COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

June 30, 2017

Maybell Irrigation District
Attn: Mike Camblin
P.O. Box 131
Maybell, CO 81640

**RE: Notice to Proceed – WSRF Grant – CTGG1 2017-1094 – Maybell Ditch Improvement Project**

Dear Mike,

This letter is to inform you that the grant request to assist in the above WSRF grant project has been approved. The attachments serve as your original contracting documents.

With the executed agreement, you are now able to proceed with the project and invoice the State of Colorado for costs incurred through September 30, 2019. Your planned date of completion as indicated on your original schedule is October, 2018. The State has provided you with additional time for unforeseen delays to the project and also to avoid a request for an amendment to this agreement. Please provide the project name, CTGG1 number, and basin when corresponding with or invoicing for your project along with back-up documentation of cost incurred for the WSRF portion of the grant according to the original scope of work tasks. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 30 days after review and signed approval of the project manager.

Please refer to the current WSRF Criteria & Guidelines on our website for the six month progress report and final deliverable requirements in order to avoid a delay in payment. A 90-day advance notice is required in the event you are seeking an additional amendment to the term of this agreement. An official letter of request to the CWCB project manager briefly describing the need for the extension, updated insurance certificates (if applicable) and an updated schedule reflecting the specific tasks that require additional time to complete is required.

If you have any questions or concerns regarding the project, please contact Craig Godbout, Project Manager at 303-866-3441 3210 or at Craig.godbout@state.co.us. Please send the 6 month progress reports directly to Craig and when submitting invoices, please send them to Craig and cc me at Dori.vigil@state.co.us.

You can contact me at 303-866-3441 ext. 3250 for additional invoicing and payment disbursement questions.

Thank you.

Sincerely,

//s//

**Doriann Vigil**
**Program Assistant II**
O 303-866-3441 ext. 3250
1313 Sherman Street, Rm. 719, Denver, CO 80203
Dori.vigil@state.co.us / cwcb.state.co.com

Attachments
Cc: Craig Godbout, CWCB Project Manager

# STATE OF COLORADO
## Department of Natural Resources

**ORDER**
Number: POGG1 PDAA 201700001094
Date: 06/30/17
Description:
PDAA 2500 WSRF MAYBELL DITCH BASIN FUNDING
Effective Date: 06/29/17 Expiration Date: 09/30/19

**BUYER**
Buyer:
Email:

**VENDOR**
MAYBELL IRRIGATION DISTRICT
PO BOX 131
MAYBELL, CO 81640

Contact: .
Phone: .

**** IMPORTANT ****
The order number and line number must appear on all invoices, packing slips, cartons and correspondence

**BILL TO**
COLORADO WATER BOARD CONSERVATION
1313 SHERMAN STREET, ROOM 718
DENVER, CO 80203

**SHIP TO**
COLORADO WATER BOARD CONSERVATION
1313 SHERMAN STREET, ROOM 718
DENVER, CO 80203

**SHIPPING INSTRUCTIONS**
Delivery/Install Date:
F.O.B: FOB Dest, Freight Allowed
**VENDOR INSTRUCTIONS:**

| Line Item | Commodity/Item Code | UOM | QTY | Unit Cost | Total Cost | MSDS Req. |
|---|---|---|---|---|---|---|
| 1 | G1000 | | 0 | 0.00 | $45,675.00 | ☐ |

Description: PDAA 2500 WSRF MAYBELL DITCH BASIN FUNDING

Service From: 06/29/17 Service To: 09/30/19

**TERMS AND CONDITIONS**
https://www.colorado.gov/osc/purchase-order-terms-conditions

**DOCUMENT TOTAL = $45,675.00**

## Statement of Work

**Project Purpose:**

The purpose of the project is to:

- improve an existing water supply system
- improve instream water quality through the reduction of sedimentation into the Yampa River due to hillside sloughing
- improve water use efficiency with the installation of measuring devices and an automated waste gate

**Project Description:**

The Maybell Irrigation District plans to install an automated waste gate and a measuring flume in the Maybell Ditch. In addition, the District plans to permanently stabilize a hillside that has been reducing irrigation efficiency and producing sediment loads into the Yampa River for many years. Finally, gates will be installed in strategic locations on the ditch to improve water management, helping to manage water flows and reducing tail water.

**Technical Information:**

Hillside Stabilization

This is the most important part of the project. The Maybell Irrigation District has worked diligently to fix the slough every year since 2012 and is lacking the funding to permanently fix the ditch. If the slough continues to fall into the river, the Maybell Ditch will be completely lost into the Yampa River.

The sloughing hillside, on the south side of the Yampa River downstream from the flume, reduces the delivery of irrigation water through the Maybell Ditch and continues to contribute to sediment loads in the Yampa River (Figure 6).

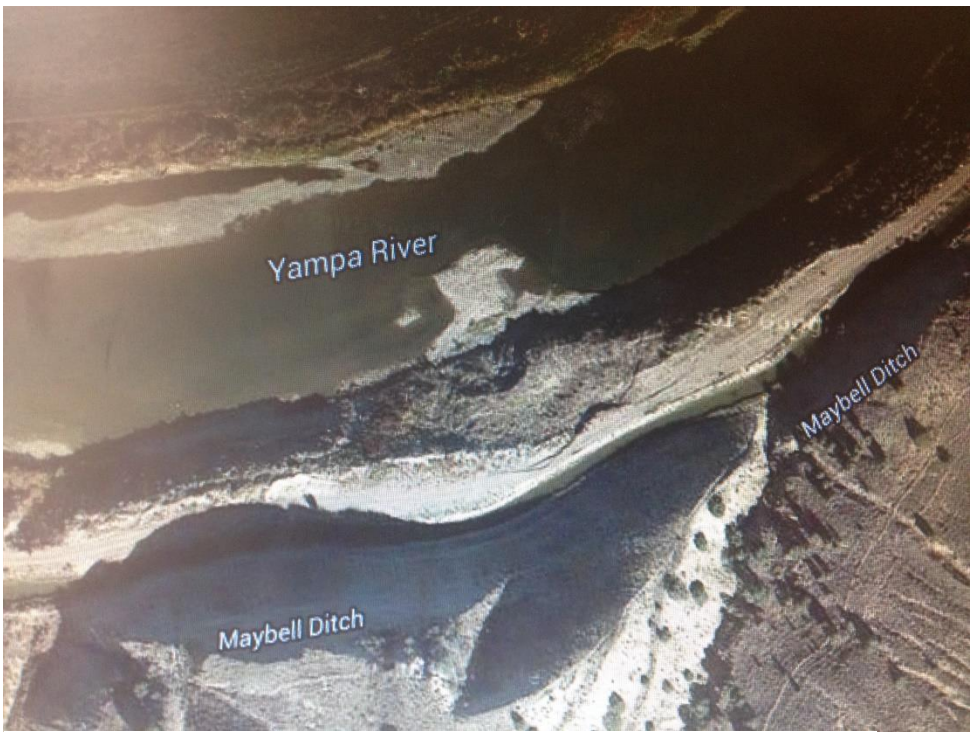



Figure 6. Maybell Ditch sloughing into the Yampa River

In order to permanently remedy the sloughing, the ditch will be moved into the hillside approximately 8-10 feet while building the outer ditch bank to 7 to 8 feet wide. The length of the stabilization project will be approximately 400 feet and may include blasting 450 cubic yards, if needed, and installing a 45 mil Firestone Pondgard EPDM Liner measuring 25 feet X 500 feet.

Flume

A 125 CFS flume will be constructed, including 40 feet of new concrete walls on the east side of the flume along with ditch liner to reduce water loss and improve efficiency. Figure 7 shows a photo of the currently flume crossing the river.

Figure 7. Maybell Ditch flume crossing the Yampa River.

Measuring Device, Waste Gate and Ditch Accessibility

This portion of the project will improve the ditch bank, blast rock and widen the ditch to install a measuring flume. The installation of a measuring device, automatic waste gate and making the ditch bank more accessible to the state engineer employees for ditch monitoring is of major importance. Currently, willows, trees and rocks reduce efficiency by inhibiting ditch riders and causing a loss of water back to the Yampa River.

The Maybell Irrigation District is working with Colorado Parks and Wildlife, Fish and Wildlife Service, and the State Water Engineer to design a waste gate.

The proposed waste gate is a Langemann gate complete with a SCADA ready controller, solar power supply and on-site commissioning. The control system can be set up to keep an upstream water level with flow monitoring or flow control. These units can stand alone or be tied into a SCADA system with the addition of a communication device. The gate frame would be slightly less than 10 feet wide and 3.7 feet high.

Check (overshot) Gates

Gates will be installed in strategic locations on the ditch improve water management, helping to manage water flows and reducing tail water per the State Water Engineer (it is now mandatory that no tail water returns to the Yampa River). This will also allow the Irrigation District to back the water up in the ditch so users with high head gates can access the water without running a full head of water, thus improving water efficiency and reliability throughout the entire ditch.

## Maybe Ditch Improvement Project Budget

| Task | Item | Cost | *Funding Source |
|---|---|---|---|
| **Task #1 Headgate Flume** | 129 CFS headgate flume and installation | $51,500.00 | CRD Funds + MID |
| | Blasting rock and excavation for rock corner and flume | $26,500.00 | MID |
| | Vegetation Control | $4,500.00 | MID |
| | | **$82,500.00** | |
| **Task #2 Automated Gate for Elkhead Release Return** | Langmanne automatic gate | $45,000.00 | Fish Recovery Program |
| | Concrete for automatic gate | $14,200.00 | Fish Recovery Program |
| | Excavation for Langmanne automatic gate and spill way | $3,500.00 | Fish Recovery Program |
| | | **$62,700.00** | |
| **Task #3 Canal Improvements** | Three overshot gates (check structures in the canal) | $24,000.00 | WSRA Funds |
| | Concrete for overshot gates | $10,175.00 | WSRA Funds ($3,675) + MID ($6,500) |
| | Rebuild and line 400 feet of ditch with firestone liner | $18,000.00 | WSRA Funds |
| | | **$52,175.00** | |
| **Total Project Cost** | | **$197,375.00** | |

*Colorado River District: CRD; Maybell Irrigation District: MID; Water Supply Reserve Account: WSRA

## Timeline for Tasks proposed to being funded by WSRA grant:

Task #1 Headgate Flume – N/A

Task #2 Automated Gate – N/A

Task #3 Canal Improvements – ~~January 1st to June 30th, 2018~~ (See below)

## Project Schedule

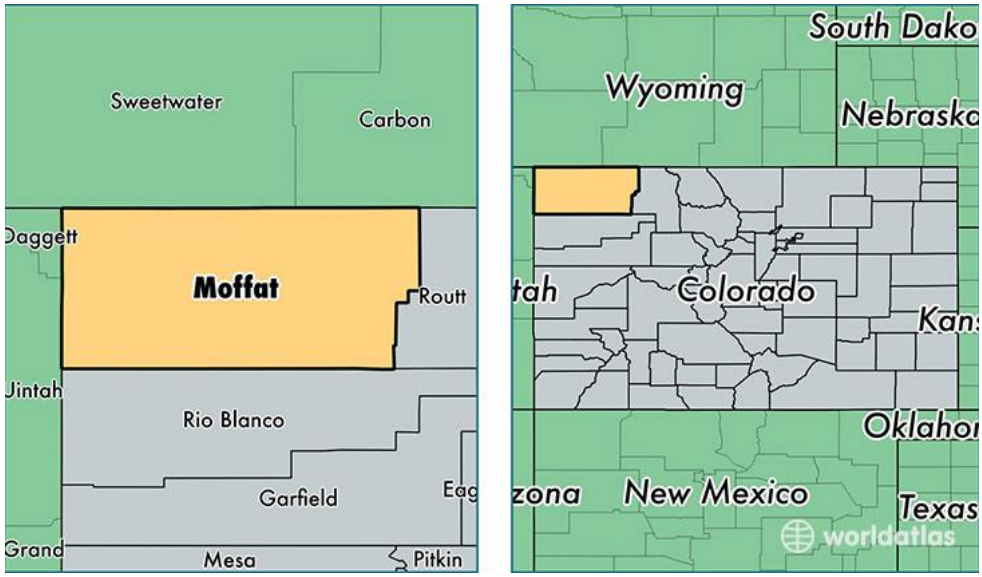
April –

January –

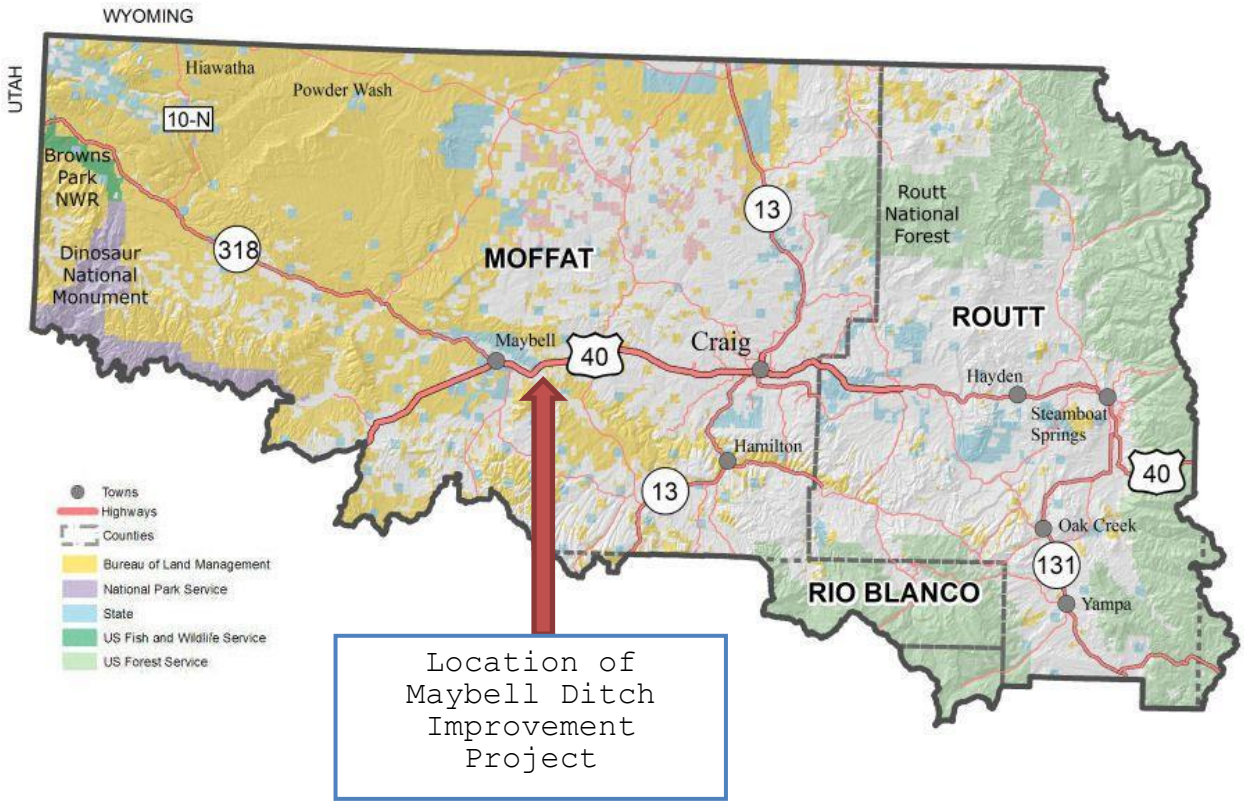
April – June 2018: finish excavation/hill stabilization on the slough area; pour concrete, install headgate, flume and gates

June – October, 2018: irrigation season, monitor project components to ensure system is function properly

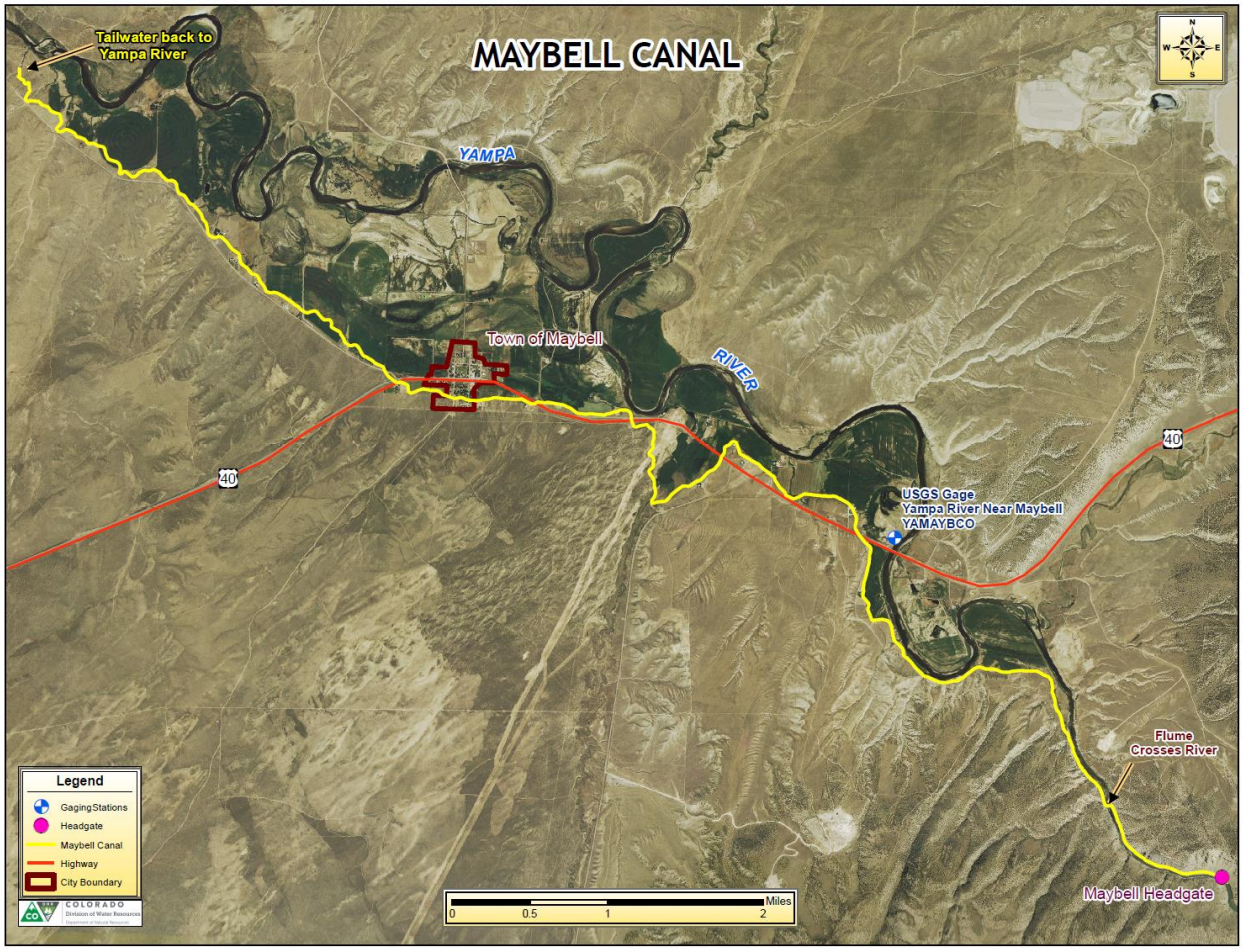
## Map of Moffat County, Colorado




## Map of Maybell, Colorado



## Map of Maybell Ditch



**Background Information:**

The Maybell Ditch is maintained and operated by the Maybell Irrigation District and is structure number 694 in Water Division 6, Lower Yampa River, District 44 of the Colorado Division of Water Resources (CDSS 2006). It has a decreed capacity of 129 cubic feet per second (cfs), but average maximum discharge is 80 to 90 cfs (Kathy Bower, Colorado Division of Water Resources). The Maybell Ditch was appropriated on October 2, 1899 and decreed on December 8, 1923. Typical operation runs from late April through the end of October in any given year, and the diversion is closed and the ditch dewatered at all other times (Figure 2).


Figure 2. Aerial view of Maybell Ditch along base of Juniper Mountain. Headgate located on far right and flume located at the top left corner of photo.

The ditch inlet structure (Figure 3) is located on the north bank of the Yampa River in Juniper Canyon at river mile (RM) 90.3 and consists of an earthen and rock berm with two adjustable head gate valves set over two 1.2-m culverts that control inflow into an earthen channel. The diversion dam consists of boulders piled across the river channel which impound water upstream into Juniper Canyon and create a class II-III rapid at runoff flows.

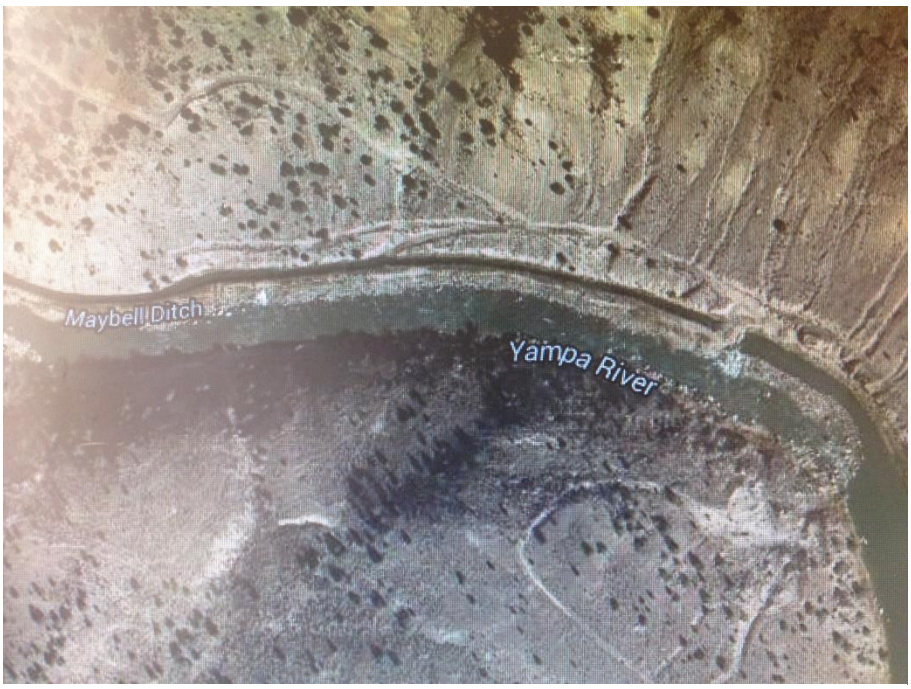



Figure 3. Maybell Ditch inlet out of Yampa River

From the head gates, the ditch follows the river for approximately 1.4 km and then crosses to the south side of the river in a steel flume.


Figure 4. Maybell Ditch flume crossing the Yampa River

Between the head gates and the flume, there are at least two culverts which function as “waste gates” that expel excess water back to the Yampa River channel.

Downstream of the flume, the ditch parallels the river for another 1.2 km before leaving Juniper Canyon and continuing through several ranches along Colorado highways 40 and 318. Unused water returns to the Yampa River near RM 74.5(Figure 5).

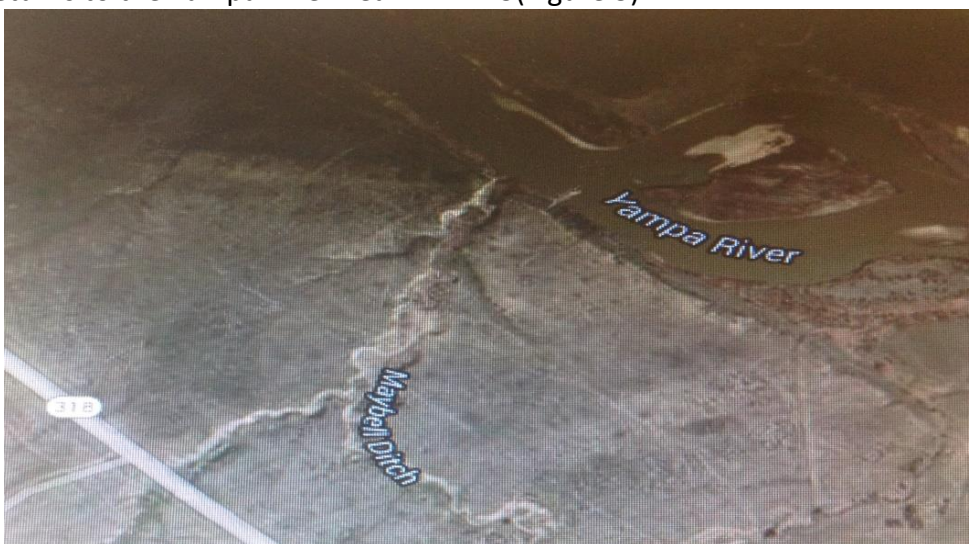



Figure 5. Maybell Ditch outlet into Yampa River

The ditch channel is approximately 4.5 m wide with a flat bed and steeply sloped earthen banks. Substrate is sand and silt with occasional cobbles, small boulders, and concrete rubble. Overhanging grasses, junipers, and sagebrush occur along most of the ditch.