan would allocate a total of 25708 acre-feet over the 5-year plan. We recognize that this quantity is not sustainable long term and desire to reduce water below long term averages and below the current LEMA allocation. We also recognize the proposed WCA plan is the first step in reducing water usage and additional reductions may be necessary in future WCA plans to extend the productive life on the Ogallala Aquifer within Sherman County.

Water Rights Enrolled and Geographic Boundaries
This WCA shall include the water rights listed in the attached document. This list includes details of all points of diversion associated with those water rights; as well as legal descriptions of the locations of the points of diversion and/or identification numbers.

The current total appropriations authorized for all water rights included in this WCA are 8406 acre-feet (AF) per year, with an average annual irrigation use during the period 2003-2016 of 3594AF. With an approximate 4% reduction from the historical annual average use, the 5-year WCA allocation is 17550 AF.
The geographic boundary for this WCA is shown on the attached map(s) and attached table defined by legal locations. This table includes total acres and legal definitions by section, township, and range of the WCA boundary.

Findings Regarding Groundwater Conditions

We understand that the WCA Law requires a finding that one of the following circumstances be present within the area geographic boundaries of this WCA; specified in K.S.A. 82a-1036 (a) through (d):

a) Groundwater levels in the area in question are declining or have declined excessively;

b) The rate of withdrawal of groundwater in the area equals or exceeds the rate of recharge within such area;

c) Preventable waste of water is occurring or may occur within the area in question; or

d) Unreasonable deterioration of the quality of water is occurring or may occur within the area in question

and amendments thereto, exist, or include a finding or findings that the area within the geographic boundaries described in paragraph (1) has been closed to new appropriations by rule, regulation or order of the Chief Engineer.

We have been informed that the following conditions exist:

a) Groundwater levels in the area in question are declining or have declined excessively;

b) The rate of withdrawal of groundwater in the area equals or exceeds the rate of recharge within such area; and

c) The area has been closed to new appropriations by rule, regulation or order of the Chief Engineer.

These conditions suggest the advisability of implementing this WCA.

See the attached maps and figures supporting these findings and observations. Such attached documents may include:

- Detailed table with description of WCA geographic boundaries and legal descriptions of water rights - Attachment A
- Maps with WCA geographic boundaries defined - Attachment B
- Estimated useable life maps (if available) - Attachment C
- Changes in water levels (if available) - Attachment D & E
- Summary of water use history - Attachment F
- KGS Observation well(s) data (if applicable) - Attachment G
- KDA-DWR Theis analysis report(s) (if applicable) - Attachment H

Per the Corrective Controls Provisions and Plan for Conservation Section under this WCA management plan it has been determined that the proposed provisions listed will not significantly affect nearby points of diversion. This has been determined by a Theis analysis conducted by the Kansas Department of Agriculture. The Theis report(s) for the water rights in question are included in the attached documents.
Due Consideration for Past Conservation

We acknowledge that as described in the law, a water conservation area (WCA) management plan shall give due consideration to water users who have previously implemented reductions in water use resulting from voluntary conservation measures. We, the water right owners, request the Chief Engineers consideration of the following conservation measures be considered and enumerated under this plan.

For three generations, starting with the onset of irrigation in Sherman county in the early 1950's our family has planted and produced a variety of crops focusing on the production of dry edible beans. The current rotation of corn, dry beans, and wheat has been judiciously mastered since the 1974 to increase production and enhance or maintain financial stability of our operation. The rotation is a significant reduction in water usage over time, and continues to be a viable alternative to standard corn production practice.

In addition to our crop production strategies, the operation was an early adopter to LEPA irrigation on all pivots to reduce evaporation and increase crop water use efficiency. We worked closely with the developers of this system and also participated in gypsum block research technology to monitor soil moisture levels. We continue to seek ways to conserve water through the use of technology with the installation and use of soil moisture probes, and Ag Sense system monitors and controls on the majority of our irrigated acres.

Recently, in addition to our past practices we have introduced spring yellow peas to the rotation as a limited irrigation alternative. After harvest the yellow peas are followed with a forage crop of turnips and radish for fall livestock grazing. This addition allows us to reduce water use, diversify and maintain the economics of our operation.

We are and will always continue to look for measures that conserve water, diversify our operation, and maintain a positive cash flow in the ever changing agricultural environment.

Corrective Control Provisions and Plan for Conservation

We acknowledge that the following corrective controls will be in effect within this WCA during the term of the WCA period listed:

1. Water rights, at the discretion of the owners, may be pumped as directed by the owner, provided that:
   a. All points of diversion are limited to their annual authorized quantity unless explicitly authorized under this plan.
   b. All points of diversions are limited to their current authorized pumping rates.
   c. The combined of water use under all water rights combined shall be limited to no more than 17550 acre-feet for the 5-year duration of this plan.

2. The corrective control provisions of this WCA cannot conflict with the rules and regulations of the local GMD that result in greater overall conservation of water resources. If a Local Enhanced Management Area (LEMA) plan or an Intensive Groundwater Use Control Area (IGUCA) is formed after the initiation of this WCA, and the WCA is partially or wholly within the LEMA or IGUCA, the
corrective control provisions that result in the greater overall conservation of water resources based on inches per acre and not based on percent reduction of average historical use shall prevail. However, any LEMA or IGUCA must give due consideration to the conservation achieved by WCA participants pursuant to 82a-745(a)(6). The Chief Engineer is authorized to amend the provision of the WCA to conform to any rules, regulations, or requirements that result in greater conservation of the water resource subject to the foregoing due consideration for past and current conservation.

We, the water right owners enrolling in this WCA understand we may gain the following additional incentive(s) in consideration for our WCA participation.

3. Water Right #11944 (PDIV# 43988) maybe over-pumped by up to an additional 20 AF/YR for a total of 193 AF/YR.
4. Water Right #11944 (PDIV# 44559) may be over-pumped by up to an additional 20 AF/YR for a total of 297 AF/YR.
5. Water Right #25799 (PDIV# 45933, 10686, & 35290) may be over-pumped by up to an additional 20 AF/YR for a total of 739 AF/YR.
6. Up to the annual WCA allocation (3565 AF) may be carried over if unused during the duration of this WCA period. In order to for the carryover quantity to be included, all owners must enter into agreement to participate into a subsequent WCA by December 31st of the last year of this WCA period.
7. The addition of dry acres not currently authorized by any of the water rights maybe added through the issuance of a term permit(s). Term permits will take under consideration potential impairment to neighboring water rights.

Compliance Monitoring and Enforcement
We, the owners, understand that the following compliance monitoring and enforcement provisions are proposed. This section also includes any specific provisions regarding measuring or reporting water usage.

There are two (2) recognized observation well(s) within the WCA boundary that has for many years been measured annually by the Kansas Geological Survey (KGS). See attached maps for locations. The well(s) will continue to be measured annually and the data collected will help in evaluating the effectiveness of the WCA. An onsite observation well may be necessary to monitor the local water level more accurately.

We will submit an annual report no later than March 1st and maintain a spreadsheet detailing the following information for each well and all wells combined: beginning and ending meter readings, quantity of water diverted, acres irrigated, the inches per acre, and the quantity of water remaining for the WCA period listed. These records will be available to KDA-DWR upon request.

We will ensure backup measurements will be supported or an alternate measurement device will be available to be put into service in case the water flowmeter record for any given well is questionable or not reliable.
We acknowledge that water flowmeters within the WCA may be sealed to the measurement chamber by KDA-DWR during the duration of this management plan to ensure an accurate water use record.

We, water right owners within this WCA shall be responsible for ensuring the water flowmeters comply with state and local law(s). Any water right owner or authorized designee who finds a flow meter that is inoperable or inaccurate shall within 48 hours contact the KDA-DWR concerning the matter. Whenever an inoperable or inaccurate meter is repaired or replaced, the owner or authorized designee shall notify the KDA-DWR within seven (7) days on a form prescribed by the Chief Engineer of the water flowmeter installation and any water flowmeter repair or replacement event.

We acknowledge that failure to abide by the terms of this agreement may result in the termination of the WCA. Failure to abide by the terms, conditions, and limitations of the individual water rights will be subject to the civil penalties outlined in K.A.R. 5-14-10 and K.A.R. 5-14-12.

Review of Effectiveness
We acknowledge that a review of this WCA shall be completed prior to November 1st of the final year of the WCA period listed to ensure the above terms remain appropriate and are achieving the stated goals of this WCA. Should the Chief Engineer find that the terms are no longer appropriate or that no progress has been made towards the stated goal, the Chief Engineer may refuse to renew a WCA and may suggest new terms and goals. We understand that upon review, and a finding by the Chief Engineer that the WCA has achieved or made progress towards its goals and that the same terms me be included in a subsequent WCA for another designated period. The terms of the WCA may be continued as long as this WCA is in good standing with its most recent WCA period and upon formal approval by the Chief Engineer. The Chief Engineer shall issue findings addressing the terms and goals of the existing management plan prior to any renewal of a subsequent WCA.

We acknowledge that unless terminated under the provisions below (e.g. due to the development of a LEMA), the WCA will be in effect for the listed period with an evaluation at the end of every WCA period. We understand that KDA-DWR will conduct this evaluation to ensure compliance and conservation. The evaluation will determine total water use during the WCA period.

We acknowledge that should an order of designation for a LEMA be implemented prior to end of this WCA period, an evaluation of this WCA will be conducted the year prior to the start of a LEMA. This evaluation may be used to determine an additional allocation amount of water to be carried over into a LEMA; should this be the case.

Member addition, withdrawal, and removal
We acknowledge that the water right owners and their associated water right(s) and geographic boundaries may be added to the WCA upon written notification to the Chief Engineer by the owners of each enrolling water right with legal descriptions of the areas to be added. A member may withdrawal from the WCA through written notification to the Chief Engineer signed by the owners of the participating water right or rights to be withdrawn from the WCA.
If the addition or withdrawal of water rights requires modification to the water allocation quantities, geographic boundaries, places of use, terms, or conditions of the original WCA, the management plan shall be revised to incorporate such changes and the associated consent agreement shall be reaffirmed by all parties, after opportunity for comment on the proposed revisions by the applicable GMD.

**Termination**

We acknowledge this WCA agreement may be terminated by written notification, signed by all then-existing members of the WCA, to the Chief Engineer of the intent to terminate.

We also acknowledge that the Chief Engineer may terminate this WCA upon findings that it is not being upheld to its terms. Such termination shall give notice and require a full evaluation of the WCA and water rights associated to ensure follow up actions.

**State Law**

We acknowledge that this WCA is subject to compliance with all other applicable state laws.

**Notification to Nearby Owners**

We acknowledge that, by statute, the Chief Engineer is required to provide written notification to all water right owners with a point of diversion within $\frac{1}{2}$ of a mile, or farther if deemed necessary, by a rule and regulation of the Chief Engineer, of the geographic boundaries of this WCA.

**Assurances**

We acknowledge this WCA will not alter the terms, conditions, and limitations of the base water rights.

**Review of Other Applicable Requirements**

We acknowledge that upon review, this WCA management plan was found to effect equal or greater overall conservation than applicable GMD regulations, LEMA, and IGUCA requirements.

**Participant’s Agreement**

By signing below, we, the water right owners, agree that this management plan is fair and equitable. This management plan, provided to the Chief Engineer and water right owners, is the expressed written intent of the parties and the whole agreement between the parties. We, the water right owners agree to be bound by all the terms contained in this management plan and understand that the provisions of this agreement shall be construed to give effect to the provisions listed. We, the water right owners also agree that this management plan is the basis for a consent agreement among the Chief Engineer and the undersigned water right owners, and therefore any order and consent agreement issued by the Chief Engineer, designating this WCA, shall be binding upon all parties as the necessary formal implementation of this management plan.

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Townsend WCA Management Plan
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

John H Golden Trust Owner 14193, 16400, 11944
Water Right No(s). 14193
PO Box 330, Goodland, KS 67735-0330
Full Mailing Address
Email Address
Phone Number

ACKNOWLEDGMENT OF NOTARY
State of Kansas
County of	Sherman
Acknowledged before me on 8-22-18
by John H Golden
Signature: Nancy J. Kear
Notary Public

My commission expires: 1-15-19

(Notary Seal)

RECEIVED
OCT 29 2018
Stockton Field Office
Division of Water Resources

Townsend WCA Management Plan
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Ad Astra Per Aspera Owner (Signature)  
Water Right No(s). 14193, 16400, 11944

PO Box 913, Goodland, KS 67735-0913
Full Mailing Address
Email Address
Phone Number

ACKNOWLEDGMENT OF NOTARY

State of Kansas )
County of ) SS
Acknowledged before me on 8-22-18
by Jennifer Golden House, Mgr
Signature: Nancy J. Kear
Notary Public

My commission expires: 1-15-19

RECEIVED
OCT 29 2018
Stockton Field Office
Division of Water Resources

Townsend WCA Management Plan
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Leo R Townsend Trust Owner (Signature)
Water Right No(s). 3900, 26905, 8637, 10299, 24534, 18126, 23916, 29206
105 E 14th Street, Goodland, KS 67735-0913
Full Mailing Address
Townsend r st tel.net 785-821-2997
Email Address Phone Number

ACKNOWLEDGMENT OF NOTARY
State of Kansas )
) SS
County of )
Sherman )
Acknowledged before me on 8-15-18
by Debbie S. Reed
Signature: Debbie S. Reed
Notary Public

My commission expires: 3-24-21
(Notary Seal)

Townsend WCA Management Plan
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Silkman Inc. Owner (Signature)  
Date: Sept 4, 2018

Water Right No(s). 7750

7373 E 29th St., N Apt W226, Wichita, KS 67226-3459

Full Mailing Address: kevin153@cox.net  
Phone Number: 316-686-8832

Email Address

ACKNOWLEDGMENT OF NOTARY

State of Kansas )
County of Sedgwick ) SS

Acknowledged before me on 9/4/18 by Chanel McCray

My commission expires: 11/11/2021

Townsend WCA Management Plan
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Boyington Enterprises TV
Date: 8-24-18
Betsy J. Boyington, Owner (Signature)
Water Right No(s). 9163

1514 Pecan Valley Court, Corinth, TX 76210
Full Mailing Address
Email Address
Phone Number

ACKNOWLEDGMENT OF NOTARY

State of Kansas Texas )
County of Denton ) SS
Acknowledged before me on August 24, 2018
by Betsy Lou Boyington.
Signature: Cynthia Flores
Notary Public

My commission expires: 3-25-2019
(Notary Seal)
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Ray and Ellen Townsend, Owner (Signature)
Water Right No(s). 15634, 6140, 7775, 10573

407 W 9th, Goodland, KS 67735-8718
Full Mailing Address

Email Address
Phone Number

ACKNOWLEDGMENT OF NOTARY

State of Kansas )
County of Sherman ) SS
Acknowledged before me on August 22, 2018 by Ellen Townsend.

Signature: Cara G. Daize
Notary Public

My commission expires: June 28, 2022
(Notary Seal)
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Hornbrook Trust-Dianne D Hornbrook Trustee, Owner (Signature)
Water Right No(s). 11057, 26742
5950 RD10, Goodland, KS 67735-8718
Full Mailing Address
Email Address

ACKNOWLEDGMENT OF NOTARY
State of Kansas )
County of Sherman ) SS
Acknowledged before me on 8/23/18 by Dianne Hornbrook.
Signature: 2. 2.
Notary Public

My commission expires: 6/29/2022
(Notary Seal)
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Ross Townsend, Owner (Signature)
Water Right No(s). 17499

5475 Road 14, Goodland, KS 67735-9031
Full Mailing Address

Email Address         Phone Number

ACKNOWLEDGMENT OF NOTARY

State of Kansas     )
) SS
County of Sherman     )
Acknowledged before me on October 12, 2018 by Kelly Hawks.
Signature: Kelly Hawks
Notary Public

My commission expires: 5-31-21
(Notary Seal)

RECEIVED

OCT 29 2018
Stockton Field Office
Division of Water Resources

Townsend WCA Management Plan
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Winifred James Trust Et al Owner (Signature)
Water Right No(s). 25799

23807 RD 55, Burlington, CO 80807
Full Mailing Address
carlyledebbie@hotmail.com 719-342-1575

Email Address Phone Number

ACKNOWLEDGMENT OF NOTARY

State of Kansas )
) SS
County of Keith )

Acknowledged before me on August 30, 2018
by Winifred James Trust by Carlyle C. James

Signature: Christine McKnight

Notary Public

My commission expires: April 9, 2019

(Notary Seal)
FOR THE PARTICIPANTS: All participating water right owner(s) signing below, affirm their approval of this WCA management plan and if approved by the Chief Engineer allow consent to the Chief Engineer to formally approve the designation of this Water Conservation Area, described herein, by means of a Consent Agreement and Order.

Alan Townsend, Owner (Signature)
Water Right No(s). 29206, 27734

PO Box 508, Goodland, KS 67735
Full Mailing Address
Email Address: alant_ksdq.com
Phone Number: 785-821-9626

ACKNOWLEDGMENT OF NOTARY

State of Kansas )
County of Sherman ) SS

Acknowledged before me on August 22, 2018
by Alan Townsend

Signature: Cara G. Daise

Notary Public

My commission expires: June 28, 2022
(Notary Seal)
## Attachment A

### Water Right #’s and Points of Diversion

#### WCA Place of Use

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Attachment B
Water Right Area Location Map
Water Rights & Authorized Place of Use

Legend
- Townsend WCA Points of Diversion Selection
- Authorized Points of Diversion
- WCA Place of Use
Attachment C
Estimated Usable Life to Support 400 GPM
Attachment D

Changes in Water Level (ft) from 2003 to 2015

Sherman County

Legend
- Townsend WCA Points of Division
- Authorized Points of Division
- WCA Paddle of Use

Change in Feet 2003-2015

Change > 30
20 - 30
10 - 20
5 - 10
0 - 5
- Groundwater level pre-2003
Attachment E

Percent Change in Saturated Thickness from 2003 to 2015
### Summary of Water Use History

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**Average:** Yearly average acres of water use.

**File #:** Water use file number for each year.

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**Notes:**
- 
- 

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**Townsend WCA Management Plan**

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**Attachment F**

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**KANSAS DEPARTMENT OF AGRICULTURE - DIVISION OF WATER RESOURCES**

---

**File #:** Reference number for file contents.
## Attachment G

### KGS Observation Well Data

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County: Sherman
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Latitude: 39.234631
Local Well ID: 10260002
GMD: Northwest Kansas GMD #4
Local Well ID: 10260002
Description: 10260002
GMD: -101.889155
Lat/Long Source: GPS (within 50 feet)
Lat/Long Accuracy: 5 seconds
Surface Elevation (ft): 3841
Depth of Well (ft): 292
Geological Unit Codes: TO
USGS Map Name: Horsethief Draw NW
Use of Site: Withdrawal of Water
Use of Water: Irrigation
WWC5 Links: None
WIMAS Link: 26947
Theis analysis of File 25,799

A Theis analysis was performed to evaluate the impact of authorizing File 25,799 to divert an additional 20 acre-feet per year at the nearby well authorized by File 15,704. The proposed authorized quantity was compared against the average legal water use from 2007-2016 (Table 1) and to the authorized quantity (Table 2). The saturated thickness and transmissivity are from the Northwest Kansas Model projected for year 2068. The storage coefficient was assumed to be the projected saturated thickness multiplied by $10^5$.

Table 1: Theis analysis of drawdown at File 15,704 compared to historic use. $T = 1,227 \text{ ft}^2/\text{d}; S = 0.0006$

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<th>Rate (gpm)</th>
<th>Volume Pumped (AF)</th>
<th>Distance (ft)</th>
<th>Drawdown (ft)</th>
<th>Change in Drawdown</th>
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</thead>
<tbody>
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Table 2: Theis analysis of drawdown at File 15,704 compared to authorized. $T = 1,227 \text{ ft}^2/\text{d}; S = 0.0006$

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