



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

Water Quality Board
Jennifer Grant, Chair
Gregg A. Galecki, Vice Chair
L. Scott Baird
Steven K. Earley
Brandon Gordon
Michael D. Luers
Emily Niehaus
James Webb
Dr. James VanDerslice
Dr. Erica Brown Gaddis
Executive Secretary

Utah Water Quality Board Meeting
Moab Arts & Recreation Center (MARC)
111 East 100 North
Stage Room
Moab, UT 84532

November 6, 2019

Tour of Board Funded Projects begins at 8:00 am
Board Meeting Begins at 1:30 pm

AGENDA

Water Quality Board Meeting – Roll Call

- A. Minutes:**
Approval of minutes for August 28, 2019 Water Quality Board Meeting Jennifer Grant
- B. Executive Secretary’s Report** Erica Gaddis
- C. Funding:**
 - 1. Financial Report..... Emily Cantón
 - 2. De-obligation of DEQ – Division of Water Quality Hardship Grant Funds Emily Cantón
 - 3. Munk Dairy Interest Rate Buy Down Project..... Jim Bowcutt
- D. Rule Making:**
 - 1. Graywater Rule Making Robert Beers
 - 2. Public Notice Rule Revision Matt Garn
- E. Other Business:**
 - 1. Gold King Mine and San Juan River Update Lucy Parham

F. Public Comment Period

G. Meeting Adjournment

**Next Meeting December 3, 2019
DEQ Board Room 1015
195 North 1950 West
Salt Lake City, UT 84116**

Attachment – Tour Itinerary

Revised 10/23/2019
DWQ-2019-013742

In compliance with the American Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Larene Wyss, Office of Human resources, at (801) 536-4281, TDD (801) 536-4284, or by email at lwyss@utah.gov at least five working days prior to the scheduled meeting.

Water Quality Board Meeting
November 6, 2019
Tour Itinerary

Tour Itinerary

8:00 am	Leave Sorrel River Ranch to Tour Castle Valley Project
8:20 am	Fire Restoration Area
9:00 am	Springs Area
9:20 am	Travel to Moab
9:45 – 10:15 am	Graywater Experimental Subdivision
10:30 – 11:30 am	Tour Moab Wastewater Treatment Plant
12:00 – 1:00 pm	Lunch at USU Office View Riparian and Rain Harvesting Area
1:30 pm	Water Quality Board Meeting at Moab Arts & Recreation Center (MARC)



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MINUTES

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

UTAH WATER QUALITY BOARD

195 North 1950 West
Salt Lake City, UT 84116
August 28, 2019

UTAH WATER QUALITY BOARD MEMBERS PRESENT

Scott Baird	Mike Luers
Steven Earley	Emily Niehaus (On Phone)
Gregg Galecki	James VanDerslice
Brandon Gordon	James Webb
Jennifer Grant	

DIVISION OF WATER QUALITY STAFF MEMBERS PRESENT

Robert Beers	Ken Hoffman
Emily Cantón	Brenda Johnson
Marsha Case	John Mackey
Skyler Davies	Jerry Rogers
James Harris	Danielle Lenz

OTHERS PRESENT

Name	Organization Representing
Paul McConkie	AG Environmental Division
Marie Owens	DDW
Jesse Ralphs	Sunrise Engineering
Justin Atkinson	Sunrise Engineering
Randall Probst	Wasatch County Health Department
Tracy Richardson	Wasatch County Health Department
Jean Powell	Wellington City
Cory Pierce	Spanish Fork City

Ms. Grant called the Board meeting to order at 9:30 AM and took roll call for the members of the Board and audience.

APPROVAL OF MINUTES OF JUNE 26, 2019 MEETING

Motion: Mr. Gordon moved to approve the minutes of the June 26, 2019 meeting. Mr. Vanderslice seconded the motion. The motion passed unanimously.

EXECUTIVE SECRETARY REPORT

National Level

- Mr. Harris updated the WQ Board that the division is formulating comments on the proposed changes to the 401 Certification process and will be finalizing them with the Governor's office.
- The Division created an internal water reuse group to evaluate the rules and permit approach to ensure that WQ is ready for projects when they come. Items in the plan include: evaluating suitability of existing rules, permitting issues, water balance and rights and related uses such as aquifer storage and recovery, indirect potable reuse, and direct potable reuse. The EPA will be releasing a Water Reuse Action Plan in early September.

State Level

- Mr. Harris updated the WQ Board about the Watershed Council Act that was drafted by Representative Tim Hawkes to create watershed councils to facilitate coordinated action among stakeholders on water issues at the watershed level to encourage collaborative solutions.
- There are 11 active advisories at this time for HABs events. Matt Warner Reservoir is closed for swimming and fishing. Utah Lake is under warning in the areas of Provo Bay, Lincoln Beach and Goshen Bay. On August 20th the warning for Wheeler Farm was lifted due to ongoing monitoring results.

Division Level

- Mr. Harris announced that Ms. Kim Shelley has been promoted to the DEQ Executive Directors Office as the Director of Operations.
- Dr. Gaddis is attending the Association of Clean Water Administrators Annual Conference.
- A new staff member, Danielle Lenz was introduced to the WQ Board.
- Mr. Harris advised the Board that Water Quality was chosen for a multi-purpose grant to be used on the WQ Trading/Credit Tool. WQ will develop a tool to support water quality credit tracking and trading along the Jordan River with the goal to maximize the water quality benefit of public expenditures aimed at improving the Jordan River by September 2020.
- Water Quality has selected the WQ Board as a priority Continuous Improvement Project.

Staff has scoped out needed areas of improvement and focus which include internal improvements associated with agenda development, board presentations and staff guidance in addition to developing an updated board manual for members and improving technology, WQB packets, board training and work meetings.

FUNDING REQUESTS

Financial Report: Mr. Rogers updated the Water Quality Board on the Loan Funds and Hardship Grant Funds, as indicated in the packet. He also introduced a new Financial Report format.

Amended FY19 Intended Use Plan: Request for Public Comment: Ms. Cantón presented the recommendation to the board to amend the FY19 Intended Use Plan (IUP) for transferring funds between SRF Programs.

Motion: **Mr. Luers moved to approve the proposed amendment for the FY19 IUP with a Public Comment period of 30 days. Mr. Webb seconded the motion. The motion passed with a majority vote with Mr. Earley opposing.**

Wasatch County Health Department: Request for Hardship Planning Grant. Mr. Beers presented Wasatch County Health Departments request for a hardship planning grant in the amount of \$100,000 to complete and update their Hydrologic/Water Quality Study from 1994 to assess the impacts of growth and land use transition in Heber and Round Valleys on groundwater quality.

Motion: **Mr. Luers moved to approve the staff recommendations with the following stipulations.**

- DWQ must approve the Engineering Agreement and Plan of Study (Scope of Work) before the grant agreement will be executed.
- Wasatch County Health Department must provide an informational presentation of the study results and recommendations to the Water Quality Board within one year following the project completion.
- The Plan of Study (Scope of Work) must include an evaluation and estimate of the maximum density of on-site septic systems that can be 'permitted' within any given area; based on existing and most probable water quality issues, soil type, ground water, etc.
- The Plan of Study (Scope of Work) must include a requirement for the Wasatch County Health Department to discuss their proposed study with the wastewater providers in the area. In particular, how can existing septic tanks areas and proposed septic tank areas be served by a wastewater provider.
- If an area is restricted to how many septic tanks the area can

handle, due to soil type, ground water etc., other treatment options need to be considered, such as community subsurface, package plants etc.

Ms. Grant seconded the motion. The motion passed unanimously.

OTHER BUSINESS

Wellington City Financial Assistance Project Follow-up. Mr. Davies reintroduced Wellington City to the Board. The City has recently completed the emergency repair and returned to provide the schedule update that the Board requested at authorization. The update included the status of that project as well as the anticipated schedule going forward. The City has reevaluated the recommendations that were provided in the previous master plan and have determined that the necessary improvements were not fully identified in that report. Wellington City has identified about \$7.3 million in necessary sewer improvements and repair. The City will be seeking the necessary funding through multiple funding agencies.

Public Comments:

- No public comments.

Meeting Adjournment

Motion: Mr. Gordon moved to adjourn the meeting. Mr. Earley seconded the motion. The motion passed unanimously.

To listen to the full recording of the Board meeting go to: <http://www.utah.gov/pmn/index.html>

Next Meeting – September 25, 2019

195 North 1950 West
Salt Lake City, UT 84116

Jennifer Grant, Chair
Utah Water Quality Board

**LOAN FUNDS
FINANCIAL STATUS REPORT
NOVEMBER FY20**

STATE REVOLVING FUND (SRF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025	State Fiscal Year 2026
Funds Available							
2016 - 2019 Capitalization Grants	27,398,801	-	-	-	-	-	-
2017 - 2019 State Match	4,800,000	-	-	-	-	-	-
Future Capitalization Grants (estimated)	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
Future State Match (estimated)	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
SRF - 2nd Round	92,014,879	95,718,309	65,305,392	24,803,117	4,243,722	11,394,914	38,686,356
Interest Earnings at 2.866%	1,758,282	2,743,574	1,871,848	710,932	121,638	326,612	1,108,867
Loan Repayments	9,453,642	14,992,510	18,374,876	17,378,674	17,478,554	17,364,830	17,364,830
Total Funds Available	145,025,604	123,054,392	95,152,117	52,492,722	31,443,914	38,686,356	66,760,053
Project Obligations							
Duchesne City	(27,295)	-	-	-	-	-	-
Logan City	(14,131,000)	(23,000,000)	(23,000,000)	-	-	-	-
Logan City - Supplemental Loan	-	-	-	-	-	-	-
Moab City	(80,000)	-	-	-	-	-	-
Salem City	(1,469,000)	-	-	-	-	-	-
San Juan Spanish Valley SSD	-	-	-	-	-	-	-
Loan Authorizations							
Central Valley Water Reclamation Facility	(5,000,000)	(15,000,000)	(20,100,000)	(23,000,000)	(2,000,000)	-	-
Provo City	-	(15,000,000)	(25,000,000)	(23,000,000)	(15,800,000)	-	-
South Davis Sewer District (with NPS)	(26,351,000)	(2,500,000)	-	-	-	-	-
South Salt Lake City	(2,249,000)	(2,249,000)	(2,249,000)	(2,249,000)	(2,249,000)	-	-
Planned Projects							
None at this time							
Total Obligations	(49,307,295)	(57,749,000)	(70,349,000)	(48,249,000)	(20,049,000)	-	-
SRF Unobligated Funds	\$ 95,718,309	\$ 65,305,392	\$ 24,803,117	\$ 4,243,722	\$ 11,394,914	\$ 38,686,356	\$ 66,760,053

UTAH WASTEWATER LOAN FUND (UWLF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025	State Fiscal Year 2025
Funds Available							
UWLF	\$ 19,963,724	\$ 11,776,659	\$ 15,500,451	\$ 18,898,057	\$ 21,846,345	\$ 24,777,936	\$ 27,708,970
Sales Tax Revenue	2,212,677	3,587,500	3,587,500	3,587,500	3,587,500	3,587,500	3,587,500
Loan Repayments	2,151,533	3,357,992	3,031,806	2,582,488	2,565,791	2,565,235	2,565,235
Total Funds Available	24,327,934	18,722,151	22,119,757	25,068,045	27,999,636	30,930,670	33,861,705
General Obligations							
State Match Transfers	(6,400,000)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)
DWQ Administrative Expenses	(1,216,275)	(1,621,700)	(1,621,700)	(1,621,700)	(1,621,700)	(1,621,700)	(1,621,700)
Project Obligations							
Grantsville City	-	-	-	-	-	-	-
Loan Authorizations							
Kane Co Water Conservancy Dist (Duck Creek)	(1,000,000)	-	-	-	-	-	-
Kearns	(1,414,000)	-	-	-	-	-	-
Planned Projects							
Plain City	(2,521,000)	-	-	-	-	-	-

**LOAN FUNDS
FINANCIAL STATUS REPORT**

Total Obligations	(12,551,275)	(3,221,700)	(3,221,700)	(3,221,700)	(3,221,700)	(3,221,700)	(3,221,700)
UWLF Unobligated Funds	\$ 11,776,659	\$ 15,500,451	\$ 18,898,057	\$ 21,846,345	\$ 24,777,936	\$ 27,708,970	\$ 30,640,005

<i>Contingency Calculation for Authorized Projects</i>							
Total Unobligated Loan Funds	\$ 107,494,968	\$ 80,805,843	\$ 43,701,174	\$ 26,090,067	\$ 36,172,850	\$ 66,395,327	\$ 97,400,058
25% Contingency for Authorized Projects	\$ (9,003,500)	\$ (8,687,250)	\$ (11,837,250)	\$ (12,062,250)	\$ (5,012,250)	\$ -	\$ -
Remaining Balance	\$ 98,491,468	\$ 72,118,593	\$ 31,863,924	\$ 14,027,817	\$ 31,160,600	\$ 66,395,327	\$ 97,400,058

**HARDSHIP GRANT FUNDS
FINANCIAL STATUS REPORT
NOVEMBER FY 2020**

HARDSHIP GRANT FUNDS (HGF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025	State Fiscal Year 2026
Funds Available							
Beginning Balance		\$ 4,832,711	\$ 5,102,530	\$ 5,637,407	\$ 6,159,981	\$ 6,672,093	\$ 7,172,350
Federal HGF Beginning Balance	6,655,843	-	-	-	-	-	-
State HGF Beginning Balance	1,858,304	-	-	-	-	-	-
Interest Earnings at 2.866%	162,694	138,520	146,254	161,585	176,564	191,242	205,581
UWLF Interest Earnings at 2.866%	572,220	337,554	444,289	541,675	626,182	710,210	794,222
Hardship Grant Assessments	768,980	666,402	571,300	473,841	392,175	309,384	218,883
Interest Payments	219,275	403,983	373,034	345,473	317,191	289,421	261,668
Advance Repayments	-	-	-	-	-	-	-
Total Funds Available	10,237,316	6,379,171	6,637,407	7,159,981	7,672,093	8,172,350	8,652,705
Financial Assistance Project Obligations							
Eagle Mountain City - Construction Grant	(510,000)	-	-	-	-	-	-
Emigration Sewer Imp Dist - Planning Grant	(26,158)	-	-	-	-	-	-
Green River	(54,000)	-	-	-	-	-	-
Kane Co Water Conservancy Dist (Duck Creek) - Hardship Grant	(2,034,500)	-	-	-	-	-	-
Lewiston - Planning Advance	(40,000)	-	-	-	-	-	-
USU Extension - Hardship Grant	(42,000)	-	-	-	-	-	-
Wasatch Co. Study	(100,000)	-	-	-	-	-	-
Wellington City	(44,026)	-	-	-	-	-	-
Non-Point Source/Hardship Grant Obligations							
Fitzgerald ARDL interest-rate buy down	(51,056)	-	-	-	-	-	-
McKees ARDL interest-rate buy down	(55,261)	-	-	-	-	-	-
(FY11) Gunnison Irrigation Company	(48,587)	-	-	-	-	-	-
(FY11) DEQ - Willard Spur Study	(113,326)	-	-	-	-	-	-
(FY12) Utah Department of Agriculture	(395,162)	-	-	-	-	-	-
(FY13) DEQ - Great Salt Lake Advisory Council	(173,009)	-	-	-	-	-	-
(FY15) DEQ - Ammonia Criteria Study	(46,630)	-	-	-	-	-	-
(FY15) DEQ - Nitrogen Transformation Study	(14,500)	-	-	-	-	-	-
(FY16) DEQ - San Juan River Monitoring	(125,083)	-	-	-	-	-	-
(FY17) DEQ - GW Quality Study	(5,051)	-	-	-	-	-	-
(FY17) DEQ - Utah Lake Water Quality Study	(206,150)	(172,749)	-	-	-	-	-
UofU - Utah Lake Sediment - Water Nutrient Interactions	(70,785)	-	-	-	-	-	-
BYU - Bioassays to Investigate Nutrient Limitation	(41,798)	(26,282)	-	-	-	-	-
USU - Historic Trophic State/Nutrient Concentrations Paleo Record	(157,571)	(77,609)	-	-	-	-	-
FY 2015 - Remaining Payments	(4,223)	-	-	-	-	-	-
FY 2016 - Remaining Payments	(141,507)	-	-	-	-	-	-
FY 2017 - Remaining Payments	(29,723)	-	-	-	-	-	-
FY 2018 - Remaining Payments	(207,407)	-	-	-	-	-	-
FY 2019 - Remaining Payments	(651,076)	-	-	-	-	-	-
Future NPS Annual Allocations	-	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)
Planned Projects							
Munk Dairy ARDL interest-rate buy down	(16,017)	-	-	-	-	-	-
Total Obligations	(5,404,605)	(1,276,641)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)
HGF Unobligated Funds	\$ 4,832,711	\$ 5,102,530	\$ 5,637,407	\$ 6,159,981	\$ 6,672,093	\$ 7,172,350	\$ 7,652,705

State of Utah
Wastewater Project Assistance Program
Project Priority List

As of November 6, 2019

Rank	Project Name	Funding Authorized	Total Points	Point Categories			
				Project Need	Potential Improvement	Population Affected	Special Consideration
1	Provo City	x	144	50	24	10	60
2	Central Valley Water Reclamation Facility	x	143	50	23	10	60
3	South Davis Sewer District	x	138	50	18	10	60
4	Plain City		105	50	10	5	40
5	Kearns	x	74	5	0	9	60
6	Kane County Water Conservancy District (Duck Creek)	x	62	40	21	1	0



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MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica Brown Gaddis, PhD
Executive Secretary

FROM: Emily Cantón
Administrative Services Manager

DATE: November 6, 2019

SUBJECT: De-obligation of DEQ – Division of Water Quality Hardship Grant Funds

The Division of Water Quality (DWQ) has concluded work on two projects which were funded by hardship grant funds:

- 1) Willard Spur – In 2010, the Water Quality Board (WQB) authorized hardship grant funding in the amount of \$1,415,000 for DWQ to investigate the assimilative capacity of nutrients for the Willard Spur ecosystem in order to determine appropriate and defensible modification to water quality standards for the Willard Spur. In 2013, DWQ returned to the WQB to present Phase I findings. In addition, DWQ requested that the remaining balance of \$261,000 plus an additional \$105,000 be authorized to complete Phase II of the project. The study was completed and the Perry/Willard Regional Wastewater Treatment Plant UPDES permit No. UT0025721 and approved variance from the Technology-Based Phosphorus Effluent Limits (TBPELs) required under UAC R317-1-3.3(A)(1), was made effective March 19, 2018. **DWQ will de-obligate the remaining balance of \$116,482.19.**
- 2) San Juan River Monitoring – On August 5, 2016, the Gold King Mine in Colorado released 3 million gallons of metal laden water into the Animas River, tributary to the San Juan River in Utah. The WQB authorized hardship grant funding in the amount of \$200,000 for DWQ to monitor water quality in the San Juan River. DWQ expended a total of \$74,917.06 for the monitoring efforts. EPA reimbursed the Department of Environmental Quality for a portion of the costs incurred for incident response and continued monitoring, including costs that were paid from hardship grant funds. **DWQ will return a total of \$29,718.13 to the WQB and will de-obligate the remaining balance of \$125,082.94.**

The Division of Water Quality understands that hardship grant funds are limited and appreciates the Water Quality Board's support for these important water quality projects.

DWQ-2019-014642



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MEMORANDUM

TO: Water Quality Board

THROUGH: Erica Brown Gaddis, PhD
Executive Secretary

FROM: Jim Bowcutt, Nonpoint Source Program Coordinator, DWQ

DATE: November 6, 2019

SUBJECT: Munk Dairy Interest Buy Down Request

The Munk Dairy is requesting an Agricultural Resource Development Loan (ARDL) Interest Rate buy down from the Water Quality Board. Munk Dairy was recently approved for an ARDL loan from the Utah Department of Agriculture and Food (UDAF) for \$160,000. The estimated interest on this loan will be \$32,034 at 2.5%. UDAF has agreed to waive 1.25% of the interest, leaving \$16,017 in interest to be bought down by the Water Quality Board.

The owners of the dairy would like to abandon an existing feedlot that drains directly into a slough adjacent to the Bear River in Amalga, Utah. The cattle will be moved to a new location adjacent to the dairy, where all waste will be stored in newly constructed bunkers. This project was screened by representatives from UDAF and Division of Water Quality (DWQ) at an onsite visit on August 26, 2019. During this visit it was determined that this project is a good candidate for the ARDL buy down program. The Utah Animal Feedlot Runoff Risk Index (UAFRRRI) worksheet estimates that by installing these practices the risk of runoff from this operation entering into waters of the state will go from "High risk" to "Very low risk".

The feedlot to be abandoned is located on a hill above the Bear River. The drainage from this feedlot currently drains into a slough adjacent to the Bear River, which is listed on the 303(d) list of impaired waters for total phosphorous and low dissolved oxygen. This project will help implement the TMDL that was developed on the Middle Bear River and Cutler Reservoir for total phosphorous and low dissolved oxygen.

Date Received: August 26, 2019
Date Presented to the WQB: November 6, 2019

WATER QUALITY BOARD
AGRICULTURAL RESOURCE DEVELOPMENT LOAN BUY DOWN PROJECT
AUTHORIZATION

APPLICANT: Munk Dairy
2598 West 5900 North
Amalga, Utah 84335

CONTACT PERSON: Shane Munk

CONSERVATION PLANNER: Justin Elsner
USDA-NRCS Soil Conservationist
Logan, UT.
Work Cell (435) 720-7485
Office: (435)-557-5128

APPLICANT'S REQUEST:

Munk Dairy is requesting financial assistance in the form of an interest buy-down for an Agricultural Resource Development Loan (ARDL) loan previously approved by the Utah Conservation Commission on October 17th, 2019. The total ARDL loan amount is \$160,000. This is a 15 year amortized loan at 1.25% interest. The total amount being requested for the buy down of this loan will be \$16,017.

APPLICANT'S LOCATION:

Munk Dairy is located approximately 1 mile South of Amalga, where the Bear River crosses 2400 West.

BACKGROUND:

Munk Dairy is located approximately 1 mile South of Amalga. The feedlot that has been proposed to be abandoned contains approximately 90 animals. The runoff from this feedlot currently runs into a slough on the edge of the Bear River. The Division of Water Quality (DWQ) is currently implementing a Total Maximum Daily Load (TMDL) for total phosphorous and low dissolved oxygen on the Middle Bear River and Cutler Reservoir. The purpose of this project is to decommission the old feedlot, and relocate the

animals to the main operation where the NRCS has been working with the landowner to construct better facilities that can adequately store the waste from these animals. The NRCS is also working with the Munk Dairy to update their nutrient management plan that will help them know when and where they can apply manure and liquids to their fields.

PROJECT NEED:

This project will completely eliminate the runoff from the 90 animal feedlot. This runoff is currently running through a pipe directly into a slough. According to the Utah Animal Feedlot Runoff Risk Index the potential pollutant load reductions could be reduced by as much as 131 lbs. of phosphorous and 657 lbs. of Nitrogen per year by implementing the practices recommended by the NRCS conservation planner.

PROJECT DESCRIPTION:

The Munk Dairy is proposing the following:

- Decommissioning of the old feedlot and drainage line.
- Installation of two waste storage facilities
- Installation of coral fencing (980 feet)
- Installation of Irrigation Pipeline and one pumping plant(280 feet)
- Installation of roof runoff prevention structures (3)
- Installation of waste transfer stations (6)
- Update of nutrient management plan.

IMPLEMENTATION SCHEDULE:

Application first received by DEQ	August 2019
Application for ARDL loan	August 2019
Application for ARDL loan approved	October 2019
Project presented to WQB	November 2019
Projected project completion date	December 2022

COST SHARING:

Funding from the Natural Resource Conservation Service	\$306,403
ARDL Loan	\$160,000
Interest Buy Down from WQB	<u>\$ 16,017</u>
Total Project Cost	\$482,420

STAFF RECOMMENDATIONS:

Staff recommends that the Water Quality Board authorize Munk Dairy an interest buy down of their existing ARDL loan of \$160,000 at 1.25% for a total of \$16,017. This agreement will be between DEQ and UDAF, and once the project has been completed and certified by a certified conservation planner, DEQ will issue payment to UDAF, and the buy down will be applied directly to the ARDL loan held by Munk Dairy.

SPECIAL CONDITIONS:

- 1) The Munk Dairy must adhere to the developed nutrient management plan
- 2) A final project report will be submitted to DEQ within 90 days of project completion.



State of Utah

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Department of
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MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica B. Gaddis, PhD
Director

John K. Mackey, P.E.
Engineering Section Manager

FROM: Robert R. Beers, MBA, EHS
Onsite Wastewater Program Manager

DATE: November 6, 2019

SUBJECT: Request to Initiate Rulemaking on Rule R317-401 Graywater Systems

The purpose of this memorandum is to request authorization from the Utah Water Quality Board to initiate rulemaking to revise Rule R317-401, Graywater Systems¹. The proposed amendment would:

1. Simplify the regulatory requirements for graywater system implementation, including home and business retrofits;
2. Incorporate nationally recognized standards, materials, practices and regulations;
3. Ensure proper application of graywater systems that both conserve water and protect public health and water quality; and
4. Implement regulatory processes to track, monitor, and correct permitted systems.

Attachments: Text of Revisions to *Rule R317-401, Graywater Systems* (DWQ-2019-015210)
Summary of Changes to *R317-401, Graywater Systems* (DWQ-2019-015212)

In partnership with the 13 Local and District Health Departments (LHDs) in Utah, the Division administers Rule R317-401, Graywater Systems, for the State. This rule allows for subsurface dispersal of graywater using drainage trenches (similar to onsite wastewater systems) and by pressurized drip irrigation. Currently, all systems are required to have a holding tank. Rule requires that all systems must be regulated under a Division approved graywater management program administered by the LHD. Implementation of this program

¹ "Graywater" means wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, or laundry tubs. Graywater does not include wastewater from toilets, kitchen sinks, photo lab sinks, dishwashers, water softeners, garage floor drains, or other sources that pose a public health hazard.

has been optional for the LHDs and to date only one (Utah County Health Department) elected to “Opt-in” under this delegated program. Southeast Utah District Health Department has been authorized to approve two experimental systems.

Implementation of this rule, and hence, graywater systems, has been extremely limited by: (1) programmatic requirements for LHDs, and (2) the limited system alternatives allowed. Some applicants have been frustrated by the burdensome process and high costs of rule prescriptions, and as a result, decide to not implement their system or (potentially) install a system without regulatory oversight.

As a result of the relative disuse of this rule and growing interest in some parts of the state for more solutions toward water conservation, staff and CLEHA Onsite Wastewater Partnership (COWP) worked to update and improve the subject rule.

Proposed Revision to Rule R317-401, Graywater Systems

With today’s request to initiate rulemaking, the proposed rule institutes a statewide graywater management program, applicable to most residential and non-residential uses upon adoption. When implemented, the results of the rule change will be to enable property owners to implement significant water conservation measures on their property in a manner that is both feasible and protective of water quality and public health. The text for the proposed rule change is attached. The principal changes to R317-401 being proposed today are outlined as follows and a detailed description of the proposed changes is also attached.

Simplified Regulatory Process

1. Delegates program implementation authority to the LHDs for both residential and non-residential properties
2. Does not require LHDs to implement a graywater management program by resolution
3. Adds adaptive flexibility for LHD programs
4. Expands graywater system alternatives available to users.

Application

1. Provides two system type tiers: Simple and Pressurized
2. Establishes testing and designer requirements consistent with Onsite Professional Certification requirements
3. Eliminates mandatory holding tank requirement (Tier 1 systems)
4. Updates irrigation system design standards
5. Adds branched drain basin systems and standard
6. Updates variance provisions
7. Incorporates Best Management Practice Guidance (Rule Appendix)

Regulatory Oversight

1. Adds Operating Permit alternatives
2. Establishes Annual LHD reporting to the Division

The precise impacts of the level of conservation that will be accomplished by this Rule are difficult to predict. Although it may take years before its impact is detectible, several outcomes of the graywater rule can be stated:

1. The health of humans and the ecosystem are protected under the properly administered graywater management program as proposed in this rule.
2. The volume of water recovered through graywater systems each year is expected to be extremely small on a statewide hydrologic basis but can provide a significant benefit for property owners who are otherwise limited by climate and/or cost in their ability to maintain outdoor plants.
3. Property owners wanting to actively contribute to water conservation and “green” homes, businesses and communities will have greater flexibility and opportunity to do so under this Rule.

Costs and Benefits of Graywater Systems Rule Implementation

Graywater systems permitted under this Rule are not required. Their installation is available at the property owner’s option. System upkeep will be required as a condition of the operating permit, administered by the LHD, and these costs will be borne by the owner. Some savings due to the conservation of water will be achieved. The owner’s personal satisfaction from conserving water may be the most important benefit.

Local health departments may incur costs from their administration of the graywater management program, but only if the LHD elects to "opt-in" to the program. Costs will result from program development, construction and operating permitting, inspections, records management and reporting. All of these costs can be recovered through fees; however, where community interest in the program is low, the necessary fees may be prohibitive. For such cases, the Rule does not require an LHD to “Opt-in” to the program, but the LHD may choose to do so when demand for graywater systems is sufficient to support these costs through reasonable fees.

Staff Recommendation

Staff recommends that the Water Quality Board authorize initiation of rulemaking to “rescind-and-replace” the current Rule R317-401, Graywater Systems, with the proposed new Rule. Staff is recommending the “rescind-and-replace” approach instead of simply amending the current Rule due to reorganizations within the existing Rule that took place during its development. This approach should simplify the Board and the public’s review and understanding of staff’s proposal for implementing graywater systems for the future. The proposed replacement Rule, which is attached, institutes a statewide graywater management program, applicable to most residential and non-residential uses.

R317. Environmental Quality, Water Quality.

R317-401. Graywater Systems.

R317-401-1. Authority, Purpose, Scope and Administrative Requirements.

1.1. Authorization.

These rules are administered by the Division authorized by Title 19 Chapter 5.

1.2. Purpose.

The purpose of this rule is to protect public health and environment from potential adverse effects from graywater use while promoting water conservation by facilitating reuse of graywater for landscape irrigation within the boundaries of Utah.

1.3. Scope.

This rule shall apply to the design, installation, modification, discharge, use and repair of graywater systems for subsurface landscape irrigation for residential and non-residential buildings.

1.4. Jurisdiction.

Local health departments have jurisdiction to administer this rule. Nothing contained in this rule shall be construed to prevent a local health department from:

- (a) adopting stricter requirements than those contained in R317-401;
- (b) prohibiting any graywater system within its jurisdiction;
- (c) assessing fees for administration of this rule;
- (d) requiring graywater systems within its jurisdiction be placed under an umbrella of a:
 - (i) responsible management entity overseen by the local health department;
 - (ii) contract service provider overseen by the local health department; or
 - (iii) management district or body politic created by the county for the purpose of operation, maintenance and repairs of all graywater systems;
- (e) receiving a request for a variance, conducting a review, and granting either an approval or denial.

1.5. Graywater System Administration.

(a) The local health department having jurisdiction shall obtain approval from the Director to administer a graywater systems program before permitting any graywater system.

(b) The local health department request for approval shall include a description of its plan to properly manage graywater systems to protect public health. This plan must include:

(i) Documentation of:

(A) the adequacy of staff resources to manage the increased work load;

(B) the technical capability to administer the new program including any training plans that are needed;

(C) Local Board of Health and County Commission support for this request; and

(D) the county's or the health jurisdiction's legal authority to implement and enforce correction of any malfunctioning system and its commitment to exercise this authority.

(ii) An agreement to:

(A) advise the owner of the system of the type of system, and information concerning risk of failure, level of maintenance required, financial liability for repair, modification or replacement of a failed system and periodic monitoring requirements;

(B) advise the local building authority of the approved graywater system on the property;

(C) provide oversight of installed systems;

(D) record the existence of any graywater system on the deed of ownership for that property;

(E) Implement a graywater system operating permit program consisting of:

(1) Tier 1 system operating permits may be issued at the discretion of the regulatory authority; and

(2) Tier 2 system operating permits issued with a renewal frequency not exceeding five years and inspection by the regulatory authority prior to renewal, or annual inspections by the regulatory authority consisting of the greater of 20 per cent of all installed systems or the minimum of ten installed systems.

(F) maintain records of all installed systems, failures, modifications, repairs and all inspections recording the condition of the system at the time of inspection such as overflow, surfacing, ponding and nuisance; and

(G) submit an annual report to the Division on or before September 1 for the previous State of Utah fiscal year's

activities showing:

- (1) the type and number of graywater systems approved, installed, modified, repaired, failed, and inspected;
- (2) a summary of enforcement actions taken, pending, and resolved;
- (3) the number of variances granted or denied; and
- (4) a summary of any water quality performance data collected.

R317-401-2. Definitions.

2.1 Definitions found in R317-4 apply to graywater systems except where specifically replaced in R317-401-2:

"Aggregate" means regulatory authority approved clean porous material used to disperse graywater.

"Backflow" means the phenomena that occur when the customer's water pressure is higher than the supply pressure. This could be caused by an unprotected cross connection between a drinking water supply and a pressurized irrigation system, a boiler, a pressurized industrial process, elevation differences, air or steam pressure, use of booster pumps or any other source of pressure.

"Bedroom" means any portion of a dwelling that is so designed as to furnish the minimum isolation necessary for use as a sleeping area. It may include a den, study, sewing room, or sleeping loft. Unfinished basements shall be counted as a minimum of one additional bedroom.

"Distribution zone" means any portion of a graywater irrigation system that discharges graywater to a specific area for irrigation purposes.

"Graywater" means wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, or laundry tubs. Graywater does not include wastewater from toilets, kitchen sinks, photo lab sinks, dishwashers, water softeners, garage floor drains, or other sources that pose a public health hazard.

"Irrigation system" means any network of pipes, drip irrigation lines, or mulch shields used to distribute graywater in a manner suitable for subsurface landscape irrigation.

"Mulch Shield" means a perforated vessel into which graywater is discharged and is temporarily detained before draining into a mulch basin.

"Non-Residential" means a building that produces domestic

wastewater, and is not a single-family dwelling.

"Regulatory Authority" means either the Utah Division of Water Quality or the local health department having jurisdiction.

"Residential" means a single-family or multi-family dwelling that produces domestic wastewater.

"Stub-out" means a plumbed connection located with fixtures in compliance with R317-401 for diversion of graywater from wastewater plumbing. A stub-out shall be connected to an approved graywater collection system or capped for future connection.

"Surge Tank" means a water-tight tank used to equalize peaks in graywater pressure and flow so that graywater may be dispersed gradually over time. A surge tank is intended only for temporary storage of graywater during periods of peak flow.

"Three-way diverter valve" means a valve that allows the operator to send graywater to the graywater system or to the building sewer.

"Tier 1 system" means a gravity-fed graywater system that does not include any surge tank, pretreatment, or pressurized components. A Tier 1 system may be appropriate for retrofit situations. A Tier 1 system is intended to be simple to operate and can be easily disconnected during winter months or other periods when the system may not be in use.

"Tier 2 system" means a graywater system that employs a surge tank, pretreatment, drip line irrigation system, or pressurized components.

"Unapproved graywater system" means any graywater system that is deemed by the regulatory authority to have been installed, repaired, or altered without required regulatory oversight, permit, or inspection.

R317-401-3. Failure to Comply, Prohibitions, and Abandonment of Graywater Systems.

3.1. Failure to Comply with Rules.

Any person failing to comply with this rule shall be subject to enforcement action as specified in sections 19-5-115 and 26A-1-123.

3.2. Prohibitions.

It shall be unlawful for any person to construct, install, modify, or cause to be constructed, installed or modified any

graywater system in a building or on a given lot without first obtaining a permit to do such work.

(a) graywater may not be:

(i) discharged on the land surface;

(ii) applied to vegetable gardens except where graywater is not likely to have direct contact with the edible part, whether the fruit will be processed or not;

(iii) used in spray irrigation;

(iv) discharged directly into or reach any storm sewer system or any waters of the State; or

(v) allowed to surface, pond, or runoff.

(b) a graywater system shall be located on the same lot as the building served unless, when approved by the regulatory authority, a perpetual utility easement and right-of-way is established on an adjacent or nearby lot, which includes rights to ingress and egress necessary or convenient for the full or complete use, occupation, and enjoyment of the granted easement.

(c) a graywater system may not be approved as the sole source of water disposal. Connection to an approved sewer or onsite wastewater system is required.

(d) the capacity of any onsite wastewater system, including required future replacement areas, shall not be decreased by the existence or proposed installation of a graywater system servicing a given lot.

(e) a potable water connection may not be made to any graywater system.

(f) graywater components within the building shall comply with the International Plumbing Code and local building code.

3.3. Abandonment of Graywater Systems.

(a) the regulatory authority shall be notified at least 30 days before the planned abandonment of any graywater system.

(b) upon approval from the local health department having jurisdiction, the owner of the real property on which a graywater system is located shall have any surge tank, if present:

(i) pumped out only in a manner approved by the regulatory authority within 30 days;

(ii) filled completely with earth, sand, or gravel within 30 days; or

(iii) removed within 30 days.

(c) upon approval from the regulatory authority, the owner

of the real property on which a graywater system is located shall disconnect the abandoned graywater system from any buildings served by the system.

R317-401-4. Feasibility Determination and Design Requirements.

4.1. General Criteria for Determining Graywater System Feasibility.

The regulatory authority shall determine the feasibility of using a graywater system. The regulatory authority will review required information for any existing or proposed system to determine graywater system feasibility. The required information shall be prepared at the owner's expense by, or under the supervision of, a qualified person approved by the regulatory authority.

(a) General Information.

The required information shall include:

(i) the county recorder's plat and parcel ID and situs address if available;

(ii) name and address of the property owner and person requesting feasibility.

(b) The location and distance to the nearest sewer, owner of sewer, whether property is located within the service boundary, and size of sewer; and

(c) Statement of proposed use if other than a single-family dwelling.

4.2. Soil and Site Evaluation.

Soil and groundwater evaluations shall be conducted by professionals fulfilling the requirements of R317-11.

(a) soil classification and maximum ground water determination shall be:

(i) performed using a minimum of one test hole;

(ii) dug in close proximity to the proposed subsurface distribution zone;

(iii) be at least two feet below the bottom of the proposed subsurface distribution zone; and

(iv) evaluated and reported using the USDA Soil Texture Classification method;

(b) soil sample test results may also be accepted from a qualified soil analysis lab at the discretion of the local health department.

4.3. Plan Review and Permitting.

Plans and specifications for the construction, alteration, extension, or change of use for any graywater system shall be submitted to the regulatory authority. The regulatory authority shall review said plans and specifications as to their adequacy of design for the intended purpose, and shall, if necessary, require such changes as are required by these rules. When the reviewing regulatory authority is satisfied that plans and specifications are adequate for the conditions under which a system is to be installed and used, a construction permit shall be issued to the property owner. Construction of any graywater system may not commence until the regulatory authority has issued a construction permit.

(a) System Designer Qualifications.

Graywater system design requirements are determined by the complexity of the system. Systems shall be permitted by tiers.

(i) a Tier 1 System designer shall be certified at a Level 2 as defined by R317-11.

(ii) a Tier 2 System designer shall be certified at a Level 3 as defined by R317-11.

(b) Information Required.

Plans submitted for review shall be drawn to scale, 1" = 10', 20' or 30', or other scale as approved by the regulatory authority. Plans shall be prepared in such a manner that the contractor can read and follow them in order to install the system properly. Depending on the individual site and circumstances, or as determined by the regulatory authority, required information may include:

(i) Applicant information consisting of:

(A) the name, current address, and telephone number of the applicant;

(B) complete address, legal description of the property, or both to be served by the graywater system.

(ii) Graywater Irrigation System Site Plan consisting of:

(A) submittal date of plan;

(B) North arrow;

(C) lot size and dimensions;

(D) ground surface contours, preferably at 2 foot intervals, of both the original and proposed final grades of the property, or relative elevations using an established bench mark;

(E) maximum number of bedrooms, including statement of

whether a finished or unfinished basement will be provided, the number of fixtures proposed to be connected to graywater system, or if other than a single family dwelling, the number of occupants expected and the estimated gallons of wastewater generated per day;

(F) location and dimensions of paved and unpaved driveways, roadways and parking areas;

(G) proposed location and dimensions of the essential components of the graywater system;

(H) location of all soil exploration pits and all percolation test holes;

(I) location of any present or proposed retaining walls, drainage channels, or buildings;

(J) location of building sewer and water service line to serve the building;

(K) location of easements or drainage right-of-ways affecting the property;

(L) location of all intermittent or year-round streams, ditches, watercourses, ponds, subsurface drains, etc. within 100 feet of proposed graywater system;

(M) location, type, and depth of all existing and proposed non-public water supply sources within 200 feet of the graywater system, and of all existing or proposed public water supply sources within 1500 feet of the graywater system and associated source protection zones;

(N) distance to nearest public water main and size of main;

(O) distance to nearest public sewer, size of sewer, and whether accessible by gravity;

(P) location of any onsite wastewater system, any replacement area, and location of the proposed graywater system;

(iii) a statement with the site plan indicating the source of culinary water supply, whether a well, spring, non-public or public system, and its location and distance from any graywater systems within 200 feet. The regulatory authority may not approve a graywater irrigation system if:

(A) the applicant has a private culinary system; and

(B) lacks a water right with use type designated for irrigation by the Utah Division of Water Rights.

(iv) Relative elevations, using an established bench mark, including:

- (A) building drain outlet;
- (B) the outlet of any graywater system components;
- (C) the final ground surface over the graywater system.
- (v) Details for the graywater system design site, plans, and specifications as listed in Section R317-401-5, including:
 - (A) schedule or grade, material, diameter, and minimum slope of graywater sewer and distribution pipes;
 - (B) surge tank capacity, design, cross sections, etc., materials, and dimensions, if applicable. If tank is commercially manufactured, state the name and address of manufacturer;
 - (C) subsurface graywater discharge system details, including:
 - (1) details of mulch shields and mulch shield basins, if provided;
 - (2) description and details for method of graywater dispersal, whether aggregate or chambers;
 - (3) length, slope, and spacing of each absorption system component;
 - (4) maximum slope across ground surface of absorption system area;
 - (5) distance of graywater discharge system from trees, cut banks, fills, or subsurface drains; and
 - (6) cross section of graywater discharge system showing the:
 - (I) depth and width of graywater discharge system excavation;
 - (II) depth of distribution pipe;
 - (III) depth of aggregate;
 - (IV) barrier material, i.e. synthetic filter fabric, straw, etc., used to separate aggregate from cover; and
 - (V) depth of cover; and
 - (7) other pertinent information.

4.4. Plans Submitted.

- (a) All applicants requesting plan approval for a graywater system shall submit a sufficient number of copies of required information to enable the regulatory authority to retain one copy as a permanent record.
- (b) Applications may be rejected if proper information is not submitted.

R317-401-5. Design of Graywater Systems.

- 5.1. The basis of design for a graywater system shall be:
 (a) according to Table 1 or Table 2 for residential usage;

TABLE 1
 Design Flow, Entire Single Family Dwelling

Number of Bedrooms	Flow, gallons per day
Two Bedrooms (Minimum)	160
Three Bedrooms	240
Each Additional Bedroom	40

TABLE 2
 Design Flow, Single Fixture

Fixture	Flow, gallons per day/bedroom
Washing Machine	30
Shower/Bath Tub	50
Hand Wash Basin	5
Other Sources	Shall be sized by a qualified designer

(b) non-residential usage shall be sized by a certified designer and evaluated on a case-by-case basis by the regulatory authority;

(c) all materials shall meet the requirements of the International Plumbing Code and local building code; and

(d) no graywater system or any part thereof shall be located at any point having less than the minimum distances indicated in Table 3:

TABLE 3
 Separation Distances

Minimum Horizontal Distance From(ft)	Surge Tank	Subsurface Discharge
Building or Structures (a)	5 (b)	2
Property Line	5	5
Public Drinking Water Sources (c)	(d)	(d)
Non-public Drinking Water Sources		
Protected (grouted) Source	50	100
Unprotected (ungROUTED) Source	50 (e)	200 (e)

Streams, Ditches, and Lakes (c)	25	100 (f)
Seepage Pits	5	10
Absorption System and Replacement Area	5	10
Septic Tank	5	5
Culinary Water Supply Line	10	10 (g)

Notes:

(a) Including porches and steps, whether covered or uncovered, but does not include carports, covered walks, driveways and similar structures.

(b) For above ground tanks the regulatory authority may allow less than five feet separation.

(c) As defined in R309-600 and R309-605.

(d) Recommended separation distances will comply with the Source Water Protection requirements listed in R309-600 and R309-605.

(e) Recommended separation distance may increase at the discretion of the regulatory authority for the purpose of protecting public health.

(f) Lining or enclosing watercourse or location above graywater discharge area may justify reduced separation distance(s) at the discretion of the regulatory authority.

(g) As defined in R309-550

5.2. Surge Tank

(a) a surge tank is required for a Tier 2 graywater system. Plans for a surge tank shall include dimensions, structural, bracing and connection details, and a certification of structural suitability for the intended installation from the manufacturer.

(b) a surge tank shall be:

(i) a minimum of 250 gallons in volumetric capacity to provide settling of solids, accumulation of sludge and scum unless justified with a mass balance of inflow and outflow and type of distribution for graywater discharge;

(ii) accessible to the surface with a locking, gasketed access opening, or approved equivalent, to allow for inspection and cleaning;

(iii) constructed of structurally durable materials to withstand all expected physical forces, and not subject to

excessive corrosion or decay;

- (iv) watertight;
- (v) anchored against overturning;
- (vi) installed below ground on dry, level, well-compacted soil or above ground on a level, four-inch thick concrete slab;
- (vii) permanently marked showing the rated capacity, and "GRAYWATER IRRIGATION SYSTEM, DANGER - UNSAFE WATER" on the unit;
- (viii) provided with an overflow pipe:
 - (A) of diameter at least equal to that of the inlet pipe diameter;
 - (B) connected permanently to the building sewer;
 - (C) equipped with a check valve or backwater valve, accessible for cleaning and maintenance, to prevent backflow from building sewer; and
 - (D) which may not include a shut-off valve.
- (ix) provided with a drain pipe of diameter at least equal to that of the inlet pipe diameter; and
- (x) provided with a vent pipe in conformance with the requirements of the International Plumbing Code and local building code;

5.3. Valves and Piping.

(a) graywater piping that discharges into a surge tank or has a direct connection to a sanitary drain or sewer piping shall be downstream of an approved water seal type trap(s). If no such trap(s) exists, an approved vented running trap shall be installed upstream of the connection to protect the building from any possible waste or sewer gases.

(b) vents, venting, and piping shall meet the requirements of the International Plumbing Code and local building code.

(c) all graywater piping shall be purple or shall have a continuous marking with the words: DANGER - UNSAFE WATER.

(d) a graywater system shall have a 3-way diverter valve at any stub-out connection. A 3-way diverter valve shall be connected to a fixture or inlet, an approved graywater system, and building sewer.

(e) any 3-way diverter valve(s) shall be readily accessible and clearly marked to indicate directional flow to graywater system or building sewer.

R317-401-6. Construction and Installation of Irrigation

Systems.

6.1. each distribution zone shall have a minimum effective irrigation area for the soil characteristics and vegetation needs.

6.2. the area of a distribution zone shall be equal to the total length of the perforated pipe sections within the distribution zone multiplied by the width of the proposed trench. The required square footage shall be determined using Table 4 or Table 5.

TABLE 4
Subsurface Irrigation System Design

Soil Characteristics	Subsurface Irrigation System Area Loading, gallons of graywater per day per square foot
Coarse Sand or Gravel	5
Fine Sand	4
Sandy Loam	2.5
Sandy Clay Loam	1.6
Clay Loam	1.1
Clay with Sand or Gravel	0.8

TABLE 5
Drip Irrigation System Design

Soil Characteristics	Minimum Number of Emitters, per gallon per day	Maximum Emitter Discharge, gallons per day
Coarse Sand or Gravel	0.6	1.8
Fine Sand	0.7	1.4
Sandy Loam	0.9	1.2
Sandy Clay Loam	1.1	0.9
Clay Loam	1.6	0.6
Clay with Sand or Gravel	2.0	0.5

6.3. the lowest point of any distribution zone may not be within two vertical feet to the maximum groundwater table.

Applicant shall provide sufficient groundwater data to the regulatory authority. R317-4-4.1.B.4 may be used to determine maximum groundwater elevation.

6.4. Subsurface drip irrigation system.

Subsurface drip irrigation systems shall be constructed so that:

(a) a 140 mesh (115 micron) filter with a capacity of 25 gallons per minute minimum shall be used to prevent drip irrigation system clogging;

(b) the filter backwash and flush discharge shall be captured, contained, and discharged to the sewer system or approved onsite wastewater system;

(i) filter backwash water and flush water may not be used for any purpose.

(ii) sanitary procedures shall be followed when handling filter backwash and flush discharge of graywater.

(c) emitters recommended by the manufacturer shall be resistant to root intrusion and suitable for subsurface and graywater dispersal;

(d) each irrigation zone shall include the minimum number of emitters required to meet the daily graywater flows as defined in Table 5;

(e) minimum spacing between emitters should be 12 inches in any direction, or as recommended by the manufacturer;

(f) the system shall provide user controls such as valves, switches, timers, and other controls as appropriate, to rotate the discharge of graywater between distribution zones;

(g) all drip irrigation force mains and manifolds shall:

(i) meet requirements of Table 7;

(ii) be connected with schedule 40 fittings;

(iii) be connected as per manufacturer's specifications, inspected and pressure tested at 40 pounds per square inch and shown to be drip tight for five minutes, before burial; and

(iv) buried at a minimum depth of six inches.

(h) lateral distribution lines may be PE or flexible PVC tubing and shall be covered to a minimum depth of six inches;

(i) pressure at the emitter shall meet the manufacturer's recommendations; and

(j) each distribution zone shall include a flush valve, and where applicable, an anti-siphon valve to prevent back siphonage of water and soil.

6.5. Subsurface Irrigation System

Subsurface irrigation systems consisting of pipe and gravel or chambers may be used for dispersal of graywater.

(a) perforated pipe sections shall be a minimum three-inch diameter and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated PVC pipe, or other approved materials as required in Table 7, provided that sufficient openings are available for distribution of the graywater in the trench area. Material, construction and perforation of the piping shall be in compliance with the requirements of the International Plumbing Code and local building code.

(b) a subsurface irrigation system shall be constructed in accordance with Table 6.

(c) aggregate shall be placed in the trench to the depth and grade required by Table 6. The aggregate shall then be covered with barrier material to prevent closure of voids with backfill.

(d) chamber systems shall be installed as per manufacturer's specifications. All chambers shall meet International Association of Plumbing and Mechanical Officials (IAPMO) Standard PS 63-2005, which is hereby incorporated into this rule by reference.

(e) backfill may not be placed over the barrier material or chambers prior to inspection and approval by the regulatory authority.

TABLE 6
Lateral Construction Details

Description	Minimum	Maximum
Number of drain lines per zone	1	---
Length of each perforated line, feet	---	150
Bottom width of trench, inches	6	36
Total depth of trench, inches	9	36
Spacing of lines, wall to wall, feet	4	---
Depth of backfill, inches	6	---
Depth of aggregate cover over lines, inches	2	---
Depth of aggregate beneath lines, inches	3	---
Grade of drain lines, inches per 100 feet	Level	4

TABLE 7
Minimum Standards for Graywater Sewer and Distribution Pipe
Materials (a)

Acceptable Graywater Pipe Materials

Type of Pipe	Minimum Standard
Acrylonitrile-Butadiene Styrene (ABS)	ASTM (b), D-2680, D-2751, F-628
Polyvinyl Chloride (PVC)	ASTM D-2665, D-3033, D-3034

Acceptable Distribution Pipe Materials

Type of Pipe	Minimum Standard
ABS	ASTM D-2661, D-2751
Polyethylene (PE)	Smooth Wall ASTM D-3350
PVC	ASTM D-2665, D-3033, D-3034, D-2729(c)

Notes:

- (a) Each length of graywater sewer and distribution pipe shall be stamped or marked.
- (b) American Society for Testing and Materials.
- (c) Although perforated PVC, ASTM D-2729 is approved for absorption system application, the solid-wall version of this pipe is not approved for any application.

R317-401-7. Construction and Installation of Branched Drain Basin Systems.

7.1. Branched Drain Basin Construction Details.

(a) mulch shields shall be constructed of a durable material and should be placed for optimum effluent distribution.

(b) aggregate shall be placed in the basin in a manner that will allow proper effluent distribution, prevent ponding, with a minimum depth of 6 inches over graywater flood level, and as required in Table 6.

(c) backfill may not be placed over the mulch shields or flow splitters until after inspection and approval by the regulatory authority.

(d) access to any flow splitter or mulch shield shall be within 6 inches of finished grade.

(e) branched drain basins shall be constructed in accordance with Table 8 and Table 9.

TABLE 8
Mulch Basin Sizing

Soil Type	Mulch Basin Loading Rate, gallons of graywater per day per square foot	Maximum gallons per mulch shield per day(a)
Sand	5	60
Loam	3	40
Clay	1	20

(a) The number of gallons per mulch shield per day is site specific and the designer may need to decrease the number of gallons per mulch shield when appropriate or as required by the regulatory authority.

TABLE 9
Mulch Basin Construction Details

Description	Minimum	Maximum
Cleanouts	1	---
3-way Valve or similar (per stub out location)	1	---
Discharge Points (per stub-out location)	2	16
Double Ell Flow Splitter	1	---
Pipe Diameter	2 inch	4 inch
Pipe Slope	$\frac{1}{4}$ inch per foot	---
Mulch Shield Volume	5 gallons	---
Air gap in mulch shield above highest perforation	6 inches	---

7.2. Construction, Inspection and Testing.

(a) installation shall conform to the equipment and installation methods described in the approved plans.

(b) any surge tank shall be filled with water to the overflow line prior to and during construction inspection. All seams and joints shall be left exposed and the tank shall remain watertight.

(c) the irrigation system shall be installed in the area which has soils similar to the soils which have been evaluated,

and has an absorption rate corresponding to the given soil classification.

(d) a graywater stub-out may be allowed for future construction, provided it is capped prior to connection to the installed irrigation lines and landscaping. Any stub-out shall be permanently marked: GRAYWATER STUB-OUT, DANGER UNSAFE WATER.

(e) a flow test shall be performed throughout the system, from surge tank to the point of graywater discharge. All lines and components shall be watertight.

(f) written operation and maintenance procedures including checklist and maintenance instructions from the designer shall be provided to the owner prior to the regulatory authority issuing written approval or authorization.

(g) the installed graywater system shall be operated only after receiving a written approval or authorization from the regulatory authority after the regulatory authority has made the final construction inspection.

R317-401-8. Variance to Design Requirements.

8.1. Request for a Variance.

A variance may not be approved unless an applicant demonstrates that:

(a) a graywater system consistent with R317-401 and local health department requirements cannot be constructed. This determination will be made by the regulatory authority;

(b) graywater from the proposed graywater system may not:

(i) contaminate groundwater or waters of the state; or

(ii) surface or move off site.

(c) the proposed system will result in equal or greater protection of public health and the environment than is required by meeting the minimum standards and intent of this rule;

(d) adjacent properties, including the current and reasonably anticipated uses of adjacent properties, will not be jeopardized if the proposed system is constructed, operated, and maintained;

8.2. Procedure for Requesting a Variance.

(a) a variance request shall include the information and documentation described in Subsection R317-401-6.

(b) the regulatory authority shall review the variance request and prepare a written determination outlining the conditions of approval or denial of the request. The review

shall identify the factors considered in the process and specify the basis for the determination.

8.3. Application Requirements.

The variance application shall include all information and documentation necessary to evaluate proposal and ensure that public health and the environment are protected.

(a) the regulatory authority shall require a detailed description of the proposed system, including a detailed explanation of wastewater treatment technologies allowed by this rule that have been considered for use, and that will provide the best available treatment;

(b) the regulatory authority may require technical justification and appropriate engineering, geotechnical, hydrogeologic, and reliability information justifying the request for a variance.

8.4. Variance Approvals.

(a) a variance may not be approved unless the applicant demonstrates that all of the required conditions in Chapter R317-401 are met.

(b) the regulatory authority may not issue an approval or an operating permit for a graywater system that does not comply with this rule unless a variance has been approved.

(c) notice of the conditions shall be recorded in the chain of title for the property in the office of the county recorder. The notice shall include:

(i) the description of the system and variance conditions;
(ii) operation and maintenance requirements;
(iii) permission for the regulatory authority to access the property for the purpose of inspection and monitoring of the system; and

(iv) owner responsibilities to correct, repair, or replace the system at the direction of the regulatory authority.

R317-401-9. APPENDICES.

APPENDIX A. RECOMMENDED BEST MANAGEMENT PRACTICES.

The use of plant friendly products is important when using graywater for irrigation. Products should be salt and borax free in addition to being biodegradable and non-toxic. Plant friendly products are key when reusing graywater. Chlorine bleach can be harmful to plants and should be diverted to your sewer system. Hydrogen peroxide based products can be used

instead of bleach. The pH of your graywater also needs to be considered. Most soaps do not change the pH but some do. Liquid soaps typically do not change the pH of graywater. Bar soaps can make the water very basic. Choosing plants that are not affected by pH is best if you are not sure if the pH is being affected by the products you typically use. Graywater systems are not maintenance free and require consistent and frequent inspection by the owner to ensure proper functionality.

7.1. Graywater Compatible Plants.

- (a) trees and fruit trees;
- (b) bushes, shrubs, and vines;
- (c) larger perennials and annuals; and
- (d) food crops for which the graywater will not come into contact with the edible portion of the plant.

7.2. Graywater Incompatible Plants.

- (a) acidic soil-loving plants;
- (b) seedlings or young plants.

7.3. Graywater Irrigation Issues.

Graywater can clog drip systems without proper filtration and regular maintenance. Either remove solid particles from the water (by filtering or settlement) or increase the diameter of the holes in the irrigation pipe. It is recommended that drip irrigation hoses with small outlets not be used for graywater irrigation unless the solid particles have been removed.

7.4. Maintaining Graywater Irrigation Zones.

It may be necessary to replace mulch, flush soil with potable or fresh water periodically during extended periods of no rain in order to disperse minerals, such as salts from building up. Check for these issues and adjust graywater output accordingly:

- (a) unusual odors;
- (b) clumping of soil;
- (c) poor vegetation growth;
- (d) damp or boggy ground hours after irrigation, or soil is excessively damp with signs of surface ponding and run-off;
- (e) a fine sheet of clay covering the surface; or
- (f) evidence of pests and diseases on plants.

APPENDIX B. INSPECTION AND MAINTENANCE SCHEDULE.

Inspection and Maintenance Item	Frequency
---------------------------------	-----------

Inspect and clean filters and screens, replacing where necessary	Every 3 months
Inspect and verify that disinfection, filters, and water quality treatment devices and systems are operational and maintaining minimum water quality requirements	In accordance with manufacturer's instructions and the regulatory authority
Inspect pumps and verify operation	After initial installation and every 12 months thereafter
Inspect valves and verify operation	After initial installation and every 12 months thereafter
Inspect pressure tanks and verify operation	After initial installation and every 12 months thereafter
Inspect and clear debris from storage tanks, locking devices, and verify operation	After initial installation and every 12 months thereafter
Inspect caution labels and markings	After initial installation and every 12 months thereafter
Inspect for cross-connections and test entire system	After initial installation and every 12 months thereafter
Inspect and maintain mulch basins	As needed to maintain mulch depth and prevent ponding and runoff

KEY: wastewater, graywater, drip irrigation
Date of Enactment or Last Substantive Amendment: TBD
Notice of Continuation: TBD
Authorizing, and Implemented or Interpreted Law: 19-5

Summary of Changes to R317-401. Graywater Systems

Section 1

- Modified Section 1 “Purpose,” “Scope,” and “Administrative” requirements for consistency with R317-4 and R317-5
- Added Administrative Requirements
- Expanded Rule coverage to residential and commercial properties
- Removed variance portion and created new section 8 (see below)

Section 2

- Added definitions, including “Tier 1” and Tier 2” systems
- Revised definitions for consistency with consistent with R317

Section 3

- New section added -- "Failure to Comply, Prohibitions, and Abandonment of Graywater Systems" to be consistent with R317

Section 4

- New section added -- "Feasibility Determination and Design Requirements" to be consistent with R317
- Systems without surge tanks and pumps may be designed by Level 2 Onsite Professionals. Pressurized systems still required to be designed by Level 3 Onsite Professionals

Section 5

- New section added -- "Design of Graywater Systems" to be consistent with R317
- Added sections 4 & 5 incorporate existing "Permitting and Approval Requirements" section

Section 6

- Allows for multiple installation options, including low-maintenance gravity systems

Section 7

- New section added -- "Construction and Installation of Branched Drain Basin Systems" to address "mulch shield basin" method for simple graywater dispersal and treatment

Section 8

- New section added -- "Variance to Design Requirements" to be consistent with R317

Appendices

- Added "Best Management Practices" and "Inspection and Maintenance Schedule" appendices to provide useful information. Revisions to appendices can be made without initiating formal rule revision process.



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Dr. Erica Brown Gaddis
Executive Secretary

MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica Brown Gaddis, PhD, Executive Secretary

FROM: Matthew Garn, Manager UPDES Surface Water Section

DATE: November 6, 2019

SUBJECT: Proposed Revisions to R317-8, Utah Pollutant Discharge Elimination System (UPDES)

Action Item: **Request Board approval to initiate rulemaking on the proposed changes.**

Staff requests the Board's approval to commence rulemaking for the following proposed revisions to Utah's Utah Pollution Discharge Elimination System (UPDES) rules. With the approval of the Board, staff can initiate the formal rulemaking process with the Utah Division of Administrative Rules. The Board will be apprised of all comments received during the public comment period. After considering the comments received, staff will return to the Board with recommendations for changing or adopting the revisions.

Summary of Proposed Revisions.

Attachment 1 is a redline-strikeout version of the proposed change.

R317-8-6.5(3)(b). The EPA has finalized 40 CFR 124.10(c)(2)(iv) to allow permitting authorities to provide public notice of permitting actions for UPDES major individual and general permits on the permitting authorities publicly available website in lieu of the newspaper publication requirement in 40 CFR 124.10(c)(2)(i).

Utah DWQ would like to adopt this rule as it would save DWQ the cost of public noticing the draft permits in the local newspaper, which cost on average \$300.00 per publication. On average DWQ notices 20-25 permit actions per year.

DWQ-2019-015082

ATTACHMENT 1
Redline/Strikeout of Proposed Amendments to R317-8
Utah Pollution Discharge Elimination System (UPDES)
November 6, 2019 Utah Water Quality Board Meeting

R317. Environmental Quality, Water Quality.
R317-8. Utah Discharge Elimination System (UPDES)
R317-8-6. Review Procedures
R317-8-6.5. Public Notice of Permit Actions and Public Comment Period
R317-8-6.5(3). Methods

6.5 PUBLIC NOTICE OF PERMIT ACTIONS AND PUBLIC COMMENT PERIOD

(1) Scope.

(a) The Director will give public notice that the following actions have occurred:

- 1. A permit application has been tentatively denied under R317-8-6.3(2); or**
- 2. A draft permit has been prepared under R317-8-6.3(4);**
- 3. A public hearing has been scheduled under R317-8-6.7; and**
- 4. A UPDES new source determination has been made in accordance with the definition in R317-8-1.**

(b) No public notice is required when a request for permit modification, revocation and reissuance, or termination is denied under .2. Written notice of the denial will be given to the requester and to the permittee.

(c) Public notices may describe more than one permit or permit action.

(2) Timing.

(a) Public notice of the preparation of a draft permit, including a notice of intent to deny a permit application, required under R317-8-6.5(1) will allow at least thirty (30) days for public comment.

(b) Public notice of a public hearing shall be given at least thirty (30) days before the hearing. (Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.)

(3) Methods. Public notice of activities described in R317-8-6.5(1)(a) will be given by the following methods:

(a) By mailing a copy of a notice to the following persons (Any person otherwise entitled to receive notice under this paragraph may waive their rights to receive notice for any classes and categories of permits.):

1. The applicant, except for UPDES general permittees, and Region VIII, EPA.

2. Federal and state agencies with jurisdiction over fish, shellfish, and wildlife resources, the Advisory Council on Historic Preservation, Utah Historic Society and other appropriate government authorities, including any affected states;

3. The U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

4. Any user identified in the permit application of a privately owned treatment works; and

5. Persons on a mailing list developed by:

a. Including those who request in writing to be on the list;

b. Soliciting persons for area lists from participants in past permit proceedings in that area; and

c. Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as newsletters, environmental bulletins, or state law journals. The Director may update the mailing list from time to time by requesting written indication of continued interest from those listed. The name of any person who fails to respond to such a request may be deleted from the list.

6. Any unit of local government having jurisdiction over the area where the facility is proposed to be located and each State agency having any authority under State law with respect to construction or operation of such facility.

7. Any other agency which the Director knows has issued or is required to issue a RCRA, UIC, PSD (or other permit under the Federal Clean Air Act, NPDES, 404, or sludge management permit).

(b) For major permits, UPDES general permits, and permits that include sewage sludge and application plans, the Director will publish a notice in a daily or weekly newspaper within the area affected by the facility or activity; or in lieu of the requirement for publication of a notice in a daily or weekly newspaper, the Director may publish all notices of activities described in paragraph (1)(a) of this section to

the Division of Water Quality's public website. If the Director selects this option for a draft permit, in addition to meeting the requirements in paragraph (4) of this section, the Director must post the draft permit and fact sheet on the website for the duration of the public comment period.

(c) In a manner constituting legal notice to the public under Utah law; and

(d) Any other method reasonably determined to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.

(4) Contents.

(a) All public notices issued under this part shall contain the following minimum information:

1. Name and address of the office processing the permit action for which notice is being given;

2. Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit, except in the case of UPDES draft general permits under R317-8-2.5;

3. A brief description of the business conducted at the facility or activity described in the permit application or the draft permit, for UPDES general permits when there is no application;

4. Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit or draft general permit as the case may be, statement of basis or fact sheet, and the application; and

5. A brief description of the comment procedures and the time and place of any public hearing that will be held, including a statement of procedures to request a public hearing, unless a hearing has already been scheduled, and other procedures by which the public may participate in the final permit decision;

6. For UPDES permits only (including those for sludge-only facilities), a general description of the location of each existing or proposed discharge point and the name of the receiving water and the sludge use and disposal practice(s) and the location of each sludge treatment works treating domestic sewage and use or disposal sites known at the time of permit application. For draft general permits, this requirement will be satisfied by a map or description of the permit area;

7. Any additional information considered necessary or appropriate.

(b) Public notices for public hearings. In addition to the general public notice described in .5(4) the public notice for a permit hearing under R317-8-6.7 will contain the following information:

- 1. Reference to the date of previous public notices relating to the permit;**
- 2. Date, time, and place of the hearing;**
- 3. A brief description of the nature and purpose of the hearing, including the applicable rules and procedures.**

(c) Requests under R317-8-2.3(4). In addition to the information required under R317-8-6.5(4)(a) public notice of a UPDES draft permit for a discharge when a R317-8-2.3(4) request has been filed will include:

- 1. A statement that the thermal component of the discharge is subject to effluent limitations under R317-8-4.2(1) and a brief description, including a quantitative statement of the thermal effluent limitations; and**
- 2. A statement that a R317-8-2.3(4) request has been filed and that alternative less stringent effluent limitations may be imposed on the thermal component of the discharge and a brief description, including a quantitative statement, of the alternative effluent limitations, if any, included in the request.**
- 3. If the applicant has filed an early screening request under R317-8-7.4(4) for a variance, a statement that the applicant has submitted such a plan.**

(5) In addition to the general public notice described in .5(4) all persons identified in .5(3)(a)1-4 will be mailed a copy of the fact sheet, the permit application and the draft permit.



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MEMORANDUM

TO: Water Quality Board
THROUGH: Erica Brown Gaddis, PhD, Executive Secretary
FROM: Lucy Parham, Southeast Colorado Basin Coordinator, UDWQ
DATE: November 6, 2019
SUBJECT: San Juan Watershed Program Update

In response to the Gold King Mine spill (GKM) that occurred in August 2015, the Utah Division of Water Quality (UDWQ) received \$465,000 from the U.S. Environmental Protection Agency (EPA) to evaluate the impacts of the GKM release on the San Juan River and Lake Powell. This 5-year grant was used for several projects including, 1) analyzing and synthesizing data to determine immediate impacts to water bodies, 2) conducting human health and ecological risk assessments, 3) conducting a source identification study, and 4) supporting US Geological Survey (USGS) sediment research through deployment of sediment traps in Lake Powell and installation of sediment monitoring equipment on the San Juan River. For a more detailed look at these projects, please visit UDWQ's [San Juan Watershed Program](#) website. Presently, \$100,000 remains from this grant and will be used to continue to fund the USGS sediment traps and source identification in the watershed by the University of Utah. From these efforts, we hope to better understand the natural versus anthropogenic sources of metals in the watershed. This grant expires in September of 2021 at which time we hope to have all projects completed.

A second result of the GKM release was that in 2016, under the Water Infrastructure Improvements for the Nation Act (WIIN), the U.S. Congress authorized appropriations of \$4 million per year from 2017–2021 for a long-term water quality monitoring program for the San Juan watershed. The intent of this funding is to facilitate collaboration between EPA and the adjoining states/tribes of the San Juan Watershed to: 1) conduct collaborative annual water quality monitoring, 2) communicate information about the condition of the watershed to the public, and 3) carry out targeted research activities to inform decision making. To date, \$12 million of the \$20 million has been appropriated, approximately \$8.3 million of which has been spent or is planned to be spent in the coming fiscal year (Figure 1). Of the \$8.3 million, Utah has received \$992,714 to fund several efforts including, 1) Lake Powell sediment coring study, 2) San Juan River suspended sediment concentration monitoring, 3) communication, and 4) project administration and scoping. For a more detailed look at these projects, please visit DWQ's [San Juan Watershed Program](#) website.

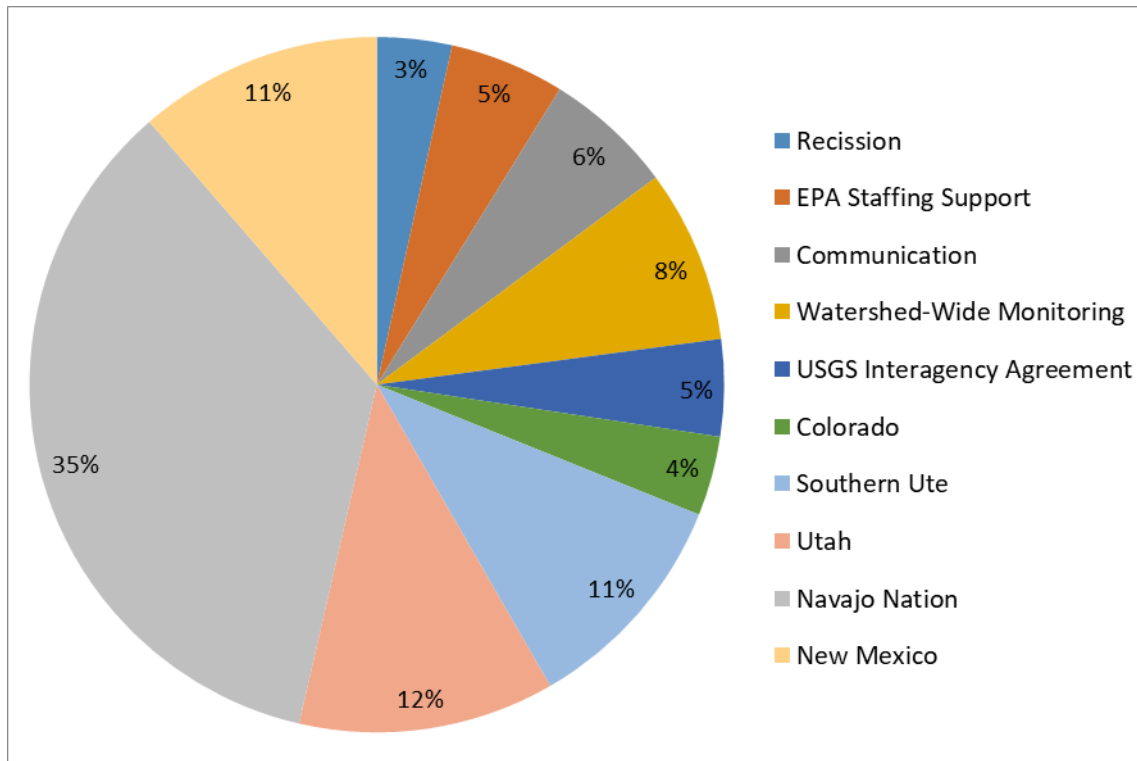


Figure 1. Breakdown of current spending of \$8.3 million under the WIIN act.