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COLORADO WATER CONSERVATION BOARD FEASIBILITY STUDY FOR ACQUISITION OF THE WEST FARM GRAVEL PIT

PREPARED FOR: LOWER ARKANSAS WATER
MANAGEMENT ASSOCIATION

PREPARED BY: RANDY HENDRIX, P.E.

FEBRUARY 1, 2019

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The technical material in this report were prepared by the undersigned, whose seal as a Professional Engineer is affixed below:



Randall L. Hendrix

February 1, 2019

Table of Contents

I. Background, Purpose, and Need	1
Overview of Need	1
Opportunities and Problems Addressed	2
Overview of Study Area	2
II. Project Sponsor	3
History	4
Membership and Stock	4
Summary of Members' Existing Uses	4
Revenue Sources	5
Dues	5
Assessments	5
Existing Water Supply Facilities	5
III. Water Rights and Water Supply Demands	6
Water Rights and Other Water Sources	6
Water Supply Demands	7
Mainstem Irrigation – Rule 14 Plan	7
Mainstem Irrigation Wells – Rule 14 Plan	7
Mainstem Municipal and Commercial Wells – Rule 14 Plan	8
Tributary Area Pumping – Rule 14 Plan	8
Alluvial Aquifer Wells – Augmentation Plan	9
Bedrock Aquifer Wells – Augmentation Plan	9
Gravel Pits and Wildlife Ponds – Augmentation Plan	9
Other Structures – Augmentation Plan	9
Stream Depletions – Rule 14 Plan and Augmentation Plan	10
Water Supply Deficit	10
IV. Project Description – West Farm Gravel Pit	10
Proposed Use of the West Farm Gravel Pit	10
Analysis of Alternatives	10
Evaluation factors and methods	11
Benefits of LAWMA's Acquisition of the West Farm Gravel Pit	12

Impacts to the Natural and Man-Made Environment	14
Selected Alternative	14
Cost Estimate.....	14
Implementation Schedule	14
Impacts	14
Institutional Feasibility	14
V. Financial Feasibility Analysis	15
Loan Amount.....	15
Financing Sources and Collateral	15
Outstanding CWCB Loans.....	16
LAWMA's Income, Operating Expenses and CWCB Loan Service	17
Financial Impacts on LAWMA Shareholders	18
Sponsor Creditworthiness.....	18
VI. Conclusions and Recommendation.....	18

FIGURE

Figure 1 – General Location Map of the Lower Arkansas Water Management Association
Direct Flow Replacement Supplies

TABLES

Table 1.1 – Summary of LAWMA's Replacement Operations without the West Farm Gravel Pit
Table 1.2 – Available Consumable Water for Replacement Purposes without the West Farm Gravel Pit
Table 2.1 – Mainstem Irrigation Well Rule 14 Pumping
Table 2.2 – Mainstem Municipal & Commercial Well Rule 14 Pumping
Table 2.3 – Tributary Well Rule 14 Pumping
Table 2.4 – Alluvial Aquifer Well Augmentation Plan Pumping
Table 2.5 – Bedrock Aquifer Well Augmentation Plan Pumping
Table 2.6 – Ponds and Gravel Pit Augmentation Plan Diversions
Table 2.7 – Other Structures Augmentation Plan Pumping
Table 3.1 – Summary of LAWMA's Replacement Operations with the West Farm Gravel Pit
Table 3.2 – Available Consumable Water For Replacement Purposes with the West Farm Gravel Pit

APPENDICES

Appendix A – West Farm Gravel Pit liner approval letter
Appendix B – Map of LAWMA's general service area and shareholder structures
Appendix C – Articles of Incorporation
Appendix D – Bylaws
Appendix E – List of BOD
Appendix F – 2017 Audited Financials
Appendix G – 2016 Audited Financials
Appendix H – 2015 Audited Financials

Appendix I – Map of the West Farm Gravel Pit and related facilities
Appendix J – 90-day Performance Test Results
Appendix K – Projected Revenues and Expenses

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I. Background, Purpose, and Need

This report presents the results of our loan feasibility study for the Lower Arkansas Water Management Association (LAWMA), which is seeking a loan from the Colorado Water Conservation Board (CWCB) for the purpose of acquiring an existing water storage structure known as the West Farm Gravel Pit (WFGP). LAWMA plans to purchase approximately 1,564 acre-feet of open water storage and usable bank storage capacity in the WFGP to store fully consumable water for use in LAWMA's decreed plan for augmentation, its annual Arkansas River Use Rules replacement plan (Rule 14 Plan), LAWMA-operated Compact Compliance Plans under Rule 10 of the Compact Rules Governing Improvements to Surface Water Irrigation Systems in the Arkansas River Basin in Colorado (Rule 10 Plan), and substitute water supply plans that include LAWMA shares as a source of replacement supply. The cost of the project is \$4,595,000, and LAWMA is seeking a CWCB loan to cover the entire cost of the project. Along with its loan application, LAWMA is filing a Water Plan Grant Application to fund a portion of this project with grant money available for water storage projects. LAWMA would use any grant funds awarded to reduce the amount borrowed under the requested loan.

Overview of Need. LAWMA needs storage in the WFGP to increase and firm the amount of water that LAWMA allocates to its common shares, and therefore to increase and firm the amount of water that LAWMA's shareholders may use for irrigation, municipal, and other purposes. Each spring, working in conjunction with the Office of the Division Engineer as part of LAWMA's annual Rule 14 Plan submittal, the LAWMA Board of Directors (Board) determines the amount of fully consumable water that will be allocated to each common share. The allocation is based on the projected yield to LAWMA's portfolio of direct-flow water rights in that water year; that projected yield varies with climatic conditions. An allocation of 100% means one acre-foot of fully consumable water for each LAWMA common share, an allocation of 70% means 0.7 acre-foot of fully consumable water for each common share, and so on. Based on that annual allocation, the number of common shares that a LAWMA shareholder dedicates to a particular "LAWMA structure," and the presumptive depletion factor (PDF) associated with the shareholder's use of water (e.g., 85% PDF for sprinkler irrigation under LAWMA's augmentation plan), the LAWMA Board then sets the amount of pumping or other diversions that can be made at that structure. The higher the allocation to a LAWMA share, the more pumping or other diversions can be made by LAWMA's shareholders.

At present, when LAWMA has excess consumptive use (CU) credits attributable to its direct-flow water rights (i.e., CU credits that are not needed for immediate replacement of stream

depletions), LAWMA is able to store those excess credits only in certain Arkansas River Compact-limited accounts in John Martin Reservoir. As a result, LAWMA is not able to capture and re-time the use of all of the excess CU credits available to its direct-flow water rights, and therefore is not able to maximize the efficient use of those credits for its shareholders. Storage will allow LAWMA to achieve significantly more efficient beneficial use of its direct-flow water rights, and as a direct result to increase the average annual allocation to a LAWMA common share from 72% to 85%. Storage also will significantly reduce the likelihood of a “minimum allocation year,” in which the allocation to a LAWMA common share is only 40%, from the historical average of 34% of water years to only 12% of water years.

Opportunities and Problems Addressed. The WFGP offers a rare opportunity for an augmentation association such as LAWMA to acquire storage in the lower Arkansas River Basin. The purpose of this feasibility study was to evaluate that opportunity—i.e., to evaluate the suitability of the WFGP for meeting LAWMA’s water supply needs, including especially the need to re-capture excess CU credits when they are available in the river, and impound that water for later use when the yield to LAWMA’s direct-flow water rights is low or unavailable.

The WFGP is a fully constructed and operational gravel pit storage reservoir located downstream of the City of Lamar on the Arkansas River. In February 2015, the Assistant Division Engineer approved the WFGP’s lining based on its performance in the 90-day Performance Test. In the 90-day Performance Test, the WFGP met the design standard referenced in the August, 1999 State Engineer Guideline for Lining Criteria for Gravel Pits. A copy of the liner approval letter is attached as **Appendix A**.

Overview of Study Area. LAWMA’s primary service area is the Arkansas River mainstem below the Fort Lyon Canal river headgate, although LAWMA also has members on various tributaries that drain into the Arkansas River below the Fort Lyon Canal river headgate. LAWMA membership also includes several municipal and rural domestic water suppliers that rely on Dakota and Cheyenne aquifer wells, which are considered non-tributary and are not subject to the Arkansas River Use Rules; and the City of Colorado Springs (Colorado Springs Utilities, or CS-U), which will take direct delivery of water available to its LAWMA common shares under a water-sharing agreement / alternative transfer mechanism between LAWMA and CS-U. LAWMA currently augments member structures in Baca, Bent, Cheyenne, Elbert, Kiowa, Lincoln, Otero, and Prowers counties. According to the U.S. Census Bureau, in 2017, the combined estimated population for these counties was 74,305. Between 2013 and 2017, the median household income of LAWMA’s service area was \$40,495, according to U.S. Census Bureau statistics. As

described in more detail below, a significant majority of LAWMA's shareholders make their living or are otherwise involved in agriculture.

Under the CS-U water-sharing agreement / alternative transfer mechanism, LAWMA shares would be delivered to CS-U's service area in El Paso County and used for municipal purposes. U.S. Census Bureau statistics from 2017 estimate the population of El Paso County as 699,232 and give the median household income between 2013 and 2017 as \$62,535.

The maps included in **Appendix B** show the locations of active LAWMA structures, the points of diversion for LAWMA's direct-flow water rights, John Martin Reservoir, the WFGP, the Arkansas River mainstem, and the major tributaries on which LAWMA operates.

The remainder of this feasibility study provides more detailed information about LAWMA's general service area, LAWMA's shareholders, their ground water pumping and other diversions, and their use of water and the resulting stream depletions that need to be replaced under Colorado law and the Arkansas River Compact. The study then documents LAWMA's need to purchase the WFGP and the projected effect of this new storage on the average and firm yield of LAWMA's water rights portfolio. Finally, the study addresses the status of LAWMA's existing CWCB loans and LAWMA's financial ability to repay those loans while also repaying the requested new loan in the amount of \$4,640,950 for the acquisition of the WFGP.

II. Project Sponsor

LAWMA is a non-profit corporation organized under the Colorado Non-Profit Corporation Act, as amended, and the Mutual Ditch and Reservoir Company Act, as amended. LAWMA was formed in 1973 and re-organized, by vote of the membership, as a share-based corporation in 1998. Copies of LAWMA's Restated and Amended Articles of Incorporation and LAWMA's Bylaws are attached as **Appendices C** and **D**, respectively. LAWMA was formed for the primary purpose of replacing depletions from its members' well pumping and other water uses requiring augmentation within the lower portion of the Arkansas River Basin, generally below John Martin Reservoir, in order to comply with Colorado law and the Arkansas River Compact.

The control and management of the business and affairs of LAWMA are vested in its Board, which consists of seven shareholders. A list of LAWMA's current Board of Directors is attached as **Appendix E**. The duties and responsibilities of the Board are set forth in LAWMA's Restated and Amended Articles of Incorporation and LAWMA's Bylaws.

History. LAWMA developed its first replacement plan soon after the State Engineer published, in 1995, the rules and regulations for Arkansas River well-pumping that, as amended, remain in effect today. These rules, known as the “Arkansas River Use Rules,” required a comprehensive replacement plan under which LAWMA would replace its members’ depletions to the Arkansas River. Accordingly, LAWMA embarked on a search for water rights to use within such a plan, and soon after made its first large augmentation water purchase: the XY Ranch property and associated water rights. Since then, LAWMA has spent over \$8,000,000 for water rights to use for augmentation and replacement purposes. In 2007, LAWMA obtained a decree in Case No. 02CW181, which approved a change in use of LAWMA’s initial portfolio of water rights and established the plan for augmentation under which LAWMA continues to operate today. LAWMA continues to acquire new water rights to bolster its portfolio, and also continues to add new member structures to the Augmentation Plan and the Rule 14 Plan.

Membership and Stock. LAWMA members may be either shareholders or non-shareholders. LAWMA has 205 shareholder members and 12 non-shareholder members. For non-shareholder members, rights and obligations relating to augmentation of pumping or other diversions is established by written contract between the member and LAWMA.

There are two classes of LAWMA stock, common and preferred. As of the date of this study, 1 share of LAWMA preferred stock may be issued in exchange for 2.5 shares of LAWMA common stock. Unlike the annual allocation to common stock, which varies according to the projected yield of LAWMA’s water rights and which can be adjusted during a water year if conditions change, the annual allocation to preferred stock is intended to be guaranteed and, therefore, not adjusted during a water year. As of the date of this study, the annual allocation to preferred share is set at 1 acre-foot of fully consumable replacement water per share. Because preferred shares are “funded” before common shares, LAWMA requires members to dedicate preferred shares for augmentation of any non-curtable depletions.

There are 27,300 shares of LAWMA common stock outstanding and 1,109.4 shares of LAWMA preferred stock issued and outstanding. At the ratio of 2.5 common shares to 1 preferred share, the 1,109.4 preferred shares equate to 2,773.5 common shares, for a total of 30,073.5 common share and common-share equivalents outstanding.

Summary of Members’ Existing Uses. Of the 27,300 LAWMA common shares outstanding, 24,800 are used by means of augmentation: 24,522 of those shares are used for

agricultural/irrigation purposes; 67 are used for municipal purposes; and 211 are used for commercial purposes. Upon implementation of the LAWMA/CS-U alternative transfer mechanism, 2,500 common shares will be delivered directly for CS-U's municipal purposes. Of the 1,109.4 LAWMA preferred shares outstanding, all of which are used by means of augmentation, 294.5 shares are used for agricultural/irrigation purposes, and 814.9 are used for non-curtable structures such as gravel pits.

LAWMA's 2018 Rule 14 Plan included 499 wells, of which 418 are located in the Arkansas River's mainstem area and 81 are located in tributary areas. Of those 499 wells, 457 are irrigation wells, 31 are municipal wells, and 11 are commercial wells. LAWMA's plan for augmentation decreed in Case No. 02CW181 (Augmentation Plan) currently includes 204 wells, 11 gravel pits, 8 wildlife ponds, and 18 other types of structures.

Revenue Sources. LAWMA has two main sources of annual revenue, membership dues and assessments on shares of LAWMA stock. The dues rate is set each year by the Board, and the assessment rate is set by the LAWMA shareholders based on recommendation of the Board.

Copies of LAWMA's three most recent financial statements are attached as **Appendices E, F and G.**

Dues. For 2019, dues were set at \$375 per well or other structure for Type B members, and at \$275 per well or other structure for all other members. This dues schedule generates approximately \$202,550 of annual income to LAWMA.

Assessments. For 2019, assessments were set at \$39.50 per common share and \$98.75 per preferred share. As stated above, LAWMA currently has 27,300 common shares and 1,109.4 preferred shares outstanding. 2019 revenues from assessments therefore totaled \$1,187,903. To fund the acquisition of the WFGP and ensure that LAWMA maintains sufficient funds to cover its operational expenses and liabilities, the Board is proposing share assessment increases from the current rate of \$39.50 up to \$44.14 by 2024, and then reducing assessments over time to \$26.37 as existing debt is retired.

Existing Water Supply Facilities. The facilities associated with LAWMA's existing water supply are summarized in the table in Section III below. The locations of those facilities are shown on the maps included in **Appendix B.**

III. Water Rights and Water Supply Demands

Water Rights and Other Water Sources. The following table summarizes LAWMA's water rights and other sources of water that LAWMA currently uses to augment the stream depletions caused by LAWMA members' well pumping or other diversions:

Source	Amount	Case No.	Plan(s) in which the source can be used as of January 2019
Fully consumable water leased from PBWW or CS-U	Varies – spot market contract		All plans
Fryingpan-Arkansas Project Water return flows	Varies - annual contract		All plans subject to use within SECWCD boundaries
Highland Irrigation Company	3,402 of 3,800 shares	02CW181	All plans
Highland Irrigation Company	169 of 3,800 shares	10CW085	All plans
Highland Irrigation Company Unconsumed transit loss on deliveries to John Martin Reservoir	Varies		All Plans
Fort Lyon Canal Company	6,080 of 93,989.4166 shares	Change case to be filed in 2019	Rule 14 Plan
Keesee Ditch	14.25 cfs of 28.5 cfs	02CW181	All plans
Keesee Ditch	14.25 cfs of 28.5 cfs	05CW052	All plans
Keesee Ditch Article II Account	Half of Account	02CW181	All plans
Keesee Ditch Article II Account	Half of Account	05CW052	All plans
Fort Bent Ditch Company	1,104 of 11,651.2 shares	02CW181	All plans
Fort Bent Ditch Company	144 of 11,651.2 shares	10CW085	All plans
Fort Bent Ditch Company	162.5 of 11,651.2 shares	17CW3068 (pending)	Rule 14 Plan
Lamar Canal Company	50 of 26,127 shares	02CW181	All plans
Lamar Canal Company (Colorado Parks and Wildlife)	15% of 4,720 shares	02CW181	All plans
Lamar Canal Company (Colorado Beef)	Unused portion of 2,297 shares	02CW181	All plans
Lamar Canal Company	897 of 26,127 shares	15CW3067 (pending)	Rule 14 Plan (all plans after decree entered in Case No. 15CW3067)
Granada Irrigation Company	750.5 of 3,030 shares	15CW3067 (pending)	Rule 14 Plan (all plans after decree entered in Case No. 15CW3067)
Manvel Canal	54 cfs	02CW181	All plans
Manvel Canal Article II Account	Entire Account	02CW181	All plans
X-Y Irrigating Ditch	67 cfs of 69 cfs	02CW181	All plans
X-Y Irrigating Ditch	2 cfs of 69 cfs	15CW3067 (pending)	Rule 14 Plan (all plans after decree entered in Case No. 15CW3067)
X-Y/Graham Article II Account	Entire Account	02CW181	All plans
Stubbs Ditch	7.2 cfs	02CW181	All plans
Stubbs Ditch Article II Account	Entire Account	02CW181	All plans
Sisson Ditch	18 cfs	10CW085	All plans
Sisson Ditch Article II Account	Entire Account	10CW085	All plans
John Martin Reservoir Offset Account Transit Loss	Varies		All plans
10-Year Credit Deliveries to the State Line (State Line Credit)	Varies		All plans

As shown in column 21 of attached **Table 1.1**, these sources are estimated to yield approximately 21,673 acre-feet of replacement water on an average annual basis and 7,372 acre-feet of replacement water on a firm annual basis (i.e., in a dry year).

Water Supply Demands.

LAWMA's water supply demands, which under current operations are LAWMA's replacement water requirements, are annually determined in the Rule 14 Plan and the Augmentation Plan.

In the Rule 14 Plan, depletions are calculated using the Ground Water Accounting Model, or "GWAM," which was derived from the Hydrologic Institutional Model (H-I Model) developed by the State Engineer's office. GWAM divides the Arkansas River into 19 segments between Pueblo Dam and the State line. Well-pumping and other diversions by LAWMA members affect the lower 12 segments: the area from the Arkansas River at the La Junta river gage above John Martin Reservoir to the Colorado Kansas state line (State Line). **Figure 1** is a schematic drawing of the Arkansas River from La Junta to the State Line.

In the Augmentation Plan, depletions are calculated using the lagging requirements in the various decrees for structures within LAWMA's augmentation plan. All of the structures within the Augmentation Plan have been assigned to one of the 12 river segments described above.

Mainstem Irrigation – Rule 14 Plan. Under the State Engineer's Arkansas River Use Rules, a PDF is assigned to each irrigation well included in LAWMA's Rule 14 Plan based on whether the well supplements ditch deliveries of surface water (supplemental well) or provides a full supply of water for the owner's fields (sole-source well). In the 2018 Rule 14 Plan, supplemental wells were assigned a 36% depletion factor; sole-source wells were assigned a 50% or 75% depletion factor for flood irrigation methods and sprinklers, respectively. Wells that are pumped for more than one irrigation method carry a PDF that is weighted by the number of acres irrigated by each method.

Currently, LAWMA structures being pumped in the mainstem area within the Rule 14 Plan include 400 wells: 171 supplemental flood irrigation wells, 49 sole-source flood irrigation wells, 110 sole-source wells supplying a sprinkler irrigation system, and 70 wells used as part of a compound or complex system (combination of flood, sprinkler, and or drip irrigation).

Mainstem Irrigation Wells – Rule 14 Plan. LAWMA members' mainstem well pumping for irrigation purposes under the Rule 14 Plan from 1997 through 2017 is summarized in attached **Table 2.1**. These values were compiled by the Division Engineer from power and

flow meter records for the wells. For this period, mainstem irrigation pumping averaged 40,939 acre-feet annually and ranged from 12,347 acre-feet in 2004 to 75,569 acre-feet in 1997. Over the loan period, mainstem irrigation pumping within the Rule 14 plan should average about 45,236 acre-feet annually and should total about 28,933 acre-feet in a dry year. The average and dry-year planning pumping totals were derived from the allocation to LAWMA's irrigation wells using a 72% allocation during an average year and 40% during a dry year.

Mainstem Municipal and Commercial Wells – Rule 14 Plan. Lamar Light & Power has 16 wells that were historically used to cool the generation equipment at the Lamar Powerplant. Although depletions are not charged against the Lamar Light and Power wells, because the cooling system is fully contained and the heated water is discharged to the Lamar Canal and charged against the Lamar Canal decrees, the pumping from the wells is included in LAWMA's Rule 14 Plan submittals and operations.

There are two commercial wells used by the Beef City feedlot that are included in LAWMA's Rule 14 Plan.

The mainstem municipal and commercial well pumping for LAWMA members is summarized in attached **Table 2.2** for 1997 through 2017. These values were compiled by the Division Engineer from power and flow meter records. For this period, mainstem pumping for municipal and commercial purposes averaged 4,564 acre-feet annually and ranged from 21 acre-feet in 2017 to 11,677 acre-feet in 1999. The large drop in municipal and commercial mainstem pumping is due to the reduced operations at the Lamar Powerplant. Over the loan period, municipal and commercial mainstem pumping within the Rule 14 plan should average about 8,591 acre-feet annually and should total about 8,551 acre-feet in a dry year. 8,500 acre-feet in the average and dry year is attributed to the Lamar Power Plant. The average and dry-year pumping totals were derived from the allocation to LAWMA's irrigation wells using 72% allocation during an average year and 40% during a dry year.

Tributary Area Pumping – Rule 14 Plan. LAWMA augments pumping of 57 irrigation wells and 24 municipal wells and commercial wells in the tributary areas, primarily the Big Sandy Basin. The confluence of Big Sandy Creek and the Arkansas River is located about 8.5 miles upstream from the Buffalo Canal diversion. Big Sandy Creek flows only intermittently except during major precipitation events, and depletions to the Arkansas River from LAWMA members' well pumping in these areas are calculated as only 4% of annual wellhead depletions.¹ The depletions are replaced to the Arkansas River.

¹ As documented in LAWMA's Rule 14 Plan submittals from 1997 to 2018.
00189697-2

Total pumping in the tributary areas from 1997 to 2017 is summarized in attached **Table 2.3**. For this period, pumping averaged 3,529 acre-feet annually and ranged from 1,582 acre-feet in 2013 to 5,948 acre-feet in 2002. The 3,529 acre-feet of pumping is a good estimate of future average pumping in the tributary areas by LAWMA's present membership in the Rule 14 plan.

Alluvial Aquifer Wells – Augmentation Plan. Since 2007, LAWMA's Augmentation Plan has covered 155 alluvial aquifer wells that are used for commercial, irrigation and municipal purposes. Pumping of the alluvial aquifer wells is summarized in attached **Table 2.4** for 2007 through 2017. That pumping has averaged 5,040 acre-feet per year, with a maximum of 9,015 acre-feet in 2016 and a minimum of 2,091 in 2013. Over the loan period, pumping of alluvial aquifer wells within the Augmentation Plan should average about 9,243 acre-feet annually, and should total about 6,407 acre-feet in a dry year.

Bedrock Aquifer Wells – Augmentation Plan. Since 2007, LAWMA's Augmentation Plan has covered 49 bedrock aquifer wells that are used for commercial, irrigation and municipal purposes. Pumping of the bedrock aquifer wells is summarized in attached **Table 2.5** for 2007 through 2017. That pumping has averaged 573 acre-feet per year, with a maximum of 670 acre-feet in 2017 and a minimum of 376 acre-feet in 2007. Over the loan period, pumping of bedrock aquifer wells within the Augmentation Plan should average about 695 acre-feet annually, and should total about 690 acre-feet in a dry year. This amount hardly varies because bedrock wells are considered non-curtable structures and most LAWMA members with bedrock aquifer wells used preferred shares to augment those depletions.

Gravel Pits and Wildlife Ponds – Augmentation Plan. LAWMA's Augmentation Plan covers 11 gravel pits and 8 wildlife ponds. Diversions from the gravel pits and wildlife ponds are primarily attributable to evaporation and are summarized in attached **Table 2.6** for 2007 through 2017. Diversions from the wildlife ponds averaged 173 acre-feet per year, with a maximum of 309 acre-feet in 2016 and a minimum of 110 acre-feet in 2008 and 2009. Diversions from gravel pits averaged 822 acre-feet per year, with a maximum of 1,336 acre-feet in 2017 and a minimum of 490 acre-feet in 2007. Over the loan period, diversions from wildlife ponds and gravel pits within the Augmentation Plan should average about 1,073 acre-feet annually and should total about 1,073 acre-feet in a dry year. Since evaporation is the primary depletion for both the gravel pits and ponds, depletions do not change significantly between an average and dry year.

Other Structures – Augmentation Plan. LAWMA's plan for augmentation covers 18 other structures (i.e., structures that are not alluvial wells, bedrock wells, gravel pits or wildlife ponds). These structures include surface water diversion points, structures with a return flow obligation requirement, and diversion points on drains. Diversions from these structures are

summarized in attached **Table 2.7** for 2007 through 2017. Such diversions averaged 333 acre-feet annually, with a maximum of 429 acre-feet in 2014 and a minimum of 86 acre-feet in 2013. Over the loan period, diversions from other structures within the Augmentation Plan should average 63 acre-feet annually and should total about 63 acre-feet in a dry year.

Stream Depletions – Rule 14 Plan and Augmentation Plan. We modeled historical depletions for each GWAM river segment using the accounting model and the above-described pumping levels. We reduced depletions to allow for (1) wells operating as alternate points of diversion for senior surface water rights, (2) pre-Arkansas River Compact (Compact) wells, and (3) usability factors applied to depletions at the State Line from pre-1986 wells. Those modeled depletions, which currently make up LAWMA's water supply demands, are summarized columns 3-5 in attached **Table 1.1**.

Water Supply Deficit. **Table 1.1** summarizes the modeled long-term operation of LAWMA's existing water supplies, as described above, without the inclusion of the WFGP. As shown in column 21 of **Table 1.1**, and as described above, LAWMA's existing supplies are estimated to yield approximately 21,673 acre-feet of water on an average annual basis and 7,372 acre-feet of replacement water on a firm annual basis (i.e., in a dry year). As shown in column 5 of **Table 1.1**, LAWMA's minimum annual replacement requirement under the Rule 14 Plan and the Augmentation Plan is 11,106 acre-feet. Therefore, because LAWMA's firm-yield supply of water in a dry year is 7,372 acre-feet, LAWMA faces a significant dry-year deficit, and needs to substantially increase the firm yield of its water rights portfolio. As explained in Section IV below, the incorporation of the WFGP into LAWMA's water rights operations will enable LAWMA to do exactly that.

IV. Project Description – West Farm Gravel Pit

Proposed Use of the West Farm Gravel Pit. The purpose of acquiring storage in the WFGP is for LAWMA to capture excess CU credits delivered to the Arkansas River that are not needed for immediate replacement of stream depletions, and to store those credits for later delivery to the river when they are needed and when water may not be available to LAWMA's direct-flow water rights and other water supply sources. More specifically, LAWMA proposes to store excess CU credits available to LAWMA's Lamar Canal shares in the WFGP; and, following LAWMA's successful prosecution of a change of water rights case for its Fort Lyon Canal shares, to also store excess CU credits available to those shares in the WFGP. All return flow components will continue to be delivered to the river to maintain the historical return flow patterns.

Analysis of Alternatives. There is not another source of storage capacity available for LAWMA's purchase on the Arkansas River below John Martin Reservoir and above the river

reaches to which LAWMA must deliver water. In the absence of an alternative reservoir, LAWMA compared acquiring the WFGP to a no-action alternative. As documented below and in the attached tables, the selected alternative is acquisition of the WFGP.

Evaluation factors and methods. In order to evaluate the potential benefit to LAWMA of acquiring the WFGP, we updated the LAWMA Operational Yield Study (Yield Study) to include the ability to store excess Lamar Canal CU credits in the WFGP and release the CU credits when they are needed downstream of the pit. A comparison of the Yield Study output prior to the inclusion of the WFGP with the Yield Study including the WFGP documents the overall benefits to LAWMA of acquiring the WFGP.

The Yield Study is an iterative model that utilizes multiple runs incorporating varying annual allocation percentages to determine the monthly and annual stream depletions by H-I Model reach that can be fully replaced by LAWMA's augmentation water supplies. The output of the Yield Study is finalized when the model shows no shortfalls in replacement of depletions. The Yield Study incorporates LAWMA's water supply sources described above and includes the terms and conditions of each of the decrees for LAWMA's changed direct-flow water rights, as well as the following conditions and assumptions:

- Modeled pro rata diversions of LAWMA's direct-flow water rights from 1950 to 2017.
- Monthly CU factors.
- Monthly maximum, annual, and long-term volumetric limits.
- Other sources of water, such as inflow to conservation storage in John Martin Reservoir accounts that LAWMA owns, Fryingpan-Arkansas River Project return flows made available to LAWMA by Southeastern Water Conservation District (SECWCD) annually, and credits from unconsumed transit loss of deliveries from the Highland Canal to John Martin Reservoir.
- Operation of newly developed recharge facilities under the Fort Lyon Canal.
- Stream depletion replacement requirement based on the 2018 LAWMA share distribution between the Rule 14 Plan, Augmentation Plan, and Substitute Water Supply Plans.
- User Groups associated with the H-I Model.
- H-I Model river reaches for modeling stream depletions and locations to which replacement supplies must be delivered.
- Maximum usable storage of the WFGP as 1,564 acre-feet; maximum rate of inflow to and outflow from the WFGP as 20 cfs.

- Evaporation from the WFGP as 5.02 acre-feet per acre, as defined in LAWMA's Exhibit R, Paragraph B. of Case No. 02CW181, for the Lamar weather station.
- Since the WFGP is a lined reservoir, monthly seepage amount as zero.
- Water delivered from the WFGP to H-I Model Reach 14 of the H-I Model (actual location where deliveries will take place in the future) at a point just northeast of Lamar, Colorado below the Arkansas River at Lamar, Colorado river gage and above the X-Y and Buffalo Canal river headgates.

Table 1.1 represents the Yield Study run from 1950 to 2017 (Study Period) without incorporating the WFGP into LAWMA's operations. This table therefore represents the no-action alternative.

Table 1.2 represents LAWMA's currently available supplies, modeled without inclusion of the WFGP. This table, which also represents the no-action alternative, is divided into direct-flow CU credits, consumable water in storage in John Martin Reservoir, and other available CU credits.

Table 3.1 represents the LAWMA Yield Study updated to include modeled operation of the WFGP during the Study Period. This table therefore represents the selected alternative, which is acquisition of the WFGP. Columns 10 and 16 of **Table 3.1** (highlighted in orange) show, respectively, the modeled annual inflow to and outflow from the WFGP. On average, LAWMA would be able to store 933 acre-feet of CU credits in the WFGP, with a modeled maximum of 2,225 acre-feet in 1958 and a modeled minimum of 125 acre-feet in 1977. The modeled maximum inflow is larger than the maximum capacity of the WFGP; that is because in 1958 1,966 acre-feet was also modeled as released from the pit. This type of operation also occurred in 1950, 1951, 1954, 1955, 1957, 1959, 1960, 1987, and 2013. The model never had more than 1,242 acre-feet of water stored at any one time. The updated Yield Study determined that to maximize the beneficial use of its water supplies and the efficient operation of the Rule 14 Plan and Augmentation Plan, on average, LAWMA would need to release 761 acre-feet from the WFGP annually, with a modeled maximum of 2,658 acre-feet in 1959 and a modeled minimum of zero in 1976 and 1982.

Table 3.2 represents **Table 1.2** updated to include excess CU credits stored in the WFGP; therefore, **Table 3.2** also represents the selected alternative, acquisition of the WFGP.

Benefits of LAWMA's Acquisition of the West Farm Gravel Pit.

A comparison of Columns 2 of **Table 1.1** and **Table 3.1** shows the significant and tangible benefit to LAWMA members of storing excess CU credits in the WFGP. In **Table 1.1** (no-action alternative), the average annual allocation to a LAWMA common share was 72% (Column 2).

This is consistent with LAWMA's past studies without the WFGP showing the historical average allocation being between 72% and 75%. For purposes of past planning, LAWMA therefore has used a 75% allocation as the projected long-term average. By contrast, Column 2 of **Table 3.1** (operations with the WFGP, the selected alternative) shows an increase in the long-term average allocation from 72% to 85%.

This is a substantial increase in allocation to LAWMA's shareholders. An allocation of 72% in 2018 for LAWMA's shareholders would have represented a total amount of pumping under the Rule 14 Plan of 54,608 acre-feet and 11,074 acre-feet of pumping under the Augmentation Plan. This combines for total shareholder pumping under both plans of 65,682 acre-feet (54,608 + 11,074). If the allocation was increased by addition of the WFGP to 85%, then the total amount of pumping would increase to 61,353 acre-feet under the Rule 14 Plan and 12,229 acre-feet under the Augmentation Plan. This results in a total amount of pumping for both plans of 73,582 acre-feet (61,353 + 12,229). The difference between the two totals is 7,900 acre-feet of pumping or a 12% increase ($7,900 / 65,682$) in overall pumping.

Furthermore, incorporation of the WFGP into LAWMA's operations also would significantly reduce the likelihood of "minimum allocation years," which we have modeled as years in which there is an allocation of only 40%. **Table 1.1** shows that without LAWMA's having the ability to store excess CU credits in the WFGP, there were 23 years out of the 68-year Study Period—34% of the Study Period—in which LAWMA would have had a minimum allocation year. By contrast, **Table 3.1** shows that with the WFGP incorporated into LAWMA's modeled operations, minimum allocation years occurred only 8 times, which is only 12% of the Study Period.

A comparison of **Tables 1.1** and **3.1** therefore demonstrates that the ability to store excess CU credits in the WFGP will increase the efficiency of LAWMA's operations and as a result provide a significant and tangible benefit to LAWMA members in the form of an increase in the annual allocation to LAWMA common shares—and a corresponding increase in authorized pumping or other diversions. The WFGP will primarily benefit the farming communities in Bent and Prowers Counties, but will also be beneficial to the State of Colorado in maintaining Arkansas River Compact compliance by allowing LAWMA to deliver CU credits to the Arkansas River during times of need. LAWMA's proposed use of the WFGP also is consistent with the goals of the Colorado Water Plan for more storage in the Arkansas River Basin. Finally, the addition of WFGP storage to LAWMA's operations will make LAWMA's use of its water supply portfolio more flexible and more precise, enabling LAWMA to deliver replacement water below the Lamar Canal river headgate—both to downstream calling water rights and to the State Line if needed for Compact compliance—at specified times and in specified amounts, including for replacement of historical return flows associated with LAWMA's changed direct-flow water rights.

Impacts to the Natural and Man-Made Environment. Because the WFGP is an existing, constructed gravel pit reservoir, there will be no additional impacts to the environment caused by LAWMA's purchase of the WFGP. The original impacts of the gravel pit mine and subsequent reclamation into storage reservoirs were addressed in the West Farm Gravel Pit Mine mining Permit No. M-2008-078.

Selected Alternative. For the reasons explained above, acquisition of the WFGP is LAWMA's selected alternative.

A narrative description of project components and operation is included above.

A map of the WFGP and its related facilities is included in **Appendix I**.

A copy of the 90-day Performance Test summary of results is attached as **Appendix J**.

At the closing for the WFGP, LAWMA will acquire an access easement to the WFGP and easements for carrying water in the inlet and outlet structures for the WFGP.

Cost Estimate. The price for the WFGP to be acquired by LAWMA is \$4,595,000.

Implementation Schedule. LAWMA and the owner of the WFGP, GP Aggregates LLC, intend to close on the purchase and sale before the end of 2019.

Impacts. As explained above, there will be no impacts to the natural or man-made environment from LAWMA's storage of water in the existing WFGP. Because the stored water will be used within LAWMA's existing Rule 14 Plan and existing Augmentation Plan, there also will be no impacts to local or regional plans for water resource development, land use, recreation, or water quality management. The increase in allocation to LAWMA common shares may spur economic development in the lower Arkansas River Basin. There will be no other social or environmental effects from LAWMA's storage of water in the WFGP.

Institutional Feasibility. Actions or proceedings that must be undertaken for LAWMA to implement the project are as follows:

- LAWMA must obtain a decree in pending Case No. 15CW3067 to allow WFGP storage of CU credits available to LAWMA's Lamar Canal shares being changed in that case.
- LAWMA must obtain a decree in a water court case that it will file this year to change the use of its shares in the Fort Lyon Canal Company, including to allow WFGP storage of CU credits available to those shares. In the interim, LAWMA may obtain an approved substitute water supply plan for this purpose.

V. Financial Feasibility Analysis

Based on 2017 audited financial statements, LAWMA has total income of \$1,315,678 and total expenses of \$1,156,353, with an ending cash equivalent balance of \$273,574. The 2017 statement of financial position lists \$19,116,804 in total assets, \$8,048,346 in total liabilities, and \$11,068,458 of total equity.

Loan Amount.

The purchase price for the WFGP that LAWMA will acquire is \$4,595,000. LAWMA is requesting a loan of **\$4,640,950** to cover the purchase price and CWCB's 1% loan origination fee.

LAWMA is requesting an interest rate of 2.2%. We calculated the requested interest rate based on the weighted average of the interest rate categories on the CWCB's website and the number of shares held by LAWMA's members qualifying under each category. Those interest rate categories were as follows: agricultural at 1.85%, low income municipal at 2.55%, high income municipal at 3.30% and commercial at 6.0%. We converted preferred shares to common shares for the purpose of weighting the interest rates. LAWMA has 25,635.38 common shares serving agricultural structures, 303 common shares serving small municipalities, 2,500 common shares serving a large municipality, and 1,635.125 common shares serving non-agricultural commercial structures.

LAWMA is requesting a term of 30 years on the \$4,640,950 loan. As described below, if LAWMA receives an approximately \$1,750,000 payment from CS-U at some point in the next five years, LAWMA would like to use that payment to pay down the outstanding principal on the loan. At that point, to reduce the financial burden on its shareholders, LAWMA would like to restructure the loan over a new 30-year term using the same interest rate (2.2%) on the remaining principal balance.

Financing Sources and Collateral.

LAWMA will use a mix of share assessment increases (from the current rate of \$39.50 up to \$44.14 per share by 2024) and payments from CS-U to finance acquisition of the WFGP. Under the LAWMA/CS-U Water-Sharing Agreement dated July 16, 2018, if LAWMA is able to obtain a water court decree authorizing CS-U's use of its 2,500 LAWMA common shares in the CS-U municipal system, CS-U will purchase 500 acre-feet of storage capacity in the WFGP for LAWMA at a total cost of \$1,750,000. Until such a decree is entered, and provided that the Water-Sharing Agreement remains in effect, CS-U will reimburse LAWMA \$125,000 per year for LAWMA's costs to lease the 500 acre-feet of storage capacity in the WFGP. Each year, a portion of the lease

payments reduces the \$1,750,000 purchase price based on schedules attached to the LAWMA/CS-U Water-Sharing Agreement. Once LAWMA receives the adjusted \$1,750,000 payment from CS-U for 500 acre-feet of storage in the West Farm Gravel Pit, LAWMA will apply that payment to the principal of the requested loan and will seek to restructure the loan agreement to reduce the annual loan payments being financed by LAWMA's shareholders as described above.

LAWMA's annual payment on the proposed new CWCB loan in the amount of \$4,640,950 would be approximately \$212,960 under the requested terms. In our analysis, we estimated that LAWMA would obtain a final decree in the water court case authorizing CS-U's use of LAWMA shares in its municipal system in 2023. The adjusted purchase price for the 500 acre-feet of storage at that point is approximately \$1,557,093. LAWMA plans on applying the \$1,557,093 payment from CS-U to LAWMA's annual payment to CWCB for 2023 (i.e., for the amount in excess of the annual payment, to pay down the outstanding principal of the loan). If LAWMA is able to restructure the loan with the remaining principal balance of \$2,838,532 at a 2.2% interest rate for a new 30-year period, we calculate annual payments of \$130,297 from 2024 through 2053.

LAWMA plans to use share assessment revenue as collateral for the new CWCB loan.

Outstanding CWCB Loans.

LAWMA has four outstanding loans with the CWCB, as summarized below:

Loan No.	Date of Contract	Principal	Terms	Current Balance	Annual Payment
C153715	5/1/1997	\$3,688,567	3% - 40 yrs	\$2,739,480	\$199,184
C153768	5/28/1997	\$2,300,000	3% - 40 yrs	\$1,596,343	\$89,297
C150150	1/1/2004	\$2,272,500	2.5% - 30 yrs	\$1,417,443	\$108,575
C150258	1/29/2008	\$2,493,722	2.3% - 30 yrs	\$1,842,818	\$115,990

The table below shows LAWMA's CWCB loan payment schedule from 2007 through 2038, when all of LAWMA's existing CWCB loans are scheduled to be paid off.

Loan No.	2019 – 2034 Annual Payment	2035 – 2037 Annual Payment	2038 Annual Payment
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C153715	\$199,184	\$199,184	\$ 0
C153768	\$89,297	\$89,297	\$ 0
C150150	\$108,575	\$ 0	\$ 0
C150258	\$115,990	\$115,990	\$115,990
TOTALS	\$513,046	\$404,471	\$115,990

Adding \$212,960 in annual payments for the requested loan would make LAWMA's annual CWCB loan payments increase as shown in the table below:

Loan No.	2019 – 2023 Annual Payment	2024 – 2034 Annual Payment	2035 – 2037 Annual Payment	2038 Annual Payment	2039-2053 Annual Payment
C153715	\$199,184	\$199,184	\$199,184	\$ 0	\$ 0
C153768	\$89,297	\$89,297	\$89,297	\$ 0	\$ 0
C150150	\$108,575	\$108,575	\$ 0	\$ 0	\$ 0
C150258	\$115,990	\$115,990	\$115,990	\$115,990	\$ 0
New Loan - WFGP	\$212,960	\$130,298	\$130,298	\$130,298	\$130,298
TOTALS	\$726,006	\$643,344	\$534,769	\$246,288	\$130,298

LAWMA's Income, Operating Expenses and CWCB Loan Service

The summary table below projects LAWMA's income, operating expenses, CWCB loan debt service obligations, and necessary share assessments from 2018 to 2053 based on receiving \$1,557,093 (the adjusted purchase price based on the LAWMA/CS-U Water-Sharing Agreement) from CS-U in 2023 and restructuring the loan under the terms described above. The table factors in the CWCB's requirement that LAWMA retain 10% of its annual loan payment in a reserve account for the first 10 years of the loan term.

	2019	2020-2022	2023	2024-2029	2030-2034	2035-2038	2039-2053
Total Revenue	1,390,453	1,612,591	3,044,684	1,529,994	1,508,642	1,400,077	995,588
Total Expenses	1,365,183	1,612,384	2,956,517	1,529,722	1,508,426	1,399,851	995,380
Net Income	25,270	207	88,167	272	216	226	208
Share Assessment	\$ 39.50	\$ 42.73	\$ 42.73	\$ 44.14	\$ 43.43	\$ 39.82	\$ 26.37

A detailed table of LAWMA's projected revenues and expenses is attached at **Appendix K**. As shown in the table above, LAWMA will adjust share assessments to meet its loan service

obligations and maintain financial stability. Once existing CWCB loans are retired, LAWMA will be able to cut share assessments drastically and reduce the overall financial burden on its shareholders.

Financial Impacts on LAWMA Shareholders. LAWMA's shareholders will be impacted by the proposed assessment increase of up to \$5.00 per share. The increase in the share assessment will be offset by the substantial benefit to shareholders from the increase in the annual allocation per share. LAWMA's members have given preliminary approval to an increase in share assessments levels as necessary to ensure repayment of the requested loan.

Sponsor Creditworthiness. LAWMA's current schedule of annual dues and assessments is included in Section II above.

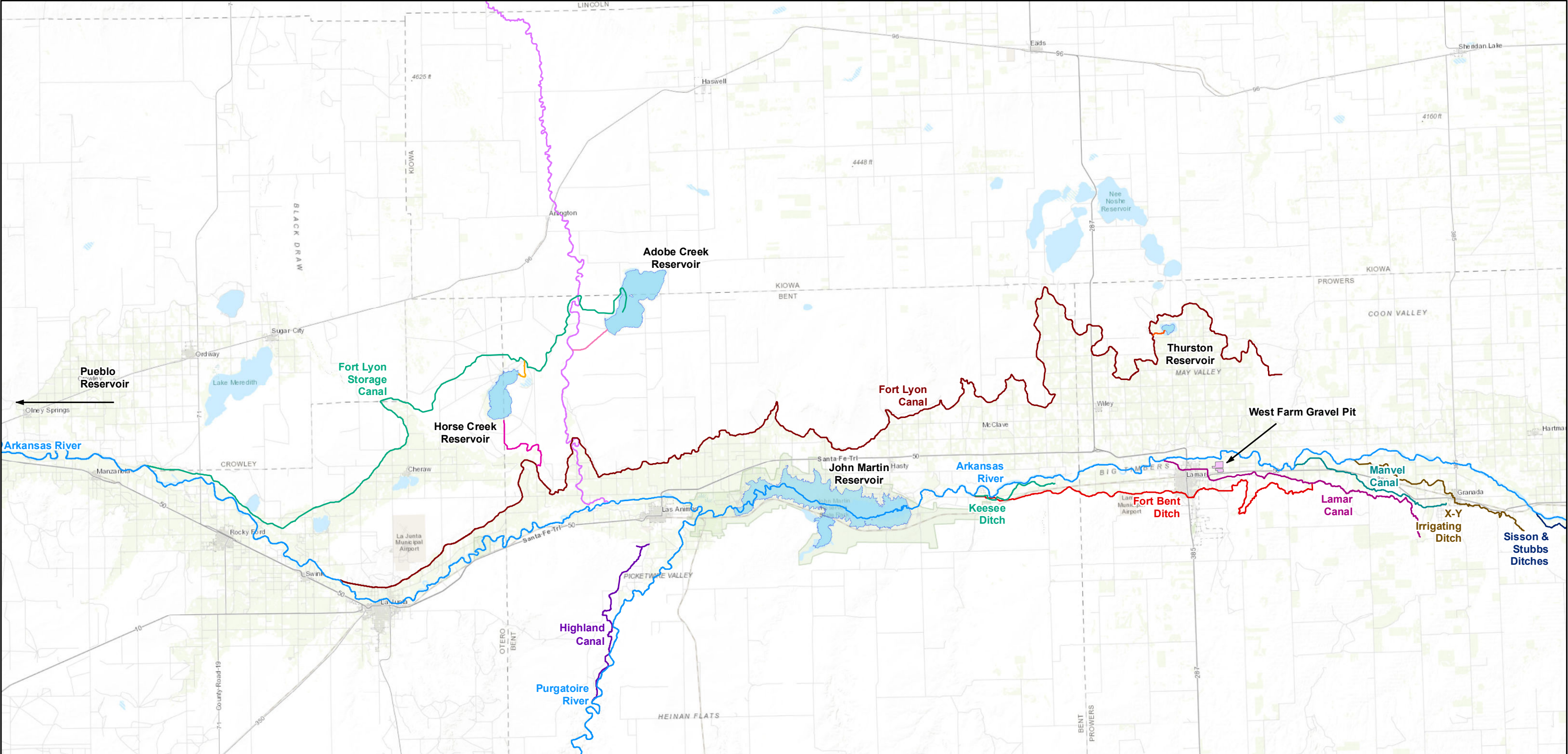
Copies of LAWMA's three most recent audited financial statements are attached as **Appendices F, G, and H.**

LAWMA will make a current credit report available to CWCB upon request.

VI. Conclusions and Recommendation

- A. The addition of the West Farm Gravel Pit to LAWMA's replacement operations will increase the average annual allocation of a LAWMA share from 72% to 85%, which represents a significant and tangible benefit to LAWMA's shareholders.
- B. LAWMA's acquisition of the West Farm Gravel Pit also will significantly decrease the likelihood of a minimum allocation to a LAWMA common share, from 34% of the Study Period without the proposed storage to 12% of the Study Period with the proposed storage.
- C. With its existing revenues, a potential increase in share assessments, and CS-U repayments, LAWMA will be able to finance the requested loan for the duration of the loan term.
- D. The benefits of the project will be felt by the LAWMA shareholders in the near future and into the distant future. As an existing and operational gravel pit storage reservoir, the West Farm Gravel Pit can be incorporated into LAWMA's replacement operations as soon as closing has occurred.

Based on this study, we have concluded that both the overall project and LAWMA's repayment of the requested loan are feasible.



Legend

- | | | |
|------------------------------|-------------------------|-----------------------|
| Thurston Reservoir Inlet | Lamar Canal | West Farm Gravel Pit |
| Adobe Creek Reservoir Outlet | Keesee Ditch | Thurston Reservoir |
| Horse Creek Reservoir Outlet | Fort Bent Canal | John Martin Reservoir |
| Horse Creek Reservoir Inlet | Fort Lyon Storage Canal | Horse Creek Reservoir |
| X-Y Irrigating Ditch | Fort Lyon Canal | Adobe Creek Reservoir |
| Sisson & Stubbs Ditches | Adobe Creek | |
| Manvel Canal | Highland Canal | |

 Miles		Job No. L101
		File: FLCC OGM of LAWMA WRS.mxd
		Date: 1/22/19
		Prepared For: LAWMA
Hendrix Wai Engineering, Inc.		Figure 1 General Location Map of the Lower Arkansas Water Management Association Direct Flow Replacement Supplies

Table 1.1
Summary of LAWMA's Replacement Operations without the West Farm Gravel Pit
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
Operations with LAWMA's current water rights portfolio
(values in ac-ft)

Year (Apr - Mar)	Replacement Requirement				Shortage in Meeting Replacement Req't	Direct and Other Sources		LAWMA Storage Accounts Inflow					LAWMA Storage Accounts Outflow						End of Mar Storage	Total of LAWMA Water Sources
	Percent Allocated	Augmented Structures Rule 14	Augmented Structures 02CW181	Total		Direct Flow Credit	Other CU Credit	Article II Storage Inflow	Ft Lyon Direct Flow to Offset	Keesee I Direct Flow to Offset	Highland Direct Flow to Offset	Total Inflow	Offset Account Storage Charge	Release for Replacement	Offset Account Release	Spill	Evap	Total Outflow		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1950	100%	21,220	7,837	29,057	0	11,689	2,663	4,815	786	613	1,818	8,032	500	6,810	3,761	0	2,380	13,452	8,274	22,384
1951	100%	21,238	7,838	29,076	0	11,880	2,879	5,388	754	896	2,726	9,765	500	8,248	3,551	0	1,249	13,548	3,920	24,524
1952	72%	17,931	6,618	24,549	0	11,694	3,856	1,640	826	1,529	2,224	6,219	500	1,586	4,590	0	404	7,080	2,539	21,770
1953	40%	12,654	4,919	17,572	0	9,587	3,115	3,125	632	1,046	2,486	7,289	500	1,288	3,137	0	486	5,411	3,890	19,991
1954	40%	10,464	4,533	14,997	0	6,671	2,114	3,095	279	1,087	1,740	6,201	500	1,726	2,991	0	595	5,811	3,801	14,986
1955	88%	15,362	6,576	21,938	0	10,164	2,412	10,236	529	283	2,145	13,193	500	3,124	2,575	0	1,448	7,647	8,934	25,769
1956	72%	15,625	6,396	22,021	0	8,155	2,406	1,375	438	1,134	2,136	5,083	500	5,889	3,379	0	1,096	10,864	2,683	15,644
1957	98%	18,473	7,412	25,886	0	9,919	4,448	12,329	1,064	0	4,511	17,904	500	4,657	3,818	0	1,234	10,209	9,725	32,271
1958	100%	20,087	7,773	27,860	0	9,266	3,499	6,202	877	0	4,193	11,272	500	8,113	4,838	0	754	14,205	6,135	24,037
1959	110%	21,840	8,262	30,102	0	13,251	3,227	6,867	752	637	3,050	11,307	500	7,573	4,349	0	1,244	13,666	3,210	27,785
1960	40%	14,330	5,331	19,661	0	7,322	3,071	2,753	658	1,011	2,329	6,751	500	2,031	3,253	0	531	6,315	3,131	17,145
1961	44%	11,389	4,754	16,143	0	8,678	3,013	1,865	829	809	3,756	7,259	500	0	4,177	0	457	5,134	4,609	18,950
1962	86%	15,523	6,540	22,063	0	10,240	4,247	2,709	1,028	1,326	2,696	7,759	500	2,272	5,041	0	577	8,390	3,349	22,246
1963	40%	11,884	4,987	16,871	0	5,943	2,626	1,313	351	1,483	1,454	4,602	500	1,022	2,711	0	331	4,563	2,910	13,171
1964	40%	9,938	4,535	14,473	0	4,181	2,589	940	407	1,243	1,642	4,232	500	883	3,448	0	208	5,039	1,656	11,002
1965	40%	9,349	4,485	13,834	0	6,044	3,900	1,554	929	564	3,496	6,543	500	0	3,233	0	11	3,744	3,858	16,487
1966	104%	16,659	7,263	23,923	0	8,558	3,289	13,757	765	0	2,662	17,184	500	5,580	3,134	0	1,543	10,756	9,721	29,031
1967	100%	19,442	7,787	27,229	0	11,754	3,240	3,941	812	742	2,597	8,092	500	7,343	3,398	0	1,367	12,608	4,602	23,086
1968	75%	17,297	6,736	24,032	0	9,290	3,280	2,441	726	1,209	2,912	7,288	500	2,097	4,655	0	512	7,764	3,505	19,858
1969	46%	12,940	5,208	18,148	0	7,855	3,421	4,648	862	0	1,032	6,542	500	1,867	2,948	0	759	6,074	3,685	17,818
1970	49%	11,542	4,992	16,533	0	10,090	4,119	2,245	1,075	0	202	3,523	500	392	1,277	0	900	3,069	3,979	17,732
1971	49%	11,118	4,983	16,101	0	8,637	3,874	1,861	839	0	1,432	4,133	500	1,448	1,483	0	855	4,285	3,560	16,644
1972	40%	9,825	4,588	14,412	0	7,198	3,329	1,770	700	0	948	3,417	500	2,761	1,731	0	485	5,476	1,290	13,945
1973	40%	9,220	4,488	13,708	0	9,085	3,962	3,275	1,011	0	2,156	6,442	500	915	2,435	0	567	4,417	2,977	19,490
1974	40%	8,989	4,476	13,465	0	4,766	3,253	1,299	490	0	342	2,131	500	2,477	1,685	0	303	4,966	10	10,150
1975	40%	8,867	4,474	13,341	0	5,181	3,281	610	671	0	1,527	2,808	500	0	702	0	26	1,228	1,308	11,270
1976	40%	8,793	4,473	13,266	0	4,852	2,892	1,031	554	68	1,180	2,833	500	0	2,089	0	50	2,638	1,236	10,577
1977	40%	8,747	4,473	13,220	0	5,488	1,888	1,895	353	0	1,965	4,213	500	687	1,469	0	294	2,950	2,176	11,589
1978	40%	8,718	4,473	13,190	0	5,895	2,775	1,791	527	0	2,269	4,587	500	741	2,534	0	317	4,093	2,296	13,258
1979	40%	8,701	4,472	13,173	0	6,972	3,692	1,521	921	0	3,068	5,509	500	105	3,081	0	352	4,038	3,299	16,173
1980	86%	14,144	6,476	20,620	0	10,531	3,835	8,262	1,040	0	3,602	12,905	500	1,666	3,620	0	1,498	7,284	8,344	27,271
1981	92%	17,300	7,240	24,540	0	9,540	2,995	3,575	766	235	2,732	7,309	500	6,819	3,707	0	712	11,738	3,416	19,844
1982	68%	15,576	6,319	21,896	0	10,228	4,015	3,716	1,154	369	3,536	8,775	500	1,413	3,489	0	581	5,983	5,597	23,017
1983	110%	19,769	7,903	27,672	0	12,483	5,237	11,141	1,561	68	3,671	16,440	500	3,702	4,619	0	1,693	10,514	10,824	34,160
1984	110%	21,850	8,336	30,186	0	12,081	6,143	11,405	1,655	536	3,005	16,600	500	4,494	4,444	0	2,532	11,970	14,758	34,824
1985	120%	23,723	8,821	32,544	0	13,041	6,097	14,082	1,641	0	4,197	19,919	500	6,486	4,942	10,719	1,638	24,284	9,652	39,058
1986	110%	23,408	8,504	31,911	0	13,378	5,034	6,323	833	841	2,166	10,162	500	7,725	3,964	0	1,364	13,552	5,660	28,574
1987	110%	23,240	8,409	31,650	0	13,312	4,586	17,610	1,223	0	3,926	22,759	500	9,297	4,035	0	1,635	15,468	12,319	40,657
1988	110%	23,263	8,400	31,662	0	14,805	4,110	3,744	1,128	1,257	3,372	9,500	500	7,090	5,142	0	1,808	14,540	6,564	28,415
1989	87%	20,570	7,397	27,967	0	11,235	3,767	1,532	799	1,155	356	3,843	500	4,515	3,584	0	437	9,035	1,022	18,845
1990	40%	13,797	5,099	18,896	0	11,220	3,490	2,186	914	218	602	3,921	500	762	1,768	0	174	3,204	1,545	18,631
1991	40%	10,906	4,555	15,462	0	10,240	3,520	2,169	794	177	1,600	4,740	500	485	1,525	0	341	2,851	3,129	18,500
1992	44%	10,376	4,664	15,040	0	10,680	3,251	2,465	881	117	1,387	4,850	500	371	2,514	0	569	3,954	3,746	18,781
1993	82%	14,599	6,351	20,950	0	13,614	4,318	3,145	1,071	45	2,499	6,759	500	838	2,692	0	872	4,901	5,214	24,692
1994	100%	18,551	7,553	26,104	0	13,899	3,783	3,617	1,070	49	427	5,163	500	5,340	2,335	0	768	8,942	1,220	22,845
1995	91%	18,979	7,406	26,385	0	12,602	5,395	15,358	1,422	0	1,836	18,616	500	2,503	1,157	0	1,438	5,598	13,833	36,612
1996	100%	20,119	7,731	27,850	0	8,645	4,875	7,158	1,202	0	1,060	9,420	500	5,798	3,132	0	2,710	12,140	10,756	22,939
1997	110%	21,901	8,259	30,160	0	9,985	5,235	8,387	1,283	10	1,772	11,451	500	6,419	2,105	0	2,236	11,260	10,565	26,671
1998	110%	22,669	8,379	31,049	0	9,427	4,772	13,415	1,238	0	2,514	17,167	500	9,968	3,250	0	2,409	16,128	11,140	31,367
1999	110%	22,971	8,394	31,365	0	9,117	4,757	16,635	1,396	0	470	18,500	500	11,293	2,149	0	1,737	15,679	13,673	32,374
2000	100%	21,946	7,962	29,908	0	12,203	4,406	5,621	1,141	17	2,482	9,262	500	6,243	2,944	0	2,864	12,551	9,976	25,871
2001	87%	19,966	7,287	27,253	0	9,313	3,806	2,646	883	255	1,869	5,653	500	8,249	2,684	0	966	12,400	2,853	18,772
2002	40%	13,582	5,086	18,668	0	6,218	2,694	1,181	301	390	805	2,677	500	1,944	2,016	0	179	4,639	684	11,589
2003	40%	10,799	4,553	15,352	0	6,107	2,641	909	550	68	1,677	3,203	500	467	2,466	0	56	3,489	226	11,952
2004	40%	9,839	4,490	14,329	0	10,035	2,616	1,899	677	515	3,459	6,550	500	0	2,231	0	129	2,861	3,441	19,201
2005	53%	10,909	5,045	15,953	0	9,182	3,386	2,625	873	21	3,422	6,940	500	1,561	4,397	0	499	6,958	2,899	19,508

Table 1.1
Summary of LAWMA's Replacement Operations without the West Farm Gravel Pit
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
Operations with LAWMA's current water rights portfolio
(values in ac-ft)

Year (Apr - Mar)	Replacement Requirement				Shortage in Meeting Replacement Req't	Direct and Other Sources		LAWMA Storage Accounts Inflow					LAWMA Storage Accounts Outflow						End of Mar Storage	Total of LAWMA Water Sources
	Percent Allocated	Augmented Structures Rule 14	Augmented Structures 02CW181	Total		Direct Flow Credit	Other CU Credit	Article II Storage Inflow	Ft Lyon Direct Flow to Offset	Keesee I Direct Flow to Offset	Highland Direct Flow to Offset	Total Inflow	Offset Account Storage Charge	Release for Replacement	Offset Account Release	Spill	Evap	Total Outflow		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
2006	40%	9,797	4,618	14,415	0	8,857	3,271	1,427	711	715	3,115	5,968	500	0	3,066	0	382	3,948	4,365	18,095
2007	100%	16,289	7,104	23,393	0	15,158	3,300	2,835	1,232	76	3,628	7,771	500	1,219	4,473	0	649	6,841	4,665	26,228
2008	100%	19,271	7,746	27,017	0	14,050	3,774	2,434	1,014	1,164	2,928	7,539	500	1,673	4,725	0	562	7,460	4,135	25,363
2009	93%	19,381	7,515	26,896	0	15,448	3,732	1,941	972	1,052	2,376	6,341	500	1,608	3,917	0	425	6,450	3,484	25,521
2010	64%	16,012	6,188	22,200	0	11,774	3,467	2,728	987	288	2,529	6,532	500	1,442	3,641	0	586	6,168	3,349	21,773
2011	40%	11,738	4,820	16,558	0	8,423	3,215	1,442	797	91	1,018	3,348	500	1,340	2,263	0	335	4,437	1,952	14,986
2012	40%	10,033	4,520	14,553	0	3,023	2,592	1,097	329	76	254	1,757	500	1,615	1,547	0	147	3,809	0	7,372
2013	40%	9,422	4,483	13,905	0	9,424	2,510	1,468	575	114	983	3,139	500	0	435	0	58	993	1,771	15,073
2014	40%	9,120	4,476	13,596	0	12,495	3,031	1,933	918	114	2,888	5,854	500	0	2,781	0	296	3,577	3,614	21,379
2015	110%	17,251	7,523	24,773	0	14,357	3,180	12,358	888	114	2,607	15,966	500	3,812	3,106	0	1,643	9,061	10,031	33,504
2016	89%	18,391	7,373	25,765	0	10,885	3,486	2,236	1,125	34	1,587	4,982	500	5,397	2,795	0	1,457	10,149	4,473	19,353
2017	110%	7,749	3,357	11,106	0	13,592	2,170	8,379	4,241	16	2,954	15,590	500	0	2,403	0	1,795	4,698	14,772	31,352
Average	72%	15,255	6,206	21,462	0	9,866	3,571	4,697	923	381	2,235	8,235	500	3,165	3,052	158	905	7,779	5,087	21,673
Max	120%	23,723	8,821	32,544	0	15,448	6,143	17,610	4,241	1,529	4,511	22,759	500	11,293	5,142	10,719	2,864	24,284	14,772	40,657
Min	40%	7,749	3,357	11,106	0	3,023	1,888	610	279	0	202	1,757	500	0	435	0	11	993	0	7,372

Column Explanation:

1	Plan Year (April to March)
2	The amount of pumping allocated as a percentage where a full allocation to a Common share is an allocation of 100%.
3	Replacement requirement for pumping allocated to LAWMA Preferred and Common shares in a Rule 14 Plan using the <u>Ground Water Accounting Model</u> developed by DeWayne Schroeder.
4	Replacement requirements for structures identified in LAWMA's 02CW181 decree augmented by LAWMA Preferred and Common shares.
5	Column 3 + Column 4
6	Summary of shortages to the Lamar and Buffalo Canals utilizing the one month carry forward of a credit or deficit if necessary.
7	Column 15 of Table 1.2.
8	Column 27 of Table 1.2.
9	Sum of Columns 17 through 20 of Table 1.2.
10	Column 21 of Table 1.2.
11	Column 22 of Table 1.2.
12	Column 23 of Table 1.2.
13	Sum of Columns 9 through 12.
14	The amount of water delivered to establish the Offset account (500 acre-feet annually).
15	Releases from storage for replacement requirements.
16	The amount of water released from the Offset Account for delivery to the Stateline.
17	Storage account spills.
18	Evaporation on storage accounts calculated as a monthly percentage of storage content. Monthly percentages derived from relationship of total monthly evaporation and monthly content for the period of 1980 through 2006.
19	Sum of Column 14 through Column 18
20	Storage content at the end of March each year. March was selected due to Operational Plan year is April through March. [Beginning storage was 11,239 acre-feet calculated as 350,000 maximum John Martin Reservoir x 0.60 Colorado Ownership x 0.051 X-Y Graham Ownership x 0.609 Consumptive Use Factor + 350,000 maximum John Martin Reservoir x 0.60 Colorado Ownership x 0.0034 Stubbs Ownership x 0.641 Consumptive Use Factor + 350,000 maximum John Martin Reservoir x 0.60 Colorado Ownership x 0.0230 Keesee Ownership x 0.642 Consumptive Use Factor + 350,000 maximum John Martin Reservoir x 0.60 Colorado Ownership x 0.0086 Sisson Ownership x 0.641 Consumptive Use Factor]
21	Sum of Column 7, Column 8 and Column 13.

Table 1.2
AVAILABLE CONSUMABLE WATER FOR REPLACEMENT PURPOSES
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
Operations with LAWMA's current water rights portfolio
(values in ac-ft)

	DIRECT FLOW CU CREDITS															LAWMA STORAGE CU INFLOWS										OTHER CU CREDITS					
Year (Apr - Mar)	Highland Direct Flow (02CW181)	Highland Direct Flow (10CW85)	Ft Lyon (Pending)	Keesee II Direct Flow (05CW52)	Ft Bent Ditch (02CW181)	Ft Bent Ditch (10CW85)	Ft Bent Ditch (17CW3068)	Lamar Canal (02CW181)	Lamar Canal (15CW3067)	Manvel Direct Flow (02CW181)	XY Direct Flow (02CW181)	XY Direct Flow (15CW3067)	Stubbs Ditch Direct Flow (02CW181)	Sisson Ditch Direct Flow (10CW85)	Total Direct Flow CU	Keesee	XY / Graham	Sisson	Stubbs	Ft Lyon CU (Pending)	Keesee I Direct Flow CU (02CW181)	Highland Direct Flow CU (02CW181)	Total	Fry-Ark Return Flows	Highland Transit Loss	Ft Lyon Recharge	Total Other CU	Total CU Credits			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)			
1950	573	126	1,311	730	530	144	209	2,733	868	437	3,300	111	308	308	11,689	1,325	2,799	484	207	4,815	613	1,818	12,060	1,233	459	971	2,663	26,412			
1951	373	142	1,257	730	460	126	177	2,644	827	0	4,385	144	308	308	11,880	1,484	3,132	543	230	5,388	896	2,726	14,399	1,422	14	1,443	2,879	29,159			
1952	394	146	1,377	730	440	126	178	2,757	884	0	3,915	132	308	308	11,694	449	957	155	79	1,640	1,529	2,224	7,033	2,018	45	1,794	3,856	22,583			
1953	161	181	1,053	699	330	97	136	2,161	697	321	3,030	107	308	308	9,587	860	1,818	312	136	3,125	1,046	2,486	9,783	1,303	146	1,665	3,115	22,484			
1954	320	136	465	730	217	63	88	1,623	454	297	1,605	56	308	308	6,671	852	1,799	312	132	3,095	1,087	1,740	9,017	779	153	1,182	2,114	17,802			
1955	233	21	881	601	434	120	173	3,077	856	437	2,625	90	308	308	10,164	2,822	5,943	1,047	423	10,236	283	2,145	22,900	1,077	101	1,235	2,412	35,476			
1956	306	172	730	730	276	82	113	2,196	629	437	1,805	62	308	308	8,155	378	800	136	61	1,375	1,134	2,136	6,020	1,169	0	1,237	2,406	16,581			
1957	0	0	1,773	653	421	118	168	2,761	873	0	2,455	82	308	308	9,919	3,394	7,167	1,239	530	12,329	0	4,511	29,169	2,479	0	1,970	4,448	43,537			
1958	0	0	1,462	559	483	129	191	2,638	817	0	2,295	76	308	308	9,266	1,708	3,605	625	265	6,202	0	4,193	16,597	1,462	0	2,037	3,499	29,362			
1959	319	77	1,253	678	516	37	213	3,565	1,144	0	4,670	163	308	308	13,251	1,892	3,990	696	290	6,867	637	3,050	17,422	1,199	0	2,028	3,227	33,901			
1960	459	139	1,097	572	223	65	92	1,792	514	0	1,693	60	308	308	7,322	757	1,602	272	122	2,753	1,011	2,329	8,846	1,258	0	1,813	3,071	19,239			
1961	44	258	1,382	662	313	70	124	2,217	689	0	2,229	74	308	308	8,678	511	1,089	176	90	1,865	809	3,756	8,296	1,027	0	1,986	3,013	19,986			
1962	41	181	1,714	730	355	69	143	2,539	822	0	2,929	100	308	308	10,240	744	1,577	266	122	2,709	1,326	2,696	9,439	1,851	46	2,349	4,247	23,926			
1963	137	135	586	730	251	71	99	1,616	452	0	1,208	41	308	308	5,943	361	765	129	59	1,313	1,483	1,454	5,564	903	108	1,616	2,626	14,133			
1964	53	83	678	659	115	35	48	1,195	341	0	345	12	308	308	4,181	258	548	91	44	940	1,243	1,642	4,765	1,155	91	1,342	2,589	11,535			
1965	0	66	1,549	615	243	69	98	1,864	518	0	391	14	308	308	6,044	417	920	112	105	1,554	564	3,496	7,169	1,904	143	1,852	3,900	17,112			
1966	0	0	1,275	511	376	108	153	2,604	832	0	2,014	69	308	308	8,558	3,794	7,988	1,408	568	13,757	0	2,662	30,176	1,103	249	1,937	3,289	42,024			
1967	724	305	1,353	556	427	122	170	3,280	1,035	0	3,061	104	308	308	11,754	1,084	2,292	394	171	3,941	742	2,597	11,220	1,222	25	1,994	3,240	26,214			
1968	312	219	1,209	730	308	71	122	2,579	819	0	2,228	76	308	308	9,290	671	1,420	242	108	2,441	1,209	2,912	9,003	1,328	0	1,952	3,280	21,574			
1969	244	321	1,437	0	273	36	113	2,288	729	0	1,737	60	308	308	7,855	1,279	2,703	465	202	4,648	0	1,032	10,328	1,342	0	2,080	3,421	21,604			
1970	113	204	1,792	0	348	101	143	3,320	1,051	0	2,323	80	308	308	10,090	616	1,309	217	104	2,245	0	202	4,693	1,696	0	2,424	4,119	18,902			
1971	215	201	1,398	0	373	107	149	2,786	881	0	1,846	64	308	308	8,637	511	1,084	181	85	1,861	0	1,432	5,155	1,599	0	2,275	3,874	17,666			
1972	92	143	1,167	0	369	106	149	2,293	731	0	1,481	52	308	308	7,198	486	1,031	172	81	1,770	0	948	4,487	1,301	0	2,029	3,329	15,015			
1973	80	200	1,685	0	331	96	137	2,531	805	0	2,516	87	308	308	9,085	901	1,905	325	144	3,275	0	2,156	8,706	1,654	0	2,308	3,962	21,754			
1974	156	45	816	0	191	58	78	1,653	475	0	654	23	308	308	4,766	357	756	127	58	1,299	0	342	2,940	1,328	81	1,845	3,253	10,959			
1975	15	82	1,118	0	242	73	102	1,697	484	18	710	25	308	308	5,181	166	357	54	32	610	0	1,527	2,747	1,451	61	1,768	3,281	11,209			
1976	171	67	923	0	235	66	93	1,583	437	91	551	19	308	308	4,852	279	607	85	61	1,031	68	1,180	3,310	1,139	153	1,600	2,892	11,055			
1977	366	122	588	0	192	57	78	1,605	456	296	1,076	38	308	308	5,488	521	1,102	189	82	1,895	0	1,965	5,755	573	17	1,299	1,888	13,132			
1978	208	160	879	0	236	69	98	1,718	490	266	1,114	39	308	308	5,895	492	1,043	175	81	1,791	0	2,269	5,850	1,370	80	1,325	2,775	14,521			
1979	85	253	1,535	0	285	82	117	2,152	610	289	916	32	308	308	6,972	414	891	135	81	1,521	0	3,068	6,109	1,754	77	1,861	3,692	16,773			
1980	382	153	1,734	0	370	105	151	2,543	710	235	3,418	115	308	308	10,531	2,280	4,795	851	336	8,262	0	3,602	20,126	1,595	0	2,240	3,835	34,492			
1981	852	299	1,277	0	297	82	116	3,067	851	350	1,676	55	308	308	9,540	981	2,083	347	164	3,575	235	2,732	10,118	878	0	2,117	2,995	22,653			
1982	227	274	1,923	0	338	96	136	2,595	808	175	2,941	99	308	308	10,228	1,017	2,168	352	178	3,716	369	3,536	11,336	1,518	0	2,497	4,015	25,578			
1983	243	260	2,602	0	436	122	175	3,386	1,137	87	3,307	112	308	308	12,483																

Table 1.2
AVAILABLE CONSUMABLE WATER FOR REPLACEMENT PURPOSES
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
Operations with LAWMA's current water rights portfolio
(values in ac-ft)

	DIRECT FLOW CU CREDITS															LAWMA STORAGE CU INFLOWS							OTHER CU CREDITS						
Year (Apr - Mar)	Highland Direct Flow (02CW181)	Highland Direct Flow (10CW85)	Ft Lyon (Pending)	Keesee II Direct Flow (05CW52)	Ft Bent Ditch (02CW181)	Ft Bent Ditch (10CW85)	Ft Bent Ditch (17CW3068)	Lamar Canal (02CW181)	Lamar Canal (15CW3067)	Manvel Direct Flow (02CW181)	XY Direct Flow (02CW181)	XY Direct Flow (15CW3067)	Ditch Direct Flow (02CW181)	Stubbs Ditch Direct Flow (10CW85)	Sisson Ditch Direct Flow (10CW85)	Total Direct Flow CU (16)	Keesee (17)	XY / Graham (18)	Sisson (19)	Stubbs (20)	Ft Lyon CU (Pending) (21)	Keesee I Direct Flow CU (02CW181) (22)	Highland Direct Flow CU (02CW181) (23)	Total (24)	Fry-Ark Return Flows (25)	Highland Transit Loss (26)	Ft Lyon Recharge (27)	Total Other CU (28)	Total CU Credits (29)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)

Column Explanation:

1	Plan Year (April to March)
2	Consumptive use water delivered to the Arkansas River. [{Calculated as monthly diversions x 02CW181 monthly consumptive factors x (3,402 shares / 3,800 shares)} - 17% transit loss].
3	Consumptive use water delivered to the Arkansas River. [{Calculated as monthly diversions x 10CW85 monthly consumptive use factors x (167 shares / 3,800 shares)} - 17% transit loss].
4	Consumptive use water delivered to the Arkansas River in Reach 9 from the Fort Lyon Canal.
5	Consumptive use water delivered to the Arkanas River. [Calculated as estimated monthly diversion of the Keesee II (05CW52) water rights x monthly consumptive use factor x percent of direct flow diversion taken].
6	Shares delivered through an augmentation station. [Calculated as volumetric limited farm headgate diversions x (462 shares / 11,651.2 shares) x 0.662 Consumptive Use Factor + volumetric limited farm headgate diversions x (408 shares / 11,651.2 shares) x 0.662 Consumptive Use Factor x 0.15 water management fee.
7	Shares delivered through an augmentation station. [Calculated as volumetric limited farm headgate diversions x (144 shares / 11,651.2 shares) x 10CW85 monthly consumptive use factors].
8	Shares delivered through an augmentation station. [Calculated as volumetric limited farm headgate diversions x (162.5 shares / 11,651.2 shares) x Proposed 17CW3068 monthly consumptive use factors].
9	Lamar Canal shares delivered through the West & Center Farm augmentation stations. When canal is in rotation [Calculated as volumetric limited farm headgate diversions x (4,720 shares / 26,127 shares) x 0.583 consumptive use factor x 0.15 water management fee + volumetric limited farm headgate diversions x ({50 + 3,477} shares / 26,127 shares x 0.583 consumptive use factor]. When canal is not in rotation [Calculated as volumetric limited farm headgate diversions x (4,180 shares / 26,127 shares) x 0.583 consumptive use factor x 0.15 water management fee + volumetric limited farm headgate diversions x ({50 + 3,078} shares / 26,127 shares x 0.583 consumptive use factor)]. Farm headgate deliveries were reduced in wet years to maximum available water in the dry years.
10	Lamar Canal shares delivered through the West Farm, Granada East and Granada West augmentation stations. [Calculated as volumetric limited farm headgate diversions x (897 shares / 26,127 shares) x Proposed 15CW3067 monthly consumptive use factors + volumetric limited farm headgate diversions x (2,625.512 equivalent Lamar shares / 26,127 shares) x Proposed 15CW3067 monthly consumptive use factors.
11	Manvel direct flow credit as measured using the Granada streamflow gages on the Arkansas River.
12	X-Y direct flow credit (02CW181) as measured using the Granada streamflow gages on the Arkansas River. [Calculated as volumetric limited river headgate diversions x percent monthly diversion attributed to direct flow x 0.629 Consumptive use factor]. Actual river headgate diversions claimed in Rule 14 accounting used for 1996 through last year.
13	X-Y direct flow credit (15CW3067) as measured using the Granada streamflow gages on the Arkansas River. [Calculated as volumetric limited river headgate diversions x percent monthly diversion attributed to direct flow x Proposed monthly 15CW3067 consumptive use factor]. Actual river headgate diversions claimed in Rule 14 accounting used for 1996 through last year.
14	Stubbs direct flow credit. [Estimated as 1/2 of direct flow credit of 616 acre-feet for the Sisson-Stubbs in the H-I Model distributed during the irrigation season of April to October.]
15	Sisson direct flow credit. [Estimated as 1/2 of direct flow credit of 616 acre-feet for the Sisson-Stubbs in the H-I Model distributed during the irrigation season of April to October.]
16	Sum of Columns 2 through 15.
17	Consumptive use water delivered to the Keesee Article II storage account. [Calculated as water allocated from conservation storage x 0.60 Colorado ownership x 0.024 Keesee ownership x N/A Consumptive Use factor.]
18	Consumptive use water delivered to the X -Y Article II storage account. [Calculated as water allocated from conservation storage x 0.60 Colorado ownership x X - Y ownership x Consumptive Use factor.]
19	Consumptive use water delivered to the Sisson Article II storage account. [Calculated as water allocated from conservation storage x 0.60 Colorado ownership x 0.0034 Sisson ownership x 0.641 Consumptive Use factor.]
20	Consumptive use water delivered to the Stubbs Article II storage account. [Calculated as water allocated from conservation storage x 0.60 Colorado ownership x 0.0086 Stubbs ownership x 0.641 Consumptive Use factor.]
21	Consumptive use water delivered to Offset account from the Fort Lyon Canal releases to the Arkansas River above JMR.
22	Consumptive use water exchanged into John Martin Reservoir. [Calculated as estimated monthly diversion of the Keesee I (02CW181) water rights x monthly consumptive use factor x percent of direct flow diversion taken x (1 - % of month in Conservation Storage).]
23	Consumptive use water delivered into John Martin Reservoir that is not delivered to the Arkansas River for in-state replacement. [{Calculated as monthly diversions x 02CW181 monthly consumptive factors x (3,402 shares / 3,800 shares) + monthly diversions x 10CW85 monthly consumptive use factors x (167 shares / 3,800 shares)} - 17% transit loss].
24	Sum of Columns 17 to 23.
25	Projected Fryingpan-Arkansas Project return flows. [Calculated as 69,000 average Project water delivery x 0.49 assigned to agriculture x 0.40 Return Flow x 0.103 2004 SECWCD allocation distribution to LAWMA. Annual variability calculated as percentage of average annual flow of the Roaring Fork River at Glenwood Springs.]
26	Consumptive use of the transit losses of Highland Canal water delivered into John Martin Reservoir. [Calculated as monthly diversions x monthly consumptive use factors x (3,569 shares / 3,800 shares) x 0.90 x 0.17 Transit Loss factor.]
27	Consumptive use credits lagged back to the Arkansas River from five recharge ponds under the Fort Lyon Canal.
28	Sum of Column 25 through 27.
29	Sum of Column 16 + Column 24 + Column 28.

Table 2.1
Mainstem Irrigation Well
Rule 14 Pumping

Year	Amount (ac-ft)
1997	75,569
1998	46,965
1999	42,363
2000	65,295
2001	72,465
2002	63,453
2003	12,755
2004	12,347
2005	39,996
2006	26,263
2007	27,560
2008	44,183
2009	32,092
2010	46,696
2011	44,425
2012	41,867
2013	19,857
2014	38,035
2015	36,880
2016	36,767
2017	33,880

Table 2.2
Mainstem Municipal & Commercial Well
Rule 14 Pumping

Year	Amount (ac-ft)
1997	11,617
1998	11,048
1999	11,677
2000	8,037
2001	11,668
2002	11,381
2003	3,975
2004	3,135
2005	3,528
2006	3,204
2007	461
2008	459
2009	4,552
2010	4,345
2011	2,159
2012	868
2013	604
2014	1,496
2015	1,495
2016	111
2017	21

Table 2.3
Tributary Well Pumping
Rule 14 Pumping

Year	Irrigation Amount (ac-ft)	Municipal & Commercial Amount (ac- ft)	Total Amount (ac-ft)
1997	3,998	1,152	5,150
1998	4,008	1,145	5,153
1999	3,442	1,048	4,490
2000	4,192	924	5,116
2001	4,014	987	5,001
2002	5,123	825	5,948
2003	2,834	795	3,629
2004	1,486	634	2,120
2005	2,899	618	3,516
2006	2,223	651	2,874
2007	1,953	570	2,523
2008	2,429	596	3,025
2009	1,941	479	2,419
2010	2,176	567	2,744
2011	2,506	521	3,027
2012	2,994	639	3,633
2013	1,040	542	1,582
2014	2,558	595	3,153
2015	1,952	606	2,559
2016	2,482	513	2,994
2017	2,953	500	3,452

Table 2.4
Alluvial Aquifer Well
Augmentation Plan Pumping

Year	Amount (ac-ft)
2007	5,706
2008	3,479
2009	3,460
2010	4,327
2011	3,615
2012	3,561
2013	2,091
2014	5,066
2015	7,702
2016	9,015
2017	7,416

Table 2.5
Bedrock Aquifer Wells
Augmentation Plan Pumping

Year	Amount (ac-ft)
2007	376
2008	556
2009	529
2010	556
2011	635
2012	648
2013	527
2014	589
2015	603
2016	617
2017	670

Table 2.6
Ponds and Gravel Pits
Augmentation Plan Diversions

Year	Ponds (ac-ft)	Gravel Pits (ac-ft)
2007	111	490
2008	110	494
2009	110	528
2010	116	705
2011	147	822
2012	141	839
2013	134	837
2014	184	891
2015	237	922
2016	309	1,181
2017	306	1,336

Table 2.7
Other Structures
Augmentation Plan Pumping

Year	Amount (ac-ft)
2007	395
2008	419
2009	280
2010	275
2011	344
2012	314
2013	86
2014	429
2015	387
2016	417
2017	321

Table 3.1
Summary of LAWMA's Replacement Operations with the West Farm Gravel Pit
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
Operations with LAWMA's current water rights portfolio
(values in ac-ft)

Replacement Requirement					Direct and Other Sources		LAWMA Storage Accounts Inflow							LAWMA Storage Accounts Outflow							End of Mar Storage	Total of LAWMA Water Sources
Year (Apr - Mar)	Percent Allocated	Augmented Structures Rule 14	Augmented Structures 02CW181	Total	Shortage in Meeting Replacement Req't	Direct Flow Credit	Other CU Credit	Article II Storage Inflow	West Farm Gravel Pit Inflow	Ft Lyon Direct to Flow to Offset	Keesee I Direct Flow to Offset	Highland Direct Flow to Offset	Total Inflow	Offset Account Storage Charge	West Farm Gravel Pit Outflow	Release for Replacement	Offset Account Release	Spill	Evap	Total Outflow		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1950	100%	21,220	7,837	29,057	0	8,963	3,984	4,815	1,945	786	984	2,534	11,064	500	908	5,246	3,761	0	2,541	12,955	11,505	24,011
1951	100%	21,228	7,830	29,058	0	9,152	3,544	5,388	1,777	754	1,097	3,992	13,008	500	1,554	7,711	4,552	0	1,563	15,879	7,662	25,703
1952	91%	20,015	7,382	27,397	0	8,949	4,217	1,640	1,059	826	1,767	2,735	8,028	500	995	2,991	6,120	0	595	11,202	3,689	21,194
1953	56%	15,025	5,699	20,724	0	7,795	3,323	3,125	974	632	1,046	3,774	9,551	500	1,174	559	3,350	0	533	6,115	6,238	20,669
1954	71%	15,376	6,149	21,525	0	5,807	2,242	3,095	1,573	279	1,087	2,516	8,550	500	1,704	2,440	4,006	0	652	9,302	4,709	16,599
1955	96%	18,669	7,365	26,034	0	7,619	2,495	10,236	1,860	529	283	2,599	15,506	500	1,418	5,706	3,219	0	1,199	12,042	7,554	25,621
1956	70%	16,285	6,384	22,669	0	6,079	2,462	1,375	1,189	438	1,134	3,500	7,635	500	1,293	3,326	3,798	0	687	9,604	4,748	16,176
1957	110%	20,790	8,077	28,867	0	7,252	4,486	12,329	1,700	1,064	0	9,021	24,114	500	1,314	5,148	6,486	0	1,324	14,772	12,735	35,852
1958	110%	22,255	8,345	30,600	0	7,188	3,526	6,202	2,225	877	0	8,160	17,465	500	1,965	5,778	8,603	0	1,073	17,919	10,943	28,179
1959	100%	21,411	7,878	29,289	0	8,214	3,247	6,867	2,118	752	682	3,716	14,135	500	2,659	8,464	6,817	0	1,486	19,926	4,275	25,597
1960	55%	15,284	5,717	21,001	0	6,124	3,086	2,753	1,599	658	1,027	2,703	8,741	500	1,295	2,536	3,331	0	600	8,263	4,055	17,951
1961	56%	13,480	5,450	18,930	0	6,089	3,023	1,865	1,378	829	809	5,162	10,043	500	94	406	5,025	0	472	6,497	6,630	19,155
1962	92%	17,523	7,063	24,586	0	7,914	4,254	2,709	259	1,028	1,455	3,645	9,096	500	843	1,483	5,974	0	623	9,422	5,341	21,265
1963	64%	15,027	6,006	21,033	0	5,652	2,632	1,313	1,173	351	1,510	2,829	7,177	500	949	1,215	3,373	0	433	6,471	5,216	15,461
1964	45%	11,825	4,988	16,813	0	4,406	2,593	940	403	407	1,285	1,671	4,706	500	1,029	984	4,593	0	262	7,368	1,912	11,705
1965	40%	10,047	4,613	14,660	0	5,535	3,902	1,554	1,034	929	655	5,373	9,546	500	51	0	3,566	0	19	4,136	6,350	18,983
1966	110%	18,602	7,795	26,397	0	6,370	3,290	13,757	1,168	765	0	4,766	20,457	500	1,223	7,322	4,491	0	1,393	14,930	10,783	30,117
1967	100%	19,983	7,827	27,810	0	8,192	3,241	3,941	1,193	812	808	5,839	12,593	500	501	4,441	6,056	0	1,319	12,817	9,322	24,026
1968	84%	18,413	7,089	25,502	0	6,897	3,281	2,441	555	726	1,239	4,380	9,341	500	819	2,543	7,024	0	838	11,725	5,880	19,518
1969	100%	20,122	7,709	27,832	0	7,022	3,422	4,648	1,020	862	663	5,519	12,712	500	898	1,925	5,973	0	818	10,115	7,451	23,155
1970	92%	19,661	7,433	27,094	0	7,923	4,119	2,245	892	1,075	1,372	3,833	9,417	500	416	2,437	5,729	0	758	9,839	6,056	21,459
1971	82%	18,213	6,911	25,125	0	6,957	3,874	1,861	735	839	886	3,792	8,113	500	629	1,347	4,581	0	537	7,593	5,644	18,944
1972	70%	16,184	6,273	22,457	0	6,478	3,329	1,770	858	700	1,312	1,702	6,342	500	783	1,557	4,090	0	398	7,328	3,951	16,149
1973	70%	15,488	6,157	21,645	0	7,681	3,962	3,275	1,059	1,011	1,280	4,484	11,109	500	405	950	5,169	0	626	7,650	6,473	22,753
1974	51%	12,698	5,250	17,948	0	4,875	3,253	1,299	125	490	986	755	3,655	500	1,246	2,480	4,039	0	382	8,646	987	11,783
1975	40%	10,286	4,594	14,880	0	5,346	3,281	610	1,510	671	1,746	1,764	6,301	500	467	0	2,023	0	77	3,067	3,588	14,928
1976	40%	9,423	4,493	13,915	0	5,198	2,892	1,031	560	554	1,753	1,298	5,195	500	0	0	3,750	0	92	4,342	3,781	13,285
1977	40%	9,065	4,495	13,560	0	4,986	1,888	1,895	127	353	1,596	2,576	6,547	500	561	108	3,043	0	393	4,605	4,972	13,421
1978	60%	11,525	5,439	16,964	0	5,448	2,775	1,791	910	527	1,479	3,273	7,980	500	857	539	4,652	0	462	7,010	5,097	16,204
1979	79%	14,817	6,497	21,314	0	6,349	3,692	1,521	803	921	1,668	5,177	10,090	500	570	831	5,591	0	408	7,901	6,197	20,131
1980	110%	19,975	8,089	28,064	0	9,092	3,835	8,262	845	1,040	729	4,560	15,437	500	516	3,535	6,269	0	1,389	12,209	8,430	28,365
1981	97%	20,028	7,739	27,767	0	7,236	2,995	3,575	869	766	1,435	5,711	12,356	500	518	3,533	5,345	0	798	10,694	8,908	22,588
1982	100%	20,586	7,826	28,411	0	8,304	4,015	3,716	397	1,154	1,558	5,635	12,461	500	0	1,666	7,054	0	845	10,064	9,995	24,779
1983	110%	22,195	8,307	30,502	0	9,447	5,237	11,141	591	1,561	543	8,482	22,318	500	427	1,714	8,169	0	2,095	12,905	17,851	37,001
1984	110%	22,794	8,393	31,187	0	9,342																

Table 3.1
Summary of LAWMA's Replacement Operations with the West Farm Gravel Pit
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
Operations with LAWMA's current water rights portfolio
(values in ac-ft)

Year (Apr - Mar)	Replacement Requirement				Shortage in Meeting Replacement Req't	Direct and Other Sources		LAWMA Storage Accounts Inflow						LAWMA Storage Accounts Outflow							End of Mar Storage	Total of LAWMA Water Sources
	Percent Allocated	Augmented Structures Rule 14	Augmented Structures 02CW181	Total		Direct Flow Credit	Other CU Credit	Article II Storage Inflow	West Farm Gravel Pit Inflow	Ft Lyon Direct to Flow to Offset	Keesee I Direct Flow to Offset	Highland Direct Flow to Offset	Total Inflow	Offset Account Storage Charge	West Farm Gravel Pit Outflow	Release for Replacement	Offset Account Release	Spill	Evap	Total Outflow		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
2006	71%	15,350	6,335	21,685	0	6,528	3,271	1,427	980	711	1,416	3,086	7,620	500	254	1,127	4,128	0	374	6,384	5,668	17,419
2007	100%	18,996	7,597	26,593	0	11,617	3,300	2,835	350	1,232	1,108	5,507	11,031	500	423	509	6,193	0	604	8,230	7,385	25,948
2008	100%	20,232	7,803	28,035	0	9,907	3,774	2,434	902	1,014	1,298	3,844	9,492	500	802	1,610	6,330	0	598	9,840	6,078	23,173
2009	100%	20,689	7,823	28,512	0	10,509	3,732	1,941	1,103	972	1,415	3,605	9,036	500	887	1,393	5,479	0	511	8,770	5,488	23,277
2010	91%	19,705	7,387	27,092	0	8,019	3,467	2,728	494	987	1,361	4,012	9,581	500	746	1,229	5,496	0	635	8,606	5,553	21,067
2011	65%	15,984	6,090	22,074	0	6,320	3,215	1,442	932	797	1,221	1,233	5,625	500	622	1,438	3,682	0	429	6,670	3,865	15,160
2012	40%	11,486	4,725	16,211	0	4,058	2,592	1,097	199	329	1,203	691	3,520	500	1,038	1,590	2,833	0	220	6,181	833	10,170
2013	40%	10,011	4,554	14,565	0	8,040	2,510	1,468	1,635	575	1,598	2,158	7,433	500	37	0	1,700	0	119	2,355	5,278	17,983
2014	90%	16,018	6,868	22,886	0	9,855	3,031	1,933	507	918	1,658	3,902	8,919	500	645	0	5,276	0	346	6,766	6,461	21,804
2015	110%	20,481	8,145	28,626	0	10,255	3,180	12,358	741	888	140	6,223	20,350	500	695	4,892	6,761	0	1,613	14,461	11,300	33,785
2016	86%	18,829	7,245	26,074	0	8,230	3,504	2,236	879	1,125	336	3,588	8,164	500	719	5,060	5,769	0	1,327	13,376	5,335	19,898
2017	110%	21,457	8,118	29,575	0	10,640	3,968	8,379	609	4,241	591	8,260	22,079	500	232	276	5,707	0	1,673	8,388	17,737	36,688
Average	85%	18,085	6,992	25,077	0	7,911	3,642	4,697	933	923	1,078	4,039	11,669	500	765	2,902	5,187	346	987	10,687	7,800	23,221
Max	120%	24,747	8,873	33,620	0	11,617	6,143	17,610	2,225	4,241	1,789	9,021	28,519	500	2,659	9,333	8,603	15,033	3,310	31,995	19,580	42,170
Min	40%	9,065	4,493	13,560	0	4,058	1,888	610	125	279	0	470	3,520	500	0	0	1,700	0	19	2,355	833	10,170

Column Explanation:

1	Plan Year (April to March)
2	The amount of pumping allocated as a percentage where a full allocation to a Common share is an allocation of 100%.
3	Replacement requirement for pumping allocated to LAWMA Preferred and Common shares in a Rule 14 Plan using the <u>Ground Water Accounting Model</u> developed by DeWayne Schroeder.
4	Replacement requirements for structures identified in LAWMA's 02CW181 decree augmented by LAWMA Preferred and Common shares.
5	Column 3 + Column 4
6	Summary of shortages to the Lamar and Buffalo Canals utilizing the one month carry forward of a credit or deficit if necessary.
7	Column 15 of Table 3.2.
8	Column 27 of Table 3.2.
9	Sum of Columns 17 through 20 of Table 3.2.
10	Excess Fort Lyon consumable use credits delivered to West Farm Gravel Pit Storage.
11	Column 21 of Table 3.2
12	Column 22 of Table 3.2
13	Column 23 of Table 3.2
14	Sum of Column 9 through Column 13.
15	The amount of water delivered to establish the Offset account (500 acre-feet annually).
16	Releases from West Farm Gravel Pit storage for replacement requirements.
17	Releases from storage for replacement requirements.
18	The amount of water released from the Offset Account for delivery to the Stateline.
19	Storage account spills.
20	Evaporation on storage accounts calculated as a monthly percentage of storage content. Monthly percentages derived from relationship of total monthly evaporation and monthly content for the period of 1980 through 2006.
21	Sum of Column 15 through Column 21
22	Storage content at the end of March each year. March was selected due to Operational Plan year is April through March. [Beginning storage was 11,239 acre-feet calculated as 350,000 maximum John Martin Reservoir x 0.60 Colorado Ownership x 0.051 X-Y Graham Ownership x 0.609 Consumptive Use Factor + 350,000 maximum John Martin Reservoir x 0.60 Colorado Ownership x 0.0034 Stubbs Ownership x 0.641 Consumptive Use Factor + 350,000 maximum John Martin Reservoir x 0.60 Colorado Ownership x 0.0230 Keesee Ownership x 0.642 Consumptive Use Factor + 350,000 maximum John Martin Reservoir x 0.60 Colorado Ownership x 0.0086 Sisson Ownership x 0.641 Consumptive Use Factor]
23	Sum of Column 7, Column 8 and Column 14.

Table 3.2
AVAILABLE CONSUMABLE WATER FOR REPLACEMENT PURPOSES
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
Operations with LAWMA's current water rights portfolio
(values in ac-ft)

	DIRECT FLOW CU CREDITS															LAWMA STORAGE CU INFLOWS										OTHER CU CREDITS				
Year (Apr - Mar)	Highland Direct Flow (02CW181)	Highland Direct Flow (10CW85)	Ft Lyon (Pending)	Keesee II Direct Flow (05CW52)	Ft Bent Ditch (02CW181)	Ft Bent Ditch (10CW85)	Fort Bent Ditch (17CW3068)	Lamar Canal (02CW181)	Lamar Canal (15CW3067)	Manvel Direct Flow (02CW181)	XY Direct Flow (02CW181)	XY Direct Flow (15CW3067)	Stubbs Ditch Direct Flow (02CW181)	Sisson Ditch Direct Flow (10CW85)	Total Direct Flow CU	Keesee	XY / Graham	Sisson	Stubbs	Ft Lyon CU (Pending)	Keesee I Direct Flow CU (02CW181)	Highland Direct Flow CU (02CW181)	Total	Fry-Ark Return Flows	Highland Transit Loss	Ft Lyon Recharge	Total Other CU	Total CU Credits		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)		
1950	339	139	1,311	1,346	530	144	209	308	172	437	3,300	111	308	308	8,963	1,325	2,799	484	207	4,815	984	2,534	13,147	1,233	459	2,292	3,984	26,094		
1951	191	159	1,257	1,340	460	126	177	254	43	0	4,385	144	308	308	9,152	1,484	3,132	543	230	5,388	1,097	3,992	15,865	1,422	14	2,108	3,544	28,560		
1952	191	146	1,377	1,572	440	126	178	128	128	0	3,915	132	308	308	8,949	449	957	155	79	1,640	1,767	2,735	7,782	2,018	45	2,154	4,217	20,948		
1953	191	198	1,053	1,240	330	97	136	417	61	321	3,030	107	308	308	7,795	860	1,818	312	136	3,125	1,046	3,774	11,071	1,303	146	1,874	3,323	22,189		
1954	388	145	465	1,186	217	63	88	535	145	297	1,605	56	308	308	5,807	852	1,799	312	132	3,095	1,087	2,516	9,793	779	153	1,310	2,242	17,843		
1955	251	15	881	1,154	434	120	173	681	141	437	2,625	90	308	308	7,619	2,822	5,943	1,047	423	10,236	283	2,599	23,354	1,077	101	1,318	2,495	33,468		
1956	235	186	730	1,048	276	82	113	368	121	437	1,805	62	308	308	6,079	378	800	136	61	1,375	1,134	3,500	7,384	1,169	0	1,293	2,462	15,924		
1957	0	0	1,773	945	421	118	168	393	282	0	2,455	82	308	308	7,252	3,394	7,167	1,239	530	12,329	0	9,021	33,680	2,479	0	2,007	4,486	45,418		
1958	0	0	1,462	1,066	483	129	191	595	275	0	2,295	76	308	308	7,188	1,708	3,605	625	265	6,202	0	8,160	20,565	1,462	0	2,064	3,526	31,279		
1959	402	86	1,253	0	516	37	213	226	31	0	4,670	163	308	308	8,214	1,892	3,990	696	290	6,867	682	3,716	18,133	1,199	0	2,048	3,247	29,594		
1960	443	138	1,097	866	223	65	92	732	100	0	1,693	60	308	308	6,124	757	1,602	272	122	2,753	1,027	2,703	9,236	1,258	0	1,828	3,086	18,446		
1961	88	262	1,382	733	313	70	124	128	69	0	2,229	74	308	308	6,089	511	1,089	176	90	1,865	809	5,162	9,701	1,027	0	1,997	3,023	18,813		
1962	0	181	1,714	1,393	355	69	143	281	132	0	2,929	100	308	308	7,914	744	1,577	266	122	2,709	1,455	3,645	10,517	1,851	46	2,357	4,254	22,686		
1963	141	149	586	1,363	251	71	99	818	310	0	1,208	41	308	308	5,652	361	765	129	59	1,313	1,510	2,829	6,966	903	108	1,621	2,632	15,250		
1964	23	84	678	1,106	115	35	48	1,052	292	0	345	12	308	308	4,406	258	548	91	44	940	1,285	1,671	4,837	1,155	91	1,346	2,593	11,836		
1965	0	64	1,549	1,050	243	69	98	1,048	392	0	391	14	308	308	5,535	417	920	112	105	1,554	655	5,373	9,137	1,904	143	1,855	3,902	18,574		
1966	0	0	1,275	704	376	108	153	696	358	0	2,014	69	308	308	6,370	3,794	7,988	1,408	568	13,757	0	4,766	32,281	1,103	249	1,938	3,290	41,941		
1967	562	319	1,353	933	427	122	170	297	227	0	3,061	104	308	308	8,192	1,084	2,292	394	171	3,941	808	5,839	14,529	1,222	25	1,995	3,241	25,962		
1968	197	228	1,209	1,210	308	71	122	445	185	0	2,228	76	308	308	6,897	671	1,420	242	108	2,441	1,239	4,380	10,501	1,328	0	1,953	3,281	20,678		
1969	912	302	1,437	569	273	36	113	750	218	0	1,737	60	308	308	7,022	1,279	2,703	465	202	4,648	663	5,519	15,478	1,342	0	2,080	3,422	25,921		
1970	228	193	1,792	1,088	348	101	143	610	402	0	2,323	80	308	308	7,923	616	1,309	217	104	2,245	1,372	3,833	9,695	1,696	0	2,424	4,119	21,738		
1971	397	199	1,398	694	373	107	149	805	308	0	1,846	64	308	308	6,957	511	1,084	181	85	1,861	886	3,792	8,401	1,599	0	2,275	3,874	19,231		
1972	211	88	1,167	1,023	369	106	149	901	314	0	1,481	52	308	308	6,478	486	1,031	172	81	1,770	1,312	1,702	6,553	1,301	0	2,029	3,329	16,360		
1973	105	205	1,685	1,157	331	96	137	580	165	0	2,516	87	308	308	7,681	901	1,905	325	144	3,275	1,280	4,484	12,314	1,654	0	2,308	3,962	23,958		
1974	111	43	816	805	191	58	78	1,116	364	0	654	23	308	308	4,875	357	756	127	58	1,299	986	755	4,339	1,328	81	1,845	3,253	12,467		
1975	0	88	1,118	1,448	242	73	102	679	228	18	710	25	308	308	5,346	166	357	54	32	610	1,746	1,764	4,730	1,451	61	1,768	3,281	13,357		
1976	52	68	923	1,439	235	66	93	713	332	91	551	19	308	308	5,198	279	607	85	61	1,031	1,753	1,298	5,113	1,139	153	1,600	2,892	13,203		
1977	19	129	588	1,372	192	57	78	420	106	296	1,076	38	308	308	4,986	521	1,102	189	82	1,895	1,596	2,576	7,963	573	17	1,299	1,888	14,837		
1978	128	169	879	1,068	236	69	98	630	133	266	1,114	39	308	308	5,448	492	1,043	175	81	1,791	1,479	3,273	8,334	1,370	80	1,325	2,775	16,557		
1979	202	268	1,535	1,092	285	82	117	709	205	289	916	32	308	308	6,349	414	891	135	81	1,521	1,668	5,177	9,887	1,754	77	1,861	3,692	19,928		
1980	541	146	1,734	1,155																										

Table 3.2
AVAILABLE CONSUMABLE WATER FOR REPLACEMENT PURPOSES
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
Operations with LAWMA's current water rights portfolio
(values in ac-ft)

	DIRECT FLOW CU CREDITS																LAWMA STORAGE CU INFLOWS								OTHER CU CREDITS				
Year (Apr - Mar)	Highland Direct Flow (02CW181)	Highland Direct Flow (10CW85)	Ft Lyon (Pending)	Keesee II Direct Flow (05CW52)	Ft Bent Ditch (02CW181)	Ft Bent Ditch (10CW85)	Fort Bent Ditch (17CW3068)	Lamar Canal (02CW181)	Lamar Canal (15CW3067)	Manvel Direct Flow (02CW181)	XY Direct Flow (02CW181)	XY Direct Flow (15CW3067)	Stubbs Ditch Direct Flow (02CW181)	Sisson Ditch Direct Flow (10CW85)	Total Direct Flow CU (16)	XY / (17)	Graham (18)	Sisson (19)	Stubbs (20)	Ft Lyon CU (21)	Keesee I Direct Flow CU (02CW181)	Highland Direct Flow CU (02CW181)	Total (24)	Fry-Ark Return Flows (25)	Highland Transit Loss (26)	Ft Lyon Recharge (27)	Total Other CU (28)	Total CU Credits (29)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	
Column Explanation:																													
1	Plan Year (April to March)																												
2	Consumptive use water delivered to the Arkansas River. [(Calculated as monthly diversions x 02CW181 monthly consumptive factors x (3,402 shares / 3,800 shares)) - 17% transit loss].																												
3	Consumptive use water delivered to the Arkansas River. [(Calculated as monthly diversions x 10CW85 monthly consumptive use factors x (167 shares / 3,800 shares)) - 17% transit loss].																												
4	Consumptive use water delivered to the Arkansas River in Reach 9 from the Fort Lyon Canal.																												
5	Consumptive use water delivered to the Arkanas River. [Calculated as estimated monthly diversion of the Keesee II (05CW52) water rights x monthly consumptive use factor x percent of direct flow diversion taken].																												
6	Shares delivered through an augmentation station. [Calculated as volumetric limited farm headgate diversions x (462 shares / 11,651.2 shares) x 0.662 Consumptive Use Factor + volumetric limited farm headgate diversions x (408 shares / 11,651.2 shares) x 0.662 Consumptive Use Factor x 0.15 water management fee.																												
7	Shares delivered through an augmentation station. [Calculated as volumetric limited farm headgate diversions x (144 shares / 11,651.2 shares) x 10CW85 monthly consumptive use factors].																												
8	Shares delivered through an augmentation station. [Calculated as volumetric limited farm headgate diversions x (162.5 shares / 11,651.2 shares) x Proposed 17CW3068 monthly consumptive use factors].																												
9	Lamar Canal shares delivered through the West & Center Farm augmentation station. When canal is in rotation [Calculated as volumetric limited farm headgate diversions x (4,720 shares / 26,127 shares) x 0.583 Consumptive Use Factor x 0.15 water management fee + volumetric limited farm headgate diversions x ((50 + 3,477} shares / 26,127 shares x 0.583 Consumptive Use Factor]. When canal is not in rotation [Calculated as volumetric limited farm headgate diversions x (4,180 shares / 26,127 shares) x 0.583 Consumptive Use Factor x 0.15 water management fee + volumetric limited farm headgate diversions x ((50 + 3,078} shares / 26,127 shares x 0.583 Consumptive Use Factor)]. Farm headgate deliveries were reduced in wet years to maximum available water in the dry years.																												
10	Excess Fort Lyon consumable use credits delivered to West Farm Gravel Pit Storage.																												
11	Manvel direct flow credit as measured using the Granada streamflow gages on the Arkansas River.																												
12	X-Y direct flow credit (02CW181) as measured using the Granada streamflow gages on the Arkansas River. [Calculated as volumetric limited river headgate diversions x percent monthly diversion attributed to direct flow x 0.629 Consumptive use factor]. Actual river headgate diversions claimed in Rule 14 accounting used for 1996 through last year.																												
13	X-Y direct flow credit (15CW3067) as measured using the Granada streamflow gages on the Arkansas River. [Calculated as volumetric limited river headgate diversions x percent monthly diversion attributed to direct flow x Proposed monthly consumptive use factors]. Actual river headgate diversions claimed in Rule 14 accounting used for 1996 through last year.																												
14	Stubbs direct flow credit. [Estimated as 1/2 of direct flow credit of 616 acre-feet for the Sisson-Stubbs in the H-I Model distributed during the irrigation season of April to October.]																												
15	Sisson direct flow credit. [Estimated as 1/2 of direct flow credit of 616 acre-feet for the Sisson-Stubbs in the H-I Model distributed during the irrigation season of April to October.]																												
16	Sum of Columns 2 through 15.																												
17	Consumptive use water delivered to the Keesee Article II storage account. [Calculated as water allocated from conservation storage x 0.60 Colorado ownership x 0.024 Keesee ownership x N/A Consumptive Use factor.]																												
18	Consumptive use water delivered to the X -Y Article II storage account. [Calculated as water allocated from conservation storage x 0.60 Colorado ownership x X - Y ownership x Consumptive Use factor.]																												
19	Consumptive use water delivered to the Sisson Article II storage account. [Calculated as water allocated from conservation storage x 0.60 Colorado ownership x 0.0034 Sisson ownership x 0.641 Consumptive Use factor.]																												
20	Consumptive use water delivered to the Stubbs Article II storage account. [Calculated as water allocated from conservation storage x 0.60 Colorado ownership x 0.0086 Stubbs ownership x 0.641 Consumptive Use factor.]																												
21	Consumptive use water delivered to Offset account from the Fort Lyon Canal releases to the Arkansas River above JMR.																												
22	Consumptive use water exchanged into John Martin Reservoir. [Calculated as estimated monthly diversion of the Keesee I (02CW181) water rights x monthly consumptive use factor x percent of direct flow diversion taken x (1 - % of month in Conservation Storage).]																												
23	Consumptive use water delivered into John Martin Reservoir that is not delivered to the Arkansas River for in-state replacement. [(Calculated as monthly diversions x 02CW181 monthly consumptive factors x (3,402 shares / 3,800 shares) + monthly diversions x 10CW85 monthly consumptive use factors x (167 shares / 3,800 shares)) - 17% transit loss].																												
24	Sum of Columns 17 to 23.																												
25	Projected Fryingpan-Arkansas Project return flows. [Calculated as 69,000 average Project water delivery x 0.49 assigned to agriculture x 0.40 Return Flow x 0.103 2004 SECWCD allocation distribution to LAWMA. Annual variability calculated as percentage of average annual flow of the Roaring Fork River at Glenwood Springs.]																												
26	Consumptive use of the transit losses of Highland Canal water delivered into John Martin Reservoir. [Calculated as monthly diversions x monthly consumptive use factors x (3,569 shares / 3,800 shares) x 0.90 x 0.17 Transit Loss factor.]																												
27	Consumptive use credits lagged back to the Arkansas River from five recharge ponds under the Fort Lyon Canal.																												
28	Sum of Column 25 through 27.																												
29	Sum of Column 16 + Column 24 + Column 28.																												

Hendrix Wai Engineering, Inc.

Water Resources, Water Rights and GIS/Computer Modeling

Appendix A

West Farm Gravel Pit liner approval letter



COLORADO
Division of Water Resources
Department of Natural Resources

Water Division 2 - Main Office
310 E. Abriendo Ave, Suite B
Pueblo, CO 81004

February 16, 2015

J.C. York, P.E., Principal
J & T Consulting, Inc
305 Denver Avenue, Suite D
Fort Lupton, CO 80621

Re: West Farm Gravel Pit Slurry Wall
Slurry Wall 90-Day Performance Test Final Report
Sections 33 & 28, T22S, R46W, 6th PM
M-08-078
Water Division 2, Water District 67

Dear Mr. York:

The purpose of this letter is to approve the lining of the above referenced site based on your February 12, 2015 submittal of the Performance Test report and documentation. The measured outflow due to pumping indicate that this site **has been lined to the design standard** referenced in the August, 1999 State Engineer Guidelines for Lining Criteria for Gravel Pits. **Meeting the design standard requires that all water inflows and outflows for this site must be accounted for on at least a monthly basis.** I understand from your letter report that GP Aggregates, LLC will be responsible for providing the monthly water accounting. Please provide the specific contact information of the person who will be responsible for this reporting at your earliest convenience, but no later than February 27, 2015.

Please call me if you have any questions.

Sincerely,

Bill W. Tyner, P.E.
Assistant Division Engineer

Enclosure

CC: Rebecca Nichols, Water Commissioner, Water District 67
Lonnie Spady, Water Commissioner, Water Districts 17/67
Charlie DiDomenico, Augmentation Coordinator
Melissa Peterson, Denver SEO Team 237
Michelle L. Hatcher, Clear Water Solutions
Rachel Zancanella, Engineering Support
Dan DiRezza, Ground Water Commissioner
Don Higbee, LAWMA

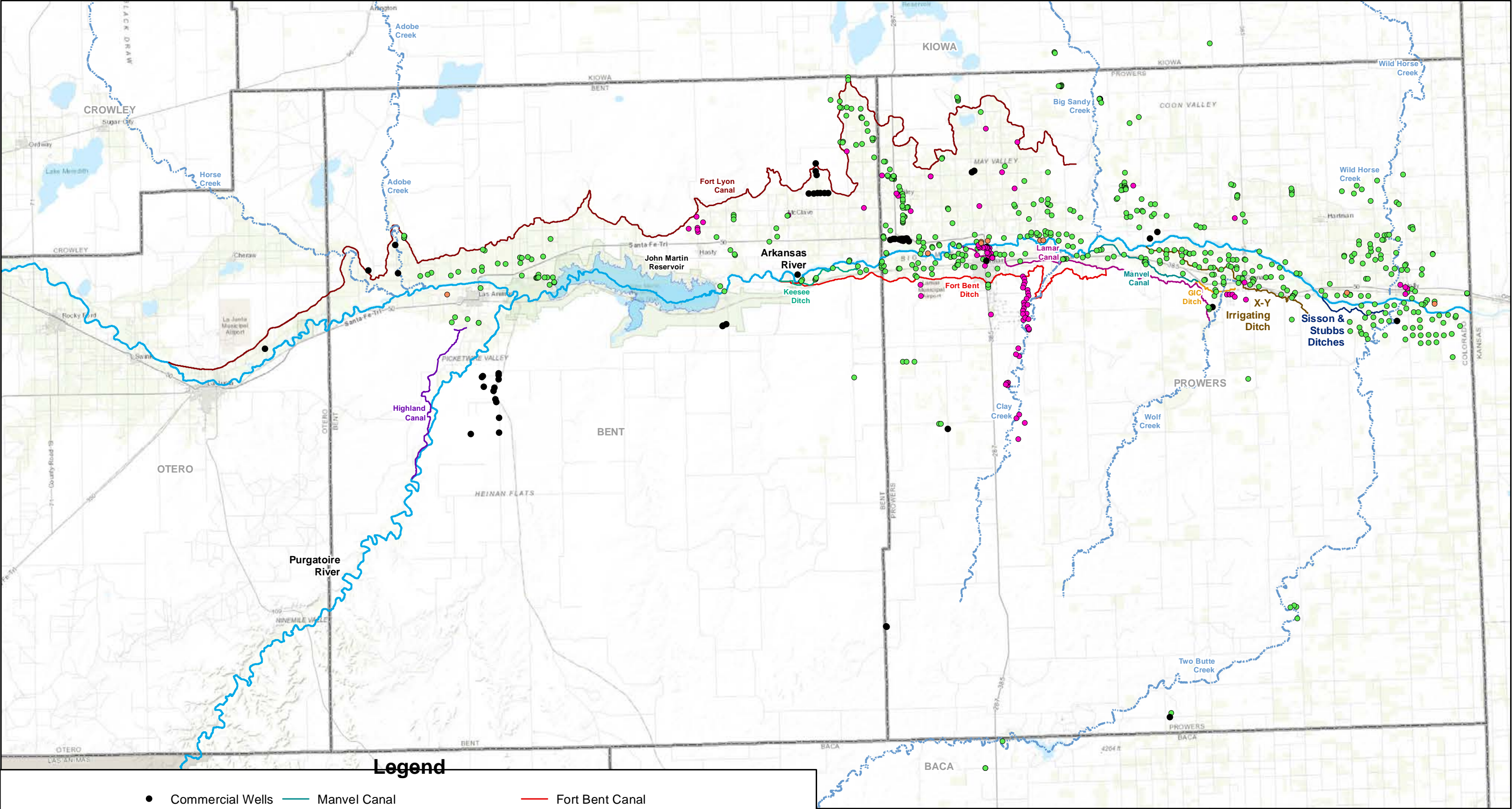


Hendrix Wai Engineering, Inc.

Water Resources, Water Rights and GIS/Computer Modeling

Appendix B

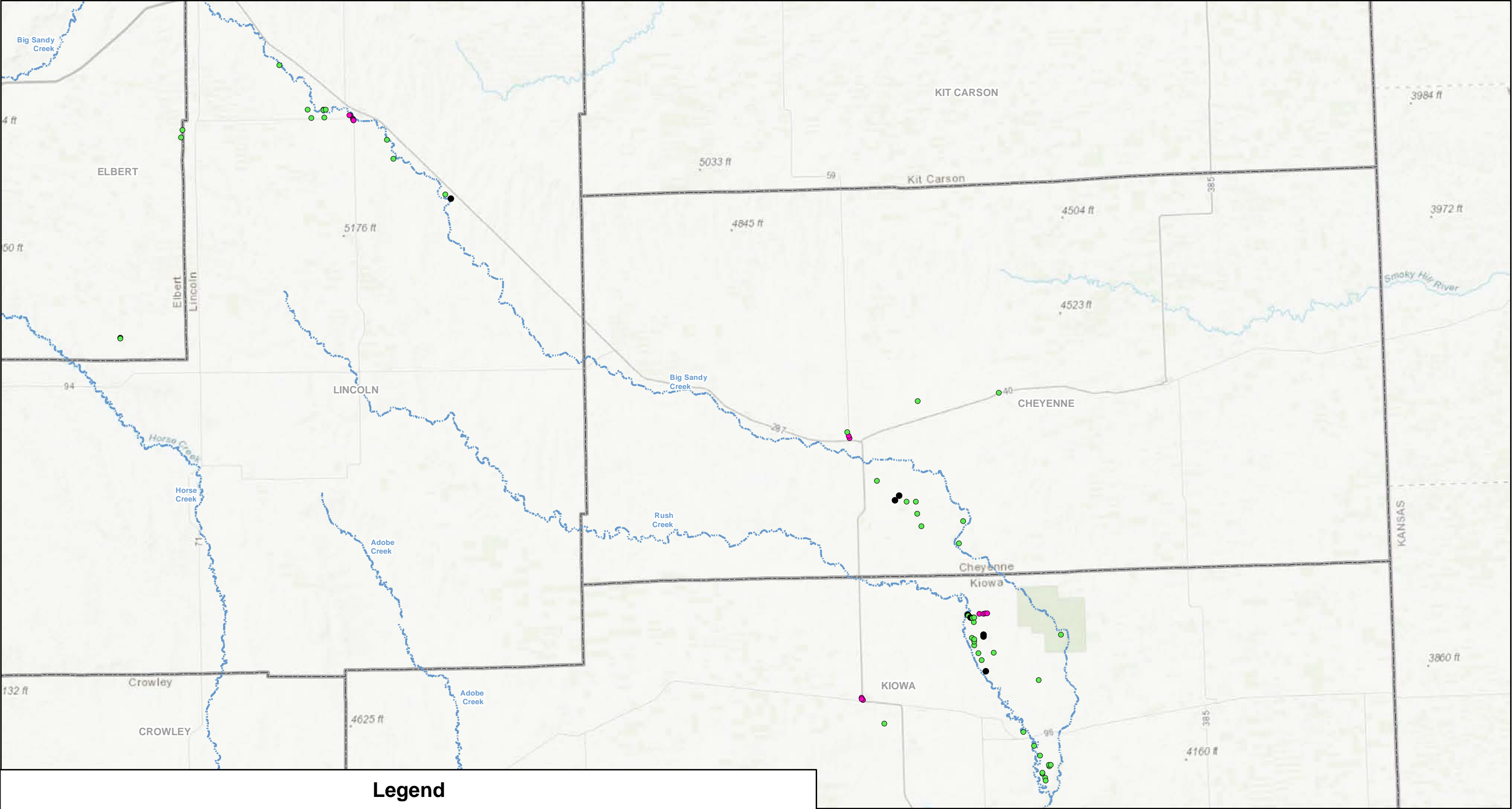
**Map of LAWMA's general Service Area and
Shareholder Structures**



Legend

- | | | |
|--------------------|------------------------------------|-------------------------|
| ● Commercial Wells | — Manvel Canal | — Fort Bent Canal |
| ● Gravel Pit Wells | — Granada Irrigation Company Ditch | — Fort Lyon Canal |
| ● Irrigation Wells | — X-Y Irrigating Ditch | — Highland Canal |
| ● Municipal Wells | — Sisson & Stubbs Ditches | — Rivers |
| — Creeks | — Lamar Canal | — Purgatoire_River |
| | — Keesee Ditch | — John Martin Reservoir |

<p>Scale in Miles</p>		Job No. L7510
		File: GLM Active LAWMA Structures.mxd
		Date: 1/30/2019
		Prepared For: LAWMA
Hendrix Wai Engineering, Inc.		Appendix B - 1 General Location Map of LAWMA's Active Structures along the Mainstem Arkansas River



Legend

- Commercial Wells
- Gravel Pit Wells
- Irrigation Wells
- Municipal Wells
- Creeks

03.5714

Scale in Miles

N

W

E

S

**Hendrix Wai
Engineering, Inc.**

Job No. L7510
File: GLM Active LAWMA Structures.mxd
Date: 1/30/2019
Prepared For: LAWMA

Appendix B - 2

General Location Map
of
LAWMA's Active Structures along
the Northern Tributaries

Appendix C

Articles of Incorporation

SECOND AMENDED AND RESTATED ARTICLES OF INCORPORATION

OF

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

Pursuant to the provisions of the Colorado Nonprofit Corporation Act, as amended, the Lower Arkansas Water Management Association hereby adopts the following Second Amended and Restated Articles of Incorporation. Upon their effective date, these Second Amended and Restated Articles of Incorporation shall supersede and replace the Articles of Incorporation adopted on September 29, 1998.

ARTICLE I

Name

The name of the corporation is LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION.

ARTICLE II

The corporation is formed in recognition of the need of its members to organize in order to meet the requirements of ground water use administration in the State of Colorado and, in particular, in the Arkansas Valley. The corporation is the continuation of the organization incorporated on February 20, 1973, on May 30, 1990 and on September 29, 1998 for the purpose of providing augmentation service to its members.

After the State of Colorado was sued by the State of Kansas and the Colorado State Engineer adopted stricter rules and regulations governing well pumping, the importance of continuing and strengthening this organization has increased. Increased augmentation demands have led members with pre-1986 wells to come together to jointly borrow money on a long-term basis to buy additional water rights and for all members to band together to implement a practical plan for augmentation and to accommodate its administration for the benefit of all members. It is recognized that the adoption of a structure that enables the issuance of stock to members with pre-1986 wells will strengthen the organization.

These articles of incorporation are adopted in recognition of these matters.

ARTICLE III
Office and Agents

The address of the registered office of the corporation is 310 South 6th Street, P.O. Box 1161, Lamar, Prowers County, Colorado 81052. The name of its registered agent at this time at such address is Donald F. Higbee.

ARTICLE IV
Purposes and Powers

A. **Purposes.** This corporation is formed pursuant to the Colorado Nonprofit Corporation Act, as amended, and pursuant to Title 7, Article 42, Colorado Revised Statutes, as amended, for the purpose of engaging in any lawful business or activity including, but not limited to, the acquisition and management of corporate assets, including but not limited to water, water rights, ditches, wells, reservoirs and reservoir accounts, to replace depletions caused by the pumping of its members' wells as required by law, and any related water resources management activity in accordance with the corporations' bylaws and policies of its board of directors.

B. **Powers.** The corporation shall have and may exercise all of the rights, powers and privileges now or hereafter conferred upon corporations operating pursuant to the Colorado Nonprofit Corporation Act, as amended, and the provisions of Title 7, Article 42, as amended. These powers include, but shall not be limited to, the power to:

- (1) acquire, develop and administer water supplies for the benefit of its members;
- (2) establish classes of membership and determine the entitlements and conditions upon each such class of membership;
- (3) issue shares of stock in the corporation;
- (4) establish classes of stock and determine the entitlements and conditions upon each class of stock;
- (5) purchase, lease, or otherwise acquire and to own, hold, mortgage, pledge and sell real and personal property of all kinds;
- (6) borrow money for the use of the corporation and to issue securities thereof and to pledge, mortgage, hypothecate, and otherwise dispose of the real, personal and intangible property of the corporation as security thereof;
- (7) determine the place, time and manner of delivery and establish schedules of rates for the delivery of water for the benefit of its members;
- (8) levy and collect assessments against its members to meet the costs of

management of the corporation and of administration of its assets, pay debts of the corporation, make any necessary repairs and for any other purpose consistent with any purpose, object or statutory power of the corporation;

(9) enforce collection of delinquent water assessment payments in the manner provided in the corporation's bylaws;

(10) employ personnel, agents, attorneys, engineers, representatives and independent contractors as may be necessary or convenient to the carrying out of any purpose, object or statutory power of the corporation;

(11) take any other such actions as the Board of Directors may consider proper or necessary to carry the objects and purposes of the corporation into effect; and

(12) exercise any and all powers permitted by law with respect to nonprofit corporations pursuant to the Colorado Nonprofit Corporation Act and Title 7, Article 42, Colorado Revised Statutes, as amended.

ARTICLE V

Membership

A. **Admission.** All members as of the effective date of these Amended Articles of Incorporation may continue to be members of the corporation. New members may be admitted upon approval of the Board of Directors in accordance with criteria and procedures defined by the Board of Directors. Each member shall be entitled to one membership for each well owned by that member for which dues are paid and which is included in the LAWMA augmentation plan.

B. **Classes of Membership.** Unless otherwise provided in the corporation's bylaws, there shall be one class of member. Additional classes may be defined in the future by bylaw. The rights and obligations of each class of members shall be defined by the bylaws and may differ between membership classes.

C. **Transfer of Membership.** Memberships may be transferred subject to the approval of the Board of Directors in accordance with the bylaws of the corporation and with any rules which may be adopted from time to time by the Board of Directors.

D. **Suspension and Termination of Membership.** Memberships may be suspended or terminated as provided in the bylaws of the corporation. The bylaws shall provide for a procedure for termination that includes notice and an opportunity to be heard. The bylaws may also provide for reinstatement upon terms to be determined by the Board of Directors.

ARTICLE VI
Shares of Stock

A. Issuance of Shares. The corporation shall issue shares of stock in the manner and subject to the rights and limitations more specifically set forth in these Amended Articles of Incorporation and in the bylaws of the corporation.

B. Authority. The aggregate number of shares of capital stock which the corporation shall have authority to issue is 30,000 shares, consisting of shares of Common Stock, no par value per share, and shares of Preferred Stock, no par value per share. The voting powers, designations, preferences, privileges and relative, participating, optional or other special rights, and the qualifications, limitations or restrictions of each class or series of capital stock of the corporation, shall be as provided in these Articles of Incorporation and in the bylaws of the corporation.

C. Allocation of Water to Preferred Stock. The Board of Directors intends to annually allocate one (1) acre-foot of replacement water to each share of Preferred Stock. Preferred Stock will receive the first allocation of any replacement water owned or controlled by LAWMA that LAWMA is permitted to allocate to its shareholder members by the Colorado State Engineer, Colorado Water Court or other authority exercising jurisdiction over such matters.

D. Equitable Interest in Water Rights. Shares of stock shall represent an entitlement to an equitable interest in the water rights of the corporation as specifically defined in the bylaws, and shall be assessable in order to assure repayment of the corporation's debt on such water rights. Only the shareholders (and not the members), by virtue of such shares of stock, shall be entitled to such equitable interest in the water rights; non-shareholder members shall not be so entitled.

E. Dissolution. Upon dissolution of the company, the water rights of the company shall be distributed on the basis of stock ownership. Stock ownership shall not represent any specific equitable ownership in any assets other than the water rights and any storage accounts specifically associated with these water rights, such as Article II storage accounts in John Martin Reservoir under the 1980 operating agreement. All other assets, including facilities, equipment, ditch capacity or reservoir capacity, or accounts associated generally with the plan for augmentation and not with specific water rights (such as the offset account in John Martin Reservoir), shall be distributed upon dissolution in accordance with a plan of distribution adopted in accordance with the Colorado Nonprofit Corporation Act or bylaws.

F. Preemptive Rights. No shareholder of the corporation shall have preemptive or other rights to subscribe for any additional unissued or treasury shares of stock or for other securities of any class, or for rights, warrants or options to purchase stock, or for script, or for securities of any kind convertible into stock purchase warrants or privileges.

G. Transfer of Shares. The transfer of shares shall be allowed, but only upon approval of the Board of Directors in accordance with the bylaws of the corporation and such rules, if any, as the Board of Directors may determine from time to time.

H. Authority. The corporation is authorized to issue shares of stock. Such issuance is consistent with the Colorado Nonprofit Corporation Act, pursuant to Title 7, Article 42 of the Colorado Revised Statutes.

ARTICLE VII

Voting Rights of Members and Shareholders

A. Voting. The corporation shall have voting members and voting shareholders. The voting rights of the members and shareholders may differ depending on their class and shall be defined in these Articles of Incorporation and the bylaws of the corporation. Voting by proxy shall be permitted as provided in the bylaws of the corporation. Cumulative voting shall be prohibited.

B. Meetings.

(1) Annual and other meetings of the members and shareholders shall be held at such time and place and upon such notice as shall be prescribed by the bylaws of the corporation, which are not inconsistent with the Colorado Nonprofit Corporation Act, as amended.

(2) The bylaws of the corporation may fix or provide the manner of filing a date as the record date for determining the members and shareholders entitled to notice of a meeting, the members and shareholders entitled to vote at a meeting, and the members and shareholders entitled to exercise any rights in respect of any other lawful action. If the bylaws do not fix or provide the manner of fixing the record date for any of said actions, the Board of Directors may fix a future date as such record date. If neither the bylaws nor the Board of Directors fixes the record date for any of said actions, the record date shall be as provided in the Colorado Nonprofit Corporation Act, as amended. If a record date is fixed under the bylaws or by the Board of Directors on a case by case basis, said record date shall not be more than seventy days before the meeting or action requiring a determination of members and shareholders occurs.

(3) The bylaws of the corporation may provide for the preparation of an alphabetical list of the names of all its members and shareholders entitled to notice of, and to vote at, a meeting or to take such action by written ballot. If such list is prepared, it shall be available for inspection to the extent and in the manner provided in the Colorado Nonprofit Corporation Act, as amended.

(4) Actions requiring member and/or shareholder approval may be taken without a meeting, or by written ballot as provided under the bylaws of the corporation, and, if no such provision is made by the bylaws, under the Colorado Nonprofit Corporation Act, as amended.

C. Quorum. Members and shareholders may take action on a matter at a meeting only if a quorum of members and/or shareholders entitled to vote on that matter is present at the meeting in person or by proxy. Fifteen percent (15%) of the votes entitled to be cast on the matter by the voting group constitutes a quorum of the voting group entitled to vote for action on that matter.

ARTICLE VIII
Directors and Officers

A. **Board of Directors.** The control and management of the business and affairs of the corporation shall be vested in the Board of Directors. The number of directors to sit on the Board, the term to be served, the process for filling vacancies before the end of a term, and the Board's meeting, voting and notice procedures shall be specified in the bylaws of the corporation. The Board of Directors shall have sole control over the administration and management of the water and water rights, augmentation plan and all related resources of the corporation.

B. **Meetings of the Board of Directors.** The Board of Directors may hold regular or special meetings in the manner and upon the notice requirements set forth in the bylaws or, if no such requirements are set forth in the bylaws, as provided in the Colorado Nonprofit Corporation Act, as amended.

C. **Officers.** The officers shall be a President, a Vice-President, a Secretary, a Treasurer, and such other officers as may be designated by the Board of Directors, each of whom shall be qualified and elected in such a manner and for such a term as provided in the bylaws of the corporation. The duties of each officer shall be specified in the bylaws of the corporation.

D. **Standards of Conduct.** The standards of conduct of officers and directors of the corporation shall be as provided in the Colorado Nonprofit Corporation Act, as amended.

E. **Indemnification.** To the extent consistent with the Colorado Nonprofit Corporation Act, no director of the corporation shall be liable to the corporation or to its members for monetary damages for breach of fiduciary duty as a director. The corporation shall indemnify any person made a party to any proceeding because the person is or was a director against liability incurred in the proceeding in the manner and to the extent authorized under the Colorado Nonprofit Corporation Act, as amended.

ARTICLE IX
Use of Water

A. **Management.** The Board of Directors shall have the exclusive authority to set policies and procedures and the exclusive authority to make decisions regarding the use of water, water rights, augmentation plan and related resources controlled by the corporation for the benefit of the membership including, but not limited to, the authority to determine the amount of replacement water available each year, the timing and location of releases to replace depletions caused by its members' wells and the specific water and water rights to be used to replace said depletions. Such policy and procedures may be set out in the bylaws and in rules, if any, as the Board may determine from time to time. The water and water rights controlled by the corporation shall be managed to assist its members in complying with the rules and regulations of the Colorado State Engineer and other such applicable law governing the pumping of the members' wells.

B. Members Responsibility. Members are solely responsible for their compliance with any and all laws governing the pumping of their wells, including compliance with orders issued and rules and regulations promulgated by the Colorado State Engineer and with any other laws applicable to the pumping of their wells. Membership in the corporation does not guarantee compliance with said rules and regulations, orders, or other laws and neither the corporation nor the Board of Directors shall be responsible or liable for members' noncompliance.

ARTICLE X **Amendment**

Amendment of Articles of Incorporation. Except as otherwise provided in this Article X, these articles may be amended by a vote of a majority of the total membership and shareholders of the corporation at any regular or special meeting for which prior notice was duly given as to the general nature of the amendment. Notwithstanding the foregoing, Article VI, Section C. of these articles shall not be altered or changed without the affirmative vote or written consent of the holders of at least two-thirds of a quorum of the Preferred Stock, voting together as a single class, and at least two-thirds of a quorum of the Common Stock, voting together as a single class. To the extent of any inconsistency, the provisions of the Colorado Nonprofit Corporation Act, as amended, shall prevail.

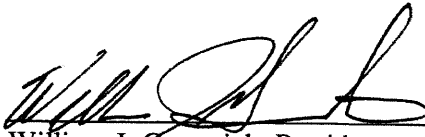
ARTICLE XI **Adoption and Effective Date**

A. Statement of Adoption. These amended articles of incorporation were adopted at a meeting of all members and shareholders of the corporation duly called and held in Lamar, Colorado, on December 8, 2008. A quorum of members and shareholders was present at such meeting in person or by proxy. These amended articles of incorporation received at least a majority of the total membership and shareholders present at the meeting or represented by proxy. These amended articles of incorporation also received at least two-thirds of a quorum of the Preferred Stock present or by proxy voting together as a single class and at least two-thirds of a quorum of the Common Stock present or by proxy voting together as a single class. These amended articles of incorporation supersede and replace the articles of incorporation adopted on May 30, 1990 and the restated and amended articles of incorporation adopted on September 29, 1998, as amended December 13, 2007.

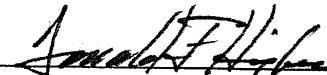
B. Effective Date. The effective date of these articles of incorporation is December 8, 2008.

Dated: December 9, 2008.

LOWER ARKANSAS WATER MANAGEMENT
ASSOCIATION

By: 
William J. Grasmick, President

ATTEST:


Donald F. Higbee, Secretary

3994020_1.DOC



Colorado Secretary of State
Date and Time: 02/04/2009 09:47 AM
ID Number: 19901061002
Document number: 20091075795
Amount Paid: \$25.00

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If document is filed on paper \$125.00
If document is filed electronically \$ 25.00
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documents, visit www.sos.state.co.us
and select Business Center.
Paper documents must be typewritten or machine printed.

ABOVE SPACE FOR OFFICE USE ONLY

Amended and Restated Articles of Incorporation

filed pursuant to §7-90-301, et seq. and §7-130-106 and §7-90-304.5 of the Colorado Revised Statutes (C.R.S.)

ID number: 19901061002

1. Entity name: LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
(If changing the name of the corporation, indicate name BEFORE the name change)

2. New Entity name:
(if applicable) _____

3. Use of Restricted Words *(if any of these terms are contained in an entity name, true name of an entity, trade name or trademark stated in this document, mark the applicable box):*

- ☐ "bank" or "trust" or any derivative thereof
☐ "credit union" ☐ "savings and loan"
☐ "insurance", "casualty", "mutual", or "surety"

4. If the corporation's period of duration as amended is less than perpetual, state the date on which the period of duration expires:

(mm/dd/yyyy)

OR

If the corporation's period of duration as amended is perpetual, mark this box: ☒

5. The amended and restated constituent filed document is attached.

6. The amendment to the articles of incorporation was in the manner indicated below:
(make the applicable selection)

- ☐ The amendment and restatement was adopted by the board of directors or incorporators without member action and member action was not required.
- ☒ The amendment and restatement was adopted by the members AND the number of votes cast for the amendment by each voting group entitled to vote separately on the amendment was sufficient for approval by that voting group.

(If the amended and restated articles of incorporation include amendments adopted on a different date or in a different manner, mark this box ☐ and include an attachment stating the date and manner of adoption.)

7. (Optional) Delayed effective date: _____
(mm/dd/yyyy)

Notice:

Causing this document to be delivered to the secretary of state for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the secretary of state, whether or not such individual is named in the document as one who has caused it to be delivered.

8. Name(s) and address(es) of the individual(s) causing the document to be delivered for filing:

Mehren	Richard	John	
(Last)	(First)	(Middle)	(Suffix)
P.O. Box 1440			
(Street name and number or Post Office Box number)			
1002 Walnut Street, Suite 300			
Boulder	CO	80302	
(City)	(State)	(Postal/Zip Code)	
	United States		
(Province – if applicable)	(Country – if not US)		

(The document need not state the true name and address of more than one individual. However, if you wish to state the name and address of any additional individuals causing the document to be delivered for filing, mark this box ☐ and include an attachment stating the name and address of such individuals.)

Disclaimer:

This form, and any related instructions, are not intended to provide legal, business or tax advice, and are offered as a public service without representation or warranty. While this form is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form. Questions should be addressed to the user's attorney.

Click the following links to view attachments

Attachment 1

2nd Amended and Restated Articles of Incorporation

Appendix D

Bylaws

BYLAWS
OF
LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

**[Adopted September 10, 1998; Amended November 8, 2002; Amended October 12, 2004;
Amended July 12, 2006; Amended September 8, 2006; Amended August 13, 2007;
Amended February 10, 2009; Amended February 9, 2016; Amended August 8, 2017]**

ARTICLE I
OFFICE AND AGENT

- Section 1. The corporation shall maintain a registered office and a registered agent.
- Section 2. The registered office and registered agent may be changed by the Board of Directors (“Board”) by delivering to the secretary of state for filing a statement of change that sets forth the following:
- A. The corporation's corporate name;
 - B. The street address of its current registered office;
 - C. If the registered office is to be changed, the street address of the new registered office;
 - D. The name of its current registered agent;
 - E. If the registered agent is to be changed, the name of the new registered agent and the new registered agent's written consent to the appointment; and
 - F. That after the changes are made, the street addresses of its registered office and the business office of its registered agent will be identical.

ARTICLE II
MEMBERS AND SHAREHOLDERS

- Section 1. Membership Required for Allocation of Water. A LAWMA membership is required for allocation, to a “LAWMA Structure” as defined in this Article II, of a portion of the water available to the corporation’s water rights or a portion of any other water controlled by the corporation. A holder of a LAWMA membership is referred to herein as a “member.”

Section 2. Application for Membership. The Board may accept new memberships upon application submitted in such form as determined by the Board and upon the following conditions:

- A. Applicant's well, gravel pit, surface diversion, or other structure requiring augmentation or replacement ("Augmented Structure") is located within the State of Colorado and is so situated as to be able to be served by the corporation's water court approved plan(s) for augmentation, annual replacement plan approved by the State Engineer for Water Division No. 2 pursuant to Rule 14 of the Amended Rules and Regulations Governing the Diversion and Use of Tributary Ground Water in the Arkansas River Basin, effective June 4, 1996 (including any amendments) ("Rule 14 plan"), or any LAWMA-operated Compact Compliance Plan pursuant to Rule 10 of the Compact Rules Governing Improvements to Surface Water Irrigation Systems in the Arkansas River Basin in Colorado ("Rule 10 plan") (collectively, "Augmentation Plan") without adverse impact thereon, such determination to be made by the Board in its sole discretion; or Applicant's proposed point of delivery for direct use of water available to the corporation's water rights or other water controlled by the corporation ("Direct Delivery Point") is located within the State of Colorado and is able to be served by the corporation's water rights or other water controlled by the corporation without adverse impact thereon, such determination to be made by the Board in its sole discretion; and
- B. Augmented Structures and Direct Delivery Points are referred to collectively as "LAWMA Structures" herein; and
- C. A member shall hold one membership for each LAWMA Structure, and shall register each such LAWMA Structure with the corporation; and
- D. For each membership, the member shall pay a fee to be determined by the Board from time to time; and
- E. The member shall pay the costs, including without limitation costs for engineering and legal consulting services, incurred by the corporation to add the Augmented Structure to the corporation's Augmentation Plan or to change or administer the corporation's water rights as needed for delivery of water to the Direct Delivery Point ("Reimbursable Costs").
 - (1) The Reimbursable Costs include, without limitation, all costs associated with the following: any Water Court proceeding or administrative proceeding necessary to amend the Augmentation Plan on a temporary or permanent basis to include the Augmented Structure; any Water Court proceeding or administrative

proceeding necessary to allow for direct delivery of water at the Direct Delivery Point; review of the member's proposed substitute water supply plan ("SWSP") in which LAWMA shares will be used; review of the member's past plan for augmentation, replacement plan, or SWSP in which the Augmented Structure was augmented with water from a source other than LAWMA shares; and the preparation, review, or amendment of any lease, contract, or other such document in connection with membership in the corporation; and

(2) At the time of the Board's approval of the application for a membership for a LAWMA Structure, the member shall enter into a reimbursement agreement with the corporation to provide for payment of the Reimbursable Costs; and

F. New members may be issued shares of stock in the corporation in accordance with Article VI, Section 9 of these bylaws. Nothing in these bylaws precludes the transfer or lease of shares of stock from a current shareholder to a new member, subject to approval of such transfer as described in Article VI, Section 2 below; and

G. The Board may adopt rules and regulations to guide the determination of whether to approve new memberships.

Section 3. Membership and Classes of Stock.

A. Members. There will be one class of members.

B. Shareholders. Those members who satisfy one of the qualifications set forth in Subsection (1) or (2) of this Article II, Section 3.B, and who are issued or hold Preferred Stock or Common Stock will be shareholders in addition to being members.

A. Upon approval of the Board and upon such terms and conditions as are necessary to prevent injury to the corporation, any person or entity may be issued stock and become a shareholder.

B. Any person or entity that acquired, through purchase, gift, foreclosure, or otherwise, shares of stock from a shareholder and whose transfer of such stock has been approved as provided in Article VI, Section 2 below, may be issued stock upon the surrender of the acquired stock, and upon such issuance will become a shareholder.

- C. A person or entity will cease to be a shareholder upon the approved transfer to another of all shares of stock owned by that person or entity. Cessation of shareholder status under this section does not and will not release such person or entity from any liability or obligation incurred as a shareholder and not discharged or satisfied as of the date of cessation.
- C. Non-Shareholder Members. All members who are not shareholders will nevertheless be full members, designated as “non-shareholder members,” for all purposes other than distribution of benefits and burdens on stock.
 - A. For non-shareholder members, all rights and obligations relating to LAWMA’s provision of water for augmentation of LAWMA Structures or for delivery to a Direct Delivery Point must be established by written contract between the non-shareholder member and the corporation. Solely for purposes of this provision, non-shareholder members who rent stock will be treated as shareholders upon submitting acceptable proof of the rental of such stock.
 - B. The Board may add or revise membership classes and the rights and obligations associated therewith from time to time by amendment of these bylaws.

Section 4. Dues and Fees. The corporation shall assess membership dues and fees. The Board shall determine the amount of proposed membership dues and fees each year and shall present said proposed dues and fees to the membership for approval at any annual meeting or special meeting called for that purpose. Membership fees and dues require the approval of a majority of a quorum of all members entitled to vote, either present at the meeting or by proxy. Dues and fees will become due thirty (30) days after the date of billing. The Secretary shall give written notice to each member of the amount of dues and fees and the time when the same will be due, which notice the Secretary shall give by delivering the notice personally to each member or mailing the notice to the address of the member as shown by the books of the corporation.

Section 5. Transfer of Membership. Any membership in this corporation may be transferred with approval of the Board in accordance with these bylaws and such rules as may be adopted from time to time by the Board.

Section 6. Suspension and Termination of Membership. Any membership in this corporation may be suspended or terminated for non-payment of dues and/or fees, or for non-compliance with the conditions of membership or any water court

decree or administrative approval that governs operation of the corporation's water rights and Augmentation Plan.

- A. Suspension and renewal for non-payment. Dues and/or fees not paid by March 1 of each year will result in suspension of the membership for which such dues and/or fees were assessed, and all rights attendant to that membership will be suspended unless and until the membership is renewed. To renew a suspended membership, the member shall pay the full amount of unpaid dues and/or fees, together with a 20% penalty on such amount.
- B. Termination for non-payment. Dues and/or fees not paid for one year following their due date will result in termination of the suspended membership for which such dues and/or fees were assessed, and all rights attendant to that membership will be terminated. To avoid termination of a suspended membership, the member shall pay, prior to March 1 of the year following the original non-payment, the full amount of unpaid dues and/or fees for the delinquent year, together with a 20% penalty, and the dues and/or fees assessed on the membership for the next year. If such payment has not been made prior to March 1 of the year following the delinquent year, the suspended membership will be terminated, and a new application will be required for a membership for the LAWMA Structure for which the terminated membership was held. Before termination of a membership in accordance with this Article II, Section 6, the Board shall give not less than thirty (30) days' prior written notice to the member of the impending termination and the reasons therefor, and an opportunity for the member to be heard, orally or in writing, not less than ten (10) days before the effective date of the termination.

ARTICLE III

MEETINGS AND VOTING

Section 1. Annual and Regular Meetings. A meeting of the members and the shareholders shall be held annually at a place and time to be stated in or fixed in accordance with a resolution of the Board. In addition, regular meetings of the members and shareholders may be held at a place and time to be stated in or fixed in accordance with a resolution of the Board.

Section 2. Special Meetings. Special meetings of the members and shareholders may be called at any time by the President, or by a majority of the Board. The President, or in his absence the Vice President, shall call a special meeting upon the written petition of one-third of the members of the corporation.

Section 3. Notice. Written notice of each annual, regular, and special meeting shall be given by mailing a copy of such notice, properly addressed and first class postage prepaid, to each member and each shareholder not less than ten (10) days nor more than thirty (30) days prior to the date of said meeting. The record date for determining the members and shareholders entitled to notice of a meeting and those entitled to vote at a meeting shall be determined by the Board and shall be no more than sixty (60) days and no less than ten (10) days before notice is mailed. A list of members and shareholders who are entitled to notice of, and to vote at, the meeting shall be prepared and made available for inspection in accordance with the provisions of the Colorado Revised Nonprofit Corporation Act, as amended. Notice shall be mailed to each member's and each shareholder's last known address according to the corporation's records. The notice shall state the place, date, and time of the meeting, the purpose of the meeting, and a description of any matter or matters that must be approved by the members and shareholders or for which the members' and shareholders' approval is needed.

Section 4. Quorum. Fifteen percent (15%) of the votes entitled to be cast on a matter constitutes a quorum of that voting group for action on that matter. If such a quorum is not present at a meeting at which the matter will be placed to a vote, either in person or by proxy, the meeting may be adjourned by a majority of those present, provided that such meeting may not be adjourned for a period to exceed sixty (60) days for any one adjournment.

Section 5. Voting. The voting rights of the members and shareholders of the corporation shall be as follows:

- A. Shareholders. Shareholders shall have one vote for each share of Common Stock and two and five-tenths (2.5) votes for each share of Preferred Stock standing in the shareholder's name on the books of the corporation, in addition to one vote for each membership held by such shareholder, as provided below. Shareholders have two and five-tenths (2.5) votes for each share of Preferred Stock because the Board has determined, based on analysis and recommendations from the Company's consulting engineers, that a share of Preferred Stock may be issued to a shareholder upon surrender to the corporation of two and five-tenths (2.5) shares of Common Stock (see bylaw Article VI, Section 9). The differential voting rights for Common and Preferred Stock are intended to ensure that a shareholder does not suffer a reduction in voting rights when Common Stock is converted to Preferred Stock, and may be changed by the Board from time to time to maintain the relationship between Common and Preferred Stock as allowed by bylaw Article VIII.

- B. Members. Each member shall have one vote for each LAWMA Structure owned and for which a membership is held.

Voting by proxy shall be permitted. Cumulative voting shall be prohibited. Unless otherwise provided in these bylaws or in the articles of incorporation of the corporation and to the extent consistent with the Colorado Nonprofit Corporation Act, as amended, any matter requiring approval of the members and shareholders shall require approval by a majority of a quorum of the members and shareholders present at a regular or special meeting or by proxy.

ARTICLE IV **DIRECTORS**

- Section 1. Board of Directors. The Board shall consist of seven (7) shareholders of the corporation to be elected at the members' and shareholders' annual meeting or adjourned annual meeting and shall be the seven receiving the highest number of votes cast in favor of their election.
- Section 2. Term of Directors. The directors shall be elected for staggered terms of three (3) years.
- Section 3. Compensation. The Board and the officers of this corporation other than the Secretary or Treasurer shall serve without compensation as such directors or officers, but any such director or officer may be reimbursed for actual expenses incurred in the performance of his duties or in the attendance at any regular or special meetings of the Board.
- Section 4. Meetings. Regular meetings of the Board shall be held at such a time and place as the Board shall determine. Special meetings of the Board may be called by the President or by two (2) or more directors. The Secretary's oral notice to the directors of special meetings, at least two (2) days prior to the special meeting, shall be sufficient. A majority of the number of directors in office immediately before the meeting begins shall constitute a quorum for the conduct of business.
- Section 5. Powers and Duties of the Board of Directors. The Board shall exercise the following powers:
- A. To act for and in behalf of the corporation in any manner not prohibited by statute or by the articles of incorporation of the corporation.
 - B. To control and supervise the business affairs and management of the corporation, and to hire and employ such labor and other employees as may be necessary and advisable to carry out the purposes of the corporation.

- C. To elect the officers of the corporation, and to adopt and procure a corporate seal for the corporation.
- D. To authorize and approve the issuance of, and to issue, shares of Common Stock and Preferred Stock in the corporation;
- E. To make rules and regulations and set policies for the transaction of the business of the corporation, and for the control, management, and distribution of water by the corporation.
- F. To prescribe the form of applications for membership and to approve or reject all such applications.
- G. To levy assessments on stock, dues, and fees at such times and in such amounts as to the Board shall deem necessary, and to provide for the manner of receiving and collecting such assessments, dues, and fees and to enforce the collection thereof.
- H. To approve or reject any transfer of membership or the rights associated therewith, and to approve or reject any transfer of stock.
- I. To provide for the maintenance of accurate records and books of account for the affairs and business of the corporation, and to cause regular audits to be made at least once each year.
- J. To approve and direct all disbursements out of the funds of the corporation and to borrow money as it may be necessary upon the credit and for the benefit of the corporation, said indebtedness to be approved in the form of a resolution duly recorded in the minutes of the directors' meeting.

Section 6. Specific Powers Relating to the Administration of the Corporation's Water Rights and Augmentation Plan, and to the Allocation of Water. In recognition of the variability in water availability to the corporation's water rights in different years and under different hydrological circumstances, the Board shall have exclusive authority to determine the allocation of water to Common Stock and to Preferred Stock each year. The Board shall also have exclusive authority over all aspects of operation of facilities and water accounts of the corporation. The Board may adopt rules to provide further detailed guidance with respect to such administration and allocation.

Section 7. Vacancies. Vacancies among the directors and the officers of this corporation shall be filled for the unexpired term by majority vote of the Board.

ARTICLE V

OFFICERS

- Section 1. Officers of the Corporation. The officers of this corporation shall be a President, Vice President, Secretary, and Treasurer. The Secretary and the Treasurer may be the same person. The President and Vice President shall be elected from the Board. The Secretary and Treasurer need not be members, shareholders or directors of this corporation. All officers shall serve for a term of one (1) year or until successors are duly elected and qualified; election of officers of the Board shall be held immediately after each annual meeting of the members and shareholders.
- Section 2. Duties and Powers of the President. The President shall preside at all meetings of the Board and meetings of the members and shareholders; and shall sign all stock certificates, bonds, deeds, leases, encumbrances, notes, contracts, or other instruments of writing made or entered into by or on behalf of the corporation. The President shall exercise a general supervision over the business of the corporation and shall have all the power and perform all of the duties usually incident to the office of President of similar associations.
- Section 3. Duties and Powers of the Vice President. The Vice President shall perform all of the functions and duties associated with the office of the President in the absence of the President, or in the case of his inability or refusal to act. The Vice President shall perform such additional duties as the Board may prescribe.
- Section 4. Duties and Powers of the Secretary. The Secretary shall perform all duties usually incident to the office of Secretary of a corporation. He shall keep the minutes of all members' and shareholders' meetings and all directors' meetings, and have the custody of all minutes, records, and other papers and documents of the corporation. He shall provide notice of members' and shareholders' meetings and meetings of the Board as provided by these bylaws. He shall provide written notice of proposed membership dues and fees as described in Article II, Section 4 above, and of proposed annual assessments as described in Article VI, Section 4 below. He shall attest by his signature and affix the corporate seal to all stock certificates, contracts, and conveyances requiring the same. He shall prepare and keep an accurate stock ledger and all other proper books of record and of account of the business of the corporation, and such other books and records as the Board may prescribe. He shall make such reports to the Board of all his accounts and doings as may be required by the Board. Said accounts may also be made to the members and the shareholders if required by the Board. If required by the Board, the Secretary shall furnish a bond satisfactory to the Board for the satisfactory performance of his duties, the cost of which shall be borne by the corporation.

Section 5. Duties and Powers of the Treasurer. The Treasurer shall perform all duties usually incident to the office of Treasurer of a corporation. He shall collect assessments and other sums due to the corporation. He shall safely keep all money and funds of the corporation and disburse the same only on orders signed by the President. He shall keep such financial records and accounts as will accurately reflect the finances and assets of the corporation, and shall report the same to the shareholders at each annual meeting and to the Board upon request. If required by the Board, the Treasurer shall provide a bond in the amount determined by the Board at the cost of the corporation.

Section 6. Manager or Superintendent. In addition to the officers above named, the Board may authorize the appointment of a manager or a superintendent, who may or may not be a director, member or a shareholder of this corporation. The duties, authority, and compensation of such manager or superintendent shall be as determined by the Board.

ARTICLE VI

STOCK, CERTIFICATES AND TRANSFERS

Section 1. Classes of Stock. There shall be two classes of stock, Common Stock and Preferred Stock. Preferred Stock will be identified as such on the face of the stock certificate.

Section 2. Transfer of Stock. No transfer of stock shall be allowed without approval of the Board. The Board may adopt rules governing approval of said transfers. A shareholder proposing to transfer his stock in this corporation, whether to a shareholder, non-shareholder, member, or non-member of this corporation, or from one LAWMA Structure to another LAWMA Structure, shall make a written request to the Board for approval of the transfer. If, in the opinion of the Board, the transfer may be made without injury to the corporation, the corporation's water rights and other replacement water sources, or to other members, or to the integrity or administrability of the corporation's water rights or Augmentation Plan, the Board shall approve the transfer and any such approval shall include terms and conditions deemed necessary by the Board to prevent such injury. The proposed transferee shall pay the corporation's engineering and legal costs associated with evaluating the proposed transfer. It is the policy of the corporation to encourage the free transferability of stock as much as consistent with the foregoing principle. Therefore, a transfer of stock from one well to another well both of which divert from the Valley Fill Aquifer and surficial aquifers along the Arkansas River below John Martin Dam to the Colorado-Kansas stateline, as generally delineated on the map attached to the Amended Rules and Regulations Governing the Diversion and Use of Tributary Ground Water in the Arkansas River Basin, Colorado effective June 4, 1996, will be presumed to be without injury unless the Board determines otherwise based on the

unique facts of any particular circumstance. The corporation shall not be liable for revegetation of land or weed control on land from which shares of stock have been transferred. In the event of a transfer of shares by any person, bank, or institution which is a creditor of a shareholder, as part of a foreclosure or exercise of a security interest on a loan or financing where the person, bank, or institution does not use the services of the corporation, such transfer will be presumed to be without injury unless rebutted on the facts of any particular circumstance. The subsequent assignment and transfer of such shares of stock to a third party shall require Board approval as required by these bylaws. The decision of the Board with respect to any proposed transfer shall be final and shall be transmitted to the requesting shareholder in writing.

Section 3. Surrender of Certificate and Assignment for Transfers. No transfer of stock certificates shall be made on the books of the corporation except upon surrender of the duly endorsed original, duplicate or temporary duplicate stock certificate and the written assignment of the person to whom the same was issued, or in the case of his death, the written assignment of his personal representative.

Section 4. Assessments. The Board shall determine the assessment proposed to be levied on the stock of the corporation for the ensuing year and shall present the question of making the assessment to the members and shareholders at an annual meeting or a special meeting called for that purpose.

- A. If the members and shareholders vote in favor of making such assessment, the Board shall levy same.
- B. If the members and shareholders fail to hold such a meeting or fail to make or authorize any assessment within ninety (90) days after the close of the corporation's fiscal year, the Board shall have the power to make any such assessment at any regular or special meeting called for that purpose.
- C. All assessments will become due thirty (30) days after the date of billing. Assessments paid later than sixty (60) days after billing will require the additional payment of a 20% penalty. The Secretary shall give written notice to each shareholder of the amount of each assessment and the time when the same will be due, which notice the Secretary shall deliver personally to each shareholder or mail to the address of the shareholder as shown by the books of the corporation. If any shareholder fails to pay such assessment, including any penalty, within ninety (90) days after the assessment is due, his stock shall be forfeited to the corporation. Forfeited stock may be sold by the corporation.

Section 5. Effects of Non-Use on Membership Suspension or Termination. Stock shall not be forfeited due to non-use, but it may be forfeited for non-payment of assessments. If a membership is terminated pursuant to Article II, Section 6 of these bylaws, stock owned by that member will not be forfeited as long as assessments continue to be paid in accordance with the requirements of this Article VI.

Section 6. Duplicate Stock Certificates. The Board may order a duplicate stock certificate to be issued in place of any stock certificate of the corporation alleged to have been lost, mislaid, or destroyed, but in every such case, the owner of the lost, mislaid, or destroyed stock certificate shall comply with the provisions of the Ditch and Reservoir Companies Act as codified at Title 7, Article 42, Colorado Revised Statutes, as amended.

Section 7. Temporary Duplicate Stock Certificates. The Board may order a temporary duplicate stock certificate to be issued in place of any stock certificate of the corporation alleged to have been lost, mislaid, or destroyed if the owner of the lost, mislaid, or destroyed stock certificate provides a bond to the corporation, with security, to be approved by the Board on such sum as the Board may determine and direct, as indemnity against any loss or claim that the corporation may incur by reason of issuance of the temporary duplicate stock certificate.

- A. So long as the shareholder complies with all of the obligations and requirements of the corporation's articles of incorporation, bylaws, policies, and rules, and so long as no contrary claim of interest or ownership in the subject stock is made to the corporation, a temporary duplicate stock certificate issued by the Board in accordance with Section 7 (A) of this Article VI shall be valid until all of the requirements of the Ditch and Reservoir Companies Act for the issuance of duplicate stock certificates have been satisfied by the shareholder and a duplicate stock certificate has been issued by the corporation in accordance with the provisions of the Ditch and Reservoir Companies Act.
- B. Upon compliance with the provisions of the Ditch and Reservoir Companies Act and surrender of the temporary duplicate stock certificate issued pursuant to Section 7 (A) of this Article VI, a duplicate stock certificate shall be issued by the corporation to the shareholder to replace the temporary duplicate stock certificate and original stock certificate alleged to have been lost, mislaid, or destroyed, and the bond provided to the corporation as indemnity against any loss or claim the corporation may have incurred by reason of the issuance of the temporary duplicate stock certificate shall be released.

Section 8. Possession of Stock Certificate. Possession of a stock certificate shall not be regarded as evidence of ownership of the same unless it appears on the stock book of the corporation that said stock certificate was issued or duly transferred to the holder of the same. The Board may, in its discretion, refuse to issue a stock certificate, temporary duplicate stock certificate, or duplicate stock certificate except upon the order of a court having jurisdiction in such matter.

Section 9. Issuance of Shares of LAWMA Stock. No issuance of shares of stock shall be permitted without the approval of the Board. The Board may adopt rules governing approval of the issuance of shares of stock.

- A. If in the opinion of the Board the issuance of shares of stock may be made without injury to the corporation, the corporation's water rights and other replacement water sources, or other members, or to the integrity or administrability of the corporation's water rights and its Augmentation Plan, the Board may approve the issuance of shares of stock to the member, and any such approval and issuance of shares shall include terms and conditions deemed necessary by the Board to prevent such injury. Such terms and conditions shall be referenced on the face of the stock certificate.
- B. A share of Preferred Stock may be issued to a shareholder upon the shareholder's surrender to the corporation of two and five-tenths (2.5) shares of Common Stock; or, upon the Board's determination, a share of Preferred Stock may be issued upon the conveyance to LAWMA of water equivalent to two and five-tenths (2.5) shares of Common Stock. This conversion ratio of shares of Common Stock to Preferred Stock is called the "Preferred Stock Conversion Ratio." The Preferred Stock Conversion Ratio may be changed from time to time upon the Board's advisement by the corporation's consulting engineer, but such change may be accomplished only by amendment of these bylaws as provided for herein.
- C. The Secretary shall record, on the face of each share certificate representing Preferred Stock, the Preferred Stock Conversion Ratio in effect on the date of issuance of such certificate.
- D. Shares of Common Stock may be issued to a shareholder upon the shareholder's surrender to the corporation of shares of Preferred Stock. The number of shares of Common Stock that will be issued in exchange for surrender of shares of Preferred Stock will be determined by the Preferred Stock Conversion Ratio that was in effect at the time the shares of Preferred Stock were issued to the shareholder. By way of example and not by way of limitation, if a share of Preferred Stock is issued to a shareholder under the Preferred Stock Conversion Ratio of 2.5 to 1, then

the surrender of that share of Preferred Stock in exchange for Common Stock would yield 2.5 shares of Common Stock, regardless of when the surrender of Preferred Stock is made.

- E. The person or entity requesting the issuance of shares of stock shall pay all of the corporation's legal and engineering costs associated with evaluating and implementing the proposed issuance of shares of stock. The decision of the Board as to whether shares of stock will be issued shall be final and shall be transmitted in writing to the person or entity requesting the issuance of shares of stock.

ARTICLE VII **USE OF WATER**

Section 1. The Board shall set policies and procedures for and make all decisions regarding use of the water rights and facilities owned or controlled by the corporation, including without limitation the timing and location of releases or deliveries of water available to the corporation's water rights, replacement of depletions, and retention of water in carryover storage, in accordance with applicable state laws and regulations and with the water court decrees and any administrative approvals governing operation of the corporation's water rights and Augmentation Plan.

Section 2. The Board shall annually allocate water to each share of stock in the corporation, with such allocation expressed as the amount of fully consumable water available per share. This allocation will include the preferred allocation to holders of Preferred Stock set forth in the corporation's articles of incorporation. Such allocation shall be made no later than April 1 of each year, and written notice of the allocation shall be provided to each shareholder. The notice shall also state the maximum amount of water that can be diverted by each LAWMA Structure to which the shareholder has dedicated shares of Common Stock or Preferred Stock ("Noticed Maximum Diversion"). A supplemental allocation or a reduction in allocation may be made at any time by the Board at its sole discretion. The amount of water allocated in each year shall be determined with due regard for current year needs and availability and for future year possible needs and availability.

Section 3. The Board may adopt rules to provide general guidance, but in recognition of the difficulty of anticipating all hydrological and water management situations, the Board shall retain the right to make exceptions or alterations to such rules in any particular year, including, without limitation, situations in which the water rights owned or controlled by the corporation are insufficient to allow for the Noticed Maximum Diversion by LAWMA Structures in a given year. Such rules may include a requirement that diversions from LAWMA Structures be curtailed, and may provide for procedures to enforce such curtailment. No member, whether

shareholder or non-shareholder, shall be entitled to divert water in excess of the Noticed Maximum Diversion for a particular LAWMA Structure, or to cause depletions in excess of the allocation to the shares dedicated to that LAWMA Structure, unless a supplemental allocation is made or that member has rented additional sources of replacement water, including rental of the allocation then remaining to stock owned by other shareholders. Such rental sources and the use thereof must be first approved by the Board.

Section 4. Provision of Replacement Water to Members with Water Uses That Are Non-Curtailable. Depletions that may not reasonably and practically be shut down by cessation of pumping or other diversion (“Non-Curtailable Depletions”) must be augmented only with Preferred Stock. Depletions attributable to certain types of Augmented Structures, including without limitation gravel pits, wells that are used to provide water for industrial, commercial, municipal, or domestic uses, and bedrock wells, are presumed to be Non-Curtailable Depletions.

Section 5. Use of LAWMA Stock for Augmentation or Replacement Purposes. It is the policy of the corporation that LAWMA stock may be used for augmentation or replacement purposes only within the LAWMA Augmentation Plan as defined in Article II, Section 2.A of these bylaws. However, the Board understands that, in certain limited circumstances, the use of LAWMA stock for augmentation purposes may be needed temporarily under a substitute water supply plan approved by the State Engineer pursuant to C.R.S. § 37-90-137(11) or § 37-92-308.

- A. Upon water court approval of a LAWMA augmentation plan that includes a LAWMA Structure then operating pursuant to a temporary substitute water supply plan, the member shall promptly terminate such temporary plan.
- B. LAWMA stock may not be used for augmentation or replacement purposes within a decreed plan for augmentation, Rule 14 plan, or Rule 10 plan operated by any entity other than LAWMA.

Section 6. Use of LAWMA Stock for Direct Use. It is the policy of the corporation that water allocated to LAWMA stock may be delivered to a Direct Delivery Point and used directly, rather than for augmentation or replacement purposes, only upon the prior written approval of the Board, which may grant or deny such approval in its sole discretion based on consultation with the corporation’s consulting engineer and legal counsel.

- A. Any member requesting direct use of water allocated to LAWMA stock following delivery to a Direct Delivery Point shall, as part of such request, enter into a reimbursement agreement with the corporation requiring the

member to pay for all of the corporation's expenses associated with the Board's evaluation of the proposed direct delivery and direct use. Those expenses will include, but are not limited to, all expenses incurred by the corporation for engineering and legal review of the proposed direct delivery and direct use, as part of the corporation's determination of whether such use may be made in accordance with state law and with water court decrees and any administrative orders governing operation of the corporation's water rights and Augmentation Plan.

- B. The Board shall deny any request for direct use of LAWMA stock following delivery of water to a Direct Delivery Point if, in the Board's determination made in the Board's sole discretion, such use would (i) cause injury to the corporation, the corporation's water rights and other replacement water sources, or to other members, or to the integrity or administrability of the corporation's water rights or Augmentation Plan; or (ii) violate the terms and conditions of any water court decree or administrative order governing use and administration of the corporation's water rights or Augmentation Plan; or (iii) result in an undue administrative burden on the corporation, including with respect to accounting.
- C. Delivery of water to a Direct Delivery Point may be made and administered only by the corporation. Members and shareholders are prohibited from calling for water directly from ditch companies in which the corporation holds water rights.

Section 7. Use of Preferred Stock. Preferred Stock may be used directly or for augmentation of all types of water uses, including but not limited to irrigation use.

Section 8. Measurement and Reporting Obligations. LAWMA members shall make all gauge and meter readings necessary to document diversions from and depletions attributable to the LAWMA Structures. Members shall provide copies of all such records, calculations and accounting to LAWMA monthly or on a more frequent basis if requested by LAWMA or required by the water court, the State Engineer, the Division Engineer for Water Division No. 2, or the water commissioner.

ARTICLE VIII **AMENDMENT**

These bylaws may be amended by a majority vote at any meeting of the Board. Except as provided in this Article VIII, these bylaws may also be amended by a majority vote of the members and shareholders at any annual meeting or at any special meeting called for that purpose. Notwithstanding the foregoing, the voting rights of shareholders set forth in Article III, Section 5.A. may only be amended by either (1) a majority vote at any meeting of the Board,

which vote is supported by a determination, after consultation with LAWMA's consulting engineers, that the voting rights of shareholders need to be modified due to a corresponding change under bylaw Article VI, Section 9, in the number of shares of Common Stock that are required to be surrendered to the corporation for the issuance of each share of Preferred Stock; or (2) a vote of at least two-thirds of a quorum of the Preferred Stock, present or by proxy, voting together as a single class and at least two-thirds of a quorum of the Common Stock, present or by proxy, voting together as a single class at any annual meeting or at any special meeting called for that purposes. If an amendment is adopted by vote of the members and shareholders, it may not thereafter be altered by a majority of the Board until after the next meeting of the members and shareholders.

I hereby certify that the foregoing are the bylaws of Lower Arkansas Water Management Association as adopted by the directors at their meeting of August 8, 2017.

ATTEST:


Secretary

Appendix E

List of BOD

Lower Arkansas Water Management Association

Board of Directors:

William J. Grasmick, President

Robert Wilger, Vice President

Donald F. Higbee, Secretary

William O. Broyles

Greg Spitzer

Ronald Peterson

Donald Seufer

Appendix F

2017 Audited Financials

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
(a 501(c)(12) Tax Exempt Organization)
LAMAR, COLORADO

REVIEWED FINANCIAL STATEMENTS
For the Years Ended **December 31, 2017** & 2016

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

INDEX

	Page
Independent Accountant's Review Report	1
Statement of Financial Position	2
Statement of Operations (and Change in Fund Balance)	3
Statement of Cash Flows	4
Notes to Financial Statements	5-8



Members
NSA
PASC

Certified Public Accountants

Gary L. Anderson, C.P.A.
Cynthia S. Anderson, A.B.A., A.T.P.

Independent Accountant's Review Report

To the Board of Directors

Lower Arkansas Water Management Association

Lamar, Colorado 81052

We have reviewed the accompanying *Statement of Financial Condition* of Lower Arkansas Water Management Association as of **December 31, 2017** and 2016 and the related *Statements of Operations, and Cash Flows* for the years then ended, and the related notes to the financial statements. A review includes primarily applying analytical procedures to management's financial data and making inquiries of management. A review is less in scope than an audit, the objective of which is the expression of an opinion regarding the financial statements as a whole. Accordingly, we do not express such an opinion.

Management's Responsibility for the Financial Statements:

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America. This includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements.

Accountant's Responsibility:

Our responsibility is to conduct the review engagement in accordance with Statements on Standards for Accounting and Review Services promulgated by the Accounting and Review Services Committee of the AICPA. Those standards require us to perform procedures to obtain limited assurance as a basis for reporting whether we are aware of any material modifications that should be made to the financial statements for them to be in accordance with accounting principles generally accepted in the United States of America. We believe that the results of our procedures provide a reasonable basis for our conclusion.

Accountant's Conclusion:

Based on our review, we are not aware of any material modifications that should be made to the accompanying financial statements in order for them to be in accordance with accounting principles generally accepted in the United States of America.

ANDERSON & COMPANY, P.C. – CPA's
Lamar, Colorado
November 8, 2018

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF FINANCIAL POSITION

December 31, 2017 and 2016

	<u>2017</u>	<u>2016</u>
CURRENT ASSETS		
Cash in Checking	\$ 10,644	\$ 7,833
Cash in Bank/Savings - Note 2	262,930	382,724
TOTAL CURRENT ASSETS	273,574	390,557
PROPERTY and EQUIPMENT		
Water Wells, Well Meters, Office Equipment	66,823	66,823
Less, Accumulated Depreciation	(66,823)	(66,823)
NET PROPERTY and EQUIPMENT	0	0
OTHER ASSETS		
Water Rights - Note 3	18,843,230	18,843,230
TOTAL ASSETS	\$ 19,116,804	\$ 19,233,787
CURRENT LIABILITIES		
Prepaid Dues, Other Deferred Income	\$ 0	\$ 0
Payroll Taxes Payable	906	830
Accrued Interest Payable	154,260	159,873
Current Portion of Long Term Debt	297,097	289,259
TOTAL CURRENT LIABILITIES	452,263	449,962
LONG TERM LIABILITIES		
Notes Payable - CWCB - Note 6	7,893,180	8,182,440
Less, Current Portion of Long Term Debt	(297,097)	(289,259)
TOTAL LONG TERM LIABILITIES	7,596,083	7,893,181
TOTAL LIABILITIES	8,048,346	8,343,143
MEMBER EQUITY		
Fund Balance	11,068,458	10,890,644
NET FUND BALANCE	11,068,458	10,890,644
TOTAL LIABILITIES and MEMBER EQUITY	\$ 19,116,804	\$ 19,233,787

See Accountant's Review Report.

The accompanying notes are an integral part of these Financial Statements.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF OPERATIONS (and Change in Fund Balance)

For Years Ended December 31, 2017 and 2016

	<u>2017</u>	<u>2016</u>
INCOME		
Membership Dues and Fees	\$ 1,315,678	\$ 1,033,880
Interest Earned	2,223	2,400
Stock Transfer Fees	700	1,350
Lease Water	12,810	187,560
Late Fees	2,756	2,902
Miscellaneous	0	0
TOTAL INCOME	1,334,167	1,228,092
EXPENSES		
Salaries	45,800	41,800
Payroll Taxes	3,803	3,491
Telephone	2,924	2,366
Office Rent and Utilities	7,194	7,190
Office Supplies and Expense	5,418	5,816
Board and Meeting Expense	829	708
Accounting	2,505	2,450
Legal Fees	276,963	80,883
Engineering Services	147,455	118,327
Revegetation Expense	113,234	8,455
Insurance	54,279	49,367
Interest	218,173	225,950
Depreciation	0	0
Mileage and Travel	444	63
Repairs and Maintenance	2,921	2,639
Supplemental Water and Water Assessme	250,166	152,647
Satellite Monitoring	0	4,900
Miscellaneous	146	197
Well Testing	24,099	26,785
TOTAL EXPENSES	1,156,353	734,034
NET Increase (Decrease) in Fund Balance	177,814	494,058
Fund Balance - Beginning of Year	10,890,644	10,396,586
Common Shares Issued	0	0
Fund Balance - End of Year	\$ 11,068,458	\$ 10,890,644

See Accountant's Review Report.

The accompanying notes are an integral part of these Financial Statements.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF CASH FLOWS

For Years Ended December 31, 2017 and December 31, 2016

	<u>2017</u>	<u>2016</u>
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash received from Shareholders/Members	\$ 1,316,378	\$ 1,035,230
Interest Earned	2,223	2,400
Other	15,566	190,462
Cash Paid to Suppliers and Employees	(938,104)	(507,958)
Interest Paid	(223,786)	(231,413)
NET CASH PROVIDED BY OPERATING ACTIVITIES	172,277	488,721
CASH FLOWS FROM INVESTING ACTIVITIES		
Capital Expenditures and Water Rights	0	0
NET CASH USED FOR INVESTING ACTIVITIES	0	0
CASH FLOWS FROM FINANCING ACTIVITIES		
Common Shares Issued	0	0
Long Term Debt Borrowings	0	0
Payments on Long Term Debt	(289,260)	(281,632)
NET CASH USED BY FINANCING ACTIVITIES	(289,260)	(281,632)
NET INCREASE (DECREASE) IN CASH	(116,983)	207,089
CASH - January 1	390,557	183,468
CASH - December 31	\$ 273,574	\$ 390,557

Reconciliation of EARNINGS to NET CASH FLOW FROM OPERATING ACTIVITIES

Net Change in Fund Balance, (page 3)	\$ 177,814	\$ 494,058
Add back: Depreciation (a non-cash item)	0	0
INCREASE (DECREASE) IN:		
Accrued Taxes	76	126
Accrued Interest	(5,613)	(5,463)
Prepaid Dues and Other Deferred Income	0	0
Adjustment - other	0	0
NET CASH PROVIDED BY OPERATING ACTIVITIES	\$ 172,277	\$ 488,721

See Accountant's Review Report.

The accompanying notes are an integral part of these Financial Statements.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS

December 31, 2017

NOTE 1- SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Background

Lower Arkansas Water Management Association (LAWMA) was formed in 1973 for the primary purpose of replacing depletions from its members' well pumping, and other structures requiring augmentation, within the lower portion of the Arkansas River Basin, in order to comply with Colorado law and the Arkansas River Compact. As of December 31, 2017 LAWMA had 204 shareholder members, consisting of 27,258 common shares of stock, and 923.15 shares of preferred stock.

Financial Statements

The books and records are maintained on a modified cash basis. Some cash receipts and cash disbursements are recognized when received and when paid rather than when earned and when obligated.

Depreciation

For financial reporting purposes, depreciation of equipment is provided on the straight-line and declining balance methods.

Income Taxes

The Association is exempt from federal income tax under Code Section 501(c)(12) of the Internal Revenue Code if 85% or more of its gross income is received from its member stockholders. In a year when the 85% rule is not met, the Association will not be entitled to exemption from federal income tax. The Association is also exempt from state income tax.

NOTE 2 - CASH ACCOUNTS summary

Following is a summary of cash and cash equivalents at December 31, 2017. Cash and cash equivalents include all cash balances and highly liquid investments (certificates of deposit and money market accounts). The Company places its cash and cash equivalents with high credit quality financial institutions. It should be noted that FDIC provides deposit insurance which guarantees the safety of deposits in member banks, currently set at \$250,000 per depositor, per bank. During 2017, the Company had cash investments in one bank in excess of FDIC limits.

			12-31-2017
Bank	Account #	Maturity	Balance
Frontier Bank	CD-52012207	10/6/2017	\$ 17,196
Girard National Bank	1108005501	Money Market	170,760
Girard National Bank	1102956701	CWCB Re-Pmt	744
Frontier Bank	92216	Money Market	18,464
TBK Bank	CD 0113216922	9/11/2017	55,766
			\$ 262,930

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

December 31, 2017

NOTE 3 - WATER RIGHTS PURCHASED

Water 1 - Stubbs	\$ 30,000
Water 2 - Peterson	10,000
Water 3 - Manvel Shares	6,055
Water 4 - Ft Bent Shares	51,000
Water 5 - XY	2,178,618
Water 6 - Manvel	655,773
Water 7 - Outside XY	17,200
Water 8 - Highland	2,971,152
Water 9 - Keesee I	2,282,658
Water 9B - Keesee II	3,566,570
Water 10 - Lamar Canal	2,619,829
Water 11 - Granada Irrig. Co.	4,454,375
	\$ 18,843,230

Most recently, during 2014, the Association entered into two Water Rights Exchange Agreements. The Association issued 2,085 common shares valued at \$3,500 per share, totaling \$7,297,500 and received in exchange: 897 shares of Lamar Canal & Irrigation Company, 436 shares of Granada Irrigation Company, and 2.0 cfs X-Y Canal water rights.

NOTE 4 – RISK MANAGEMENT

The Association carries general liability insurance, Directors and Officers liability insurance, and a Treasurer's bond.

NOTE 5 – LAWMA PREFERRED SHARES

In December 2005, the Association (pursuant to provisions of the Association's Articles and Bylaws) issued and sold 150 shares of preferred stock at \$3,166 per share, totaling \$474,900.

During 2006, the Association entered into a Water Rights Option Agreement (as amended April 28, 2006) for the purchase of the second half of the water rights decreed to the Keesee Ditch and Keesee storage account in John Martin Reservoir. In order to finance a portion of LAWMA's purchase of the second half of the Keesee Water Rights, the Association entered into Stock Purchase Agreements to sell 400 shares of preferred LAWMA stock at \$3,167 per share. The issuance of 400 preferred shares was expressly conditioned upon the Association's exercise of the Water Rights Option Agreement. Per provisions of the Stock Purchase Agreement, participants paid into an interest-bearing escrow account 20% of the purchase price, as earnest money. The escrow account was established at Colorado East Bank & Trust in Holly, Colorado. During early 2008 the Association did exercise the Water Rights Option Agreement and obtained additional funding in the form of a loan from the Colorado Water Conservation Board. This transaction was recorded in the books in 2008.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

December 31, 2017

NOTE 6 - LOAN INFORMATION

In 1996 a loan from the Colorado Water Conservation Board was obtained for the purchase of X-Y Ranch land and Manvel Canal Ditch water rights. The total loan is \$3,688,568 with an interest rate of 3.0% with a term of 40 years. The first payments in the amount of \$122,000 per year for the first ten years are due May 1 and will increase to \$199,184 for the remaining term. The CWCB granted the Association deferral of the 2002 and 2003 loan payments on this loan. The deferred interest amounts were added to the current loan balance and re-amortized over the loan's remaining life.

To purchase water rights from the Highland Irrigation Canal, the Association entered into a contract for a loan of \$1,875,584 during 2004 from the Colorado Water Conservation Board for 40 years with an interest rate of 3% with annual payments of \$67,200 for the first 10 years and \$89,297 for the remaining 30 years.

The Lower Arkansas Water Management Association obtained a new loan from the Colorado Water Conservation Board during 2004 in the amount of \$ 2,272,500 for the purchase of 50% of the Keesee I Ditch water rights with an interest rate of 2.50% and a term of 30 years. Annual payments in the amount of \$108,575 began March 1, 2005.

During 2008, the Lower Arkansas Water Management Association obtained a new loan from the Colorado Water Conservation Board in the amount of \$ 2,493,722 for the purchase of 50% of the Keesee II Ditch water rights with an interest rate of 2.30% and a term of 30 years. Annual payments in the amount of \$115,990 began May 1, 2009.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

December 31, 2017

A summary of long-term notes payable as of December 31, 2017 is as follows:

	12-31-17 Principal Due	Annual Payment	Interest Rate
Colorado Water Conservation Board - \$3,688,568 Note (Payable in annual installments of \$122,000, including interest at 3.0%, through 2035, for purchase of X-Y Ranch and Manvel Canal Ditch water rights) (annual payments increased to \$199,184 beginning in 2008) (note: accrued interest of \$220,966 was added to the note in 2002 and 2003)	2,853,071	199,184	3.00 %
Colorado Water Conservation Board - \$1,875,584 Note (Payable in annual installments of \$67,200, including interest at 3.0%, through 2044, for water rights of the Highland Irrigation Canal) (annual payments increased to \$89,297 beginning in 2015)	1,636,543	89,297	3.00 %
Colorado Water Conservation Board - \$2,272,500 Note (Payable in annual installments of \$108,575, including interest at 2.5%, through 2034, to purchase 50% of the Keesee I Ditch water rights)	1,488,798	108,575	2.50 %
Colorado Water Conservation Board - \$2,493,722 Note (Payable in annual installments of \$115,990, including interest at 2.3%, through 2038, to purchase 50% of the Keesee II Ditch water rights)	1,914,768	115,990	2.30 %
Total Long-Term Debt	7,893,180		
Less, Current Portion	(297,097)		
Principal Due after one year	\$ 7,596,083	\$ 513,046	Annual Debt Service

Principal payments toward notes payable for the next five years are as follows:

2018	\$ 297,097
2019	305,150
2020	313,424
2021	321,924
2022	330,658
Thereafter	6,324,927
	\$ 7,893,180

Appendix G

2016 Audited Financials

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
(a 501(c)(12) Tax Exempt Organization)
LAMAR, COLORADO

REVIEWED FINANCIAL STATEMENTS
For the Years Ended **December 31, 2016** & 2015

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

INDEX

	Page
Independent Accountant's Review Report	1
Statement of Financial Position	2
Statement of Operations (and Change in Fund Balance)	3
Statement of Cash Flows	4
Notes to Financial Statements	5-8



Members
NSA
PASC

Certified Public Accountants

Gary L. Anderson, C.P.A.
Cynthia S. Anderson, A.B.A., A.T.P.

Independent Accountant's Review Report

To the Board of Directors
Lower Arkansas Water Management Association
Lamar, Colorado 81052

We have reviewed the accompanying *Statement of Financial Condition* of Lower Arkansas Water Management Association as of **December 31, 2016** and 2015 and the related *Statements of Operations, and Cash Flows* for the years then ended, and the related notes to the financial statements. A review includes primarily applying analytical procedures to management's financial data and making inquiries of management. A review is less in scope than an audit, the objective of which is the expression of an opinion regarding the financial statements as a whole. Accordingly, we do not express such an opinion.

Management's Responsibility for the Financial Statements:

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America. This includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements..

Accountant's Responsibility:

Our responsibility is to conduct the review engagement in accordance with Statements on Standards for Accounting and Review Services promulgated by the Accounting and Review Services Committee of the AICPA. Those standards require us to perform procedures to obtain limited assurance as a basis for reporting whether we are aware of any material modifications that should be made to the financial statements for them to be in accordance with accounting principles generally accepted in the United States of America. We believe that the results of our procedures provide a reasonable basis for our conclusion.

Accountant's Conclusion:

Based on our review, we are not aware of any material modifications that should be made to the accompanying financial statements in order for them to be in accordance with accounting principles generally accepted in the United States of America.


ANDERSON & COMPANY, P.C. – CPA's
Lamar, Colorado
November 7, 2017

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF FINANCIAL POSITION

December 31, 2016 and 2015

	<u>2016</u>	<u>2015</u>
CURRENT ASSETS		
Cash in Checking	\$ 7,833	\$ 8,732
Cash in Bank/Savings - Note 2	382,724	174,736
TOTAL CURRENT ASSETS	390,557	183,468
PROPERTY and EQUIPMENT		
Water Wells, Well Meters, Office Equipment	66,823	66,823
Less, Accumulated Depreciation	(66,823)	(66,823)
NET PROPERTY and EQUIPMENT	0	0
OTHER ASSETS		
Water Rights - Note 3	18,843,230	18,843,230
TOTAL ASSETS	\$ 19,233,787	\$ 19,026,698
CURRENT LIABILITIES		
Prepaid Dues, Other Deferred Income	\$ 0	\$ 0
Payroll Taxes Payable	830	704
Accrued Interest Payable	159,873	165,336
Current Portion of Long Term Debt	289,259	281,631
TOTAL CURRENT LIABILITIES	449,962	447,671
LONG TERM LIABILITIES		
Notes Payable - CWCB - Note 6	8,182,440	8,464,072
Less, Current Portion of Long Term Debt	(289,259)	(281,631)
TOTAL LONG TERM LIABILITIES	7,893,181	8,182,441
TOTAL LIABILITIES	8,343,143	8,630,112
MEMBER EQUITY		
Fund Balance	10,890,644	10,396,586
NET FUND BALANCE	10,890,644	10,396,586
TOTAL LIABILITIES and MEMBER EQUITY	\$ 19,233,787	\$ 19,026,698

See Accountant's Review Report.
The accompanying notes are an integral part of these Financial Statements.
Page 2

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF OPERATIONS (and Change in Fund Balance)

For Years Ended December 31, 2016 and 2015

	<u>2016</u>	<u>2015</u>
INCOME		
Membership Dues and Fees	\$ 1,033,880	\$ 1,033,208
Interest Earned	2,400	1,852
Stock Transfer Fees	1,350	850
Lease Water	187,560	429,120
Late Fees	2,902	3,181
Miscellaneous	0	0
TOTAL INCOME	1,228,092	1,468,211
EXPENSES		
Salaries	41,800	41,800
Payroll Taxes	3,491	3,485
Telephone	2,366	4,203
Office Rent and Utilities	7,190	7,175
Office Supplies, Postage, Web-Site	5,816	9,496
Board and Meeting Expense	708	585
Accounting	2,450	2,310
Legal Fees	80,883	192,667
Engineering Services	118,327	137,358
Revegetation Expense	8,455	13,660
Insurance	49,367	45,055
Interest	225,950	233,520
Depreciation	0	0
Mileage and Travel	63	44
Repairs and Maintenance	2,639	4,625
Supplemental Water and Water Assessme	152,647	391,985
Satellite Monitoring	4,900	4,900
Miscellaneous	197	146
Well Testing	26,785	33,243
TOTAL EXPENSES	734,034	1,126,257
NET Increase (Decrease) in Fund Balance	494,058	341,954
Fund Balance - Beginning of Year	10,396,586	10,054,632
Common Shares Issued - Note 3	0	0
Fund Balance - End of Year	\$ 10,890,644	\$ 10,396,586

See Accountant's Review Report.

The accompanying notes are an integral part of these Financial Statements.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF CASH FLOWS
For Years Ended December 31, 2016 and December 31, 2015

	<u>2016</u>	<u>2015</u>
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash received from Shareholders/Members	\$ 1,035,230	\$ 894,058
Interest Earned	2,400	1,852
Other	190,462	432,301
Cash Paid to Suppliers and Employees	(507,958)	(822,863)
Interest Paid	(231,413)	(238,837)
NET CASH PROVIDED BY OPERATING ACTIVITIES	488,721	266,511
CASH FLOWS FROM INVESTING ACTIVITIES		
Capital Expenditures and Water Rights	0	0
NET CASH USED FOR INVESTING ACTIVITIES	0	0
CASH FLOWS FROM FINANCING ACTIVITIES		
Common Shares Issued	0	0
Long Term Debt Borrowings	0	0
Payments on Long Term Debt	(281,632)	(274,207)
NET CASH USED BY FINANCING ACTIVITIES	(281,632)	(274,207)
NET INCREASE (DECREASE) IN CASH	207,089	(7,696)
CASH - January 1	183,468	191,164
CASH - December 31	\$ 390,557	\$ 183,468

Reconciliation of EARNINGS to NET CASH FLOW FROM OPERATING ACTIVITIES

Net Change in Fund Balance, (page 3)	\$ 494,058	\$ 341,954
Add back: Depreciation (a non-cash item)	0	0
INCREASE (DECREASE) IN:		
Accrued Taxes	126	(126)
Accrued Interest	(5,463)	(5,317)
Prepaid Dues and Other Deferred Income	0	(70,000)
Adjustment - other	0	0
NET CASH PROVIDED BY OPERATING ACTIVITIES	\$ 488,721	\$ 266,511

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS

December 31, 2016

NOTE 1- SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Background

Lower Arkansas Water Management Association (LAWMA) was formed in 1973 for the primary purpose of replacing depletions from its members' well pumping, and other structures requiring augmentation, within the lower portion of the Arkansas River Basin, in order to comply with Colorado law and the Arkansas River Compact. As of December 31, 2016 LAWMA had 204 shareholder members, with 20,336 common shares of stock and 1007.45 shares of preferred stock.

Financial Statements

The books and records are maintained on a modified cash basis. Some cash receipts and cash disbursements are recognized when received and when paid rather than when earned and when obligated.

Depreciation

For financial reporting purposes, depreciation of equipment is provided on the straight-line and declining balance methods.

Income Taxes

The Association is exempt from federal income tax under Code Section 501(c)(12) of the Internal Revenue Code if 85% or more of its gross income is received from its member stockholders. In a year when the 85% rule is not met, the Association will not be entitled to exemption from federal income tax. The Association is also exempt from state income tax.

NOTE 2 - CASH ACCOUNTS summary

Following is a summary of cash and cash equivalents at December 31, 2016. Cash and cash equivalents include all cash balances and highly liquid investments (certificates of deposit and money market accounts). The Company places its cash and cash equivalents with high credit quality financial institutions. It should be noted that FDIC provides deposit insurance which guarantees the safety of deposits in member banks, currently set at \$250,000 per depositor, per bank. During 2016, the Company had cash investments in one bank in excess of FDIC limits.

Bank	Account #	Maturity	12-31-2016	
				Balance
Frontier Bank	CD-52012207	10/6/2017	\$	17,094
Valley National Bank	1108005501	Money Market		290,736
Valley National Bank	1102956701	CWCB Re-Pmt		744
Frontier Bank	92216	Money Market		18,384
TBK Bank	CD 0113216922	9/11/2017		55,766
			\$	<u>382,724</u>

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

December 31, 2016

NOTE 3 - WATER RIGHTS PURCHASED

Water 1 - Stubbs	\$ 30,000
Water 2 - Peterson	10,000
Water 3 - Manvel Shares	6,055
Water 4 - Ft Bent Shares	51,000
Water 5 - XY	2,178,618
Water 6 - Manvel	655,773
Water 7 - Outside XY	17,200
Water 8 - Highland	2,971,152
Water 9 - Keesee I	2,282,658
Water 9B - Keesee II	3,566,570
Water 10 - Lamar Canal	2,619,829
Water 11 - Granada Irrig. Co.	4,454,375
	<u>\$ 18,843,230</u>

During 2014, the Association entered into two Water Rights Exchange Agreements. The Association issued 2,085 common shares valued at \$3,500 per share, totaling \$7,297,500 and received in exchange: 897 shares of Lamar Canal & Irrigation Company, 436 shares of Granada Irrigation Company, and 2.0 cfs X-Y Canal water rights.

NOTE 4 – RISK MANAGEMENT

The Association carries general liability insurance, Directors and Officers liability insurance, and a Treasurer's bond.

NOTE 5 – LAWMA PREFERRED SHARES

In December 2005, the Association (pursuant to provisions of the Association's Articles and Bylaws) issued and sold 150 shares of preferred stock at \$3,166 per share, totaling \$474,900.

During 2006, the Association entered into a Water Rights Option Agreement (as amended April 28, 2006) for the purchase of the second half of the water rights decreed to the Keesee Ditch and Keesee storage account in John Martin Reservoir. In order to finance a portion of LAWMA's purchase of the second half of the Keesee Water Rights, the Association entered into Stock Purchase Agreements to sell 400 shares of preferred LAWMA stock at \$3,167 per share. The issuance of 400 preferred shares was expressly conditioned upon the Association's exercise of the Water Rights Option Agreement. Per provisions of the Stock Purchase Agreement, participants paid into an interest-bearing escrow account 20% of the purchase price, as earnest money. The escrow account was established at Colorado East Bank & Trust in Holly, Colorado. During early 2008 the Association did exercise the Water Rights Option Agreement and obtained additional funding in the form of a loan from the Colorado Water Conservation Board. This transaction was recorded in the books in 2008.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

December 31, 2016

NOTE 6 - LOAN INFORMATION

In 1996 a loan from the Colorado Water Conservation Board was obtained for the purchase of X-Y Ranch land and Manvel Canal Ditch water rights. The total loan is \$3,688,568 with an interest rate of 3.0% with a term of 40 years. The first payments in the amount of \$122,000 per year for the first ten years are due May 1 and will increase to \$199,184 for the remaining term. The CWCB granted the Association deferral of the 2002 and 2003 loan payments on this loan. The deferred interest amounts were added to the current loan balance and re-amortized over the loan's remaining life.

To purchase water rights from the Highland Irrigation Canal, the Association entered into a contract for a loan of \$1,875,584 during 2004 from the Colorado Water Conservation Board for 40 years with an interest rate of 3% with annual payments of \$67,200 for the first 10 years and \$89,297 for the remaining 30 years.

The Lower Arkansas Water Management Association obtained a new loan from the Colorado Water Conservation Board during 2004 in the amount of \$ 2,272,500 for the purchase of 50% of the Keesee I Ditch water rights with an interest rate of 2.50% and a term of 30 years. Annual payments in the amount of \$108,575 began March 1, 2005.

During 2008, the Lower Arkansas Water Management Association obtained a new loan from the Colorado Water Conservation Board in the amount of \$ 2,493,722 for the purchase of 50% of the Keesee II Ditch water rights with an interest rate of 2.30% and a term of 30 years. Annual payments in the amount of \$115,990 began May 1, 2009.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

December 31, 2016

A summary of long-term notes payable as of December 31, 2016 is as follows:

	12-31-16 Principal Due	Annual Payment	Interest Rate
Colorado Water Conservation Board - \$3,688,568 Note (Payable in annual installments of \$122,000, including interest at 3.0%, through 2035, for purchase of X-Y Ranch and Manvel Canal Ditch water rights) (annual payments increased to \$199,184 beginning in 2008) (note: accrued interest of \$220,966 was added to the note in 2002 and 2003)	2,963,355	199,184	3.00 %
Colorado Water Conservation Board - \$1,875,584 Note (Payable in annual installments of \$67,200, including interest at 3.0%, through 2044, for water rights of the Highland Irrigation Canal) (annual payments increased to \$89,297 beginning in 2015)	1,675,573	89,297	3.00 %
Colorado Water Conservation Board - \$2,272,500 Note (Payable in annual installments of \$108,575, including interest at 2.5%, through 2034, to purchase 50% of the Keesee I Ditch water rights)	1,558,412	108,575	2.50 %
Colorado Water Conservation Board - \$2,493,722 Note (Payable in annual installments of \$115,990, including interest at 2.3%, through 2038, to purchase 50% of the Keesee II Ditch water rights)	1,985,100	115,990	2.30 %
Total Long-Term Debt	8,182,440		
Less, Current Portion	(289,259)		
Principal Due after one year	\$ 7,893,181	\$ 513,046	Annual Debt Service

Principal payments toward notes payable for the next five years are as follows:

2017	\$ 289,259
2018	297,097
2019	305,150
2020	313,424
2021	321,924
Thereafter	6,655,586
	\$ 8,182,440

Appendix H

2015 Audited Financials

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
(a 501(c)(12) Tax Exempt Organization)
LAMAR, COLORADO

REVIEWED FINANCIAL STATEMENTS
For the Years Ended December 31, 2015 & 2014

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

INDEX

	Page
Independent Accountant's Review Report	1
Statement of Financial Position	2
Statement of Operations (and Change in Fund Balance)	3
Statement of Cash Flows	4
Notes to Financial Statements	5-8



Members
NSA
PASC

Certified Public Accountants

Gary L. Anderson, C.P.A.
Cynthia S. Anderson, A.B.A., A.T.P.

Independent Accountant's Review Report

Board of Directors

Lower Arkansas Water Management Association

Lamar, Colorado 81052

We have reviewed the accompanying *Statement of Financial Condition* of Lower Arkansas Water Management Association as of **December 31, 2015** and 2014 and the related *Statements of Operations, and Cash Flows* for the years then ended, and the related notes to the financial statements. A review includes primarily applying analytical procedures to management's financial data and making inquiries of management. A review is less in scope than an audit, the objective of which is the expression of an opinion regarding the financial statements as a whole. Accordingly, we do not express such an opinion.

Management's Responsibility for the Financial Statements:

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement whether due to fraud or error.

Accountant's Responsibility:

Our responsibility is to conduct the review engagement in accordance with Statements on Standards for Accounting and Review Services promulgated by the Accounting and Review Services Committee of the AICPA. Those standards require us to perform procedures to obtain limited assurance as a basis for reporting whether we are aware of any material modifications that should be made to the financial statements for them to be in accordance with accounting principles generally accepted in the United States of America. We believe that the results of our procedures provide a reasonable basis for our conclusion.

Accountant's Conclusion:

Based on our review, we are not aware of any material modifications that should be made to the accompanying financial statements in order for them to be in accordance with accounting principles generally accepted in the United States of America.

ANDERSON & COMPANY, P.C. – CPA's
Lamar, Colorado
November 8, 2016

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF FINANCIAL POSITION

December 31, 2015 and 2014

	<u>2015</u>	<u>2014</u>
CURRENT ASSETS		
Cash in Checking	\$ 8,732	\$ 4,698
Cash in Bank/Savings - Note 2	<u>174,736</u>	<u>186,466</u>
TOTAL CURRENT ASSETS	183,468	191,164
PROPERTY and EQUIPMENT		
Water Wells, Well Meters, Office Equipment	66,823	66,823
Less, Accumulated Depreciation	<u>(66,823)</u>	<u>(66,823)</u>
NET PROPERTY and EQUIPMENT	0	0
OTHER ASSETS		
Water Rights - Note 3	<u>18,843,230</u>	<u>18,843,230</u>
TOTAL ASSETS	\$ <u>19,026,698</u>	\$ <u>19,034,394</u>
CURRENT LIABILITIES		
Prepaid Dues and Other Deferred Income	\$ 0	\$ 70,000
Payroll Taxes Payable	704	830
Accrued Interest Payable	165,336	170,653
Current Portion of Long Term Debt	<u>281,631</u>	<u>274,207</u>
TOTAL CURRENT LIABILITIES	447,671	515,690
LONG TERM LIABILITIES		
Notes Payable - CWCB - Note 6	8,464,072	8,738,279
Less, Current Portion of Long Term Debt	<u>(281,631)</u>	<u>(274,207)</u>
TOTAL LONG TERM LIABILITIES	8,182,441	8,464,072
TOTAL LIABILITIES	8,630,112	8,979,762
MEMBER EQUITY		
Fund Balance	<u>10,396,586</u>	<u>10,054,632</u>
NET FUND BALANCE	10,396,586	10,054,632
TOTAL LIABILITIES and MEMBER EQUITY	\$ <u>19,026,698</u>	\$ <u>19,034,394</u>

See Accountant's Review Report.

The accompanying notes are an integral part of these Financial Statements.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF OPERATIONS (and Change in Fund Balance)

For Years Ended December 31, 2015 and 2014

	<u>2015</u>	<u>2014</u>
INCOME		
Membership Dues and Fees	\$ 1,033,208	\$ 989,076
Interest Earned	1,852	1,398
Stock Transfer Fees	850	600
Lease Water	429,120	244,145
Late Fees	3,181	309
CWCB Grant Funds Received	0	0
Grant Funds Disbursed to Members	0	0
Miscellaneous	0	0
TOTAL INCOME	1,468,211	1,235,528
EXPENSES		
Salaries	41,800	41,800
Payroll Taxes	3,485	3,492
Telephone	4,203	4,336
Office Rent and Utilities	7,175	7,406
Office Supplies, Postage, Web-Site	9,496	4,866
Board and Meeting Expense	585	809
Accounting	2,310	2,290
Legal Fees	192,667	171,403
Engineering Services	137,358	156,028
Revegetation Expense	13,660	9,828
Insurance	45,055	41,384
Interest	233,520	240,727
Depreciation	0	0
Mileage and Travel	44	456
Repairs and Maintenance	4,625	1,207
Supplemental Water and Water Assessments	391,985	258,789
Satellite Monitoring	4,900	2,600
Miscellaneous	146	404
Well Testing	33,243	51,436
TOTAL EXPENSES	1,126,257	999,261
NET Increase (Decrease) in Fund Balance	341,954	236,267
Fund Balance - Beginning of Year	10,054,632	2,520,865
Common Shares Issued - Note 3	0	7,297,500
Fund Balance - End of Year	<u>\$ 10,396,586</u>	<u>\$ 10,054,632</u>

See Accountant's Review Report.

The accompanying notes are an integral part of these Financial Statements.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION
LAMAR, COLORADO

STATEMENT OF CASH FLOWS

For Years Ended December 31, 2015 and December 31, 2014

	<u>2015</u>	<u>2014</u>
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash received from Shareholders/Members	\$ 894,058	\$ 989,676
Interest Earned	1,852	1,398
Other	432,301	244,454
Cash Paid to Suppliers and Employees	(822,863)	(687,788)
Interest Paid	(238,837)	(245,421)
NET CASH PROVIDED BY OPERATING ACTIVITIES	266,511	302,319
CASH FLOWS FROM INVESTING ACTIVITIES		
Capital Expenditures and Water Rights		(7,298,227)
NET CASH USED FOR INVESTING ACTIVITIES	0	(7,298,227)
CASH FLOWS FROM FINANCING ACTIVITIES		
Common Shares Issued	0	7,297,500
Long Term Debt Borrowings	0	0
Payments on Long Term Debt	(274,207)	(245,527)
NET CASH USED BY FINANCING ACTIVITIES	(274,207)	7,051,973
NET INCREASE (DECREASE) IN CASH	(7,696)	56,065
CASH - January 1	191,164	135,099
CASH - December 31	<u>\$ 183,468</u>	<u>\$ 191,164</u>

Reconciliation of EARNINGS to NET CASH FLOW FROM OPERATING ACTIVITIES

Net Change in Fund Balance, (page 3)	\$ 341,954	\$ 236,267
Add back: Depreciation (a non-cash item)	0	0
INCREASE (DECREASE) IN:		
Accrued Taxes	(126)	746
Accrued Interest	(5,317)	(4,694)
Prepaid Dues and Other Deferred Income	(70,000)	70,000
Adjustment - other	0	0
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>\$ 266,511</u>	<u>\$ 302,319</u>

See Accountant's Review Report.

The accompanying notes are an integral part of these Financial Statements.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS

December 31, 2015

NOTE 1- SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Background

Lower Arkansas Water Management Association (LAWMA) was formed in 1973 for the primary purpose of replacing depletions from its members' well pumping, and other structures requiring augmentation, within the lower portion of the Arkansas River Basin, in order to comply with Colorado law and the Arkansas River Compact. As of December 31, 2015 LAWMA had 214 shareholder members, with 20,251 common shares of stock and 1002.45 shares of preferred stock.

Financial Statements

The books and records are maintained on a modified cash basis. Some cash receipts and cash disbursements are recognized when received and when paid rather than when earned and when obligated.

Depreciation

For financial reporting purposes, depreciation of equipment is provided on the straight-line and declining balance methods.

Income Taxes

The Association is exempt from federal income tax under Code Section 501(c)(12) of the Internal Revenue Code if 85% or more of its gross income is received from its member stockholders. In a year when the 85% rule is not met, the Association will not be entitled to exemption from federal income tax. The Association is also exempt from state income tax.

NOTE 2 - CASH ACCOUNTS summary

Bank	Account #	Maturity	12-31-2015	
				Balance
First National Bank	CD-12207	10/6/2016	\$	17,009
Valley National Bank	1108005501	Money Market		83,202
Valley National Bank	1102956701	CWCB Re-Pmt		744
First National Bank	92216	Money Market		18,349
Colo East Bank & Trust	CD 0113216922	9/11/2016		55,432
			\$	<u>174,736</u>

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

December 31, 2015

NOTE 3 - WATER RIGHTS PURCHASED

Water 1 - Stubbs	\$ 30,000
Water 2 - Peterson	10,000
Water 3 - Manvel Shares	6,055
Water 4 - Ft Bent Shares	51,000
Water 5 - XY	2,178,618
Water 6 - Manvel	655,773
Water 7 - Outside XY	17,200
Water 8 - Highland	2,971,152
Water 9 - Keesee I	2,282,658
Water 9B - Keesee II	3,566,570
Water 10 - Lamar Canal	2,619,829
Water 11 - Granada Irrig. Co.	4,454,375
	<u>\$ 18,843,230</u>

During 2014, the Association entered into two Water Rights Exchange Agreements. The Association issued 2,085 common shares valued at \$3,500 per share, totaling \$7,297,500 and received in exchange: 897 shares of Lamar Canal & Irrigation Company, 436 shares of Granada Irrigation Company, and 2.0 cfs X-Y Canal water rights.

NOTE 4 – RISK MANAGEMENT

The Association carries general liability insurance, Directors and Officers liability insurance, and a Treasurer's bond.

NOTE 5 – LAWMA PREFERRED SHARES

In December 2005, the Association (pursuant to provisions of the Association's Articles and Bylaws) issued and sold 150 shares of preferred stock at \$3,166 per share, totaling \$474,900.

During 2006, the Association entered into a Water Rights Option Agreement (as amended April 28, 2006) for the purchase of the second half of the water rights decreed to the Keesee Ditch and Keesee storage account in John Martin Reservoir. In order to finance a portion of LAWMA's purchase of the second half of the Keesee Water Rights, the Association entered into Stock Purchase Agreements to sell 400 shares of preferred LAWMA stock at \$3,167 per share. The issuance of 400 preferred shares was expressly conditioned upon the Association's exercise of the Water Rights Option Agreement. Per provisions of the Stock Purchase Agreement, participants paid into an interest bearing escrow account 20% of the purchase price, as earnest money. The escrow account was established at Colorado East Bank & Trust in Holly, Colorado. During early 2008 the Association did exercise the Water Rights Option Agreement and obtained additional funding in the form of a loan from the Colorado Water Conservation Board. This transaction was recorded in the books in 2008.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

December 31, 2015

NOTE 6 - LOAN INFORMATION

The Association obtained a loan in 1999 from the Colorado Water Conservation Board (CWCB) in the amount of \$65,000 for the purpose of a feasibility study, with interest at the rate of 3.25% for 10 years with annual payments of \$9,154. The final payment on this loan was made in 2009.

In 1996 a loan from the Colorado Water Conservation Board was obtained for the purchase of X-Y Ranch land and Manvel Canal Ditch water rights. The total loan is \$3,688,568 with an interest rate of 3.0% with a term of 40 years. The first payments in the amount of \$122,000 per year for the first ten years are due May 1 and will increase to \$199,184 for the remaining term. The CWCB granted the Association deferral of the 2002 and 2003 loan payments on this loan. The deferred interest amounts were added to the current loan balance and re-amortized over the loan's remaining life.

To purchase water rights from the Highland Irrigation Canal, the Association entered into a contract for a loan of \$1,875,584 during 2004 from the Colorado Water Conservation Board for 40 years with an interest rate of 3% with annual payments of \$67,200 for the first 10 years and \$89,297 for the remaining 30 years.

The Lower Arkansas Water Management Association obtained a new loan from the Colorado Water Conservation Board during 2004 in the amount of \$ 2,272,500 for the purchase of 50% of the Keesee I Ditch water rights with an interest rate of 2.50% and a term of 30 years. Annual payments in the amount of \$108,575 began March 1, 2005.

During 2008, the Lower Arkansas Water Management Association obtained a new loan from the Colorado Water Conservation Board in the amount of \$ 2,493,722 for the purchase of 50% of the Keesee II Ditch water rights with an interest rate of 2.30% and a term of 30 years. Annual payments in the amount of \$115,990 began May 1, 2009.

LOWER ARKANSAS WATER MANAGEMENT ASSOCIATION

NOTES TO FINANCIAL STATEMENTS (continued)

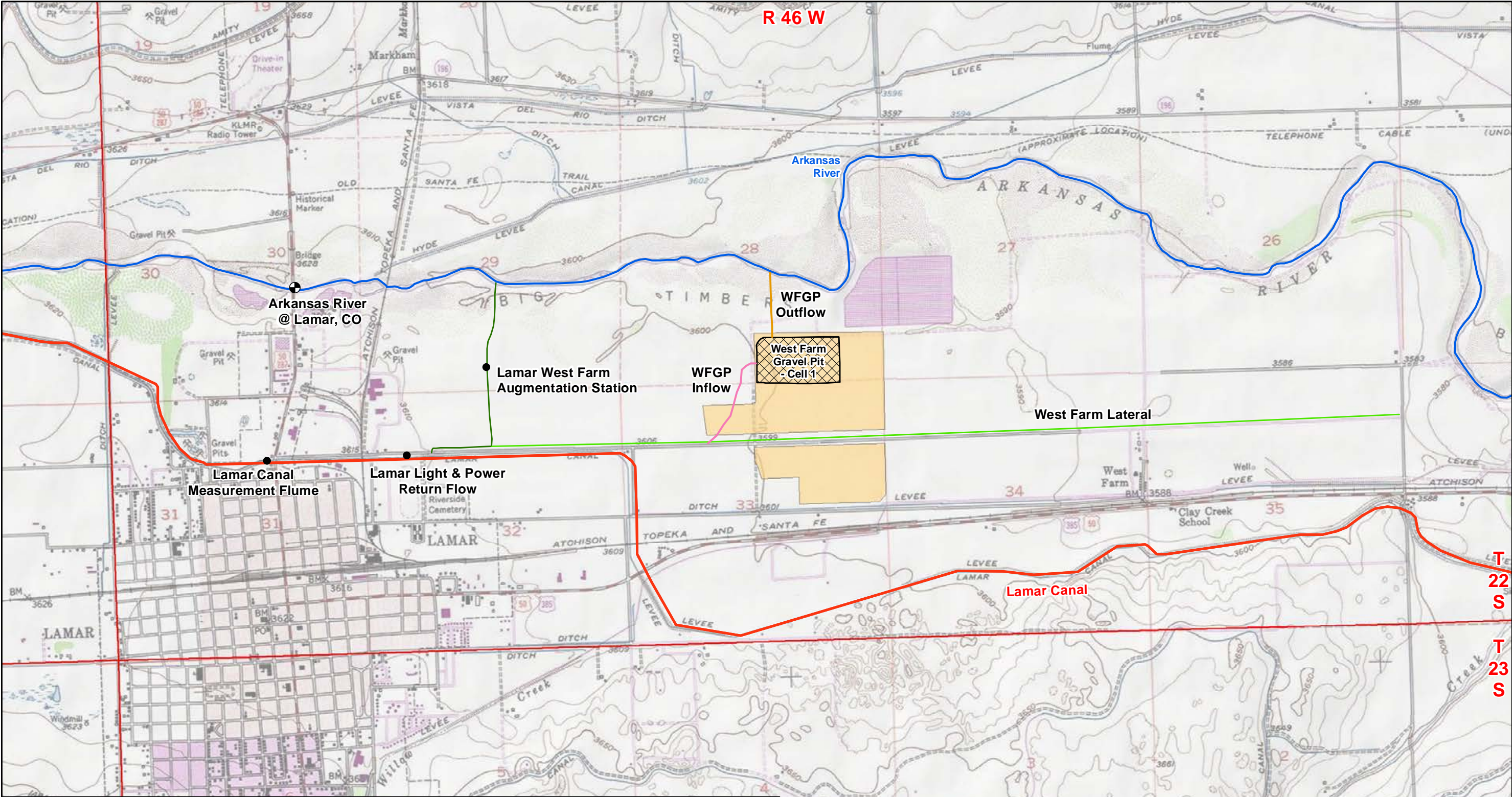
December 31, 2015

A summary of long-term notes payable as of December 31, 2015 is as follows:

	12-31-15 Principal Due	Annual Payment	Interest Rate
Colorado Water Conservation Board - \$3,688,568 Note (Payable in annual installments of \$122,000, including interest at 3.0%, through 2035, for purchase of X-Y Ranch and Manvel Canal Ditch water rights) (annual payments increase to \$199,184 beginning in 2008) (note: accrued interest of \$220,966 was added to the note in 2002 and 2003)	3,070,426	199,184	3.00 %
Colorado Water Conservation Board - \$1,875,584 Note (Payable in annual installments of \$67,200, including interest at 3.0%, through 2044, for water rights of the Highland Irrigation Canal) (annual payments increase to \$89,297 beginning in 2015)	1,713,466	89,297	3.00 %
Colorado Water Conservation Board - \$2,272,500 Note (Payable in annual installments of \$108,575, including interest at 2.5%, through 2034, to purchase 50% of the Keesee I Ditch water rights)	1,626,328	108,575	2.50 %
Colorado Water Conservation Board - \$2,493,722 Note (Payable in annual installments of \$115,990, including interest at 2.3%, through 2038, to purchase 50% of the Keesee II Ditch water rights)	2,053,852	115,990	2.30 %
Total Long-Term Debt	8,464,072		
Less, Current Portion	(281,631)		
Principal Due after one year	\$ 8,182,441	\$ 513,046	Annual Debt Service

Appendix I

Map of West Farm Gravel Pit and related facilities



Legend

● Lamar Canal Features	— West Farm Lateral
⊙ Arkansas River Gaging Stations	— West Farm Augmentation Station
— Arkansas_River	— Lamar Canal
— West Farm Gravel Pit Inflow	▣ West Farm Gravel Pit Cell 1
— West Farm Gravel Pit Outflow	■ West Farm Gravel Pit

0 1,000 2,000 4,000

Scale in Feet

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Hendrix Wai
Engineering, Inc.

Job No.
L7510

File:
WFGP GLM.mxd

Date:
01/31/2019

Prepared For:
LAWMA

Appendix I

West Farm Gravel Pit Storage and related facilities

Copyright:© 2013 National Geographic Society, i-cubed

Appendix J

90-day Performance Test Results



J&T Consulting, Inc.

February 12, 2015

Colorado Division of Water Resources – Division 2
The Office of the State Engineer
Attention: Bill Tyner
310 E. Abriendo Avenue, Suite B
Pueblo, CO 81004

Subject: Slurry Wall 90-Day Performance Test Final Report
West Farm Gravel Pit Slurry Wall and Reservoir
Prowers County, Colorado

Dear Mr. Tyner:

On behalf of GP Aggregates, LLC, J&T Consulting, Inc. (JT) is submitting this performance report for the slurry wall that was constructed at the West Farm Gravel Pit in Prowers County, Colorado.

A description of the attached tables is listed below.

1. Table I – Piezometer Data & Groundwater Level Summary. This table along with the attached Monitoring Well Location Map provides the locations of the piezometers and the water level differences that were present on the site during the leak test.
2. Table II – Allowable Groundwater Flow. This table provides the input values that determined the allowable groundwater inflow (leakage rate) for the slurry wall based on the State Engineer Guidelines for Lining Criteria for Gravel Pits, August 1999.
3. Table III - Monthly Evaporation Data. Evaporative losses were determined using the National Oceanic and Atmospheric Administration's (NOAA) Technical Report NWS 33 "Evaporative Atlas for the Contiguous 48 United States" and are shown on this Table. The West Farm Gravel Pit location is subject to an annual evaporation of 60 inches per Map 3 of the report titled "Annual Free Water Surface Evaporation". A dewatering trench measuring 8 feet wide by 400 feet long was used to dewater the area inside the slurry wall and to maintain the water level inside the slurry wall throughout the duration of the test. An area of 3,200 square-feet corresponding to the exposed water surface area of the dewatering trench was used to calculate the evaporative losses during the test.
4. Table IV – Precipitation and Pumping Data. Precipitation data was taken from NOAA Weather Station GHCND: USC00054770 which is located approximately 2.5 miles west of the site. Daily climatological summaries for the test period are attached for your reference. JT estimated that 30 percent of the rain that fell upon the dry portions enclosed within the slurry wall contributed to the volume of water and 100 percent that fell on the open water portions within the slurry wall boundary contributed to the volume of water that affected the leak test. The overall area enclosed by the slurry wall is 39.4



acres. The area discussed above in the evaporation section was used for the open water area (3,200 square-feet = 0.0735 acres), with the remaining 39.32 acres of area being the dry portion of the site. Water was intermittently pumped from the dewatering trench to maintain the level of water inside the slurry wall. The pump totalizer was read at four intervals throughout the test. The pump totalizer reads in acre-feet units to the one-thousandth of an acre-foot (000.000). A pump totalizing flow meter re-verification test was done to certify the accuracy of the totalizer. A copy of the certification for the totalizer is attached for your reference.

5. Table V – Water Accounting. This table displays the amount of water on a daily interval that affected the leak test. Data from the site precipitation, evaporation, and pumping was used in the following equations to determine the leakage rate through and/or under the slurry wall and reservoir floor:
 - a) Total Outflow = Evaporation + Water Pumped Out
 - b) Leak Volume (Net Outflow) = Cumulative Outflow (Evaporation + Pumping)
– Cumulative Inflow (Precipitation)
 - c) Leakage Rate = Leak Volume converted to gallons per minute rate

A design standard leakage rate of 70.3 gallons per minute and a performance standard of 210.8 gallons per minute were calculated for this reservoir. The leak test exhibited an overall leakage rate of 53.3 gallons per minute. The starting date for the performance test was November 1, 2014 and the test was concluded on January 31, 2015, a period of 92 days. The leak test was performed over four periods with the overall leakage calculated over the start and end dates above.

The minimum 10-ft water level differential that is required during a leak test was achieved throughout the test as shown in Table I. The minimum water level differential that occurred during the test was 40.12 feet on November 1, 2014 between monitoring well I-1 and X-2.

The slurry wall appears to have passed the State regulations for the design standard during the test. Pending approval from the Office of the State Engineer, GP will now be responsible for providing monthly water accounting to the Office of the State Engineer, Colorado Division of Water Resources.

Please contact us if you have any questions or comments regarding this report.

Sincerely,



J.C. York, P.E.
Principal

Cc: GP Aggregates, LLC



Enclosures:

Monitoring Well Location Map

West Farm Pit Slurry Wall and Reservoir construction plans by J&T Consulting, Inc. dated May 30, 2013

Table I – Piezometer Data & Groundwater Level Summary

Table II – Allowable Groundwater Flow

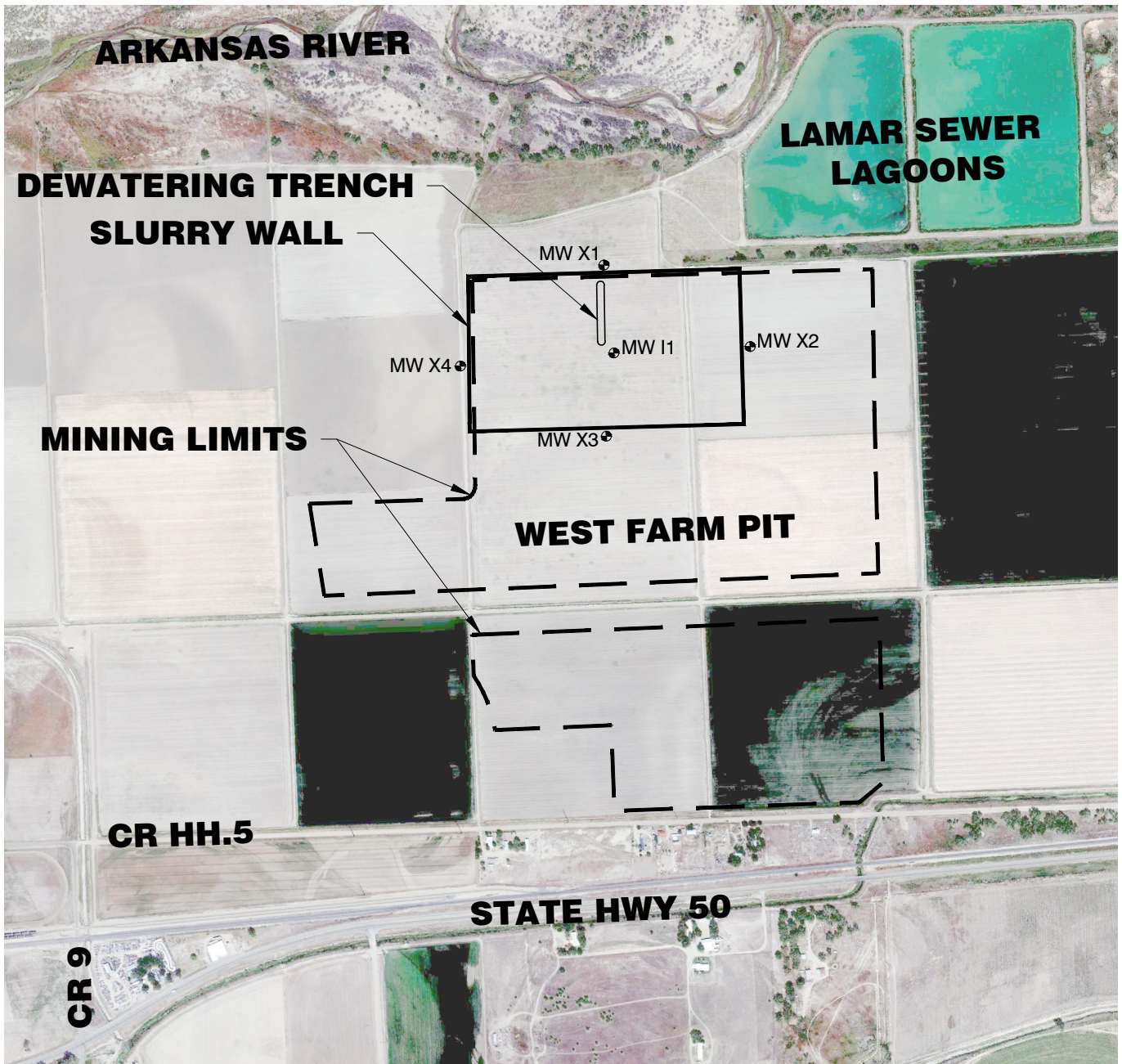
Table III – Monthly Evaporation Data

Table IV – Precipitation and Pumping Data

Table V – Water Accounting

NOAA Weather Station GHCND: USC00054770 climatological data

Pump totalizing flow meter re-verification test



LEGEND:

MW X3  MONITORING WELL LOCATION



1000 500 0 1000



SCALE IN FEET



J&T Consulting, Inc.

305 Denver Avenue - Suite D
Fort Lupton, CO 80621
303-857-6222

GP Aggregates, LLC
West Farm Pit
Monitoring Well Location Map

Date:	2/10/15
Job No:	07115
Drawn:	WSS
Scale:	1" = 1000'
Sheet: 1	Of: 1

GP RESOURCES, LLC

West Farm Pit

Slurry Wall & Reservoir Construction Plans

LOCATED IN

TOWNSHIP 22 SOUTH, RANGE 48 WEST, 6th P.M.

COUNTY of PROWERS, STATE of COLORADO

APRIL, 2013

ISSUED FOR CONSTRUCTION

GENERAL NOTES:

1.

THESE CONSTRUCTION PLANS ARE TO BE USED IN CONJUNCTION WITH THE TECHNICAL SPECIFICATIONS PREPARED BY J&T CONSULTING, INC., AND GEOTECHNICAL INVESTIGATION AND ENGINEERING DESIGN RECOMMENDATIONS PREPARED BY CESARE, INC.
2.

COMPLY WITH ALL REQUIREMENTS OF OWNER OBTAINED PROJECT PERMITS: INCLUDING, BUT NOT LIMITED TO, PERMITS FROM THE U.S. ARMY CORPS OF ENGINEERS AND COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT. CONTRACTOR SHALL OBTAIN ALL OTHER PERMITS NECESSARY FOR CONSTRUCTION OF THE WORK.
3.

PROTECT ALL EXISTING WETLANDS.
4.

THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION AND SEDIMENT CONTROL MEASURES AT ALL TIMES DURING CONSTRUCTION.
5.

ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE STATE OF COLORADO PERMITTING PROCESS FOR "STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY." FOR INFORMATION, PLEASE CONTACT THE COLORADO DEPARTMENT OF HEALTH, WATER QUALITY CONTROL DIVISION, 4300 CHERRY DRIVE SOUTH, DENVER, COLORADO 80246-1530. ATTENTION: PERMITS SECTION. PHONE 303-692-3500.
6.

IF DEWATERING IS REQUIRED, A STATE CONSTRUCTION DEWATERING DISCHARGE PERMIT IS REQUIRED FOR DISCHARGES TO A STORM SEWER, CHANNEL, IRRIGATION DITCH, ANY STREET THAT IS TRIBUTARY TO THE AFOREMENTIONED FACILITIES, OR ANY WATER OF THE UNITED STATES.
7.

PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT ALL UTILITIES TO COORDINATE SCHEDULES.
8.

THE CONTRACTOR SHALL REGULARLY PATROL THE PUBLIC LANDS ADJACENT TO THE PROJECT, REMOVE CONSTRUCTION DEBRIS AND KEEP AREAS CLEAN AND SAFE.
9.

THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND IMPLEMENTING A SEQUENCE AND SCHEDULE FOR COMPLETION OF THE WORK IN ACCORDANCE WITH APPLICABLE PROVISIONS OF THE CONTRACT DOCUMENTS.
10.

READ THOROUGHLY AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND INSTALLATION DETAILS FOR THIS RELATED WORK PRIOR TO CONSTRUCTION.
11.

VERIFY SITE ELEVATIONS PRIOR TO CONSTRUCTION.
12.

THE CONTRACTOR SHALL PROCURE ALL PERMITS AND LICENSES, PAY ALL CHARGES AND FEES INCLUDING, BUT NOT LIMITED TO, ALL INSPECTION CHARGES OF AGENCIES HAVING APPROPRIATE JURISDICTION.
13.

CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF ENTIRE PROJECT, AS SPECIFIED, UPON FINAL COMPLETION OF PROJECT.

SEDIMENT AND EROSION CONTROL:

1.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEDIMENT AND EROSION CONTROL AT THE SITE THROUGHOUT CONSTRUCTION.
2.

BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE USED AS NECESSARY TO ADDRESS SEDIMENT AND DUST FROM SITE DISTURBANCE. ADDITIONAL MEASURES MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER.
3.

BMP'S MAY INCLUDE, BUT ARE NOT LIMITED TO:

MINIMAL DISTURBANCE FOR MINIMAL TIME PERIODS

GRAVEL CONSTRUCTION ENTRIES

SILT FENCE, STRAW BALE OR SAND BAG BARRIERS, ROCK CHECK DAMS

STORM SEWER INLET PROTECTION

SEDIMENT CAPTURE PONDS

SITE WATERING FOR DUST SUPPRESSION
4.

BMP'S SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL INSPECT BMP'S WEEKLY AND AFTER SIGNIFICANT (GREATER THAN 0.1" PRECIPITATION) STORM EVENTS. THE MAINTENANCE AND REPAIR SHALL BE COMPLETED IN A TIMELY MANNER. SEDIMENT AND DEBRIS SHALL BE REMOVED WHEN THEY REACH HALF THE BMP HEIGHT OR IMPACT THE FUNCTION OF THE BMP.
5.

SOIL STOCKPILES SHALL BE PROTECTED FROM SEDIMENT TRANSPORT BY SURFACE ROUGHENING, WATERING AND PERIMETER SILT FENCING. SOILS THAT WILL BE STOCKPILED FOR MORE THAN 30 DAYS SHALL BE MULCHED AND SEEDED WITH A GRASS COVER WITHIN 14 DAYS OF STOCKPILE CONSTRUCTION.
6.

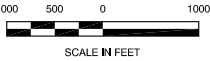
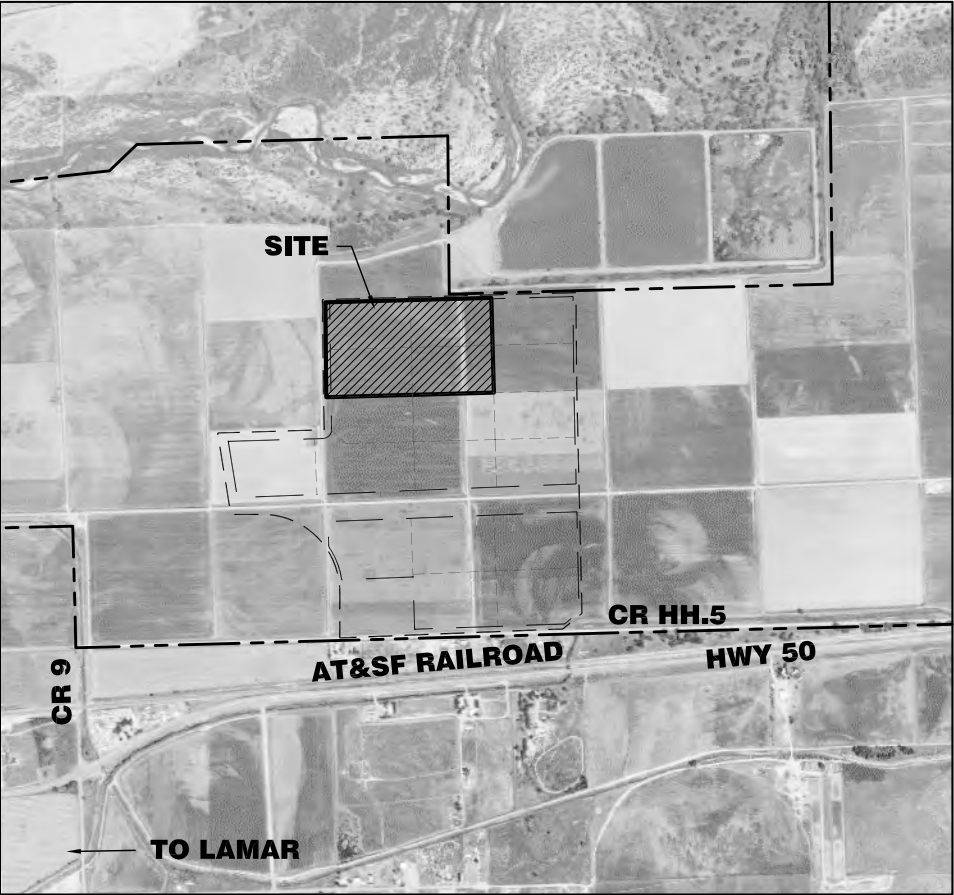
THE CONTRACTOR SHALL INSURE THAT ALL LOADS OF CUT AND FILL SOILS IMPORTED TO OR EXPORTED FROM THE SITE ARE PROPERLY LOADED AND COVERED TO PREVENT LOSS DURING TRANSPORT.
7.

THE CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, AND CONSTRUCTION DEBRIS RESULTING FROM THIS PROJECT FROM FLOWLINES AND PAVEMENT OF PUBLIC STREETS IN A TIMELY MANNER.
8.

SOILS EXPOSED DURING LAND DISTURBING ACTIVITY SHALL BE KEPT IN A ROUGHENED CONDITION BY RIPPING OR DISCING ALONG LAND CONTOURS UNTIL MULCH, VEGETATION OR OTHER PERMANENT EROSION CONTROL IS IN PLACE. NO SOILS SHALL REMAIN EXPOSED BY LAND DISTURBING ACTIVITY FOR MORE THAN THIRTY (30) DAYS BEFORE REQUIRED TEMPORARY OR PERMANENT EROSION CONTROL IS INSTALLED UNLESS OTHERWISE APPROVED.
9.

ALL TEMPORARY SEDIMENT CONTROLS WILL BE REMOVED WITHIN 30 DAYS AFTER THE FINAL STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, WHICHEVER OCCURS FIRST.
10.

NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHENEVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.



VICINITY MAP
SCALE 1" = 1000



OWNER

GP Resources, LLC
Karl Nyquist
7991 Shaffer Parkway, Ste. 200
Littleton, CO 80127
303-369-5100

ENGINEER

J&T Consulting, Inc.
J.C. York
305 Denver Ave., Ste. D
Fort Lupton, CO 80621
303-857-6222
Fax: 303-857-6224

SURVEYOR

Bear Creek Surveying, Inc.
402 Santa Fe Ave., Ste. 108
La Junta, CO 81050
303-659-1532

GEOTECHNICAL/SOIL INVESTIGATIONS

Cesare, Inc.
7108 S. Alton Way, Bldg. B
Centennial, CO 80112
303-220-0300



Know what's below.
Call before you dig.

SHEET INDEX

- 1

Cover Sheet
- 2

Geotechnical Information
- 3

Site, Reservoir Grading, & Boring Location Plan
- 4

Slurry Wall Horizontal & Vertical Control
- 5-9

Slurry Wall Plan and Profiles

LEGEND:

- PROPERTY LINE
- SECTION LINE
- X-X-

FENCE LINE
- OE---

OVERHEAD ELECTRIC LINES
- T---

UNDERGROUND TELECOM LINE
- G---

UNDERGROUND GAS LINE
- SAN FM---

EXISTING SANITARY FORCE MAIN
- MINING LIMIT
- DIRT ROAD
- EXISTING WATER/DITCH
- EXISTING CONTOURS
- PROPOSED CONTOURS
- FUTURE HIGHWAY REALIGNMENT PARCEL
- PERMIT BOUNDARY
- ⊠

ELECTRIC RISER BOX
- ↑

GUY WIRE
- ⊙

POWER POLE
- ⊙

WATER PUMP
- PHASE LIMITS
- ⊕

BORING LOCATION
- SLURRY WALL DELINEATION POST

Engineer's Certification

I hereby certify that these plans for the construction of the West Farm Pit Slurry Wall and Reservoir were prepared by me or under my direct supervision for GP Resources, LLC.

James C. York, P.E.
Colorado Registration No. 36846

J&T Consulting, Inc.



305 Denver Avenue - Suite D
Fort Lupton, CO 80621
Ph: 303-857-6222 Fax: 303-857-6224
www.jtconsulting.com

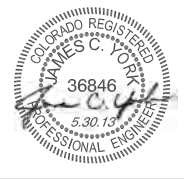
Slurry Wall & Reservoir
Construction Plans

Cover Sheet

GP Resources, LLC

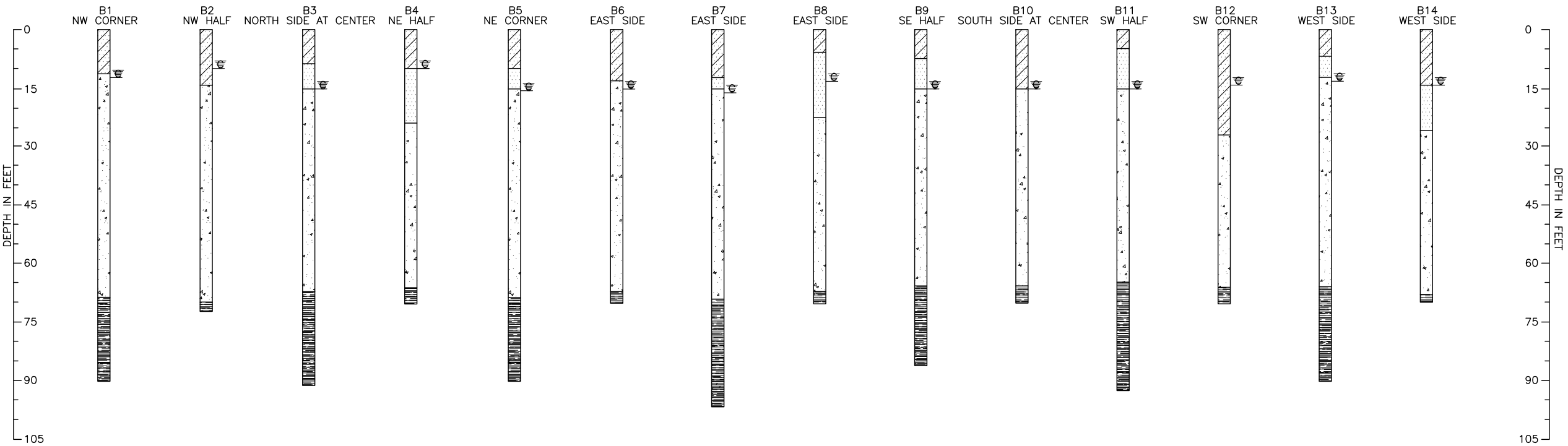
West Farm Pit

REVISIONS				Description
No.	Date	By	Chk	



Job #	07115
Date	4/1/13
Drawn By	WSS
Designed By	TPY
Checked By	JCY
File	JT-Cover sheet
Scale	As Shown

Sheet: 1 of 9



SYMBOL DESCRIPTION

Strata symbols



CLAY, sandy to SAND, clayey, medium to high plasticity (clay, fine to medium grained (sand), moist to very moist, light brown (CL to SC)



SAND with silt and gravel, poorly graded, moist to wet, light brown (SP to SM-SP)



SAND, gravelly to GRAVEL, sandy, poorly to well graded, wet, light brown to brown (SP, SW, GP, GW)



SHALE (top 2 to 5 feet weathered), thinly bedded, with Sandstone and Limestone lenses, Bentonite seams, cemented (calcite), slightly moist to moist, light gray to gray.



Water table during drilling



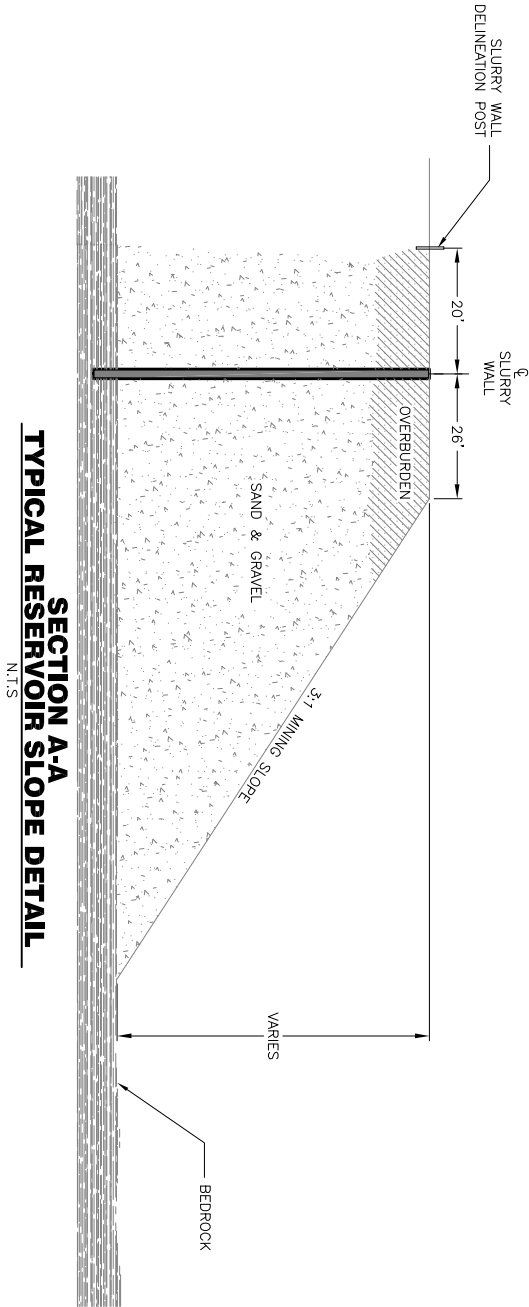
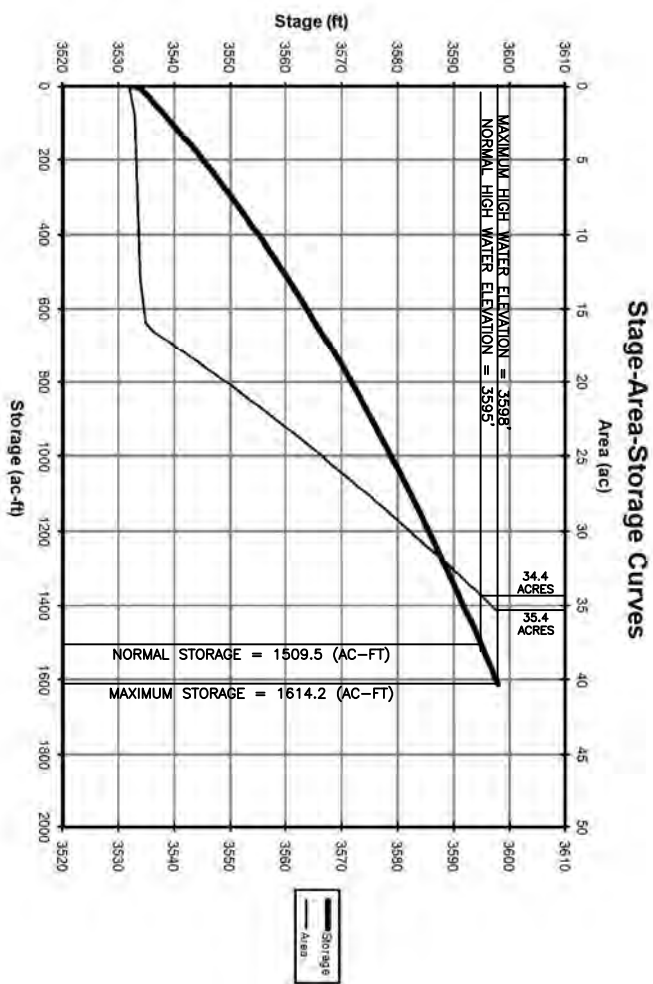
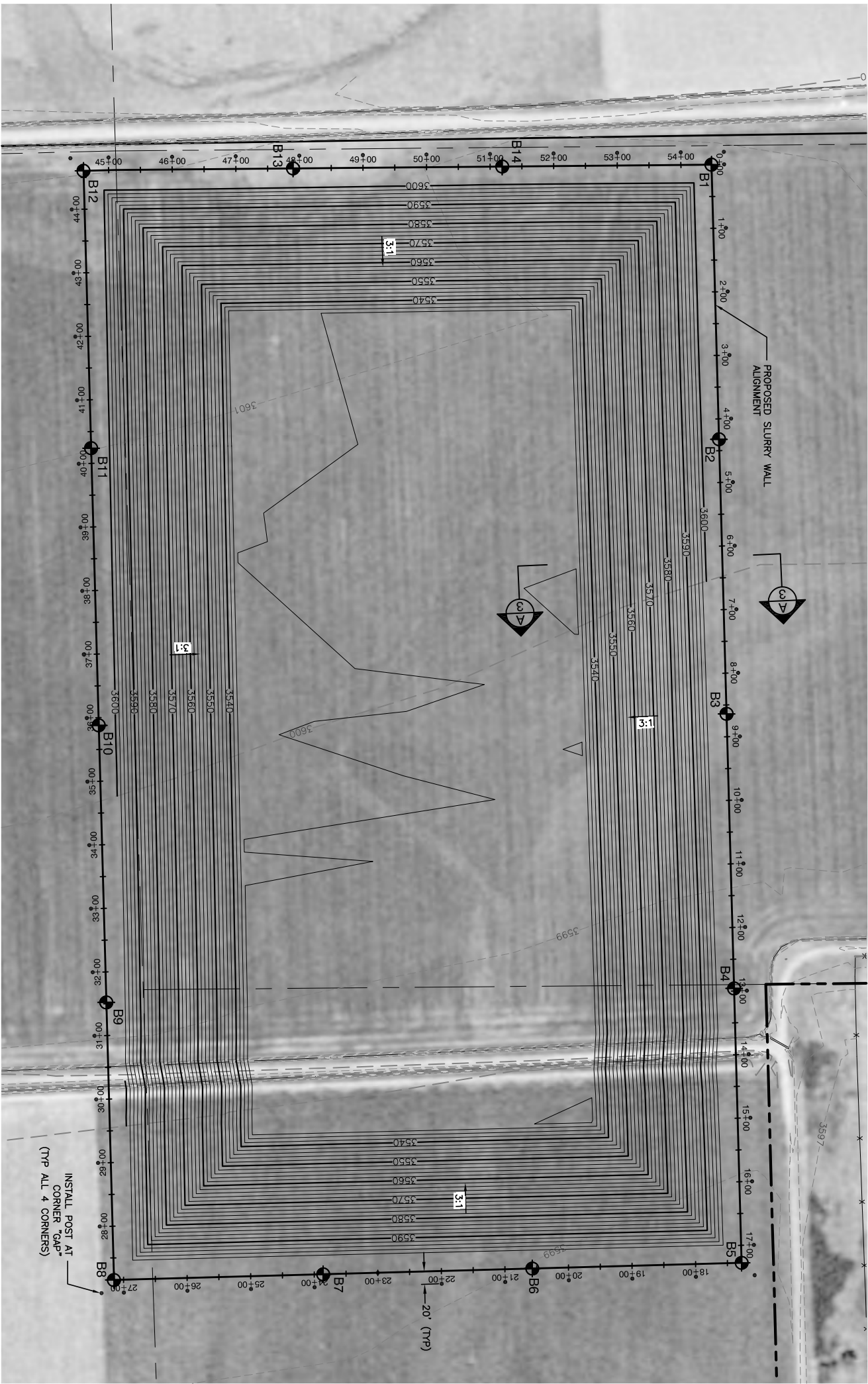
Depth to caving

- NOTES;
- EXPLORATORY BORINGS WERE DRILLED ON JULY 18, 2011.
 - BORING LOCATIONS WERE SURVEYED BY OTHERS PRIOR TO DRILLING.
 - THESE LOGS ARE SUBJECT TO LIMITATIONS, CONCLUSIONS, AND RECOMMENDATIONS IN THE GEOTECHNICAL REPORT BY J.A. CESARE AND ASSOCIATES DATED AUGUST 10, 2011.

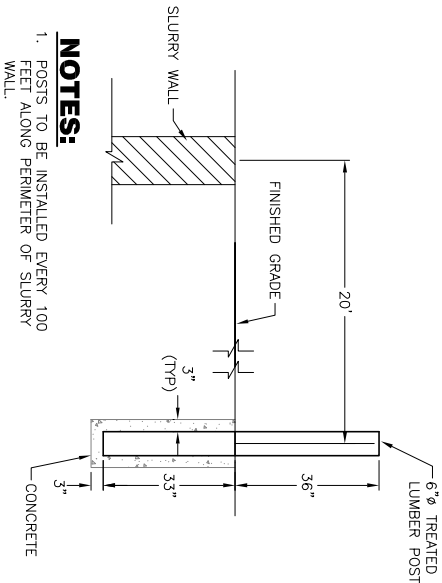
REVISIONS				Description	
No	Date	By	Chk		



Job #	07115
Date	4/1/13
Drawn By	WSS
Designed By	TPY
Checked By	JCY
File	JT-Slurry Wall
Scale	N.T.S.



LEGEND:	
	PROPERTY LINE
	SECTION LINE
	FENCE LINE
	DIRT ROAD
	EXISTING WATER/DITCH
	EXISTING CONTOURS
	PROPOSED CONTOURS



- NOTES:**
1. POSTS TO BE INSTALLED EVERY 100 FEET ALONG PERIMETER OF SLURRY WALL.
 2. POSTS TO BE SET 20 FEET OUTSIDE SLURRY WALL ALIGNMENT.
 3. POSTS TO BE INSTALLED AT THE 4 CORNER "GAPS."

SLURRY WALL DELINEATION POST

N.T.S.

ISSUED FOR CONSTRUCTION



J&T Consulting, Inc.
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Fort Lupton, CO 80621
Ph: 303-857-6222 Fax: 303-857-6224
www.jtconsulting.com

**Slurry Wall & Reservoir
Construction Plans**
Site, Reservoir Grading, &
Boring Location Plan

GP Resources, LLC
West Farm Pit

REVISIONS				
No	Date	By	Chk	Description



J&T #	07115
Date	4/11/13
Drawn By	WSS
Designed By	TPV
Checked By	JCY
File	JT-Slurry Grading
Scale	1" = 300'

Sheet: 3 9



POINT	NORTH	EAST	ELEVATION	DESCRIPTION
43	1532536.60	3841355.78	3603.08	SRB BC-1
44	1536020.82	3841335.50	3598.39	FND RBR / ERC CP 03
45	1534550.77	3838397.50	3603.44	FND ALC 1.5 12103
46	1532302.28	3838489.68	3603.95	FND ALC 3.5 30087
47	1532225.34	3835849.49	3609.79	FND ALC 1.5 1/4 COR
5000	1533830.08	3839941.53	3603.75	AWCP1
28904	1535991.32	3840169.18	3598.68	AWCP2
28905	1535857.36	3838372.08	3603.82	AWCP3

ISSUED FOR CONSTRUCTION

REVISIONS				
No	Date	By	Chk	Description

GP Resources, LLC

West Farm Pit

Slurry Wall & Reservoir
Construction Plans

Horizontal & Vertical Control

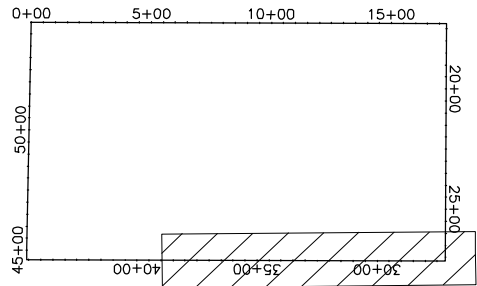
J&T Consulting, Inc.

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Ph: 303-857-6222 Fax: 303-857-6224
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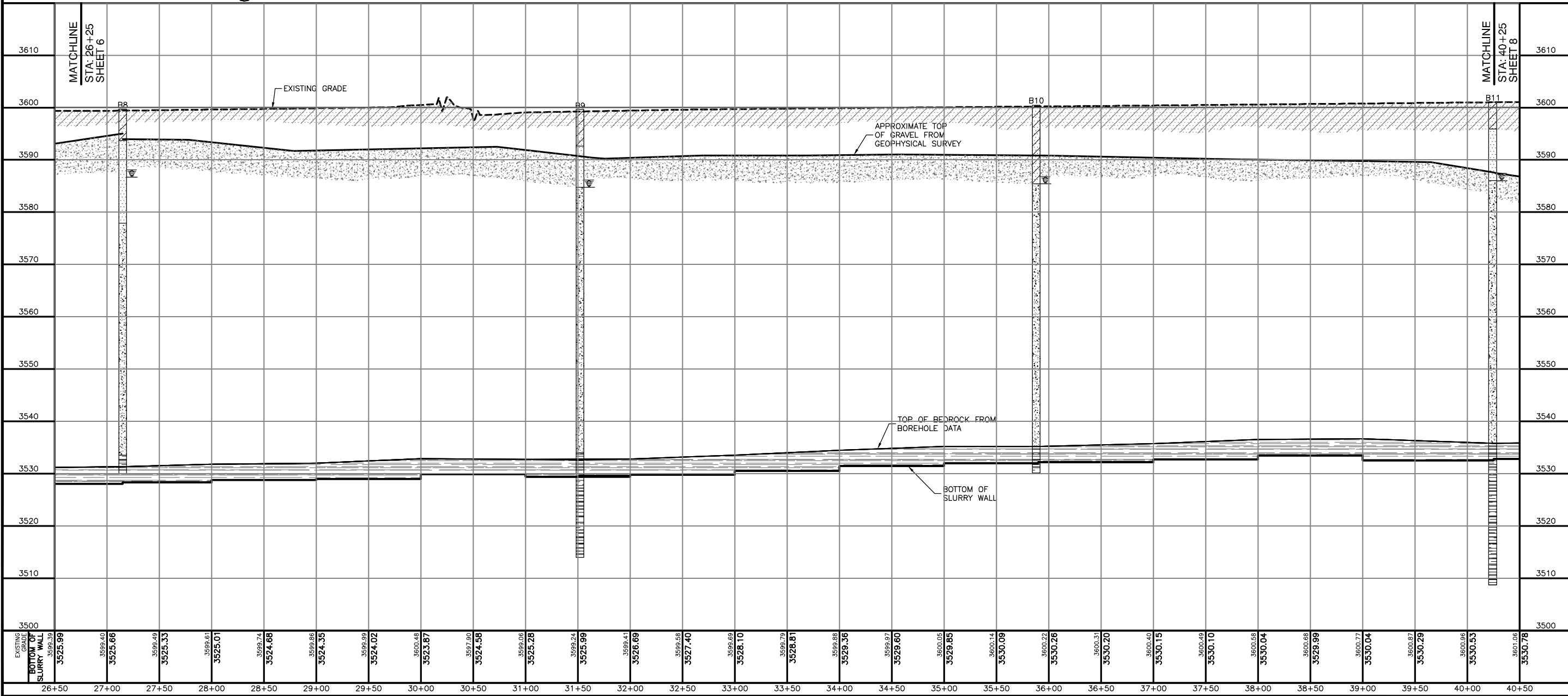
Job #	071115
Date	4/1/13
Drawn By	WSS
Designed By	TPY
Checked By	JCY
Title	JT-Slurry Wall
Scale	1" = 300'

Sheet: 4 of 9



STATION	DEPTH TO TOP OF BEDROCK (FT.)	EXISTING GRADE (EL.)	TOP OF BEDROCK (EL.)	SLURRY WALL SEGMENT	DEPTH TO BOTTOM OF SLURRY WALL SEGMENT (FT.)	BOTTOM OF SLURRY WALL SEGMENT (EL.)
27+15	68.00	3599.40	3531.40	27+15 TO 28+00	71.00	3528.40
28+00	67.80	3599.61	3531.81	28+00 TO 29+00	70.80	3528.81
29+00	67.80	3599.86	3532.06	29+00 TO 30+00	70.80	3529.06
30+00	67.60	3600.48	3532.88	30+00 TO 31+00	70.60	3528.46
31+00	66.30	3599.06	3532.76	31+00 TO 31+50	69.60	3529.46
31+50	66.60	3599.24	3532.64	31+50 TO 32+00	69.60	3529.64
32+00	66.60	3599.41	3532.81	32+00 TO 33+00	69.60	3529.81
33+00	66.10	3599.69	3533.59	33+00 TO 34+00	69.10	3530.59
34+00	65.40	3599.88	3534.48	34+00 TO 35+00	68.40	3531.48
35+00	64.80	3600.05	3535.25	35+00 TO 35+90	68.00	3532.05
35+90	65.00	3600.22	3535.22	35+90 TO 37+00	68.00	3532.22
37+00	64.60	3600.40	3535.80	37+00 TO 38+00	67.60	3532.80
38+00	64.00	3600.58	3536.58	38+00 TO 39+00	67.10	3533.48
39+00	64.10	3600.77	3536.67	39+00 TO 40+25	68.20	3532.57
40+25	65.20	3601.01	3535.81	40+25 TO 41+00	68.20	3532.81

ISSUED FOR CONSTRUCTION

[illegible]

Job #	07115
Date	4/1/13
Drawn By	WSS
Designed By	TPY
Checked By	JCY
File	JT- <u>Slurry profile</u>
Scale	1" = 50'h/10'v
Sheet:	Of:

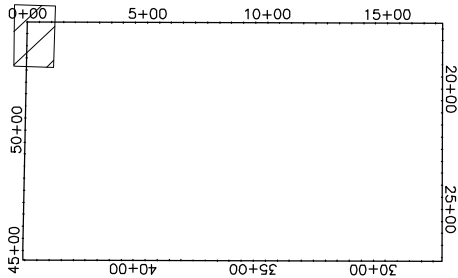
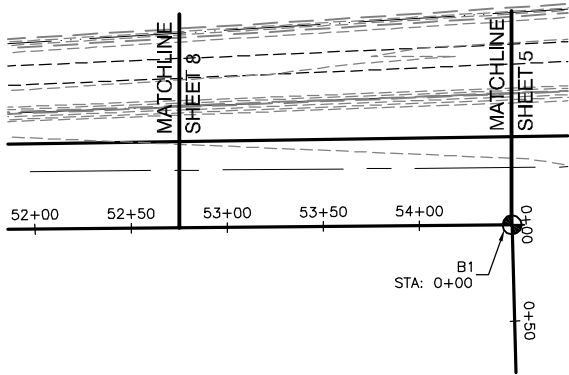
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Ph: 303-857-6222 Fax: 303-857-6224
www.j-tconsulting.com

Slurry Wall & Reservoir Construction Plans

Slurry Wall Plan and Profile
Sta: 27+00 to 40+50

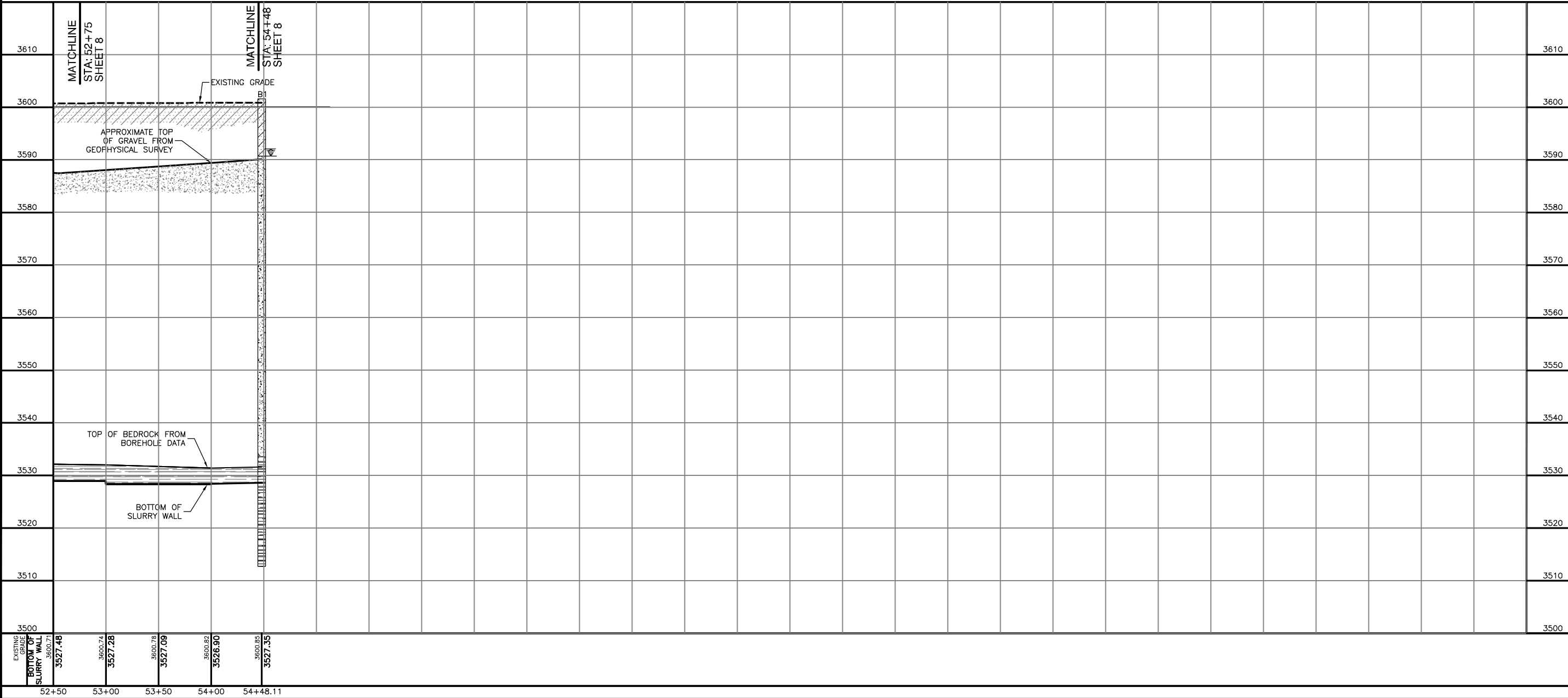
GP Resources, LLC

West Farm Pit



KEY MAP

STATION	DEPTH TO TOP OF BEDROCK (FT.)	EXISTING GRADE (EL)	TOP OF BEDROCK (EL)	SLURRY WALL SEGMENT	DEPTH TO BOTTOM OF SLURRY WALL SEGMENT (FT.)	BOTTOM OF SLURRY WALL SEGMENT (EL)
52+00	68.40	3600.67	3532.27	52+00 TO 53+00	71.70	3528.97
53+00	68.70	3600.74	3532.04	53+00 TO 54+00	72.40	3528.34
54+00	69.40	3600.82	3531.42	54+00 TO 54+48	72.40	3528.42
54+48	69.20	3600.85	3531.65	54+48	72.20	3528.65



REVISIONS				Description			
No.	Date	By	Chk	JCY	ALS	REVISED TOP OF BEDROCK AND BOTTOM OF SLURRY WALL	
1	5/30/13						



Job #	07115
Date	4/1/13
Drawn By	WSS
Designed By	TPY
Checked By	JCY
File	JT-Slurry profile
Scale	1" = 50h/10v

Well Designation	I-1			X-1				X-2				X-3				X-4			
Description	Interior - Center of Wall Area			Exterior - Sta 9+10 - 20' North of Wall				Exterior - Sta 22+20 - 20' East of Wall				Exterior - Sta 36+00 - 15' South of Wall				Exterior - Sta 49+50 - 30' West of Wall			
Top of Well Height (in)	40.25			40.5				38				39				40			
Top of Well Height (ft)	3.35			3.38				3.17				3.25				3.33			
Ground Elevation	3599.90			3599.47				3599.07				3600.23				3601.36			
Date	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Change in Groundwater Level vs I-1 (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Change in Groundwater Level vs I-1 (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Change in Groundwater Level vs I-1 (ft)	Depth to Groundwater from Top of Well (ft)	Depth to Groundwater from Ground (ft)	Elevation of Groundwater (ft)	Change in Groundwater Level vs I-1 (ft)
August 30, 2014	39.10	35.75	3564.15	9.88	6.50	3592.97	28.82	9.85	6.68	3592.39	28.24	7.90	4.65	3595.58	31.43	8.84	5.51	3595.85	31.70
September 6, 2014	39.90	36.55	3563.35	10.15	6.77	3592.70	29.35	10.05	6.88	3592.19	28.84	8.02	4.77	3595.46	32.11	9.15	5.82	3595.54	32.19
September 13, 2014	42.93	39.58	3560.32	10.20	6.82	3592.65	32.33	10.27	7.10	3591.97	31.65	8.05	4.80	3595.43	35.11	9.23	5.90	3595.46	35.14
September 20, 2014	46.30	42.95	3556.95	10.38	7.00	3592.47	35.52	10.52	7.35	3591.72	34.77	8.25	5.00	3595.23	38.28	9.48	6.15	3595.21	38.26
September 27, 2014	NO READING			NO READING				NO READING				NO READING				NO READING			
October 4, 2014	47.17	43.82	3556.08	10.56	7.18	3592.29	36.21	10.65	7.48	3591.59	35.51	8.54	5.29	3594.94	38.86	9.71	6.38	3594.98	38.90
October 11, 2014	47.84	44.49	3555.41	10.52	7.14	3592.33	36.92	10.69	7.52	3591.55	36.14	8.48	5.23	3595.00	39.59	9.63	6.30	3595.06	39.65
October 18, 2014	48.75	45.40	3554.50	10.48	7.10	3592.37	37.87	11.06	7.89	3591.18	36.68	8.38	5.13	3595.10	40.60	9.64	6.31	3595.05	40.55
October 25, 2018	51.50	48.15	3551.75	10.39	7.01	3592.46	40.71	10.47	7.30	3591.77	40.02	8.40	5.15	3595.08	43.33	9.84	6.51	3594.85	43.10
November 1, 2014	51.88	48.53	3551.37	10.64	7.26	3592.21	40.84	10.75	7.58	3591.49	40.12	8.45	5.20	3595.03	43.66	9.78	6.45	3594.91	43.54
November 6, 2014	54.25	50.90	3549.00	10.45	7.07	3592.40	43.40	10.88	7.71	3591.36	42.36	8.65	5.40	3594.83	45.83	9.91	6.58	3594.78	45.78
November 15, 2014	53.63	50.28	3549.62	10.57	7.19	3592.28	42.66	10.89	7.72	3591.35	41.73	8.63	5.38	3594.85	45.23	9.95	6.62	3594.74	45.12
November 22, 2014	53.98	50.63	3549.27	10.61	7.23	3592.24	42.97	10.91	7.74	3591.33	42.06	8.70	5.45	3594.78	45.51	10.05	6.72	3594.64	45.37
November 29, 2014	54.30	50.95	3548.95	10.68	7.30	3592.17	43.22	11.12	7.95	3591.12	42.17	8.90	5.65	3594.58	45.63	10.12	6.79	3594.57	45.62
December 6, 2014	54.05	50.70	3549.20	10.73	7.35	3592.12	42.92	11.07	7.90	3591.17	41.97	8.95	5.70	3594.53	45.33	10.19	6.86	3594.50	45.30
December 13, 2014	54.20	50.85	3549.05	10.74	7.36	3592.11	43.06	11.10	7.93	3591.14	42.09	8.97	5.72	3594.51	45.46	13.28	9.95	3591.41	42.36
December 19, 2014	54.35	51.00	3548.90	10.78	7.40	3592.07	43.17	11.17	8.00	3591.07	42.17	9.04	5.79	3594.44	45.54	10.33	7.00	3594.36	45.46
December 27, 2014	54.45	51.10	3548.80	10.82	7.44	3592.03	43.23	11.26	8.09	3590.98	42.18	9.11	5.86	3594.37	45.57	10.35	7.02	3594.34	45.54
January 3, 2015	54.65	51.30	3548.60	10.88	7.50	3591.97	43.37	11.37	8.20	3590.87	42.27	9.20	5.95	3594.28	45.68	10.43	7.10	3594.26	45.66
January 10, 2015	54.65	51.30	3548.60	10.89	7.51	3591.96	43.36	11.47	8.30	3590.77	42.17	9.25	6.00	3594.23	45.63	10.43	7.10	3594.26	45.66
January 16, 2015	54.70	51.35	3548.55	10.87	7.49	3591.98	43.43	11.48	8.31	3590.76	42.21	9.35	6.10	3594.13	45.58	10.48	7.15	3594.21	45.66
January 21, 2015	54.69	51.34	3548.56	10.94	7.56	3591.91	43.35	11.56	8.39	3590.68	42.12	9.37	6.12	3594.11	45.55	10.55	7.22	3594.14	45.58
January 31, 2015	54.65	51.30	3548.60	11.03	7.65	3591.82	43.22	11.53	8.36	3590.71	42.11	9.40	6.15	3594.08	45.48	10.72	7.39	3593.97	45.37

Indicates Overall Test Period (92 days)



Length of the perimeter slurry wall constructed to full height.	5,448	
Average vertical depth of the perimeter slurry wall as measured from the ground surface to the top of bedrock.	67	
Area of the natural bedrock bounded by the perimeter slurry wall constructed to full height.	1,716,060	(39.40 acres)
Resulting area affected by the precipitation. 30% credit to the 39.32 dry acres and 100% to the 0.0735 acres of water.	517,058	

Groundwater Inflow through Perimeter slurry wall

Design		Performance	
q (cu.ft./day/sq.ft.)=	0.03	q (cu.ft./day/sq.ft.)=	0.09
Area (sq.ft.)=	365,016	Area (sq.ft.)=	365,016
Q (cu.ft./day)=	10,950	Q (cu.ft./day)=	32,851
Q (gpm)=	57	Q (gpm)=	171

q = flow rate per unit area
Area = total vertical area of slurry wall
Q = total flow rate

Groundwater Inflow through Natural Bedrock Pit Bottom

Design		Performance	
q (cu.ft./day/sq.ft.)=	0.0015	q (cu.ft./day/sq.ft.)=	0.0045
Area (sq.ft.)=	1,716,060	Area (sq.ft.)=	1,716,060
Q (cu.ft./day)=	2,574	Q (cu.ft./day)=	7,722
Q (gpm)=	13	Q (gpm)=	40

q = flow rate per unit area
Area = total area of pit bottom
Q = total flow rate

Total Allowable Groundwater Inflow

Design Standard	13,525	cubic feet per day
	1,244,260	cubic-feet in 92 days
	70.3	gallons per minute
	9,308,312	gallons in 92 days
Performance Standard	40,574	cubic feet per day
	3,732,781	cubic-feet in 92 days
	210.8	gallons per minute
	27,924,937	gallons in 92 days



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Slurry Wall Leak Test

2/12/2015

Monthly Evaporation Data
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TABLE III

Month	Percent of Total Evaporation	Monthly Evaporation (CF/SF)	Daily Evaporation (CF/SF)	Daily Evaporation (CF)
January	3.0%	0.15	0.0048	15.5
February	3.5%	0.18	0.0063	20.0
March	5.5%	0.28	0.0089	28.4
April	9.0%	0.45	0.0150	48.0
May	12.0%	0.60	0.0194	61.9
June	14.5%	0.73	0.0242	77.3
July	15.0%	0.75	0.0242	77.4
August	13.5%	0.68	0.0218	69.7
September	10.0%	0.50	0.0167	53.3
October	7.0%	0.35	0.0113	36.1
November	4.0%	0.20	0.0067	21.3
December	3.0%	0.15	0.0048	15.5
	100.0%	5.00		

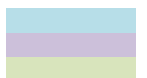
60 Annual Free Water Surface Evaporation (Shallow Lake) (inches)
5.00 Annual Free Water Surface Evaporation (Shallow Lake) (feet)
3,200 Water Surface exposed (8ft x 400 ft trench) with water elevation at 3549 feet (square-feet)



Date	Test Day	Precipitation Data	Pump Totalizer Data				Total Pumped (cu-ft)
		NOAA Weather Station GHCND:USC00054770 Rainfall (in)	Previous Period Pump Totalizer Reading (ac-ft)(reading)	Previous Period Pump Totalizer Reading (cu-ft)(calculated)	This Period Pump Totalizer Reading (ac-ft)(reading)	This Period Pump Totalizer Reading (cu-ft)(calculated)	
31-Oct-14	0	0.00			192.897	8,402,593	
1-Nov-14	1	0.00					
2-Nov-14	2	0.00					
3-Nov-14	3	0.02					
4-Nov-14	4	0.00					
5-Nov-14	5	0.00					
6-Nov-14	6	0.00					
7-Nov-14	7	0.00					
8-Nov-14	8	0.00					
9-Nov-14	9	0.00					
10-Nov-14	10	0.00					
11-Nov-14	11	0.10					
12-Nov-14	12	0.03					
13-Nov-14	13	0.05					
14-Nov-14	14	0.00					
15-Nov-14	15	0.00					
16-Nov-14	16	0.12					
17-Nov-14	17	0.00					
18-Nov-14	18	0.00					
19-Nov-14	19	0.00					
20-Nov-14	20	0.00					
21-Nov-14	21	0.00					
22-Nov-14	22	0.00					
23-Nov-14	23	0.00					
24-Nov-14	24	0.00					
25-Nov-14	25	0.00					
26-Nov-14	26	0.00					
27-Nov-14	27	0.00					
28-Nov-14	28	0.00					
29-Nov-14	29	0.00					
30-Nov-14	30	0.00	192.897	8,402,593	199.561	8,692,877	290,284
1-Dec-14	31	0.00					
2-Dec-14	32	0.00					
3-Dec-14	33	0.00					
4-Dec-14	34	0.00					
5-Dec-14	35	0.00					
6-Dec-14	36	0.00					
7-Dec-14	37	0.00					
8-Dec-14	38	0.00					
9-Dec-14	39	0.00					
10-Dec-14	40	0.00					
11-Dec-14	41	0.00					
12-Dec-14	42	0.00					
13-Dec-14	43	0.00					
14-Dec-14	44	0.00					
15-Dec-14	45	0.15					
16-Dec-14	46	0.00					
17-Dec-14	47	0.00					
18-Dec-14	48	0.00	199.561	8,692,877	205.033	8,931,237	238,360



Date	Test Day	Precipitation Data	Pump Totalizer Data				Total Pumped (cu-ft)
		NOAA Weather Station GHCND:USC00054770 Rainfall (in)	Previous Period Pump Totalizer Reading (ac-ft)(reading)	Previous Period Pump Totalizer Reading (cu-ft)(calculated)	This Period Pump Totalizer Reading (ac-ft)(reading)	This Period Pump Totalizer Reading (cu-ft)(calculated)	
19-Dec-14	49	0.00					
20-Dec-14	50	0.00					
21-Dec-14	51	0.00					
22-Dec-14	52	0.00					
23-Dec-14	53	0.00					
24-Dec-14	54	0.00					
25-Dec-14	55	0.00					
26-Dec-14	56	0.00					
27-Dec-14	57	0.03					
28-Dec-14	58	0.00					
29-Dec-14	59	0.00					
30-Dec-14	60	0.25					
31-Dec-14	61	0.00					
1-Jan-15	62	0.00					
2-Jan-15	63	0.00					
3-Jan-15	64	0.00					
4-Jan-15	65	0.05					
5-Jan-15	66	0.00					
6-Jan-15	67	0.00	205.033	8,931,237	210.982	9,190,376	259,138
7-Jan-15	68	0.00					
8-Jan-15	69	0.00					
9-Jan-15	70	0.00					
10-Jan-15	71	0.00					
11-Jan-15	72	0.00					
12-Jan-15	73	0.00					
13-Jan-15	74	0.00					
14-Jan-15	75	0.00					
15-Jan-15	76	0.00					
16-Jan-15	77	0.00					
17-Jan-15	78	0.00					
18-Jan-15	79	0.00					
19-Jan-15	80	0.00					
20-Jan-15	81	0.00					
21-Jan-15	82	0.00					
22-Jan-15	83	0.12					
23-Jan-15	84	0.00					
24-Jan-15	85	0.00					
25-Jan-15	86	0.00					
26-Jan-15	87	0.00					
27-Jan-15	88	0.00					
28-Jan-15	89	0.00					
29-Jan-15	90	0.00					
30-Jan-15	91	0.00					
31-Jan-15	92	0.15	210.982	9,190,376	215.160	9,372,370	181,994
Totals		1.07					969,776



Indicates Test Period 1
Indicates Test Period 2
Indicates Test Period 3

Indicates Test Period 4
Indicates Overall Test Period (92 days)



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Slurry Wall Leak Test
2/12/2015

TABLE V

Date	Inflow Volumes				Outflow Volumes					Leak Volume (per pump cycle)		Leak Rate (per pump cycle)
	Precipitation		Daily Inflow (cu-ft)	Cumulative Inflow (cu-ft)	Evaporation		Pumping		Cumulative Outflow (cu-ft)	Net Outflow (cu-ft)	Net Outflow (gal)	(gpm)
	(in)	(ft)			Daily (cu-ft)	Cumulative (cu-ft)	Water Pumped Out (cu-ft)	Total Outflow (cu-ft)				
01-Nov-14	0.00	0.00	0	0	21.3	21.3	0	21	21			
02-Nov-14	0.00	0.00	0	0	21.3	42.7	0	43	64			
03-Nov-14	0.02	0.00	862	862	21.3	64.0	0	64	128			
04-Nov-14	0.00	0.00	0	862	21.3	85.3	0	85	213			
05-Nov-14	0.00	0.00	0	862	21.3	106.7	0	107	320			
06-Nov-14	0.00	0.00	0	862	21.3	128.0	0	128	448			
07-Nov-14	0.00	0.00	0	862	21.3	149.3	0	149	597			
08-Nov-14	0.00	0.00	0	862	21.3	170.7	0	171	768			
09-Nov-14	0.00	0.00	0	862	21.3	192.0	0	192	960			
10-Nov-14	0.00	0.00	0	862	21.3	213.3	0	213	1,173			
11-Nov-14	0.10	0.01	4,309	5,171	21.3	234.7	0	235	1,408			
12-Nov-14	0.03	0.00	1,293	6,463	21.3	256.0	0	256	1,664			
13-Nov-14	0.05	0.00	2,154	8,618	21.3	277.3	0	277	1,941			
14-Nov-14	0.00	0.00	0	8,618	21.3	298.7	0	299	2,240			
15-Nov-14	0.00	0.00	0	8,618	21.3	320.0	0	320	2,560			
16-Nov-14	0.12	0.01	5,171	13,788	21.3	341.3	0	341	2,901			
17-Nov-14	0.00	0.00	0	13,788	21.3	362.7	0	363	3,264			
18-Nov-14	0.00	0.00	0	13,788	21.3	384.0	0	384	3,648			
19-Nov-14	0.00	0.00	0	13,788	21.3	405.3	0	405	4,053			
20-Nov-14	0.00	0.00	0	13,788	21.3	426.7	0	427	4,480			
21-Nov-14	0.00	0.00	0	13,788	21.3	448.0	0	448	4,928			
22-Nov-14	0.00	0.00	0	13,788	21.3	469.3	0	469	5,397			
23-Nov-14	0.00	0.00	0	13,788	21.3	490.7	0	491	5,888			
24-Nov-14	0.00	0.00	0	13,788	21.3	512.0	0	512	6,400			
25-Nov-14	0.00	0.00	0	13,788	21.3	533.3	0	533	6,933			
26-Nov-14	0.00	0.00	0	13,788	21.3	554.7	0	555	7,488			
27-Nov-14	0.00	0.00	0	13,788	21.3	576.0	0	576	8,064			
28-Nov-14	0.00	0.00	0	13,788	21.3	597.3	0	597	8,661			
29-Nov-14	0.00	0.00	0	13,788	21.3	618.7	0	619	9,280			
30-Nov-14	0.00	0.00	0	13,788	21.3	640.0	290,284	290,924	300,204	286,416	2,142,675	49.6



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West Farm Pit - Lamar, CO

Slurry Wall Leak Test
2/12/2015

TABLE V

Date	Inflow Volumes				Outflow Volumes					Leak Volume (per pump cycle)		Leak Rate (per pump cycle)
	Precipitation		Daily Inflow (cu-ft)	Cumulative Inflow (cu-ft)	Evaporation		Pumping		Cumulative Outflow (cu-ft)	Net Outflow (cu-ft)	Net Outflow (gal)	(gpm)
	(in)	(ft)			Daily (cu-ft)	Cumulative (cu-ft)	Water Pumped Out (cu-ft)	Total Outflow (cu-ft)				
01-Dec-14	0.00	0.00	0	0	15.5	15.5	0	15	15			
02-Dec-14	0.00	0.00	0	0	15.5	31.0	0	31	46			
03-Dec-14	0.00	0.00	0	0	15.5	46.5	0	46	93			
04-Dec-14	0.00	0.00	0	0	15.5	61.9	0	62	155			
05-Dec-14	0.00	0.00	0	0	15.5	77.4	0	77	232			
06-Dec-14	0.00	0.00	0	0	15.5	92.9	0	93	325			
07-Dec-14	0.00	0.00	0	0	15.5	108.4	0	108	434			
08-Dec-14	0.00	0.00	0	0	15.5	123.9	0	124	557			
09-Dec-14	0.00	0.00	0	0	15.5	139.4	0	139	697			
10-Dec-14	0.00	0.00	0	0	15.5	154.8	0	155	852			
11-Dec-14	0.00	0.00	0	0	15.5	170.3	0	170	1,022			
12-Dec-14	0.00	0.00	0	0	15.5	185.8	0	186	1,208			
13-Dec-14	0.00	0.00	0	0	15.5	201.3	0	201	1,409			
14-Dec-14	0.00	0.00	0	0	15.5	216.8	0	217	1,626			
15-Dec-14	0.15	0.01	6,463	6,463	15.5	232.3	0	232	1,858			
16-Dec-14	0.00	0.00	0	6,463	15.5	247.7	0	248	2,106			
17-Dec-14	0.00	0.00	0	6,463	15.5	263.2	0	263	2,369			
18-Dec-14	0.00	0.00	0	6,463	15.5	278.7	238,360	238,639	241,008	234,545	1,754,630	67.7



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Slurry Wall Leak Test
2/12/2015

TABLE V

Date	Inflow Volumes				Outflow Volumes					Leak Volume (per pump cycle)		Leak Rate (per pump cycle)
	Precipitation		Daily Inflow (cu-ft)	Cumulative Inflow (cu-ft)	Evaporation		Pumping		Cumulative Outflow (cu-ft)	Net Outflow (cu-ft)	Net Outflow (gal)	(gpm)
	(in)	(ft)			Daily (cu-ft)	Cumulative (cu-ft)	Water Pumped Out (cu-ft)	Total Outflow (cu-ft)				
19-Dec-14	0.00	0.00	0	0	15.5	15.5	0	15	15			
20-Dec-14	0.00	0.00	0	0	15.5	31.0	0	31	46			
21-Dec-14	0.00	0.00	0	0	15.5	46.5	0	46	93			
22-Dec-14	0.00	0.00	0	0	15.5	61.9	0	62	155			
23-Dec-14	0.00	0.00	0	0	15.5	15.5	0	15	15			
24-Dec-14	0.00	0.00	0	0	15.5	31.0	0	31	46			
25-Dec-14	0.00	0.00	0	0	15.5	46.5	0	46	93			
26-Dec-14	0.00	0.00	0	0	15.5	61.9	0	62	155			
27-Dec-14	0.03	0.00	1,293	1,293	15.5	77.4	0	77	232			
28-Dec-14	0.00	0.00	0	1,293	15.5	92.9	0	93	325			
29-Dec-14	0.00	0.00	0	1,293	15.5	108.4	0	108	434			
30-Dec-14	0.25	0.02	10,772	12,065	15.5	123.9	0	124	557			
31-Dec-14	0.00	0.00	0	12,065	15.5	139.4	0	139	697			
01-Jan-15	0.00	0.00	0	12,065	15.5	154.8	0	155	852			
02-Jan-15	0.00	0.00	0	12,065	15.5	170.3	0	170	1,022			
03-Jan-15	0.00	0.00	0	12,065	15.5	185.8	0	186	1,208			
04-Jan-15	0.05	0.00	2,154	14,219	15.5	201.3	0	201	1,409			
05-Jan-15	0.00	0.00	0	14,219	15.5	216.8	0	217	1,626			
06-Jan-15	0.00	0.00	0	14,219	15.5	232.3	259,138	259,371	260,997	246,777	1,846,142	67.5



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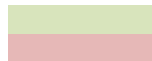
Slurry Wall Leak Test
2/12/2015

TABLE V

Date	Inflow Volumes				Outflow Volumes					Leak Volume (per pump cycle)		Leak Rate (per pump cycle)
	Precipitation		Daily Inflow (cu-ft)	Cumulative Inflow (cu-ft)	Evaporation		Pumping	Total Outflow (cu-ft)	Cumulative Outflow (cu-ft)	Net Outflow (cu-ft)	Net Outflow (gal)	(gpm)
	(in)	(ft)			Daily (cu-ft)	Cumulative (cu-ft)	Water Pumped Out (cu-ft)					
07-Jan-15	0.00	0.00	0	0	15.5	15.5	0	15	15			
08-Jan-15	0.00	0.00	0	0	15.5	31.0	0	31	46			
09-Jan-15	0.00	0.00	0	0	15.5	46.5	0	46	93			
10-Jan-15	0.00	0.00	0	0	15.5	61.9	0	62	155			
11-Jan-15	0.00	0.00	0	0	15.5	77.4	0	77	232			
12-Jan-15	0.00	0.00	0	0	15.5	92.9	0	93	325			
13-Jan-15	0.00	0.00	0	0	15.5	108.4	0	108	434			
14-Jan-15	0.00	0.00	0	0	15.5	123.9	0	124	557			
15-Jan-15	0.00	0.00	0	0	15.5	139.4	0	139	697			
16-Jan-15	0.00	0.00	0	0	15.5	154.8	0	155	852			
17-Jan-15	0.00	0.00	0	0	15.5	170.3	0	170	1,022			
18-Jan-15	0.00	0.00	0	0	15.5	185.8	0	186	1,208			
19-Jan-15	0.00	0.00	0	0	15.5	201.3	0	201	1,409			
20-Jan-15	0.00	0.00	0	0	15.5	216.8	0	217	1,626			
21-Jan-15	0.00	0.00	0	0	15.5	232.3	0	232	1,858			
22-Jan-15	0.12	0.01	5,171	5,171	15.5	247.7	0	248	2,106			
23-Jan-15	0.00	0.00	0	5,171	15.5	263.2	0	263	2,369			
24-Jan-15	0.00	0.00	0	5,171	15.5	278.7	0	279	2,648			
25-Jan-15	0.00	0.00	0	5,171	15.5	294.2	0	294	2,942			
26-Jan-15	0.00	0.00	0	5,171	15.5	309.7	0	310	3,252			
27-Jan-15	0.00	0.00	0	5,171	15.5	325.2	0	325	3,577			
28-Jan-15	0.00	0.00	0	5,171	15.5	340.6	0	341	3,917			
29-Jan-15	0.00	0.00	0	5,171	15.5	356.1	0	356	4,274			
30-Jan-15	0.00	0.00	0	5,171	15.5	371.6	0	372	4,645			
31-Jan-15	0.15	0.01	6,463	11,634	15.5	387.1	181,994	182,381	187,026	175,392	1,312,109	36.4
Totals	1.07	0.09		46,104		1,538	969,776		989,234	943,130	7,055,556	53.3



Indicates Test Period 1
Indicates Test Period 2



Indicates Test Period 3
Indicates Test Period 4



Indicates Overall Test Period (92 days)

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Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: **LAMAR, CO US**

GHCND:USC00054770

Observation Time Temperature: 0700 Observation Time Precipitation: 0700

Elev: 3627 ft. Lat: 38.094° N Lon: 102.631° W

P r e l i m i n a r y	Y e a r	M o n t h	D a y	Temperature (F)			Precipitation(see **)					Evaporation		Soil Temperature (F)					
				24 hrs. ending at observation time		at O b s e r v a t i o n	24 Hour Amounts ending at observation time				At Obs Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in depth			8 in depth		
				Max.	Min.		Rain, melted snow, etc. (in)	F l a g	Snow, ice pellets, hail (in)	F l a g	Snow, ice pellets, hail, ice on ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
	2014	11	1	58	33	39	0.00		0.0		0								
	2014	11	2	78	37	38	0.00		0.0		0								
	2014	11	3	80	38	53	0.02		0.0		0								
	2014	11	4	63	27	29	0.00		0.0		0								
	2014	11	5	59	26	28	0.00		0.0		0								
	2014	11	6	67	27	28	0.00		0.0		0								
	2014	11	7	69	28	43	0.00		0.0		0								
	2014	11	8	77	37	38	0.00		0.0		0								
	2014	11	9	63	31	33	0.00		0.0		0								
	2014	11	10	77	33	44	0.00		0.0		0								
	2014	11	11	77	18	18	0.10		2.0		2								
	2014	11	12	22	11	11	0.03		1.0		2								
	2014	11	13	14	-5	-5	0.05		1.0		3								
	2014	11	14	17	-5	13	0.00		0.0		3								
	2014	11	15	33	13	15	0.00		0.0		0								
	2014	11	16	37	12	13	0.12		3.0		3								
	2014	11	17	26	1	2	0.00		0.0		2								
	2014	11	18	33	2	9	0.00		0.0		0								
	2014	11	19	48	9	19	0.00		0.0		0								
	2014	11	20	51	19	26	0.00		0.0		0								
	2014	11	21	53	24	24	0.00		0.0		0								
	2014	11	22	54	23	24	0.00		0.0		0								
	2014	11	23	66	24	43	0.00		0.0		0								
	2014	11	24	49	20	21	0.00		0.0		0								
	2014	11	25	50	15	16	0.00		0.0		0								
	2014	11	26	53	16	24	0.00		0.0		0								
	2014	11	27	47	19	20	0.00		0.0		0								
	2014	11	28	62	20	26	0.00		0.0		0								
	2014	11	29	75	26	32	0.00		0.0		0								
	2014	11	30	73	29	30	0.00		0.0		0								
Summary				54.4	20.3		0.32		7.0										

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"s" This data value failed one of NCDC's quality control tests.

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www.ncdc.noaa.gov

Station: **LAMAR, CO US**

GHCND:USC00054770

Observation Time Temperature: 0700 Observation Time Precipitation: 0700

Elev: 3627 ft. Lat: 38.094° N Lon: 102.631° W

P r e l i m i n a r y	Y e a r	M o n t h	D a y	Temperature (F)			Precipitation(see **)					Evaporation		Soil Temperature (F)					
				24 hrs. ending at observation time		at O b s e r v a t i o n	24 Hour Amounts ending at observation time				At Obs Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in depth			8 in depth		
				Max.	Min.		Rain, melted snow, etc. (in)	F l a g	Snow, ice pellets, hail (in)	F l a g	Snow, ice pellets, hail, ice on ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
	2014	12	1	35	12	12	0.00		0.0		0								
	2014	12	2	32	11	15	0.00		0.0		0								
	2014	12	3	56	15	28	0.00		0.0		0								
	2014	12	4	42	22	25	0.00		0.0		0								
	2014	12	5	48	25	26	0.00		0.0		0								
	2014	12	6	64	23	23	0.00		0.0		0								
	2014	12	7	51	23	26	0.00		0.0		0								
	2014	12	8	62	21	21	0.00		0.0		0								
	2014	12	9	54	18	19	0.00		0.0		0								
	2014	12	10	53	19	23	0.00		0.0		0								
	2014	12	11	59	20	20	0.00		0.0		0								
	2014	12	12	63	20	22	0.00		0.0		0								
	2014	12	13	50	22	33	0.00		0.0		0								
	2014	12	14	55	30	47	0.00		0.0		0								
	2014	12	15	55	31	31	0.15		0.0		0								
	2014	12	16	41	20	20	0.00		0.0		0								
	2014	12	17	39	19	26	0.00		0.0		0								
	2014	12	18	30	25	28	0.00		0.0		0								
	2014	12	19	43	20	20	0.00		0.0		0								
	2014	12	20	45	20	20	0.00		0.0		0								
	2014	12	21	46	20	21	0.00		0.0		0								
	2014	12	22	54	21	38	0.00		0.0		0								
	2014	12	23	47	30	33	0.00		0.0		0								
	2014	12	24	35	16	16	0.00		0.0		0								
	2014	12	25	49	16	29	0.00		0.0		0								
	2014	12	26	62	25	25	0.00		0.0		0								
	2014	12	27	26	6	7	0.03		0.0		0								
	2014	12	28	31	6	9	0.00		0.0		0								
	2014	12	29	37	9	11	0.00		0.0		0								
	2014	12	30	24	3	3	0.25		5.0		5								
	2014	12	31	6	-9	-7	0.00		0.0		5								
			Summary	45.0	18.0		0.43		5.0										

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Observation Time Temperature: 0700 Observation Time Precipitation: 0700

Elev: 3627 ft. Lat: 38.094° N Lon: 102.631° W

P r e l i m i n a r y	Y e a r	M o n t h	D a y	Temperature (F)			Precipitation(see **)					Evaporation		Soil Temperature (F)					
				24 hrs. ending at observation time		at O b s e r v a t i o n	24 Hour Amounts ending at observation time				At Obs Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in depth			8 in depth		
				Max.	Min.		Rain, melted snow, etc. (in)	F l a g	Snow, ice pellets, hail (in)	F l a g	Snow, ice pellets, hail, ice on ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
	2015	1	1	12	-7	3	0.00		0.0		0								
	2015	1	2	26	2	3	0.00		0.0		0								
	2015	1	3	33	3	19	0.00		0.0		0								
	2015	1	4	37	-1	0	0.05		2.0		2								
	2015	1	5	20	-1	4	0.00		0.0		0								
	2015	1	6	37	4	15	0.00		0.0		0								
	2015	1	7	47	14	15	0.00		0.0		0								
	2015	1	8	21	13	18	0.00		0.0		0								
	2015	1	9	54	17	23	0.00		0.0		0								
	2015	1	10	30	15	15	0.00		0.0		0								
	2015	1	11	37	15	17	0.00		0.0		0								
	2015	1	12	51	17	23	0.00		0.0		0								
	2015	1	13	25	18	18	0.00		0.0		0								
	2015	1	14	36	18	24	0.00		0.0		0								
	2015	1	15	40	19	20	0.00		0.0		0								
	2015	1	16	53	20	20	0.00		0.0		0								
	2015	1	17	64	20	37	0.00		0.0		0								
	2015	1	18	56	21	26	0.00		0.0		0								
	2015	1	19	63	21	24	0.00		0.0		0								
	2015	1	20	62	24	35	0.00		0.0		0								
	2015	1	21	42	29	33	0.00		0.0		0								
	2015	1	22	33	8	8	0.12		4.0		4								
	2015	1	23	29	4	5	0.00		0.0		3								
	2015	1	24	48	5	26	0.00		0.0		0								
	2015	1	25	53	26	32	0.00		0.0		0								
	2015	1	26	57	30	31	0.00		0.0		0								
	2015	1	27	70	30	31	0.00		0.0		0								
	2015	1	28	74	31	38	0.00		0.0		0								
	2015	1	29	69	36	39	0.00		0.0		0								
	2015	1	30	53	33	40	0.00		0.0		0								
	2015	1	31	45	35	37	0.15		0.0		0								
			Summary	44.4	16.7		0.32		6.0										

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West

L-1-72

Form 3.1 05/01/2014 Colorado Division of Water Resources www.water.state.co.us	S. Platte River – Division 1 970-352-8712 Fax 970-392-1816 810 9 th Street, 2 nd Floor, Greeley, CO 80631 Republican River – Division 1 970-352-8712 Fax 970-392-1816 810 9 th Street, 2 nd Floor, Greeley, CO 80631 Arkansas River – Division 2 719-542-3368 Fax 719-544-0800 310 E. Abriendo, Suite B, Pueblo, CO 81004 Rio Grande River – Division 3 719-589-6683 Fax 719-589-6685 P.O. Box 269, 301 Murphy Drive, Alamosa, CO 81101 Designated Basins – Division 8 303-866-3581 Fax 303-866-2223 1313 Sherman St. Rm. 818, Denver, CO 80237		For Office Use Only <input type="checkbox"/> Passed <input type="checkbox"/> Failed <input type="checkbox"/> Variance Approved Date of variance _____
	NOTICE OF TOTALIZING FLOW METER RE-VERIFICATION, INSTALLATION OR REPLACEMENT		

NOTICE OF TOTALIZING FLOW METER RE-VERIFICATION, INSTALLATION OR REPLACEMENT

Check appropriate box

☐ To be filed in Compliance with Rule 16.5 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the Republican River Basin (Complete pages 1-6)

☐ To be filed in Compliance with Rules 3.1 of the Amended Rules Governing the Measurement of Tributary Ground Water Diversions in the Arkansas River Basin (Complete pages 1-5)

☐ To be filed in Compliance with Rule 3.1 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the Rio Grande River Basin (Complete pages 1-5)

☐ To be filed in Compliance with the Ground Water Commission Rules Governing Designated Basins (Complete pages 1-5)

☐ To be filed in Compliance with Rule 3.1 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the South Platte River Basin (Complete pages 1-5)

Reason for meter verification (Check all that apply)

<input type="checkbox"/>	Re-Verify Previously Verified TFM	The following MUST be provided for new & replaced meters			
<input type="checkbox"/>	New TFM (No previous meter)	Date New TFM installed:			
<input type="checkbox"/>	Replacing Previous TFM (also complete area at right)	Date Previous TFM removed:		7-14	
<input type="checkbox"/>	Previous TFM Serial No.: 14-05261-6	Previous TFM Reading (Estimate required if not readable):		380917 X100	
<input type="checkbox"/>	Change in Measurement Method from:	Hour Meter <input type="checkbox"/>	Slave Meter <input type="checkbox"/>	Power Co Meter <input type="checkbox"/>	Previous Meter SN
<input type="checkbox"/>	Register seal replaced due to:	New Seal No.	Old Seal No.	TFM Reading	K-Factor (Test req'd. if changed)
<input type="checkbox"/>	(Sensor) (meter) seal replaced due to:	New Seal No.	Old Seal No.	TFM Reading	

Contact Information:					
Well Owner <i>GR Irrigated Farms</i>			User (if not same as well owner) <i>Cross Line</i>		
Name <i>% Karl Nyquist</i>			Name <i>%</i>		
Mailing Address <i>7991 Shaffer Pkwy Suite 200</i>			Mailing Address <i>820 Airport Rd</i>		
City <i>Littleton</i>	State <i>CO</i>	Zip <i>80127</i>	City <i>Durango</i>	State <i>CO</i>	Zip <i>81303</i>
Phone <i>303-369-5100</i>	Email		Phone	Email	

Well Information and Location (Provide Permit No. and/or Case or Decree No. if no WDID exists or is not known)

WDID	Permit No.	Case or Decree No.	Location (1/4, Sec., T., R., PM)	GPS Coord. (UTM, meters, NAD 83)		
				Northing	Easting	Zone (12/13)
<i>GRAVEL PIT</i>						

Power Supply

☐ Electric ☐ Artesian ☐ Solar ☐ Windmill ☒ Fossil Fuel ☐ Other (describe):

Provide the following for all wells with electric power:

Power Company Name	Power Company Service No.	Meter Manufacturer	Manufacturer's Serial No.
Power Company Meter Reading on Date of Test (including all rotating and leading zeroes):		Multiplier	Number of Rotating Digits:

Uses on power company meter:

Does the same Power Company Meter serve other devices, including other wells/pumps? If yes, describe system.

☐ Yes ☐ No

Installed TFM Information			
Manufacturer <u>McCrometer</u>		Model No. <u>MD308</u>	Meter GPS Coordinates (NAD83 UTM Zone 13N)
Serial No. <u>06-8-1722</u>		Reading on Test Date <u>019.791</u>	Northings: <u>4219918</u>
Sensor/Meter Register			Easting: <u>711955</u>
Provide sensor serial number ONLY if meter has a remote readout. Provide BOTH sensor and meter serial number only if different.			
Beginning Remote Reading: <u>N/A</u> Time: _____		Ending Remote Reading: <u>N/A</u> Time: _____	
Do these readings match the installed TFM readings? <input type="checkbox"/> Yes <input type="checkbox"/> No		If no, explain:	
Meter Type <u>PROP</u>	Meter Size <u>8"</u>	Multiplier <u>x.001</u>	No. of recording digits <u>6</u>
Water Units:			
<input type="checkbox"/> Gallons <input checked="" type="checkbox"/> Acre Feet <input type="checkbox"/> Cubic Feet <input type="checkbox"/> Other, describe:			
Meter Orientation		Diameters of Straight Pipe	
<input checked="" type="checkbox"/> Horizontal		Upstream	Downstream
<input type="checkbox"/> Vertical		<u>16" (24)</u>	<u>48 (6)</u>
		ID	OD
		<u>8.027</u>	<u>8.625</u>
Is the meter installed to manufacturer's specifications? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, explain:			
Test Meter Information			
Test Meter Manufacturer: <u>FUJI</u>		Test Meter Serial Number: <u>A9P7492</u>	Date of Last Calibration: <u>1-7-14</u>
Meter Orientation		Diameters of Straight Pipe	
<input checked="" type="checkbox"/> Horizontal		Upstream	Downstream
<input type="checkbox"/> Vertical		<u>17" (25.5)</u>	<u>48" (4.65)</u>
Pipe Wall Thickness: <u>.299</u>		ID	OD
		<u>8.027</u>	<u>8.625</u>
Verification of Installed Meter (If more than one meter tested for same discharge, show all tests. Use second sheet if necessary.)			
Date of Test: <u>7-21-14</u>	Time of Test (Begin): <u>12:30</u>	Length of time pump has been running prior to Tester's arrival: <u>24:45</u> (HH:MM)	
Test Meter Calculations (Show All Work)		Installed Meter Calculations (Show All Work)	
Collins Meter GPM Factor: <u>N/A</u> Stop Clamp Settings: <u>N/A</u> $\left. \begin{array}{l} \text{FINISH} - 17445.01 \\ \text{START} - 0 \end{array} \right\} = 17445.01 \text{ GALLONS}$ $\text{Time} - 1507.44 = 907.44 \text{ SECONDS}$ $\frac{17445.01 \text{ GALLONS}}{907.44 \text{ SECONDS}} = 1153.46 \text{ GPM}$		$\left. \begin{array}{l} \text{FINISH} - 019.845 \\ \text{START} - 019.791 \end{array} \right\} = 0.054$ $0.054 \times 325851 = 17595.95 \text{ GALLONS}$ $\text{Time} - 1507.06 = 907.06 \text{ SECONDS}$ $\frac{17595.95 \text{ GALLONS}}{907.06 \text{ SECONDS}} = 1163.93 \text{ GPM}$ Existing K-factor <u>N/A</u> Adjusted K-factor <u>N/A</u> Flow rate with Collins tube removed:	
(Show Q to the nearest 0.00 GPM) Avg QT: <u>1153.46</u>		(Show Q to the nearest 0.00 GPM) Avg QI: <u>1163.93</u>	
Correction Factor = $\frac{\text{AVG QT}}{\text{AVG QI}} = \frac{1153.46}{1163.93} = 0.991$		Calibration Coefficient must be shown to the nearest 0.000	

If Correction Factor Is:	Div. 1, Div. 2 and Republican River Correction Factor Policies	Div. 3 Correction Factor Policies
0.950 to 1.050	The installed TFM is in accurate working condition. No Correction Factor is Applied.	No Request for Variance is required.
0.920 to 0.949 OR 1.051 to 1.080	Test will be valid for a maximum of four years. The Variance Request to Use Correction Factor portion of this Form must be completed and signed by the Owner/User. *Note: A Correction Factor will be applied to determine diversions.	May grant a request for a variance to allow the use of a Correction Factor. Test will be valid for one year from the date of the test. A variance will be allowed for a maximum of three years, after which the TFM must be repaired or replaced AND a new Test conducted. That Test must confirm an accuracy within $\pm 5.0\%$. The Variance Request to Use Correction Factor for TFM portion of this Form must be completed and signed by the Owner/User. *Note: A Correction Factor will be applied to determine diversions.
0.900 to 0.919 OR 1.081 to 1.100	Test will be valid for one year only. No later than one year from the date of this Test the installed TFM must be repaired or replaced AND a new test conducted that confirms an accuracy of within $\pm 5.0\%$. The Variance Request to Use Correction Factor portion of this Form must be completed and signed by the Owner/User. *Note: A Correction Factor will be applied to determine diversions.	Test will be rejected and the installed TFM must be repaired or replaced AND a new Test conducted. The second Test must confirm an accuracy of within $\pm 5.0\%$. If TFM fails test and is re-calibrated (k-factor modified) show failed Test, indicate below k-factor before and after, AND show new test on additional duplicate page (include failed and passed test page 3).
<0.900 OR >1.100	Test will be rejected and the installed TFM must be repaired or replaced AND a new Test conducted.	

Uses through this totalizing flow meter:

Does well have multiple discharges measured through TFM?

☒ Yes ☐ No

If yes, check all that apply:

☒ Open ☒ Pressure ☐ Artesian ☐ OtherUse this space to describe all discharges DISCHARGES TO A SETTLING POND AND TO A TRUCK LOAD OUT

Meter Testing

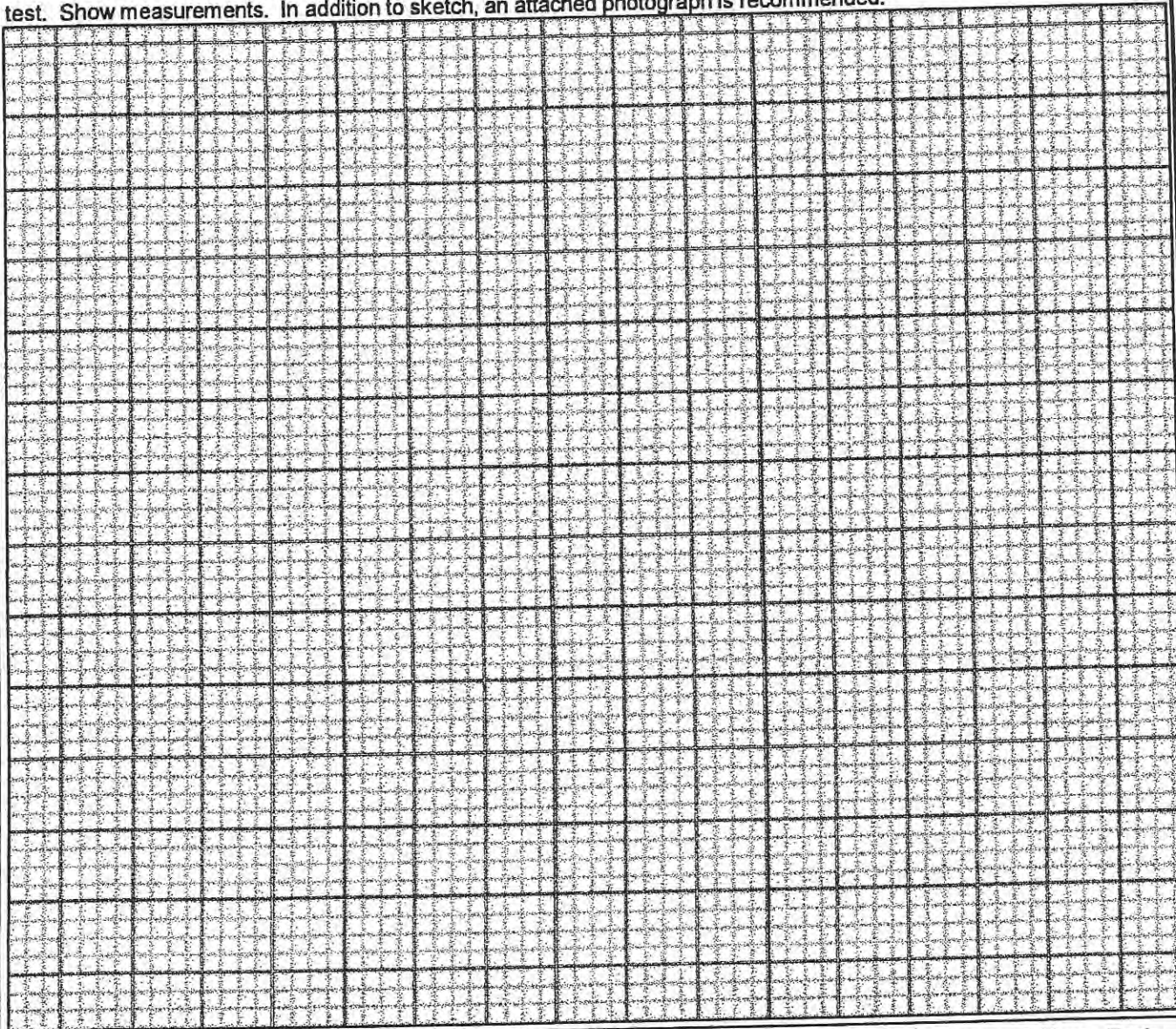
How was the well/meter tested with test equipment (open discharge, pressure, or more than one way)?

Show information in detailed sketch on next page or as an attachment

PUMP WAS RUNNING ON ARRIVAL TO A SETTLING POND
A APPROX 4000' AWAY

Detailed Sketch:

Show total system from pump to discharge, other pumps in the same well, and electrical system including other devices on the same meter. Show where test meter and pressure gauge were placed and how system was modified to perform test. Show measurements. In addition to sketch, an attached photograph is recommended.



Detailed description of system under normal operating conditions. (Example: One well pumps to two sprinklers. Each sprinkler has an end gun that operates when the sprinkler is operating.) Include number of irrigated acres.

THIS meter is used for DEWATERING A GRAVEL pit & for
DUST CONTROL

Tester Verification

I, the undersigned, state that I am currently a person approved by the State Engineer to conduct well tests pursuant to the Rules Governing the Measurement of Ground Water Diversions as indicated on page 1 of this form. I have determined the installed Totalizing Flow Meter to either be in accurate working condition as defined by the Rules indicated on page 1 of this form OR have advised the Owner/User to complete the Variance Request below of this form.

I understand that "accurate working condition" is determined when the indicated flow through the installed METER is within plus or minus 5% of an independent field measurement made using Calibrated Test Equipment. I understand that falsifying the accuracy and/or condition of a Totalizing Flow Meter can subject me to a fine of up to \$500.00.

Signature of Tester: *Dan Richards*Date 7/21/14

Tester Name, Company, Phone, Email

Name: DAN RICHARDSCompany Name: RICHARDS' WELL CALIBRATIONSPhone: 719-688-5451

Email:

Variance Request to Allow a Correction Factor to be used when calculating diversions from the installed TFM

I request a Variance to allow the use of the Correction Factor. I understand that a Variance WILL NOT be issued to allow a Correction Factor for a Totalizing Flow Meter (TFM) if the inaccuracy is due to the TFM or appurtenances being intentionally damaged or modified by the owner and/or user of the well/meter.

I understand that the Correction Factor as computed by the above Qualified Well Tester will be verified by or revised by the Division of Water Resources and that final Correction Factor will be applied to ALL use records until the TFM is repaired/replaced and/or a new test conducted for this Well.

I understand and agree to the required conditions of the variance as indicated below.

Division 1, Division 2 or Republican River Basin (Check only one)



If Correction Factor is between 0.920 to 0.949 or is between 1.051 to 1.080, the Test will be valid for no more than four years. The Correction Factor will be applied to determine diversions from the well.



If Correction Factor is between 0.900 to 0.919 or is between 1.081 to 1.100, the Test will be valid one year. No later than one year from the date of this Test, a new Measurement Test must be conducted and the accuracy of the new Test must be within $\pm 5.0\%$. The Correction Factor will be applied to determine diversions from the well.

Further, I acknowledge that repair and/or replacement of this Meter and/or portions of the Discharge System is required within that one year AND I agree to make the necessary changes within that time.

Division 3



If Correction Factor is between 0.920 to 0.949 or 1.051 to 1.080, and Division 3 approves this Variance Request, the Test will be valid for no more than one year. A new variance including new correction factor computed by a Qualified Well Tester shall be required each year thereafter. A variance will only be allowed for TFM for a maximum of three years. After three years the TFM must be repaired or replaced and working within the required $\pm 5\%$. The Correction Factor will be applied to determine diversions from the well.

For Electrically Powered Wells/Pumps, I agree to the release of information pertaining to my Electric Service and Use, including Current Transformer Factor, Voltage/Potential Transformer Factor and Electric Meter Readings, to the Colorado Division of Water Resources by my electric supplier for the purposes of determining or verifying Water Use from the Well/Pump.

The above information is true to the best of my knowledge. I understand that falsifying the accuracy and/or condition of a Totalizing Flow Meter can subject me to a fine of up to \$500.00. If any Variance is requested on my behalf to apply a Calibration Coefficient to my TFM, I agree to such Variance.

I am the ☐ Well Owner OR ☐ Well User

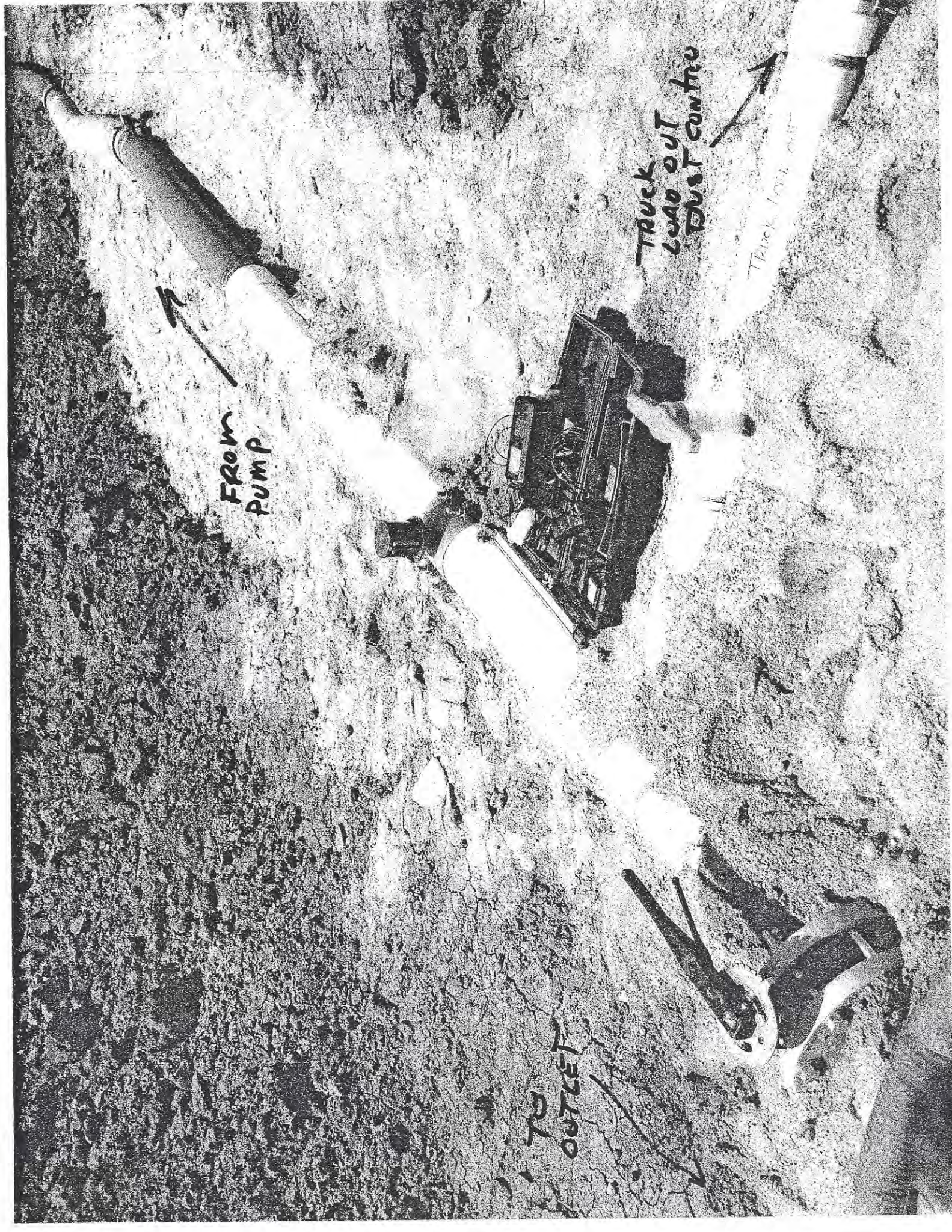
Signature of Well Owner/User

Natale Musick

Date

7/21/14

Print Name of Well Owner/User



FROM
PUMP

TRUCK
LOAD OUT
DUST CONTROL

TO
OUTLET

Appendix K

Projected Revenues and Expenses

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039 - 2053
Year of Loan Term	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 -34
(1) Share Assessment Revenue	1,187,903	1,285,041	1,285,041	1,285,041	1,285,041	1,327,444	1,327,444	1,327,444	1,327,444	1,327,444	1,327,444	1,306,092	1,306,092	1,306,092	1,306,092	1,306,092	1,197,527	1,197,527	1,197,527	1,197,527	793,038
(2) Membership Dues Revenue	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550	202,550
(3) CS-U Payments	-	125,000	125,000	125,000	1,557,093	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue	1,390,453	1,612,591	1,612,591	1,612,591	3,044,684	1,529,994	1,529,994	1,529,994	1,529,994	1,529,994	1,529,994	1,508,642	1,508,642	1,508,642	1,508,642	1,508,642	1,400,077	1,400,077	1,400,077	1,400,077	995,588
(4) Operating Expenses	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633	519,633
(5) WFGP Operating Expenses	4,315	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260	17,260
(6) Legal	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769	177,769
(7) Engineering	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420	150,420
(8) CWCB Loan Payments	513,046	726,006	726,006	726,006	2,070,139	643,344	643,344	643,344	643,344	643,344	643,344	643,344	643,344	643,344	643,344	643,344	534,769	534,769	534,769	246,288	130,298
(9) CWCB 10% Reserve Payment:	-	21,296	21,296	21,296	21,296	21,296	21,296	21,296	21,296	21,296	21,296	-	-	-	-	-	-	-	-	-	-
Total Expenses	1,365,183	1,612,384	1,612,384	1,612,384	2,956,517	1,529,722	1,529,722	1,529,722	1,529,722	1,529,722	1,529,722	1,508,426	1,508,426	1,508,426	1,508,426	1,508,426	1,399,851	1,399,851	1,399,851	1,111,370	995,380
Net Position	25,270	207	207	207	88,167	272	272	272	272	272	272	216	216	216	216	216	226	226	226	288,707	208

Share Assessments

2019	\$	39.50
2020-2023	\$	42.73
2024-2029	\$	44.14
2030-2034	\$	43.43
2035-2038	\$	39.82
2039-2053	\$	26.37

Outstanding shares (converted to common stock) 30,073.50

Notes:

- (1) Share Assessment Revenue is calculated by multiplying the outstanding number of converted common stock by the projected share assessment for a given year.
- (2) Membership Dues are projected to remain the same for the term of the WFGP loan.
- (3) CS-U Payments are based on the lease payments from CS-U for 500 acre-feet of storage under the Water-Sharing Agreement and the adjusted purchase price for 500 acre-feet of storage LAWMA common shares to CS-U once LAWMA obtains a water court decree for the direct delivery of 2,500 LAWMA shares to CS-U's municipal system.
- (4) Operating Expenses were projected to remain at the 2019 projected levels for the term of the loan.
- (5) WFGP Operating Expenses include pumping costs (average outflows from the pit 761 acre-feet * \$15 per acre foot), insurance costs, and some additional maintenance and operational expenses.
- (6) Legal expenses were projected to remain at the 2019 projected levels for the term of the loan.
- (7) Engineering expenses were projected to remain at the 2019 projected levels for the term of the loan.
- (8) CWCB Loan Payments equal the outstanding annual payments on Loan Nos. C153715, C153768, C150150, C150258, and the new WFGP loan.
- (9) CWCG 10% Reserve Payments are calculated as 10% of the annual payment (\$212,296) on the new WFGP loan for the first 10 years of the loan term.