Environmental Assessment & Public Notice for Public Comment

- Environmental Assessment & supporting documents
- Public Notice for Public Comment package
  - Notice Area List
  - Notice Area Map
  - Form Checklist
  - PN- Letter to applicant
  - PN- Letter to editor
  - PN- Certificate of service
  - PN- Invoice & tear sheet
  - PN- Return mail
  - Public Comment files

Environmental Assessment & Public Notice for Public Comment

NOTICE AREA

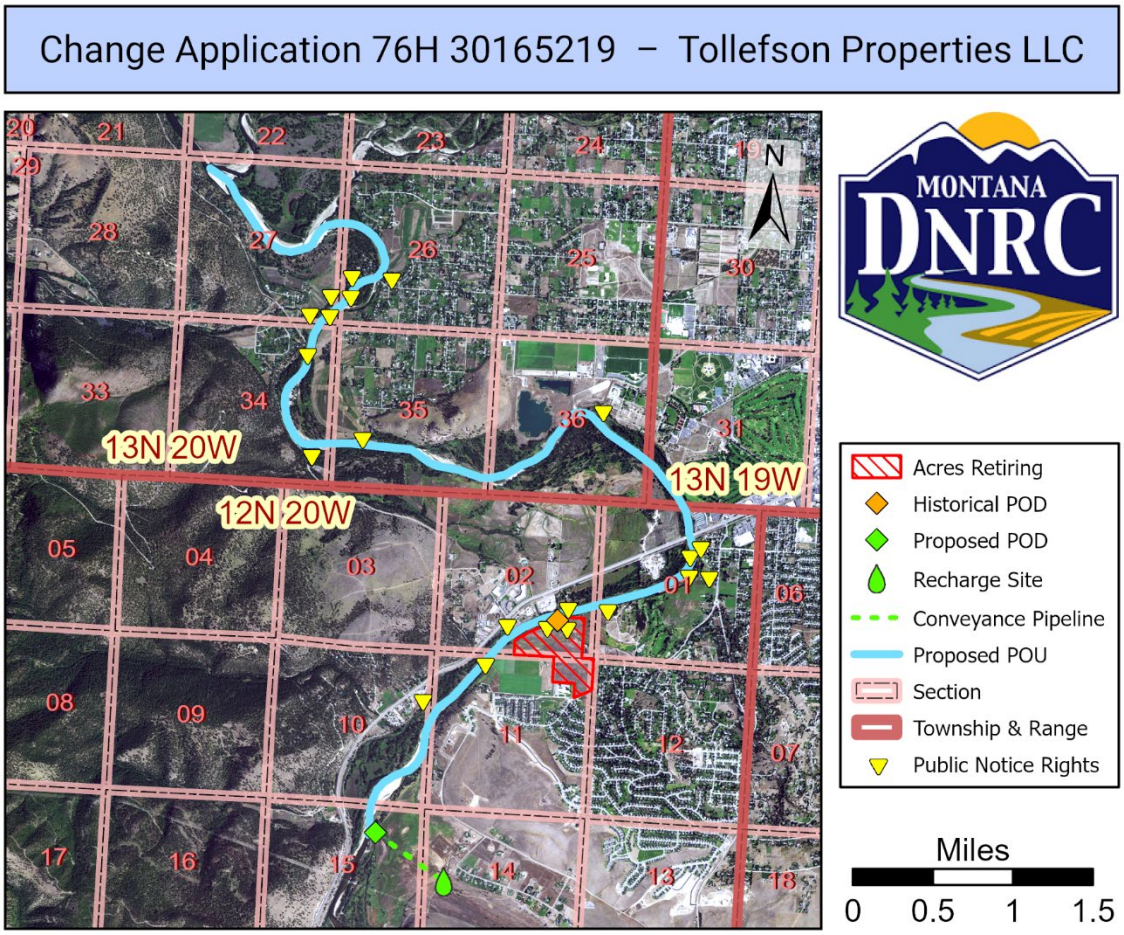
Application No. **76M 30165219** Regional Office # 09

Applicant's Name **Tollefson Properties LLC**

Indian Reservation [ ] Yes [X] No If yes, Reservation

Irrigation District [ ] Yes [X] No If yes, District

Specialist **Benjamin Thomas** Date **5/29/2025**



Map of surface water diversions downstream of new point of diversion. Locations are approximate, and some water rights may be displayed as having overlapping points of diversion.

Interested Party	
Applicant: Tollefson Properties LLC	
Consultant: Dave Baldwin, Hydrosolutions Inc.	
Avista Corporation	
Bureau of Indian Affairs	
Clark Fork Coalition	
Department of Environmental Quality	
Department of Fish Wildlife & Parks	
Lolo National Forest	
Missoula County Clerk & Recorder	
Missoula County Clerk of Court	
Missoula County Conservation District	
Missoulian	
Montana Board of Land Commissioners	
Northwestern Energy	
PPL Montana LLC	
Trout Unlimited	
U.S. Forest Service	
Water Right Owner	**Water Right #**
DORIS W SHERICK	76H 45872 00
BRAD A BENIGER; CAROL M BENIGER; MICHAEL A KENNEDY; JON T MCROBERTS; KATRINA MCROBERTS; SHARI F MONTANA	76H 149983 00
GRAYS MINI RANCH LLC	76H 35713 00
USA (DEPT OF ARMY CORP OF ENGINEERS)	76H 111267 00
1905 SUSSEX LLC	76H 633 00
TOLLEFSON PROPERTIES LLC	76H 30165310
DEBORAH P COLE; ROBERT J COLE; VICTORIA GORDON	76H 6445 00
DEBORAH P COLE; ROBERT J COLE	76H 52092 00
SUSAN M WOLF	76H 47443 00
USA (DEPT OF INTERIOR BUREAU OF RECLAMATION)	76H 120055 00
CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	76H 151312 00
CAPRI FOSEID; REID FOSEID	76H 151394 00
DEBORAH P COLE; ROBERT J COLE; VICTORIA GORDON	76H 560 00
DENNIS GORDON; PAULINE GORDON; DAVID R YUHAS	76H 29206 00
WESTERN MONTANA RETRIEVER CLUB INC	76H 87103 00
BRUCE B BARRETT; HOWARD J HICKINGBOTHAM; SANDRA B HICKINGBOTHAM	76H 125091 00
EARL M PRUYN	76H 43060 00
W H GINTER	76H 105168 00
KHOURY INC	76H 39791 00
MR RIVER PROPERTY LLC	76H 131603 00
CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	76H 151306 00
CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	76H 151313 00
CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	76H 151311 00
BOGGESS FAMILY TRUST	76H 104521 00
KYMRA ARCHIBALD; MATTHEW ARCHIBALD	76H 150956 00
CARTER E BECK; SUSAN M BECK	76H 151743 00
USA (DEPT OF ARMY CORP OF ENGINEERS)	76H 111268 00
ADAM BARTELS; KARIN BARTELS	76H 150826 00
WILLIAM R MACLAY	76H 31299 00

**If owner listed twice, only one notice sent*

Montana Department of Natural Resources and Conservation
Water Resources Division
Water Rights Bureau

ENVIRONMENTAL ASSESSMENT
For Routine Actions with Limited Environmental Impact

Part I. Proposed Action Description

1. Applicant/Contact name and address:
Tollefson Properties LLC
15311 Tyson Way
Frenchtown, MT 59834-8535

2. Type of action: Change Application 76M 30165219

3. Water source name: Bitterroot River

4. Location affected by project: Sections 2, 11 and 15 T12N, R20W, Missoula County. Bitterroot River from the NENW Sec. 15, T12N, R20W to the confluence of the Bitterroot and Clark Fork Rivers in the NWNW Sec. 27, T13N, R20W.

5. Narrative summary of the proposed project, purpose, action to be taken, and benefits: Tollefson Properties proposes to change the purpose of Statement of Claim 76H 30165310 from irrigation to aquifer recharge, retiring 82 acres in the S2S Sec. 2 and the NENE Sec. 11, T12N, R20W, which constitute the entirety of the irrigated acres on this right. The place of use for the new aquifer recharge purpose will be the Bitterroot River from the southern boundary of the NENW Sec. 15, T12N, R20W to the confluence of the Bitterroot and Clark Fork Rivers in the NWNW of Sec. 27, T13N, R20W. A pump in the SENWNE Sec. 15, T12N, R20W will serve as the new point of diversion for aquifer recharge; the current point of diversion in the NWSESE Sec. 2, T12N, R21W will no longer be used by this right. This application is to provide mitigation water via aquifer recharge for Permit Application 76H 30163647.

The DNRC shall issue a change authorization if an applicant proves the criteria in 85-2-402 MCA are met.

6. Agencies consulted during preparation of the Environmental Assessment:
Montana Department of Fish, Wildlife & Parks (DFWP)
Montana Department of Environmental Quality (DEQ)
Montana Natural Heritage Program Species of Concern Report
U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory
USDA Natural Resources Conservation Service (NRCS) Web Soil Survey

Part II. Environmental Review

Environmental Impact Checklist:

PHYSICAL ENVIRONMENT

WATER QUANTITY, QUALITY AND DISTRIBUTION

Water quantity **-** *Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.*

This reach of the Bitterroot River is not identified as a chronically or periodically dewatered stream by DFWP. This application is for aquifer recharge to offset depletions to the Bitterroot River by another application. The total consumptive use of water under this Statement of Claim will decrease if this change application is approved.

Determination: No significant impact

Water quality **-** *Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.*

The Bitterroot River is not considered to have impaired water quality by DEQ. The proposed application for aquifer recharge is not expected to negatively affect water quality.

Determination: No significant impact

Groundwater **-** *Assess if the proposed project impacts ground water quality or supply. If this is a groundwater appropriation, assess if it could impact adjacent surface water flows.*

This application is not for appropriation of groundwater, and is not anticipated to have any negative effects on groundwater quality or supply.

Determination: No significant impact

DIVERSION WORKS - *Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

The diversion works are designed by a professional engineering firm and are not anticipated to have negative impacts on the local environment.

Determination: No significant impacts.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species **-** *Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

The Montana Natural Heritage Program website was reviewed to determine if there are any "threatened" or "endangered" fish, wildlife, plants, or aquatic species that could potentially be impacted by this project. "Species of special concern" were also included in this search.

According to the Montana Natural Heritage Program, observations from the past 50 years indicate that 9 animal species of concern may be found in the area of potential impact. Of these, 2 species are listed as threatened by the USFWS in this area: the Grizzly Bear *(Ursus arctos)* and the Bull Trout *(Salvelinus confluentus).*

Animal species of concern include:
Grizzly Bear *(Ursus arctos)*
Northern Hoary Bat *(Lasiurus cinereus)*
Cassin's Finch *(Haemorhous cassinii)*
Clark's Nutcracker *(Nucifraga columbiana)*
Evening Grosbeak *(Coccothraustes vespertinus)*
Great Blue Heron *(Ardea herodias)*
Pileated Woodpecker *(Dryocopus pileatus)*
Bull Trout *(Salvelinus confluentus)*
Westslope Cutthroat Trout *(Oncorhynchus lewisi)*

The new diversion and conveyance works and the aquifer recharge water provided by this project are not anticipated to adversely affect any of these species.

Determination: No significant impact.

Wetlands **-** *Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.*

The area in which the diversion and conveyance structures will be constructed contain riparian emergent and freshwater emergent wetland. The diversion and conveyance structures are not anticipated to disrupt these ecosystems. The proposed aquifer recharge plan may raise groundwater levels in the area.

Determination: No significant impact.

Ponds **-** *For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.*

No ponds were identified as being adversely affected.

Determination: No significant impact.

GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE - *Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.*

Erosion and degradation of soil quality is not anticipated as a result of the proposed change. Soils are not heavy in salts, and not likely to create saline seep.

Determination: No significant impact

VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS - *Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.*

Irrigation in the historical place of use ceased prior to this change; therefore, no change to vegetative cover is anticipated as a result of this change, nor is the establishment or spread of noxious weeds predicted.

Determination: No significant impact

AIR QUALITY - *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

No negative effects to air quality are expected as a result of this proposal.

Determination: No significant impact

HISTORICAL AND ARCHEOLOGICAL SITES - *Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project if it is on State or Federal Lands. If it is not on State or Federal Lands simply state NA-project not located on State or Federal Lands.*

Determination: N/A – Project not located on State or Federal Lands

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY - *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

No additional impacts to land, water, or energy are anticipated.

Determination: No significant impact

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

This project does not violate any known locally adopted environmental plans or regulations.

Determination: No significant impact

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES - *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

The proposed project will not inhibit, alter, or impair access to present recreational opportunities in the area. The project is not expected to create any significant pollution, noise, or traffic congestion in the area that may alter the quality of recreational opportunities. The proposed place of use and diversion do not exist on land designated as wilderness.

Determination: No significant impact

HUMAN HEALTH - *Assess whether the proposed project impacts on human health.*

No impacts on human health are anticipated as a result of this project.

Determination: No significant impact

PRIVATE PROPERTY - *Assess whether there are any government regulatory impacts on private property rights.*
Yes___ No_X_ If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights.

Determination: No significant impact

OTHER HUMAN ENVIRONMENTAL ISSUES - *For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.*

Impacts on:

(a) Cultural uniqueness and diversity? None identified

(*b) Local and state tax base and tax revenues?* None identified

(c) Existing land uses? None identified

(*d) Quantity and distribution of employment?* None identified

(e) Distribution and density of population and housing? None identified

(f) Demands for government services? None identified

(g) Industrial and commercial activity? None identified

(h) Utilities? None identified

(i) Transportation? None identified

(j) Safety? None identified

(k) *Other appropriate social and economic circumstances?* None identified

2. ***Secondary and cumulative impacts on the physical environment and human population:***

Secondary Impacts: None identified

Cumulative Impacts: None identified

3. ***Describe any mitigation/stipulation measures:*** None

4. ***Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:*** None identified

PART III. Conclusion

1. ***Preferred Alternative***
Issue a water use permit if the Applicant proves the criteria in 85-2-402 MCA are met.

2 ***Comments and Responses***
None.

3. ***Finding:***
Yes___ No_X_ Based on the significance criteria evaluated in this EA, is an EIS required?

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:

No significant environmental impacts were identified as a result of the EA.

Name of person(s) responsible for preparation of EA:
Name: Benjamin Thomas
Title: Water Conservation Specialist
Date: 5/22/2025

Draft Preliminary Determinations

- Draft PD
- Draft PD cover letter
- Updated Draft PD
- Updated Draft PD cover letter
- Any correspondence with the applicant regarding the draft PDs

Draft Preliminary Determinations

BEFORE THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION OF THE STATE OF MONTANA

* * * * * * * * *

COMBINED APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 76H 30163647 BY CITY OF MISSOULA AND APPLICATION TO CHANGE WATER RIGHT NO. 76H 30165219	)))))	**NOTICE OF ERRATA DRAFT PRELIMINARY DETERMINATION TO GRANT COMBINED APPLICATION**

* * * * * * * * *

The following errors have been found in the PRELIMINARY DETERMINATION TO GRANT COMBINED APPLICATION:

1. In the PRELIMINARY DETERMINATION TO GRANT COMBINED APPLICATION, on page 4, Finding of Fact 1, Table 1.1, the proposed place of use is:

¼	¼	¼	Section	Township	Range
SE	SW	S2	1	12N	20W
	SE	S2	1	12N	20W
W2	SW	SE	1	12N	20W
	S2	SE	2	12N	20W
SE	SE	S2	2	12N	20W
			11	12N	20W
		W2	12	12N	20W
S2	S2	NE	12	12N	20W
W2	SE	NE	12	12N	20W
	SW	NE	12	12N	20W
W2	NW	SE	12	12N	20W
	SW	SE	12	12N	20W
S2	SE	SE	12	12N	20W
		N2	13	12N	20W
	N2	N2	14	12N	20W

This should read:

¼	¼	¼	Section	Township	Range
SE	SW	SW	1	12N	20W
	SE	SW	1	12N	20W
W2	SW	SE	1	12N	20W
	S2	SE	2	12N	20W
SE	SE	SW	2	12N	20W
			11	12N	20W
		W2	12	12N	20W
S2	S2	NE	12	12N	20W
W2	SE	NE	12	12N	20W
	SW	NE	12	12N	20W
W2	NW	SE	12	12N	20W
	SW	SE	12	12N	20W

S2	SE	SE	12	12N	20W
		N2	13	12N	20W
	N2	N2	14	12N	20W

Please make these corrections to your copy.

Dated this 16th day of June, 2025.

Jim Nave, Manager
Missoula Regional Office
Department of Natural Resources
and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the NOTICE OF ERRATA PRELIMINARY DETERMINATION TO GRANT CHANGE was served upon all parties listed below on this 16th day of June 2025, by first class United States mail.

ATTN: LOGAN MCINNIS
CITY OF MISSOULA
435 RYMAN ST
MISSOULA, MT 59802

TOLLEFSON PROPERTIES LLC
15311 TYSON WAY
FRENCHTOWN, MT 59834-8535

ATTN: DAVE BALDWIN
HYDROSOLUTIONS INC
303 CLARKE ST
HELENA, MT 59601

Benjamin Thomas

Benjamin Thomas
Water Conservation Specialist
Missoula Regional Office
(406) 542-5883

From: David Baldwin
To: Thomas, Benjamin
Subject: [EXTERNAL] RE: Next Steps for Tollefson/City of Missoula PD
Date: Monday, June 9, 2025 12:09:34 PM
Attachments: image001.png

Hi Benjamin – Please consider this written confirmation to correct the error.

Thanks

Dave Baldwin MS PG | Sr. Hydrogeologist | Sr. Water Rights Specialist

Office: 406.443.6169 303 Clarke Street
Cell: 406.431-7760 (Primary #) Helena, MT 59601
dbaldwin@hydrosi.com [mail.hydrosi.com] www.hydrosi.com [mail.hydrosi.com]

From: Thomas, Benjamin <Benjamin.Thomas@mt.gov>
Sent: Monday, June 9, 2025 12:08 PM
To: David Baldwin <dbaldwin@hydrosi.com>
Subject: RE: Next Steps for Tollefson/City of Missoula PD

Good morning, Dave,

One more thing: I was double-checking the water right in our database and noticed that I fatfingered part of the LLD in the PD (typed S2 where the application form had SW). Since we've already sent you the PD, I just need your written confirmation before I can go ahead correcting the error.

Let me know if you have questions.

Benjamin

Benjamin Thomas | Water Conservation Specialist II
Water Resources Division, Missoula Regional Office
Montana Department of Natural Resources and Conservation
2705 Spurgin Road, Building C, Missoula, MT 59804
DESK: 406-542-5883 **EMAIL:** benjamin.thomas@mt.gov
Website [linkprotect.cudasvc.com] | **Facebook** [facebook.com]| **X (Twitter** [twitter.com]) | **Instagram** [instagram.com]
How did we do? Let us know here: **Feedback Survey** [linkprotect.cudasvc.com]

Missoula Water Resources Regional Office
PO Box 5004
2705 Spurgin Road, Bldg. C
Missoula, MT 59806-5004
(406) 721-4284

May 23, 2025
ATTN: Logan McInnis
City of Missoula
435 Ryman St
Missoula, MT 59802

Subject: Draft Preliminary Determination to Grant Combined Beneficial Water Use Permit Application No. 76H 30163647 and Water Right Change Application No. 76H 30165219

Dear Logan,

The Department of Natural Resources and Conservation (Department or DNRC) has completed a preliminary review of your application. This review consists of an evaluation of the criteria for issuance of a permit and change authorization found in §85-2-311 and §85-2-402, MCA. The Department has preliminarily determined that the criteria are met, and this application should be granted. A copy of the Draft Preliminary Determination to Grant your application is attached.

You have the opportunity to request an extension of time to submit additional information for the Department to consider in the decision, within 15 business days of the date of this letter. If no response is received by June 16, 2025, the Department will prepare a notice of opportunity to provide public comment per §85-2-307(4), MCA.

Please note that if you are granted an extension of time to submit additional information to the Department, additional information may be considered an amendment to your application, which may reset application timelines pursuant to ARM 36.12.1401.

Please let me know if you have any questions.

Sincerely,

Benjamin Thomas

Benjamin Thomas
Water Conservation Specialist
New Appropriations Program
Water Resources Division

CC:
Tollefson Properties LLC
Dave Baldwin, Hydrosolutions Inc.

BEFORE THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION OF THE STATE OF MONTANA

* * * * * * *

COMBINED APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 76H 30163647 BY CITY OF MISSOULA AND APPLICATION TO CHANGE WATER RIGHT NO. 76H 30165219 BY TOLLEFSON PROPERTIES, LLC	**DRAFT PRELIMINARY DETERMINATION TO GRANT COMBINED APPLICATION**

* * * * * * *

On March 3, 2025, the City of Missoula submitted Application for Beneficial Water Use Permit No. 76H 30163647 and Tollefson Properties LLC submitted Change Application No. 76H 30165219 to the Missoula Regional Water Resources Office of the Department of Natural Resources and Conservation (Department or DNRC). The City of Missoula and Tollefson Properties LLC (Applicant or Applicants) submitted the applications pursuant to Montana Code Annotated (MCA) § 85-2-360. The permit application was submitted for a flow rate of 2.18 CFS (980 GPM) up to an annual volume of 99.0 AF from a groundwater well for municipal purposes. The change application was submitted to change the point of diversion, place of use and purpose from irrigation to aquifer recharge for Statement of Claim 76H 30165310. The Department published receipt of the applications on its website. For permit application 76H 30163674, a preapplication meeting was held between the Department and the Applicant on May 7, 2024, in which the Applicant designated that the technical analyses for the application would be completed by the Department. The Applicant returned the completed Preapplication Meeting Form for the permit application on September 3, 2024. The Department delivered the Department-completed technical analysis for the permit application on October 16, 2024. For change application 76H 30165219, a preapplication meeting was held between the Department and the Applicant on January 22, 2025, in which the Applicant designated that the technical analyses for the application would be completed by the Department. The Applicant returned the completed Preapplication Form for the change application on January 30, 2025. The Department delivered the Department-completed technical analysis for the change application on February 13, 2025. Both applications were determined to be correct and complete as of March 26, 2025. Environmental Assessments for these applications were completed on May 23, 2025.

INFORMATION

The Department considered the following information submitted by the Applicant, which is contained in the administrative record.

Applications as filed:

- Application for Beneficial Water Use Permit, Form 600
    - Addenda:
        - Mitigation Addendum, Form 600/606-MIT
        - Aquifer Testing Addendum, Form 600-ATA
    - Maps:
        - Historical Use Map, undated
        - Proposed Use Map, undated
        - Map of claimed POD, conveyance, storage, and POU, supplemental overlap, undated
    - Department- completed technical analyses based on information provided in the Preapplication Meeting Form, dated October 16, 2024
- Application for Change of Appropriation Water Right, Form 606
    - Addenda:
        - Mitigation Addendum, Form 600/606-MIT
    - Attachments:
        - Oxbow Ranch Surface Water Diversion plan diagrams, dated February 2025
        - 20 HP 5TMH-375 Berkeley submersible turbine pump curve
    - Maps:
        - Detail map of new POD 2 to aquifer recharge site, undated
        - Design details of proposed POD 2 diversion to aquifer recharge site, undated
        - Proposed POD 2 aquifer recharge site, and place of use, undated
    - Department-completed technical analysis based on information provided in the Preapplication Meeting Form, dated February 13, 2025

Information Received after Application Filed

- N/A

Information within the Department's Possession/Knowledge

- Application file for combined Permit Application 76H 30150412 and Change Application 76H 30150414

- Water Resource Survey Book for Missoula County
- Water Resource Survey Field Notes for Missoula County
- USGS flow records for Gage #12352500
- Variance Request Form 653 received May 3, 2024
- Department Variance Grant Letter dated May 3, 2024
- The Department also routinely considers the following information. The following information is not included in the administrative file for this application but is available upon request. Please contact the Missoula Regional Office at (406) 721-4284 to request copies of the following documents.
    - Memorandum: Development of standardized methodologies to determine Historical Diverted Volume, dated September 13, 2012
    - DNRC Technical Memorandum: Standard Practices for Net Surface Water Depletion from Ground Water Pumping, dated July 6, 2018

The Department has fully reviewed and considered the evidence and argument submitted in this application and preliminarily determines the following pursuant to the Montana Water Use Act (Title 85, chapter 2, part 3, MCA).

For the purposes of this document, Department or DNRC means the Department of Natural Resources & Conservation; CFS means cubic feet per second; GPM means gallons per minute; AF means acre-feet; AC means acres; and AF/YR means acre-feet per year.

BENEFICIAL WATER USE PERMIT APPLICATION NO. 76H 30163647

PROPOSED APPROPRIATION

FINDINGS OF FACT

1. The Applicant proposes to divert water from groundwater from the Bitterroot River Valley Shallow Aquifer, by means of an 82-ft well, from May 1 to October 31 at 2.18 CFS (980 GPM) up to 99.0 AF, from a point in the NWSWNW, Sec. 14, T12N, R20W, for municipal use from May 1 through October 31. The Applicant proposes to provide additional water within the place of use, supplementing 66 municipal water rights owned by the City of Missoula. The place of use is generally located in Sections 1, 2, 11, 12, 13, and 14 T12N, R20W, Missoula County, described in detail in Table 1.1. Water will be pumped to the City's Sophie and Upper Linda

Vista water tanks, and thence to the place of use by water mains. Table 1 below provides a summary of the proposed use.

Table 1: Summary of Proposed Use

Flow Rate	Volume	Purpose	Period Of Use	Place Of Use (General Location)	Point Of Diversion
2.18 CFS	99.0 AF	Municipal	5/1 – 10/31	Secs. 1, 2, 11, 12, 13, and 14 T12N, R20W	NWSWNW, Sec. 14, T12N, R20W

Table 1.1: Detailed Description of Proposed Place of Use

¼	¼	¼	Section	Township	Range
SE	SW	S2	1	12N	20W
	SE	S2	1	12N	20W
W2	SW	SE	1	12N	20W
	S2	SE	2	12N	20W
SE	SE	S2	2	12N	20W
			11	12N	20W
		W2	12	12N	20W
S2	S2	NE	12	12N	20W
W2	SE	NE	12	12N	20W
	SW	NE	12	12N	20W
W2	NW	SE	12	12N	20W
	SW	SE	12	12N	20W
S2	SE	SE	12	12N	20W
		N2	13	12N	20W
	N2	N2	14	12N	20W

2. The proposed point of diversion is located approximately 2500 ft east of the Bitterroot River.

3. Per DNRC Technical Memorandum: Standard Practices for Net Surface Water Depletion from Ground Water Pumping, dated July 6, 2018, municipal use is considered to be 100% consumptive. Thus, the consumptive use for this application is the full 99.0 AF diverted.

4. If granted, this permit will be supplemental to 66 of the City of Missoula's municipal water rights, which are enumerated in Table 25 of the application form for Permit Application 76H 30163647.

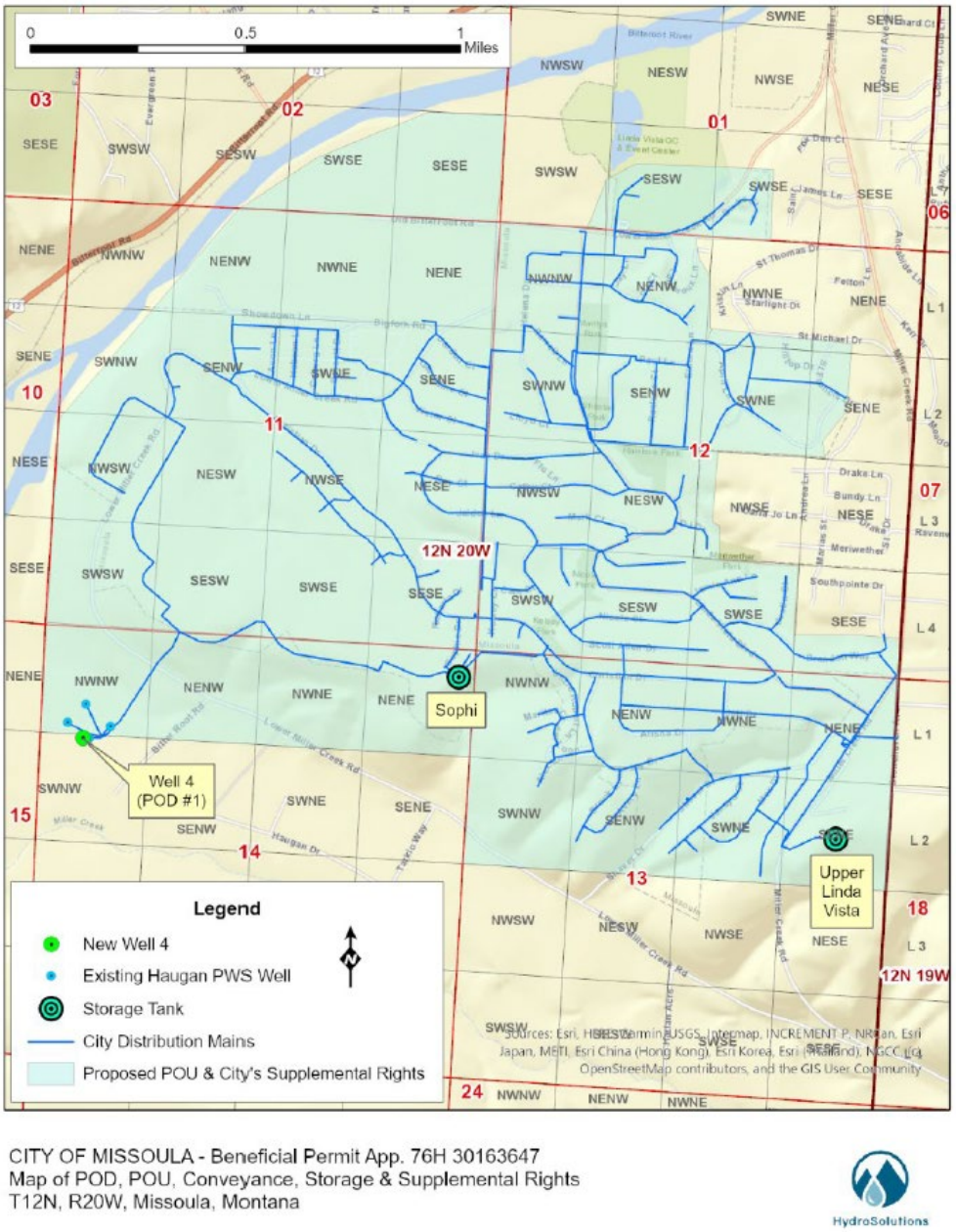


Figure 1. Applicant-Submitted Map of Proposed Appropriation.

5. The Applicant is held to the following water measurement condition to meet the adverse effect criterion:

WATER MEASUREMENT-INLINE FLOW METER REQUIRED: THE APPROPRIATOR SHALL INSTALL A DEPARTMENT APPROVED IN-LINE FLOW METER AT A POINT IN THE DELIVERY LINE APPROVED BY THE DEPARTMENT. WATER MUST NOT BE DIVERTED UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL KEEP A WRITTEN MONTHLY RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED,

INCLUDING THE PERIOD OF TIME. RECORDS SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR UNTIL THE PROVISIONAL PERMIT IS PERFECTED AND THE DEPARTMENT RECEIVES A PROJECT COMPLETION NOTICE. IN THE EVENT THAT PERMITTED FLOW RATES AND/OR VOLUMES HAVE BEEN EXCEEDED DURING PERFECTION OF THE PROVISIONAL PERMIT OR THE APPROPRIATOR FAILS TO SUBMIT ANNUAL REPORTS, THE DEPARTMENT MAY CONTINUE TO REQUIRE ANNUAL SUBMISSIONS OF MONTHLY FLOW RATE AND VOLUME RECORDS. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF A PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE MISSOULA WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

BASIN CLOSURE

6. This application is for the appropriation of groundwater for the purpose of Municipal use. This application is located within the Statutory Bitterroot River Subbasin Temporary Closure, in which the Department may not grant an application for a permit to appropriate water or for a state water reservation, with certain exceptions (§ 85-2-344, MCA). One exception to the closure are permits to appropriate groundwater where the applicant complies with § 85-2-360, MCA.

7. The Applicant submitted a completed Form 600P Permit Preapplication Meeting Form and elected for DNRC to conduct the Technical Analysis (TA). The Applicant's submittal of this TA with the Form 600 Application for Beneficial Water Use Permit meets the requirements for submission of a hydrogeologic assessment report per §§ 85-2-360 and -361, MCA.

§ 85-2-311, MCA, BENEFICIAL WATER USE PERMIT CRITERIA

BASIN CLOSURE

8. Pursuant to § 85-2-360, MCA, a combined application for new appropriations of groundwater in a closed basin shall consist of a hydrogeologic assessment with an analysis of net depletion, a mitigation plan or aquifer recharge plan if required, an application for a beneficial water use permit or permits, and an application for a change in appropriation right or rights if necessary. A combined application must be reviewed as a single unit. A beneficial water use permit may not be granted unless the accompanying application for a change in water right is also granted. E.g., *In the Matter of Application No. 76H-30046211 for a Beneficial Water Use Permit and Application No.76H-30046210 to Change a Non-filed Water Right by Patricia Skergan and Jim Helmer* (DNRC Final Order 2010, Combined Application)(combined application, reviewed as a single unit).

GENERAL CONCLUSIONS OF LAW

9. The Montana Constitution expressly recognizes in relevant part that:

> (1) All existing rights to the use of any waters for any useful or beneficial purpose are hereby recognized and confirmed.
> (2) The use of all water that is now or may hereafter be appropriated for sale, rent, distribution, or other beneficial use . . . shall be held to be a public use.
> (3) All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided by law.

Mont. Const. Art. IX, § 3. While the Montana Constitution recognizes the need to protect senior appropriators, it also recognizes a policy to promote the development and use of the waters of the state by the public. This policy is further expressly recognized in the water policy adopted by the Legislature codified at § 85-2-102, MCA, which states in relevant part:

> (1) Pursuant to Article IX of the Montana constitution, the legislature declares that any use of water is a public use and that the waters within the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided in this chapter. . . .
> (3) It is the policy of this state and a purpose of this chapter to encourage the wise use of the state's water resources by making them available for appropriation consistent with this chapter and to provide for the wise utilization, development, and conservation of the waters of the state for the maximum benefit of its people with the least possible degradation of the natural aquatic ecosystems. In pursuit of this policy, the state encourages the development of facilities that store and conserve waters for beneficial use, for the maximization of the use of those waters in Montana . . .

10. Pursuant to § 85-2-302(1), MCA, except as provided in §§ 85-2-306 and 85-2-369, MCA, a person may not appropriate water or commence construction of diversion, impoundment, withdrawal, or related distribution works except by applying for and receiving a permit from the Department. *See* § 85-2-102(1), MCA. An Applicant in a beneficial water use permit proceeding must affirmatively prove all of the applicable criteria in § 85-2-311, MCA. Section § 85-2-311(1) states in relevant part:

> … the department shall issue a permit if the Applicant proves by a preponderance of evidence that the following criteria are met:
> (a) (I) there is water physically available at the proposed point of diversion in the amount that the Applicant seeks to appropriate; and
> (ii) water can reasonably be considered legally available during the period in which the Applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:
> (A) identification of physical water availability;
> (B) identification of existing legal demands on the source of supply throughout the area of potential impact by the proposed use; and
> (C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.
> (b) the water rights of a prior appropriator under an existing water right, a certificate, a

permit, or a state water reservation will not be adversely affected. In this subsection (1)(b), adverse effect must be determined based on a consideration of an Applicant's plan for the exercise of the permit that demonstrates that the Applicant's use of the water will be controlled so the water right of a prior appropriator will be satisfied;

(c) the proposed means of diversion, construction, and operation of the appropriation works are adequate;

(d) the proposed use of water is a beneficial use;

(e) the Applicant has a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use, or if the proposed use has a point of diversion, conveyance, or place of use on national forest system lands, the Applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water under the permit;

(f) the water quality of a prior appropriator will not be adversely affected;

(g) the proposed use will be substantially in accordance with the classification of water set for the source of supply pursuant to 75-5-301(1); and

(h) the ability of a discharge permit holder to satisfy effluent limitations of a permit issued in accordance with Title 75, chapter 5, part 4, will not be adversely affected.

(2) The Applicant is required to prove that the criteria in subsections (1)(f) through (1)(h) have been met only if a valid objection is filed. A valid objection must contain substantial credible information establishing to the satisfaction of the department that the criteria in subsection (1)(f), (1)(g), or (1)(h), as applicable, may not be met. For the criteria set forth in subsection (1)(g), only the department of environmental quality or a local water quality district established under Title 7, chapter 13, part 45, may file a valid objection.

To meet the preponderance of evidence standard, "the Applicant, in addition to other evidence demonstrating that the criteria of subsection (1) have been met, shall submit hydrologic or other evidence, including but not limited to water supply data, field reports, and other information developed by the Applicant, the department, the U.S. geological survey, or the U.S. natural resources conservation service and other specific field studies." Section 85-2-311(5), MCA (emphasis added). The determination of whether an application has satisfied the § 85-2-311, MCA criteria is committed to the discretion of the Department. *Bostwick Properties, Inc. v. Montana Dept. of Natural Resources and Conservation*, 2009 MT 181, ¶ 21. The Department is required grant a permit only if the § 85-2-311, MCA, criteria are proven by the Applicant by a preponderance of the evidence. Id. A preponderance of evidence is "more probably than not." *Hohenlohe v. DNRC*, 2010 MT 203, ¶¶ 33, 35, 357 Mont. 438, 240 P.3d 628.

11. Pursuant to § 85-2-312, MCA, the Department may condition permits as it deems necessary to meet the statutory criteria:

(1) (a) The department may issue a permit for less than the amount of water requested, but may not issue a permit for more water than is requested or than can be beneficially used without waste for the purpose stated in the application. The department may require

> modification of plans and specifications for the appropriation or related diversion or construction. The department may issue a permit subject to terms, conditions, restrictions, and limitations it considers necessary to satisfy the criteria listed in 85-2-311 and subject to subsection (1)(b), and it may issue temporary or seasonal permits. A permit must be issued subject to existing rights and any final determination of those rights made under this chapter.

E.g., Montana Power Co. v. Carey (1984), 211 Mont. 91, 96, 685 P.2d 336, 339 (requirement to grant applications as applied for, would result in, "uncontrolled development of a valuable natural resource" which "contradicts the spirit and purpose underlying the Water Use Act."); *see also*, *In the Matter of Application for Beneficial Water Use Permit No. 65779-76M by Barbara L. Sowers* (DNRC Final Order 1988)(conditions in stipulations may be included if it further compliance with statutory criteria); *In the Matter of Application for Beneficial Water Use Permit No. 42M-80600 and Application for Change of Appropriation Water Right No. 42M-036242 by Donald H. Wyrick* (DNRC Final Order 1994); Admin. R. Mont. (ARM) 36.12.207.

12. The Montana Supreme Court further recognized in *Matter of Beneficial Water Use Permit Numbers 66459-76L, Ciotti: 64988-G76L, Starner*, 278 Mont. 50, 60-61, 923 P.2d 1073, 1079, 1080 (1996), *superseded by legislation on another issue*:

> Nothing in that section [85-2-313], however, relieves an Applicant of his burden to meet the statutory requirements of § 85-2-311, MCA, before DNRC may issue that provisional permit. Instead of resolving doubts in favor of appropriation, the Montana Water Use Act requires an Applicant to make explicit statutory showings that there are unappropriated waters in the source of supply, that the water rights of a prior appropriator will not be adversely affected, and that the proposed use will not unreasonably interfere with a planned use for which water has been reserved.

See also, Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order* (2011). The Supreme Court likewise explained that:

> .... unambiguous language of the legislature promotes the understanding that the Water Use Act was designed to protect senior water rights holders from encroachment by junior appropriators adversely affecting those senior rights.

Montana Power Co., 211 Mont. at 97-98, 685 P.2d at 340; *see also* Mont. Const. art. IX §3(1).

13. An appropriation, diversion, impoundment, use, restraint, or attempted appropriation, diversion, impoundment, use, or restraint contrary to the provisions of § 85-2-311, MCA is invalid. An officer, agent, agency, or employee of the state may not knowingly permit, aid, or assist in any manner an unauthorized appropriation, diversion, impoundment, use, or other restraint. A person or corporation may not, directly or indirectly, personally or through an agent, officer, or employee, attempt to appropriate, divert, impound, use, or otherwise restrain or

control waters within the boundaries of this state except in accordance with this § 85-2-311, MCA. Section 85-2-311(6), MCA.

14. The Department may take notice of judicially cognizable facts and generally recognized technical or scientific facts within the Department's specialized knowledge, as specifically identified in this document. ARM 36.12.221(4).

PHYSICAL AVAILABILITY

FINDINGS OF FACT

15. The Applicant proposes to divert up to 99.0 AF at a flow rate of up to 2.18 CFS for municipal use from the Bitterroot River Valley Shallow Aquifer.

16. The Department evaluated the volume of water that is physically available from the source aquifer using applicant-supplied data from an aquifer test on Well 4 (the proposed POD). Department Groundwater Hydrologist Melissa Brickl used data from said tests to produce the October 16, 2024, Technical Analysis. A variance was granted by the Department from Aquifer Testing Requirements in ARM 36.12.121(3) (a), (d), (e), and (h) on May 3, 2024 for pumping rate, pumping duration, and measurement schedule.

17. Using the Theis (1935) solution, an aquifer transmissivity (T) value of 150,905 ft2/day, specific yield of 0.1 (Lohman, 1972), a normalized pump schedule using the requested diverted volume, and a constant head boundary 2,500 ft west of the well to represent the Bitterroot River, the Department modeled a 0.01-foot drawdown contour, or zone of influence to inform the groundwater flux in the Bitterroot River Valley Shallow Aquifer at the point of diversion. Groundwater flux through the zone of influence is equal to 10,956 AF/year.

18. The Department finds groundwater is physically available during the proposed period of diversion.

LEGAL AVAILABILITY

FINDINGS OF FACT

19. The Department determined the legal availability of water in the source aquifer by subtracting the legal demands of existing water rights within the zone of influence of the proposed point of diversion from the amount of water physically available in the source aquifer.

20. The Department defined the zone of influence to be the area within which existing wells would experience a drawdown of 0.01 feet or more. This was calculated to be an area roughly described extending 6,000 ft east and 2,500 ft west of the proposed well. A map of the zone of influence and the method of its calculation may be found in the Department’s technical analysis.

21. One groundwater right was identified within the zone of influence: Ground Water Certificate 76H 30124274, which has a legal demand of 1.28 AF.

22. The amount of water legally available in the source aquifer is 10,954.72 AF (10,956 AF physically available – 1.28 AF legally available = 10,954.72 AF legally available).

23. The Department determined in its technical analysis that the Bitterroot River is hydraulically connected to the source aquifer. The location where depletions begin to accrue was identified as the southern boundary of the NWNE Sec. 15, T12N, R20W, Missoula County, and the area of potential impact was defined as the reach between this point and the confluence of the Bitterroot and Clark Fork Rivers located in the NWNW of Section 27, T13N, R20W, Missoula County.

24. The Department considers municipal use to be 100% consumptive. As a result, the depletions to the Bitterroot River were set equal to the diverted volume of 99.0 AF. As part of the technical analysis of the proposal, the Department modeled the timing of depletions (Table 2).

Table 2. Timing of Depletions to the Bitterroot River

Month	Depletions to Bitterroot River (AF)	Depletions to Bitterroot River (GPM)
January	1.3	9.2
February	1.0	7.9
March	0.9	6.9
April	0.8	6.2
May	11.8	86.3
June	17.2	129.7
July	19.5	142.9
August	20.0	146.1
September	13.0	98.4
October	9.7	70.8
November	2.2	16.8
December	1.6	11.6

25. The Department calculated the physical availability of water on the Bitterroot River by taking the Median Mean Monthly flow rate (MMM) as recorded at USGS Gage #12352500 (Bitterroot River near Missoula MT). Flow rates were converted to volumes using the following equation: MMM (CFS) × 1.98 (AF/day/CFS) × days per month = AF/month. The monthly legal demands of water rights between the gage and the point of depletions were then added to the physical

availability at the gage to arrive at physical availability at the point of depletions. The legal demands of water rights within the area of potential impact were then subtracted from the physical availability to assess legal availability at the point of depletions (Table 3). A full description of the methodology can be found in Part B of the Department's technical analysis for Permit Application 76H 30163647.

Table 3: Physical and Legal Availability of Water at the Point of Depletions

Month	Physical Availability at Point of Depletions (CFS)	Physical Availability at Point of Depletions (AF)	Legal Demands (CFS)	Legal Demands (AF)	Legal Availability at Point of Depletions (CFS)	Legal Availability at Point of Depletions (AF)
January	782.58	48,118.97	900.66	55,379.42	-118.08	-7,260.45
February	820.08	45,951.59	900.66	50,466.73	-80.58	-4515.14
March	1,164.08	71,576.49	900.66	55,379.42	263.42	16197.07
April	2,578.63	153,439.14	940.30	55,951.74	1638.33	97487.4
May	6,770.63	416,309.81	7,740.30	475,932.5	-969.67	-59622.69
June	7,487.63	445,544.93	7,740.30	460,579.8	-252.67	-15034.87
July	2,333.40	143,475.17	635.07	39,048.93	1698.33	104426.24
August	867.80	53,358.94	635.07	39,048.93	232.73	14310.01
September	826.40	49,174.21	635.07	37,789.29	191.33	11384.92
October	930.70	57,226.51	935.07	57,495.21	-4.37	-268.7
November	1,040.08	61,889.06	900.66	53,592.99	139.42	8296.07
December	872.83	53,668.22	900.66	55,379.42	-27.83	-1711.2

26. The comparison between physically available and legally available water in the Bitterroot River indicates that water is legally available in the amount of water modeled to be depleted during the months of March, April, July, August, September, and November, but legally unavailable during the rest of the year (the months of January, February, May, June, October, and December).

27. The Department finds the proposed appropriation of 2.18 CFS and up to 99.0 AF of groundwater to be legally available during the proposed period of use.

28. The Department finds that surface water in the hydraulically connected Bitterroot River is not legally available in the amount modeled to be depleted during portions of the year.

29. The Applicant has addressed legal availability of surface water in the Bitterroot River by providing an aquifer recharge plan which proposes to fully mitigate the depletions to the Bitterroot

River during months in which water is not legally available. This aquifer recharge plan is fully addressed under "Adverse Effect" below.

30. The Department finds that surface water in the hydraulically connected Bitterroot River is legally available when considering the aforementioned aquifer recharge plan.

ADVERSE EFFECT

FINDINGS OF FACT

31. The Applicant submitted a plan for responding to a valid call on their water right by a senior appropriator. The City of Missoula can restrict or curtail the use of water for landscaping purposes in the place of use, as needed, if a call is made. The proposed diversion can also be shut off. In this case, the City's Sophie and Upper Linda Vista storage tanks can provide a level of backup water if the duration of call is short. The area supplied by the proposed diversion is also supplied from three other wells in the immediate area and can be supplemented from wells elsewhere in the municipal water system.

32. To determine if the proposed appropriation of groundwater will cause adverse effect to other water users, the Department modeled whether any extant wells would experience drawdown of 1 foot or more. No wells met this criterion. The Department determined that no groundwater rights will be adversely affected by drawdown from the proposed diversion.

33. The Department determined in its technical analysis of Permit Application 76H 30163647 that the proposed groundwater diversion will deplete the Bitterroot River. During the months of January, February, May, June, October, and December, water is not legally available. An aquifer recharge plan was submitted to mitigate depletions during the months where water is not legally available.

34. The water right proposed for use in the aquifer recharge plan is Statement of Claim 76H 30165310, which has a priority date of June 30, 1958. This claim was historically used for irrigation of 82 acres, and has a historical consumptive use of 105.57 AF. The retirement of the 82 acres and the aquifer recharge plan will provide sufficient water to mitigate the depletions of Permit Application 76H 30163647 during the months where water is legally unavailable, as shown in Table 7 and more fully described in the analysis of Change Application 76H 30165219, below. To the Applicant's knowledge, no calls have ever been made on Statement of Claim 76H 30165310.

35. Water is physically and legally available for appropriation in the groundwater aquifer, and the aquifer recharge plan fully offsets the depletions to surface water in the Bitterroot River during the months in which water is not legally available. Thus, the Department finds there will be no adverse effect to existing water users as a result of the proposed appropriation.

36. To ensure that the proposed flow rate and volume of water are not exceeded, and that the amount of mitigation water provided to the Bitterroot River is adequate to offset adverse effect, the Applicant will be required to adhere to the following water measurement conditions:

THE APPROPRIATOR'S USE OF WATER UNDER THIS PERMIT IS CONDITIONED UPON THE 99.0 AC-FT OF MITIGATION VOLUME REQUIRED TO OFFSET ADVERSE EFFECTS FROM NET DEPLETION TO THE BITTERROOT RIVER. DIVERSION UNDER THIS PERMIT MAY NOT COMMENCE UNTIL THE MITIGATION PLAN AS SPECIFICALLY DESCRIBED AND APPROVED THROUGH CHANGE AUTHORIZATION 76H 30165219 IS LEGALLY IMPLEMENTED. DIVERSION UNDER THIS PERMIT MUST STOP IF MITIGATION AS HEREIN REQUIRED IN AMOUNT, LOCATION, AND DURATION CEASES.

WATER MEASUREMENT-INLINE FLOW METER REQUIRED: THE APPROPRIATOR SHALL INSTALL A DEPARTMENT APPROVED IN-LINE FLOW METER AT A POINT IN THE DELIVERY LINE APPROVED BY THE DEPARTMENT. WATER MUST NOT BE DIVERTED UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL KEEP A WRITTEN MONTHLY RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED, INCLUDING THE PERIOD OF TIME. RECORDS SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR UNTIL THE PROVISIONAL PERMIT IS PERFECTED AND THE DEPARTMENT RECEIVES A PROJECT COMPLETION NOTICE. IN THE EVENT THAT PERMITTED FLOW RATES AND/OR VOLUMES HAVE BEEN EXCEEDED DURING PERFECTION OF THE PROVISIONAL PERMIT OR THE APPROPRIATOR FAILS TO SUBMIT ANNUAL REPORTS, THE DEPARTMENT MAY CONTINUE TO REQUIRE ANNUAL SUBMISSIONS OF MONTHLY FLOW RATE AND VOLUME RECORDS. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF A PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE MISSOULA WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

37. The Department finds that the proposed appropriation of 2.16 CFS up to 99 AF annually will not result in adverse effect to existing water rights.

ADEQUATE MEANS OF DIVERSION

FINDINGS OF FACT

38. The proposed point of diversion is a 12-inch well in the City of Missoula's Haugen well field (GWIC 326236). The well pump has not yet been installed but is planned to be similar to the pump in Haugan Well #2 (GWIC 251974), which is a Goulds 10RJLC, an 8-in, 150 hp unit capable of 1000 GPM at 330 ft of lift. Water is pumped from the well through a 10-inch pipe to the pump house and chlorinating unit. From the pump house, water is conveyed to the Sophie and Upper Linda Vista storage tanks via an 18-inch pipeline. Total dynamic head is 330 feet to the storage

tanks. From the tanks, water is distributed throughout the municipal place of use in 10- to 12-inch water mains.

39. The Department conducted an evaluation of the potentially available water column to determine adequacy of diversion. Using FWS:SOLV software, predicted drawdown within the well casing was modeled based on the monthly pumping schedule provided by the Applicant. Based on the Department's modeling, after one year of pumping 63 feet of water column would remain in the well casing. A full description of the methodology can be found in the Department's technical analysis titled Groundwater Permit Technical Analyses Report – Part A.

40. The Department finds that the proposed means of diversion and conveyance are capable of diverting and conveying the proposed flow rate and volume.

BENEFICIAL USE

FINDINGS OF FACT

41. Permit Application 76H 30165219 is for 980 GPM and up to 99.0 AF for municipal use.

42. The requested flow rate is needed to provide pressure to deliver the diverted water to the City's storage tanks, while the volume is what the City determined to be necessary to serve its municipal water users. The place of use is in the Miller Creek area of Missoula, which is experiencing development and growth with increased water demand. The period of diversion requested corresponds with lawn and garden irrigation season, and the additional flow rate and volume will allow the City to provide additional water during this higher demand period. The Department considers the City to be a reliable authority on the requirements of its municipal water system.

43. The Department finds the proposed water use is beneficial, and that the requested flow rate of 980 GPM and annual volume of 99.0 AF are the amounts necessary for the municipal purpose.

POSSESSORY INTEREST

FINDINGS OF FACT

44. This application is for municipal use, in which water is supplied to another. It is clear that the ultimate user will not accept the supply without consenting to the use of water. The Applicant has possessory interest in the property where the water is to be put to beneficial use or has the written consent of the person having the possessory interest.

APPLICATION TO CHANGE A WATER RIGHT NO. 76H 30165219

WATER RIGHTS TO BE CHANGED

FINDINGS OF FACT

45. The Applicant seeks to change the Point of Diversion, Place of Use, and Purpose of Use of Statement of Claim 76H 30165310 in this Application. Statement of Claim 76H 30165310 is filed for 2.5 CFS from the Bitterroot River via means of a pump for the purpose of Irrigation (Sprinkler) for 82 acres. The original filing did not include a volume; however, the Department's technical analysis calculated a historical diverted volume of 131.96 AF. The period of use is April 1 through October 31. The point of diversion is located in the NWSESE Sec. 2, T12N, R20W, Missoula County.

Table 4: Water Right Proposed for Change

Water Right Number	Flow Rate	Purpose	Period Of Use	Place Of Use	Point Of Diversion	Priority Date
76H 30165310	2.5 CFS	Irrigation	April 1 – October 31	S2SE Sec. 2 T12N, R20 W; NENE Sec. 11 T12N, R20W	NWSESE Sec. 2 T12N, R20W	6/30/1958

46. Statement of Claim 76H 30165310 is a child right of Statement of Claim 76H 105168-00, created when the Applicant submitted DNRC Form 641: Ownership Update, Divided Interest (Split) to the Department on February 6, 2025 (OUID #270457). Statement of Claim 76H 30122609 is also a child right of Statement of Claim 76H 105168-00. All three rights are associated by a shared point of diversion and share a flow rate of 2.5 CFS. The parent right was filed for 100 acres of irrigation of which 82 acres are associated with 76H 30165310, 8 acres associated with 76H 30122609, with 10 acres remaining with the parent claim.

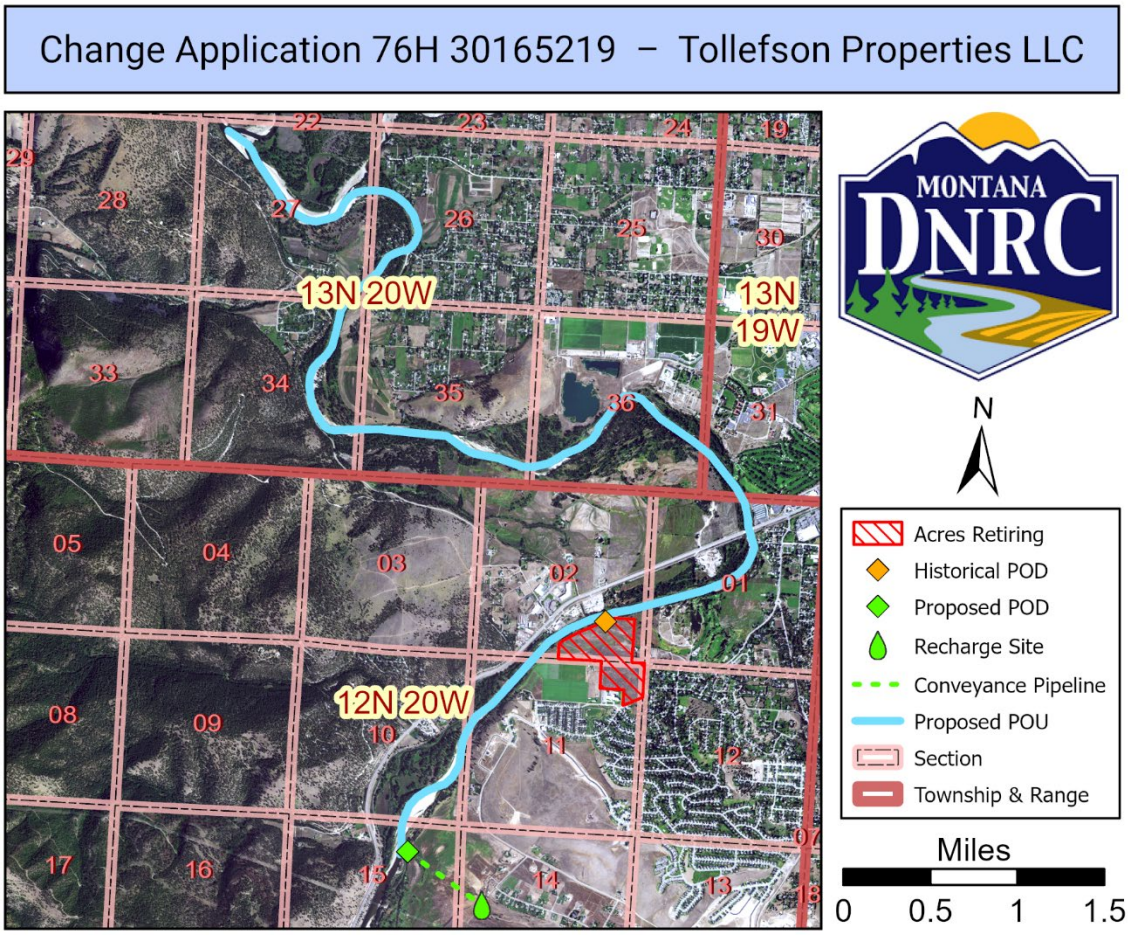
CHANGE PROPOSAL

FINDINGS OF FACT

47. The Applicant proposes to change the purpose of Statement of Claim 76H 30165310 from irrigation to aquifer recharge, retiring 82 acres in the S2SE Sec. 2 and the NENE Sec. 11, T12N, R20W, which constitute the entirety of the irrigated acres on this right. The place of use for the new aquifer recharge purpose will be the Bitterroot River from the southern boundary of the NENW Sec. 15, T12N, R20W to the confluence of the Bitterroot and Clark Fork Rivers in the NWNW of Sec. 27, T13N, R20W. A pump in the SENWNE Sec. 15, T12N, R20W will serve as the new point of diversion for aquifer recharge; the current point of diversion in the NWSESE Sec.

2, T12N, R21W will no longer be used by this right. Map 2 shows the elements of the proposed change.

48. This Application is to provide mitigation water via aquifer recharge for Permit Application 76H 30163647. The Applicant will divert 101.1 AF of water at up to 366.6 GPM from the Bitterroot River from April 1 to October 31 and convey it via a pipeline to a point in the SESWNW Sec. 14, T12N, R20W, where water will be released into Miller Creek, a losing stream. Water will infiltrate into the groundwater aquifer and provide year-round mitigation water to the Bitterroot River from the southern boundary of the NENW Sec. 15, T12N, R20W to the confluence of the Bitterroot and Clark Fork Rivers.



Map 2. Department-Generated Map of Proposed Change

49. The Applicant is held to the following conditions to meet the adverse effect and beneficial use criteria:

WATER MEASUREMENT-INLINE FLOW METER REQUIRED: THE APPROPRIATOR SHALL INSTALL A DEPARTMENT APPROVED IN-LINE FLOW METER AT A POINT IN THE DELIVERY LINE APPROVED BY THE DEPARTMENT. WATER MUST NOT BE DIVERTED UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL KEEP A WRITTEN MONTHLY RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED, INCLUDING THE PERIOD OF TIME. RECORDS SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. IN THE EVENT THAT AUTHORIZED FLOW RATES AND/OR VOLUMES HAVE BEEN EXCEEDED DURING PERFECTION OF THE CHANGE AUTHORIZATION OR THE APPROPRIATOR FAILS TO SUBMIT ANNUAL REPORTS, THE DEPARTMENT MAY CONTINUE TO REQUIRE ANNUAL SUBMISSIONS OF MONTHLY FLOW RATE AND VOLUME RECORDS. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF A PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE MISSOULA WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

THIS CHANGE AUTHORIZATION PROVIDES MITIGATION WATER FOR BENEFICIAL WATER USE PERMIT NO. 76H 30163647. THE BENEFICIAL USE CRITERION OF THIS CHANGE AUTHORIZATION IS CONDITIONED UPON THE AUTHORIZATION OF BENEFICIAL WATER USE PERMIT AUTHORIZATION NO. 76H 30163647.

CHANGE CRITERIA

50. The Department is authorized to approve a change if the Applicant meets its burden to prove the applicable § 85-2-402, MCA, criteria by a preponderance of the evidence. *Matter of Royston*, 249 Mont. 425, 429, 816 P.2d 1054, 1057 (1991); *Hohenlohe v. DNRC*, 2010 MT 203, ¶¶ 33, 35, and 75, 357 Mont. 438, 240 P.3d 628 (an Applicant's burden to prove change criteria by a preponderance of evidence is "more probable than not."); *Town of Manhattan v. DNRC*, 2012 MT 81, ¶ 8, 364 Mont. 450, 276 P.3d 920. Under this Preliminary Determination, the relevant change criteria in § 85-2-402(2), MCA, are:

> (2) Except as provided in subsections (4) through (6), (15), (16), and (18) and, if applicable, subject to subsection (17), the department shall approve a change in appropriation right if the appropriator proves by a preponderance of evidence that the following criteria are met:
> (a) The proposed change in appropriation right will not adversely affect the use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued under part 3.
> (b) The proposed means of diversion, construction, and operation of the appropriation works are adequate, except for: (i) a change in appropriation right for instream flow pursuant to 85-2-320 or 85-2-436; (ii) a temporary change in appropriation right for instream flow pursuant to 85-2-408; or (iii) a change in appropriation right pursuant to 85-2-420 for mitigation or marketing for mitigation.
> (c) The proposed use of water is a beneficial use.
> (d) The Applicant has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to

> beneficial use or, if the proposed change involves a point of diversion, conveyance, or place of use on national forest system lands, the Applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water. This subsection (2)(d) does not apply to: (i) a change in appropriation right for instream flow pursuant to 85-2-320 or 85-2-436; (ii) a temporary change in appropriation right for instream flow pursuant to 85-2-408; or (iii) a change in appropriation right pursuant to 85-2-420 for mitigation or marketing for mitigation.

51. The evaluation of a proposed change in appropriation does not adjudicate the underlying right(s). The Department's change process only addresses the water right holder's ability to make a different use of that existing right. *E.g., Hohenlohe*, ¶¶ 29-31; *Town of Manhattan*, ¶ 8; *In the Matter of Application to Change Appropriation Water Right No.41F-31227 by T-L Irrigation Company* (DNRC Final Order 1991).

HISTORICAL USE FOR ADVERSE EFFECT

FINDINGS OF FACT

52. Statement of Claim 76H 30165310 is one of two child rights to Statement of Claim 76H 105168-00. Application to Change a Water Right 76H 30150414 was filed on the other child right, Statement of Claim 76H 30122609. The historical use analysis in this Change Application covered the entirety of the original parent right. The Department reaffirms the historical use analysis conducted in Change Application 76H 30150414 and has relied on these findings in its historical use analysis of Statement of Claim 76H 30165310.

53. Statement of Claim 76H 30165310 lists a priority date of June 30, 1958, and an 82-acre place of use in the S2SE Sec. 2 and the NENE Sec. 11, T12N, R20W, Missoula County. The Water Resource Survey aerial photographs were taken in August 1955, before the 1958 priority date of this Claim. However, Statement of Claim 76H 30165310 is a child right of Statement of Claim 76H 105168-00. Change Application 76H 30150414 was submitted for another child right of Statement of Claim 76H 105168-00. This application includes 1966 aerial imagery (Map IR.2.C in deficiency letter response) which confirms the full 100 acres claimed under Statement of Claim 76H 105168-00 were historically irrigated, including 82 irrigated acres under what is now Statement of Claim 76H 30165310.

54. The Department reviewed the Water Resources Survey Field Notes for Missoula County, T12N, R20W, for further evidence of irrigation. Notes dated August 13, 1959, for property then

owned by Daniel Maloney show that the 82-acre place of use for Statement of Claim 76H 30165310 were irrigated at that time.

55. There are no water rights historically supplemental to Statement of Claim 76H 30165310.

56. The Applicant opted to use Department methodology per ARM 36.12.1902(16) and (17) to determine historical consumptive use. The variables used in this calculation are shown in Table 5.

Table 5. Historical Consumptive Use for Statement of Claim 76H 30165310.

Irrigation Method	Acres	IWR (in)[1]	Mgmt. Factor[2]	Field Efficiency	Crop Consumption (AF)	Field Applied Volume (AF)	Irrecoverable Losses (AF)	Total Consumed Volume (AF)
Sprinkler	82	19.45	70%	70%	92.37	131.96	13.2	105.57

[1]Missoula WSO AP IWR Weather Station
[2]Missoula County Historical Use Management Factor (Pre-July 1, 1973)

57. The Department verified the historical point of diversion in the NWSESE Sec. 2, T12N, R20W using USDA aerial photograph 1079-109, dated September 24, 1979.

58. The pump historically used to divert water to the place of use was a Baldwor Reliance 25 HP pump motor. A performance curve could not be located due to the discontinuation of this product by the manufacturer. The Applicant relied on calculations based on the publication *Irrigation Water Pumps* (AE1057, Revised Aug 2017), by Thomas F. Scherer, Extension Agricultural Engineer at N. Dakota State University. Using 18.75 water horse power (WHP) and a total dynamic head of 69.7 ft, the Applicant calculated:

(18.75 WHP × 3960 constant) / 69.7 TDH = 1,065 GPM, or 2.37 CFS

59. The decreed flow rate on this claim is 2.5 CFS, and these calculations indicate the pump supported a flow rate of 2.37 CFS. The Water Court added an informational remark to parent Claim 76H 105168-00 which notes that this claim and its children share and alternate the use of the point of diversion and flow rate, so that the combined flow rate of Statements of Claim 76H 105168-00, 76H 30165310, and 76H 30122609 may not exceed 2.5 CFS.

60. Water was conveyed to the place of use by a buried 8-inch mainline pipe running approximately 2400 feet, with risers spaced 60 ft apart. Lateral lines extended from the main line, with risers 30 ft apart.

61. As the historical conveyance is by pipeline, there are no meaningful conveyance losses. Therefore, the historically diverted volume is equal to the field applied volume of 131.96 AF, per ARM 36.12.1902(10).

62. The historical period of diversion for the subject water right was described in the application materials submitted for Application to Change a Water Right 76H 30150414. In that application the Department found the historical period of diversion to be April 1 to October 31, matching what was decreed by the Montana Water Court.

63. The Department finds the following historical use, as shown in Table 6.

Table 6. Summary of historical use findings for Statement of Claim 76H 30165310

Priority Date	Diverted Volume	Flow Rate	Purpose (Total Acres)	Consumptive Use	Place of Use	Point of Diversion
6/30/1958	131.96 AF	2.5 CFS	Sprinkler Irrigation (82 acres)	105.57 AF	S2SE Sec. 2; NENE Sec. 11, T12N, R20W	NWSESE Sec. 2, T12N, R20W

ADVERSE EFFECT

FINDINGS OF FACT

64. The Applicant proposes to retire all 82 irrigated acres on Statement of Claim 76H 30165310 and to use 101.1 AF at a flow rate of up to 336.6 GPM for aquifer recharge to offset the depletions of proposed Permit 76H 30163647. The volume of 101.1 AF was identified as the amount of water necessary for the seasonal aquifer recharge schedule to offset the depletions of the proposed permit during the months when adverse effect would occur.

65. The historical consumptive use for this Claim is 105.57 AF. The proposed retirement of all irrigated acres and transition to the nonconsumptive aquifer recharge purpose will thus result in a decrease of 105.57 AF of consumed volume.

66. Return flows were found to historically accrue in the Bitterroot River beginning in the SESESW Section 2, T12N, R20W, Missoula County. This change is for aquifer recharge, utilizing a portion of the historically consumed volume to mitigate depletions to the Bitterroot River. Historically, irrigation of the 82 acres being retired from irrigation generated 26.4 AF of return flows to the Bitterroot River. The proposed aquifer recharge injection schedule requires a volume of 101.1 AF to be diverted from the Bitterroot River, leaving 30.86 AF of historically diverted water in the Bitterroot River, offsetting lost return flows. When return flows return to the source at the location that they historically did and water is left instream so that historically diverted flows are available during the historical period of diversion where return flows historically returned to the

source (as is the case in this application), the Department does not conduct a monthly analysis of the rate and timing of return flows.

67. The Applicant proposes to move the location of their Bitterroot River diversion approximately 2 miles upstream, allowing the mitigation provided by the aquifer recharge plan to offset depletions from proposed permit 76H 30163647 in the location where they occur. Eight water rights lie between the historical point of diversion and the proposed point of diversion (Table 7). Of these, three are senior irrigation rights, four are junior instream rights, and one is a junior irrigation right.

Table 7. Rights with Points of Diversion between Historical and Proposed POD.

Water Right	Owner	Purpose	Priority Date
76H 104521-00	BOGGESS FAMILY TRUST	IRRIGATION	12/13/1932
76H 131603-00	MR RIVER PROPERTY LLC	IRRIGATION	12/31/1936
76H 120055-00	BUREAU OF RECLAMATION	IRRIGATION	12/4/1944
76H 151306-00	CSKT; MT DFWP	RECREATION	7/1/1970
76H 151311-00	CSKT; MT DFWP	RECREATION	7/1/1970
76H 151312-00	CSKT; MT DFWP	RECREATION	7/1/1970
76H 151313-00	CSKT; MT DFWP	RECREATION	7/1/1970
76H 39791-00	KHOURY INC	IRRIGATION	1/13/1982

68. The reach between the historical and proposed points of diversion will be depleted by the proposed diverted volume of 101.1 AF.

69. The Department finds that the proposed change in point of diversion will not adversely affect senior irrigation rights between the historical and proposed points of diversion. The Department's analysis shows that there is sufficient physical availability of water in the Bitterroot River to satisfy all senior water rights in this reach of the river year-round. The analysis demonstrating physically available water in the Bitterroot River at this location can be found in the technical analysis for the proposal requiring mitigation, Application 76H 30163647. The change in point of diversion will not result in a need for increased call for water by senior users as their rights are satisfied due to sufficient water flows in the reach.

70. The Department finds that the proposed change in point of diversion will not adversely affect junior rights between the historical and proposed points of diversion. Prior to this change, these rights were subject to call by the water right proposed for change. While 101.1 AF of water

will no longer be physically available in this reach, this water was never legally available for appropriation by junior water rights. This change does not cause previously available water to become unavailable but only changes the manner in which water was unavailable from legal to physical. Therefore, the Department finds no adverse effect to junior water users in this reach.

71. The change in point of diversion will not result in an increase in the frequency of call on junior water users between the historical and proposed points of diversion by CSKT and DFWP. Both the historical and proposed points of diversion are located upstream of the USGS gage used by CSKT and DFWP to monitor streamflows and to potentially make call. Because of this, and because there is no increase in consumptive use, this change will not result in any difference in flows measured at the gage and therefore will not result in any change in date or frequency of call.

72. Water users downstream of the historical point of diversion will not be adversely affected as a result of this change, since there is not a proposed increase in the amount of water being diverted from the source. Historically 131.96 AF was diverted from the Bitterroot River for irrigation purposes with a consumptive use of 105.57 AF. The proposed change to aquifer recharge would result in a diverted volume of 101.1 AF which will provide 99.0 AF of mitigation water.

73. The historical period of diversion for irrigation is April 1 to October 31. The proposed aquifer recharge plan injection schedule begins on May 1 and ends on October 31. The proposed volume to be injected for aquifer recharge is 101.1 AF, less than the 105.57 AF historically consumed by irrigation.

74. To ensure that the historical and proposed amount of water diverted from the Bitterroot River are not exceeded, which would result in adverse effect, the Applicant will be required to adhere to the following water measurement condition:

WATER MEASUREMENT-INLINE FLOW METER REQUIRED: THE APPROPRIATOR SHALL INSTALL A DEPARTMENT APPROVED IN-LINE FLOW METER AT A POINT IN THE DELIVERY LINE APPROVED BY THE DEPARTMENT. WATER MUST NOT BE DIVERTED UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL KEEP A WRITTEN MONTHLY RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED, INCLUDING THE PERIOD OF TIME. RECORDS SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. IN THE EVENT THAT AUTHORIZED FLOW RATES AND/OR VOLUMES HAVE BEEN EXCEEDED DURING PERFECTION OF THE CHANGE AUTHORIZATION OR THE APPROPRIATOR FAILS TO SUBMIT ANNUAL REPORTS, THE DEPARTMENT MAY CONTINUE TO REQUIRE ANNUAL SUBMISSIONS OF MONTHLY FLOW RATE AND VOLUME RECORDS. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF A PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE MISSOULA WATER RESOURCES REGIONAL OFFICE.

THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

75. The Department finds that the proposed change in water use will not result in adverse effect to existing water rights.

BENEFICIAL USE

FINDINGS OF FACT

76. This Change Application is intended to provide mitigation water via aquifer recharge for Application for Beneficial Water Use Permit No. 76H 30163647, which requires mitigation water to be made available in the Bitterroot River in the months of January, February, May, June, October, and December to offset its net depletions that would result in adverse effect to senior surface water users. The Department's technical analysis of the Applicants' proposal found that a flow rate of 336.6 GPM and annual volume of 101.1 AF were the amounts required to provide sufficient mitigation water via aquifer recharge to offset the depletions of Application 76H 30163647.

77. The proposed aquifer recharge plan results in water accretions to the Bitterroot River in every month of the year. In the adverse effect analysis conducted for permit application 76H 30163647, the Department found that depletions from groundwater pumping would result in adverse effect during the months of January, February, May, June, October, and December. Although mitigation water is not required in every month of the year to offset adverse effects from groundwater pumping, the injection schedule proposed for aquifer recharge is necessary to generate sufficient volumes of mitigation water in the Bitterroot River during the months of January, February, May, June, October, and December when it is needed, and is a beneficial use. Table 8 below displays the monthly net effect (i.e. mitigation accretions – permit depletions) of the Applicants' proposed aquifer recharge plan to the Bitterroot River. A full description of the methodology can be found in the Department's technical analysis titled Surface Water Change Technical Analysis Report – Part B.

Table 7. Monthly net effect to the Bitterroot River from the proposed aquifer recharge plan

Month	Permit Consumed Volume (AF)	Bitterroot River Net Depletion (AF)	Bitterroot River Net Depletion (GPM)	Aquifer Recharge Accretions Bitterroot River (AF)	Aquifer Recharge Accretions Bitterroot River (GPM)	Net Effect to Bitterroot River (AF)	Net Effect to Bitterroot River (GPM)
Jan	0	1.3	9.2	1.5	11.2	0.2	1.7
Feb	0	1	7.9	1.2	9.6	0.2	1.5
Mar	0	0.9	6.9	1.1	8.4	0.2	1.8
Apr	0	0.8	6.2	1	7.6	0.2	1.5
May	13.9	11.8	86.3	11.9	86.8	0.1	0.5
June	19.8	17.2	129.7	17.3	130.4	0.1	0.4
Jul	21.8	19.5	142.9	19.6	143	0.1	0.4
Aug	21.8	20	146.1	20.1	146.9	0.1	0.6
Sep	12.8	13	98.4	13.1	98.9	0.1	0.6
Oct	8.9	9.7	70.8	9.8	71.4	0.1	0.5
Nov	0	2.2	16.8	2.7	20.2	0.5	3.6
Dec	0	1.6	11.6	1.9	14.1	0.3	2.4
Total	99	99		101.1		2.1	

78. To meet the beneficial use criterion, the change authorization is subject to the following condition:

THIS CHANGE AUTHORIZATION PROVIDES MITIGATION WATER FOR BENEFICIAL WATER USE PERMIT NO. 76H 30163647. THE BENEFICIAL USE CRITERION OF THIS CHANGE AUTHORIZATION IS CONDITIONED UPON THE AUTHORIZATION OF BENEFICIAL WATER USE PERMIT AUTHORIZATION NO. 76H 30163647.

79. The Department finds that the proposed water use is beneficial (contingent upon the issuance of Permit Application 76H 30163647), and that the requested flow rate of 336.6 GPM and annual volume of 101.1 AF are the amount required to offset depletions to surface water resulting in adverse effect from Permit Application 76H 30163647.

ADEQUATE DIVERSION

FINDINGS OF FACT

80. The aquifer recharge system was designed by a professional engineer. Three 30-foot sections of 12-in horizontal, slotted, HPDE infiltration pipe will be installed in a side channel to the Bitterroot River in the SENWNE Sec. 15, T12N, R20W. This influent pipe will connect to a solid 12-inch HPDE pipe extending about 800 ft to the southeast to a 5-foot diameter wet well (pump station) located adjacent to an active oxbow. The pipeline connecting the POD to the wet well is

designed with a siphon so that flows from the river cannot reach the wet well without pumping. A turbine pump and 4-inch totalizing inline flow meter will be installed in a pump house located above and adjacent to the wet well. The pump will be a 20 HP 5TMH-375 Berkeley submersible turbine pump, which can convey the requested 336.6 GPM over a vertical elevation lift of about 45 feet. Total dynamic head is about 170 ft at 335 GPM. From the wet well, water will be conveyed through a 4-inch pipeline approximately 1820 ft to an effluent outfall at the aquifer recharge site on lower Miller Creek.

81. Miller Creek is a losing stream and frequently dry in the lower reaches where the aquifer recharge site is located. The Applicant proposes that by discharging water into the Creek, the Bitterroot River Shallow Valley Aquifer will be recharged and supplement flows to the Bitterroot River throughout the year. Department Hydrologist Melissa Brickl analyzed the Applicant's proposal for aquifer recharge using data from shallow wells local to the area and by hydrologic modeling. The Department's analysis of the Applicant's plan found that the use of Miller Creek as a natural carrier and infiltration gallery for aquifer recharge is reasonable.

82. The City of Missoula currently utilizes Miller Creek for mitigation required for issuance of Beneficial Water Use Permit 76H 30063540. The mitigation plan for this permit retired irrigated acreage in the Miller Creek valley and left the water instream where it naturally recharges the groundwater aquifer through the streambed. The mitigation plan was approved in Authorization to Change a Water Right 76H 30063540, issued June 28, 2012. In the analyses conducted for that change application, the Department found Miller Creek to be a losing stream, and that water left in Miller Creek would infiltrate into the groundwater aquifer providing mitigation to the Bitterroot River. The Department corroborates this previous analysis for the purpose of this application.

83. The Department finds the means of diversion adequate for the proposed beneficial use.

POSSESSORY INTEREST

FINDINGS OF FACT

84. Pursuant to § 85-2-402(2)(d)(iii), MCA, the Applicant is not required to prove they have the possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to a beneficial use because this application involves aquifer recharge per § 85-2-420, MCA.

APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 76H 30163647

BENEFICIAL WATER USE PERMIT CONCLUSIONS OF LAW

BASIN CLOSURE

85. The proposed well is located within the Bitterroot River north end subbasin (76HB). Per § 85-2-344(2)(a), MCA, DNRC cannot grant an application for a permit to appropriate surface water within a Bitterroot River subbasin until the closure for the basin is terminated pursuant to § 85-2-344(5), MCA.

86. The application falls under the exceptions for the basin closure, § 85-2-344(2)(b), MCA. This application is for the appropriation of groundwater and complies with the provisions of § 85-2-360, MCA.

87. In reviewing an application for groundwater in a closed basin, the District Court in *Sitz Ranch v. DNRC* observed:

> The basin from which Applicants wish to pump water is closed to further appropriations by the legislature. The tasks before an Applicant to become eligible for an exception are daunting. The legislature set out the criteria discussed above (§ 85-2-311, MCA) and placed the burden of proof squarely on the Applicant. The Supreme Court has instructed that those burdens are exacting. It is inescapable that an Applicant to appropriate water in a closed basin must withstand strict scrutiny of each of the legislatively required factors.

Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7.

88. A basin closure exception does not relieve the Department of analyzing § 85-2-311, MCA criteria. Qualification under a basin closure exception allows the Department to accept an application for processing. The Applicant must still prove the requisite criteria. *E.g.*, *In the Matter of Application for Beneficial Water Use Permit No. 41K-30043385 by Marc E. Lee* (DNRC Final Order 2011); *In the Matter of Application for Beneficial Water Use Permit No. 41K-30045713 by Nicholas D. Konen*, (DNRC Final Order 2011).

PHYSICAL AVAILABILITY

89. Pursuant to § 85-2-311(1)(a)(i), MCA, an Applicant must prove by a preponderance of the evidence that "there is water physically available at the proposed point of diversion in the amount that the Applicant seeks to appropriate."

90. It is the Applicant's burden to produce the required evidence. *In the Matter of Application for Beneficial Water Use Permit No. 27665-41I by Anson* (DNRC Final Order 1987) (Applicant

produced no flow measurements or any other information to show the availability of water; permit denied); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.,* (DNRC Final Order 2005).

91. An Applicant must prove that at least in some years there is water physically available at the point of diversion in the amount the Applicant seeks to appropriate. *In the Matter of Application for Beneficial Water Use Permit No. 72662s76G by John Fee and Don Carlson* (DNRC Final Order 1990); *In the Matter of Application for Beneficial Water Use Permit No. 85184s76F by Wills Cattle Co. and Ed McLean* (DNRC Final Order 1994).

92. The Applicant has proven that water is physically available at the proposed point of diversion in the amount Applicant seeks to appropriate. Section 85-2-311(1)(a)(i), MCA (FOF 15-18).

LEGAL AVAILABILITY

93. Pursuant to § 85-2-311(1)(a), MCA, an Applicant must prove by a preponderance of the evidence that:

> (ii) water can reasonably be considered legally available during the period in which the Applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:
> (A) identification of physical water availability;
> (B) identification of existing legal demands on the source of supply throughout the area of potential impact by the proposed use; and
> (C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.

E.g., ARM 36.12.101 and 36.12.120; *Montana Power Co.*, 211 Mont. 91, 685 P.2d 336 (Permit granted to include only early irrigation season because no water legally available in late irrigation season); *In the Matter of Application for Beneficial Water Use Permit No. 81705-g76F by Hanson* (DNRC Final Order 1992).

94. It is the Applicant's burden to present evidence to prove water can be reasonably considered legally available. *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7 (the legislature set out the criteria (§ 85-2-311, MCA) and placed the burden of proof squarely on the Applicant. The Supreme Court has instructed that those burdens are exacting.); *see also Matter of Application for Change of Appropriation Water Rights Nos. 101960-41S and 101967-41S by Royston* (1991), 249 Mont. 425, 816 P.2d 1054 (burden of proof on Applicant in a change proceeding to prove required criteria); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1,*

LLC., (DNRC Final Order 2005))(it is the Applicant's burden to produce the required evidence.); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 by Utility Solutions, LLC* (DNRC Final Order 2007) (permit denied for failure to prove legal availability); *see also* ARM 36.12.1705.

95. Pursuant to *Montana Trout Unlimited v. DNRC*, 2006 MT 72, 331 Mont. 483, 133 P.3d 224, the Department recognizes the connectivity between surface water and ground water and the effect of pre-stream capture on surface water. *E.g., Wesmont Developers v. DNRC*, CDV-2009-823, Montana First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 7-8; *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006) (mitigation of depletion required), *affirmed*, *Faust v. DNRC et al.*, Cause No. CDV-2006-886, Montana First Judicial District (2008); *see also Robert and Marlene Takle v. DNRC et al.*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994) (affirming DNRC denial of Applications for Beneficial Water Use Permit Nos. 76691-76H, 72842-76H, 76692-76H and 76070-76H; underground tributary flow cannot be taken to the detriment of other appropriators including surface appropriators and ground water appropriators must prove unappropriated surface water, *citing Smith v. Duff*, 39 Mont. 382, 102 P. 984 (1909), and *Perkins v. Kramer*, 148 Mont. 355, 423 P.2d 587 (1966)); *In the Matter of Beneficial Water Use Permit No. 80175-s76H by Tintzman* (DNRC Final Order 1993)(prior appropriators on a stream gain right to natural flows of all tributaries in so far as may be necessary to afford the amount of water to which they are entitled, *citing Loyning v. Rankin* (1946), 118 Mont. 235, 165 P.2d 1006; *Granite Ditch Co. v. Anderson* (1983), 204 Mont. 10, 662 P.2d 1312; *Beaverhead Canal Co. v. Dillon Electric Light & Power Co.* (1906), 34 Mont. 135, 85 P. 880); *In the Matter of Beneficial Water Use Permit No.* 63997*-42M by Joseph F. Crisafulli* (DNRC Final Order 1990) (since there is a relationship between surface flows and the ground water source proposed for appropriation, and since diversion by Applicant's well appears to influence surface flows, the ranking of the proposed appropriation in priority must be as against all rights to surface water as well as against all groundwater rights in the drainage).

96. Because the Applicant bears the burden of proof as to legal availability, the Applicant must prove that the proposed appropriation will not result in prestream capture or induced infiltration and cannot limit its analysis to ground water. Section 85-2-311(a)(ii), MCA. Absent such proof, the Applicant must analyze the legal availability of surface water in light of the proposed ground water appropriation. *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 By Utility Solutions LLC* (DNRC Final Order 2007) (permit denied); *In the Matter of*

Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer (DNRC Final Order 2009); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 ; *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12.

97. Where a proposed ground water appropriation depletes surface water, Applicant must prove legal availability of amount of depletion of surface water throughout the period of diversion either through a mitigation /aquifer recharge plan to offset depletions or by analysis of the legal demands on, and availability of, water in the surface water source. *Robert and Marlene Takle v. DNRC*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994); *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006) (permits granted), *affirmed*, *Faust v. DNRC et al.*, Cause No. CDV-2006-886, Montana First Judicial District (2008); *In the Matter of Application for Beneficial Water Use Permit 41H 30019215 by Utility Solutions LLC* (DNRC Final Order 2007 *)*(permit granted)*, affirmed*, *Montana River Action Network et al. v. DNRC*, Cause No. CDV-2007-602, Montana First Judicial District (2008); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 by Utility Solutions LLC* (DNRC Final Order 2007) (permit denied for failure to analyze legal availability outside of irrigation season (where mitigation applied)); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30026244 by Utility Solutions LLC* (DNRC Final Order 2008); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009)(permit denied in part for failure to analyze legal availability for surface water depletion); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 (Court affirmed denial of permit in part for failure to prove legal availability of stream depletion to slough and Beaverhead River); *Westmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12 ("DNRC properly determined that Westmont cannot be authorized to divert, either directly or indirectly, 205.09 acre-feet from the Bitterroot River without establishing that the water does not belong to a senior appropriator"; Applicant failed to analyze legal availability of surface water where projected surface water depletion from groundwater pumping); *In the Matter of Application for Beneficial Water Use Permit No. 76D-30045578 by GBCI Other Real Estate, LLC* (DNRC Final Order 2011) (in an open basin, Applicant for a new water right can show legal availability by using a mitigation/aquifer recharge plan or by showing that any depletion to surface water by groundwater pumping will not take water already appropriated; development next to Lake Koocanusa will not take previously appropriated water). Applicant

may use water right claims of potentially affected appropriators as a substitute for "historic beneficial use" in analyzing legal availability of surface water under § 85-2-360(5), MCA. *Royston, supra*.

98. In analyzing legal availability for surface water, Applicant was required to evaluate legal demands on the source of supply throughout the "area of potential impact" by the proposed use under § 85-2-311(1)(a)(ii), MCA, not just within the "zone of influence." *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 6.

99. Based on the Applicant's proposed aquifer recharge plan, the Department finds that the Applicant has proven by a preponderance of the evidence that surface water can reasonably be considered legally available during the period in which the Applicant seeks to appropriate, in the amount requested. (FOF 29, 33-35).

100. Applicant has proven by a preponderance of the evidence that water can reasonably be considered legally available during the period in which the Applicant seeks to appropriate, in the amount requested, based on the records of the Department and other evidence provided to the Department. Section 85-2-311(1)(a)(ii), MCA. (FOF 19-30)

ADVERSE EFFECT

101. Pursuant to § 85-2-311(1)(b), MCA, the Applicant bears the affirmative burden of proving by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. Analysis of adverse effect must be determined based on a consideration of an Applicant's plan for the exercise of the permit that demonstrates that the Applicant's use of the water will be controlled so the water right of a prior appropriator will be satisfied. *See Montana Power Co.*, 211 Mont. 91, 685 P.2d 336 (1984) (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); *Bostwick Properties, Inc.*, ¶ 21.

102. An Applicant must analyze the full area of potential impact under the § 85-2-311, MCA criteria. *In the Matter of Beneficial Water Use Permit No. 76N-30010429 by Thompson River Lumber Company* (DNRC Final Order 2006). While § 85-2-361, MCA, limits the boundaries expressly required for compliance with the hydrogeologic assessment requirement, an Applicant is required to analyze the full area of potential impact for adverse effect in addition to the requirement of a hydrogeologic assessment. *Id.* ARM 36.12.120(5).

103. Applicant must prove that no prior appropriator will be adversely affected, not just the objectors. *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, 4 (2011).

104. In analyzing adverse effect to other appropriators, an Applicant may use the water rights claims of potentially affected appropriators as evidence of their "historic beneficial use." *See Matter of Application for Change of Appropriation Water Rights Nos. 101960-41S and 101967-41S by Royston*, 249 Mont. 425, 816 P.2d 1054 (1991).

105. It is the Applicant's burden to produce the required evidence. *E.g., Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, 7 (2011) (legislature has placed the burden of proof squarely on the Applicant); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005). The Department is required to grant a permit only if the § 85-2-311, MCA, criteria are proven by the Applicant by a preponderance of the evidence. *Bostwick Properties, Inc.*, ¶ 21.

106. Section 85-2-311 (1)(b) of the Water Use Act does not contemplate a de minimis level of adverse effect on prior appropriators. *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, 8 (2011).

107. A plan to prove legal availability and prevent adverse effect can be to use mitigation or augmentation. Section 85-2-360, MCA; e.g., *In the Matter of Beneficial Water Use Permit Application Nos. 41H 30012025 and 41H 30013629 by Utility Solutions, LLC* (DNRC Final Order 2006) (permit conditioned to mitigate/augment depletions to the Gallatin River by use of infiltration galleries in the amount of .55 cfs and 124 AF), *affirmed*, *Faust v. DNRC*, Cause No. CDV-2006-886, Montana First Judicial District (2008); *In the Matter of Beneficial Water Use Permit Application Nos. 41H 30019215 by Utility Solutions, LLC* (DNRC Final Order 2007) (permit conditioned to mitigate 6 gpm up to 9.73 AF of potential depletion to the Gallatin River), affirmed, *Montana River Action Network v. DNRC*, Cause No. CDV-2007-602, Montana First Judicial District Court, (2008); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7; *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pg. 12; *In the Matter of Application for Beneficial Water Use Permit No. 41H 30026244 By Utility Solutions LLC* (DNRC 2008) (permit conditioned on mitigation of 3.2 gpm up to 5.18 AF of depletion to the Gallatin River); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (HB 831, DNRC Final Order 2009) (permit denied in part for failure to analyze legal availability for surface water for depletion of 1.31 AF to Bitterroot River); § 85-2-360, MCA. The Department has a history of approving new appropriations where Applicant will mitigate/augment to offset depletions caused by the new appropriation. *In the Matter of Beneficial Water Use Permit Application No. 41I-104667 by Woods and Application to Change Water Right No 41I-G(W) 125497 by Ronald J. Woods* (DNRC Final Order 2000); *In The Matter*

of Application To Change Appropriation Water Right 76GJ 110821 by Peterson and MT Department of Transportation (DNRC Final Order 2001); *In The Matter of Application To Change Appropriation Water Right No. 76G-3235699 by Arco Environmental Remediation LLC* (DNRC Final Order 2003) (allows water under claim 76G-32356 to be exchanged for water appropriated out of priority by permits at the wet closures and wildlife to offset consumption). *In The Matter of Designation of the Larsen Creek Controlled Groundwater Area as Permanent, Board of Natural Resources Final Order* (1988).

Montana case law also provides a history of mitigation, including mitigation by new or untried methods. *See Thompson v. Harvey* (1974),154 Mont. 133, 519 P.2d 963; *Perkins v. Kramer* (1966), 148 Mont. 355, 423 P.2d 587. Augmentation/mitigation is also recognized in other prior appropriation states for various purposes. *E.g.* C.R.S.A. § 37-92-302 (Colorado); A.R.S. § 45-561 (Arizona); RCWA 90.46.100 (Washington); ID ST § 42-1763B and § 42-4201A (Idaho).

The requirement for mitigation in closed basins has been codified in § 85-2-360, *et seq.*, MCA. Section 85-2-360(5), MCA provides in relevant part:

> A determination of whether or not there is an adverse effect on a prior appropriator as the result of a new appropriation right is a determination that must be made by the d*epartment based on the amount*, location, and duration of the amount of net depletion that causes the adverse effect relative to the historic beneficial use of the appropriation right that may be adversely affected.
>
> (Emphasis added.)

108. The Department can and routinely does, condition a new permit's use on use of that special management, technology, or measurement such as augmentation now generally known as mitigation and aquifer recharge. *See* § 85-2-312; § 85-2-360 et seq., MCA; *see, e.g.*, *In the Matter of Beneficial Water Use Permit No. 107-41I by Diehl Development* (DNRC Final Order 1974) (No adverse effect if permit conditions to allow specific flow past point of diversion.); *In the Matter of Combined Application for Beneficial Water Use Permit No. 76H- 30043133 and Application No. 76H-30043132 to Change Water Right Nos. 76H-121640-00, 76H-131641-00 and 76H-131642-00 by the Town of Stevensville* (DNRC Final Order 2011).

109. It was within the discretion of the Department to decline to consider an undeveloped mitigation proposal as mitigation for adverse effect in a permit proceeding. *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pg. 10.

110. Pursuant to § 85-2-360, MCA, an applicant whose hydrogeologic assessment conducted pursuant to § 85-2-361, MCA, predicts that there will be a net depletion of surface water shall

offset the net depletion that results in the adverse effect through a mitigation plan or an aquifer recharge plan.

111. Pursuant to § 85-2-362, MCA, an aquifer recharge plan must include: evidence that the appropriate water quality related permits have been granted pursuant to Title 75, chapter 5, and pursuant to §§ 75-5-410 and 85-2-364, MCA; where and how the water in the plan will be put to beneficial use when and where, generally, water reallocated through exchange or substitution will be required; the amount of water reallocated through exchange or substitution that is required; how the proposed project or beneficial use for which the aquifer recharge plan is required will be operated; evidence that an application for a change in appropriation right, if necessary, has been submitted; a description of the process by which water will be reintroduced to the aquifer; evidence of water availability; and evidence of how the aquifer recharge plan will offset the required amount of net depletion of surface water in a manner that will offset any adverse effect on a prior appropriator.

112. In this case the Applicant proposes to mitigate consumptive use during the months in which water is not legally available in the hydrologically connected surface waters. The full depletion of surface waters by the proposed appropriation in amount, location, and duration will be mitigated during these months. Because adverse effect from consumptive use would only occur during months in which water is not legally available, and because the Applicant proposes to mitigate the full amount of consumptive use in these months, there is no adverse effect from depletion of surface waters to the historical beneficial use of surface water rights.

113. The Applicant has proven by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. Section 85-2-311(1)(b), MCA (FOF 31-37).

ADEQUATE DIVERSION

114. Pursuant to § 85-2-311(1)(c), MCA, an Applicant must demonstrate that the proposed means of diversion, construction, and operation of the appropriation works are adequate.

115. The adequate means of diversion statutory test merely codifies and encapsulates the case law notion of appropriation to the effect that the means of diversion must be reasonably effective, i.e., must not result in a waste of the resource*. In the Matter of Application for Beneficial Water Use Permit No. 33983s41Q by Hoyt* (DNRC Final Order 1981); § 85-2-312(1)(a), MCA.

116. Information needed to prove that proposed means of diversion, construction, and operation of the appropriation works are adequate varies, based upon project complexity design

by licensed engineer adequate. *In the Matter of Application for Beneficial Water Use Permit No. 41C-11339900 by Three Creeks Ranch of Wyoming LLC* (DNRC Final Order 2002).

117. Applicant has proven by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the proposed beneficial use. Section 85-2-311(1)(c), MCA (FOF 38-40).

BENEFICIAL USE

118. Under § 85-2-311(1)(d), MCA, an Applicant must prove by a preponderance of the evidence the proposed use is a beneficial use.

119. An appropriator may appropriate water only for a beneficial use. See also, § 85-2-301 MCA. It is a fundamental premise of Montana water law that beneficial use is the basis, measure, and limit of the use. *E.g.*, *McDonald*; *Toohey v. Campbell* (1900), 24 Mont. 13, 60 P. 396. The amount of water under a water right is limited to the amount of water necessary to sustain the beneficial use. *E.g.*, *Bitterroot River Protective Association v. Siebel, Order on Petition for Judicial Review*, Cause No. BDV-2002-519, Montana First Judicial District Court, Lewis and Clark County (2003), *affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518; *In The Matter Of Application For Beneficial Water Use Permit No. 43C 30007297 by Dee Deaterly* (DNRC Final Order), *affirmed other grounds*, *Dee Deaterly v. DNRC* , Cause No. 2007-186, Montana First Judicial District, *Order Nunc Pro Tunc on Petition for Judicial Review* (2009); *Worden v. Alexander* (1939), 108 Mont. 208, 90 P.2d 160; *Allen v. Petrick* (1924), 69 Mont. 373, 222 P. 451; *In the Matter of Application for Beneficial Water Use Permit No. 41S-105823 by French* (DNRC Final Order 2000).

120. Amount of water to be diverted must be shown precisely. *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, 3 (2011) (citing *BRPA v. Siebel*, 2005 MT 60, and rejecting Applicant's argument that it be allowed to appropriate 800 acre-feet when a typical year would require 200-300 acre-feet).

121. It is the Applicant's burden to produce the required evidence. *Bostwick Properties, Inc. v. DNRC*, 2013 MT 48, ¶ 22, 369 Mont. 150, 296 P.3d 1154 ("issuance of the water permit itself does not become a clear, legal duty until [the applicant] proves, by a preponderance of the evidence, that the required criteria have been satisfied"); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7; *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005); *see also Royston; Ciotti*.

122. Applicant proposes to use water for Municipal which is a recognized beneficial use. Section 85-2-102(5), MCA. Applicant has proven by a preponderance of the evidence Municipal is a beneficial use and that 99.0 AF of diverted volume and 2.18 CFS is the amount needed to sustain the beneficial use. Section 85-2-311(1)(d), MCA. (FOF 41-42).

POSSESSORY INTEREST

123. Pursuant to § 85-2-311(1)(e), MCA, an Applicant must prove by a preponderance of the evidence that it has a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use, or if the proposed use has a point of diversion, conveyance, or place of use on national forest system lands, the Applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water under the permit.

124. Pursuant to ARM 36.12.1802:

> (1) An Applicant or a representative shall sign the application affidavit to affirm the following:
> (a) the statements on the application and all information submitted with the application are true and correct and
> (b) except in cases of an instream flow application, or where the application is for sale, rental, distribution, or is a municipal use, or in any other context in which water is being supplied to another and it is clear that the ultimate user will not accept the supply without consenting to the use of water on the user's place of use, the Applicant has possessory interest in the property where the water is to be put to beneficial use or has the written consent of the person having the possessory interest.
> (2) If a representative of the Applicant signs the application form affidavit, the representative shall state the relationship of the representative to the Applicant on the form, such as president of the corporation, and provide documentation that establishes the authority of the representative to sign the application, such as a copy of a power of attorney.
> (3) The department may require a copy of the written consent of the person having the possessory interest.

125. This application is for municipal use, in which water is supplied to another. It is clear that the ultimate user will not accept the supply without consenting to the use of water. The Applicant has possessory interest in the property where the water is to be put to beneficial use or has the written consent of the person having the possessory interest. Section 85-2-311(1)(e), MCA (FOF 44).

APPLICATION TO CHANGE WATER RIGHT NO. 76H 30165219

WATER RIGHT CHANGE CONCLUSIONS OF LAW

HISTORICAL USE AND ADVERSE EFFECT

126. Montana's change statute codifies the fundamental principles of the Prior Appropriation Doctrine. Sections 85-2-401 and -402(1)(a), MCA, authorize changes to existing water rights, permits, and water reservations subject to the fundamental tenet of Montana water law that one may change only that to which he or she has the right based upon beneficial use. A change to an existing water right may not expand the consumptive use of the underlying right or remove the well-established limit of the appropriator's right to water actually taken and beneficially used. An increase in consumptive use constitutes a new appropriation and is subject to the new water use permit requirements of the MWUA. *McDonald v. State*, 220 Mont. 519, 530, 722 P.2d 598, 605 (1986) (beneficial use constitutes the basis, measure, and limit of a water right); *Featherman v. Hennessy*, 43 Mont. 310, 316-17, 115 P. 983, 986 (1911) (increased consumption associated with expanded use of underlying right amounted to new appropriation rather than change in use); *Quigley v. McIntosh*, 110 Mont. 495, 103 P.2d 1067, 1072-74 (1940) (appropriator may not expand a water right through the guise of a change – expanded use constitutes a new use with a new priority date junior to intervening water uses); *Allen v. Petrick*, 69 Mont. 373, 222 P. 451(1924) ("quantity of water which may be claimed lawfully under a prior appropriation is limited to that quantity within the amount claimed which the appropriator has needed, and which within a reasonable time he has actually and economically applied to a beneficial use. . . . it may be said that the principle of beneficial use is the one of paramount importance . . . The appropriator does not own the water. He has a right of ownership in its use only"); *Town of Manhattan*, ¶ 10 (an appropriator's right only attaches to the amount of water actually taken and beneficially applied).[1]

127. Sections 85-2-401(1) and -402(2)(a), MCA, codify the prior appropriation principles that Montana appropriators have a vested right to maintain surface and ground water conditions substantially as they existed at the time of their appropriation; subsequent appropriators may insist that prior appropriators confine their use to what was actually appropriated or necessary for their originally intended purpose of use; and, an appropriator may not change or alter its use in a manner that adversely affects another water user. *Spokane Ranch & Water Co. v. Beatty*, 37 Mont. 342, 96 P. 727, 731 (1908); *Quigley*, 110 Mont. at 505-11,103 P.2d at 1072-74; *Matter of*

[1] DNRC decisions are available at: https://dnrc.mt.gov/Directors-Office/HearingOrders

Royston, 249 Mont. at 429, 816 P.2d at 1057; *Hohenlohe*, ¶¶ 43-45.[2]

128. The cornerstone of evaluating potential adverse effect to other appropriators is the determination of the "historic use" of the water right being changed. *Town of Manhattan*, ¶10 (recognizing that the Department's obligation to ensure that change will not adversely affect other water rights requires analysis of the actual historic amount, pattern, and means of water use). A change Applicant must prove the extent and pattern of use for the underlying right proposed for change through evidence of the historic diverted amount, consumed amount, place of use, pattern of use, and return flow because a statement of claim, permit, or decree may not include the beneficial use information necessary to evaluate the amount of water available for change or potential for adverse effect.[3] A comparative analysis of the historic use of the water right to the proposed change in use is necessary to prove the change will not result in expansion of the original right, or adversely affect water users who are entitled to rely upon maintenance of conditions on the source of supply for their water rights. *Quigley*, 103 P.2d at 1072-75 (it is necessary to ascertain historic use of a decreed water right to determine whether a change in use expands the underlying right to the detriment of other water user because a decree only provides a limited description of the right); *Royston*, 249 Mont. at 431-32, 816 P.2d at 1059-60 (record could not sustain a conclusion of no adverse effect because the Applicant failed to provide the Department with evidence of the historic diverted volume, consumption, and return flow); *Hohenlohe*, ¶ 44-45; Town of Manhattan v. DNRC, Cause No. DV-09-872C, Montana Eighteenth Judicial District Court, *Order Re Petition for Judicial Review,* Pgs. 11-12 (proof of historic use is required even when the right has been decreed because the decreed flow rate or volume establishes the maximum appropriation that may be diverted, and may exceed the historical pattern of use, amount diverted or amount consumed through actual use); Matter of Application For Beneficial Water Use Permit By City of Bozeman, *Memorandum*, Pgs. 8-22 (Adopted by DNRC *Final Order* January 9,1985)(evidence of historic use must be compared to the proposed

[2] *See also Holmstrom Land Co., Inc., v. Newlan Creek Water District*,185 Mont. 409, 605 P.2d 1060 (1979); *Lokowich v. Helena*, 46 Mont. 575, 129 P. 1063 (1913); *Thompson v. Harvey*, 164 Mont. 133, 519 P.2d 963 (1974) (plaintiff could not change his diversion to a point upstream of the defendants because of the injury resulting to the defendants); *McIntosh v. Graveley*, 159 Mont. 72, 495 P.2d 186 (1972) (appropriator was entitled to move his point of diversion downstream, so long as he installed measuring devices to ensure that he took no more than would have been available at his original point of diversion); *Head v. Hale*, 38 Mont. 302, 100 P. 222 (1909) (successors of the appropriator of water appropriated for placer mining purposes cannot so change its use as to deprive lower appropriators of their rights, already acquired, in the use of it for irrigating purposes); and, *Gassert v. Noyes*, 18 Mont. 216, 44 P. 959 (1896) (change in place of use was unlawful where reduced the amount of water in the source of supply available which was subject to plaintiff's subsequent right).

[3]A claim only constitutes *prima facie* evidence for the purposes of the adjudication under § 85-2-221, MCA. The claim does not constitute *prima facie* evidence of historical use in a change proceeding under § 85-2-402, MCA. For example, most water rights decreed for irrigation are not decreed with a volume and provide limited evidence of actual historic beneficial use. Section 85-2-234, MCA

change in use to give effect to the implied limitations read into every decreed right that an appropriator has no right to expand his appropriation or change his use to the detriment of juniors).[4]

129. An Applicant must also analyze the extent to which a proposed change may alter historic return flows for purposes of establishing that the proposed change will not result in adverse effect. The requisite return flow analysis reflects the fundamental tenant of Montana water law that once water leaves the control of the original appropriator, the original appropriator has no right to its use and the water is subject to appropriation by others. *E.g., Hohenlohe*, ¶ 44; *Rock Creek Ditch & Flume Co. v. Miller*, 93 Mont. 248, 17 P.2d 1074, 1077 (1933); *Newton v. Weiler*, 87 Mont. 164, 286 P. 133 (1930); *Popham v. Holloron*, 84 Mont. 442, 275 P. 1099, 1102 (1929); *Galiger v. McNulty*, 80 Mont. 339, 260 P. 401 (1927); *Head v. Hale*, 38 Mont. 302, 100 P. 222 (1909); *Spokane Ranch & Water Co.*, 37 Mont. at 351-52, 96 P. at 731; *Hidden Hollow Ranch v. Fields*, 2004 MT 153, 321 Mont. 505, 92 P.3d 1185; ARM 36.12.101(56) (Return flow - that part of a diverted flow which is not consumed by the appropriator and returns underground to its original source or another source of water - is not part of a water right and is subject to appropriation by

[4] Other western states likewise rely upon the doctrine of historic use as a critical component in evaluating changes in appropriation rights for expansion and adverse effect: Pueblo West Metropolitan District v. Southeastern Colorado Water Conservancy District, 717 P.2d 955, 959 (Colo. 1986)("[O]nce an appropriator exercises his or her privilege to change a water right … the appropriator runs a real risk of requantification of the water right based on actual historical consumptive use. In such a change proceeding a junior water right … which had been strictly administered throughout its existence would, in all probability, be reduced to a lesser quantity because of the relatively limited actual historic use of the right."); Santa Fe Trail Ranches Property Owners Ass'n v. Simpson, 990 P.2d 46, 55 -57 (Colo.,1999); Farmers Reservoir and Irr. Co. v. City of Golden, 44 P.3d 241, 245 (Colo. 2002)("We [Colorado Supreme Court] have stated time and again that the need for security and predictability in the prior appropriation system dictates that holders of vested water rights are entitled to the continuation of stream conditions as they existed at the time they first made their appropriation); Application for Water Rights in Rio Grande County, 53 P.3d 1165, 1170 (Colo. 2002); Wyo. Stat. § 41-3-104 (When an owner of a water right wishes to change a water right … he shall file a petition requesting permission to make such a change …. The change … may be allowed provided that the quantity of water transferred … shall not exceed the amount of water historically diverted under the existing use, nor increase the historic rate of diversion under the existing use, nor increase the historic amount consumptively used under the existing use, nor decrease the historic amount of return flow, nor in any manner injure other existing lawful appropriators.); Basin Elec. Power Co-op. v. State Bd. of Control, 578 P.2d 557, 564 -566 (Wyo,1978) (a water right holder may not effect a change of use transferring more water than he had historically consumptively used; regardless of the lack of injury to other appropriators, the amount of water historically diverted under the existing use, the historic rate of diversion under the existing use, the historic amount consumptively used under the existing use, and the historic amount of return flow must be considered.)

subsequent water users).[5]

130. Although the level of analysis may vary, analysis of the extent to which a proposed change may alter the amount, location, or timing return flows is critical in order to prove that the proposed change will not adversely affect other appropriators who rely on those return flows as part of the source of supply for their water rights. *Royston*, 249 Mont. at 431, 816 P.2d at 1059-60; *Hohenlohe*, at ¶¶ 45-46 and 55-6; *Spokane Ranch & Water Co.*, 37 Mont. at 351-52, 96 P. at 731.

131. In *Royston*, the Montana Supreme Court confirmed that an Applicant is required to prove lack of adverse effect through comparison of the proposed change to the historic use, historic consumption, and historic return flows of the original right. 249 Mont. at 431, 816 P.2d at 1059-60. More recently, the Montana Supreme Court explained the relationship between the fundamental principles of historic beneficial use, return flow, and the rights of subsequent appropriators as they relate to the adverse effect analysis in a change proceeding in the following manner:

> The question of adverse effect under §§ 85-2-402(2) and -408(3), MCA, implicates return flows. A change in the amount of return flow, or to the hydrogeologic pattern of return flow, has the potential to affect adversely downstream water rights. There consequently exists an inextricable link between the "amount historically consumed" and the water that re-enters the stream as return flow. . . .
> An appropriator historically has been entitled to the greatest quantity of water he can put to use. The requirement that the use be both beneficial and reasonable, however, proscribes this tenet. This limitation springs from a fundamental tenet of western water law-that an appropriator has a right only to that amount of water historically put to beneficial use-developed in concert with the rationale that each subsequent appropriator "is entitled to have the water flow in the same manner as when he located," and the appropriator may insist that prior appropriators do not affect adversely his rights.
> This fundamental rule of Montana water law has dictated the Department's determinations in numerous prior change proceedings. The Department claims that historic consumptive use, as quantified in part by return flow analysis, represents a key element of proving historic beneficial use.
> We do not dispute this interrelationship between historic consumptive use, return flow, and the amount of water to which an appropriator is entitled as limited by his past beneficial use.

Hohenlohe, at ¶¶ 42-45 (internal citations omitted).

[5] The Montana Supreme Court recently recognized the fundamental nature of return flows to Montana's water sources in addressing whether the Mitchell Slough was a perennial flowing stream, given the large amount of irrigation return flow which feeds the stream. The Court acknowledged that the Mitchell's flows are fed by irrigation return flows available for appropriation. *Bitterroot River Protective Ass'n, Inc. v. Bitterroot Conservation Dist.*, 2008 MT 377, ¶¶ 22, 31, 43, 346 Mont. 508, 198 P.3d 219,(*citing Hidden Hollow Ranch v. Fields*, 2004 MT 153, 321 Mont. 505, 92 P.3d 1185).

132. The Department's rules reflect the above fundamental principles of Montana water law and are designed to itemize the type of evidence and analysis required for an Applicant to meet its burden of proof. ARM 36.12.1901 through 1903. These rules forth specific evidence and analysis required to establish the parameters of historic use of the water right being changed. ARM 36.12.1901 and 1902. The rules also outline the analysis required to establish a lack of adverse effect based upon a comparison of historic use of the water rights being changed to the proposed use under the changed conditions along with evaluation of the potential impacts of the change on other water users caused by changes in the amount, timing, or location of historic diversions and return flows. ARM 36.12.1901 and 1903.

133. Applicant seeks to change existing water rights represented by its Water Right Claims. The "existing water rights" in this case are those as they existed prior to July 1, 1973, because with limited exception, no changes could have been made to those rights after that date without the Department's approval. Analysis of adverse effect in a change to an "existing water right" requires evaluation of what the water right looked like and how it was exercised prior to July 1, 1973. In *McDonald v. State*, the Montana Supreme Court explained:

> The foregoing cases and many others serve to illustrate that what is preserved to owners of appropriated or decreed water rights by the provision of the 1972 Constitution is what the law has always contemplated in this state as the extent of a water right: such amount of water as, by pattern of use and means of use, the owners or their predecessors put to beneficial use. . . . the Water Use Act contemplates that all water rights, regardless of prior statements or claims as to amount, must nevertheless, to be recognized, pass the test of historical, unabandoned beneficial use. . . . To that extent only the 1972 constitutional recognition of water rights is effective and will be sustained.

220 Mont. at 529, 722 P.2d at 604; *see also Matter of Clark Fork River Drainage Area*, 254 Mont. 11, 17, 833 P.2d 1120 (1992).

134. Water Resources Surveys were authorized by the 1939 legislature. 1939 Mont. Laws Ch. 185, § 5. Since their completion, Water Resources Surveys have been invaluable evidence in water right disputes and have long been relied on by Montana courts. *In re Adjudication of Existing Rights to Use of All Water in North End Subbasin of Bitterroot River Drainage Area in Ravalli and Missoula Counties*, 295 Mont. 447, 453, 984 P.2d 151, 155 (1999) (Water Resources Survey used as evidence in adjudicating of water rights); *Wareing v. Schreckendgust*, 280 Mont. 196, 213, 930 P.2d 37, 47 (1996) (Water Resources Survey used as evidence in a prescriptive ditch easement case); *Olsen v. McQueary*, 212 Mont. 173, 180, 687 P.2d 712, 716 (1984) (judicial notice taken of Water Resources Survey in water right dispute concerning branches of a creek).

135. While evidence may be provided that a particular parcel was irrigated, the actual amount of water historically diverted and consumed is critical. *E.g., In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, DNRC Proposal for Decision adopted by Final Order (2005). The Department cannot assume that a parcel received the full duty of water or that it received sufficient water to constitute full-service irrigation for optimum plant growth. Even when it seems clear that no other rights could be affected solely by a particular change in the location of diversion, it is essential that the change also not enlarge an existing right. *See MacDonald*, 220 Mont. at 529, 722 P.2d at 604; *Featherman*, 43 Mont. at 316-17, 115 P. at 986; *Trail's End Ranch, L.L.C. v. Colorado Div. of Water Resources*, 91 P.3d 1058, 1063 (Colo., 2004).

136. The Department has adopted a rule providing for the calculation of historic consumptive use where the Applicant proves by a preponderance of the evidence that the acreage was historically irrigated. ARM 36.12.1902(16). In the alternative an Applicant may present its own evidence of historic beneficial use. In this case Applicant has elected to proceed under ARM 36.12.1902 (FOF 55).

137. If an Applicant seeks more than the historic consumptive use as calculated by ARM 36.12.1902(16), the Applicant bears the burden of proof to demonstrate the amount of historic consumptive use by a preponderance of the evidence. The actual historic use of water could be less than the optimum utilization represented by the calculated duty of water in any particular case. *E.g., Application for Water Rights in Rio Grande County*, 53 P.3d 1165 (Colo., 2002) (historical use must be quantified to ensure no enlargement); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*; *Orr v. Arapahoe Water and Sanitation Dist*., 753 P.2d 1217, 1223-1224 (Colo., 1988) (historical use of a water right could very well be less than the duty of water); *Weibert v. Rothe Bros., Inc.,* 200 Colo. 310, 317, 618 P.2d 1367, 1371 - 1372 (Colo. 1980) (historical use could be less than the optimum utilization “duty of water”).

138. Based upon the Applicant’s evidence of historic use, the Applicant has proven by a preponderance of the evidence the historic use of Statement of Claim 76H 30165310 to be a diverted volume of 131.96 AF, a historically consumed volume of 105.57 AF, and flow rate of 2.5 CFS. (FOF 52-63)

139. Based upon the Applicant’s comparative analysis of historic water use and return flows to water use and return flows under the proposed change, the Applicant has proven that the proposed change in appropriation right will not adversely affect the use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or

certificate has been issued or for which a state water reservation has been issued. Section 85-2-402(2)(a), MCA. (FOF 64-75)

BENEFICIAL USE

140. A change Applicant must prove by a preponderance of the evidence the proposed use is a beneficial use. Sections 85-2-102(4) and -402(2)(c), MCA. Beneficial use is and has always been the hallmark of a valid Montana water right: "[T]he amount actually needed for beneficial use within the appropriation will be the basis, measure, and the limit of all water rights in Montana . . ." McDonald, 220 Mont. at 532, 722 P.2d at 606. The analysis of the beneficial use criterion is the same for change authorizations under § 85-2-402, MCA, and new beneficial permits under §85-2-311, MCA. ARM 36.12.1801. The amount of water that may be authorized for change is limited to the amount of water necessary to sustain the beneficial use. *E.g., Bitterroot River Protective Association v. Siebel, Order on Petition for Judicial Review*, Cause No. BDV-2002-519 (Mont. 1st Jud. Dist. Ct.) (2003) (*affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518); *Worden v. Alexander*, 108 Mont. 208, 90 P.2d 160 (1939); *Allen v. Petrick*, 69 Mont. 373, 222 P. 451(1924); *Sitz Ranch v. DNRC*, DV-10-13390,, *Order Affirming DNRC Decision*, Pg. 3 (Mont. 5th Jud. Dist. Ct.) (2011) (citing *BRPA v. Siebel*, 2005 MT 60, and rejecting Applicant's argument that it be allowed to appropriate 800 acre-feet when a typical year would require 200-300 acre-feet); *Toohey v. Campbell*, 24 Mont. 13, 60 P. 396 (1900) ("The policy of the law is to prevent a person from acquiring exclusive control of a stream, or any part thereof, not for present and actual beneficial use, but for mere future speculative profit or advantage, without regard to existing or contemplated beneficial uses. He is restricted in the amount that he can appropriate to the quantity needed for such beneficial purposes."); § 85-2-312(1)(a), MCA (DNRC is statutorily prohibited from issuing a permit for more water than can be beneficially used).

141. Applicant proposes to use water for aquifer recharge which is a recognized beneficial use. Section 85-2-102(5), MCA. Applicant has proven by a preponderance of the evidence that aquifer recharge is a beneficial use and that 101.1 AF of diverted volume and 336.6 GPM of water requested is the amount needed to sustain the beneficial use. Section 85-2-402(2)(c), MCA (FOF 76-79).

142. This Change Application is intended to provide aquifer recharge water for Application for Beneficial Water Use Permit No. 76H 30163647 which requires 99.0 AF of water delivered to the Bitterroot River via infiltration.

ADEQUATE MEANS OF DIVERSION

143. Pursuant to § 85-2-402 (2)(b), MCA, the Applicant is not required to prove that the proposed means of diversion, construction, and operation of the appropriation works are adequate because this application involves a (iii) a change in appropriation right pursuant to § 85-2-420 for mitigation or marketing for mitigation.

144. *In the Matter of Application to Change a Water Right No. G129039-76D by Keim/Krueger* (DNRC Final Order 1989) (whether party presently has easement not relevant to determination of adequate means of diversion)

145. Pursuant to § 85-2-402 (2)(b), MCA, Applicant has proven by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the proposed beneficial use. (FOF 80-83)

POSSESSORY INTEREST

146. Pursuant to § 85-2-402(2)(d), MCA, the Applicant is not required to prove that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use because this application involves a change in appropriation right pursuant to § 85-2-420 MCA for aquifer recharge.

147. The Applicant has proven by a preponderance of the evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. (FOF 84).

PRELIMINARY DETERMINATION

Subject to the terms and analysis in this Preliminary Determination Order, the Department preliminarily determines that this Combined Application for Beneficial Water Use Permit No. 76H 30163647 and Change Application No. 76H 30165219 should be GRANTED subject to the following.

The Department determines the Applicant may divert groundwater from the Bitterroot River Valley Shallow Aquifer by means of a well from May 1 to October 31 at 980 GPM up to 99.0 AF from a point in the NWSWNW, Sec. 14, T12N, R20W, for municipal use from May 1 to October 31 in Sections 1, 2, 11, 12, 13, and 14 T12N, R20W.

Permit application 76H 30163647 will be subject to the following conditions, limitations, or restrictions to meet the adverse effect criterion:

WATER MEASUREMENT-INLINE FLOW METER REQUIRED: THE APPROPRIATOR SHALL INSTALL A DEPARTMENT APPROVED IN-LINE FLOW METER AT A POINT IN THE DELIVERY LINE APPROVED BY THE DEPARTMENT. WATER MUST NOT BE DIVERTED UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL KEEP A WRITTEN MONTHLY RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED, INCLUDING THE PERIOD OF TIME. RECORDS SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR UNTIL THE PROVISIONAL PERMIT IS PERFECTED AND THE DEPARTMENT RECEIVES A PROJECT COMPLETION NOTICE. IN THE EVENT THAT PERMITTED FLOW RATES AND/OR VOLUMES HAVE BEEN EXCEEDED DURING PERFECTION OF THE PROVISIONAL PERMIT OR THE APPROPRIATOR FAILS TO SUBMIT ANNUAL REPORTS, THE DEPARTMENT MAY CONTINUE TO REQUIRE ANNUAL SUBMISSIONS OF MONTHLY FLOW RATE AND VOLUME RECORDS. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF A PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE MISSOULA WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

THE APPROPRIATOR'S USE OF WATER UNDER THIS PERMIT IS CONDITIONED UPON THE 99.0 AC-FT OF MITIGATION VOLUME REQUIRED TO OFFSET ADVERSE EFFECTS FROM NET DEPLETION TO THE BITTERROOT RIVER. DIVERSION UNDER THIS PERMIT MAY NOT COMMENCE UNTIL THE MITIGATION PLAN AS SPECIFICALLY DESCRIBED AND APPROVED THROUGH CHANGE AUTHORIZATION 76H 30165219 IS LEGALLY IMPLEMENTED. DIVERSION UNDER THIS PERMIT MUST STOP IF MITIGATION AS HEREIN REQUIRED IN AMOUNT, LOCATION, AND DURATION CEASES.

The area that will be depleted is located along the Bitterroot River. To mitigate depletions to the affected reach, the Department determines the Applicant may use Statement of Claim 76H 30165310 to provide aquifer recharge by retiring 82 acres in the S2SE Sec. 2 and NENE

Sec. 11, T12N, R20W. The Applicant may change the point of diversion from a point on the Bitterroot River in the NWSESE Sec. 2, T12N, R20W to a point on the Bitterroot River in the SENWNE Sec. 15, T12N, R20W. The Applicant may pump water from the new point of diversion to a location on Miller Creek in the SESWNW Sec. 14, T12N, R20W, where the water will be discharged for aquifer recharge purposes.

Change application 76H 30165219 will be subject to the following conditions, limitations, or restrictions to meet the adverse effect and beneficial use criteria:

WATER MEASUREMENT-INLINE FLOW METER REQUIRED: THE APPROPRIATOR SHALL INSTALL A DEPARTMENT APPROVED IN-LINE FLOW METER AT A POINT IN THE DELIVERY LINE APPROVED BY THE DEPARTMENT. WATER MUST NOT BE DIVERTED UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL KEEP A WRITTEN MONTHLY RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED, INCLUDING THE PERIOD OF TIME. RECORDS SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. IN THE EVENT THAT AUTHORIZED FLOW RATES AND/OR VOLUMES HAVE BEEN EXCEEDED DURING PERFECTION OF THE CHANGE AUTHORIZATION OR THE APPROPRIATOR FAILS TO SUBMIT ANNUAL REPORTS, THE DEPARTMENT MAY CONTINUE TO REQUIRE ANNUAL SUBMISSIONS OF MONTHLY FLOW RATE AND VOLUME RECORDS. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF A PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE MISSOULA WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

THIS CHANGE AUTHORIZATION PROVIDES MITIGATION WATER FOR BENEFICIAL WATER USE PERMIT NO. 76H 30163647. THE BENEFICIAL USE CRITERION OF THIS CHANGE AUTHORIZATION IS CONDITIONED UPON THE AUTHORIZATION OF BENEFICIAL WATER USE PERMIT AUTHORIZATION NO. 76H 30163647.

NOTICE

The Department will provide a notice of opportunity for public comment on these Applications and the Department's Draft Preliminary Determination to Grant pursuant to § 85-2-307, MCA. The Department will set a deadline for public comments to these Applications pursuant to §§ 85-2-307, and -308, MCA. If these Applications receive public comments, the Department shall consider the public comments, respond to the public comments, and issue a preliminary determination to grant the applications, grant the applications in modified form, or deny the applications. If no public comments are received pursuant to § 85-2-307(4), MCA, the Department's preliminary determination will be adopted as the final determination.

Dated this 23rd day of May, 2025.

Jim Nave, Manager
Missoula Regional Office
Montana Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the DRAFT PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 23rd day of May, 2025, by first class United States mail.

ATTN: LOGAN MCINNIS
CITY OF MISSOULA
435 RYMAN ST
MISSOULA, MT 59802

TOLLEFSON PROPERTIES LLC
15311 TYSON WAY
FRENCHTOWN, MT 59834-8535

ATTN: DAVE BALDWIN
HYDROSOLUTIONS INC
303 CLARKE ST
HELENA, MT 59601

Benjamin Thomas

Benjamin Thomas
Water Conservation Specialist
Missoula Regional Office
(406) 542-5883

Processing Materials

- Work copies of applicant-submitted information
- Deficiency letter
- Deficiency response
- Correct & complete determination
- Any correspondence with the applicant after application receipt and prior to sending the Draft PD

Processing Materials

Missoula Water Resources Regional Office
PO Box 5004
2705 Spurgin Road, Bldg. C
Missoula, MT 59806-5004
(406) 721-4284

March 26, 2026
Tollefson Properties LLC
15311 Tyson Way
Frenchtown, MT 59834-8535
Subject: Correct and Complete Application for Change No. 76H 30165319

Dear Applicant,

The Department of Natural Resources and Conservation (Department) has determined that your application is correct and complete pursuant to ARM 36.12.1601. Please remember that correct and complete does not mean that your application will be granted. The purpose of this letter is to indicate that the Department has enough information to analyze your water right application.

The Department will issue a Draft Preliminary Determination within 60 days of the date of this letter per §85-2-307(2)(b), MCA.

Following issuance of the Draft Preliminary Determination, you (Applicant) will have 15 business days to request an extension of time to submit additional information, if desired pursuant to §85-2-307(3)(a), MCA.

If no extension of time is requested and the Draft Preliminary Determination decision is to grant your application or grant your application in modified form, the Department will prepare a notice of opportunity to provide public comment, per §85-2-307(4)(a), MCA.

If no extension of time is requested and the Draft Preliminary Determination decision is to deny your application, the Department will adopt the Draft Preliminary Determination as the final determination per §85-2-307(3)(d)(ii), MCA.

If you have any questions or concerns about the application process, please contact me.

Sincerely,

Benjamin Thomas

Benjamin Thomas
Water Conservation Specialist
New Appropriations Program
Water Resources Division

CC:
Dave Baldwin
Hydrosolutions, Inc

Application Materials

- Application
- Any information submitted with Application including maps

Application Materials

APPLICATION TO CHANGE A WATER RIGHT

§ 85-2-302

Form No. 606 *(Revised 04/2024)*

For Department Use Only

RECEIVED

MAR - 5 2025

MONTANA D.N.R.C
MISSOULA REGIONAL OFFICE

Application # 36165218 Basin 76H
Priority Date 3/5/25 Time 13:13 AM/PM
Rec'd By al
Fee Rec'd $ 1000 of 2100 Check # 17021
Deposit Receipt # MSS2518004-02
Payor Tollefson Construction
Refund $ _____ Date _____

FILING FEE

$2500/$1500 – Without/with filing fee reduction.

$400 – ***(The following types do not qualify for a filing fee reduction)***

- **Replacement well that exceeds 35 GPM or 10 AF per year**
- **Replacement municipal well that exceeds 450 GPM**
- **Replacement reservoir on the same source**

INFORMATION

An application will be eligible for a filing fee reduction and expedited timelines if the applicant completes a preapplication meeting with the Department (ARM 36.12.1302(1)), which includes submitting any follow-up information identified by the Department (ARM 36.12.1302(3)(c)) and receiving either Department-completed technical analyses or Department review of applicant-submitted technical analyses (ARM 36.12.1302(4) and (5)). An application for the proposed project also must be submitted within 180 days of delivery of Department technical analyses or scientific credibility review and no element on the submitted application can be changed from the completed preapplication meeting form (ARM 36.12.1302(6)).

Applicant Information: *Add more as necessary.*

Applicant Name TOLLEFSON PROPERTIES LLC
Mailing Address 15311 TYSON WAY City FRENCHTOWN State MT Zip 59834-8535
Phone Numbers: Home _____ Work _____ Cell _____
Email Address _____

Applicant Name _____
Mailing Address _____ City _____ State _____ Zip _____
Phone Numbers: Home _____ Work _____ Cell _____
Email Address _____

Applicant Name _____
Mailing Address _____ City _____ State _____ Zip _____
Phone Numbers: Home _____ Work _____ Cell _____
Email Address _____

Contact/Representative Information: *Add more as necessary.*

Contact/Representative is: ___ Applicant X Consultant ___ Attorney ___ Other
Contact/Representative Name DAVE BALDWIN / HYDROSOLUTIONS INC
Mailing Address 303 CLARKE ST City HELENA State MT Zip 59601
Phone Numbers: Home _____ Work _____ Cell 406-431-7760
Email Address dbaldwin@hydrosi.com

NOTE: *If a contact person is identified as an attorney, all communication will be sent only to the attorney unless the attorney provides written instruction to the contrary. If a contact person is identified as a consultant, employee, or lessee, the individual filing the water right form or objection form will receive all correspondence and a copy may be sent to the contact person.*

DIRECTIONS

Answer every question and applicable follow-up questions. Use the checkboxes to denote yes ("Y"), no ("N"), or not applicable ("NA"). Questions that require items to be submitted to the Department have a submitted ("S") checkbox, which is checked when the required item is attached to the Application. Label all submitted items with the question number for which they were submitted. Narrative responses that are larger than the space provided can be answered in an attachment. If an attachment is used, specify "see attachment" on this form, and label the attachment with the question number. Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses. Responses in the form of a table may be entered into the table provided on this form or in an attachment. Responses in the form of a table that are larger than the table provided on this form should be placed in an attachment. If an attachment is used, the table must have the exact headings found on this form, and "see attachment" must be placed on this form. For tables on this form, circle correct unit at header of column when table has unit options. For tables in attachments, label all units.

PREAPPLICATION AND TECHNICAL ANALYSIS INFORMATION

1. ☒ **Y** ☐ **N** Did you have a preapplication meeting AND complete a Form 606P Change Preapplication Meeting Form?

IF QUESTION 1 IS YES,

2. ☒ **Y** ☐ **N** Did you elect on Form 606P to have the Department conduct Technical Analysis?

3. ☐ **Y** ■ **N** Has any element of the application changed from Form 606P or the Technical Analysis conducted as part of the preapplication process? A Technical Analysis Addendum (Form 606-TAA) is required if changes have occurred.

4. Submit the following items:

See Attachment

4.1. ■ **S** Technical Analyses you would like the Department to use to conduct criteria assessment.

4.2. ☐ **S** ■ **NA** Scientific Credibility Review, if applicable.

4.3. ☐ **S** ■ **NA** Technical Analysis Addendum (Form 606-TAA), if applicable, per question 3.

IF QUESTION 1 IS NO,

5. ☐ **S** Submit the Technical Analysis Addendum (Form 606-TAA).

6. ☐ **Y** ☐ **N** Do you elect to have the Department conduct Technical Analysis?

6.1. ☐ **S** If no, submit all the required Technical Analyses. See the Technical Analysis Guide for more information.

APPLICATION ADDENDA AND REVIEW

7. ☐ **S** ■ **NA** If the proposed change is on a non-filed water project, then submit the Non-Filed Water Project Addendum (Form 606/634-NFWPA) if you have not already submitted it with the Preapplication Meeting Form (606P). The project must meet the requirements of the addendum.

8. ☐ **S** ■ **NA** If the project involves an appropriation that is greater than 5.5 CFS and 4,000 acre-feet, then submit a Reasonable Use Addendum (Form 606-B).

9. ☐ **S** ■ **NA** If the project involves out-of-state water use, then submit the Out-of-State Use Addendum (Form 600/606-OSA).

10. ☐ **S** ■ **NA** If the proposed purposes include marketing or selling water, then submit the Water Marketing Purpose Addendum (Form 600/606-WMA).

11. ☐ **S** ■ **NA** If the proposed purpose includes instream flow, then submit Change to Instream Flow Addendum (Form 606-IFA).

12. ■ **S** ☐ **NA** If the proposed purposes include mitigation or aquifer recharge, then submit a Mitigation Purpose Addendum (Form 606/606-MIT).

13. ☐ **S** ■ **NA** If the project is in designated sage grouse habitat, then submit a review letter from the Montana Sage Grouse Habitat Conservation Program (https://sagegrouse.mt.gov).

14. ■ **Y** ☐ **N** ☐ **NA** You must provide a written notice of the application to each owner of an appropriation right sharing the point of diversion or means of conveyance (e.g., canal, ditch, flume, pipeline, or constructed waterway). Have you sent this notice to all applicable parties? Your application cannot be deemed correct and complete until you have sent this notice pursuant to §85-2-302(4)(c), MCA.

APPLICATION DETAILS

15. How many change applications will be needed for this project? Refer to ARM 36.12.1305 for more information. ONE

16. Fill out the table below.

Water Right No. Proposed for Change	**Current Flow Rate (GPM or CFS)**	**Flow Rate Needed for Project (GPM or CFS)**
76H 30165310	2.5 cfs	0.75 cfs
		163.0 gpm needed for
		normalize pumping rate of
		mitigation. This extra flow
		rate may be needed for
		system management.

17. Identify the water right elements proposed for change, with a checkmark, for each water right proposed for change.

Water Right No.	76H 30165310					
Point of Diversion	■	☐	☐	☐	☐	☐
Place of Use	■	☐	☐	☐	☐	☐
Purpose of Use	■	☐	☐	☐	☐	☐
Place of Storage	☐	☐	☐	☐	☐	☐

18. ■ **S** Submit a historical use map created on an aerial photograph or topographic map that shows the following: section corners, township and range, a north arrow, all historical points of diversion (POD) labeled with a unique POD ID letter, all historical places of use (POU), all historical conveyance structures, all historical places of storage, and historical place of use for all overlapping water rights.

19. ■ **S** Submit a proposed use map created on an aerial photograph or topographic map that shows the following: section corners, township and range, a north arrow, all proposed points of diversion labeled with a unique POD ID number, all proposed places of use, all proposed conveyance structures, all proposed places of storage, and place of use for all overlapping water rights.

20. ■ **Y** ☐ **N** Does the proposed change involve a change in point of diversion?

IF YES,

20.1. Is the source for the new POD(s) surface water or groundwater? Surface water

20.2. What is the source name for the new POD(s)? Bitterroot River

20.3. What is the means of diversion for all new POD(s)? Means of diversion for surface water includes headgate, pump, dam, and others. Means of diversion for groundwater includes well, developed spring, pit pond, and others.

The means of diversion will be a horizontal infiltration gallery to divert from a channel of the Bitterroot River to a wet well where water will then be pumped and conveyed to the aquifer recharge site in lower Miller Creek. (Attachment Question 33 and Appendix C).

20.4. Describe the proposed location for all new points of diversion to the nearest 10 acres. Label POD # with the same POD ID number assigned for the proposed use map (question 19).

POD #	¼	¼	¼	Sec.	Twp.	Rge.	County	Lot	Block	Tract	Subdivision	Gov. Lot
2	SE	NW	NE	15	12N	20W	MISSOULA			2	(C.O.S. 6484)	

21. ■ **Y** ☐ **N** Does the proposed change involve a change in place of use?

IF YES,

21.1. What are the geocodes of the proposed place of use?

- None. POU is Bitterroot River (see map #19)	-
-	-
-	-
-	-
-	-

21.2. Describe the legal land description of the proposed place of use, and if the water rights being changed will have an irrigation or lawn and garden purpose, list the number of irrigated acres.

Acres	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County
See	Attachment							

22. ■ **Y** ☐ **N** Did all owners of the historical place of use for the water rights being changed sign this application? If ownership cannot be established for the entirety of the water rights being changed, a Form 641 or Form 642 must be received and processed by the Department prior to application submittal. The follow-up questions for question 22 help to establish whether a split is required before application submittal in the case all owners of the historical place of use did not sign the application.

Note: Applicant's portion of 76H 105168-00 was split to claim 76H 30165310. Applicant is the only listed owner.

IF NO,

22.1. List all water rights proposed for change for which you do not own the entire historical place of use.

_____

_____

_____

22.2. ☐ **Y** ☐ **N** Are the water rights listed in question 22.1 severed from the historical place of use?

22.2.1. ☐ **Y** ☐ **N** ☐ **NA** Do you own the entirety of the severed water rights proposed for change?

22.3. ☐ **Y** ■ **N** Are you filing on behalf of another entity?

22.3.1. If yes, explain.

_____

_____

_____

23. ■ **Y** ☐ **N** Do you meet one of the exceptions to possessory interest requirements, pursuant to ARM 36.12.1802? Exceptions include cases of an instream flow application, or where the application is for sale, rental, distribution, or is a municipal use, or in any other context in which water is being supplied to another and it is clear that the ultimate user will not accept the supply without consenting to the use of water on the user's place of use.

See Attachment

ADVERSE EFFECT

24. ■ **Y** ☐ **N** Do you have evidence that the proposed use does not exceed the historical use for flow rate, consumed volume, and diverted volume?

24.1. If yes, explain.

See Attachment

25. ☐ **Y** ■ **N** Are there any factors that would limit your ability to turn off your appropriation in response to a call?

25.1. If yes, explain.

26. Explain how you can control your diversion in response to a call being made.

The diversion pump could be turned off in response to a valid call. Operation of the POD will not adversely affect senior water rights if a call is made. A cessation of pumping at Site 2 will be rapid enough to not cause adverse effect should a call be made by a senior water right. Ten senior water rights totalling 29.8 CFS are between the Miller Creek confluence and the Clark Fork River. USGS Gage 12352500 shows water in this reach is always physically available to these senior rights within the 04/01-10/31 historic period of diversion of the changed claim.

27. ☐ **Y** ■ **N** Are you aware of any calls that have been made on the source of supply or depleted surface water source?

27.1. If yes, explain.

28. ☐ **Y** ■ **N** Does a water commissioner distribute water or oversee water distribution on your proposed source or any identified depleted surface water sources?

28.1. If yes, list the sources.

29. Describe your plan to ensure existing water rights will be satisfied during times of water shortage.

The flow rate and volume diverted will be less than what was historically diverted. The diversion pump can be turned off in response to a valid call.

30. When was the last time the water rights proposed for change were appropriated and used beneficially?

See Attachment

IF THERE HAS BEEN A PERIOD OF NONUSE,

30.1. Why was the water right not used?

See Attachment

30.2. Why will a resumption of use not adversely affect other water users?

See Attachment

30.3. ■ **Y** ☐ **N** Is the period of nonuse greater than 10 years?

30.4. ☐ **Y** ■ **N** Have new water rights been authorized to use the source during the period of nonuse?

31. For point of diversion changes:

31.1. Are the proposed points of diversion upstream or downstream of the historical points of diversion?

Proposed POD 2 is upstream from historical POD 1 (Figure 19 in Attachment)

31.2. ■ **Y** ☐ **N** Are there intervening water rights between the historical and proposed points of diversion?

31.2.1. If yes, list the water rights.

See Attachment

31.3. ☐ **Y** ■ **N** Does the proposed point of diversion allow for diverting water longer during times of shortage?

31.3.1. If yes, explain how you will prevent an expansion of use.

The claim being changed has a shared flow rate of 2.5 CFS. Water can only be diverted by pump. Access to divert water during times of water shortage is greatly diminished as river levels decrease. The maximum normalized monthly flow rate is 163.0 GPM. Water will be metered to limit diversions to a maximum of 336.6 GPM (0.75 CFS) and 101.1 AF/season, which are less than the flow rate and volume historically diverted.

31.4. ☐ **Y** ■ **N** Do other water rights share any of the proposed points of diversion?

31.4.1. If yes, describe how the proposed project will not adversely affect these water rights.

31.5. ☐ **Y** ■ **N** Do other water rights share any conveyance ditch associated with the proposed points of diversion?

31.6. If yes, describe how the proposed project will not adversely affect these water rights.

ADEQUATE MEANS OF DIVERSION AND OPERATION

32. ■ **S** Provide a diagram of how you will operate your system from all proposed points of diversion to all proposed places of use.

33. Describe specific information about the capacity of all proposed diversionary structures. This may include, where applicable: pump curves and total dynamic head calculations, headgate design specifications, and dike or dam height and length.

See Attachment

34. ■ **Y** ☐ **N** Is the diversion capable of providing the full amount of water requested through the period of diversion?

34.1. If no, explain.

35. Describe the size and configuration of infrastructure to convey water from all proposed points of diversion to all proposed places of use. This may include, where applicable: ditch capacity and/or pipeline size and configuration.

The size and configuration of the diversion/conveyance system from new POD 2 to the aquifer recharge site is described in #33 above and design plans and pump curve are provided in Appendix C. From the aquifer recharge site, water will infiltrate and be conveyed to the place of use in the Bitterroot River by natural flow through the Bitterroot alluvial aquifer in a northeast downgradient direction to the river.

36. Describe any losses related to the proposed conveyance.

No loses are expected. All water from POD 2 to the aquifer recharge site will be conveyed in a pipeline.

37. ■ **Y** ☐ **N** ☐ **NA** Is the proposed conveyance infrastructure capable of providing the required flow and volume, plus any conveyance losses?

37.1. If no, explain.

38. ■ **Y** ☐ **N** Does the proposed conveyance require easements?

38.1. If yes, explain.

An easement agreement between Tollefson Properties LLC and Oxbow Ranch Inc has been agreed to. The details of the agreement are being finalized by their respective attorneys. A copy of the agreement will be sent to the Department when finalized.

39. Describe specific information about how water is delivered within the place of use. This may include, where applicable, the range of flow rates needed for a pivot, the output and configuration of sprinkler heads, and pipelines within the place of use.

Water will be delivered to the place of use in the Bitterroot River by natural flow through the Bitterroot alluvial aquifer after infiltration at the aquifer recharge site. Flow in the river delivers the water throughout the place of use downstream to the lower end of the POU at the confluence with the Clark Fork River.

40. ☐ **Y** ■ **N** Will your system be designed to discharge water from the project?

40.1. If yes, explain the way water will be discharged.

40.2. ☐ **Y** ☐ **N** ■ **NA** Have the necessary permits been obtained to comply with §§ 75-5-410 and 85-2-364, MCA? See Attachment

41. ☐ **Y** ■ **N** Is the means of diversion for any proposed point of diversion a well?

IF YES,

41.1. ☐ **Y** ☐ **N** Have all wells already been drilled?

41.2. For all wells that have been drilled, what is the name of the well driller and, if available, what is their license number?

_____

_____

_____

_____

41.3. ☐ **Y** ☐ **N** For all wells yet to be drilled, will a licensed well driller construct the wells?

41.4. ☐ **S** ☐ **NA** Submit any additional well logs for wells drilled after submittal of Form 606P.

BENEFICIAL USE

42. Why is the requested flow rate and volume the amount needed for the purposes?

The requested infiltration flow rate and volume are provided in the Change Technical Report. These values use Department modeling results to provide normalized monthly values with a maximum flow rate of 163.0 GPM. Applicant is requesting a maximum flow rate of 336.6 GPM (0.75 CFS) to utilize as needed for managing infiltration water at the aquifer recharge site. The 0.75 CFS requested is less than the 2.5 CFS historically diverted under the claim being changed (76H 30165310). The requested volume of 101.1 AF is the amount shown in DNRC's change Tech Report to fully offset depletions to the Bitterroot River from pumping 99.0 AF from Well 4 under the associated permit. This pumped volume from POD 2 will be less than the historic consumed volume of 105.56 AF and the historically diverted volume of 131.96 AF.

The flow rate and volume requested in the change are related to the flow rate and volume requested in the associated permit for municipal use.

_____

43. ■ **Y** ☐ **N** Does the Department have a standard for the purposes for which water is proposed? Department standards can be found in the DNRC Water Calculation Guide, ARM 36.12.112, ARM 36.12.115, and ARM 36.12.1902.

43.1. ■ **Y** ☐ **N** If yes, does the proposed beneficial use fall within Department standards?

43.2. If no Department standard exists, or if proposed beneficial use falls outside of Department standards, explain how the use is reasonable for the purpose.

DNRC consumptive use standards for historical use of irrigation were used to determine the volume available for aquifer recharge and mitigation. The mitigation beneficial use is based on the flow rate and volume needed to provide mitigation for Bitterroot River depletions as the result of water pumped from Well 4 under Permit application 76H 30163647.

44. ☐ **Y** ■ **N** Will your proposed project be subject to DEQ requirements for a public water supply (PWS) system or Certificate of Subdivision Approval (COSA)?

44.1. ☐ **Y** ☐ **N** If yes, have you researched or consulted with DEQ regarding those requirements?

45. ☐ **Y** ■ **N** Are you proposing to use surface water for in-house domestic use?

45.1. ☐ **Y** ☐ **N** If yes, does a COSA exist for the proposed place of use?

45.1.1. ☐ **S** ☐ **NA** If yes, please submit the COSA.

45.1.2. ☐ **Y** ☐ **N** If no, have you researched or consulted with DEQ regarding their requirements?

PROPOSED COMPLETION PERIOD

46. How many years will be needed to complete this project and to submit to the DNRC a Project Completion Notice (Form 618)? 3 years

47. Why is this amount of time needed?

This is the time needed to construct the new diversion and pipeline and to fully utilize the change as proposed.

AFFIDAVIT & CERTIFICATION

Read carefully before you sign and review with legal counsel if you have any questions. All owners (or trustees) must sign the form. ***If the owner is a business or trust, include the title of the representative(s) signing the form (i.e., president, trustee, managing partner, etc.) and provide documentation that establishes the authority of the representative to sign the application.*

I affirm the information provided for this application is to the best of my knowledge true and correct. I am aware that my application for this project will not qualify for a discounted filing fee and expedited timelines if upon submittal of the application to the department, I changed any element of the proposed application from the preapplication meeting form and follow-up materials (ARM 36.12.1302(6)(a)).

I affirm I have possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use, unless this application meets an exception to the possessory interest requirements in ARM 36.12.1802(1)(b).

I understand that making a false statement under oath or affirmation in this application and official proceedings throughout the examination of my application may subject me to prosecution under §45-7-202, MCA, a misdemeanor punishable by a jail term not to exceed 6 months or a fine not to exceed $500, or both. I have read this Affidavit and understand the terms and conditions.

I declare under penalty of perjury and under the laws of the state of Montana that the foregoing is true and correct.

Applicant Signature Nate Tollefson Date: 2-25-25

Printed Name Nate Tollefson

Title Acting member

Applicant Signature _____ Date: _____

Printed Name _____

Title _____

Applicant Signature _____ Date: _____

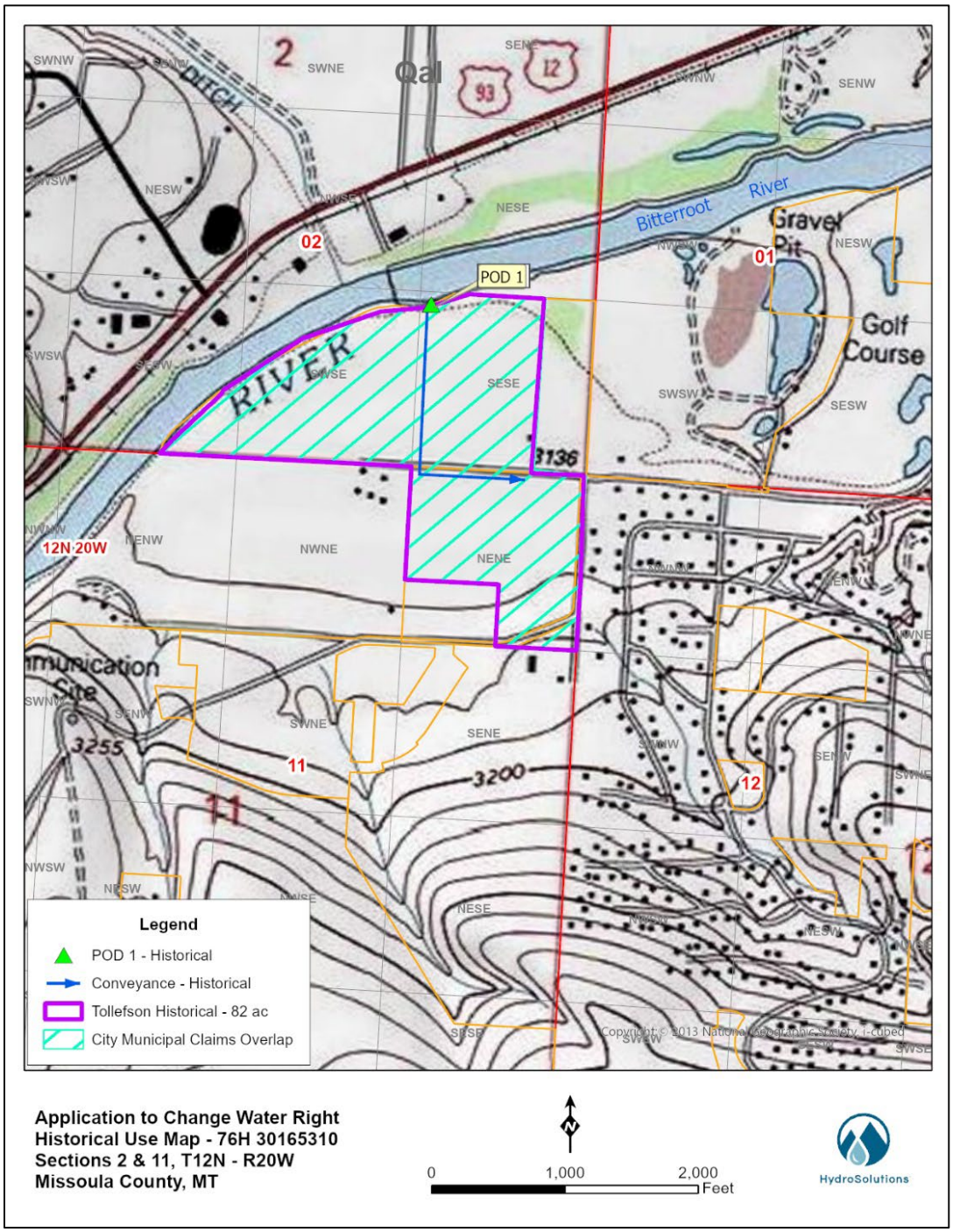
Printed Name _____

Title _____

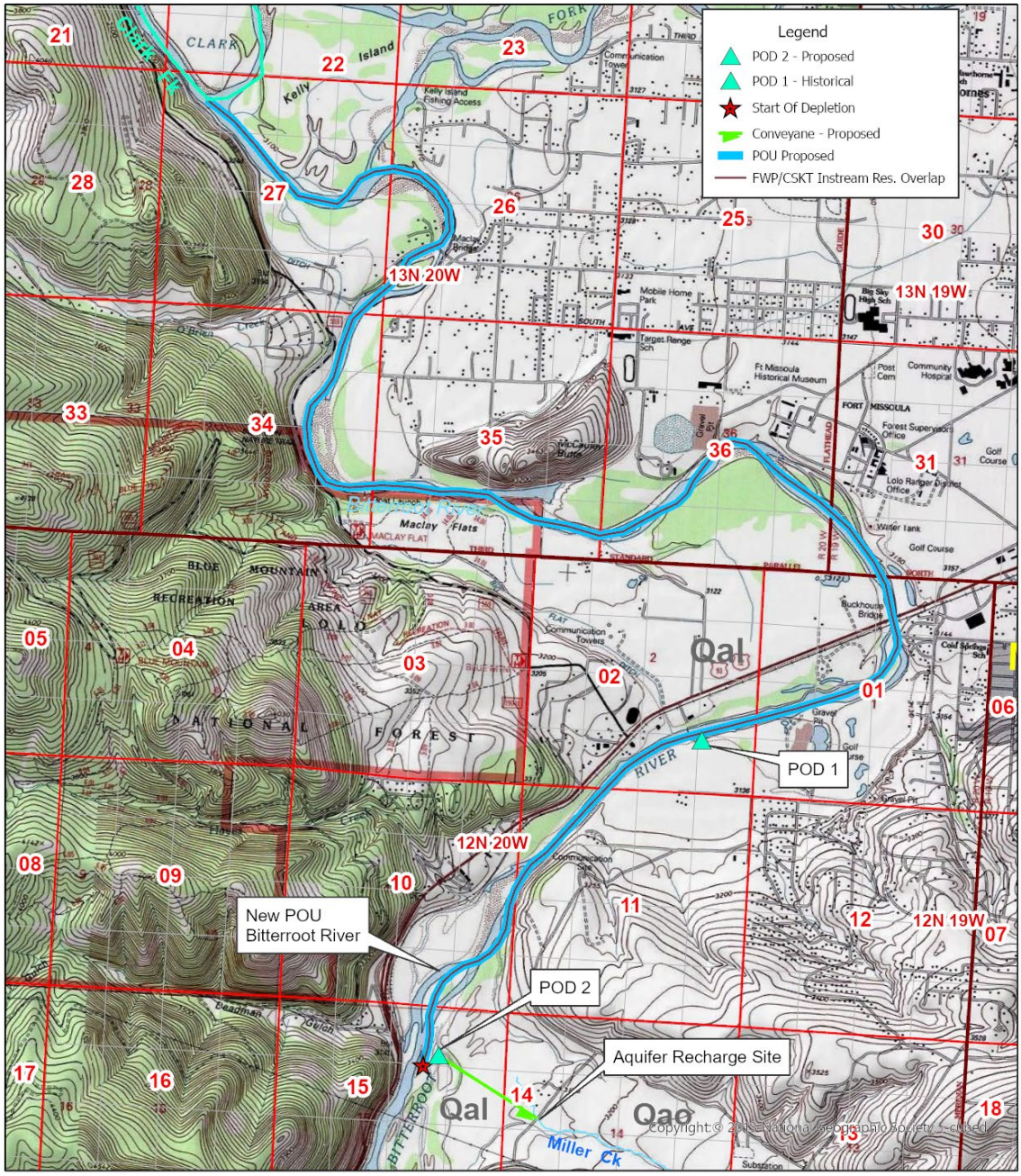
ATTACHMENT TO CHANGE APPLICATION 76H 30165219
TOLLEFSON PROPERTIES LLC
APPLICATION TO CHANGE WATER RIGHT 76H 30165310

12. See Appendix A for the Mitigation Purpose Addendum - Aquifer Recharge Plan

18. Historical Use Map



19. Proposed Use Map



21.2. Describe the legal land description of the proposed place of use, and if the water rights being changed will have an irrigation or lawn and garden purpose, list the number of irrigated acres.

Ac	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County
					01	12N	20W	MSLA
				S2	02	12N	20W	MSLA
				SE	10	12N	20W	MSLA
				NW	11	12N	20W	MSLA
			NE	NE	15	12N	20W	MSLA
			W2	SW	31	13N	19W	MSLA
				W2	26	13N	20W	MSLA
				NW	27	13N	20W	MSLA
				E2	27	13N	20W	MSLA
				S2	35	13N	20W	MSLA
				E2	34	13N	20W	MSLA
					36	13N	20W	MSLA

23. Exceptions

Yes. The place of use will be the Bitterroot River where water will be left instream as mitigation for the permit application for municipal use.

24. Do you have evidence that the proposed use does not exceed the historical use for flow rate, consumed volume, and diverted volume?

Yes

24.1 If yes, explain.

The historic flow rate for 76H 30165310 is 2.5 CFS and this will be the shared flow rate if the change is authorized. Of this total, the Peak Health portion is being changed to instream mitigation and the Ginter portion is for irrigation of 10 acres. At the standard of 17 GPM/acre, Ginter would use 170 GPM. The maximum normalized flow rate for aquifer recharge infiltration is 163.0 AF (Change Tech Report – Appendix B). The proposed flow rate is a maximum of 0.75 CFS, or 336.6 GPM. The excess above the maximum normalized rate is requested for management purposes for the aquifer recharge system. For example, there may be situations such as a summer precipitation event that raises the river level where the proposed maximum rate of 336.6 GPM could be diverted for short durations when excess water is available. Diversions will be measured, so the 336.6 GPM flow rate will not be exceeded.

The proposed diversion volume is 101.1 AF, which is 4.46 AF less than the total historical consumptive use of 105.56 AF (Change Tech Report). Diversions will be measured, so the historic consumed volume will not be exceeded.

The historical diverted volume is 131.96 AF (Change Tech Report). Because the proposed diverted volume is 101.1 AF for the proposed aquifer recharge infiltration, the historical consumed and diverted volumes will not be exceeded.

30. When was the last time the water rights proposed for change were appropriated and used beneficially?

Previous owner Mr. Ginter states that water was last diverted to fully irrigate the place of use in 2010.

IF THERE HAS BEEN A PERIOD OF NONUSE,

30.1 Why was the water right not used?

Ginter sold 82 acres of claim 76H 105168 to Applicant (Tollefson Properties LLC) in July 2020 and the Applicant has been working with Woith Engineering to develop the property since that time. The lapse in use between 2010 and 2020 is attributed to Ginter's divorce and because his age limited his ability to operate the system up to the time of the sale to Applicant. After Applicant's purchase in 2020 delays are attributed to 1) the Covid-19 pandemic, 2) to the complexities of land development, including negotiating with the City for services, and 3) to issues with defining a workable mitigation plan. Applicant's engineering consultant Woith Engineering first met with the City on April 2, 2020 regarding a change of this claim. The Applicant has now had three preapplication meetings with the Department, the first held on February 1, 2021.

30.2 Why will a resumption of use not adversely affect other water users?

Resumption of the use under this water right will not adversely affect other water users because the proposed diverted flow rate (336 GPM) and volume (101.1 AF) are less than the historically diverted flow rate (1,122 GPM) and volume (131.96 AF). Also, the 101.1 AF diverted for aquifer recharge for infiltration and accretion to the Bitterroot River is greater than the 99.0 AF of Bitterroot River depletions (Change Technical Report).

31.2.1 List of intervening water rights from existing POD to new POD.

WRNUMBER	OWNERS	PRIDATE
76H 39791 00	JANINE A PETERS; STEVEN D PETERS	1/13/1982
76H 104521 00	MILLER CREEK FARM LIMITED PARTNERSHIP	12/31/1932
76H 105168 00	SHAUNA M GINTER; W H GINTER	6/30/1958
76H 120055 00	USA (DEPT OF INTERIOR BOR)	12/4/1944
76H 131603 00	ETHEL C BRAY; LAUDIE BRAY	12/31/1936
76H 149968 00	MILLER CREEK FARM LIMITED PARTNERSHIP	12/31/1932
76H 151306 00	MT, FWP/CSKT	7/1/1970
76H 151311 00	MT, FWP/CSKT	7/1/1970
76H 151312 00	MT, FWP/CSKT	7/1/1970
76H 151313 00	MT, FWP/CSKT	7/1/1970

33. Describe specific information about the capacity of all proposed diversionary structures.

The following POD and conveyance information were designed by Woith Engineering Inc. Design diagrams and pump curve for the diversion pump are provided in Appendix C.

POD/Infiltration Gallery – Three 30-foot sections of 12-in horizontal, slotted, HPDE infiltration pipe will be installed below the Bitterroot River side channel. This influent pipe will connect to a solid 12-inch HPDE pipe which will extend about 800 feet to the southeast to a 5-foot diameter wet well located adjacent (southeast) of an active oxbow. This POD to wet well pipeline is designed with a siphon so that flows from the river cannot reach the wet well without pumping.

Wet Well – The wet well will receive diverted water during pumping. A turbine pump and 4-inch totalizing inline flow meter will be installed in a pump house located above and adjacent to the wet well. The expected pump will be a 20 HP 5TMH-375, Berkeley submersible turbine pump, which can convey the requested 336.6 GPM over a vertical elevation lift of about 45 feet. Total dynamic head is about 170 feet at 335 GPM.

Conveyance Pipeline – From the wet well, water will be conveyed though a 4-inch pipeline about 1,820 feet to the southwest to an effluent outfall at the aquifer recharge site on lower Miller Creek.

38. Does the proposed conveyance require easements?

Yes, the proposed conveyance will be installed within a utility and access easement restricted to the diversion system installation, maintenance, and operation. An agreement for the transfer of the easement is currently being negotiated with property owner Oxbow Ranch Inc and will be in place prior to installation of the conveyance system.

40.2 Have the necessary permits been obtained to comply with §§ 75-5-410 and 85-2-364, MCA?

Communications with Alanna Shaw, Section Supervisor, Surface Water Permitting (MPDES) indicate that discharge permits are not required for aquifer recharge under 85-2-364 and 75-5-410 MCA.

APPENDIX A

MITIGATION PURPOSE ADDENDUM – AQUIFER RECHARGE PLAN

Form No. 600/606-MIT *(01/2024)* **Applicant Name**

APPLICATION FOR BENEFICIAL WATER USE PERMIT OR APPLICATION TO CHANGE A WATER RIGHT

MITIGATION PURPOSE ADDENDUM

§ 85-2-420, 85-2-362, MCA

Mitigation and aquifer recharge are used to offset adverse effects resulting from the net depletion of surface water. Mitigation means the reallocation of surface water or ground water through a change in appropriation right or other means that does not result in surface water being introduced into an aquifer through aquifer recharge. Aquifer recharge means either the controlled subsurface addition of water directly to the aquifer or controlled application of water to the ground surface for the purpose of replenishing the aquifer. All net depletions to surface water located in a closed basin and net depletions that are greater than legal availability in open basins require mitigation or aquifer recharge to offset the net depletions. The department may not require an applicant, through an aquifer recharge or mitigation plan, to provide more water than the quantity needed to offset the adverse effects on a prior appropriator caused by the net depletion. An appropriation right that relies on an aquifer recharge or mitigation plan must require that the aquifer recharge or mitigation plan be exercised when the appropriation right is exercised. Marketing for mitigation allows a water right owner to change the purpose on their water right, or add a marketing for mitigation purpose, prior to having any projects requiring mitigation water. By completing this change prior to securing a use, the water remains available for mitigation for a period of up to 20 years while not subjecting the water right to abandonment proceedings. The owner may sell or lease all or a portion of the water for mitigation, depending upon the project needing mitigation. DNRC will not dictate the sale of the water for mitigation; however, DNRC must assess the mitigation water required and determine if the water provided is adequate with regard to quantity, timing, and location, as with any other mitigation water. Responses that are larger than the space provided can be answered in an attachment. If an attachment is used, specify “see attachment” on this form. Label all attachments with the question number.

1. Is mitigation water required to meet the criteria of issuance for an existing Application for Beneficial Water Use or Application to Change a Water Right or will the purpose be marketing for mitigation for a future mitigation purpose? ☒ **Existing Application** ☐ **Marketing for Mitigation**

2. If the mitigation water will help meet the criteria of issuance for an existing application, will the mitigation water be used to offset net depletions in an open or closed basin? Answer question 3 for open basins or question 4 for closed basins. ☐ **Open** ☒ **Closed**

If an open basin:

3. Submit an aquifer recharge or mitigation plan with sufficient detail to explain why the plan is adequate to prevent adverse effects. Include in the plan the amount, timing, and location of mitigation water. Compare this to the amount, timing, and location of the net depletions to provide evidence of how the aquifer recharge or mitigation plan will offset the required amount of net depletion of surface water in a manner that will offset an adverse effect on a prior appropriator. The information used to craft the plan can be found in the technical analyses. See the Technical Analysis Guide for more information.

If a closed basin:

4. If the hydrogeologic report conducted pursuant to §85-2-361, MCA, predicts that there will be a net depletion of surface water, submit an aquifer recharge or mitigation plan. The plan must include: See Attachment

   (a) where and how the water in the plan will be put to beneficial use;

   (b) when and where, generally, water for aquifer recharge or mitigation will be required;

   (c) the amount of water that is required for aquifer recharge or mitigation;

   (d) how the proposed project or beneficial use for which the aquifer recharge or mitigation plan is required will be operated;

   (e) evidence that an application for a change in appropriation right, if necessary, has been submitted;

   (f) evidence of water availability;

   (g) evidence of how the aquifer recharge or mitigation plan will offset the required amount of net depletion of surface water in a manner that will offset an adverse effect on a prior appropriator; and

   (h) evidence that the appropriate water quality permits have been granted pursuant to Title 75, chapter 5, as required by 75-5-410, MCA, and 85-2-364, MCA.

   The information required for (b), (c), (f), and (g) can be found in the relevant technical analyses. See the Technical Analysis Guide for more information.

5. ☒ **Y** ☐ **N** Does the project involve aquifer recharge?

   5.1. If yes, then the aquifer recharge plan must include a description of the process by which water will be reintroduced to the aquifer. See Attachment, 4(a)

MITIGATION PURPOSE ADDENDUM

AQUIFER RECHARGE PLAN

City of Missoula -- Permit Application 76H 30163647
Tollefson Properties LLC -- Change Application 76H 30165219

Basin 76H – Bitterroot River is a closed basin. This is the aquifer recharge plan for the above-listed applications as required in Section 4 of Form No. 600/606-MIT.

4(a) Where and how the water in the plan will be put to beneficial use

A change of Tollefson Properties LLC claim 76H 30165310 (split from 76H 105168-00) is proposed to add a second point of diversion (upstream) and change the purpose of use from irrigation to aquifer recharge to offset depletions to the Bitterroot River from pumping Well 4. From new POD 2 in SENWNE Section 15, T12N-R20W (Figure 1), a volume of 101.1 AF and a maximum flow rate of 0.75 CFS (337.0 GPM) will be diverted from beneath a south channel of the Bitterroot River using three 30-foot sections of 12-in horizontal, slotted, HPDE infiltration pipe installed at a depth of about 10 feet below the river channel bed (Figure 2). From this horizontal well, a solid 12-inch HPDE pipe will extend about 800 feet to the southeast to a 5-foot diameter wet well located adjacent (southeast) of an active oxbow. This POD to wet well pipeline is designed with a siphon so that flows from the river cannot reach the wet well without pumping. The wet well will receive diverted water during pumping. A turbine pump and 4-inch totalizing inline flow meter will be installed in a pump house located above and adjacent to the wet well. The expected pump will be a 20 HP 5TMH-375, Berkeley submersible turbine pump, which can convey the requested 336.6 GPM about 1,820 feet over a vertical elevation lift of about 45 feet. Total dynamic head is about 170 feet at 335 GPM to the aquifer recharge site on lower Miller Creek (Figure 2). Water will be discharged to an effluent outfall at the aquifer recharge site on lower Miller Creek, a known losing stream (DNRC Change Tech Report). Water will infiltrate through the streambed of Miller Creek into the underlying alluvial aquifer where it will then migrate downgradient to the northwest and accrete to the Bitterroot River to fully offset the amount, timing, and location of depletions from pumping Well 4.

4(b) When and where, generally, water for aquifer recharge or mitigation will be required.

Depletions to the Bitterroot River from pumping new Well 4 are modeled by DNRC in the Permit Technical Report (see permit application). The depleted reach where mitigation water will be required (place of use of the changed water) starts in W2NE Section 15, T12N-R20W and extends downstream to the confluence with the main channel of the Clark Fork River in the NWNW Sec. 27, T13N-R20W (Figure 3).

4(c) The amount of water that is required for aquifer recharge or mitigation.

The Bitterroot River was identified as being hydraulically connected to the source aquifer pumped by Well 4. Monthly net depletions resulting from the proposed seasonal pumping

schedule of Well 4, and the resulting monthly depletions to the Bitterroot River were identified by DNRC as shown in Table 1 below. These are the monthly flow rates and volumes that the aquifer recharge plan will mitigate.

Table 1. Pumping schedule and DNRC-modeled Bitterroot River depletions

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Well 4 Cons (AF)	0	0	0	0	13.9	19.8	21.8	21.8	12.8	8.9	0	0	99.0
Well 4 Cons (GPM)	0	0	0	0	101.6	149.6	159.4	159.4	96.7	65.1	0	0	
Bitterroot R Depletion (AF)	1.3	1.0	0.9	0.8	11.8	17.2	19.5	20.0	13.0	9.7	2.2	1.6	99.0
Bitterroot R Depletion (GPM)	9.2	7.9	6.9	6.2	86.3	129.7	142.9	146.1	98.4	70.8	16.8	11.6	

4(d). How the proposed project or beneficial use for which the aquifer recharge or mitigation plan is required will be operated.

The City's seasonal use of 980 GPM and 99.0 acre-feet (AF) through Well 4 from May 1 through October 31 will be for municipal use during the high-demand portion of the year. Well 4 is within the City's Haugan Well Field in lower Miller Creek south of the city limits in Missoula County (Figure 4). The permit will operate by pumping from Well 4 and conveying water through the pump house and chlorination system, and then to the Sophie and Upper Linda Vista storage tanks for distribution through City mains for municipal use.

4(e). Evidence that an application for a change in appropriation right, if necessary, has been submitted.

The City of Missoula is submitting an Application for Beneficial Water Use Permit (Application No. 76H 30163647), and Tollefson Properties LLC is concurrently submitting an Application To Change a Water Right (Application No. 76H 30165219). Preapplication meetings have been held and DNRC has preprepared Technical Reports Parts A and B for both the permit and the change applications. The permit application and associated change application for aquifer recharge are being submitted together with this Mitigation Purpose Addendum. If the permit and change are authorized, Tollefson will transfer his changed claim 76H 30165310 to the City in exchange for City services.

4(f). Evidence of water availability.

Permit application water is available because 99.0 AF of volume is requested, and DNRC's Permit Technical Report 76H 30163647 calculated 10,956 AF of available volume within the zone of influence of Well 4. The Technical Report concludes that that water is physically and legally available.

Change application water is available because Change Technical Report 76H 30165219 found total historical consumptive use of the 82 acres of irrigation being retired under claim 76H 30165310 is 105.57 AF and the historically diverted volume is 131.96 AF. Additionally, water is

legally available because there are only ten water rights totaling 29.5 CFS that are senior to the water that will be diverted under claim 76H 30165310 for aquifer recharge. Because the 50th percentile of mean monthly flow is 766 CFS at USGS gage 12352500 (Bitterroot River near Missoula) at its lowest flow in the month of September, the flow rates of these ten senior water rights are always met.

4(g). Evidence of how the aquifer recharge or mitigation plan will offset the required amount of net depletion of surface water in a manner that will offset an adverse effect on a prior appropriator.

Of the 105.57 AF of historically consumed volume defined for the changed claim, DNRC's model shows 101.1 AF of aquifer recharge is required to fully mitigate the 99.0 AF of monthly net Bitterroot River depletions associated with Well 4 pumping.

DNRC's modeled monthly POD 2 diversion / aquifer recharge schedule is shown in Table 2 and the modeled monthly net accretions to the Bitterroot River are shown in Table 3. Positive values of Net Effect in Table 3 correspond to increased stream flows, showing there will be no adverse effect on any existing water rights.

Table 2*. DNRC modeled aquifer recharge schedule*.

Month	Aquifer Recharge Injection Schedule (gpm)	Aquifer Recharge Injection Schedule (AF)
January	0.0	0.0
February	0.0	0.0
March	0.0	0.0
April	0.0	0.0
May	106.0	14.5
June	155.0	20.5
July	163.0	22.3
August	163.0	22.3
September	96.0	12.7
October	64.0	8.8
November	0.0	0.0
December	0.0	0.0
TOTAL		**101.1**

Table 3. ***DNRC modeled monthly net effect from proposed aquifer recharge plan***.

Month	Permit Consumed Volume (AF)	Bitterroot River Net Depletion (AF)	Bitterroot River Net Depletion (gpm)	Aquifer Recharge Accretions Bitterroot River (AF)	Aquifer Recharge Accretions Bitterroot River (gpm)	Net Effect to Bitterroot River (AF)	Net Effect to Bitterroot River (gpm)
January	0.0	1.3	9.2	1.5	11.2	0.2	1.7
February	0.0	1.0	7.9	1.2	9.6	0.2	1.5
March	0.0	0.9	6.9	1.1	8.4	0.2	1.8
April	0.0	0.8	6.2	1.0	7.6	0.2	1.5
May	13.9	11.8	86.3	11.9	86.8	0.1	0.5
June	19.8	17.2	129.7	17.3	130.4	0.1	0.4
July	21.8	19.5	142.9	19.6	143.0	0.1	0.4
August	21.8	20.0	146.1	20.1	146.9	0.1	0.6
September	12.8	13.0	98.4	13.1	98.9	0.1	0.6
October	8.9	9.7	70.8	9.8	71.4	0.1	0.5
November	0.0	2.2	16.8	2.7	20.2	0.5	3.6
December	0.0	1.6	11.6	1.9	14.1	0.3	2.4
Total	**99.0**	**99.0**		**101.1**		**2.1**	

4(h). Evidence that the appropriate water quality permits have been granted pursuant to Title 75, chapter 5, as required by 75-5-410, MCA, and 85-2-364, MCA

Communications with Alanna Shaw, Section Supervisor, Surface Water Permitting (MPDES) indicate that discharge permits are not required for aquifer recharge under 85-2-364 and 75-5-410 MCA.

Figure 1. Detail map of new POD 2 to aquifer recharge site.

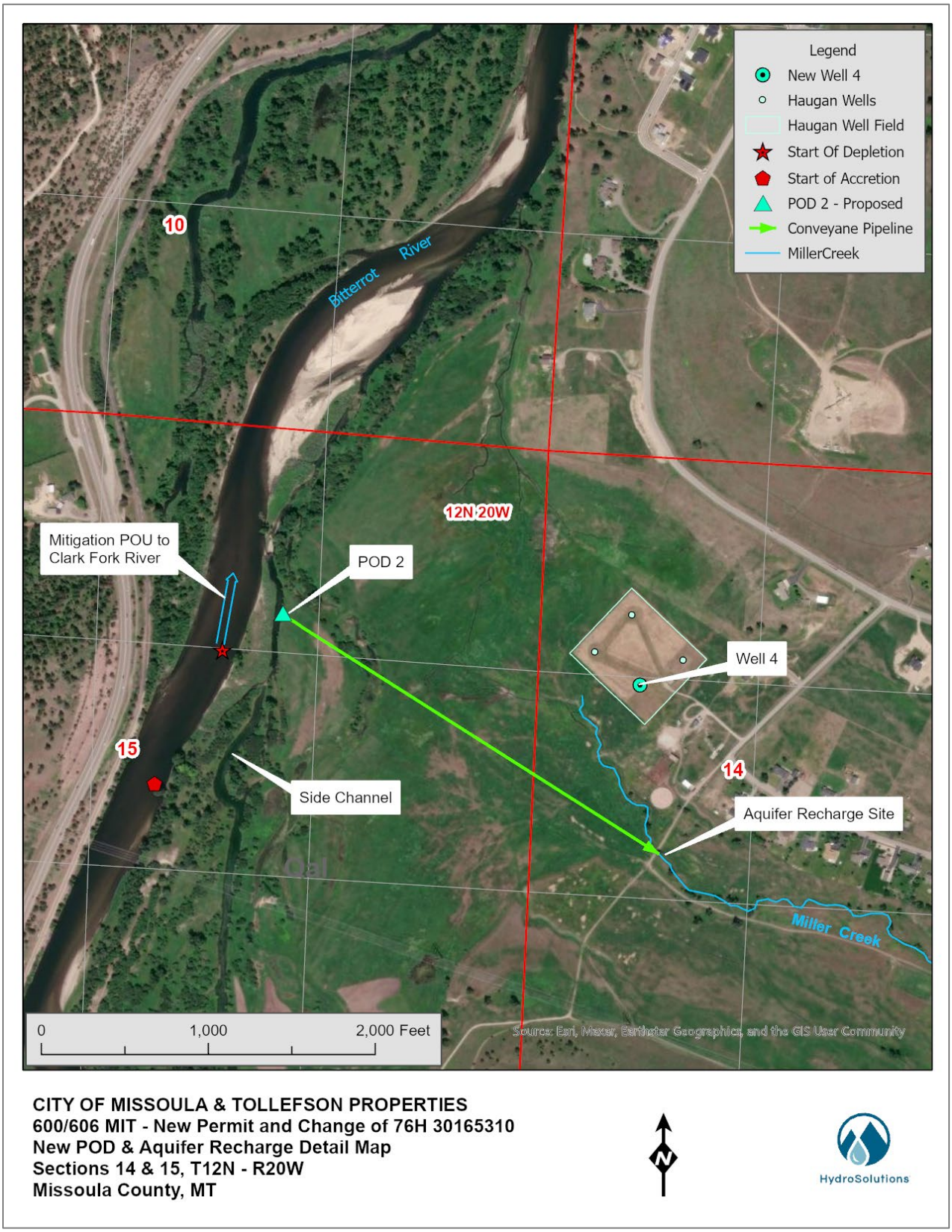
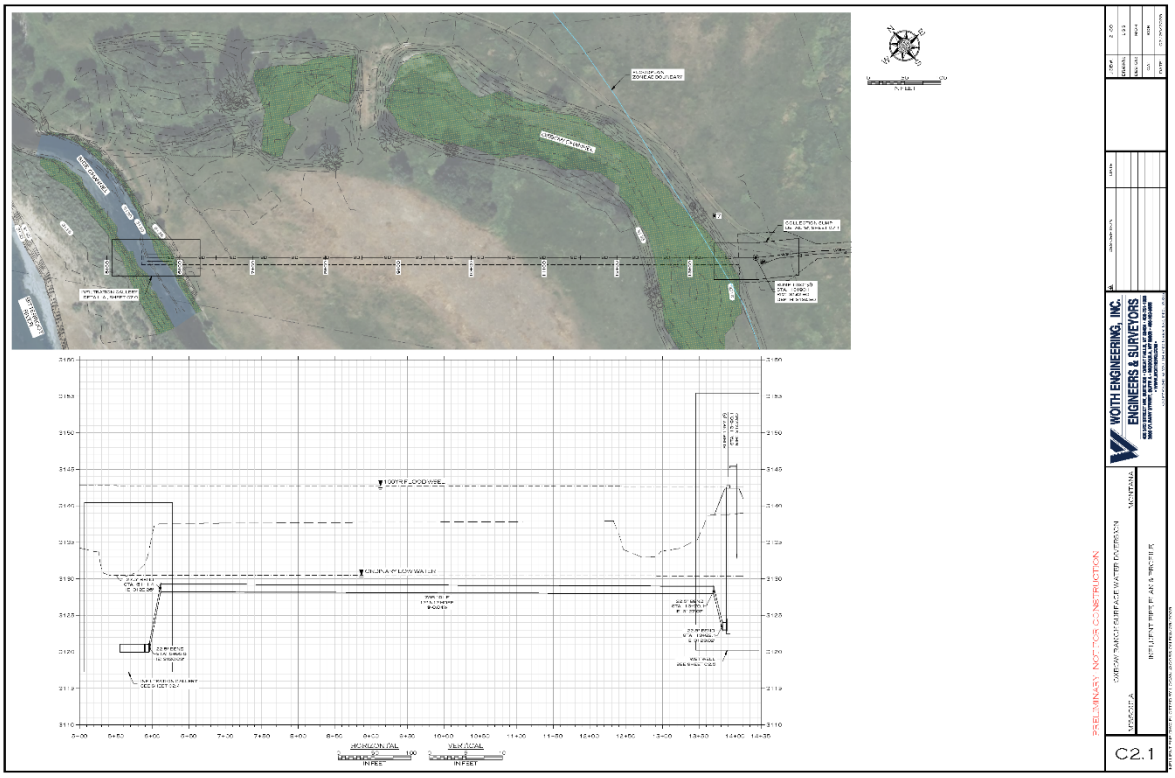
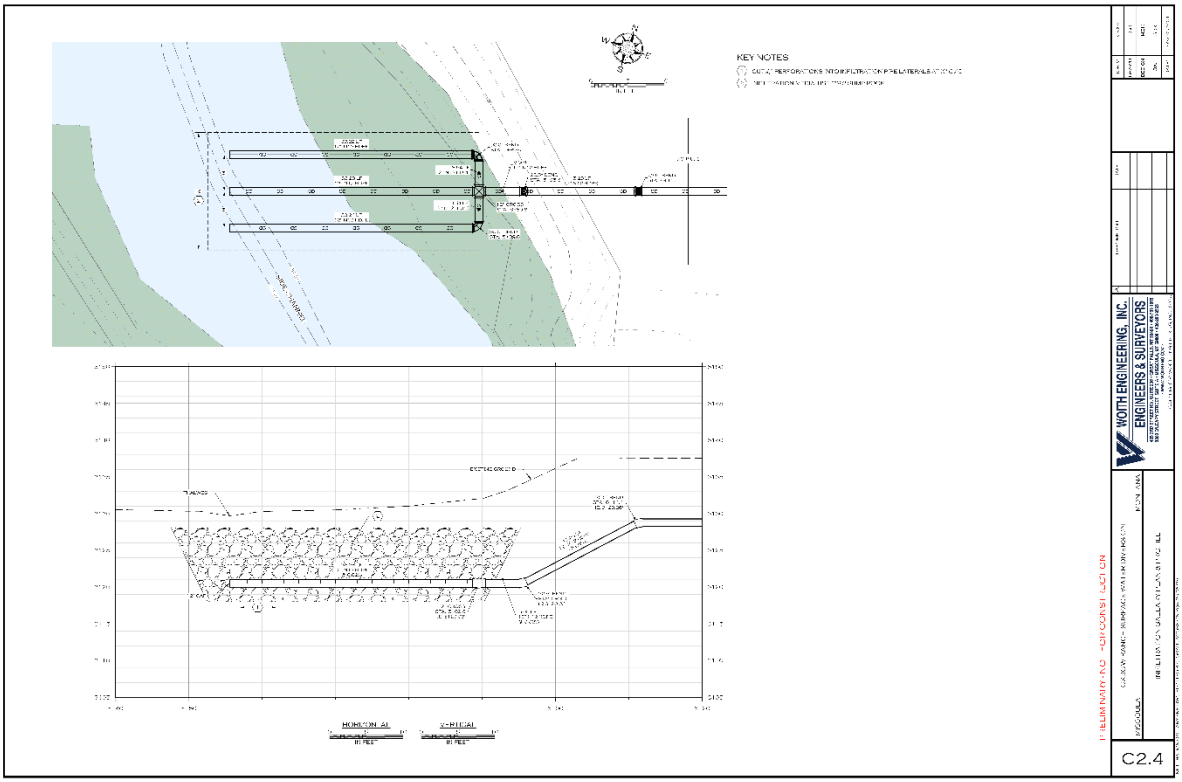
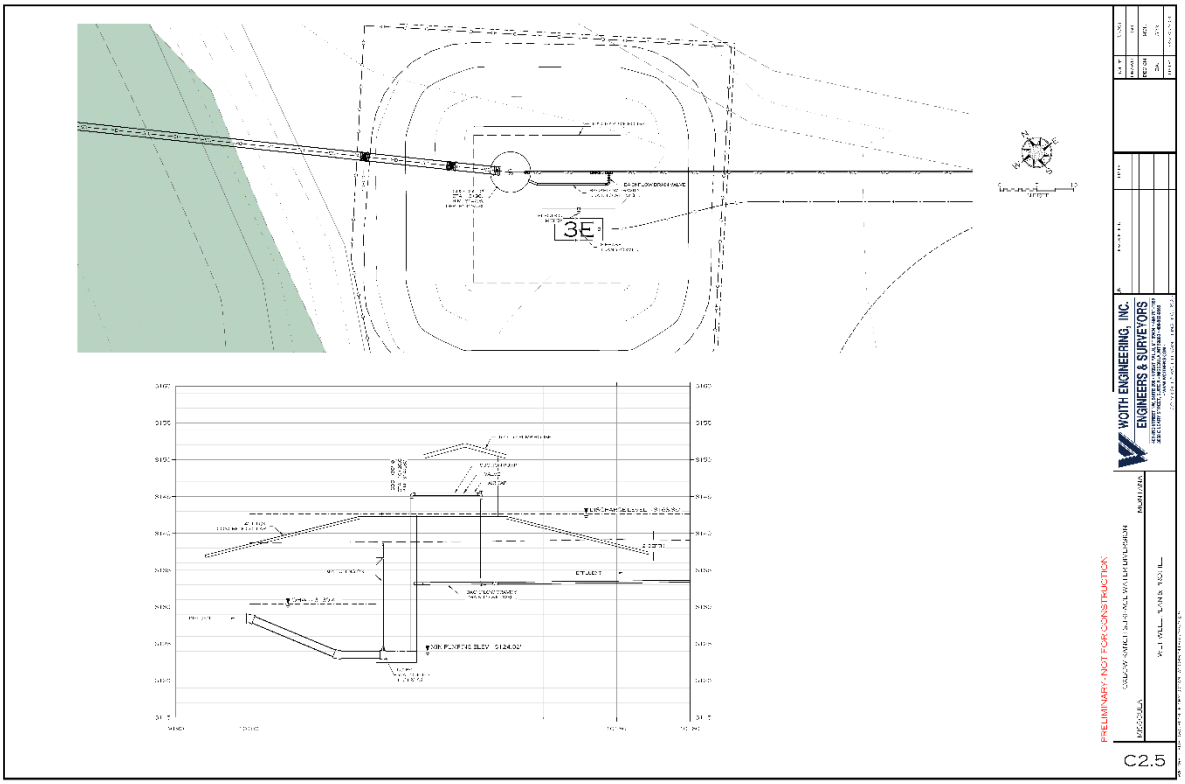


Figure 2. Design details of proposed POD 2 diversion to aquifer recharge site.



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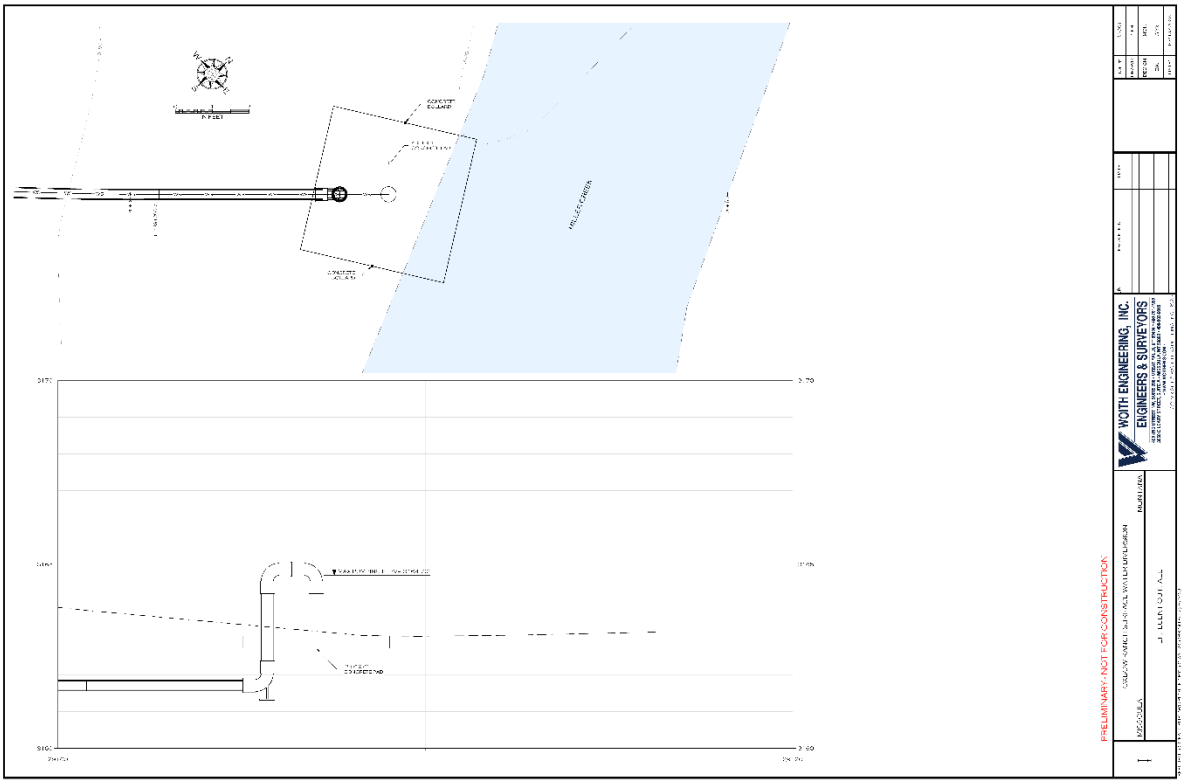
MILLER CREEK
WOITH ENGINEERING, INC.
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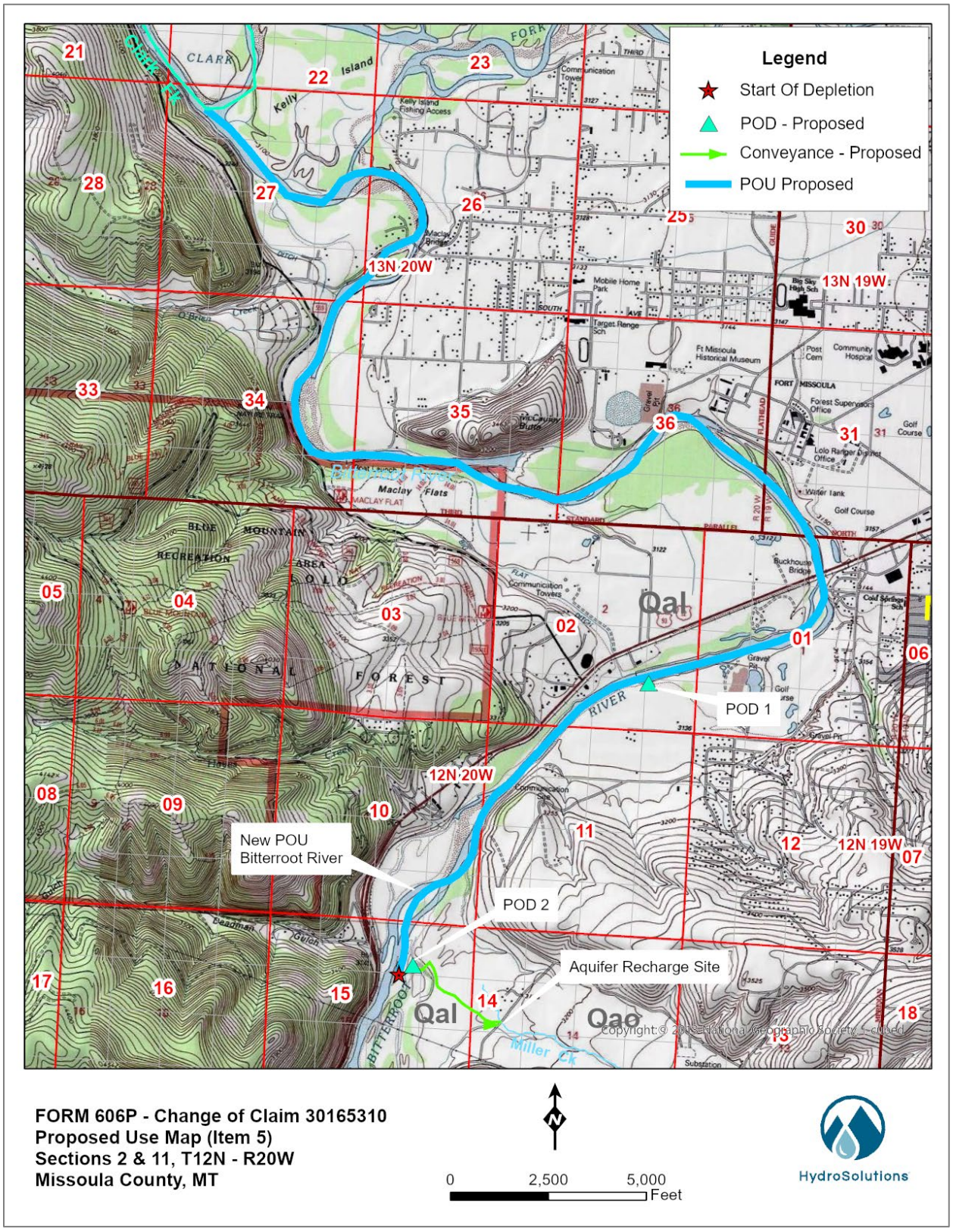
Figure 3. Proposed POD 2 aquifer recharge site, and place of use.



APPENDIX B

CHANGE TECHNICAL ANALYSIS

Surface Water Change Technical Analyses Report

Department of Natural Resources and Conservation (DNRC or Department)
Water Resources Division
Benjamin Thomas, Water Conservation Specialist, Missoula Regional Office

Application No.	76H 30165219	**Proposed Point of Diversion**	SENWNE Sec. 15 T12N, R20W
Applicant	Tollefson Properties LLC		

Overview

This report analyzes data submitted by the Applicant in support of the above-mentioned water right change application. This report provides technical analyses as required under the Administrative Rules of Montana (ARM) 36.12.1303 in support of the water rights criteria assessment as required in §85-2-402, Montana Code Annotated (MCA). This report was completed by regional office staff.

This Surface Water Change Technical Analyses Report contains the following sections:

1.0 Application Details

The Applicant proposes to change the point of diversion, place of use, and purpose for Statement of Claim 76M 105168-00. The proposed purpose is aquifer recharge for mitigation water for Beneficial Water Use Permit Application No. 76H 30163647. The proposed point of diversion is located in the SENWNE Sec. 15, T12N, R20W, and the proposed place of use is in the Bitterroot River from the southern boundary of the NWNE Sec. 15, T12N, R20W to the confluence of the Clark Fork and Bitterroot Rivers in the NWNW Sec. 27, T13N, R20W. The project is in Missoula County and the source is the Bitterroot River.

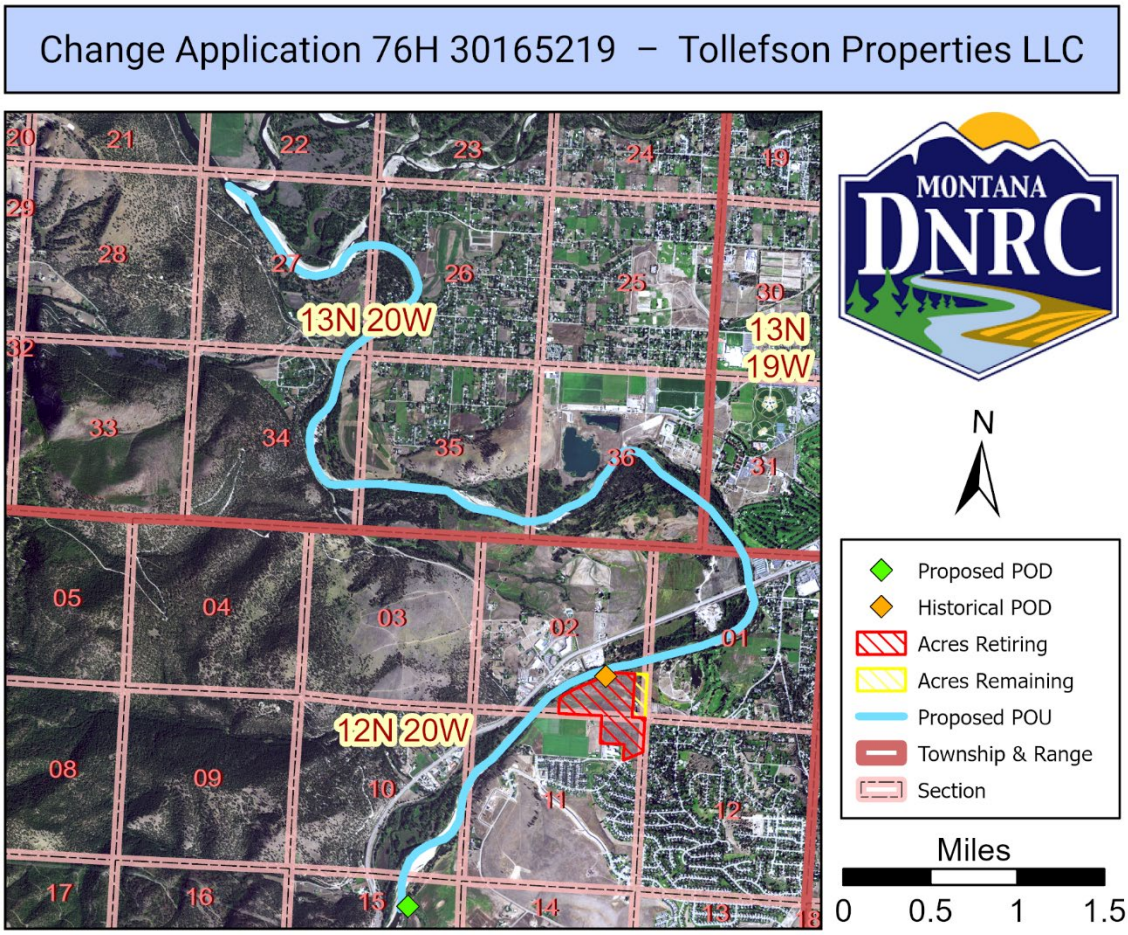


Figure 1: Map of the Applicant's proposed POD on the source and proposed place of use.

2.0 Historical Use Technical Analysis

2.1 Historical Field Consumed and Applied Volumes

The consumed volume for irrigation is based on the net irrigation requirement (NIR) from USDA Natural Resources Conservation Service Irrigation Water Requirements (IWR) at a representative weather station. The NIR is multiplied by a county-wide management factor (from ARM 36.12.1902) to produce an adjusted NIR representative of actual crop yields in Montana. Crop consumption is determined by multiplying the adjusted NIR by the number of acres of irrigation. Crop consumption is then divided by the field efficiency identified from the irrigation method and

ARM 36.12.115. Irrecoverable losses (IL) are 5% of the field applied volume for flood irrigation or 10% for sprinkler irrigation. The total consumed volume for irrigation is the crop consumption plus irrecoverable losses. The total non-consumed volume is the field applied volume minus the total consumed volume.

The historical point of diversion for Statement of Claim 76M 105168-00 is the NWSESE Sec. 2, T12N, R20W. The historical place of use is the S2SE Sec. 2 T12N, R20W, and the NENE Sec. 11, T11N, R20W. Water Resource Survey Aerial Image CNQ-2P-16, Dated August 11, 1955, was used to determine the historically irrigated acres. A total of 92 acres were historically irrigated, 82 of which are owned by the Applicant and proposed for retirement: 55 acres in the S2SE Sec. 2, T12N, R20W and 27 acres in the NENE Sec. 11, T11N, R20W. The historical method of irrigation is sprinkler irrigation.

The historical consumed and field applied volumes have been calculated with the inputs shown in Table 1 following the methods described above and in ARM 36.12.1902.

Table 1: Historical use.

Irrigation Method	Acres	IWR (in)[1]	Mgmt. Factor[2]	Field Efficiency	Crop Consumption (AF)	Field Applied Volume (AF)	Irrecoverable Losses (AF)	Total Consumed Volume (AF)
Sprinkler	82	19.45	70%	70%	92.37	131.96	13.2	105.57

[1]Missoula WSO AP IWR Weather Station
[2]Missoula County Historical Use Management Factor (Pre-July 1, 1973)

2.2 Historical Conveyance Losses

There are no historical conveyance losses considered for the historical use of Statement of Claim 76M 105168-00 because no ditches were used for conveyance.

2.3 Historical Diverted Volume

Per ARM 36.12.1902(10), the historically diverted volume is equal to the sum of the historical field application volume and historical conveyance loss volume. As this water right does not suffer conveyance losses, the historically diverted volume is equal to the field application volume of 131.96 AF.

2.4 Summary of Historical Use

The Department will consider the following values when evaluating the historical use of 76M 105168-00 for the adverse effect criterion:

Table 2: Summary of historical use of Statement of Claim 76M 105168-00

Water Right No.	Historical Purpose	Maximum Historical Acres	Historical Place of Use	Historical Point of Diversion	Maximum Historical Flow Rate	Historically Consumed Volume	Historically Diverted Volume
76M 105168-00	Irrigation (Sprinkler)	82 acres	S2SE Sec. 2 T12N, R20W; NENE Sec. 11, T11N, R20W	NWSESE Sec. 2 T12N, R20W	2.5 CFS	105.57 AF	131.96 AF

3.0 Analysis of Impacted Surface Water Sources

3.1 Summary of Proposed Use

The Applicant proposes to pump 101.1 AF of water from the Bitterroot River into Miller Creek for the purpose of aquifer recharge. A summary of the proposed use of Statement of Claim 76M 105168-00 is shown in Table 3:

Table 3: Proposed use of Statement of Claim 76M 105168-00.

Water Right No.	Proposed Purpose	Proposed Place of Use	Proposed Point of Diversion	Proposed Flow Rate	Proposed Consumptive Volume	Proposed Diverted Volume
76M 105168-00	Aquifer Recharge	The Bitterroot River from NWNE Sec. 15, T12N, R20W to the NWNW Sec. 27, T13N, R20W	SENWNE Sec. 15, T12N, R20W	0.75 CFS	0 AF	101.1 AF

A comparison between the diverted and consumed volumes of the historical and proposed uses can be seen in Table 4, demonstrating that the change would result in a net decrease to consumed and diverted volume.

Table 4: Volumes associated with historical and proposed use.

Purpose	Historically Consumed Volume	Historically Diverted Volume	Proposed Consumptive Volume	Proposed Diverted Volume	Change in Consumptive Volume	Change in Diverted Volume
Irrigation	105.57 AF	131.96 AF	0 AF	101.1 AF	-105.57 AF	-30.86 AF

3.2 Area of Potential Adverse Effect

The Department has considered a potentially impacted reach on the source of supply. This reach was determined by accounting for the location of the proposed and historical point of diversion. This reach extends from the SENWNE Sec. 15 T12N, R20W to the confluence of the Bitterroot and Clark Form Rivers in the NWNW Sec. 27 T13N, R20W. There are 28 water rights within this reach, a list of which can be found in Appendix A.

Review

This document has been reviewed by the Department on February 13, 2025.

References

Department Standard Practice for Determining Historical Use
Department Standard Practice for Analyzing Area of Potential Adverse Effect

Appendix A: Water Rights within the Area of Potential Adverse Effect

Water Right Number	Owner
76H 104521 00	BOGGESS FAMILY TRUST
76H 105168 00	SHAUNA M GINTER; W H GINTER; TOLLEFSON PROPERTIES LLC
76H 111267 00	USA (DEPT OF ARMY CORP OF ENGINEERS)
76H 111268 00	USA (DEPT OF ARMY CORP OF ENGINEERS)
76H 120055 00	USA (DEPT OF INTERIOR BUREAU OF RECLAMATION)
76H 125091 00	BRUCE B BARRETT; HOWARD J HICKINGBOTHAM; SANDRA B HICKINGBOTHAM
76H 131603 00	ETHEL C BRAY; LAUDIE BRAY
76H 149983 00	BRAD A BENIGER; CAROL M BENIGER; MICHAEL A KENNEDY; JON T MCROBERTS; KATRINA MCROBERTS; SHARI F MONTANA
76H 150826 00	ADAM BARTELS; KARIN BARTELS
76H 150956 00	KYMRA ARCHIBALD; MATTHEW ARCHIBALD
76H 151306 00	CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS
76H 151311 00	CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS
76H 151312 00	CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS
76H 151313 00	CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS
76H 151394 00	CAPRI FOSEID; REID FOSEID
76H 151743 00	CARTER E BECK; SUSAN M BECK
76H 29206 00	DENNIS GORDON; PAULINE GORDON; DAVID R YUHAS
76H 31299 00	WILLIAM R MACLAY
76H 35713 00	GRAYS MINI RANCH LLC
76H 39791 00	KHOURY INC
76H 43060 00	EARL M PRUYN
76H 45872 00	DORIS W SHERICK
76H 47443 00	SUSAN M WOLF
76H 52092 00	DEBORAH P COLE; ROBERT J COLE
76H 560 00	DEBORAH P COLE; ROBERT J COLE; VICTORIA GORDON
76H 633 00	1905 SUSSEX LLC
76H 6445 00	DEBORAH P COLE; ROBERT J COLE; VICTORIA GORDON
76H 87103 00	WESTERN MONTANA RETRIEVER CLUB INC

Surface Water Change Technical Analyses Report - Part B

Department of Natural Resources and Conservation (DNRC)
Water Resource Division
Melissa Brickl, Groundwater Hydrologist, Water Sciences Bureau

Applicant	Tollefson Properties LLC	**Point of Diversion Legal Land Description**	SENWNE Sec. 15, T12N, R20W
Application No.	76H 30165219		

Overview

This report is Part B of a two-part publication which analyzes data submitted by the Applicant in support of the above-mentioned water right change application. This report provides technical analyses as required under the Administrative Rules of Montana (ARM) 36.12.1303 in support of the water rights criteria assessment as required in §85-2-402, Montana Code Annotated (MCA). For applications in closed basins, this report fulfills the requirements of MCA 85-2-361.

This Surface Water Change Technical Analyses Report – Part B contains the following sections:

1.0 Executive Summary

Water Right Details

The Applicant proposes to add a second point of diversion to Statement of Claim No. 76H 105168-00 and change 337.0 gallons per minute (gpm) and 101.1 acre-feet (AF) of historically consumed flow rate and volume from a purpose of irrigation to aquifer recharge April 1 – October 31. The aquifer recharge would mitigate 99.0 AF of net depletions associated with Permit Application No. 76H 30163647. 82.0 of the 92.0 acres historically irrigated under Statement of Claim No. 76H 105168-00 are owned by the Applicant and would be retired. The remaining 10-acres would continue to be irrigated via the original point of diversion by another owner.

Under the proposed change, water would be pumped from the Bitterroot River at a new (second) point of diversion in the SENWNE Section 15, Township 12 North, Range 20 West, Missoula County and discharged into the natural streambed of Miller Creek. Miller Creek has been shown to be a losing stream, and discharged water would infiltrate into the unconfined aquifer and accrete to the Bitterroot River. Historically diverted non-consumed water associated with the retired 82 acres would be left instream below the historical point of diversion to offset the loss of return flows from the retired acres.

DNRC - WSB Technical Findings

Based on information submitted, the WSB quantified the historical non-consumed volume and location of historical return flows for the rights (s) proposed for change and the proposed aquifer recharge plan. These analyses are in support of the following criteria assessment: adverse effect and beneficial use. A summary of WSB findings described in subsequent sections are listed below.

TECHNICAL ANALYSES FINDINGS

ADVERSE EFFECT (RETURN FLOWS)	The historical non-consumed volume is 26.4 AF and the location of historical return flows as identified in **Figure 2** is to the Bitterroot River downstream of the SESESW, Section 02, Township 12 North, and Range 20 West.
BENEFICIAL USE: AQUIFER RECHARGE PLAN	The monthly accretions to the Bitterroot River because of the proposed aquifer recharge plan is summarized in **Table 4**. Positive values of net effect in **column 7** and **column 8** in **Table 4** correspond to increased stream flows while negative values correspond to reduced flows.

2.0 Methodology

DNRC will analyze the change to determine if:

a. Return flows will enter back into the source where they have historically returned upstream of or at the location of the next downstream appropriator; or,
b. Water is left instream so historically diverted flows are available during the historical period of diversion either below the point of diversion or where return flows historically returned to the source.

If the change in return flows impacts existing water rights, the return flow analysis must include a monthly breakdown of the rate and timing of return flow and evaluate impacts to the identified rights.

Return flows are evaluated by determining the volume of water that infiltrates past the root zone and identifying the likely receiving stream(s). The assumption is made that water applied for irrigation that is not consumed by a crop infiltrates to groundwater becoming return flow and does not run off. The amount of water not consumed is the difference between the amount of water consumed and the amount of water applied to a field. The receiving stream is determined by proximity and evidence of hydraulic connection to groundwater and generally does not depend on groundwater flow direction or land slope (Leake, 2011).

Historical consumed volumes for irrigation are calculated following the procedures described in DNRC consumptive use rules in ARM 36.12.1902. The amount of water consumed at the field is equal to crop consumption plus irrecoverable losses calculated as a percent of applied amounts. The amount of water applied to a field is determined from estimates of application efficiency and crop consumption. The amount of water not consumed is the difference between the amount of water consumed and the amount of water applied to a field.

3.0 Adverse Effect – Return Flow Analysis

3.1. Non-Consumed Volume

The consumed volume for irrigation is based on the net irrigation requirement (NIR) from USDA Natural Resources Conservation Service Irrigation Water Requirements (IWR) at a representative weather station. The NIR is multiplied by a county-wide management factor (from ARM 36.12.1902) to produce an adjusted NIR representative of actual crop yields in Montana. Crop consumption is determined by multiplying the adjusted NIR by the number of acres of irrigation. Crop consumption is then divided by the field efficiency identified from the irrigation method and ARM 36.12.115. Irrecoverable losses (IL) are 5% of the field applied volume for flood irrigation or 10% for sprinkler irrigation. The total consumed volume for irrigation is the crop consumption plus irrecoverable losses. The total non-consumed volume is the field applied volume minus the total consumed volume.

The historical consumed and non-consumed volumes have been calculated with the inputs shown in **Table 1** following the methods described above and in ARM 36.12.1902.

Table 1: Historical use Statement of Claim No. 76H 105168-00.

Irrigation Method	Acres	IWR (in)[1]	Mgmt. Factor[2]	Field Efficiency	Crop Consumption (AF)	Applied Volume (AF)	IL (AF)	Total Consumed Volume (AF)	Non-Consumed Volume (AF)
Wheel line	82.0	19.5	70.0%	70%	92.4	132.0	13.2	105.6	26.4

[1]Missoula WSO AP IWR Weather Station
[2]Missoula County Historical Use Management Factor

Under the proposed change 82.0 acres would be retired and 101.1 AF, which is a portion of the historically consumed volume (105.6 AF) associated with the retired acres, would be changed to a purpose of aquifer recharge. Historically non-consumed water (26.4 AF) associated with the retired 82.0 acres would be left instream below the historical point of diversion to offset the loss of return flows from the retired acres.

3.2 Hydraulically Connected Surface Water(s)

The receiving stream is determined by proximity and evidence of hydraulic connection to ground water. Mounding beneath irrigated fields propagates in all directions independent of ground water flow rate or direction and generally does not depend on surface topography (Leake, 2011). Return flows may accrete to more than one receiving reach or to a different stream than the source water is diverted from. Hydraulic connection of individual stream reaches to ground water is evaluated by comparing streambed elevations to static ground water elevations measured in wells less than 50 ft deep and within 1,000 ft of surface water or from published water table maps (DNRC, 2019). Surface water within that area is considered hydraulically connected to the unconfined aquifer if static ground water elevations are above or within 10 ft of the elevation of the stream bed (DNRC, 2019).

The historical irrigated place of use overlies the Cenozoic Quaternary Basin-fill and Alluvial Aquifer (111ALVM) known as the Bitterroot River Valley Shallow Aquifer. The shallow hydrologic unit is developed in surficial alluvial sediments generally within 80 ft of the land surface. Groundwater in the shallow hydrologic unit is under unconfined, or water table, conditions (Smith, 2006b).

Figure 1 shows shallow wells queried from Montana Bureau of Mines and Geology (MBMG) Groundwater Information Center (GWIC) database including GWIC ID 67056, 67122, 246089, 321908, 321909, 321911, 321912 that are less than 50 feet (ft) deep below ground surface (bgs) and with static water levels (swl) less than or equal to 10 ft below top of casing (btc) indicating a hydraulic connection between the Bitterroot River and shallow alluvial aquifer. Additional information from the Gridded National Soil Survey Geographic Database (SSURGO (NRCS, 2024)) show areas of shallow water tables and hydric conditions within the floodplain of the Bitterroot River. The Bitterroot River is categorized as perennial in the US Geological Survey (USGS) National Hydrography Dataset (NHD).

As shown in **Figure 1**, DNRC identifies the Bitterroot River as the closest perennial surface water body to the historical place of use and the receiving stream for return flows.

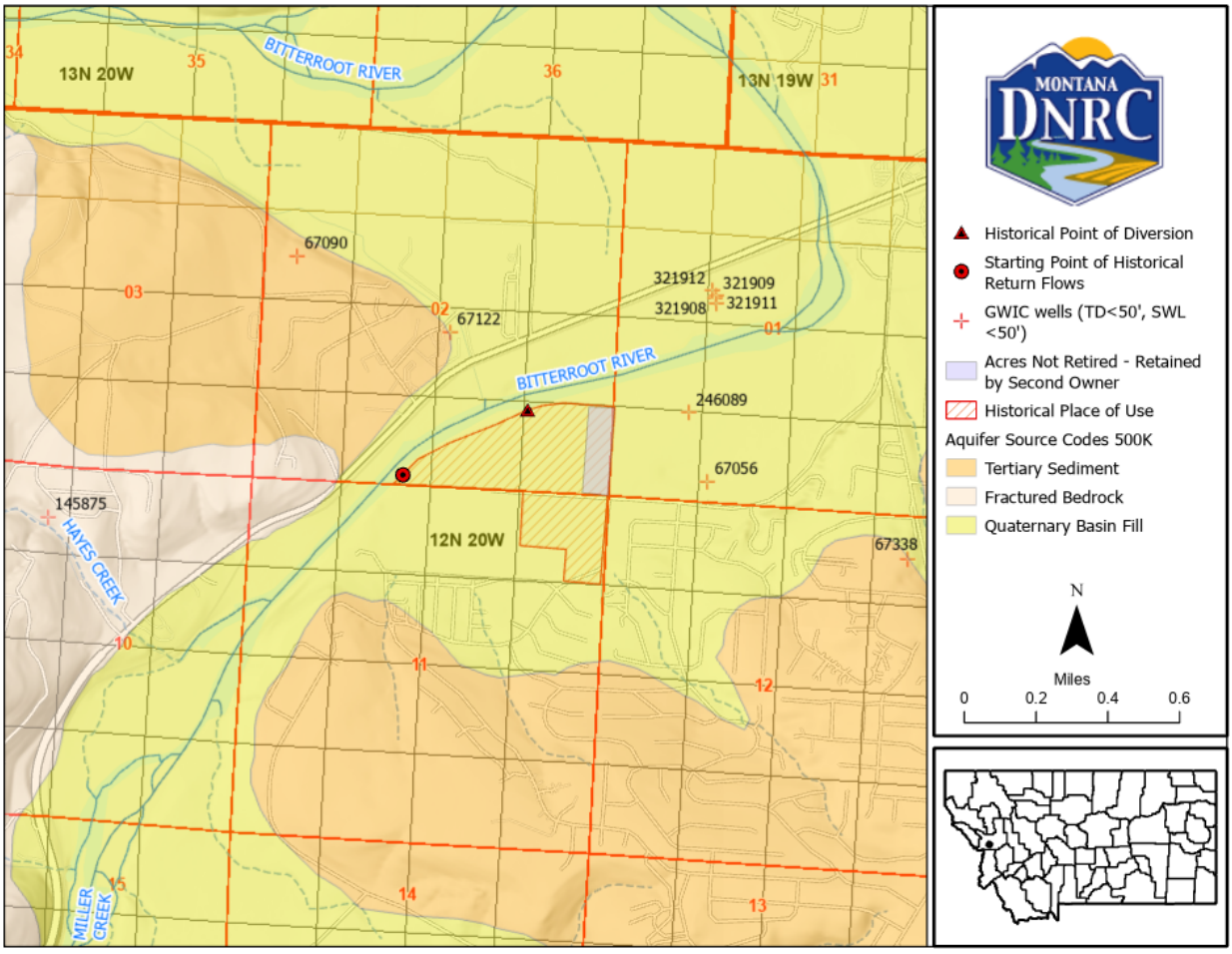


Figure 1: Location of historical place of use, acres retained under the proposed change application by the second owner, and the starting point of return flows on the Bitterroot River.

3.3 Location of Return Flows

The location of return flows from 82.0 acres of historical irrigation is the Bitterroot River downstream of the SESESW, Section 02, Township 12 North, and Range 20 West, Missoula County (**Figure 1**).

Under the proposed change, 82.0 acres of irrigation would be retired. Historically diverted, non-consumed water (26.4 AF) associated with the retired 82.0 acres would be left instream below the historical point of diversion to offset the loss of return flows from the retired acres. As such, the rate and timing of return flows were not calculated.

4.0 Aquifer Recharge Plan Analyses

DNRC will evaluate the proposed aquifer recharge plan by 1.) identifying the aquifer receiving the aquifer recharge 2.) identifying hydraulically connected surface water(s) receiving the aquifer recharge; and 3.) calculating the monthly rate and timing of accretions to affected surface water(s).

4.1 Aquifer Recharge Plan

The Applicant proposes to change 337.0 gpm and 101.1 AF of historically consumed flow rate and volume authorized under Statement of Claim No. 76H 105168-00 from a purpose of irrigation to aquifer recharge. The aquifer recharge would mitigate 99.0 AF of net depletions associated with Permit Application No. 76H 30163647 identified in **Table 2**.

Table 2: Total consumed volume and net depletion to surface water for the proposed well for Permit Application No. 76H 30163647.

Month	Municipal Diverted/Consumed Volume (AF)[1]	Municipal Diverted/Consumed Flow Rate (gpm)	Bitterroot River Net Depletion (AF)	Bitterroot River Net Depletion (gpm)
January	0.0	0	1.3	9.2
February	0.0	0	1.0	7.9
March	0.0	0	0.9	6.9
April	0.0	0	0.8	6.2
May	13.9	101.6	11.8	86.3
June	19.8	149.6	17.2	129.7
July	21.8	159.4	19.5	142.9
August	21.8	159.4	20.0	146.1
September	12.8	96.7	13.0	98.4
October	8.9	65.1	9.7	70.8
November	0.0	0	2.2	16.8
December	0.0	0	1.6	11.6
Total	99.0		99.0	

[1] *Per DNRC (2018) municipal use is considered 100% consumptive.*

The Applicant's plan is to divert water from the Bitterroot River and discharge the water into the natural streambed of Miller Creek. As identified in **Figure 2**, the point of discharge into Miller Creek is just south of the proposed well associated with Permit Application No. 76H 30163647. The Applicant asserts under their aquifer recharge plan that discharged water would return to a shallow (Quaternary-age) aquifer and result in accretions to the Bitterroot River.

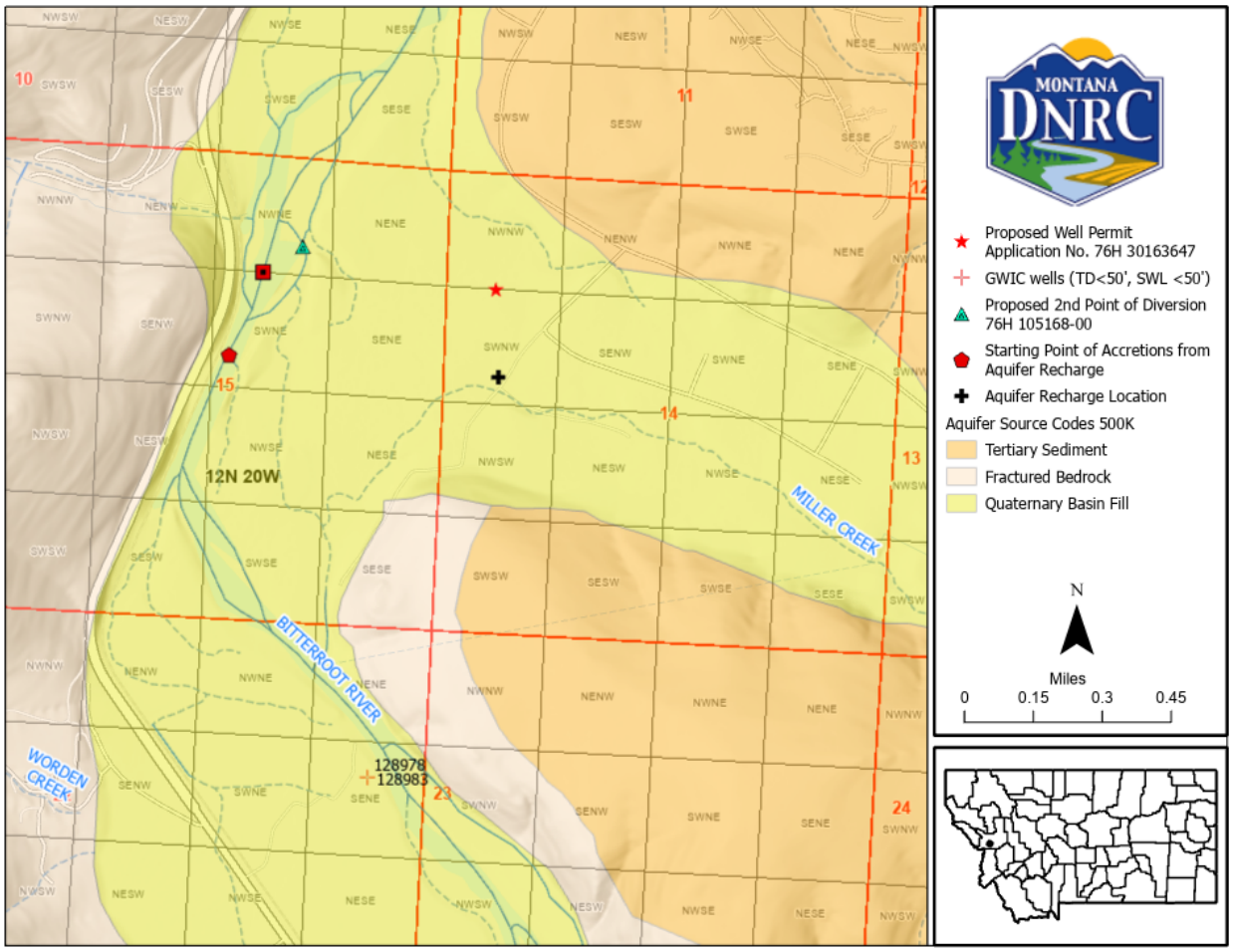


Figure 2: Location of proposed point of diversion on Bitterroot River, point of discharge into Miller Creek, and starting point of accretions to the Bitterroot River.

4.2 Hydrogeologic Setting

Under the Applicants plan, water withdrawn from the Bitterroot River would be discharged into the natural streambed of Miller Creek. Per groundwater data provided for Provisional Permit No. 76H 30063563, Miller Creek is a losing stream. The depth to groundwater measured in wells in the area is 12 to 60 ft bgs near Miller Creek. Miller Creek is also categorized as intermittent according to the USGS NHD (NHD). Discharged water would recharge the underlying Cenozoic Quaternary Basin-fill and Alluvial Aquifer (111ALVM) known as the Bitterroot River Valley Shallow Aquifer.

Quaternary basin-fill deposits (up to 300 ft thick) include older Pleistocene alluvium and lacustrine deposits associated with glaciation, and recent Holocene sand and gravel deposits in the floodplains of the major river valleys. Glaciers deposited till, which is mostly clayey and silty gravel. Bedded silt and clay were deposited in the valleys during stands of Glacial Lake Missoula and form confining layers within the basin-fill deposits. Sand and gravel interbedded with, and overlain by, bedded silt and clay deposits were deposited before glaciation and during flood events

when Glacial Lake Missoula drained. The uppermost sand and gravel deposits in stream valleys are less than 80 ft thick in most areas and represent stream deposition during and after waning phases of glaciation (Smith, 2006, Smith, 2013).

In places, the confining layers hydraulically separate the aquifers; however, in the Bitterroot valley water-level data from different depths suggest that the basin-fill aquifers are well-connected on a valley-wide scale. The basin-fill aquifers are the most utilized sources of municipal and domestic water. The median reported well yields from the basin-fill aquifers are about three times greater than median well yields from bedrock aquifers.

The three hydrogeologic units recognized are: 1) shallow basin fill, 2) deep basin fill, and 3) bedrock. Groundwater in the shallow hydrologic unit is under unconfined, or water table, conditions.

4.3 Hydraulically Connected Surface Water(s)

Shallow wells queried from MBMG GWIC database including GWIC ID 128978, 128983, 67349 south of the proposed aquifer recharge location (**Figure 2**) and GWIC ID 67056, 67122, 246089, 321908, 321909, 321911, 321912 north of the proposed aquifer recharge location near the historical place of use (**Figure 1**) meet the requirements of DNRC (2019) that suggest hydraulic connection of the Bitterroot River to the Quaternary Basin-fill alluvial aquifer.

The point where aquifer recharge will start to accrue to the Bitterroot River is approximately 1,000 ft upstream of the starting point for net depletions associated with Permit Application No. 76H 30163647. **Figure 2** identifies the starting point of accretions which is in the SWSWNE of Section 15, Township 12 North, Range 20 West.

4.4 Rate and Timing of Accretions from Aquifer Recharge

The monthly timings of accretions from the aquifer recharge to the identified receiving reach are modeled using analytical models such as the Alluvial Water Accounting System (AWAS) (AWAS, 2003), the Glover parallel drain model (Glover, 1977), FWD:SOLV (HydroSOLVE, 2024), or a numerical model. The choice of model depends on the availability of data on aquifer properties and the geometry of the receiving aquifer and stream(s). These modeling methods are believed to be suitable for common hydrogeologic settings, are appropriate to the limited data available for most locations, and adequate to provide information to evaluate criteria under §85-2-402, MCA. They may not be suitable in more complex geologic settings or where return flows to multiple streams must be considered.

Inputs to FWD:SOLV (HydroSOLVE, 2024) include specific yield (Sy), transmissivity (T), distance from a recharge well to the receiving reach, distance from other model boundaries to the receiving reach (optional) and a monthly injection schedule. FWD:SOLV (HydroSOLVE, 2024) can model accretions from a single location, represented by a recharge well, to one source with simple aquifer boundaries. The program allows multiple recharge wells to be modeled simultaneously. Assumptions for FWD:SOLV (HydroSOLVE, 2024) using the Theis (1941)/Glover and Balmer (1954) solution for a fully penetrating stream include:

- The aquifer is homogeneous, isotropic, of uniform thickness, of infinite aerial extent, and unconfined without delayed yield

- Flow in the aquifer is unsteady
- The recharge well is fully penetrating
- The well diameter is very small (no well storage)
- Flow to and from the recharge well is horizontal
- The stream is linear
- The stream is fully penetrating
- Head in the stream is constant

Identified in **Figure 3** is a summary of T and hydraulic conductivity (K), values derived from a nearby 24-hour, 72-hour and 24-hour aquifer test completed in 2007 on existing PWS Well's No. 1-3 (GWIC IDs 250507, 250507, 251976), respectively, that are completed in the Quaternary Basin-fill and Alluvial Aquifer. The figure is a clipped image of a summary table taken from the Aquifer Testing Addendum for Provisional Permit No. 76H 30063539. The average T value from the 2007 tests supported the DNRC estimated T value of 150,905 ft^2/day calculated using a 2023 aquifer test associated with Permit Application No. 76H 30163647.

The four wells associated with the 2007 and 2023 aquifer tests are in the same aquifer that would receive aquifer recharge and located 900 ft north of the aquifer recharge location on Miller Creek. Well depths are between 68 - 82 ft bgs. and static water levels between 10.23 - 19.39 ft bgs. Therefore, the calculated aquifer properties for these wells are found to be representative of the receiving aquifer for aquifer recharge. As such, a T value of 150,905 ft^2/day was used to model accretions to the Bitterroot River.

Moench (1994) states that, although an unconfined aquifer test analysis can account for Sy, evaluation of Sy should be done with caution because the very early time data are subject to large error. As such, a Sy of 0.1 (Lohman, 1972) is recommended for use in modeling for this application.

Test	Pumped Well	Duration (mins)	Q (gpm)	Well	Data	Method	T (ft^2/d)	K (ft/d)	S
Constant	PWS-1	1445	1711.8	PWS-3	Drawdown	Neuman	71,278	2,376	------
						Cooper-Jacob	175,539	5,851	0.040
					Recovery	Theis	163,499	5,450	-------
				Dorris	Drawdown	Neuman	217,820	10,891	------
						Cooper-Jacob	131,159	6,558	0.048
					Recovery	Theis	109,379	5,469	-------
				Fox	Drawdown	Neuman	151,680	7,584	------
						Theis (Unconf)	191,741	9,587	0.050
						Cooper-Jacob	223,392	11,170	0.042
					Recovery	Theis	114,600	5,730	-------
Constant	PWS-2	4500	1684	PWS-1	Drawdown	Neuman	123,481	3,742	------
						Cooper-Jacob	167,577	5,078	0.050
					Recovery	Theis	122,114	3,700	-------
				PWS-3	Drawdown	Neuman	76,786	2,560	------
						Cooper-Jacob	167,451	5,582	0.043
					Recovery	Theis	130,725	4,358	------
				Dorris	Drawdown	Neuman	201,742	10087	------
						Theis (Unconf)	186,749	9,337	0.040
						Cooper-Jacob	167,665	8,383	0.047
					Recovery	Theis	103,690	5,185	-------
				Fox	Drawdown	Neuman	102,111	5106	------
						Theis (Unconf)	138,774	6,939	0.065
						Cooper-Jacob	167,043	8,352	0.051
					Recovery	Theis	162,154	8,108	-------
Constant	PWS-3	1482	1165	PW-1	Drawdown	Neuman	187,461	5,681	------
						Theis (Unconf)	170,961	5,181	0.023
						Cooper-Jacob	153,624	4,655	0.046
					Recovery	Theis	141,620	4,292	-------
				Dorris	Drawdown	Neuman	173,292	8,665	------
						Theis (Unconf)	177,813	8,891	0.012
						Cooper-Jacob	160,570	8,029	0.022
					Recovery	Theis	109,678	5,484	-------
						Overall Average:	*151,349*	*7,067*	*0.041*

Figure 3: Summary of Provisional Permit No. 76H 30063593 aquifer test data.

Inputs for the FWD:SOLV (HydroSOLVE, 2024) model for this evaluation include the following inputs:

- Theis (1941)/Glover and Balmer (1954) solution for a fully penetrating stream.
- An injection schedule provided in **Table 3** for 100 years.
- T = 150,905 ft^2/day taken from Permit Application No. 76H 30163647.
- Sy of 0.1 (Lohman, 1972).
- A distance between the point of aquifer recharge to the Bitterroot River identified in **Figure 4** and equal to 3,618 ft.

Table 3: DNRC modeled aquifer recharge schedule.

Month	Aquifer Recharge Injection Schedule (gpm)	Aquifer Recharge Injection Schedule (AF)
January	0.0	0.0
February	0.0	0.0
March	0.0	0.0
April	0.0	0.0
May	106.0	14.5
June	155.0	20.5
July	163.0	22.3
August	163.0	22.3
September	96.0	12.7
October	64.0	8.8
November	0.0	0.0
December	0.0	0.0
TOTAL		**101.1**

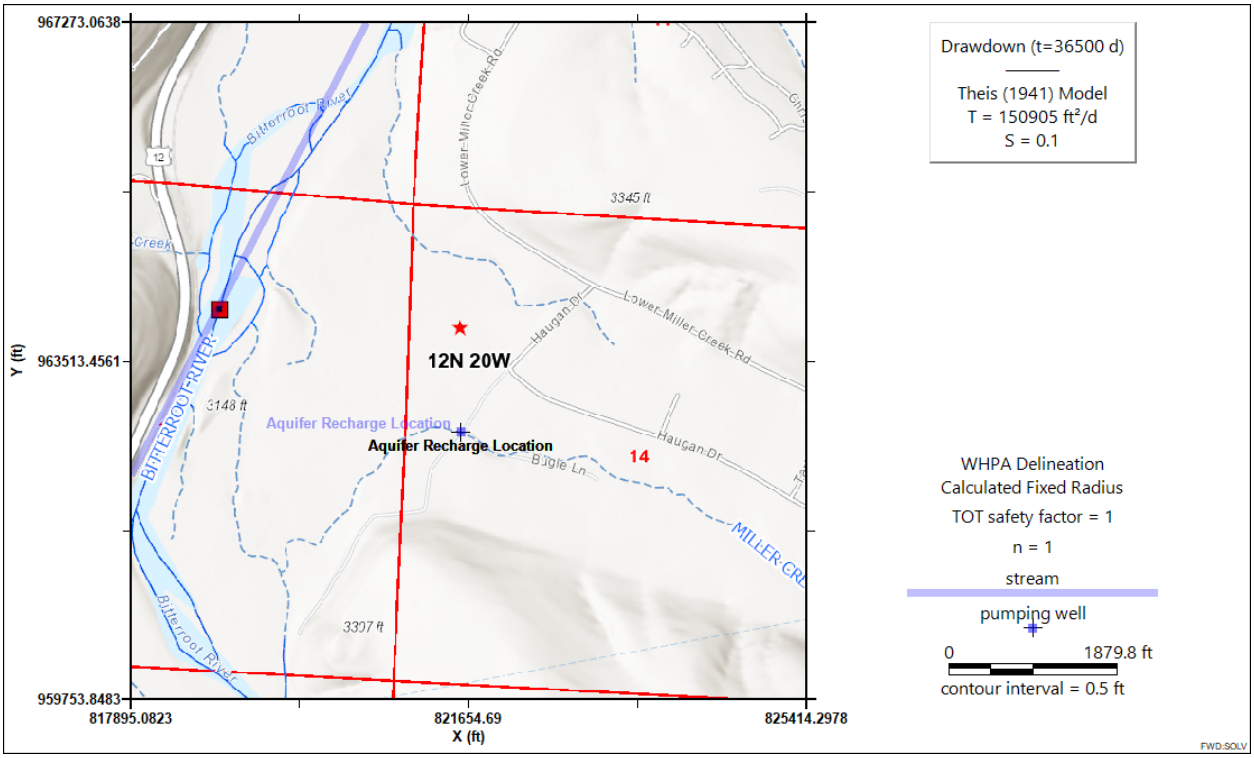


Figure 4: FWD:SOLV map of aquifer recharge location and Bitterroot River.

The monthly accretions to the Bitterroot River because of the Applicant's proposed aquifer recharge plan are summarized below. As identified in **Table 4** positive values of net effect in **column 7** or **column 8** correspond to increased stream flows while negative values correspond to reduced flows. An aquifer recharge volume greater than the net depletion volume was required to meet the monthly net depletion rate because 1.) the distance from the left bank of the Bitterroot

River to the aquifer recharge location is greater than the distance between the river and proposed well associated with Permit Application No. 76H 30163647 and 2.) the same T value and Sy was used to model both net depletions and accretions.

Table 4: Monthly net effect to the Bitterroot River from the proposed aquifer recharge plan

Month	Permit Consumed Volume (AF)	Bitterroot River Net Depletion (AF)	Bitterroot River Net Depletion (gpm)	Aquifer Recharge Accretions Bitterroot River (AF)	Aquifer Recharge Accretions Bitterroot River (gpm)	Net Effect to Bitterroot River (AF)	Net Effect to Bitterroot River (gpm)
January	0.0	1.3	9.2	1.5	11.2	0.2	1.7
February	0.0	1.0	7.9	1.2	9.6	0.2	1.5
March	0.0	0.9	6.9	1.1	8.4	0.2	1.8
April	0.0	0.8	6.2	1.0	7.6	0.2	1.5
May	13.9	11.8	86.3	11.9	86.8	0.1	0.5
June	19.8	17.2	129.7	17.3	130.4	0.1	0.4
July	21.8	19.5	142.9	19.6	143.0	0.1	0.4
August	21.8	20.0	146.1	20.1	146.9	0.1	0.6
September	12.8	13.0	98.4	13.1	98.9	0.1	0.6
October	8.9	9.7	70.8	9.8	71.4	0.1	0.5
November	0.0	2.2	16.8	2.7	20.2	0.5	3.6
December	0.0	1.6	11.6	1.9	14.1	0.3	2.4
Total	**99.0**	**99.0**		**101.1**		**2.1**	

Review

This document has been reviewed on February 6, 2025 in accordance with Category 7 of DNRC's Water Sciences Bureau Minimum Standards of Review, Version 2, February 2024.

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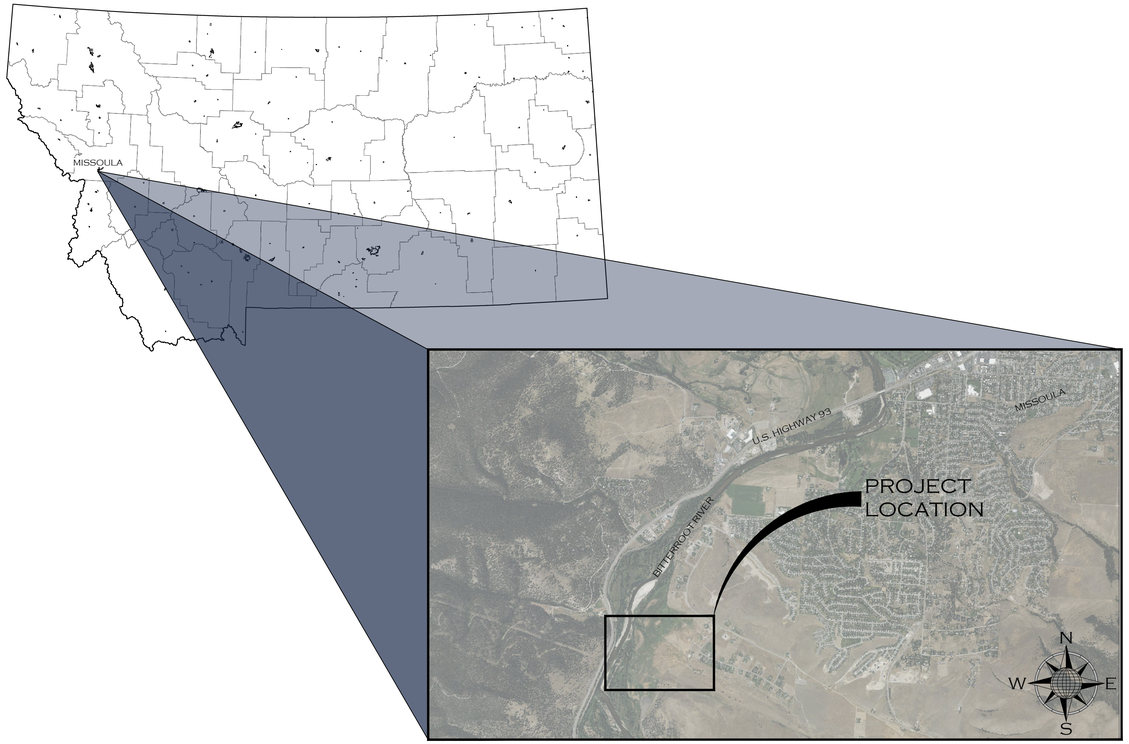
APPENDIX C

POD AND CONVEYANCE DESIGN
DIVERSION PUMP CURVE



VICINITY MAP
NOT TO SCALE

PROJECT MAP
NOT TO SCALE

Know what's below.
Call before you dig.

CONSTRUCTION PLANS FOR

OXBOW RANCH SURFACE WATER DIVERSION

MISSOULA, MONTANA

FEBRUARY 2025

APPROVED BY: _____
NAME, PE OR PLS

INDEX OF CIVIL SHEETS

PRELIMINARY - NOT FOR CONSTRUCTION

COLOR VERIFICATION
ELEMENTS ON THIS SHEET ARE INTENDED TO BE IN COLOR. IF PROPERLY REPRODUCED, RED, GREEN AND BLUE WILL BE VISIBLE.

JOB #:	21-001
DRAWN:	LGG
DESIGN:	MOH
QA:	SDR
DATE:	02/20/2025

	DESCRIPTION	DATE
1		

WOITH ENGINEERING, INC.
ENGINEERS & SURVEYORS
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3860 O'LEARY STREET, SUITE A • MISSOULA, MT 59808 • 406-203-9565
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OXBOW RANCH SURFACE WATER DIVERSION
MISSOULA MONTANA

COVER

C0.0

COVER.DWG PLOTTED BY: LOGAN JACOBS ON Feb 25, 2025

CIVIL CONSTRUCTION NOTES:

1. ALL CONSTRUCTION WORK ON THIS PROJECT SHALL BE COMPLETED IN ACCORDANCE WITH MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (7TH ED. AS MODIFIED), MISSOULA CITY PUBLIC WORKS STANDARDS AND SPECIFICATIONS MANUAL(MCPWSS), AND THESE CONTRACT DOCUMENTS.

2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA SAFETY STANDARDS.

3. THE CONTRACTOR'S OPERATIONS SHALL BE CONFINED WITHIN THE PROJECT LIMITS. MATERIALS AND EQUIPMENT SHALL BE STORED ON THE PROJECT SITE WHERE APPROVED BY THE OWNER. IT SHALL BE UNDERSTOOD THAT THE RESPONSIBILITY FOR PROTECTION AND SAFEKEEPING OF EQUIPMENT AND MATERIALS ON OR NEAR THE SITE WILL BE ENTIRELY THAT OF THE CONTRACTOR AND THAT NO CLAIM SHALL BE MADE AGAINST THE OWNER BY REASON OF ANY ACT OF AN EMPLOYEE OR TRESPASSER.

4. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES FOUND ARE TO BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO THE COMMENCEMENT OR CONTINUATION OF CONSTRUCTION ACTIVITIES.

5. CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE CITY, 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 24 HOURS IN ADVANCE OF SPECIFIC INSPECTION NEEDS DURING THE COURSE OF THE PROJECT. ALL WORK SHALL BE PERFORMED DURING NORMAL WORKING HOURS AND SUBJECT TO THE AVAILABILITY OF AN INSPECTOR AND APPROVED BY THE ENGINEER.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PUBLIC AND PRIVATE PROPERTY INSOFAR AS IT MAY BE AFFECTED BY THESE OPERATIONS. ALL COSTS FOR PROTECTING, REMOVING, AND RESTORING EXISTING IMPROVEMENTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

7. CONTRACTOR SHALL CONTACT "UTILITY NOTIFICATION CENTER" (811) AT LEAST THREE (3) WORKING DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO SCHEDULE THE MARKING OF EXISTING UTILITY LOCATIONS.

8. THE LOCATION, DEPTH, AND SIZE OF THE EXISTING UTILITIES SHOWN ON THESE PLANS IS APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION, DEPTH, AND SIZE OF THE UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING FACILITIES DUE TO FAILURE TO LOCATE OR PROPERLY PROVIDE PROTECTION WHEN LOCATION IS KNOWN.

9. LOCATION OF SITE UTILITIES SHALL BE VERIFIED BY THE GENERAL CONTRACTOR AND THE UTILITY COMPANY PROVIDING SERVICE. ANY PROPOSED ADJUSTMENTS TO DRY UTILITY LOCATIONS SHALL BE COORDINATED WITH UTILITY COMPANY PROVIDING SERVICE.

10. GENERAL CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER ANY UTILITY SYSTEM PRIOR TO INSTALLATION.

11. THE CONTRACTOR SHALL UTILIZE COMPACTION EQUIPMENT SUITABLE FOR THE SOIL TYPES AND SURFACE MATERIALS ENCOUNTERED ON THE PROJECT.

12. THE CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING VALVE BOXES, CURB BOXES, AND MANHOLES TO FINAL GRADE UPON COMPLETION OF ALL CONSTRUCTION. ANY BOXES OR MANHOLES DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR OR A SUBCONTRACTOR SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT, AND SEPARATE PAYMENT WILL NOT BE MADE.

13. NO UTILITY EXCAVATION SHALL BE PERFORMED ON THE SITE PRIOR TO ISSUANCE OF APPLICABLE EXCAVATION PERMITS BY THE CITY OF MISSOULA.

14. CONTRACTOR IS RESPONSIBLE FOR CREATING, FILING, AND ABIDING BY A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND NOTICE OF INTENT (NOI) APPROVED BY THE MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) OR THE CITY OF MISSOULA AS APPROPRIATE.

15. REFER TO (INSERT GEOTECH ENGINEER) GEOTECHNICAL REPORT FOR IMPORTED SUBBASE CHARACTERISTICS.

16. CITY OF MISSOULA CONSTRUCTION HOURS ARE 7 A.M. TO 7 P.M. MONDAY THROUGH FRIDAY. WORK SHALL NOT OCCUR OUTSIDE THESE HOURS WITHOUT CITY COUNCIL APPROVAL.

17. CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPLICABLE PERMITS FROM THE CITY OF MISSOULA PRIOR TO COMMENCEMENT OF ANY SURFACE OR UTILITY WORK. THIS INCLUDES RIGHT-OF-WAY PERMITS FOR ANY CURB AND SIDEWALK CONSTRUCTION, AND A PAVING PERMIT FOR STREETS, ALLEYS, OR DRIVEWAYS.

GENERAL CIVIL NOTES:

1. ANY MONUMENTS OR PROPERTY CORNERS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE OF MONTANA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING SAID PLS.

2. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE GENERAL CONTRACTOR, SITE SUBCONTRACTORS, CITY WATER AND SEWER REPRESENTATIVES, AND WOITH ENGINEERING, INC., PRIOR TO THE START OF CONSTRUCTION.

3. STANDARD SYMBOLS AND LINE TYPES ARE SHOWN IN THE LEGEND. SOME SYMBOLS OR LINE TYPES SHOWN MAY NOT BE SHOWN ON THE PLANS.

4. IN GENERAL, EXISTING STRUCTURES AND FACILITIES ARE NOTED AS "EXISTING" AND ARE SHOWN IN SHADED LINE WEIGHTS. NEW STRUCTURES OR FACILITIES ARE SHOWN IN HEAVY LINE WEIGHTS.

WATER DIVERSION CONSTRUCTION NOTES:

1. MAINTAIN MINIMUM BURY/COVER DEPTH OF 3 FEET OVER WATER EFFLUENT SERVICE LINES. BURY / COVER DEPTH CALLOUTS IN THE PLANS ARE TO TOP OF PIPE.

2. MAINTAIN MINIMUM 18-INCH VERTICAL AND 10-FOOT HORIZONTAL EDGE-TO-EDGE SEPARATION BETWEEN POTABLE WATER AND NON-POTABLE WATER.

3. WATER EFFLUENT SERVICE LINE FOR THIS PROJECT SHALL BE 3" HDPE SDR11 PIPE.

4. WATER INFLUENT GRAVITY PIPING FOR THIS PROJECT SHALL BE 12" HDPE N-12 DRAIN PIPE.

5. WATER MAIN FITTINGS SHALL BE ...

6. INSTALL TRACER WIRE ON ALL WATER SERVICE LINES. REFER TO PUBLIC WORKS STANDARD SPECIFICATIONS, SIXTH EDITION, APRIL, 2010 AND ALL AMENDMENTS THERETO FOR TRACER WIRE SPECIFICATIONS.

7. REFER TO MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (7TH ED. AS MODIFIED) AND ALL AMENDMENTS THERETO FOR POLYETHYLENE WRAP SPECIFICATIONS. ALL BURIED DUCTILE IRON PIPE COMPONENTS MUST BE WRAPPED IN POLYETHYLENE ENCASEMENT.

8. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TAP AND TIE-IN FEES REQUIRED.

9. WATER METERS TO BE INSTALLED IN ACCORDANCE TO MISSOULA WATER COMMERCIAL METER REQUIREMENTS.

10. THRUST BLOCKS ARE NOT SHOWN ON THE DRAWINGS. ALL BURIED PIPING SPECIFIED TO BE PRESSURE TESTED, EXCEPT WELDED, GROOVED END, OR SCREWED PIPING, SHALL BE PROVIDED WITH THRUST PROTECTION IN ACCORDANCE WITH MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (7TH ED. AS MODIFIED) UNLESS OTHERWISE NOTED.

11. ALL FITTINGS, INCLUDING BENDS EQUAL TO OR GREATER THAN TWENTY-TWO AND ONE-HALF (22.5°) DEGREES, SHALL BE THRUST BLOCKED IN ACCORDANCE WITH MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS.

12. PLEASE REFER TO PROJECT SPECIFICATIONS SECTION 02660 - WATER DISTRIBUTION, SECTION 3.4 FOR TESTING AND DISINFECTION REQUIREMENTS.

13. WATER UTILITY CONTACT: CITY OF MISSOULA WATER

20. IN CASES WHERE HIGH GROUND WATER IS ENCOUNTERED DURING CONSTRUCTION THE CONTRACTOR SHALL ABIDE BY THE REQUIREMENTS SPECIFIED IN MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS AND MISSOULA WATER STANDARD SPECIFICATIONS AS WELL AS CONTACT THE ENGINEER IMMEDIATELY UPON DISCOVERY OF GROUND WATER AT THE TRENCH BOTTOM.

ABBREVIATIONS:

Ø	DIAMETER
BOP	BOTTOM OF PIPE
CB	CATCH BASIN
C/L	CENTERLINE
COM, C.O.M.	CITY OF MISSOULA
CMP	CORRUGATED METAL PIPE
CP	CONTROL POINT
EG	EXISTING GRADE
EL, ELEV	ELEVATION
EX, EXIST	EXISTING
FF, FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FL	FLANGE
MJ	MECHANICAL JOINT
GV	GATE VALVE
HP	HIGH POINT
IE	INVERT ELEVATION
LAY	LAYDOWN CURB
LF	LINEAL FEET
LP	LOW POINT
MIN	MINIMUM
MH	MANHOLE
PD	PANEL DRAIN
PP	PERFORATED PIPE
PT	POINT
R	RADIUS
RECP, RECPs	ROLLED EROSION CONTROL PRODUCTS
S	SLOPE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FEET
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STA	STATION
SW	SIDEWALK
TBC	TOP BACK OF CURB
TYP	TYPICAL
W/	WITH
XING	CROSSING

DRAWING REFERENCE

(#/#.#) DETAIL NUMBER
FOUND ON SHEET

PRELIMINARY - NOT FOR CONSTRUCTION

JOB #: 21-001
DRAWN: LGG
DESIGN: MOH
QA: SDR
DATE: 02/20/2025

	DESCRIPTION	DATE
1		

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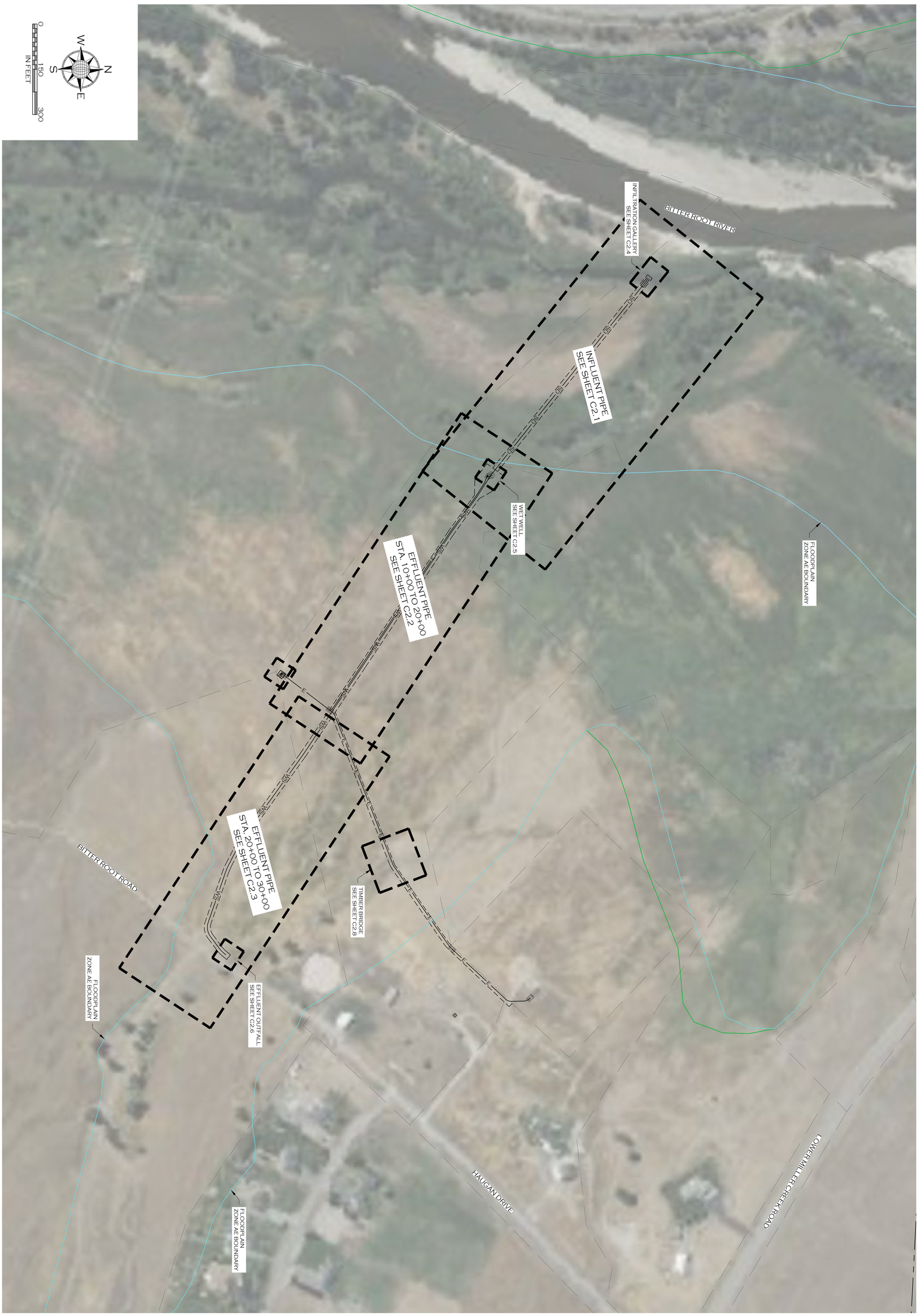
OXBOW RANCH SURFACE WATER DIVERSION
MISSOULA MONTANA

GENERAL NOTES

CO.1

GENERAL NOTES.DWG PLOTTED BY LOGAN JACOBS ON Feb 25, 2025



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C2.0

OXBOW RANCH SURFACE WATER DIVERSION

MISSOULA MONTANA

OVERALL SITE PLAN

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#	DESCRIPTION	DATE

JOB #:	21-001
DRAWN:	LGG
DESIGN:	MOH
QA:	SDR
DATE:	02/20/2025

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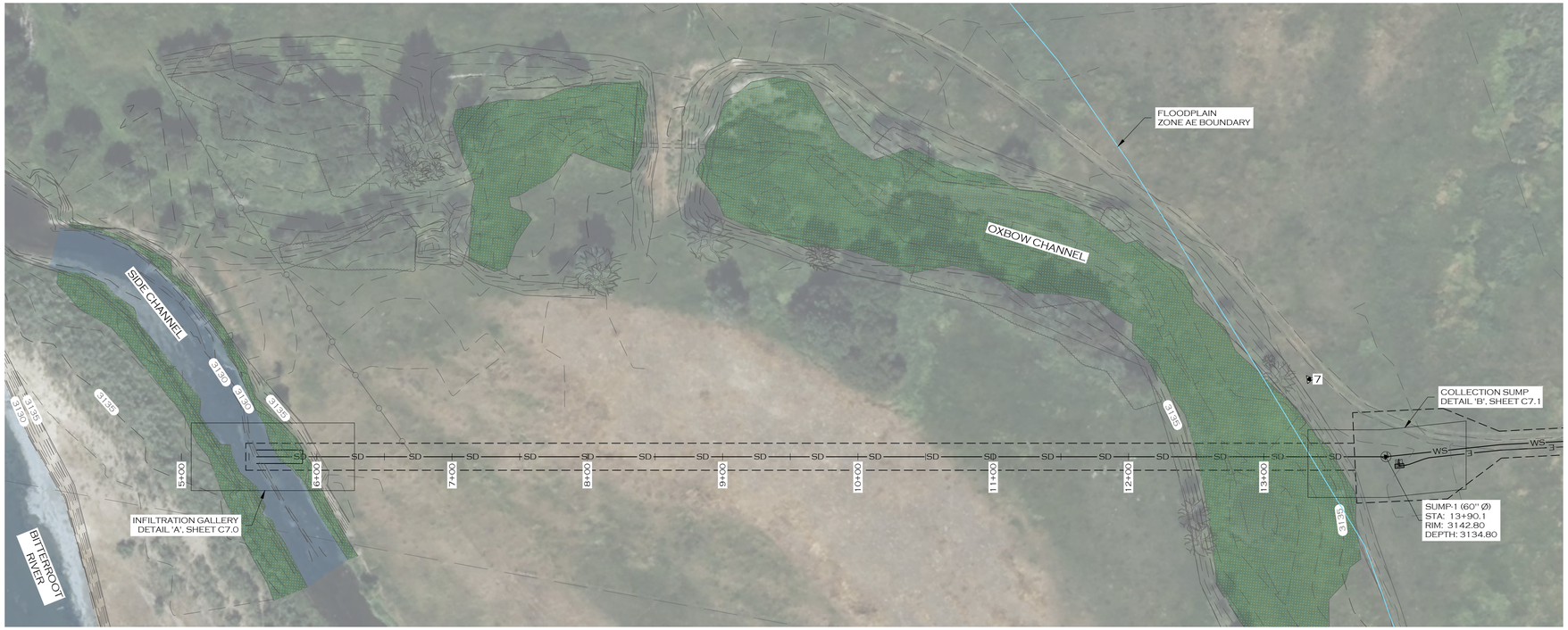

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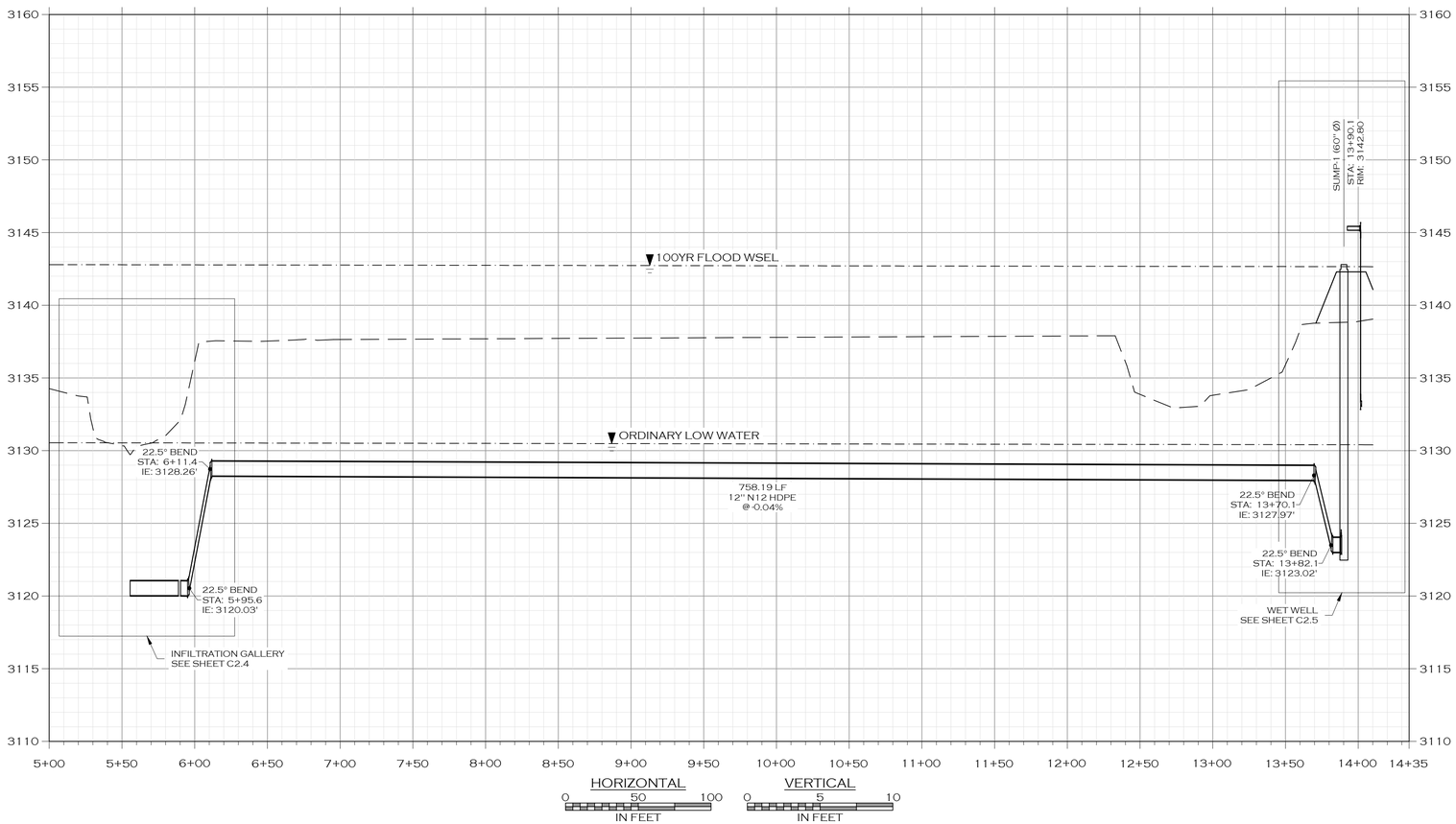
IN FEET



HORIZONTAL
0 50 100
IN FEET

VERTICAL
0 5 10
IN FEET

JOB #:	21-001	
DRAWN:	LGG	
DESIGN:	MOH	
QA:	SDR	
DATE:	02/20/2025	

	DESCRIPTION	DATE
1		

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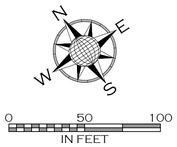
OXBOW RANCH SURFACE WATER DIVERSION

MISSOULA MONTANA

INFLUENT PIPE PLAN & PROFILE

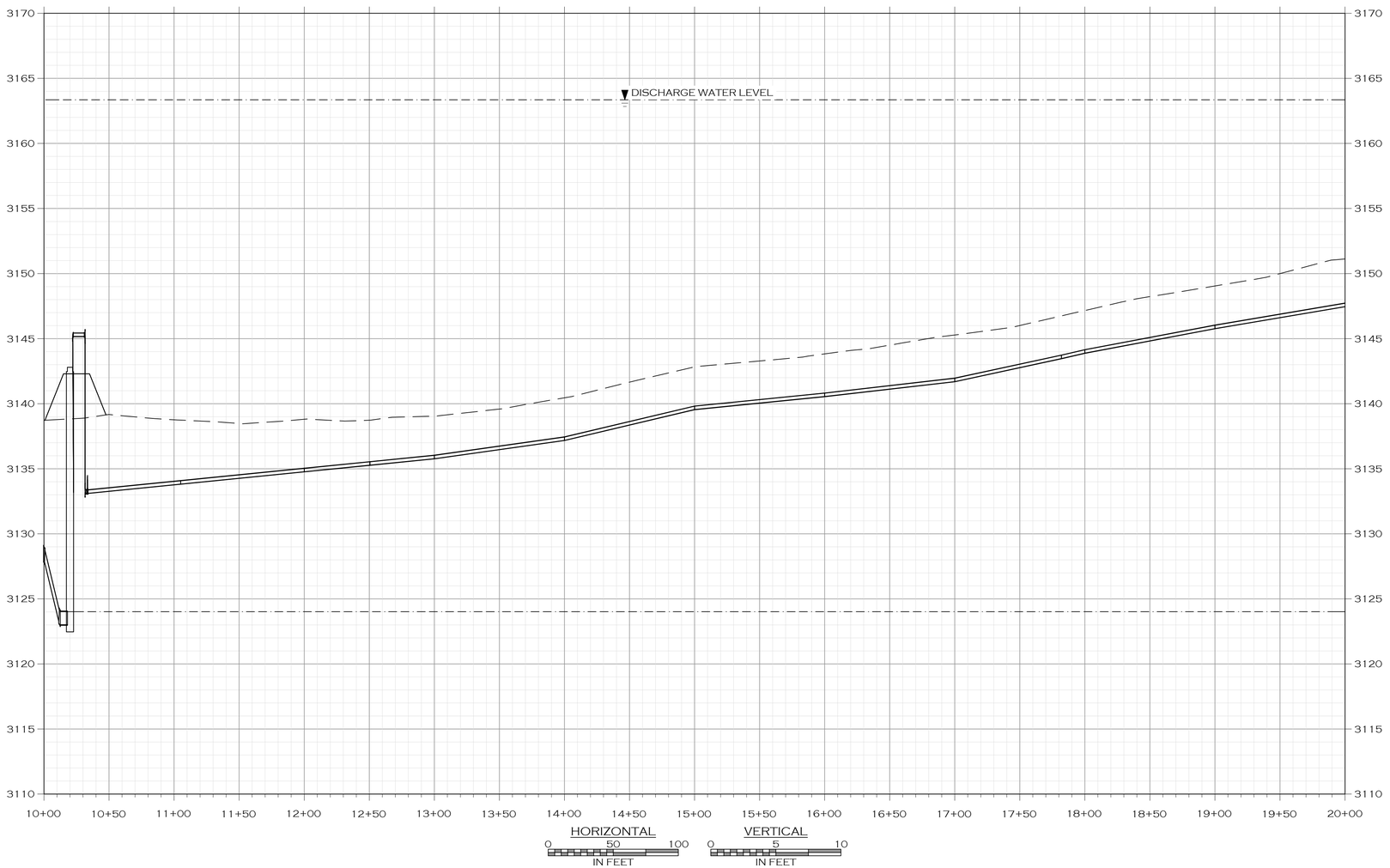
C2.1

INFLUENT PNP.DWG PLOTTED BY LOGAN.JACOBS ON FEB/25/2025



NOTES

1. WATER EFFLUENT SERVICE LINE SHALL BE 2IN HDPE
2. MAINTAIN A WATER SERVICE COVER DEPTH OF 6FT MINIMUM
3. MAINTAIN 4FT HORIZONTAL SEPARATION MINIMUM BETWEEN WATER SERVICES AND DRY UTILITIES



PRELIMINARY - NOT FOR CONSTRUCTION

JOB #:	21-001
DRAWN:	LGG
DESIGN:	MOH
QA:	SDR
DATE:	02/20/2025

	DESCRIPTION	DATE
1		

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OXBOW RANCH SURFACE WATER DIVERSION
MISSOULA MONTANA

EFFLUENT PIPE PLAN & PROFILE 1

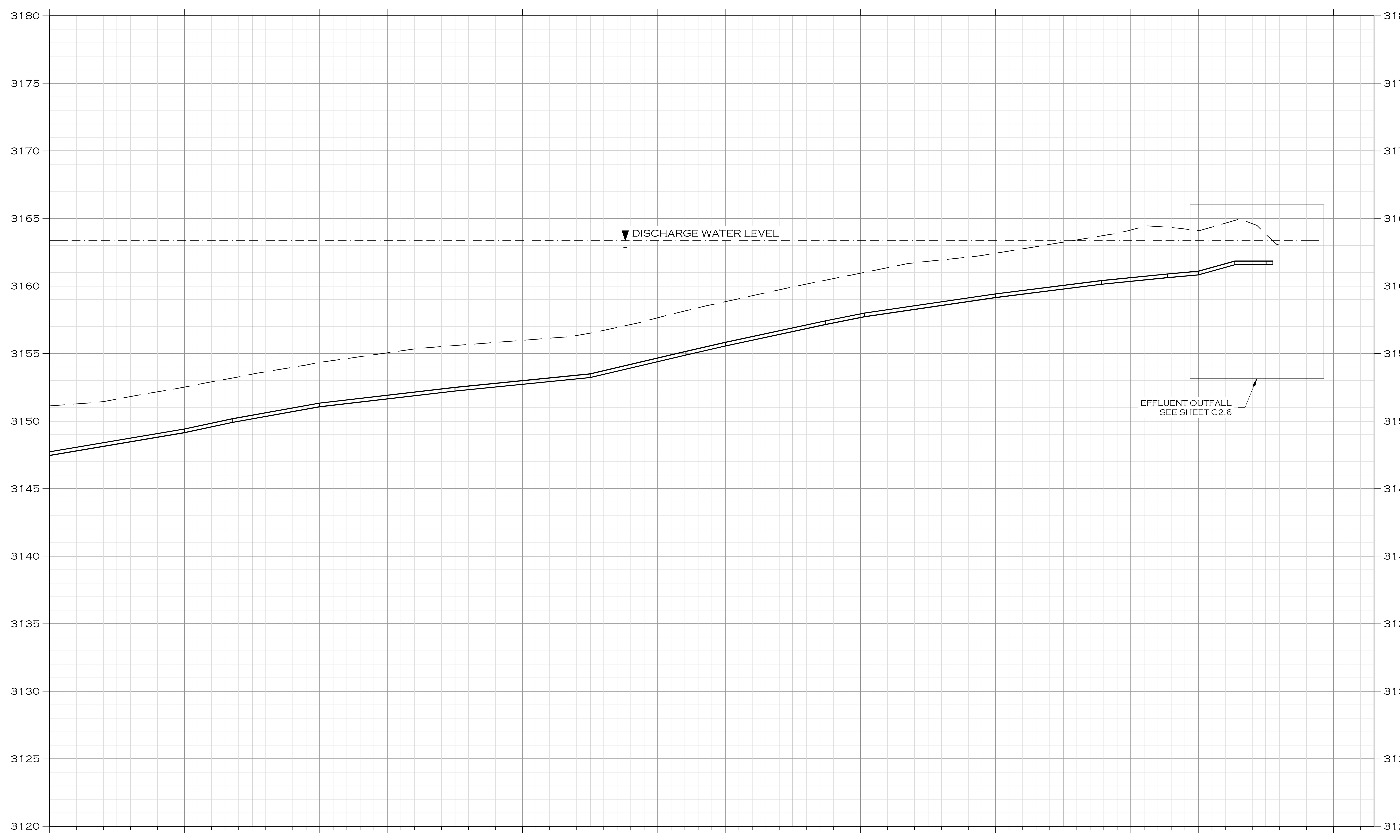
C2.2

EFFLUENT PNP 1.DWG PLOTTED BY LOGAN JACOBS ON FEB/25/2025

0 50 100
IN FEET

NOTES

1. WATER EFFLUENT SERVICE LINE SHALL BE 2IN HDPE
2. MAINTAIN A WATER SERVICE COVER DEPTH OF 6FT MINIMUM
3. MAINTAIN 4FT HORIZONTAL SEPARATION MINIMUM BETWEEN WATER SERVICES AND DRY UTILITIES



HORIZONTAL
0 50 100
IN FEET

VERTICAL
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PRELIMINARY - NOT FOR CONSTRUCTION

JOB #:	21-001
DRAWN:	LGG
DESIGN:	MOH
QA:	SDR
DATE:	02/20/2025

#	DESCRIPTION	DATE

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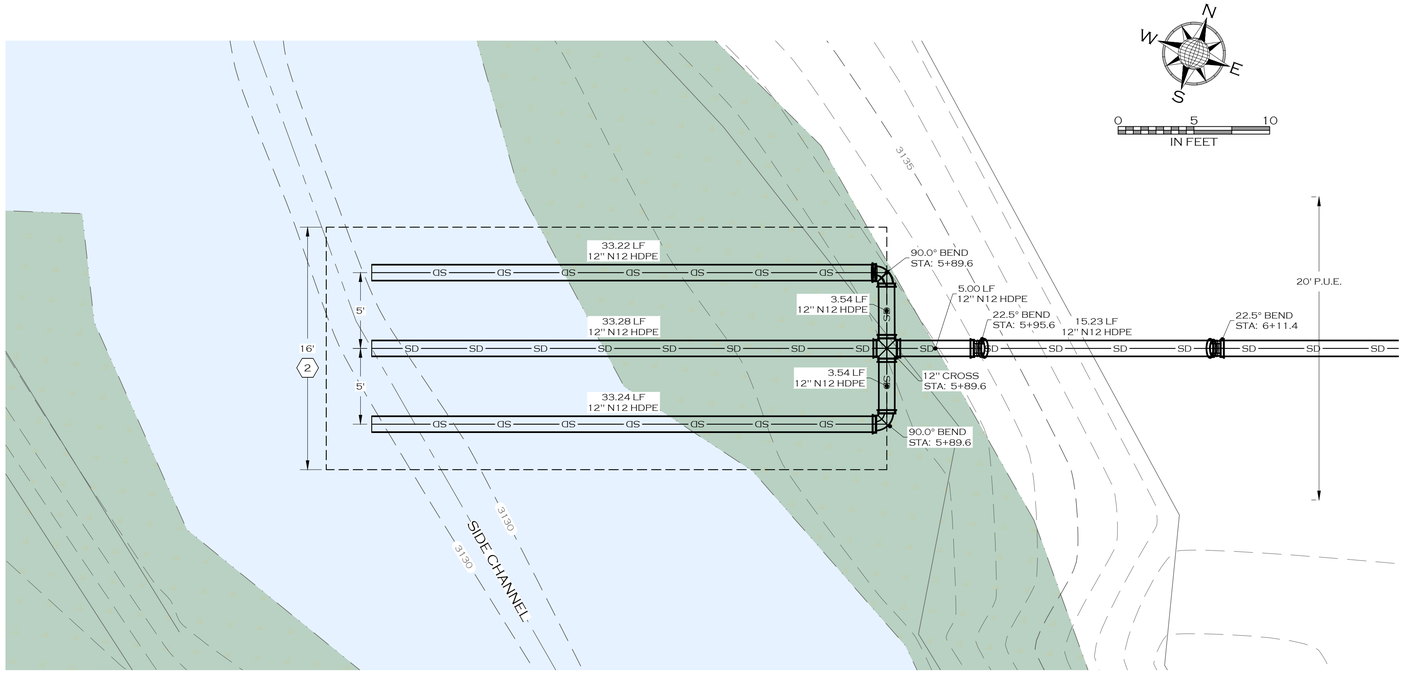
OXBOW RANCH SURFACE WATER DIVERSION
MISSOULA MONTANA

EFFLUENT PIPE PLAN & PROFILE 2

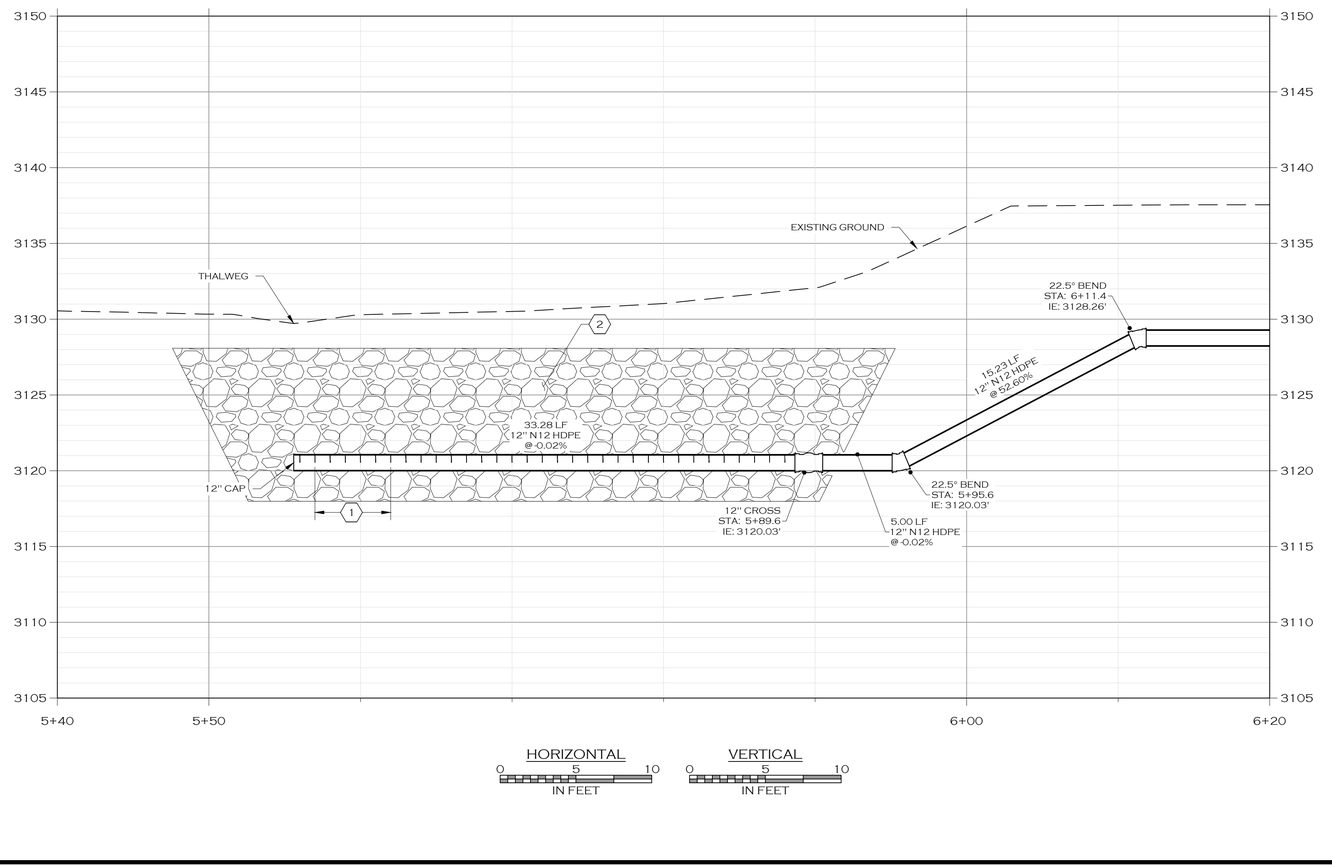
C2.3

EFFLUENT PNP 2.DWG PLOTTED BY:LOGAN JACOBS ON FEB/25/2025



KEY NOTES

1. CUT 1/8" PERFORATIONS INTO INFILTRATION PIPE LATERALS AT X" O/C
2. INFILTRATION MEDIA. USE 3"-8" SUMP ROCK



HORIZONTAL
0 5 10
IN FEET

VERTICAL
0 5 10
IN FEET

JOB #:	21-001
DRAWN:	LGG
DESIGN:	MOH
QA:	SDR
DATE:	02/20/2025

	DESCRIPTION	DATE
4		

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PRELIMINARY - NOT FOR CONSTRUCTION

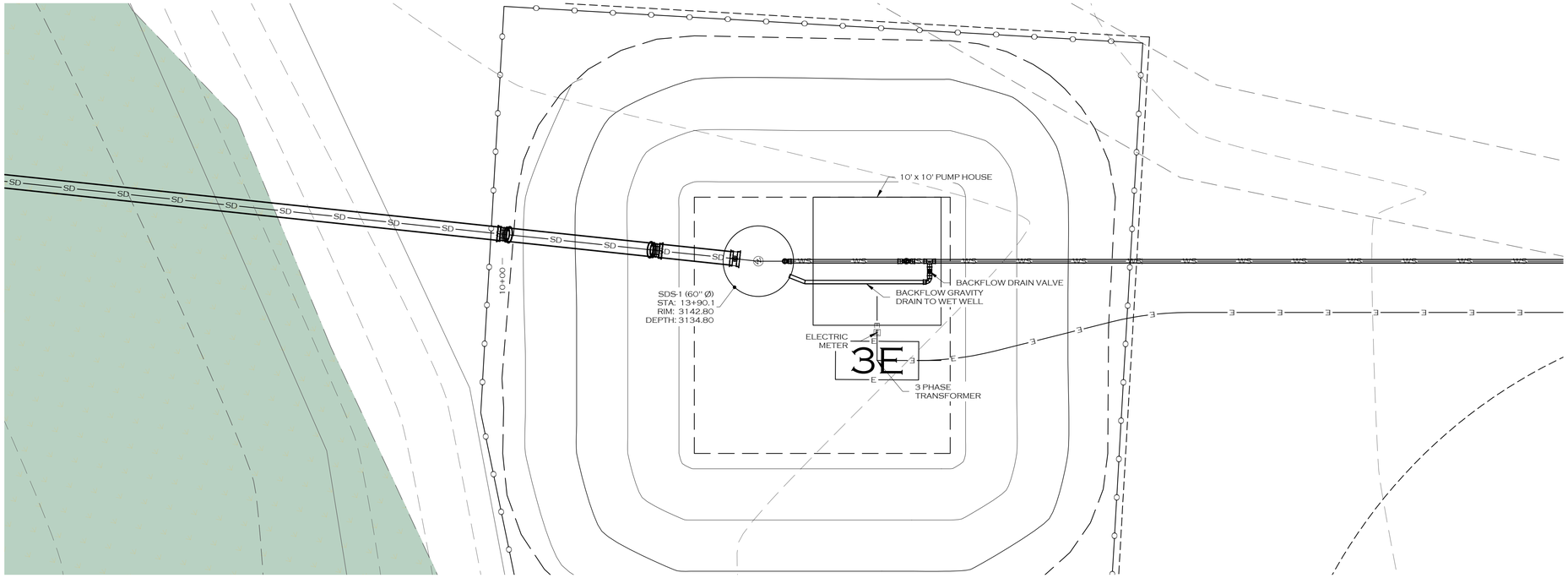
OXBOW RANCH SURFACE WATER DIVERSION

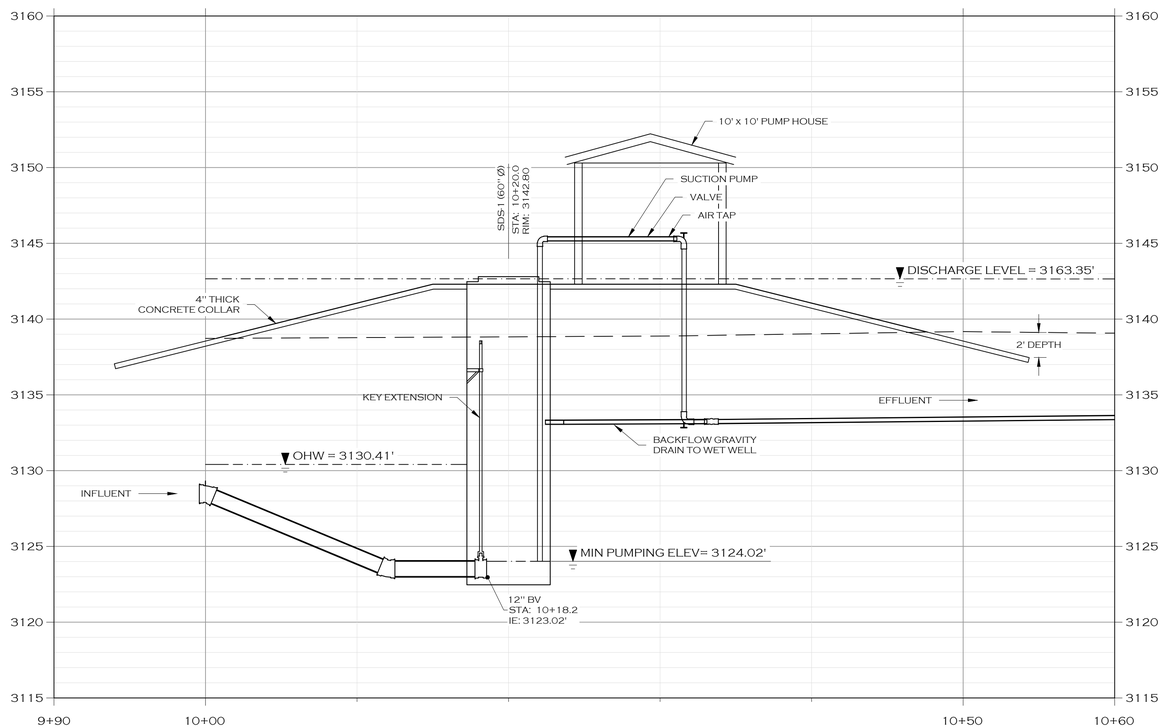
MISSOULA MONTANA

INFILTRATION GALLARY PLAN & PROFILE

C2.4

INFILTRATION GALLARY PNP.DWG PLOTTED BY:LOGAN.JACOBS ON FEB/25/2025





JOB #:	21-001
DRAWN:	LGG
DESIGN:	MOH
QA:	SDR
DATE:	02/20/2025

	DESCRIPTION	DATE

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PRELIMINARY - NOT FOR CONSTRUCTION

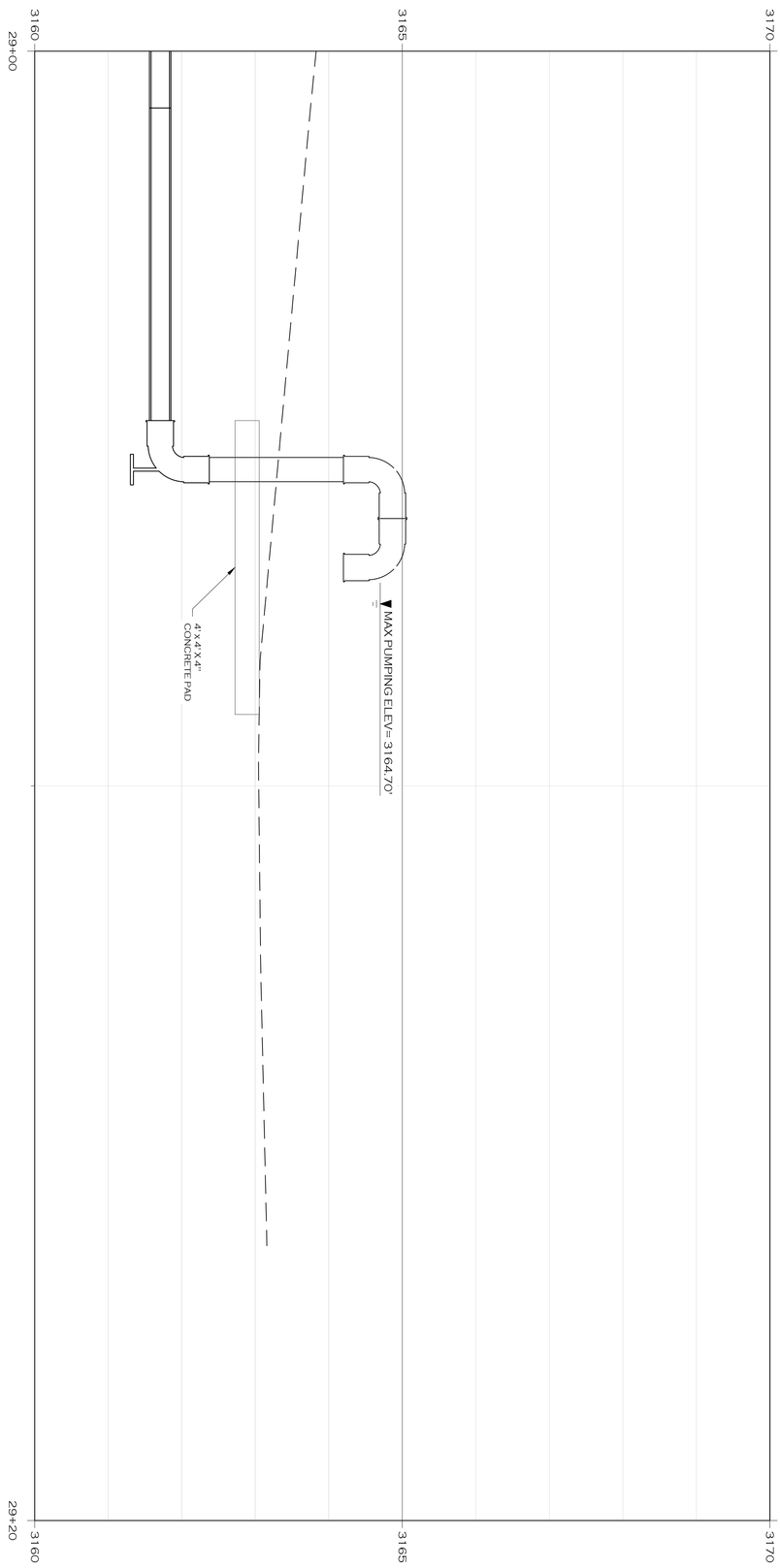
OXBOW RANCH SURFACE WATER DIVERSION

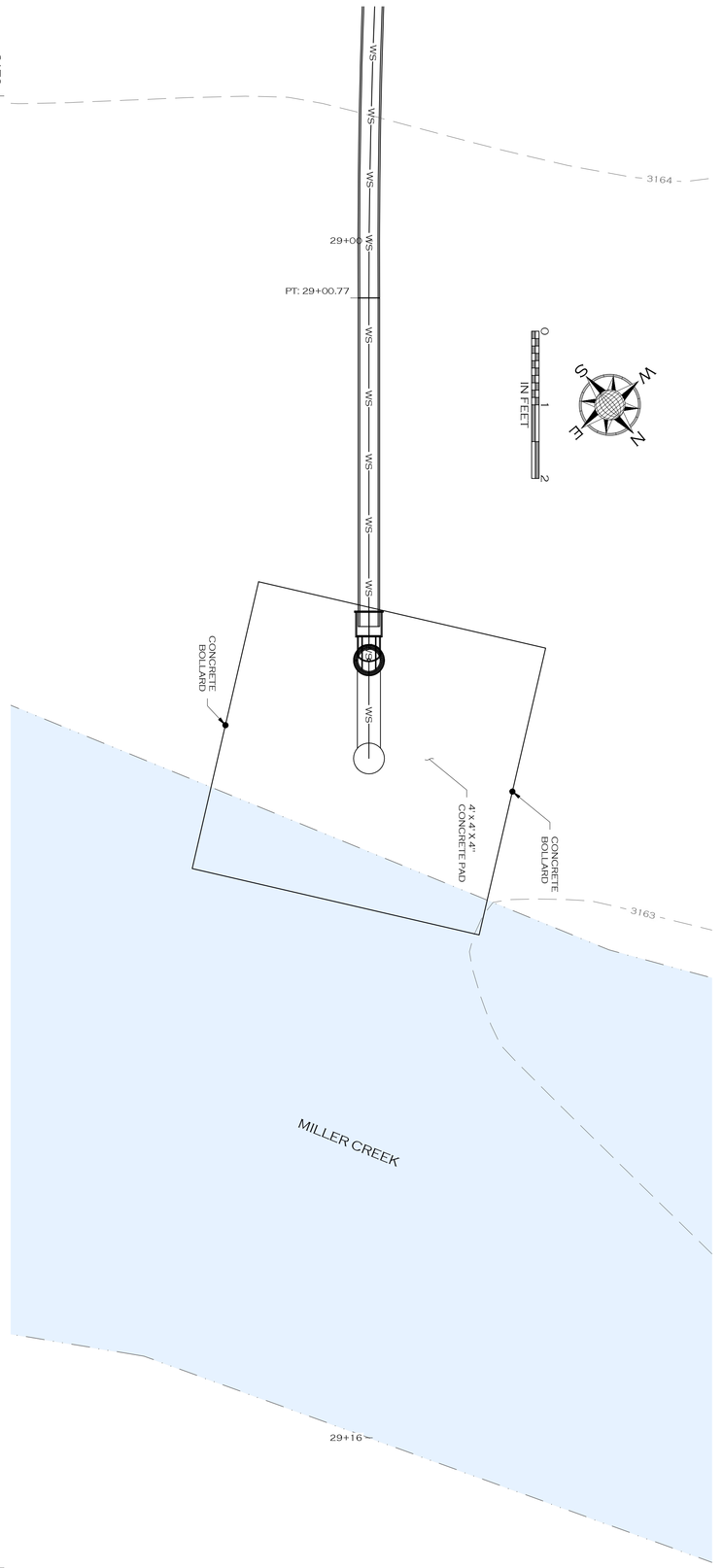
MISSOULA MONTANA

WET WELL PLAN & PROFILE

C2.5

WET WELL PNP.DWG PLOTTED BY: LOGAN JACOBS ON FEB/25/2025





PRELIMINARY - NOT FOR CONSTRUCTION

OXBOW RANCH SURFACE WATER DIVERSION

MISSOULA MONTANA

EFFLUENT OUTFALL

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	DESCRIPTION	DATE

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QA:	SDR
DATE:	10/14/2024

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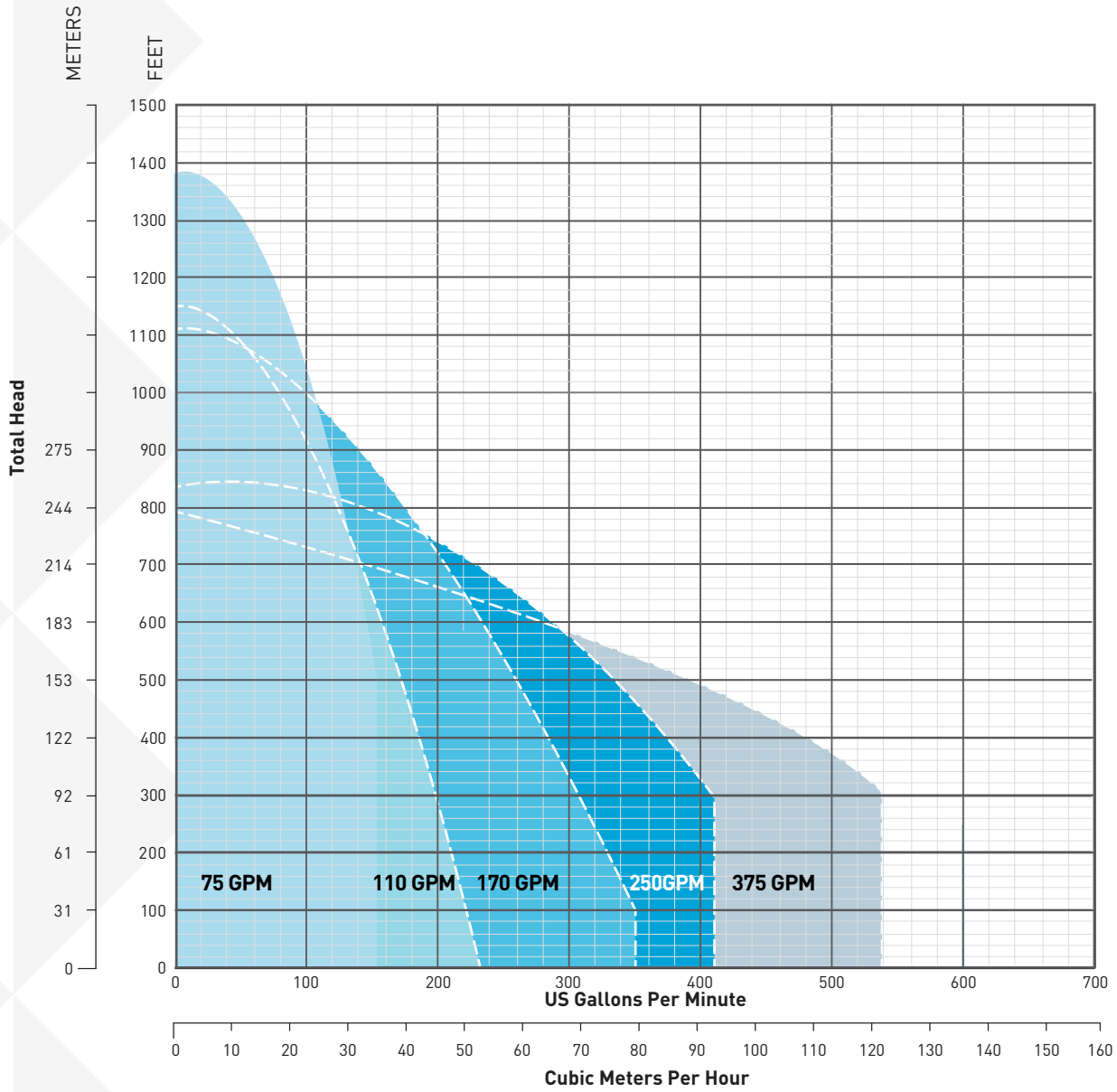
Materials of Construction

Part Name	Material	Reference
shaft, motor coupling	416 stainless steel	AISI 416 stainless steel
bowls	Class 30 cast iron	ASTM Class 30
impeller, suction screen, upthrust nut	304 stainless steel	AISI 304 stainless steel
upthrust screw	Bismuth Tin Bronze	C89835

Part Name	Material	Reference
lead guard	302 stainless steel	AISI 302 stainless steel
motor bracket, discharge	ductile iron	ASTM A536-84 65-45-12
sand boot	Buna-N (nitrile rubber)	
isolator bearings	neoprene	
discharge bearing	Vesconite®	



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Page 1.0
Supersedes 08/01/16

Series Name: 5TMH-375

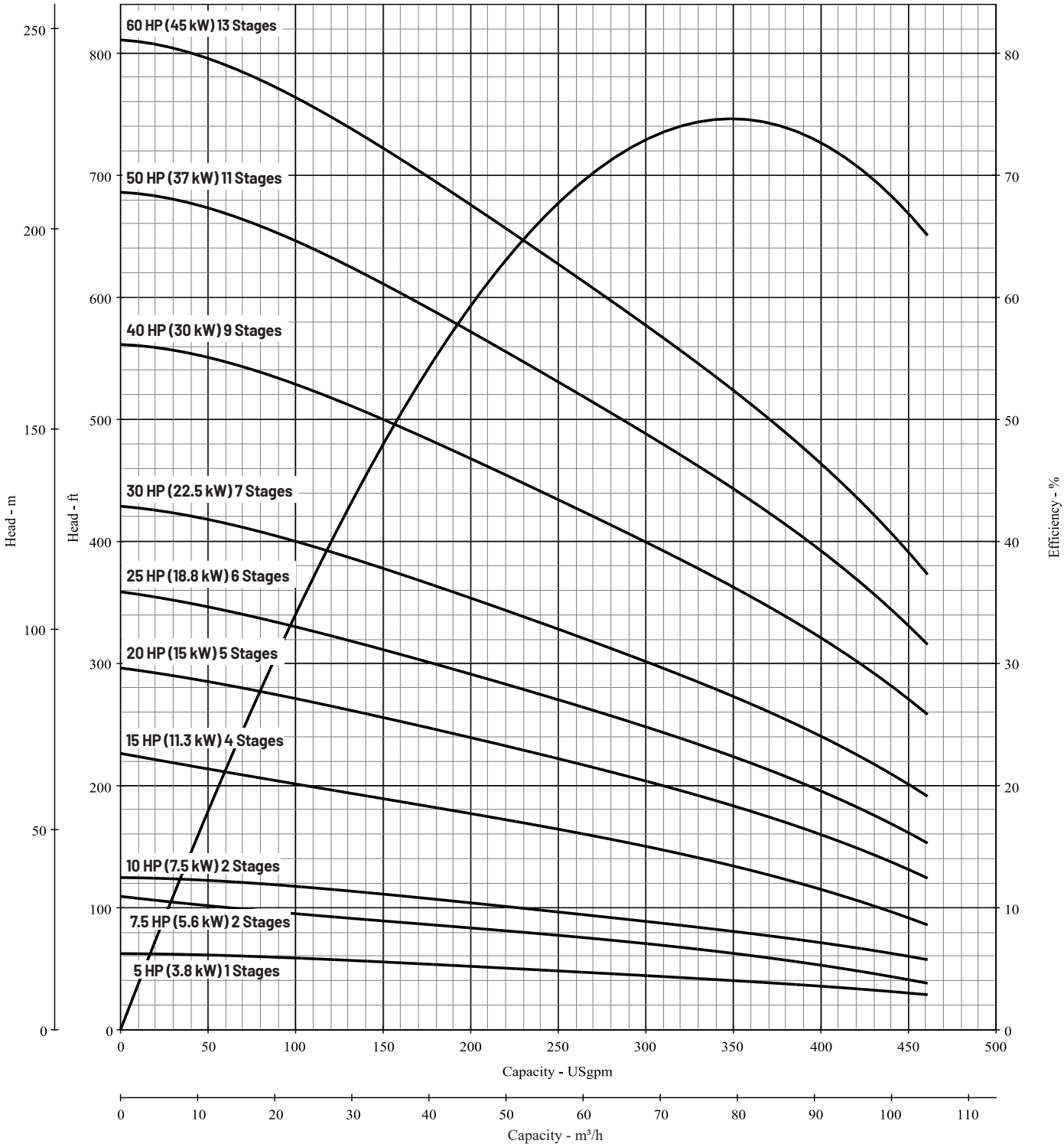
Pump Size: 5TMH-375, Pump Dia. with cable guard 5.625" (143 mm), 4" NPT discharge

Department of Energy Requirements	
PEI_{CL}	0.88
Model	5TMH-375

Available Configurations	
5TMH-375	
Imp. Dia.	4.37 in/111 mm

Curve Conditions	
Nominal RPM	3475 (60 Hz)
Maximum Working Pressure	635 PSI (43.8 BAR)
Based on Fresh Water	68˚F/20˚C

Curves represent standard catalog staging



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Technical Analyses Report/ Scientific Credibility Review

- Departmental Technical Analyses Report/ Scientific Credibility Review
- Any correspondence relating to the Technical Analyses Report

Technical Analyses Report / Scientific Credibility Review

Missoula Water Resources Regional Office
PO Box 5004
2705 Spurgin Road, Bldg. C
Missoula, MT 59806-5004
(406) 721-4284

February 13, 2025

Tollefson Properties, LLC
15311 Tyson Way
Frenchtown, MT 59834-8535

Subject: Completed Technical Analyses Report for Change Preapplication No. 76H 30165219

Dear Applicant,

As designated on the submitted Preapplication Meeting Form per §85-2-302(3)(b), MCA, the Department of Natural Resources and Conservation (DNRC or Department) has completed the technical analyses for Change Preapplication No. 76H 30165219 based on the information provided in your Preapplication Meeting Form accepted by the Department on February 5, 2025. The technical analyses can be found in the attached report. Please note this Change Technical Analyses Report is a two-part publication, comprised of a Part A completed by regional office staff, and a Part B completed by Water Sciences Bureau staff.

This Technical Analyses Report **IS**: A collection of facts that the DNRC has gathered, including content provided in the Preapplication Meeting Form materials. The Department will use these data to analyze the criteria in §85-2-402, MCA if you submit an application for the project described in the completed Preapplication Meeting Form.

This Technical Analyses Report **IS NOT**: An analysis or discussion of whether the Preapplication Meeting Form as filed meets the criteria (§85-2-402, MCA).

You have 180 days to submit the Water Right Change Application Form 606 considering the information provided in the technical analyses and Preapplication Meeting Form. If the Application Form is not submitted to the Missoula Regional Office by August 12, 2025, a new

preapplication meeting will be required to process the Application with expedited timelines (ARM 36.12.1302(6)(b)). If any details described in the submitted Application are changed from that of the submitted Preapplication Meeting Form, the discounted filing fee and expedited timelines will not apply (ARM 36.12.1302(6)(a)). Please note that the technical analyses will expire one year from the date of this letter (ARM 36.12.1302(8)).

Please let me know if you have any questions.

Best,

Benjamin Thomas

Benjamin Thomas
Water Conservation Specialist
New Appropriations Program
Water Resources Division

CC: Dave Baldwin
Hydrosolutions Inc.

Surface Water Change Technical Analyses Report

Department of Natural Resources and Conservation (DNRC or Department)
Water Resources Division
Benjamin Thomas, Water Conservation Specialist, Missoula Regional Office

Application No.	76H 30165219	**Proposed Point of Diversion**	SENWNE Sec. 15 T12N, R20W
Applicant	Tollefson Properties LLC		

Overview

This report analyzes data submitted by the Applicant in support of the above-mentioned water right change application. This report provides technical analyses as required under the Administrative Rules of Montana (ARM) 36.12.1303 in support of the water rights criteria assessment as required in §85-2-402, Montana Code Annotated (MCA). This report was completed by regional office staff.

This Surface Water Change Technical Analyses Report contains the following sections:

1.0 Application Details

The Applicant proposes to change the point of diversion, place of use, and purpose for Statement of Claim 76M 105168-00. The proposed purpose is aquifer recharge for mitigation water for Beneficial Water Use Permit Application No. 76H 30163647. The proposed point of diversion is located in the SENWNE Sec. 15, T12N, R20W, and the proposed place of use is in the Bitterroot River from the southern boundary of the NWNE Sec. 15, T12N, R20W to the confluence of the Clark Fork and Bitterroot Rivers in the NWNW Sec. 27, T13N, R20W. The project is in Missoula County and the source is the Bitterroot River.

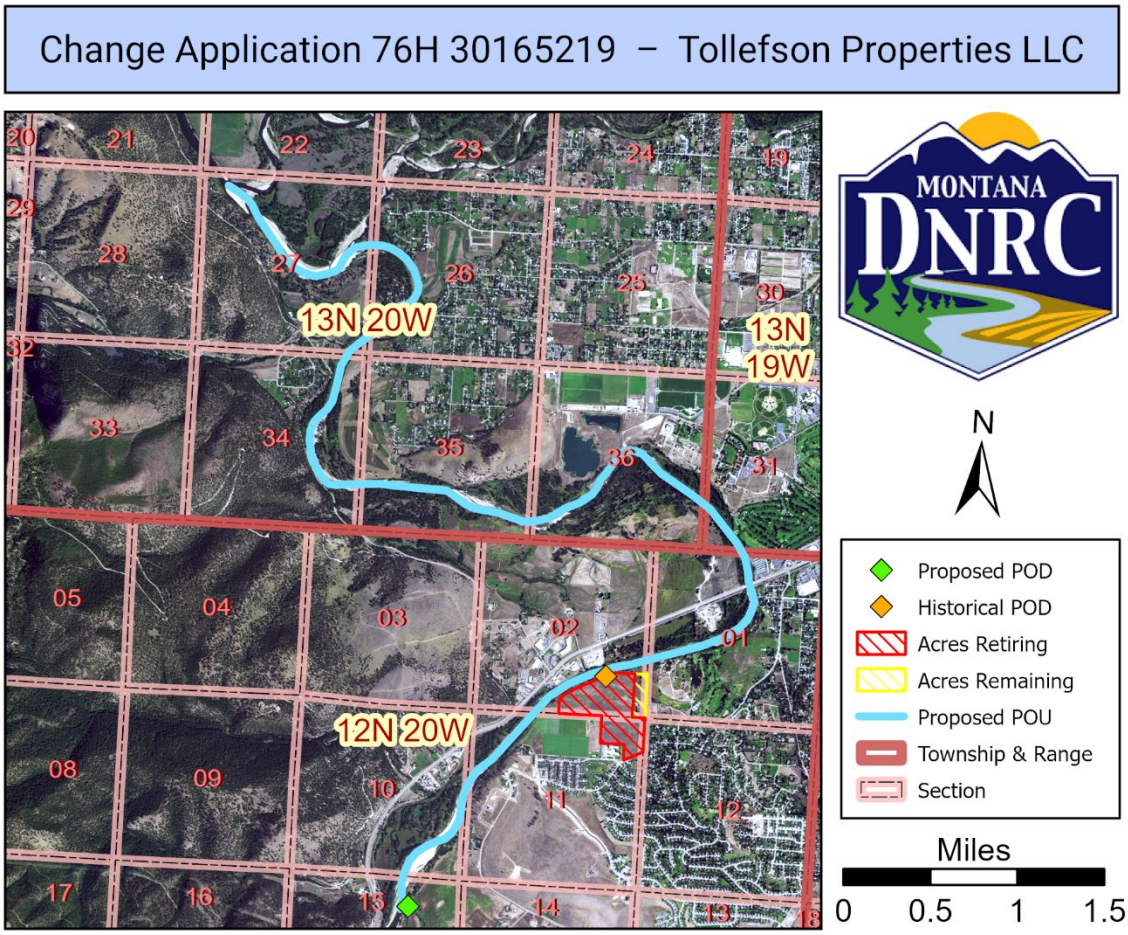

Figure 1: Map of the Applicant's proposed POD on the source and proposed place of use.

2.0 Historical Use Technical Analysis

2.1 Historical Field Consumed and Applied Volumes

The consumed volume for irrigation is based on the net irrigation requirement (NIR) from USDA Natural Resources Conservation Service Irrigation Water Requirements (IWR) at a representative weather station. The NIR is multiplied by a county-wide management factor (from ARM 36.12.1902) to produce an adjusted NIR representative of actual crop yields in Montana. Crop consumption is determined by multiplying the adjusted NIR by the number of acres of irrigation. Crop consumption is then divided by the field efficiency identified from the irrigation method and

ARM 36.12.115. Irrecoverable losses (IL) are 5% of the field applied volume for flood irrigation or 10% for sprinkler irrigation. The total consumed volume for irrigation is the crop consumption plus irrecoverable losses. The total non-consumed volume is the field applied volume minus the total consumed volume.

The historical point of diversion for Statement of Claim 76M 105168-00 is the NWSESE Sec. 2, T12N, R20W. The historical place of use is the S2SE Sec. 2 T12N, R20W, and the NENE Sec. 11, T11N, R20W. Water Resource Survey Aerial Image CNQ-2P-16, Dated August 11, 1955, was used to determine the historically irrigated acres. A total of 92 acres were historically irrigated, 82 of which are owned by the Applicant and proposed for retirement: 55 acres in the S2SE Sec. 2, T12N, R20W and 27 acres in the NENE Sec. 11, T11N, R20W. The historical method of irrigation is sprinkler irrigation.

The historical consumed and field applied volumes have been calculated with the inputs shown in Table 1 following the methods described above and in ARM 36.12.1902.

Table 1: Historical use.

Irrigation Method	Acres	IWR (in)[1]	Mgmt. Factor[2]	Field Efficiency	Crop Consumption (AF)	Field Applied Volume (AF)	Irrecoverable Losses (AF)	Total Consumed Volume (AF)
Sprinkler	82	19.45	70%	70%	92.37	131.96	13.2	105.57

[1]Missoula WSO AP IWR Weather Station
[2]Missoula County Historical Use Management Factor (Pre-July 1, 1973)

2.2 Historical Conveyance Losses

There are no historical conveyance losses considered for the historical use of Statement of Claim 76M 105168-00 because no ditches were used for conveyance.

2.3 Historical Diverted Volume

Per ARM 36.12.1902(10), the historically diverted volume is equal to the sum of the historical field application volume and historical conveyance loss volume. As this water right does not suffer conveyance losses, the historically diverted volume is equal to the field application volume of 131.96 AF.

2.4 Summary of Historical Use

The Department will consider the following values when evaluating the historical use of 76M 105168-00 for the adverse effect criterion:

Table 2: Summary of historical use of Statement of Claim 76M 105168-00

Water Right No.	Historical Purpose	Maximum Historical Acres	Historical Place of Use	Historical Point of Diversion	Maximum Historical Flow Rate	Historically Consumed Volume	Historically Diverted Volume
76M 105168-00	Irrigation (Sprinkler)	82 acres	S2SE Sec. 2 T12N, R20W; NENE Sec. 11, T11N, R20W	NWSESE Sec. 2 T12N, R20W	2.5 CFS	105.57 AF	131.96 AF

3.0 Analysis of Impacted Surface Water Sources

3.1 Summary of Proposed Use

The Applicant proposes to pump 101.1 AF of water from the Bitterroot River into Miller Creek for the purpose of aquifer recharge. A summary of the proposed use of Statement of Claim 76M 105168-00 is shown in Table 3:

Table 3: Proposed use of Statement of Claim 76M 105168-00.

Water Right No.	Proposed Purpose	Proposed Place of Use	Proposed Point of Diversion	Proposed Flow Rate	Proposed Consumptive Volume	Proposed Diverted Volume
76M 105168-00	Aquifer Recharge	The Bitterroot River from NWNE Sec. 15, T12N, R20W to the NWNW Sec. 27, T13N, R20W	SENWNE Sec. 15, T12N, R20W	0.75 CFS	0 AF	101.1 AF

A comparison between the diverted and consumed volumes of the historical and proposed uses can be seen in Table 4, demonstrating that the change would result in a net decrease to consumed and diverted volume.

Table 4: Volumes associated with historical and proposed use.

Purpose	Historically Consumed Volume	Historically Diverted Volume	Proposed Consumptive Volume	Proposed Diverted Volume	Change in Consumptive Volume	Change in Diverted Volume
Irrigation	105.57 AF	131.96 AF	0 AF	101.1 AF	-105.57 AF	-30.86 AF

3.2 Area of Potential Adverse Effect

The Department has considered a potentially impacted reach on the source of supply. This reach was determined by accounting for the location of the proposed and historical point of diversion. This reach extends from the SENWNE Sec. 15 T12N, R20W to the confluence of the Bitterroot and Clark Form Rivers in the NWNW Sec. 27 T13N, R20W. There are 28 water rights within this reach, a list of which can be found in Appendix A.

Review

This document has been reviewed by the Department on February 13, 2025.

References

Department Standard Practice for Determining Historical Use
Department Standard Practice for Analyzing Area of Potential Adverse Effect

Appendix A: Water Rights within the Area of Potential Adverse Effect

Water Right Number	Owner
76H 104521 00	BOGGESS FAMILY TRUST
76H 105168 00	SHAUNA M GINTER; W H GINTER; TOLLEFSON PROPERTIES LLC
76H 111267 00	USA (DEPT OF ARMY CORP OF ENGINEERS)
76H 111268 00	USA (DEPT OF ARMY CORP OF ENGINEERS)
76H 120055 00	USA (DEPT OF INTERIOR BUREAU OF RECLAMATION)
76H 125091 00	BRUCE B BARRETT; HOWARD J HICKINGBOTHAM; SANDRA B HICKINGBOTHAM
76H 131603 00	ETHEL C BRAY; LAUDIE BRAY
76H 149983 00	BRAD A BENIGER; CAROL M BENIGER; MICHAEL A KENNEDY; JON T MCROBERTS; KATRINA MCROBERTS; SHARI F MONTANA
76H 150826 00	ADAM BARTELS; KARIN BARTELS
76H 150956 00	KYMRA ARCHIBALD; MATTHEW ARCHIBALD
76H 151306 00	CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS
76H 151311 00	CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS
76H 151312 00	CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS
76H 151313 00	CONFEDERATED SALISH & KOOTENAI TRIBES; MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS
76H 151394 00	CAPRI FOSEID; REID FOSEID
76H 151743 00	CARTER E BECK; SUSAN M BECK
76H 29206 00	DENNIS GORDON; PAULINE GORDON; DAVID R YUHAS
76H 31299 00	WILLIAM R MACLAY
76H 35713 00	GRAYS MINI RANCH LLC
76H 39791 00	KHOURY INC
76H 43060 00	EARL M PRUYN
76H 45872 00	DORIS W SHERICK
76H 47443 00	SUSAN M WOLF
76H 52092 00	DEBORAH P COLE; ROBERT J COLE
76H 560 00	DEBORAH P COLE; ROBERT J COLE; VICTORIA GORDON
76H 633 00	1905 SUSSEX LLC
76H 6445 00	DEBORAH P COLE; ROBERT J COLE; VICTORIA GORDON
76H 87103 00	WESTERN MONTANA RETRIEVER CLUB INC

Surface Water Change Technical Analyses Report - Part B

Department of Natural Resources and Conservation (DNRC)
Water Resource Division
Melissa Brickl, Groundwater Hydrologist, Water Sciences Bureau

Applicant	Tollefson Properties LLC	**Point of Diversion Legal Land Description**	SENWNE Sec. 15, T12N, R20W
Application No.	76H 30165219		

Overview

This report is Part B of a two-part publication which analyzes data submitted by the Applicant in support of the above-mentioned water right change application. This report provides technical analyses as required under the Administrative Rules of Montana (ARM) 36.12.1303 in support of the water rights criteria assessment as required in §85-2-402, Montana Code Annotated (MCA). For applications in closed basins, this report fulfills the requirements of MCA 85-2-361.

This Surface Water Change Technical Analyses Report – Part B contains the following sections:

1.0 Executive Summary

Water Right Details

The Applicant proposes to add a second point of diversion to Statement of Claim No. 76H 105168-00 and change 337.0 gallons per minute (gpm) and 101.1 acre-feet (AF) of historically consumed flow rate and volume from a purpose of irrigation to aquifer recharge April 1 – October 31. The aquifer recharge would mitigate 99.0 AF of net depletions associated with Permit Application No. 76H 30163647. 82.0 of the 92.0 acres historically irrigated under Statement of Claim No. 76H 105168-00 are owned by the Applicant and would be retired. The remaining 10-acres would continue to be irrigated via the original point of diversion by another owner.

Under the proposed change, water would be pumped from the Bitterroot River at a new (second) point of diversion in the SENWNE Section 15, Township 12 North, Range 20 West, Missoula County and discharged into the natural streambed of Miller Creek. Miller Creek has been shown to be a losing stream, and discharged water would infiltrate into the unconfined aquifer and accrete to the Bitterroot River. Historically diverted non-consumed water associated with the retired 82 acres would be left instream below the historical point of diversion to offset the loss of return flows from the retired acres.

DNRC - WSB Technical Findings

Based on information submitted, the WSB quantified the historical non-consumed volume and location of historical return flows for the rights (s) proposed for change and the proposed aquifer recharge plan. These analyses are in support of the following criteria assessment: adverse effect and beneficial use. A summary of WSB findings described in subsequent sections are listed below.

TECHNICAL ANALYSES FINDINGS

ADVERSE EFFECT (RETURN FLOWS)	The historical non-consumed volume is 26.4 AF and the location of historical return flows as identified in **Figure 2** is to the Bitterroot River downstream of the SESESW, Section 02, Township 12 North, and Range 20 West.
BENEFICIAL USE: AQUIFER RECHARGE PLAN	The monthly accretions to the Bitterroot River because of the proposed aquifer recharge plan is summarized in **Table 4**. Positive values of net effect in **column 7** and **column 8** in **Table 4** correspond to increased stream flows while negative values correspond to reduced flows.

2.0 Methodology

DNRC will analyze the change to determine if:

a. Return flows will enter back into the source where they have historically returned upstream of or at the location of the next downstream appropriator; or,
b. Water is left instream so historically diverted flows are available during the historical period of diversion either below the point of diversion or where return flows historically returned to the source.

If the change in return flows impacts existing water rights, the return flow analysis must include a monthly breakdown of the rate and timing of return flow and evaluate impacts to the identified rights.

Return flows are evaluated by determining the volume of water that infiltrates past the root zone and identifying the likely receiving stream(s). The assumption is made that water applied for irrigation that is not consumed by a crop infiltrates to groundwater becoming return flow and does not run off. The amount of water not consumed is the difference between the amount of water consumed and the amount of water applied to a field. The receiving stream is determined by proximity and evidence of hydraulic connection to groundwater and generally does not depend on groundwater flow direction or land slope (Leake, 2011).

Historical consumed volumes for irrigation are calculated following the procedures described in DNRC consumptive use rules in ARM 36.12.1902. The amount of water consumed at the field is equal to crop consumption plus irrecoverable losses calculated as a percent of applied amounts. The amount of water applied to a field is determined from estimates of application efficiency and crop consumption. The amount of water not consumed is the difference between the amount of water consumed and the amount of water applied to a field.

3.0 Adverse Effect – Return Flow Analysis

3.1. Non-Consumed Volume

The consumed volume for irrigation is based on the net irrigation requirement (NIR) from USDA Natural Resources Conservation Service Irrigation Water Requirements (IWR) at a representative weather station. The NIR is multiplied by a county-wide management factor (from ARM 36.12.1902) to produce an adjusted NIR representative of actual crop yields in Montana. Crop consumption is determined by multiplying the adjusted NIR by the number of acres of irrigation. Crop consumption is then divided by the field efficiency identified from the irrigation method and ARM 36.12.115. Irrecoverable losses (IL) are 5% of the field applied volume for flood irrigation or 10% for sprinkler irrigation. The total consumed volume for irrigation is the crop consumption plus irrecoverable losses. The total non-consumed volume is the field applied volume minus the total consumed volume.

The historical consumed and non-consumed volumes have been calculated with the inputs shown in **Table 1** following the methods described above and in ARM 36.12.1902.

Table 1: Historical use Statement of Claim No. 76H 105168-00.

Irrigation Method	Acres	IWR (in)[1]	Mgmt. Factor[2]	Field Efficiency	Crop Consumption (AF)	Applied Volume (AF)	IL (AF)	Total Consumed Volume (AF)	Non-Consumed Volume (AF)
Wheel line	82.0	19.5	70.0%	70%	92.4	132.0	13.2	105.6	26.4

[1]Missoula WSO AP IWR Weather Station
[2]Missoula County Historical Use Management Factor

Under the proposed change 82.0 acres would be retired and 101.1 AF, which is a portion of the historically consumed volume (105.6 AF) associated with the retired acres, would be changed to a purpose of aquifer recharge. Historically non-consumed water (26.4 AF) associated with the retired 82.0 acres would be left instream below the historical point of diversion to offset the loss of return flows from the retired acres.

3.2 Hydraulically Connected Surface Water(s)

The receiving stream is determined by proximity and evidence of hydraulic connection to ground water. Mounding beneath irrigated fields propagates in all directions independent of ground water flow rate or direction and generally does not depend on surface topography (Leake, 2011). Return flows may accrete to more than one receiving reach or to a different stream than the source water is diverted from. Hydraulic connection of individual stream reaches to ground water is evaluated by comparing streambed elevations to static ground water elevations measured in wells less than 50 ft deep and within 1,000 ft of surface water or from published water table maps (DNRC, 2019). Surface water within that area is considered hydraulically connected to the unconfined aquifer if static ground water elevations are above or within 10 ft of the elevation of the stream bed (DNRC, 2019).

The historical irrigated place of use overlies the Cenozoic Quaternary Basin-fill and Alluvial Aquifer (111ALVM) known as the Bitterroot River Valley Shallow Aquifer. The shallow hydrologic unit is developed in surficial alluvial sediments generally within 80 ft of the land surface. Groundwater in the shallow hydrologic unit is under unconfined, or water table, conditions (Smith, 2006b).

Figure 1 shows shallow wells queried from Montana Bureau of Mines and Geology (MBMG) Groundwater Information Center (GWIC) database including GWIC ID 67056, 67122, 246089, 321908, 321909, 321911, 321912 that are less than 50 feet (ft) deep below ground surface (bgs) and with static water levels (swl) less than or equal to 10 ft below top of casing (btc) indicating a hydraulic connection between the Bitterroot River and shallow alluvial aquifer. Additional information from the Gridded National Soil Survey Geographic Database (SSURGO (NRCS, 2024)) show areas of shallow water tables and hydric conditions within the floodplain of the Bitterroot River. The Bitterroot River is categorized as perennial in the US Geological Survey (USGS) National Hydrography Dataset (NHD).

As shown in **Figure 1**, DNRC identifies the Bitterroot River as the closest perennial surface water body to the historical place of use and the receiving stream for return flows.

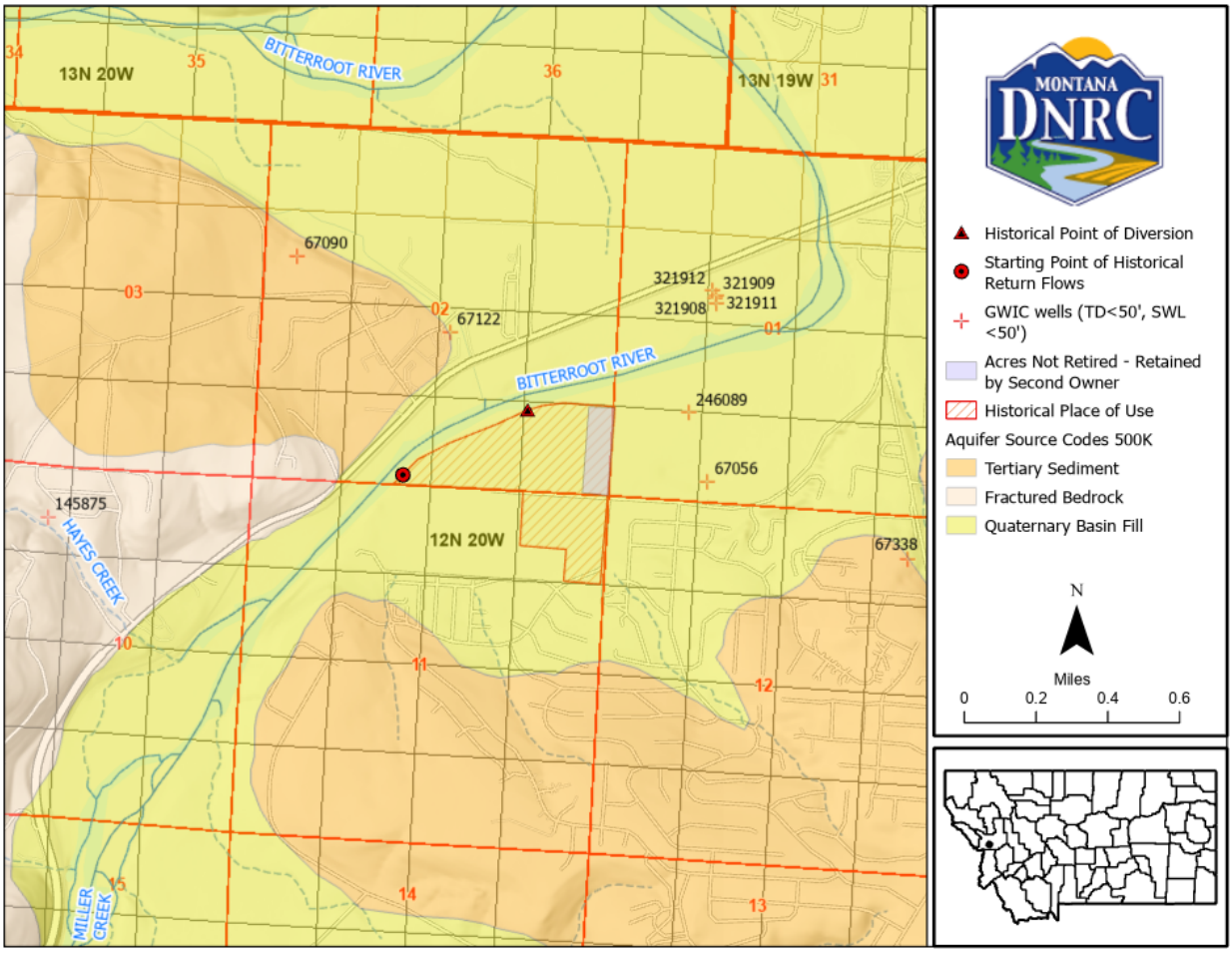

Figure 1: Location of historical place of use, acres retained under the proposed change application by the second owner, and the starting point of return flows on the Bitterroot River.

3.3 Location of Return Flows

The location of return flows from 82.0 acres of historical irrigation is the Bitterroot River downstream of the SESESW, Section 02, Township 12 North, and Range 20 West, Missoula County (**Figure 1**).

Under the proposed change, 82.0 acres of irrigation would be retired. Historically diverted, non-consumed water (26.4 AF) associated with the retired 82.0 acres would be left instream below the historical point of diversion to offset the loss of return flows from the retired acres. As such, the rate and timing of return flows were not calculated.

4.0 Aquifer Recharge Plan Analyses

DNRC will evaluate the proposed aquifer recharge plan by 1.) identifying the aquifer receiving the aquifer recharge 2.) identifying hydraulically connected surface water(s) receiving the aquifer recharge; and 3.) calculating the monthly rate and timing of accretions to affected surface water(s).

4.1 Aquifer Recharge Plan

The Applicant proposes to change 337.0 gpm and 101.1 AF of historically consumed flow rate and volume authorized under Statement of Claim No. 76H 105168-00 from a purpose of irrigation to aquifer recharge. The aquifer recharge would mitigate 99.0 AF of net depletions associated with Permit Application No. 76H 30163647 identified in **Table 2**.

Table 2: Total consumed volume and net depletion to surface water for the proposed well for Permit Application No. 76H 30163647.

Month	Municipal Diverted/Consumed Volume (AF)[1]	Municipal Diverted/Consumed Flow Rate (gpm)	Bitterroot River Net Depletion (AF)	Bitterroot River Net Depletion (gpm)
January	0.0	0	1.3	9.2
February	0.0	0	1.0	7.9
March	0.0	0	0.9	6.9
April	0.0	0	0.8	6.2
May	13.9	101.6	11.8	86.3
June	19.8	149.6	17.2	129.7
July	21.8	159.4	19.5	142.9
August	21.8	159.4	20.0	146.1
September	12.8	96.7	13.0	98.4
October	8.9	65.1	9.7	70.8
November	0.0	0	2.2	16.8
December	0.0	0	1.6	11.6
Total	99.0		99.0	

[1] *Per DNRC (2018) municipal use is considered 100% consumptive.*

The Applicant's plan is to divert water from the Bitterroot River and discharge the water into the natural streambed of Miller Creek. As identified in **Figure 2**, the point of discharge into Miller Creek is just south of the proposed well associated with Permit Application No. 76H 30163647. The Applicant asserts under their aquifer recharge plan that discharged water would return to a shallow (Quaternary-age) aquifer and result in accretions to the Bitterroot River.

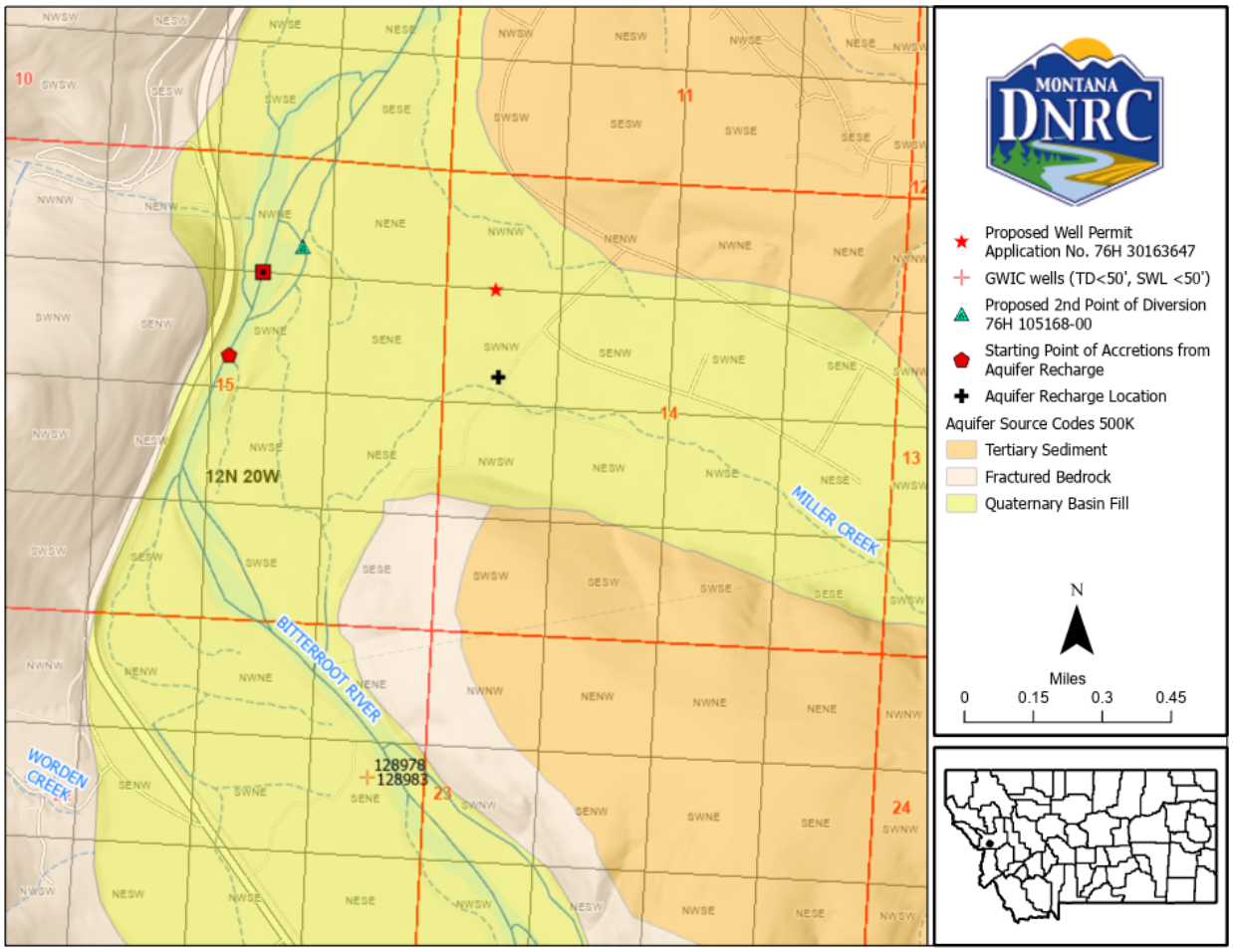

Figure 2: Location of proposed point of diversion on Bitterroot River, point of discharge into Miller Creek, and starting point of accretions to the Bitterroot River.

4.2 Hydrogeologic Setting

Under the Applicants plan, water withdrawn from the Bitterroot River would be discharged into the natural streambed of Miller Creek. Per groundwater data provided for Provisional Permit No. 76H 30063563, Miller Creek is a losing stream. The depth to groundwater measured in wells in the area is 12 to 60 ft bgs near Miller Creek. Miller Creek is also categorized as intermittent according to the USGS NHD (NHD). Discharged water would recharge the underlying Cenozoic Quaternary Basin-fill and Alluvial Aquifer (111ALVM) known as the Bitterroot River Valley Shallow Aquifer.

Quaternary basin-fill deposits (up to 300 ft thick) include older Pleistocene alluvium and lacustrine deposits associated with glaciation, and recent Holocene sand and gravel deposits in the floodplains of the major river valleys. Glaciers deposited till, which is mostly clayey and silty gravel. Bedded silt and clay were deposited in the valleys during stands of Glacial Lake Missoula and form confining layers within the basin-fill deposits. Sand and gravel interbedded with, and overlain by, bedded silt and clay deposits were deposited before glaciation and during flood events

when Glacial Lake Missoula drained. The uppermost sand and gravel deposits in stream valleys are less than 80 ft thick in most areas and represent stream deposition during and after waning phases of glaciation (Smith, 2006, Smith, 2013).

In places, the confining layers hydraulically separate the aquifers; however, in the Bitterroot valley water-level data from different depths suggest that the basin-fill aquifers are well-connected on a valley-wide scale. The basin-fill aquifers are the most utilized sources of municipal and domestic water. The median reported well yields from the basin-fill aquifers are about three times greater than median well yields from bedrock aquifers.

The three hydrogeologic units recognized are: 1) shallow basin fill, 2) deep basin fill, and 3) bedrock. Groundwater in the shallow hydrologic unit is under unconfined, or water table, conditions.

4.3 Hydraulically Connected Surface Water(s)

Shallow wells queried from MBMG GWIC database including GWIC ID 128978, 128983, 67349 south of the proposed aquifer recharge location (**Figure 2**) and GWIC ID 67056, 67122, 246089, 321908, 321909, 321911, 321912 north of the proposed aquifer recharge location near the historical place of use (**Figure 1**) meet the requirements of DNRC (2019) that suggest hydraulic connection of the Bitterroot River to the Quaternary Basin-fill alluvial aquifer.

The point where aquifer recharge will start to accrue to the Bitterroot River is approximately 1,000 ft upstream of the starting point for net depletions associated with Permit Application No. 76H 30163647. **Figure 2** identifies the starting point of accretions which is in the SWSWNE of Section 15, Township 12 North, Range 20 West.

4.4 Rate and Timing of Accretions from Aquifer Recharge

The monthly timings of accretions from the aquifer recharge to the identified receiving reach are modeled using analytical models such as the Alluvial Water Accounting System (AWAS) (AWAS, 2003), the Glover parallel drain model (Glover, 1977), FWD:SOLV (HydroSOLVE, 2024), or a numerical model. The choice of model depends on the availability of data on aquifer properties and the geometry of the receiving aquifer and stream(s). These modeling methods are believed to be suitable for common hydrogeologic settings, are appropriate to the limited data available for most locations, and adequate to provide information to evaluate criteria under §85-2-402, MCA. They may not be suitable in more complex geologic settings or where return flows to multiple streams must be considered.

Inputs to FWD:SOLV (HydroSOLVE, 2024) include specific yield (Sy), transmissivity (T), distance from a recharge well to the receiving reach, distance from other model boundaries to the receiving reach (optional) and a monthly injection schedule. FWD:SOLV (HydroSOLVE, 2024) can model accretions from a single location, represented by a recharge well, to one source with simple aquifer boundaries. The program allows multiple recharge wells to be modeled simultaneously. Assumptions for FWD:SOLV (HydroSOLVE, 2024) using the Theis (1941)/Glover and Balmer (1954) solution for a fully penetrating stream include:

- The aquifer is homogeneous, isotropic, of uniform thickness, of infinite aerial extent, and unconfined without delayed yield

- Flow in the aquifer is unsteady
- The recharge well is fully penetrating
- The well diameter is very small (no well storage)
- Flow to and from the recharge well is horizontal
- The stream is linear
- The stream is fully penetrating
- Head in the stream is constant

Identified in **Figure 3** is a summary of T and hydraulic conductivity (K), values derived from a nearby 24-hour, 72-hour and 24-hour aquifer test completed in 2007 on existing PWS Well's No. 1-3 (GWIC IDs 250507, 250507, 251976), respectively, that are completed in the Quaternary Basin-fill and Alluvial Aquifer. The figure is a clipped image of a summary table taken from the Aquifer Testing Addendum for Provisional Permit No. 76H 30063539. The average T value from the 2007 tests supported the DNRC estimated T value of 150,905 ft^2/day calculated using a 2023 aquifer test associated with Permit Application No. 76H 30163647.

The four wells associated with the 2007 and 2023 aquifer tests are in the same aquifer that would receive aquifer recharge and located 900 ft north of the aquifer recharge location on Miller Creek. Well depths are between 68 - 82 ft bgs. and static water levels between 10.23 - 19.39 ft bgs. Therefore, the calculated aquifer properties for these wells are found to be representative of the receiving aquifer for aquifer recharge. As such, a T value of 150,905 ft^2/day was used to model accretions to the Bitterroot River.

Moench (1994) states that, although an unconfined aquifer test analysis can account for Sy, evaluation of Sy should be done with caution because the very early time data are subject to large error. As such, a Sy of 0.1 (Lohman, 1972) is recommended for use in modeling for this application.

Test	Pumped Well	Duration (mins)	Q (gpm)	Well	Data	Method	T (ft^2/d)	K (ft/d)	S
Constant	PWS-1	1445	1711.8	PWS-3	Drawdown	Neuman	71,278	2,376	------
						Cooper-Jacob	175,539	5,851	0.040
					Recovery	Theis	163,499	5,450	-------
				Dorris	Drawdown	Neuman	217,820	10,891	------
						Cooper-Jacob	131,159	6,558	0.048
					Recovery	Theis	109,379	5,469	-------
				Fox	Drawdown	Neuman	151,680	7,584	------
						Theis (Unconf)	191,741	9,587	0.050
						Cooper-Jacob	223,392	11,170	0.042
					Recovery	Theis	114,600	5,730	-------
Constant	PWS-2	4500	1684	PWS-1	Drawdown	Neuman	123,481	3,742	------
						Cooper-Jacob	167,577	5,078	0.050
					Recovery	Theis	122,114	3,700	-------
				PWS-3	Drawdown	Neuman	76,786	2,560	------
						Cooper-Jacob	167,451	5,582	0.043
					Recovery	Theis	130,725	4,358	------
				Dorris	Drawdown	Neuman	201,742	10087	------
						Theis (Unconf)	186,749	9,337	0.040
						Cooper-Jacob	167,665	8,383	0.047
					Recovery	Theis	103,690	5,185	-------
				Fox	Drawdown	Neuman	102,111	5106	------
						Theis (Unconf)	138,774	6,939	0.065
						Cooper-Jacob	167,043	8,352	0.051
					Recovery	Theis	162,154	8,108	-------
Constant	PWS-3	1482	1165	PW-1	Drawdown	Neuman	187,461	5,681	------
						Theis (Unconf)	170,961	5,181	0.023
						Cooper-Jacob	153,624	4,655	0.046
					Recovery	Theis	141,620	4,292	-------
				Dorris	Drawdown	Neuman	173,292	8,665	------
						Theis (Unconf)	177,813	8,891	0.012
						Cooper-Jacob	160,570	8,029	0.022
					Recovery	Theis	109,678	5,484	-------
						Overall Average:	*151,349*	*7,067*	*0.041*

Figure 3: Summary of Provisional Permit No. 76H 30063593 aquifer test data.

Inputs for the FWD:SOLV (HydroSOLVE, 2024) model for this evaluation include the following inputs:

- Theis (1941)/Glover and Balmer (1954) solution for a fully penetrating stream.
- An injection schedule provided in **Table 3** for 100 years.
- T = 150,905 ft^2/day taken from Permit Application No. 76H 30163647.
- Sy of 0.1 (Lohman, 1972).
- A distance between the point of aquifer recharge to the Bitterroot River identified in **Figure 4** and equal to 3,618 ft.

Table 3: DNRC modeled aquifer recharge schedule.

Month	Aquifer Recharge Injection Schedule (gpm)	Aquifer Recharge Injection Schedule (AF)
January	0.0	0.0
February	0.0	0.0
March	0.0	0.0
April	0.0	0.0
May	106.0	14.5
June	155.0	20.5
July	163.0	22.3
August	163.0	22.3
September	96.0	12.7
October	64.0	8.8
November	0.0	0.0
December	0.0	0.0
TOTAL		**101.1**

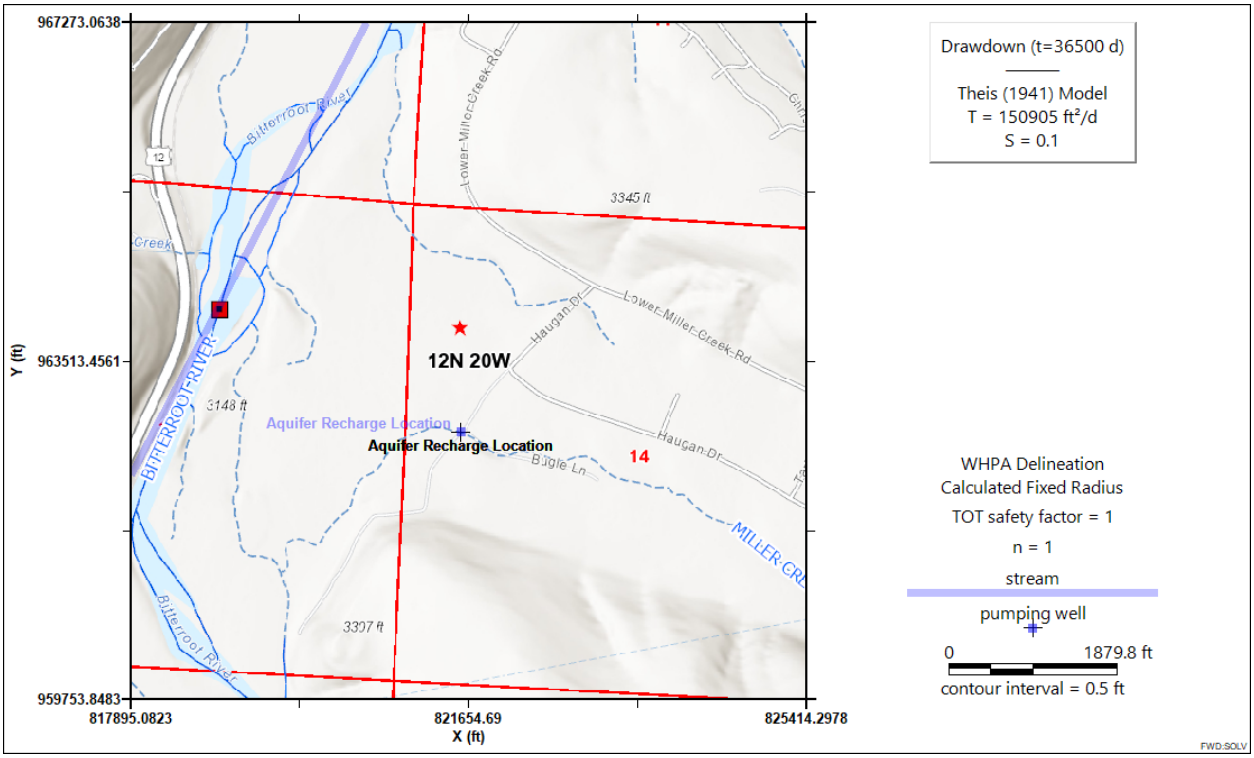

Figure 4: FWD:SOLV map of aquifer recharge location and Bitterroot River.

The monthly accretions to the Bitterroot River because of the Applicant's proposed aquifer recharge plan are summarized below. As identified in **Table 4** positive values of net effect in **column 7** or **column 8** correspond to increased stream flows while negative values correspond to reduced flows. An aquifer recharge volume greater than the net depletion volume was required to meet the monthly net depletion rate because 1.) the distance from the left bank of the Bitterroot

River to the aquifer recharge location is greater than the distance between the river and proposed well associated with Permit Application No. 76H 30163647 and 2.) the same T value and Sy was used to model both net depletions and accretions.

Table 4: Monthly net effect to the Bitterroot River from the proposed aquifer recharge plan

Month	Permit Consumed Volume (AF)	Bitterroot River Net Depletion (AF)	Bitterroot River Net Depletion (gpm)	Aquifer Recharge Accretions Bitterroot River (AF)	Aquifer Recharge Accretions Bitterroot River (gpm)	Net Effect to Bitterroot River (AF)	Net Effect to Bitterroot River (gpm)
January	0.0	1.3	9.2	1.5	11.2	0.2	1.7
February	0.0	1.0	7.9	1.2	9.6	0.2	1.5
March	0.0	0.9	6.9	1.1	8.4	0.2	1.8
April	0.0	0.8	6.2	1.0	7.6	0.2	1.5
May	13.9	11.8	86.3	11.9	86.8	0.1	0.5
June	19.8	17.2	129.7	17.3	130.4	0.1	0.4
July	21.8	19.5	142.9	19.6	143.0	0.1	0.4
August	21.8	20.0	146.1	20.1	146.9	0.1	0.6
September	12.8	13.0	98.4	13.1	98.9	0.1	0.6
October	8.9	9.7	70.8	9.8	71.4	0.1	0.5
November	0.0	2.2	16.8	2.7	20.2	0.5	3.6
December	0.0	1.6	11.6	1.9	14.1	0.3	2.4
Total	**99.0**	**99.0**		**101.1**		**2.1**	

Review

This document has been reviewed on February 6, 2025 in accordance with Category 7 of DNRC's Water Sciences Bureau Minimum Standards of Review, Version 2, February 2024.

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Preapplication Materials

- Preapplication Meeting Request
- Preapplication Meeting Form
- All attachments
- All correspondence prior to application receipt

Preapplication Materials

Missoula Water Resources Regional Office
PO Box 5004
2705 Spurgin Road, Bldg. C
Missoula, MT 59806-5004
(406) 721-4284

February 5, 2025

Tollefson Properties, LLC
15311 Tyson Way
Frenchtown, MT 59834-8535

Subject: Complete Preapplication Form for Change Application No. 76H 30165219

Dear Applicant,

The Missoula Regional Office of the Department of Natural Resources and Conservation (DNRC or Department) received your Preapplication Meeting Form and preapplication meeting fee on January 30, 2025, and the Department deems the submitted Preapplication Meeting Form to be successfully completed per ARM 36.12.1302.

As designated on the submitted Preapplication Meeting Form per §85-2-302(3)(b), MCA, the Department will produce the technical analyses based on the parameters included in the Preapplication Meeting Form (ARM 36.12.1302(4)) within 45 days of January 30, 2025. Please let me know if you have any questions.

Sincerely,

Benjamin Thomas

Benjamin Thomas
Water Conservation Specialist
New Appropriations Program
Water Resources Division

CC: Dave Baldwin
Hydrosolutions Inc

PREAPPLICATION MEETING FORM
CHANGE

§ 85-2-302(3)(b)
Form No. 606P *(Revised 4/2024)*

For Department Use Only

Application # 30165219 Basin 76H
Meeting Date 1/22/2025 Time 3:30 ~~AM~~/PM
Completed Form Deadline 7/21/2025

Completed Form Received _____
Fee Rec'd $ 500 Check # 17009
Deposit Receipt # MSS2508182
Payor Tollefson Construction Inc
Refund $ _____ Date _____

PREAPPLICATION MEETING FEE

$ 500

FILING FEE REDUCTION & EXPEDITED TIMELINE

An application will be eligible for a filing fee reduction and expedited timelines if the applicant completes a preapplication meeting with the Department (ARM 36.12.1302(1)), which includes submitting any follow-up information identified by the Department (ARM 36.12.1302(3)(c)) and receiving either Department-completed technical analyses or Department review of applicant-submitted technical analyses (ARM 36.12.1302(4) and (5)). An application for the proposed project also must be submitted within 180 days of delivery of Department technical analyses or scientific credibility review and no element on the submitted application can be changed from the completed preapplication meeting form (ARM 36.12.1302(6)).

The Department will fill out Form No. 606P and will identify follow-up during the preapplication meeting. The Department and Applicant will sign the Preapplication Meeting Affidavit and Certification within five business days. Within 180 days of the preapplication meeting, the Applicant will complete identified follow-up on a separate document with the question numbers clearly labeled.

Applicant Information: *Add more as necessary.*

Applicant Name TOLLEFSON PROPERTIES LLC
Mailing Address 15311 TYSON WAY City FRENCHTOWN State MT Zip 59834-8535
Phone Numbers: Home _____ Work _____ Cell _____
Email Address _____

Applicant Name _____
Mailing Address _____ City _____ State _____ Zip _____
Phone Numbers: Home _____ Work _____ Cell _____
Email Address _____

Contact/Representative Information: *Add more as necessary.*

Contact/Representative is: ☐ Applicant ☑ Consultant ☐ Attorney ☐ Other (describe) _____
Contact/Representative Name DAVE BALDWIN / HYDROSOLUTIONS INC
Mailing Address 303 CLARKE ST City _____ State MT Zip 59601
Phone Numbers: Home _____ Work _____ Cell 406-431-7760
Email Address dbaldwin@hydrosi.com

NOTE: *If a contact person is identified as an attorney, all communication will be sent only to the attorney unless the attorney provides written instruction to the contrary. If a contact person is identified as a consultant, employee, or lessee, the individual filing the water right form or objection form will receive all correspondence and a copy may be sent to the contact person.*

Meeting Attendees: *Add more as necessary.*

Name	Organization	Position
Jim Nave	DNRC	Missoula Regional Manager
Melissa Brickl	DNRC	Supervisor Hydrologist
Benjamin Thomas	DNRC	Water Conservation Specialist
Dave Baldwin	Hydrosolutions Inc.	Senior Hydrologist
Alex Dalgleish	DNRC	Water Conservation Specialist

Table of Contents

Application Details

The following questions are mandatory and must be filled out before the Preapplication Meeting Form is determined to be complete. Narrative responses that are larger than the space provided can be answered in an attachment. If an attachment is used, mark the see attachment ("A") checkbox on this form and label the attachment with the question number. Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses. Responses in the form of a table may be entered into the table provided on this form or in an attachment. Responses in the form of a table that are larger than the table provided on this form should be placed in an attachment. If an attachment is used, the table must have the exact headings found on this form, and the see attachment ("A") checkbox must be marked. For tables in this form, circle correct unit at header of column when faced with a choice of units. For tables in attachments, label all units. Questions that require Applicant to submit items to the Department have a submitted ("S") checkbox, which is marked when the required item is attached to the Preapplication Meeting Form. Label all submitted items with the question number for which they were submitted. For all questions where follow-up is necessary, mark the "F" checkbox in the "Follow-Up" column and write the question number on the "Follow-Up Page".

Questions, Narrative Responses, and Tables	Check-boxes	Follow-Up
1. Do you elect to have DNRC conduct Technical Analyses?	■ Y ☐ N	☐ F
2. Which water right(s) are proposed for change? Include water right number, currently authorized flow rate (GPM or CFS), and flow rate needed for project (GPM or CFS).	☐ A	☐ F

Water Right Number	Current Flow Rate (GPM or CFS)	Flow Rate Needed for Project (GPM or CFS)
76H 105168-00	2.50 CFS	0.75 CFS
		Higher flow rate than expected normalized rate
		for possible infiltration managemet needs

3. Is the proposed change on a non-filed water project?	☐ Y ■ N	☐ F
a. If yes, please submit a Non-Filed Water Project Addendum (Form 606/634-NFWPA). The project must meet the requirements of the addendum. The addendum is required before the Preapplication Meeting Form is completed.	☐ S	☐ F
4. How many change applications will be needed for this project? Please refer to ARM 36.12.1305 for more information. ONE		☐ F
5. Please submit a historical use map created on an aerial photograph or topographic map that shows the following: section corners, township and range, a north arrow, all historical points of diversion (POD) labeled with a unique POD ID letter, all historical places of use (POU), all historical conveyance structures, all historical places of storage, and historical place of	■ S	☐ F

use for all overlapping water rights. SEE SUPPLEMENT		
6. Please submit a proposed use map created on an aerial photograph or topographic map that shows the following: section corners, township and range, a north arrow, all proposed points of diversion labeled with a unique POD ID number, all proposed places of use, all proposed conveyance structures, all proposed places of storage, and proposed place of use for all overlapping water rights. SEE SUPPLEMENT	■ S	☐ F
7. Identify the water right elements proposed for change, with an "X", for each water right proposed for change.	☐ A	☐ F

Water Right #	76H 105168-00						
Point of diversion	X						
Place of use	X						
Purpose of use	X						
Place of storage							

8. Does the change involve a change in point of diversion? ADDING ADDITIONAL POD BELOW - SEE SUPPLEMENT	■ Y ☐ N	☐ F
a. If yes, describe the proposed location of the new point(s) of diversion to the nearest 10 acres, if source is groundwater (GW) or surface water (SW), source name, and means of diversion (e.g., pump, headgate, well). Label POD ID with the same numbers as the proposed use map (Question 6).	☐ A	☐ F

POD #	**¼**	**¼**	**¼**	**Sec**	**Twp**	**Rge**	**County**	**Lot**	**Block**	**Tract**	**Subdivision**	**Gov Lot**	**GW or SW**	**Source Name**	**Means**
1	SE	NW	NE	15	12N	20W	MISSOULA						SW	BITTERROOT RIVER	PUMP

9. Does the change involve a change in place of use?	■ Y ☐ N	☐ F
a. If yes,		
i. What are the geocodes of the proposed place of use?	☐ A	☐ F

No geocodes for instream description of Bitterroot River	

ii. Describe the legal land description of the proposed place of use and, if the water rights being changed will have an irrigation or lawn and garden purpose, list the number of irrigated acres. SEE SUPPLEMENT	☐ A	☐ F

Acres	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County
	Total SEE SUPPLEMENT							

b. Are you proposing to add a place of use on State of Montana Trust Land?	☐ Y ■ N	☐ F
i. If yes, you must submit an Authorization for Temporary Change in Appropriation Right Consent Form from the DNRC Trust Lands Management Division before the Preapplication Meeting Form is complete. A change authorization to add a POU on Trust Land will be temporary for the duration of the lease term. Answer project-specific questions for temporary changes (question 99 to 105).	☐ S	☐ F
10. Does the proposed change include a change in purpose of use? If yes, answer questions 106 to 109 for change in purpose of use.	■ Y ☐ N	☐ F
11. Do you propose to add or modify one or more place(s) of storage (reservoir or pond) with a storage capacity greater than 0.1 acre-feet? If yes, answer questions 110 to 119.	☐ Y ■ N	☐ F
12. Are conveyance ditches used for historical or proposed uses? If yes, answer ditch-specific questions 120 to 126.	☐ Y ■ N	☐ F
13. Do you have ownership of the entire historical POU for the water right(s) being changed?	☐ Y ■ N	☐ F
a. If no,		
i. List the water right(s) for which you do not own the entire historical POU. SEE SUPPLEMENT		☐ F
ii. Are the water right(s) listed in question 13.a.i severed from the historical POU?	☐ Y ■ N	☐ F
1. If yes, do you own the entirety of the severed water right(s) proposed for change?	☐ Y ☐ N	☐ F

iii. Are you filing on behalf of another entity? If yes, describe. _____	☐ Y ■ N	☐ F
iv. Are all owners of the historical place of use willing to sign the application?	■ Y ☐ N	☐ F
1. If no,		
a. A Form 641 or 642 to split the water right(s) being changed must be received and processed by the Department prior to application submittal	☐ S	☐ F
b. Describe how the water right(s) will be split, and which part of the split water right(s) will be proposed for change. _____ _____	☐ A	☐ F
14. Is the proposed use temporary? If yes, answer questions 99 to 105 for temporary changes.	☐ Y ■ N	☐ F
15. Is the application to change the purpose of use or place of use of an appropriation of 4,000 or more acre-feet (AF) of water a year and 5.5 or more cubic feet per second (CFS)? If yes, you must submit a Reasonable Use Addendum (Form 606-B) with the application. The reasonable use criteria are found in §85-2-402(4-5), MCA.	☐ Y ■ N	☐ F
16. Will you be transporting water for use outside of Montana? If yes, you will need submit an Out-of-State Use Addendum (Form 600/606- OSA) with the application. The out-of-state use criteria are outlined in §85-2-402(6), MCA.	☐ Y ■ N	☐ F
17. Is the project located in designated sage grouse habitat? If yes, you must have a consultation with and review of your project by the Montana Sage Grouse Habitat Conservation Program. The review letter will be required at application submittal.	☐ Y ■ N	☐ F
18. Does the application include the water marketing purpose? If yes, answer questions 127 to 134 for water marketing. A Water Marketing Purpose Addendum (Form 600/606-WMA) will be required with application submittal.	☐ Y ■ N	☐ F
19. Does the proposed purpose include instream flow? If yes, answer questions 135 to 145 for Instream Flow Changes. A Change to Instream Flow Addendum (Form 606-IFA) will be required with application submittal.	☐ Y ■ N	☐ F
20. Will the proposed use include salvage water? If yes, answer questions 146 to 150 for Salvage Water.	☐ Y ■ N	☐ F

Historical Use

The following questions are mandatory and must be filled out for both Surface Water and Groundwater Applications before the Preapplication Meeting Form is determined to be complete.

Questions, Narrative Responses, and Tables	Check-boxes	Follow-Up
21. What type of water right(s) are proposed for change? Answer question 22 for each Statement of Claim, 23 for each Provisional Permit, and 24 for other types of water rights. Only Statement of Claim 76H 105168-00 is being changed.	☐ A	☐ F
22. In the table below, write the water right number for each Statement of Claim proposed for change in the "Statement of Claim" column. If there is one or more previous change authorizations, write the application numbers for the change authorizations in the "Previous Change Authorization" column and if there are no previous change authorizations, write "none" instead. Write the date of the Project Completion Notice for each previous change authorization in the "Project Completion Notice" column and if the previous change authorization does not have a Project Completion Notice, write "none" instead. In the "Previous Historical Use Analysis" column, write "full" or "partial" if a historical use analysis was conducted for the previous change authorization, and "none" if no previous historical use analysis was conducted. In the "Use Historical Use Analysis for Current Application" column, write "yes" if the previous historical use analysis will be used for the current application and "no" if a new historical use analysis will be conducted.	☐ A	☒ F

Statement of Claim	Previous Change Authorization	Project Completion Notice	Previous Historical Use Analysis	Use Historical Use Analysis for Current Application
76H 105168-00	YES - 76H 30150414 (PENDING)	NONE	YES	YES

23. In the table below, write the water right number for each Provisional Permit proposed for change in the "Provisional Permit" column. If a Project Completion Notice has been submitted, write the date in the "Project Completion Notice" column, and if no Project Completion Notice has been submitted, write "none" instead. For each Provisional Permit proposed for change, if there are one or more previous change authorizations, write the application number for the change authorizations in the "Previous Change Authorization" column. If there are no previous change authorizations, write "none" in the "Previous Change Authorization" column and "NA" in all the remaining columns. Write the date of the Project	☐ A	☐ F

Completion Notice for each previous change authorization in the "Previous Change Project Completion Notice" column and if the previous change authorization does not have a Project Completion Notice, write "none" instead. In the "Previous Change Historical Use Analysis" column, write "full" or "partial" if a historical use analysis was conducted for the previous change authorization, and "none" if no previous historical use analysis was conducted. In the "Use Historical Use Analysis for Current Application" column, write "yes" if the previous historical use analysis will be used for the current application, "no" if a new historical use analysis will be conducted.

Provisional Permit	Project Completion Notice	Previous Change Authorization	Previous Change Project Completion Notice	Previous Change Historical Use Analysis	Use Historical Use Analysis for Current Application

24. In the table below, write the water right number for each water right with another type proposed for change, the type of water right, and the date of issuance.

☐ A ☐ F

Other Water Right Type Number	Other Water Right Type Description	Date of Issuance

25. Are there previous Montana Water Court approved stipulations, Water Master reports, or prior Montana Water Court or Department decisions related to the water right(s) being changed?

■ Y ☐ N ☐ F

a. If yes, explain.

SEE SUPPLEMENT

☐ A ☐ F

26. Fill in the table below based on ARM 36.12.1902(1) and the information provided in questions 21 to 25. In column "Water Right Number" list all water rights proposed for change. Select one of the three options from column "Historical Use Analysis Options" and fill in the "Information Required for Historical Use" associated with that option. Select "Full Historical Use Analysis NA" only if an unperfected Provisional Permit will be used to serve as historical use in lieu of analysis. If the "Existing Historical Use Analysis" or "Full Historical Use Analysis NA" option is selected, skip to question 42 because this section is complete.	☐ A	■ F

Water Right No. Proposed for Change	**Historical Use Analysis Option and Information Required for Historical Use**
76H 105168-00	■ New Historical Use Analysis. Date for new Historical Use Analysis: Prior to July 1, 1973
	■ Existing Historical Use Analysis. Change authorization number with existing Historical Use Analysis: 76H 30150414 (PENDING)
	☐ Full Historical Use Analysis NA. Water right number serving as historical use in lieu of analysis: _____
	☐ New Historical Use Analysis. Date for new Historical Use Analysis: _____
	☐ Existing Historical Use Analysis. Change authorization number with existing Historical Use Analysis: _____
	☐ Full Historical Use Analysis NA. Water right number serving as historical use in lieu of analysis: _____
	☐ New Historical Use Analysis. Date for new Historical Use Analysis: _____
	☐ Existing Historical Use Analysis. Change authorization number with existing Historical Use Analysis: _____
	☐ Full Historical Use Analysis NA. Water right number serving as historical use in lieu of analysis: _____

	☐ New Historical Use Analysis. Date for new Historical Use Analysis: ______
	☐ Existing Historical Use Analysis. Change authorization number with existing Historical Use Analysis: ______
	☐ Full Historical Use Analysis NA. Water right number serving as historical use in lieu of analysis: ______
	☐ New Historical Use Analysis. Date for new Historical Use Analysis: ______
	☐ Existing Historical Use Analysis. Change authorization number with existing Historical Use Analysis: ______
	☐ Full Historical Use Analysis NA. Water right number serving as historical use in lieu of analysis: ______
	☐ New Historical Use Analysis. Date for new Historical Use Analysis: ______
	☐ Existing Historical Use Analysis. Change authorization number with existing Historical Use Analysis: ______
	☐ Full Historical Use Analysis NA. Water right number serving as historical use in lieu of analysis: ______

27. Do you have actual knowledge of historical use?	■ Y ☐ N	☐ F
a. If yes,		
i. Is this firsthand knowledge?	☐ Y ■ N	☐ F
ii. Who has this knowledge and what was their role? SEE SUPPLEMENT	☐ A	☐ F

b. If no,		
i. Where will the historical use data be derived? _____ _____	☐ A	☐ F

Historical Use: Place of Use

28. The historical use map provided for question 5 must clearly identify the entire place of use for each overlapping water right that intersects the historical place of use. Does your historical use map meet this requirement?	■ Y ☐ N	■ F
29. Are you proposing to change all water right(s) associated with the historical place of use? SEE SUPPLEMENT	☐ Y ■ N	☐ F
a. If no, identify the water right(s) associated with the historical place of use that are not included in this application. Provide the priority date for each water right and explain why all overlapping water rights are not included in the application. Include water received via contract from a company, district, or water users' association.	☐ A	☐ F

Water Right No.	Priority Date	Reason Not Included in Change

30. Answer the questions below related to the historical purpose for each of the water right(s) being changed.		
a. Irrigation		
i. Is the water right being changed a Statement of Claim?	■ Y ☐ N	☐ F
1. If yes,		
a. Does the Water Resources Survey corroborate the acres irrigated listed on the abstract?	☐ Y ■ N	☐ F
SEE SUPPLEMENT i. If no, provide aerial photograph(s) that can corroborate the historical place of use.	■ S	☐ F
b. Does the legal land description from the abstract match the actual location of the historical place of use?	■ Y ☐ N	☐ F
i. If no, provide documentation of a written request submitted to the Water Court for amendment of the Claim as well as information to substantiate the requested amendment.	☐ S	☐ F

2. If no, provide one or more aerial photographs that can corroborate the historical place of use.	☐ S	☐ F
b. Lawn and garden		
i. Provide aerial photographs that can corroborate the historical place of use.	☐ S	☐ F
c. Stock		
i. Provide aerial photographs, grazing records, or other records to corroborate the historical place of use.	☐ S	☐ F
ii. Did the stock drink direct from source or direct from ditch?	☐ Y ☐ N	☐ F
1. If no, provide data sources that make clear the location of the stock watering infrastructure.	☐ S	☐ F
d. Multiple domestic, domestic, municipal, mining, commercial, and other purposes		
i. Provide aerial photographs, deeds, other recorded documents or records, affidavits, or other published documents, such as magazine articles, to corroborate the historical place of use.	☐ S	☐ F

Historical Use: Point of Diversion

31. For all historical point(s) of diversion, identify the means, location (¼ ¼ ¼ section), and if they are proposed for change. Label using the same POD ID letter as for the Historical Use Map (question 5).	☐ A	☐ F

POD ID	Means	Location (¼ ¼ ¼ Section)	Proposed for Change?
1	PUMP	NWSESE Section 2, T12N-R20W	NO

32. Does the legal land description from the abstract match the actual location of the historical point(s) of diversion?	■ Y ☐ N	☐ F
a. If no, do you have aerial photograph(s) that clearly show the location of the historical point(s) of diversion?	☐ Y ☐ N	☐ F
i. If yes,		
1. Provide the photograph(s).	☐ S	☐ F
2. Provide an explanation for the discrepancy and, if a Statement of Claim, provide documentation of a written request submitted to the Water Court for amendment of the Claim.	☐ S	☐ F
33. Answer questions below related to the diversion means for each of the historical point(s) of diversion.		
a. Headgate		
i. For each headgate, provide dimensions in feet (FT), slope of the channel at the headgate (%), material of the headgate, estimated historical capacity in gallons per minute (GPM) or CFS and the method used to estimate historical capacity. Label using the same POD ID letter as for the Historical Use Map (question 5).	☐ A	☐ F

POD ID	Dimensions (FT)	Slope (%)	Material	Estimated Capacity (GPM or CFS)	Method

b. Pump, dike, dam, or other surface water point of diversion		
i. For each pump, dike, dam, or other surface water point of diversion, provide an estimate of the historical capacity (GPM or CFS) and the method used to estimate the historical capacity. Label using the same POD ID letter as for the Historical Use Map (question 5).	☐ A	☐ F

POD ID	Estimated Capacity (GPM or CFS)	Method
1	2.4 CFS	See Supplement for additional information.

c. Well, pit, or other groundwater point of diversion		
i. For each well, pit, or other groundwater point of diversion, provide an estimate of the historical capacity (GPM or CFS) and the method used to estimate the historical capacity. Label using the same POD ID letter as for the Historical Use Map (question 5).	☐ A	☐ F

POD ID	Estimated Capacity (GPM or CFS)	Method

34. Do other water rights share the point(s) of diversion?	☐ Y ■ N	☐ F
a. If yes, list the water rights, their flow rates (GPM or CFS), and the nature of the relationship. Label using the same POD ID letter as for the Historical Use Map (question 5).	☐ A	☐ F

POD ID	Water Right No.	Flow (GPM or CFS)	Relationship

Historical Use: Period of Diversion

35. Are the period of diversion and the period of use the same?	■ Y ☐ N	☐ F
a. If no,		
i. Why are they different? _____ _____	☐ A	☐ F
ii. Is there a place of storage?	☐ Y ☐ N	☐ F
36. When was water diverted for the purpose(s) of the water right(s) being changed? See Supplement	☐ A	☐ F

Start Date (Month (MM)/Day (DD))	End Date (MM/DD)
04/01	10/31

37. Does the Department have a standard, found in ARM 36.12.112, for the period of diversion for the purposes for which water is used?	■ Y ☐ N	☐ F
a. If yes, does the period of diversion fall within Department standards?	■ Y ☐ N	☐ F
b. If no or if the period of diversion falls outside Department standards, explain how the period of diversion is reasonable for the purpose. _____ _____ _____ _____	☐ A	☐ F
38. If the water right(s) being changed have an irrigation purpose, answer the following questions.		
a. What were the crop(s) grown? Alfalfa _____		☐ F

i. If the crop(s) grown include hay, how many cuttings were there per season and how many days did they last? 1 cutting/year,120 average irrigation days w/ cutting at end of August. 160 maximum irrigation days		☐ F
b. Did diversions ever temporarily cease within the period of use? This may include water shortages or calls based on priority date.	☐ Y ■ N	☐ F
i. If yes, please explain. _____ _____ _____	☐ A	☐ F

Historical Use: Historical Diverted Volume

39. Answer the questions below related to the historical purposes of the water rights being changed.		
a. Irrigation		
i. Do you want ARM 36.12.1902(11) to be used to calculate historical diverted volume?	■ Y ☐ N	☐ F
1. If no, provide a Historical Water Use Addendum (Form 606-HUA). Form 606-HUA must be submitted to the Department before the Preapplication Meeting Form is completed.	☐ S	☐ F
b. Non-irrigation		
i. How often was water historically diverted? _____		☐ F
ii. What was the duration of each historical diversion? _____		☐ F
iii. Was wastewater historically discharged? If yes, what amount was discharged? _____	☐ Y ☐ N	☐ F
iv. What is the volume of water historically diverted (AF)? _____		☐ F
v. How did you determine the volume of water historically diverted? _____ _____ _____	☐ A	☐ F
vi. Did the historical diverted volume serve more than one purpose of use?	☐ Y ☐ N	☐ F

1. If yes, how much of the diverted volume served each purpose of use and how did you determine this? _____ _____ _____ _____	☐ A	☐ F

Historical Use: Historical Consumed Volume

40. Answer the questions below related to the historical purpose of the water rights being changed.		
a. Irrigation		
i. Will you use Department standards for historical consumptive use as defined in ARM 36.12.1902?	■ Y ☐ N	☐ F
1. If no,		
a. What method will you use to determine historical consumptive use? _____ _____	☐ A	☐ F
b. Provide a Historical Water Use Addendum (Form 606-HUA) to the Department. Form 606-HUA must be submitted to the Department before the Preapplication Meeting Form is completed.	☐ S	☐ F
2. If yes,		
a. What is the historical irrigation method type and subtype? Irrigation method types include flood and sprinkler. Flood irrigation subtypes include level border, graded border, furrow, contour ditch, or wild flood. Sprinkler subtypes include wheel line and center pivot. Sprinkler, wheel line _____	☐ A	☐ F
b. What was the slope of the historical place of use? minimum slope, thus the sprinkler irrigation method		☐ F
c. Are there any factors beyond irrigation method type/subtype and place of use slope that may influence percent efficiency of irrigation?	☐ Y ■ N	☐ F
i. If yes, provide evidence to support the modified percent efficiency of irrigation in the Historical Water Use Addendum (Form 606-HUA). These factors may include infrastructure age, soil characteristics, or field improvements. Form 606-HUA must be submitted to the Department before the Preapplication Meeting Form is	☐ S	☐ F

completed.		
d. Based on answers to the above questions, what is the percent efficiency of irrigation? 70%		☐ F
e. What is the County Management Factor? 69.5%		☐ F
f. What is evapotranspiration (ET) based on the irrigation method and county? 19.45 in (Msla WSO Ap)		☐ F
g. What percent of applied water are irrecoverable losses per ARM 36.12.1902(17)? 10%		☐ F
h. Do other water rights supplement or overlap the historical place of use that contribute to the irrigation water demand?	☐ Y ■ N	☐ F
i. If yes,		
1. How were the water rights operated to serve the irrigation purpose? Note: City of Msla municipal rights overlap, but have never been historically plumbed to the POU and were never used at the POU.	☐ A	☐ F
2. For each supplemental or overlapping water right, please list the average period of diversion and use (MM/DD-MM/DD), flow rate (GPM or CFS), and the volume of water (AF) contributed to the total irrigation water demand.	☐ A	☐ F

Water Right No.	Avg. Period of Diversion (MM/DD-MM/DD)	Avg. Period of Use (MM/DD-MM/DD)	Flow Rate (GPM or CFS)	Volume Contributed (AF)

b. Lawn and garden		
i. Will you use the Department standards for historical consumptive use volume for lawn and garden? Department standards include 2.5 acre-feet per acre, or a calculated volume based on Irrigation Water Requirements for turf grass.	☐ Y ☐ N	☐ F
1. If yes, which standard? _____		☐ F
2. If no, please provide an estimate of historical water use based on expert analysis and methods used to determine this estimate. _____ _____	☐ A	☐ F
c. Stock		
i. Which volume standard for animal units applies to historical use and why? The standards are either 15 or 30 gallons per animal unit per day. _____		☐ F
ii. How many animal units were historically served? _____		☐ F
iii. Did these animal units rely entirely on the water right(s) proposed for change for their full water demand?	☐ Y ☐ N	☐ F
1. If no, explain. _____ _____	☐ A	☐ F
d. Domestic and multiple domestic		
i. How many households were served? _____		☐ F
ii. Will the Department standard of 1 acre-foot per household be used? The same standard shall be applied to historical and proposed uses.	☐ Y ☐ N	☐ F
1. If no, what standard will be used? _____		☐ F
iii. Did the historical use include wastewater disposal and treatment?	☐ Y ☐ N	☐ F

1. If yes, which of the following best describes the wastewater disposal and treatment system? Individual drain fields, central treatment facility with minimal consumption, or evaporation basin or land application? _____	☐ A	☐ F
e. Municipal		
i. What is the volume of water (AF) historically consumed for municipal purposes? _____		☐ F
ii. Provide evidence to support historical municipal use such as commercial, lawn and garden, and/or multiple domestic uses. The data sources may include records that tie water use to the U.S Census, estimates of historical system capacity and estimates of leakage.	☐ S	☐ F
f. Other		
i. What is the volume of water (AF) historically consumed for other purposes? _____		☐ F
ii. Please submit to the Department evidence to support the volume of water historically consumed.	☐ S	☐ F

Historical Use: Historical Places of Storage

41. Did the historical use include one or more place(s) of storage, which may include reservoirs, ponds, and pits that are greater than 0.1 acre-feet in volume?	☐ Y ■ N	☐ F
a. If yes, for each historical place of storage please provide the surface area in acres (AC), capacity (AF), annual net evaporation (FT/year), and number of times per year the place of storage was filled.	☐ A	☐ F

ID	Surface Area (AC)	Capacity (AF)	Annual Net Evaporation (FT/YR)	# of Annual Fillings

Surface Water

■ **Applicable**, move on to question 42. ☐ **Not Applicable**, skip to question 67.

The following questions are mandatory for changes to surface water rights and must be filled out before the Preapplication Meeting Form is determined to be complete.

Surface Water: Return Flow Analysis

Questions, Narrative Responses, and Tables	Check-boxes	Follow-Up
42. Do the purposes of the water rights proposed for change include irrigation?	■ Y ☐ N	☐ F
a. If yes, does the proposed change include a change in place of use *and/or* a change in purpose? A change in place of use includes retiring acres in the historical place of use and adding any new acres outside the historical place of use.	■ Y ☐ N	☐ F
i. If yes, a return flow analysis is required. Move on to answer question 43.		
ii. If no, this section is complete, and you may skip to question 51.		
43. Does the proposed change include a change in purpose?	■ Y ☐ N	
a. If yes, what is the consumptive use for the proposed non-irrigation purpose? Please explain. The changed purpose is to aquifer recharge to mitigate 99.0 AF of depletions to SW (Permit Tech Report) under the associated permit for the City's new Well 4.	☐ A	☐ F
44. Does the proposed change include a change in place of use? If yes, move on to question 45. If no, this section is complete, and you may skip to question 51.	■ Y ☐ N	
45. Provide a map showing the historical and proposed places of use created on an aerial photograph or topographic map with section corners, township and range, and a north arrow.	☐ S	☐ F
46. How many acres, if any, will be retired from the historical place of use? 82 acres		☐ F
47. Are irrigated acres proposed that are outside the historical place of use?	☐ Y ■ N	☐ F
a. If yes,		
i. How many acres?		☐ F

ii. What is the proposed irrigation method type (e.g., flood or sprinkler) and subtype (e.g., level border, graded border, furrow, contour ditch, wild flood, center pivot, or wheel line) for the new acres? _____		☐ F
iii. What is the slope of the new place of use? _____		☐ F
iv. Based on 47.a.ii to 47.a.iii, what is the percent efficiency of irrigation for the new acres? _____		☐ F
v. What is the County Management Factor for the new acres? _____		☐ F
vi. What is the ET based on the irrigation method and county for the new acres? _____		☐ F
vii. What percent of applied water are irrecoverable losses for new acres per ARM 36.12.1902(17)? _____		☐ F
viii. Do other water rights supplement or overlap the new place of use that contribute to the irrigation water demand?	☐ Y ☐ N	☐ F
1. If yes,		
a. How will the water rights be operated to serve the irrigation purpose? _____ _____ _____ _____	☐ A	☐ F
b. For each supplemental or overlapping water right, please list the average period of diversion and use (MM/DD-MM/DD), flow rate (GPM or CFS), and the volume of water (AF) contributed to the total irrigation water demand.	☐ A	☐ F

Water Right No.	Avg. Period of Diversion (MM/DD-MM/DD)	Avg. Period of Use (MM/DD-MM/DD)	Flow Rate (GPM or CFS)	Volume Contributed (AF)

48. Do you have information for the Department to consider about the source and location where return flows historically accrued?	■ Y ☐ N	■ F
a. If yes, explain. See Supplement	☐ A	☐ F
49. Based on the preliminary data provided by the Department at this preapplication meeting, to what surface water sources do return flows accrue before and after the proposed change? **Return flow data provided by the Department at the preapplication meeting is preliminary and is subject to change during the Technical Analysis.* Historic return flows were to the Bitterroot River. Historically applied non-consumed water will be left instream.	☐ A	☐ F
50. If an analysis of impacts to identified surface water rights is required as part of the return flow analysis, pursuant to ARM 36.12.1303(3)(c)(iii), do you elect to answer non-mandatory questions 161 to 163 to provide information required for this extended return flow analysis?	☐ Y ☐ N	☐ F
a. If yes, go to question 161. If an analysis of impacts to identified surface water rights is required, this information will be used for the analysis.		
b. If no, did you elect in question 1 for the Department to conduct technical analyses?	☐ Y ☐ N	☐ F
i. If yes, do you elect for the Department to use publicly available water quantity data for the analysis of impacts to identified surface water rights? If the extended return flow analysis is required and sufficient publicly available water quantity data is not available, then the Department will not be able to conduct the extended analysis. You will still have to prove a lack of adverse effect from the proposed change.	☐ Y ☐ N	☐ F
ii. If no, an analysis of impacts to identified surface water rights will need to be completed as part of the extended return flow analysis. The Department will include the extended analysis in its scientific credibility review of the Technical Analyses.		

Surface Water: Mitigation Analysis

51. Are you changing the purpose to mitigation to meet the criteria of issuance for another application? If yes, answer the questions in this section (questions 52 to 60). If no, this section is complete, and you can skip to question 61.	■ Y ☐ N	☐ F

52. Identify the water right(s) proposed for change to a mitigation purpose, the water right(s) identified as needing mitigation and the application number for the water right(s) identified as needing mitigation. 76H 105168-00, will be change to mitigation for new Beneficial Water Use Permit Application No. 76H 30163647	☐ A	☐ F
53. What source(s) have been identified as needing mitigation water? Bitterroot River		☐ F
54. By what means will mitigation water be made available (e.g., infiltration gallery, water left instream)? You must provide a copy of all relevant discharge permits at application submittal (§85-2-364, MCA). Aquifer recharge by infiltration into lower Miller Creek	☐ A	☐ F
55. What is the location (¼ ¼ ¼ section of start and end of reach) and length (FT) of the mitigation reach? See Supplement		☐ F
56. What is the amount, timing, and location (¼ ¼ ¼ section) of water needed for mitigation? See Supplement	☐ A	■ F

Month	Days	Amount	Location	Month	Days	Amount	Location
January	31	0 gpm 0 AF	SENWNE Sec 15, 12N-20W	July	31	163.0 gpm 22.3 AF	SENWNE Sec 15, 12N-20W
February	28	0 gpm 0 AF	SENWNE Sec 15, 12N-20W	August	31	163.0 gpm 22.3 AF	SENWNE Sec 15, 12N-20W
March	31	0 gpm 0 AF	SENWNE Sec 15, 12N-20W	September	30	96.0 gpm 12.7 AF	SENWNE Sec 15, 12N-20W
April	30	0 gpm 0 AF	SENWNE Sec 15, 12N-20W	October	31	64.0 gpm 8.8 AF	SENWNE Sec 15, 12N-20W
May	31	106.0 gpm 14.5 AF	SENWNE Sec 15, 12N-20W	November	30	0 gpm 0 AF	SENWNE Sec 15, 12N-20W
June	30	155.0 gpm 20.5 AF	SENWNE Sec 15, 12N-20W	December	31	0 gpm 0 AF	SENWNE Sec 15, 12N-20W

57. How do the priority dates of the water rights proposed for change to mitigation compare to other water rights on the source? See Supplement	☐ A	☐ F
58. Do you have measurement records or Water Commissioner records that show the reliability of the water right(s) proposed for change to a mitigation purpose?	☐ Y ■ N	☐ F

a. If yes, describe and submit them to the Department. _____ _____ _____ _____	☐ S	☐ F
59. Do the water rights proposed for change to mitigation have a period of use that is greater than or equal to the period when mitigation is necessary?	☐ Y ■ N	☐ F
a. If no, how will mitigation water be made available during the entire period when mitigation is necessary? The infiltration volume will meet or exceed the depletion volume so there are no net depletions to the Bitterroot River in months that water is not legally available.	☐ A	☐ F
60. Will other water rights contribute to mitigation water?	☐ Y ■ N	☐ F
a. If yes, what amount, at what timing, and at which location (¼ ¼ ¼ section) will they contribute?	☐ A	☐ F

Month	Days	Amount	Location	Month	Days	Amount	Location
January				**July**			
February				**August**			
March				**September**			
April				**October**			
May				**November**			
June				**December**			

Surface Water: Aquifer Recharge Analysis

61. Are you changing the purpose to aquifer recharge to serve a current purpose or changing the purpose to marketing for mitigation/aquifer recharge for a future mitigation purpose? If yes, answer the questions in this section (questions 62 to 66). If no, this section is complete, and you can skip to question 67.	■ Y ☐ N	☐ F
62. Is this aquifer recharge for a current mitigation need or marketing for mitigation/aquifer recharge for a future mitigation need? Current- needed for pending application 76H 30163647		☐ F
63. What sources have been identified as having net depletions in need of mitigation or as benefiting from marketing for mitigation/aquifer recharge water? Bitterroot River		☐ F

64. By what means will aquifer recharge water be made available? You must provide a copy of all relevant discharge permits at application submittal (§85-2-364, MCA). See Supplement	☐ A	■ F
65. How do the priority dates of the water rights proposed for change to aquifer recharge compare to other water rights on the source? See answer to Question 57	■ A	☐ F
66. Do you have measurement records or Water Commissioner records that show the reliability of the water rights proposed for change to aquifer recharge?	■ Y ☐ N	☐ F
a. If yes, describe and submit them to the Department. USGS Gage data - Applicant does not need to submit to DNRC	☐ S	☐ F

Groundwater

☐ **Applicable**, move on to question 67. ☒ **Not Applicable**, skip to question 99.

The following questions are mandatory for changes to groundwater rights and must be filled out before the Preapplication Meeting Form is determined to be complete.

Groundwater: Adequacy of Diversion

Questions, Narrative Responses, and Tables	**Check-boxes**	**Follow-Up**
67. What is the flow rate (GPM or CFS), volume (AF), and period of diversion (MM/DD-MM/DD) required at each new groundwater point of diversion? Label using the same POD ID number as the Proposed Use Map (question 6) to match this information with the location information.	☐ A	☐ F

POD #	**Flow Rate (GPM or CFS)**	**Volume (AF)**	**Period of Diversion (MM/DD-MM/DD)**

68. Will the monthly pumping schedule differ from an allocation of diverted volume by the number of days in the month for year-round uses or the IWR 80% net irrigation requirements for irrigation/lawn & garden uses (IWR, NRCS 2003)?	☐ Y ☐ N	☐ F
a. If yes, provide the monthly pumping schedule in the table below. Label using the same POD ID number as the Proposed Use Map (question 6).	☐ A	☐ F

Month	**POD #**	**Volume (AF)**	**Month**	**POD #**	**Volume (AF)**
January			**July**		
February			**August**		
March			**September**		
April			**October**		
May			**November**		
June			**December**		

69. Answer the following questions specific to the means of groundwater diversion.					
Well/Pit	Questions 70 to 71	**Developed Spring**	Question 72	**Pond**	Questions 73 to 76

Groundwater: Adequacy of Diversion: Well/Pit

☐ Applicable ☐ Not Applicable

70. Have you submitted a completed Form 633 to DNRC for review?	☐ Y ☐ N	☐ F
a. If no, submit Form 633 to DNRC for review. Form 633 is required by the time the Preapplication Meeting Form is deemed complete.	☐ S	☐ F
b. If yes, did the Department identify deficiencies?	☐ Y ☐ N	☐ F
1. If yes, are variances from ARM 36.12.121 needed?	☐ Y ☐ N	☐ F
a. If yes,		
i. Do you have data for aquifer characteristics?	☐ Y ☐ N	☐ F
1. If yes, provide the data to the Department.	☐ S	☐ F
ii. Have you submitted Form 653 to the Department?	☐ Y ☐ N	☐ F
1. If yes, was the variance granted?	☐ Y ☐ N	☐ F
71. Have all the wells/pits been constructed?	☐ Y ☐ N	☐ F
a. If yes, provide a map with the location of each well/pit labeled, the well/pit depth, and, if available, the GWIC ID. Create map on an aerial photograph or topographic map and include the following: well/pit location, well/pit depth, GWIC ID (if available), section corners, township and range, and a north arrow.	☐ S	☐ F
b. If no,		
i. When will the wells/pits be constructed? _____		☐ F
ii. Do you have an initial map with the proposed location of wells/pits?	☐ Y ☐ N	☐ F
1. If yes, provide an initial map to the Department. Create map on an aerial photograph or topographic map and include the following: proposed well/pit location, section corners, township and range, and a north arrow.	☐ S	☐ F
iii. What is the anticipated depth for each new well/pit? Label on the initial map if the proposed location is known. Otherwise provide the depth(s) here: _____ _____	☐ S	☐ F
iv. Is the requested volume for each new well/pit known?	☐ Y ☐ N	☐ F
1. If no, what is the total requested volume (AF) and the number of new PODs? _____		☐ F

Groundwater: Adequacy of Diversion: Developed Spring

☐ Applicable ☐ Not Applicable

72. Have you measured the source?	☐ Y ☐ N	☐ F
a. If yes,		
i. Submit measurements to the Department.	☐ S	☐ F
ii. With what method were measurements collected? _____ _____	☐ A	☐ F
iii. What is the interval of measurements? _____		☐ F
iv. Is the interval of measurements sufficient to comply with ARM 36.12.1703(1)?	☐ Y ☐ N	☐ F
b. If no, or if measurements do not comply with ARM 36.12.1703(1),		
i. When do you plan to measure? _____		☐ F
ii. With what method and at what interval will measurements be collected? _____ _____	☐ A	☐ F

Groundwater: Adequacy of Diversion: Pond

☐ Applicable ■ Not Applicable

73. Have you submitted Form 653 to apply for a variance from ARM 36.12.121 for the Aquifer Test?	☐ Y ☐ N	☐ F
a. If yes, did the Department approve the variance request?	☐ Y ☐ N	☐ F
74. Submit pond bathymetry data, survey, or engineering plans to the Department.	☐ S	☐ F
75. Submit a map identifying the location of the proposed pond to the Department. Create map on an aerial photograph or topographic map and include the following: pond location, section corners, township and range, and a north arrow.	☐ S	☐ F
76. If you are conducting Technical Analyses, what is your plan to determine depth, surface area, and net evaporation of the pond? If the Department is conducting Technical Analyses, write N/A. _____ _____	☐ A	☐ F

Groundwater: Adverse Effect to Existing Groundwater Rights

All information to calculate the one-foot drawdown contour was collected in previous questions.

Groundwater: Adverse Effect to Surface Water Rights

Groundwater: Adverse Effect to Surface Water Rights: Surface Water Depletion Analysis

77. Does the proposed change include a change in point of diversion or a change in place of use or purpose that will lead to a change in consumptive use or pumping schedule? If you do not know if a change in place of use or purpose will lead to a change in consumptive use or pumping schedule, work through this with the Department. If yes, a surface water depletion analysis is required; move on to question 78. If no, this section is complete; skip to question 80.	☐ Y ☐ N	☐ F
78. Based on the preliminary data provided by the Department at this preapplication meeting, what are the hydraulically connected surface water sources before and after the proposed change? **Net depletion data provided by the Department at the preapplication meeting is preliminary and is subject to change during the Technical Analysis.* _____ _____ _____ _____	☐ A	☐ F
79. If an analysis of impacts to identified surface water rights is required as part of the surface water depletion analysis, pursuant to ARM 36.12.1903(2)(f), do you elect to answer non-mandatory questions 166 to 168 to provide information required for this extended surface water depletion analysis?	☐ Y ☐ N	☐ F
a. If yes, go to question 166. If an analysis of impacts to identified surface water rights is required for the surface water depletion analysis, this information will used for the analysis.		
b. If no, did you elect in question 1 for the Department to conduct technical analyses?	☐ Y ☐ N	☐ F
i. If yes, do you elect for the Department to use publicly available water quantity data for the analysis of impacts to identified surface water rights for the surface water depletion analysis? If this extended surface water depletion analysis is required and sufficient publicly available water quantity data is not available, then the Department will not be able to conduct the extended surface water depletion analysis. You will still have to prove a lack of adverse effect from the proposed change.	☐ Y ☐ N	☐ F
ii. If no, you may still include the analysis of impacts to identified surface water rights with the surface water depletion analysis. The Department will include the extended analysis in its scientific credibility review of the Technical Analyses.		

Groundwater: Adverse Effect to Surface Water Rights: Return Flow Analysis

80. Do the purposes of the water rights proposed for change include irrigation?	☐ Y ☐ N	☐ F
a. If yes, does the proposed change include a change in place of use *and/or* a change in purpose? A change in place of use includes retiring acres in the historical place of use and adding any new acres outside the historical place of use.	☐ Y ☐ N	☐ F
i. If yes, a return flow analysis is required. Move on to answer question 81.		
ii. If no, this section is complete, and you may skip to question 89.		
81. Does the proposed change include a change in purpose?	☐ Y ☐ N	
a. If yes, what is the consumptive use for the proposed non-irrigation purpose? Please explain. _____ _____ _____ _____ _____ _____	☐ A	☐ F
82. Does the proposed change include a change in place of use? If yes, move on to question 83. If no, this section is complete, and you may skip to question 89.	☐ Y ☐ N	
83. Provide a map showing the historical and proposed places of use. Create map on an aerial photograph or topographic map that shows the following: section corners, township and range, and a north arrow.	☐ S	☐ F
84. How many acres, if any, will be retired from the historical place of use? _____		☐ F
85. Are irrigated acres proposed that are outside the historical place of use?	☐ Y ☐ N	☐ F
a. If yes,		
i. How many acres? _____		☐ F
ii. What is the proposed irrigation method type and subtype (e.g., level border, graded border, furrow, contour ditch, or wild flood) for the new acres? _____		☐ F
iii. What is the slope of the new place of use? _____		☐ F
iv. Based on question 85.a.ii to 85.a.iii, what is the percent efficiency of irrigation for the new acres? _____		☐ F

v. What is the County Management Factor for the new acres? _____		☐ F
vi. What is the ET based on the irrigation method and county for the new acres? _____		☐ F
vii. What percent of applied water are irrecoverable losses for new acres? _____		☐ F
viii. Do other water rights supplement or overlap the new place of use that contribute to the irrigation water demand?	☐ Y ☐ N	☐ F
1. If yes,		
a. How will the water rights be operated to serve the irrigation purpose? _____ _____ _____ _____ _____ _____ _____	☐ A	☐ F
b. For each supplemental or overlapping water right, please list the average period of diversion and use (MM/DD-MM/DD), flow rate (GPM or CFS), and the volume of water (AF) contributed to the total irrigation water demand.	☐ A	☐ F

Water Right No.	Avg. Period of Diversion (MM/DD-MM/DD)	Avg. Period of Use (MM/DD-MM/DD)	Flow Rate (GPM or CFS)	Volume Contributed (AF)

86. Do you have information for the Department to consider about the source and location where return flows historically accrued?	☐ Y ☐ N	☐ F

a. If yes, explain. _____ _____ _____	☐ A	☐ F
87. Based on the preliminary data provided at this preapplication meeting, to what surface water sources will return flows accrue before and after the proposed change? **Return flow data provided by the Department at the preapplication meeting is preliminary and is subject to change during the Technical Analysis.* _____ _____ _____	☐ A	☐ F
88. If an analysis of impacts to identified surface water rights is required as part of the return flow analysis, pursuant to ARM 36.12.1303(5)(d)(iii), do you elect to answer non-mandatory questions 161 to 163 to provide information required for this extended analysis?	☐ Y ☐ N	☐ F
a. If yes, go to question 161. If an analysis of impacts to identified surface water rights is required as part of the return flow analysis, this information will used for the analysis.		
b. If no, did you elect in question 1 for the Department to conduct technical analyses?	☐ Y ☐ N	☐ F
i. If yes, do you elect for the Department to use publicly available water quantity data for the analysis of impacts to identified surface water rights? If this extended return flow analysis is required and sufficient publicly available water quantity data is not available, then the Department will not be able to conduct the extended analysis. You will still have to prove a lack of adverse effect from the proposed change.	☐ Y ☐ N	☐ F
ii. If no, an analysis of impacts to identified surface water rights will need to be completed as part of the return flow analysis. The Department will include the extended analysis in its scientific credibility review of the Technical Analyses.		

Groundwater: Mitigation

89. Do you require mitigation water to meet the criteria of issuance for this change application or for a different application? If yes, answer the questions in this section (questions 90 to 98). If no, this section is complete, and you can skip to question 99.	☐ Y ☐ N	☐ F
90. Please identify the water rights proposed for change to a mitigation purpose and the water rights identified as needing mitigation. _____	☐ A	☐ F

91. What sources have been identified as needing mitigation water? _____		☐ F
92. By what means will mitigation water be made available? _____ _____	☐ A	☐ F
93. What is the location (¼ ¼ ¼ section of start and end of reach) and length (feet) of the mitigation reach? _____		☐ F
94. What is the amount, timing, and location (¼ ¼ ¼ section) of water needed for mitigation?	☐ A	☐ F

Month	Days	Amount	Location	Month	Days	Amount	Location
January				**July**			
February				**August**			
March				**September**			
April				**October**			
May				**November**			
June				**December**			

95. How do the priority dates of the water rights proposed for change to mitigation compare to other water rights on the source? _____ _____	☐ A	☐ F
96. Do you have measurement records or Water Commissioner records that show the reliability of the water right(s) proposed for change to a mitigation purpose?	☐ Y ☐ N	☐ F
a. If yes, describe and submit them to the Department. _____ _____ _____	☐ S	☐ F
97. Do the water rights proposed for change to mitigation have a period of use that is greater than or equal to the period when mitigation is necessary?	☐ Y ☐ N	☐ F

a. If no, how will mitigation water be made available during the entire period when mitigation is necessary? _____ _____ _____	☐ A	☐ F
98. Will other water rights contribute to mitigation water?	☐ Y ☐ N	☐ F
a. If yes, what amount, at what timing, and at which location (¼ ¼ ¼ section) will they contribute?	☐ A	☐ F

Month	Days	Amount	Location (¼ ¼ ¼ Section)	Month	Days	Amount	Location (¼ ¼ ¼ Section)
January				**July**			
February				**August**			
March				**September**			
April				**October**			
May				**November**			
June				**December**			

Project-Specific Questions

The following questions are mandatory when applicable and must be filled out before the Preapplication Meeting Form is determined to be complete.

Temporary Change

Questions, Narrative Responses, and Tables	Check-boxes	Follow-Up
99. Does the proposal include a temporary change? If yes, please answer the questions in this section (questions 100 to 105) for each water right being changed. If no, or if you answered these questions earlier in the preapplication meeting, this section is complete and you can skip to question 106.	☐ Y ■ N	☐ F
100. What element(s) of the water right(s) are being temporarily changed? _____		☐ F
101. For how many years will the water right(s) be temporarily changed? _____		☐ F
102. Will the temporary change be intermittent over the years?	☐ Y ☐ N	☐ F
a. If yes, explain. _____	☐ A	☐ F
103. For what purpose will the water rights be temporarily used? _____		☐ F

104. Is the quantity of water subject to the temporary change being made available from the development of a new water conservation or storage project?	☐ Y ☐ N	☐ F
a. If yes, explain the water conservation or storage project. _____ _____ _____	☐ A	☐ F
105. If you are answering Project Specific Questions as they are referenced in Application Details, return to question 10 if you are proposing to add a place of use on State of Montana Trust Land and question 15 if you are proposing a temporary change that does not involve State of Montana Trust Land. If you are answering in consecutive order, go to question 106.		

Change in Purpose

106. Does the project involve a change in purpose? If yes, answer the questions in this section (questions 107 to 109). If no, of if you answered these questions earlier in the preapplication meeting, this section is complete and you can skip to question 110.	■ Y ☐ N	☐ F
107. Identify the proposed new purpose, flow rate (GPM or CFS), volume (AF), and period of use (MM/DD-MM/DD) for each purpose.	☐ A	■ F

Purpose	Flow Rate (GPM or CFS)	Volume (AF)	Period of Use Start (MM/DD-MM/DD)	Period of Use End (MM/DD-MM/DD)
AQUIFER RECHARGE	UP TO 0.75 CFS	101.1 AF	04/01	10/31

108. Explain why the requested flow rate and volume is the amount needed for the purpose. SEE SUPPLEMENT. _____ _____	■ A	☐ F
109. If you are answering Project Specific Questions as they are referenced in Application Details, return to question 11 and if you are answering in consecutive order, go to question 110.		

Change in Place of Storage

110. Does the project involve a change in place of storage? If yes, answer the questions in this section (questions 111 to 119) for each individual place of storage (use additional Change in Place of Storage sheet for additional places of storage). If no, or if you answered these questions earlier in the preapplication meeting, this section is complete; skip to question 120.	☐ Y ■ N	☐ F
111. Submit a map showing the location of the place of storage. Create map on an aerial photograph or topographic map that shows the following: place of storage, section corners, township and range, and a north arrow.	☐ S	☐ F
112. Is this application to add a new place of storage or change an existing place of storage? _____		☐ F
a. If application is to change an existing place of storage, list the water rights that include the place of storage and a short description of the proposed change. _____ _____	☐ A	☐ F
113. Is the place of storage located on-stream?	☐ Y ☐ N	☐ F
a. If no, explain the conveyance means to and from the off-stream place of storage and any losses that may occur with that conveyance. _____ _____	☐ A	☐ F
114. What is the proposed capacity of the place of storage? Use bathymetry data, survey, or engineering plans for capacity. Submit the data source used with this form. In lieu of these data sources, use the following equation: *Surface Acres x Maximum Depth (FT) x 0.5 (0.4-0.6 depending on side slope) = Capacity (AF)* _____	☐ S	☐ F
115. Will the place of storage include primary and/or emergency spillways? Preliminary design specifications for primary and emergency spillways must be included with application submittal (ARM 36.12.113).	☐ Y ☐ N	☐ F
116. Will the place of storage be lined?	☐ Y ☐ N	☐ F
117. What is the annual net evaporation of water from the place of storage using the standards in ARM 36.12.116(1) and the Department's Gridded Net Evaporation Layer? _____		☐ F
118. Is the place of storage capacity calculated to be greater than 50 acre-feet?	☐ Y ☐ N	☐ F
a. If yes, have you made an application to the DNRC Water Operations Bureau for a determination of whether the dam or reservoir is a high-hazard dam?	☐ Y ☐ N	☐ F

119. If you are answering Project Specific Questions as they are referenced in Application Details, return to question 12 and if you are answering in consecutive order, go to question 120.		

Ditch-Specific Questions

120. Does the historical use of water include at least one conveyance ditch? If yes, answer questions 121 to 122. If no, or if you answered these questions earlier in the preapplication meeting, skip to question 123.	☐ Y ■ N	☐ F
121. Submit a Historical Use Ditch Map that shows every ditch conveying water for the historical use of all water right(s) proposed for change. Label the ditch name(s), POD(s), the POU(s), and the ditch measurement locations (requested in question 122.d). The map should be created on an aerial photograph or topographic map with the following: section corners, township and range, and a north arrow.	☐ S	☐ F
122. For each historical conveyance ditch, answer question 122.a to 122.h. If there is more than one historical conveyance ditch, use an Additional Historical Ditch Sheet for each additional ditch.		
a. What is the ditch name? _____		☐ F
b. List the water right(s) proposed for change that were conveyed by the ditch. _____		☐ F
c. What is the distance water was historically carried by the conveyance ditch? Only include segments between the POD and start of the POU; do not include segments within the POU. _____	☐ A	☐ F
d. Provide at least one set of ditch measurements, which include width (FT), depth (FT), and slope (%). Discuss ditch characteristics with DNRC to determine the minimum number of ditch measurements. Include the location of each measurement, labeled with the 2-digit measurement ID number, used on the map submitted for question 121.	☐ S	☐ F

ID #	Width (FT)	Depth (FT)	Slope (%)	Date of Measurement

e. What is a reasonable Manning's n value? List the factors used for estimation. If you do not know this value, please work through estimation with the Department. _____ _____	☐ A	☐ F

f. What type of soils compose the historical conveyance ditch? For lined ditches, write "lined" instead. _____ _____	☐ A	☐ F
g. Are other water rights conveyed by the historical conveyance ditch?	☐ Y ☐ N	☐ F
i. If yes,		
1. What are the water right numbers? _____ _____ _____	☐ A	☐ F
2. What is the sum of the flow rates (GPM or CFS) for all water rights conveyed? _____ _____ _____	☐ A	☐ F
3. Provide a map with your best estimate of the historical POUs for the other water rights conveyed by the historical conveyance ditch. Include only POUs between the historical POD and your historical POU. If you do not know this information, the Department can help you create the map. The map should be created on an aerial photograph or topographic map and show the following: section corners, township and range, and a north arrow.	☐ S	☐ F
h. Were any water rights proposed for change part of one historical water right that was split?	☐ Y ☐ N	☐ F
i. If yes, were all split water rights split in such a way to ensure each post-split water right could stand alone and not be reliant on the others for carriage water?	☐ Y ☐ N	☐ F
1. If no, do any of the water right(s) proposed for change have a carriage water requirement?	☐ Y ☐ N	☐ F
a. If yes,		
i. List the water right(s) with a carriage water requirement _____		☐ F
ii. Update your Historical Use Ditch Map to label the ditch segments where a carriage water requirement exists for a water right proposed for change. Also, use your best estimate to label the POUs for all water rights included in the carriage water requirement. If you do not know this information, the Department can help you update the map.	☐ S	☐ F
123. Does the proposed use include at least one existing or new conveyance ditch? If yes, answer questions 124 to 126. If no, or if you answered these questions earlier in the preapplication meeting, this section is complete; skip to question 127.	☐ Y ■ N	☐ F

124. Submit a Proposed Use Ditch Map that shows every ditch conveying the water right(s) proposed for change, including any unchanged portions. Label all unchanged and proposed PODs, all unchanged and proposed POUs, and additional ditch measurement locations (requested in question 125.e). The map should be created on an aerial photograph or topographic map with the following: section corners, township and range, and a north arrow.	☐ S	☐ F
125. For each proposed use conveyance ditch, answer the questions 125.a to 125.i. If there is more than one proposed use conveyance ditch, use an Additional Proposed Use Ditch Sheet for each additional ditch.		
a. What is the ditch name? _____		☐ F
b. Is this ditch a historical conveyance ditch detailed in questions 121 to 122?	☐ Y ☐ N	☐ F
i. If yes, have any of the following details changed, to the best of your knowledge, from historical conditions: ditch length, distance water conveyed, ditch lining, or water rights conveyed by the ditch?	☐ Y ☐ N	☐ F
1. If yes, answer questions 125.c to 125.i using current data.		
2. If no, do not answer questions 125.c to 125.i for this ditch because the information remains unchanged. Move on to the next proposed use conveyance ditch, or if none remain, skip to question 127.		
c. List the water right(s) proposed for change that are going to be conveyed by the ditch. _____		☐ F
d. What is the distance water will be carried by the conveyance ditch? Only include segments between the POD and start of the POU; do not include segments within the POU. _____ _____	☐ A	☐ F
e. Provide at least one set of ditch measurements, which include width (FT), depth (FT), and slope (%). Discuss ditch characteristics with DNRC to determine the minimum number of ditch measurements. Include the location of each measurement, labeled with the 2-digit measurement ID number, used on the map submitted for question 124.	☐ S	☐ F

ID #	Width (FT)	Depth (FT)	Slope (%)	Date of Measurement

f. What is a reasonable Manning's n value? List the factors used for estimation. If you do not know this value, please work through estimation with the Department. _____ _____	☐ A	☐ F
g. What type of soils compose the proposed conveyance ditch? For lined ditches, write "lined" instead. _____ _____	☐ A	☐ F
h. Are other water rights conveyed by the proposed conveyance ditch?	☐ Y ☐ N	☐ F
i. If yes,		
1. What are the water right numbers? _____ _____ _____	☐ A	☐ F
2. What is the sum of the flow rates (GPM or CFS) for all water rights conveyed? _____ _____ _____	☐ A	☐ F
3. Provide a map with your best estimate of the current POUs for the other water rights conveyed by the proposed conveyance ditch. Include only POUs between the POD and your proposed POU. If you do not know this information, the Department can help you create the map. The map should be created on an aerial photograph or topographic map and show the following: section corners, township and range, and a north arrow.	☐ S	☐ F
i. Were any water right(s) proposed for change identified as having a carriage water requirement in question 122.h.i.1.a.i?	☐ Y ☐ N	☐ F
i. If yes, update your Proposed Use Ditch Map to label the ditch segments where a carriage water requirement exists for a water right proposed for change. Also, use your best estimate to label the POUs for all water rights included in the carriage water requirement. If you do not know this information, the Department can help you update the map.	☐ S	☐ F
126. If you are answering Project Specific Questions as they are referenced in Application Details, return to question 13 and if you are answering in consecutive order, go to question 127.		

Water Marketing

127. Does this project involve water marketing? If yes, answer the questions in this section (questions 128 to 134). If no, or if you answered these questions earlier in the preapplication meeting, this section is complete; skip to question 135.	☐ Y ■ N	☐ F
128. Identify the flow rate (GPM or CFS) and volume of water (AF) that will be marketed. _____		☐ F
129. Will the marketed water return to the source?	☐ Y ☐ N	☐ F
a. If yes, explain how that determination was made. _____ _____ _____	☐ A	☐ F
130. For what purpose(s) will the marketed water be used? _____ _____	☐ A	☐ F
131. How will you control or limit access to the water? _____ _____	☐ A	☐ F
132. Do you have contracts for the entire volume and flow rate sought?	☐ Y ☐ N	☐ F
133. Provide a service area map. Create map on an aerial photograph or topographic map and shows the following: general service area boundary, section corners, township and range, and a north arrow.	☐ S	☐ F
134. If you are answering Project Specific Questions as they are referenced in Application Details, return to question 19 and if you are answering in consecutive order, go to question 135.		

Instream Flow Change

135. Does the project involve an instream flow change? If yes, answer the questions in this section (questions 136 to 145). If no, or if you answered these questions earlier in the preapplication meeting, this section is complete; skip to question 146.	☐ Y ■ N	☐ F
136. Is the proposal to retire all the use from the historical purpose throughout the entire period of use?	☐ Y ☐ N	☐ F
a. If no, describe why not in detail. _____ _____ _____	☐ A	☐ F

137. What is the name of the source of water where streamflow will be maintained or enhanced? _____		☐ F
138. Provide specific information on the location (¼ ¼ ¼ section of start and end of reach) and length (FT) of the stream reach in which the streamflow is to be maintained or enhanced. _____	☐ A	☐ F
139. Does the protected reach begin at the existing point of diversion?	☐ Y ☐ N	☐ F
a. If no, does the proposed protected reach begin upstream of or downstream from the existing point of diversion? _____		☐ F
140. Does return flow go back to the source of supply? The Department provides an initial estimate of the sources where return flow historically accrued at the preapplication meeting.	☐ Y ☐ N	☐ F
141. Describe the way the streamflow is to be maintained or enhanced. _____ _____ _____	☐ A	☐ F
142. Provide initial details about a streamflow measuring plan, which include the points where measurements occur, the interval of measurement, and the methods and equipment used. A complete streamflow measuring plan will be required for the application. _____ _____ _____ _____ _____	☐ A	☐ F
143. Provide initial details about an operation plan, which include the proposed flow rate (GPM or CFS) to be protected up to the proposed volume (AF) and the period when protection is to occur. If there is a "trigger flow" associated with your operation plan, please explain. A complete operation plan, based on the Technical Analysis, will be required for the application. _____ _____ _____ _____ _____	☐ A	☐ F

144. Is the amount of water proposed for change in the application made available through creation of a "water saving method," as defined in ARM 36.12.101?	☐ Y ☐ N	☐ F
a. If yes, complete the Salvage Water section (questions 146 to 150).	☐ S	☐ F
145. If you are answering Project Specific Questions as they are referenced in Application Details, return to question 20 and if you are answering in consecutive order, go to question 146.		

Salvage Water

146. Does this project involve salvage water? Salvage water does not include destroying phreatophytes, removing vegetation, converting to a less consumptive crop, or converting to a partial irrigation schedule. If yes, answer the questions in this section (questions 147 to 150). If no, or if you answered these questions earlier in the preapplication meeting, this section is complete and you can skip to question 151.	☐ Y ■ N	☐ F
147. What water saving method was implemented? This may include lining an unlined ditch or canal, converting unlined ditch or canal to pipeline, converting high profile or high-pressure sprinklers to low pressure, and other (explain). _____ _____	☐ A	☐ F
148. How much water was salvaged from creation of the water saving method? Include flow rate (GPM or CFS) and volume (AF). _____		☐ F
149. How did you determine the amount of water salvaged? _____ _____ _____ _____ _____ _____	☐ A	☐ F
150. If you are answering Project Specific Questions as they are referenced in Application Details, return to question 21 and if you are answering in consecutive order, go to question 151.		

Non-Mandatory Questions for Criteria Analysis

The following questions are not mandatory. They should be discussed in the Preapplication Meeting, but do not need to be filled out before the Preapplication Meeting Form is determined to be complete.

Adverse Effect

Questions, Narrative Responses, and Tables	Check-boxes
151. Once the historical use analysis is complete for the application, be ready to compare the historical use with the proposed use. Do you have evidence the proposed use exceeds the historical use for flow rate, consumed volume, or diverted volume?	☐ Y ■ N
a. If yes, what is your plan to address this with the permitting process?	☐ A
152. Describe your plan to ensure that existing water rights will be satisfied during times of water shortage. Diverted water will be measured and the maximum historical flow rate and consumed volume will not be exceeded. A valid call will be honored- includes ceasing diversion of aquifer recharge infiltration and use of Well no. 4.	☐ A
153. Explain how you can control your diversion in response to call being made. See Supplement	■ A
154. Are you aware of any calls that have been made on the source of supply or depleted surface water source?	■ Y ☐ N
a. If yes, explain. There are calls for water on the upper reaches of the Bitterroot River. A water commissioner is appointed in this region every year, but does not come as far down the river as the proposed change.	☐ A
155. Does a water commissioner distribute water or oversee water distribution on your proposed source or depleted surface water source?	☐ Y ■ N
156. Will the proposed use change the ability for you to make call?	☐ Y ■ N

157. When was the last time water was appropriated and used beneficially? See Supplement If there has been a period of nonuse, explain below:	
a. Why the water right was not used. See Supplement	☐ A
b. Why a resumption of use will not adversely affect other water users. See Supplement	☐ A
c. Is the period of nonuse greater than 10 years?	■ Y ☐ N
d. Have water rights been authorized to use the source during the period of nonuse?	☐ Y ■ N
158. For point of diversion changes:	
a. Is the proposed point of diversion upstream or downstream of the historical point of diversion? Upstream	
b. Are there intervening water users between the historical and proposed point of diversion? See Supplement	■ Y ☐ N
c. Does the proposed point of diversion allow for diverting water longer during times of shortage?	☐ Y ■ N
159. For place of use changes, will changes to the rate, location, volume, or timing of return flows adversely affect other appropriators? See Supplement	☐ Y ■ N

Adverse Effect: Evaluation of Impacts to Identified Water Rights for Return Flow Analysis

160. Respond to questions in this section if you elected in questions 50 or 88 to answer optional questions 161 to 163. If you did not elect to answer these questions or answered these questions earlier in the preapplication meeting, this section is complete; skip to question 165.	
161. For each surface water source receiving return flows, is gage data available?	■ Y ☐ N
a. If yes, answer the following questions for the number of stream gages that are available.	
i. One stream gage is available	
1. What is the gage name? 12352500 - BITTERROOT RIVER ABOVE MISSOULA MT	
2. Who operates and maintains the gage? USGS	

3. Is the stream gage upstream or downstream of the point(s) of diversion? DOWNSTREAM 3 MILES	
4. Is there a limiting or controlling factor that would make the Drainage Area Method not practical? This includes dams that control the flow and streams with large gaining and/or losing reaches. If you have questions about this, please contact the Regional Hydro-Specialist or the Water Sciences Bureau.	☐ Y ■ N
5. Is the period of record greater than or equal to 10 years?	■ Y ☐ N
6. How frequently is stage data recorded? CONTINUOUS	
7. If data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	■ Y ☐ N
8. Was the rating curve established and maintained throughout the duration of the period of record using measurements taken near the reference gage and stage recorder according to USGS protocols?	■ Y ☐ N
9. Were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	■ Y ☐ N
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	■ Y ☐ N
a. If yes, skip to question 163.	
b. If no, answer question 161.b.	
ii. More than one stream gage is available	
1. List the gage names. _____	
2. Who operates and maintains the gages? _____	
3. Is one stream gage upstream and one downstream of point(s) of diversion?	☐ Y ☐ N
4. Do the stream gages have similar periods of record?	☐ Y ☐ N
5. Are the periods of record each greater than or equal to 10 years?	☐ Y ☐ N
6. How frequently is stage data recorded at each gage? _____	
7. For each gage, if data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	☐ Y ☐ N

8. Were the rating curves established and maintained throughout the duration of the period of record using measurements taken near the reference gages and stage recorders according to USGS protocols?	☐ Y ☐ N
9. For each gage, were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	☐ Y ☐ N
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N
a. If yes, skip to question 163.	
b. If no, answer question 161.b.	
b. If no gage data is available or if available gage data does not meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion, is the source otherwise measured?	☐ Y ☐ N
i. If yes,	
1. Submit measurements to the Department.	☐ S
2. Who collected the measurements? _____	☐ A
3. With what method was the data collected? _____ _____	☐ A
4. What is the period of record? _____	
5. What is the frequency of measurement? _____	
6. Are there gaps in the data?	☐ Y ☐ N
a. If yes, what is the nature of the gaps and how are gaps handled to ensure data quality? _____ _____ _____ _____	☐ A
7. Is there a process for maintaining the data and meeting specified accuracy limits?	☐ Y ☐ N

a. If yes, explain. _____ _____ _____ _____	☐ A
8. Does available measurement data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N
a. If yes, skip to question 163.	
b. If no, answer question 162.	
162. For each surface water source receiving return flows, does the available measurement data, gage and/or otherwise measured, meet the Department's standard of including a minimum of high, moderate, and low flows to be sufficient to use for validation of a department-accepted estimation technique?	■ Y ☐ N
a. If yes, describe the estimation technique. CONTINUOUS GAGE _____ _____	☐ A
b. If no, will measurements be collected prior to submission of a completed Form No. 606P that meet the Department's standard of including a minimum of high, moderate, and low flows to be sufficient to use for validation of a department-accepted estimation technique?	☐ Y ☐ N
i. If yes,	
1. With what method will the data be collected? _____ _____ _____	☐ A
2. What will be the interval of measurement? _____	

3. Describe the proposed estimation technique. _____ _____ _____ _____	☐ A
ii. If no, describe your plan supply measurements for return flow receiving sources. _____ _____ _____	☐ A
163. If you are conducting Technical Analysis, how will the Area of Potential Adverse Effect be defined for evaluating return flow impacts? If the Department is conducting Technical Analyses, write N/A. N/A _____ _____ _____	☐ A
164. If you went straight to this section when referenced, go back to question 51 for surface water changes and question 88 for groundwater changes. If you waited to answer in consecutive order and have completed all prior sections, move to question 165.	

Adverse Effect: Evaluation of Impacts to Identified Water Rights for Surface Water Depletion Analysis

165. Respond to questions in this section if you elected in question 79 to answer optional questions 166 to 168. If you did not elect to answer these questions or answered these questions earlier in the preapplication meeting, this section is complete; skip to question 170.	
166. For each hydraulically connected surface water source, is gage data available?	■ Y ☐ N
a. If yes, answer the following questions for the number stream gages are available.	
i. One stream gage is available	
1. What is the gage name? PROVIDED PREVIOUSLY	

2. Who operates and maintains the gage? _____	
3. Is the stream gage upstream or downstream of the start of the depletion? _____	
4. Is there a limiting or controlling factor that would make the Drainage Area Method not practical? This includes dams that control the flow and streams with large gaining and/or losing reaches. If you have questions about this, please contact the Regional Hydro-Specialist or the Water Sciences Bureau.	☐ Y ☐ N
5. Is the period of record greater than or equal to 10 years?	☐ Y ☐ N
6. How frequently is stage data recorded? _____	
7. If data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	☐ Y ☐ N
8. Was the rating curve established and maintained throughout the duration of the period of record using measurements taken near the reference gage and stage recorder according to USGS protocols?	☐ Y ☐ N
9. Were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	☐ Y ☐ N
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N
a. If yes, skip to question 168.	
b. If no, answer question 166.b.	
ii. More than one stream gage is available	
1. List the gage names. _____	
2. Who operates and maintains the gages? _____	
3. Is one stream gage upstream and one downstream of the start of the depletion?	☐ Y ☐ N
4. Do the stream gages have similar periods of record?	☐ Y ☐ N
5. Are the periods of record each greater than or equal to 10 years?	☐ Y ☐ N
6. How frequently is stage data recorded at each gage? _____	

7. For each gage, if data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	☐ Y ☐ N
8. Were the rating curves established and maintained throughout the duration of the period of record using measurements taken near the reference gages and stage recorders according to USGS protocols?	☐ Y ☐ N
9. For each gage, were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	☐ Y ☐ N
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N
a. If yes, skip to question 168.	
b. If no, answer question 166.b.	
b. If no gage data is available or if available gage data does not meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion, is the source otherwise measured?	☐ Y ☐ N
i. If yes,	
1. Submit available measurements to the Department	☐ S
2. Who collected the measurements? _____	☐ A
3. With what method was the data collected? _____ _____	☐ A
4. What is the period of record? _____	
5. What is the frequency of measurement? _____	
6. Are there gaps in the data?	☐ Y ☐ N
a. If yes, what is the nature of the gaps and how are gaps handled to ensure data quality? _____ _____ _____ _____	☐ A
7. Is there a process for maintaining the data and meeting specified accuracy limits?	☐ Y ☐ N

a. If yes, explain. _____ _____ _____	☐ A
8. Does available measurement data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N
a. If yes, skip to question 168.	
b. If no, answer question 167.	
167. For each hydraulically connected surface water source, does the available measurement data, gage and/or otherwise measured, meet the Department's standard of including a minimum of high, moderate, and low flows to be sufficient to use for validation of a department-accepted estimation technique?	☐ Y ☐ N
a. If yes, describe the estimation technique. _____ _____ _____ _____	☐ A
b. If no,	
i. Will measurements be collected prior to submission of a completed Form No. 606P that meet the Department's standard of including a minimum of high, moderate, and low flows to be sufficient to use for validation of a department-accepted estimation technique?	☐ Y ☐ N
1. If yes,	
a. With what method will the data be collected? _____ _____ _____	☐ A
b. What will be the interval of measurement? _____	

c. Describe the proposed estimation technique. _____ _____ _____ _____	☐ A
2. If no, describe your plan to comply with the measurement requirements for hydraulically connected surface water sources. _____ _____ _____	☐ A
168. If you are conducting Technical Analysis, how will the Area of Potential Adverse Effect be defined for evaluating changes to net depletions? If the Department is conducting Technical Analyses, write N/A. N/A _____ _____ _____	☐ A
169. If you went straight to this section when referenced, go back to question 80. If you waited to answer in consecutive order and have completed all prior sections, move to question 170.	

Adequate Means of Diversion and Operation

170. Provide a diagram of how you will operate your system from the point of diversion to the place of use.	☐ S
171. Describe specific information about the capacity of the diversionary structure(s). This may include, where applicable: pump curves and total dynamic head calculations, headgate design specifications, and dike or dam height and length. SPECIFIC DETAILS ARE PENDING. A POD DIAGRAM IS ATTACHED AS APPENDIX B _____	☐ A
172. Is the diversion capable of providing the full amount requested through the period of diversion?	■ Y ☐ N

173. Describe the size and configuration of infrastructure to convey water from point of diversion to place of use. This may include, where applicable: ditch capacity and/or pipeline size and configuration. SPECIFIC DETAILS ARE PENDING.	☐ A
174. Describe any losses related to conveyance. NO LOSES ARE EXPECTED FROM THE CONVEYANCE PIPELINE	☐ A
175. Is the conveyance infrastructure capable of providing the required flow and volume and any losses?	■ Y ☐ N
176. Does the proposed conveyance require easements?	■ Y ☐ N
a. If yes, explain. EASEMENT AGREEMENT IN PROGRESS FOR POD AND CONVEYANCE PIPELINE FROM OXBOW CATTLE CO. LLC	☐ A
177. Describe any places of storage, including whether drainage devices will be installed, and provide preliminary designs, if available. Preliminary designs will be required at application submittal. N/A	☐ A
178. Describe specific information about how water is delivered within the place of use. This may include, where applicable, the range of flow rates needed for a pivot and output and configuration of sprinkler heads. WATER WILL BE DIVERTED USING AN INFILTATION GALLERY IN THE BITTERROOT RIVER AND A SUMP WITH A PUMP. WATER WILL BE PIPED AND DISPENSED INTO LOWER MILLER CREEK WHERE IT WILL INFILATRATE TO THE BITTEROOT ALLUVIAL AQUIFER AND ACCRETE TO THE BITTERROOT RIVER.	☐ A
179. Is the water delivery system capable of providing the requested beneficial use?	■ Y ☐ N
180. Will your system be designed to discharge water from the project?	☐ Y ■ N
a. If yes, explain the way water will be discharged and the wastewater disposal method.	☐ A

181. Provide a plan of operations. Water will be pumped seasonally on a monthly basis from the Bitterroot River at POD 2. Water will be pumped to lower Miller Creek near new Well 4 for infiltration into Miller Creek, a known losing stream. Diverted water will be measured and reported to the department annually or when requested.	☐ A
182. Can the plan of operations deliver the flow rate and volume for the beneficial use being requested?	■ Y ☐ N
183. Do you have any plans to measure your diversion and use?	■ Y ☐ N
a. If yes, describe the plan and the type of measurements you will take. All water diverted will be measured with a department approved totalizing flow meter and recorded monthly and delived to the department annually or as otherwise requested.	☐ A
184. Is the means of diversion a well?	☐ Y ■ N
a. If yes, are well log(s) available?	☐ Y ☐ N
i. If yes, submit well log(s) to DNRC	☐ S
ii. If no, who drilled the well?	

Beneficial Use

185. Why is the requested flow rate and volume the amount needed for the purpose? The requested flow rate and volume are the historically used and consumed amounts based on department standards and are necessary to provide the required mitigation to offset SW depletions under an associated new permit application for City Well 4.	☐ A
186. Does the Department have a standard for the purposes for which water is used? Department standards can be found in ARM 36.12.112.	■ Y ☐ N
a. If yes, does the proposed beneficial use fall within Department standards?	■ Y ☐ N
187. If no standard or if proposed beneficial use falls outside of Department standards, explain how the use is reasonable for the purpose. Standards are used for historic use for the irrigation purpose to determine volume available for mitigation/aquifer recharge. Minimum beneficial use amounts for aquifer recharge are determined by the depletions identified in Permit Application 76H 30163647.	☐ A
188. Will your proposed project be subject to DEQ requirements for a public water supply (PWS) system or Certificate of Subdivision Approval (COSA)?	☐ Y ■ N

a. If yes,	
i. Have you researched or consulted with DEQ regarding those requirements?	☐ Y ☐ N
189. Are you proposing to use surface water for in-house domestic use?	☐ Y ■ N
a. If yes, does a COSA exist for the proposed place of use?	☐ Y ☐ N
i. If yes, please submit the COSA.	☐ S
ii. If no, have you researched or consulted with DEQ regarding their requirements?	☐ Y ☐ N

Possessory Interest

190. Do you have possessory interest, or the permission of the party with possessory interest, of the proposed place of use? Proof of possessory interest or permission of the party with possessory interest is required at application submittal.	☐ Y ■ N
a. If no, explain. The place of use is the Bitterroot River	☐ A

PREAPPLICATION MEETING AFFIDAVIT & CERTIFICATION

"We attest that the information on this form accurately describes the proposed project discussed during the preapplication meeting and that the items marked for follow-up will require the applicant to provide additional information before the form is deemed complete."

"Applicant acknowledges that any information provided by the Department during the preapplication is preliminary and subject to change."

"Applicant acknowledges that if the follow-up information provided to the Department substantially changes the proposed project, for example in a way that alters which sections of the form are applicable or which technical analyses are required, or who is to complete the technical analyses, the applicant will need to schedule a new preapplication meeting so that the department can identify any additional information necessary for completion of the technical analyses (ARM 36.12.1302(3)(c))."

Upon Department receipt of the completed form (within 180 days following the meeting), the Department reserves the first five days of the 45-day period in ARM 36.12.1302(4) or (5) to return the form to the applicant if:

1 – the completed form does not include all necessary follow-up information identified in the meeting, OR
2 – the completed form is not adequate for the Department to proceed with technical analyses, OR
3 – the applicant has elected to complete technical analyses and has not submitted each piece of technical analysis required, OR
4 – the applicant has substantially changed the details of the proposed project, such as in a way that alters which sections of the form are applicable, which technical analyses are required, or who is to complete the technical analyses.

If the Department returns the form to the Applicant within these five days due to reasons 1-3 above, the Applicant can use the balance of their 180-day period in ARM 36.12.1302(4) or (5) to gather the remaining follow-up information needed. If there is no time remaining in the 180-day period, the Applicant can submit a written request for a new preapplication meeting, pursuant to ARM 36.12.1302(2). Even if there is still time remaining, the Applicant can choose to schedule a new preapplication meeting. The Department shall transfer the $500 payment received to the new preapplication meeting, or refund the payment to the Applicant if the Applicant desires. If the Department returns the form to the Applicant within these five days due to reason (4) above, the Applicant must submit a written request for a new preapplication meeting, pursuant to ARM 36.12.1302(2). The Department shall transfer the $500 payment received to the new preapplication meeting, or refund the payment to the Applicant if the Applicant desires.

Nate Tollefson — 1-22-25

Applicant Signature — Date

Applicant Signature — Date

Jim Nave — 1/22/2025

Department Signature — Date

FOLLOW-UP PAGE

Applicant will provide all responses to questions marked for follow-up on a separate document entitled "Follow-up Responses" with the question number labeled. Answer questions in the same format as the form. For responses in the form of checkboxes, write "Y", "N", or "S". Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses and tables. Tables must have the exact headings found on the form. Questions that require items to be submitted to the Department may be marked "S" when the required item is attached to the Preapplication Meeting Form. Label all submitted items with the question number for which they were submitted. The Applicant may not alter the Preapplication Meeting Form signed at the Preapplication Meeting. Instead, the Applicant must use the Amended Responses procedure defined below. Do not include additional information for questions not marked for follow-up here; instead include any additional information pursuant to the process for amending responses defined below.

Questions marked for follow-up

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AMENDED RESPONSES PAGE

The Applicant may not alter the Preapplication Meeting Form signed at the Preapplication Meeting or the Follow-up Page. If a response has changed to a question answered at the preapplication meeting, the Applicant can provide a new response in a separate document entitled "Amended Responses" with the question number labeled. Answer questions in the same format as the form. For responses in the form of checkboxes, write "Y", "N", or "S". Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses and tables. Tables must have the exact headings found on the form. Questions that require items to be submitted to the Department may be marked "S" when the required item is attached to the Preapplication Meeting Form. Label all submitted items with the question number for which they were submitted. The Applicant will mark all question numbers with an amended response in the table below and note for each question whether the response will replace the response given at the preapplication meeting or will provide additional information to consider in conjunction with the response given at the preapplication meeting. The Applicant will return the "Amended Responses" document with the "Follow-up Responses" document and the signed Preapplication Meeting Form.

Questions with amended responses

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FOLLOW-UP PAGE AFFIDAVIT & CERTIFICATION

"I/we attest that this preapplication meeting form, follow-up page, and amended responses page accurately portray my proposed project. I am aware that my application for this project will not qualify for a discounted filing fee and expedited timelines if upon submittal of the application to the department, I change any element of the proposed application from the preapplication meeting form and follow-up materials (ARM 36.12.1302(6)(a))."

Nate Tollefson — 1-22-25

Applicant Signature — Date

Applicant Signature — Date

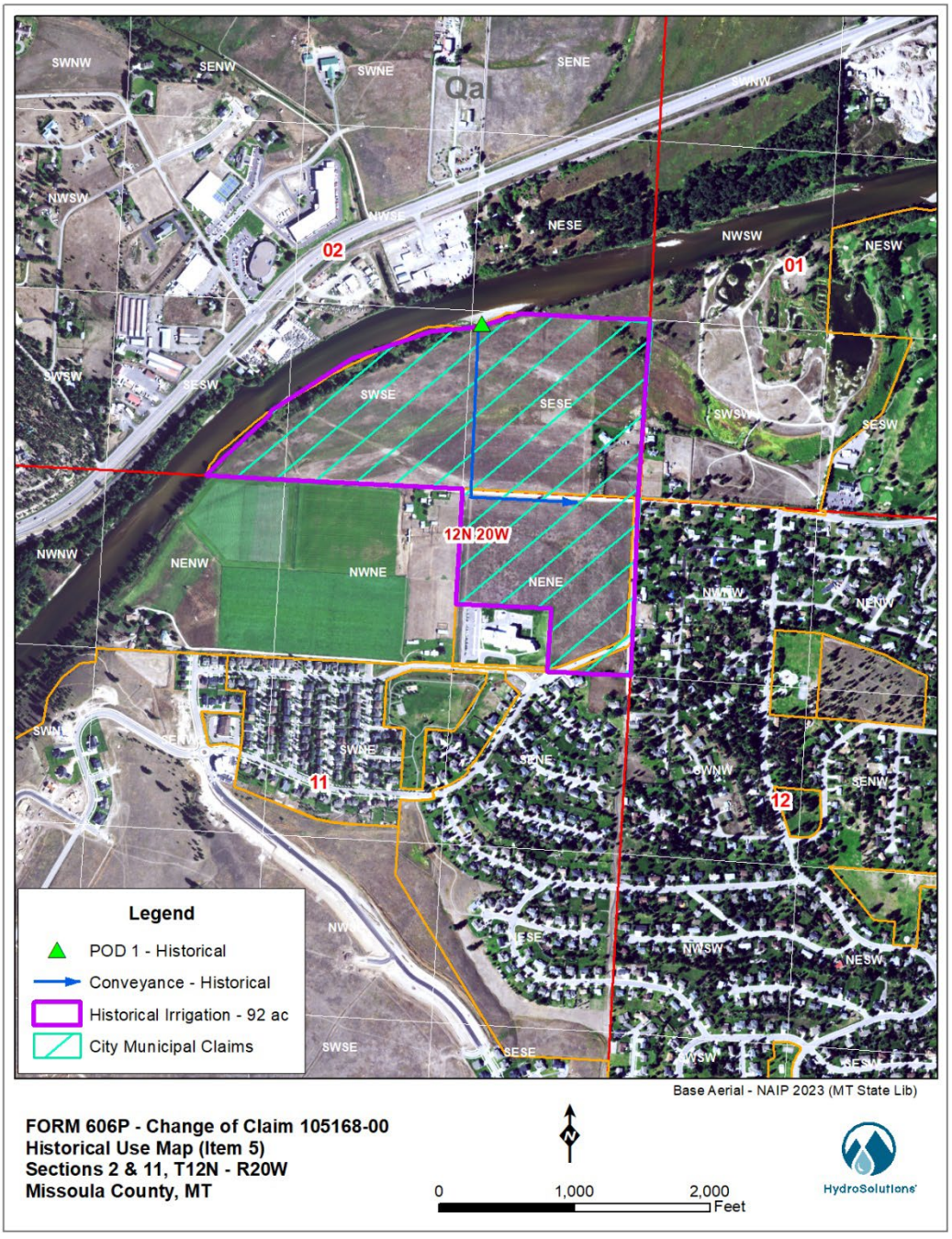
"We confirm that the preapplication form and follow-up information are adequate for the Department to proceed with technical analyses in ARM 36.12.1303. If the applicant has elected to complete technical analyses, we confirm they have submitted each piece of technical analysis required based on the proposed project and the Department is able to proceed with the scientific credibility review (ARM 36.12.1303(8))."

Department Signature — Date

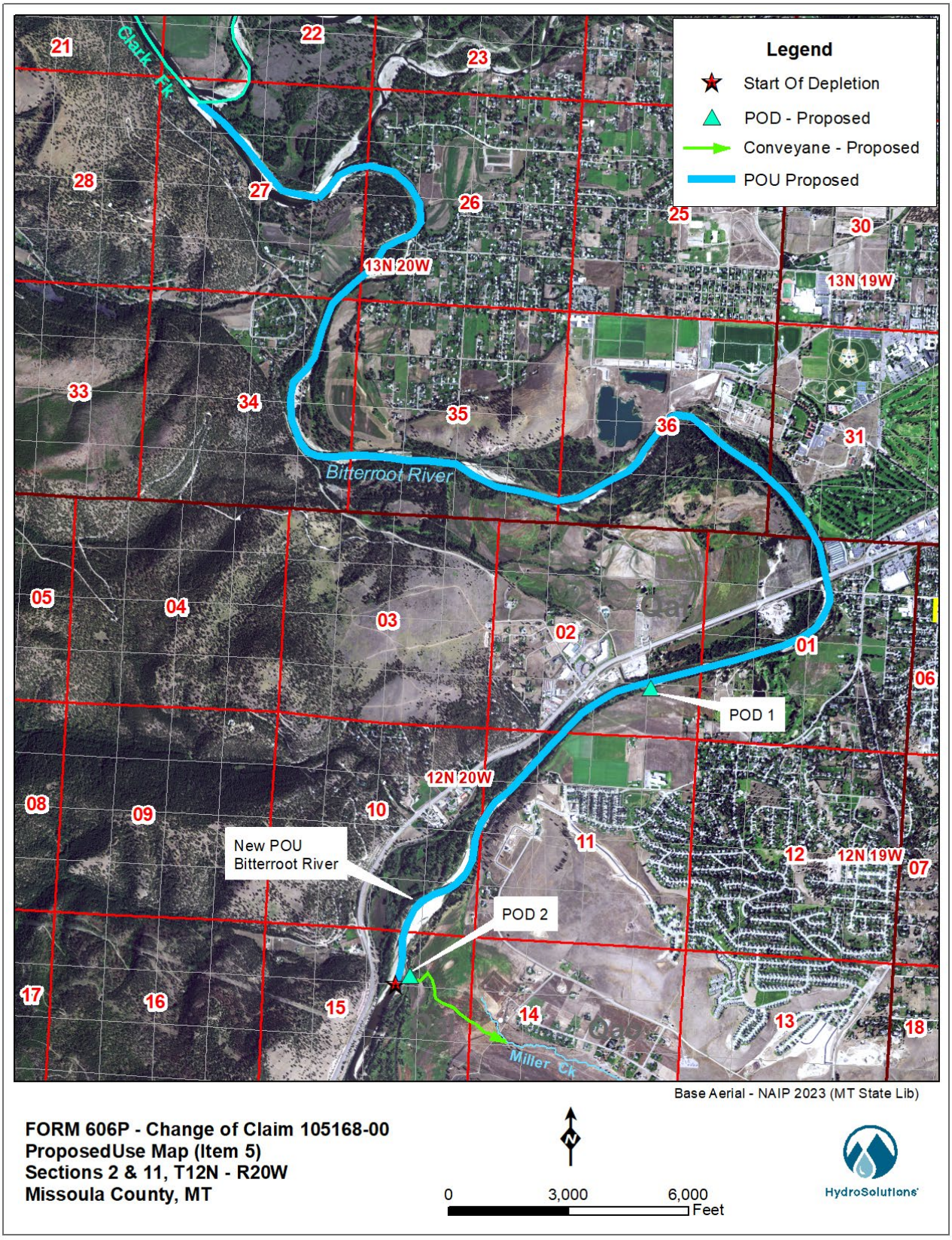
Department Signature — 1-23-2025 — Date

TOLLEFSON PROPERTIES LLC
CHANGE APPLICATION 76H 30156206
PREAPPLICATION MEETING FORM – FORM NO. 606P
SUPPLEMENTAL INFORMATION
January 22, 2025

Map 5. Historical Use Map



Map 6. Proposed Use Map



8. Does the change involve a change in point of diversion?

a. Yes. An additional point of diversion will be added to divert the Tollefson share of the water right to an infiltration site at Miller Creek. The new POD (#2) will be located in SENWNE Section 15, T12N, R20, Missoula County. GEOCODE is 04-2092-15-3-01-02-0000. Existing POD #1 will remain in NWSESE Section 2, T12N, R20, Missoula County. The MT Cadastral property card for new POD #2 is: provided below.

Primary Information

Property Category: RP	**Subcategory:** Agricultural and Timber Properties
Geocode: 04-2092-15-3-01-02-0000	**Assessment Code:** 0003493401
Primary Owner: OXBOW CATTLE COMPANY LLC 10950 ORAL ZUMWALT WAY MISSOULA, MT 59803-9794 *Note: See Owners section for all owners*	**Property Address:**
Certificate of Survey: 6484	**Legal Description:** S15, T12 N, R20 W, C.O.S. 6484, PARCEL TRACT 2, ACRES 80.93

9. Does the change involve a change in place of use?

a. Yes

The place of use is the Bitterroot River where it crosses the southern line of NWNE Section 15, T12N-R20W to its confluence with Clark Fork River, as designated in DNRC Technical Analyses Report-Part A, Application No. 76H 30163647.

i. The changed place of use is instream, so there are no geocodes.

ii. The legal description of the instream reach from the start of depletion to the Clark Fork River, listed by lowest township, then range, then section number.
The reach has been amended to add IDs 8 and 9 to extend this reach to the confluence of the main (2nd) channel of the Clark Fork River. Map 5 has been amended to show this.

Id	QTR SEC	SEC	TWP	RGE	CO
1.		01	12N	20W	MSLA
2.	S2	02	12N	20W	MSLA
3.	SE	10	12N	20W	MSLA
4.	NW	11	12N	20W	MSLA
5.	NENE	15	12N	20W	MSLA
6.	W2SW	31	13N	19W	MSLA
7.	W2	26	13N	20W	MSLA

8.	NW	27	13N	20W	MSLA
9	E2	27	13N	20W	MSLA
10.	S2	35	13N	20W	MSLA
11.	E2	34	13N	20W	MSLA
12.		36	13N	20W	MSLA

13. Do you have ownership of the entire historical POU for the water right(s) being changed?

i. No

b.**i** This change is for 82 acres of the 92 total acres listed on the abstract. The other 10 acres are owned by Shauna M and W H Ginter. The 82 acres being changed were purchased from the Ginters. The 82 acres owned by Tollefson are not currently split from the right, but if Ginters are not willing to sign this change application, a Form 642 to split the right will be filed before filing the permit and change applications.

25. Are there previous Montana Water Court approved stipulations, Water Master reports, or prior Montana Water Court or Department decisions related to the water right(s) being changed?

a. Yes. Of the original 100 acres under this claim, 8.0 acres were previously split by the water court on 11/26/2019. The split owner of the 8.0 acres was Missoula County Public School, but the split claim is now owned by Peak Health Management Company LLC (Peak) under claim 76H 30122609. A remark on the abstract for this severed claim states "*This split claim was authorized by the water court based on information in claim No. 76H 105168-00*."

27. Do you have actual knowledge of historical use?

i. No

ii. The 76H 105168-00 claim file contains an interview with Shauna Ginter, owner of the claim being changed and the daughter of former ranch manager Pat McCarthy, executer of Maloney Ranch Estate. Maloney Ranch is the pervious owner of this claim and the historical POU. Pat McCarthy operated the ranch for the Maloney family since the mid-1940s. During a DNRC interview on September 23, 2009 (claim file, p. 43), Mrs. Ginter stated that as long as she could remember that the area claimed was irrigated. Although not an affidavit, this information was used to determine historical use by the department and Ginters subsequently amended the area irrigated from 144 acres down to 100 acres, which includes the 92 acres now claimed. Shauna Ginter's husband Rocky Ginter has knowledge of operating the ranch and irrigation of the claimed POU since moving to the ranch in 1988 and operating it for his father-in-law, Pat McCarthy.

Additionally, the claim file (p. 47) contains mapping done for adjudication of this claim where DNRC examined 89.3 ac. on 1955 air photo CNQ-2P-16 and 104.2 ac. on 1979 air photo 1079-109. The eight acres now owned by Peak under claim 76H 30122609 is currently being examined by the Department for a change submittal.

29. Are you proposing to change all water right(s) associated with the historical place of use?

a. No. The City's municipal place of use for 61 supplemental municipal water rights now overlaps the historic place of use. The was not the case until the recent annexation, but the City has never provided services to the POU area, water from the City claims has never been applied to the POU. The City rights did not overlap the POU prior to July 1, 1973. Based on this information, the 61 municipal rights are not listed.

30.a.i.1.a. Does the Water Resources Survey corroborate the acres irrigated listed on the abstract?

No.

30.a.i.1.a.i The WRS does not show irrigation of the POU. However, the POU was mapped for Basin 76H adjudication showing 95.31 acres on the 8/1/1955 aerial photo CNQ-2P-16 (Data Source 2) as shown on Map 30.a below. This irrigation is noted in a Department note in the claim file (pg. 44) stating "there was clearly irrigation showing in 1955".

Map 30.a

Department of Natural Resources and Conservation Examination Report

Map Printed: 11/24/2014 1:53:01 PM Examiner: John Beyrau

Examination of: 76H 105168 00 - Irrigation
Owner or Business Name: W H GINTER, SHAUNA M GINTER

Total Water Resources Survey Acres: 95.31 Acres
Total Claimed Acres (Claim Form): 100 Acres

Township, Range, County: T 12N, R 20W, Sec. 02; Missoula County

Source: USGS 7.5 Minute Quad(s): Southwest Missoula

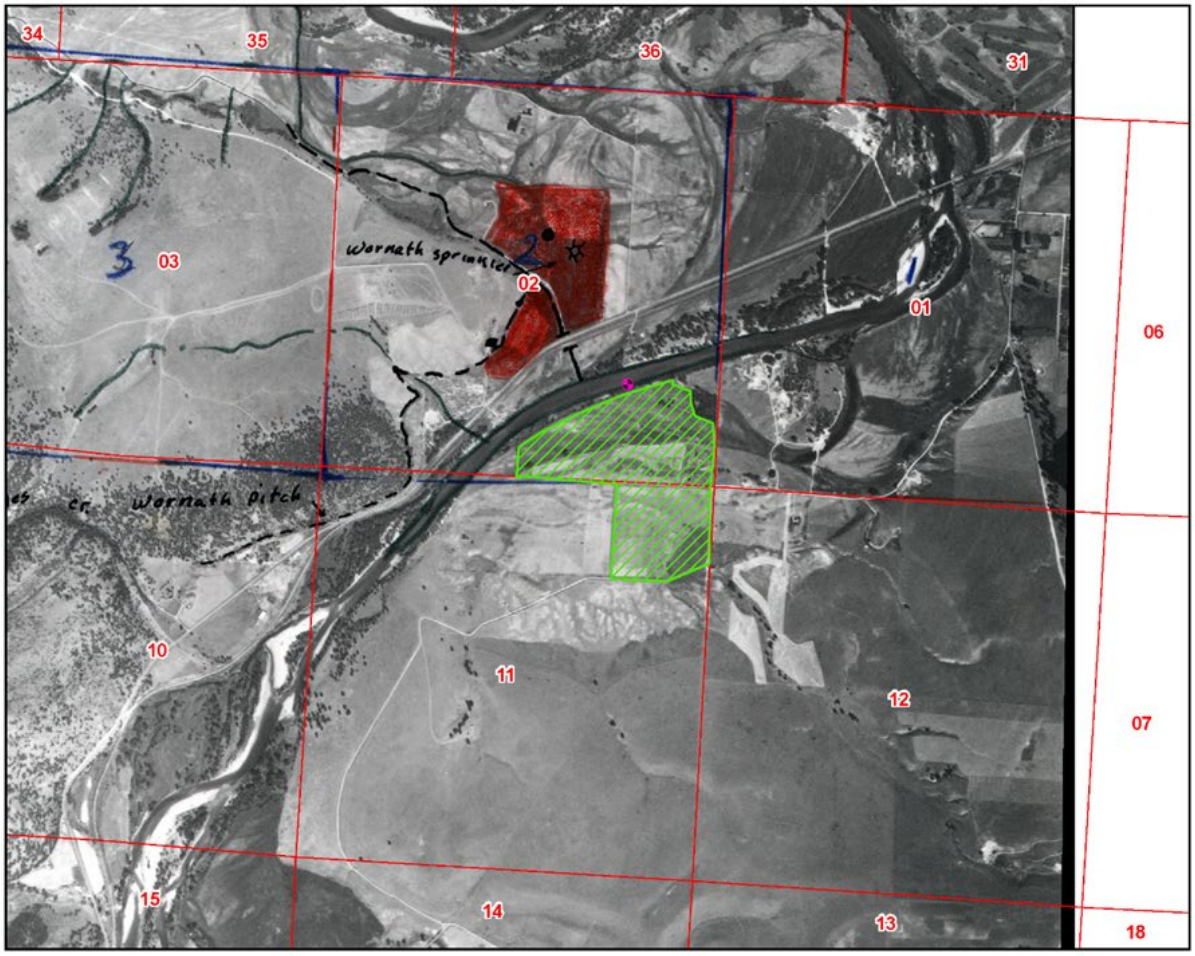
Photo #: WRS Aerial Photo(s): CNQ-2P-16 date: 8/1/1955

Claimed Point(s) of Diversion

Ditch

Water Resources Survey Place of Use

Data Source #2



0 0.5 1 Miles

1:24,000

33.b Answer questions below related to the diversion means for each of the historical point(s) of diversion.

b. Pump, dike, dam, or other surface water point of diversion

The pump historically used to divert water to the POU was a Baldwor Reliance 25 HP pump motor (shown below,) used at a flow rate of 1,065 GPM. In the change of split claim 76H 30122609 (from claim 76H 105168-00 being changed), Peak used the publication *Irrigation Water Pumps* (AE1057, Revised Aug 2017), by Thomas F. Scherer, Extension Agricultural Engineer N. Dakota State University to confirm a flow rate of 1,065 gpm (2.37 cfs) for the motor/pump used by Ginter for irrigation of the historic place of use.

The diversion also utilizes a network of perforated pipe in the riverbed that drains water to a riverbank sump consisting of a 4- foot diameter, vertical corrugated pipe. Water to the POU is through 2,400 feet of 8-in mainline to risers spaced about 60 feet apart. Risers on laterals are spaced at 30 feet.

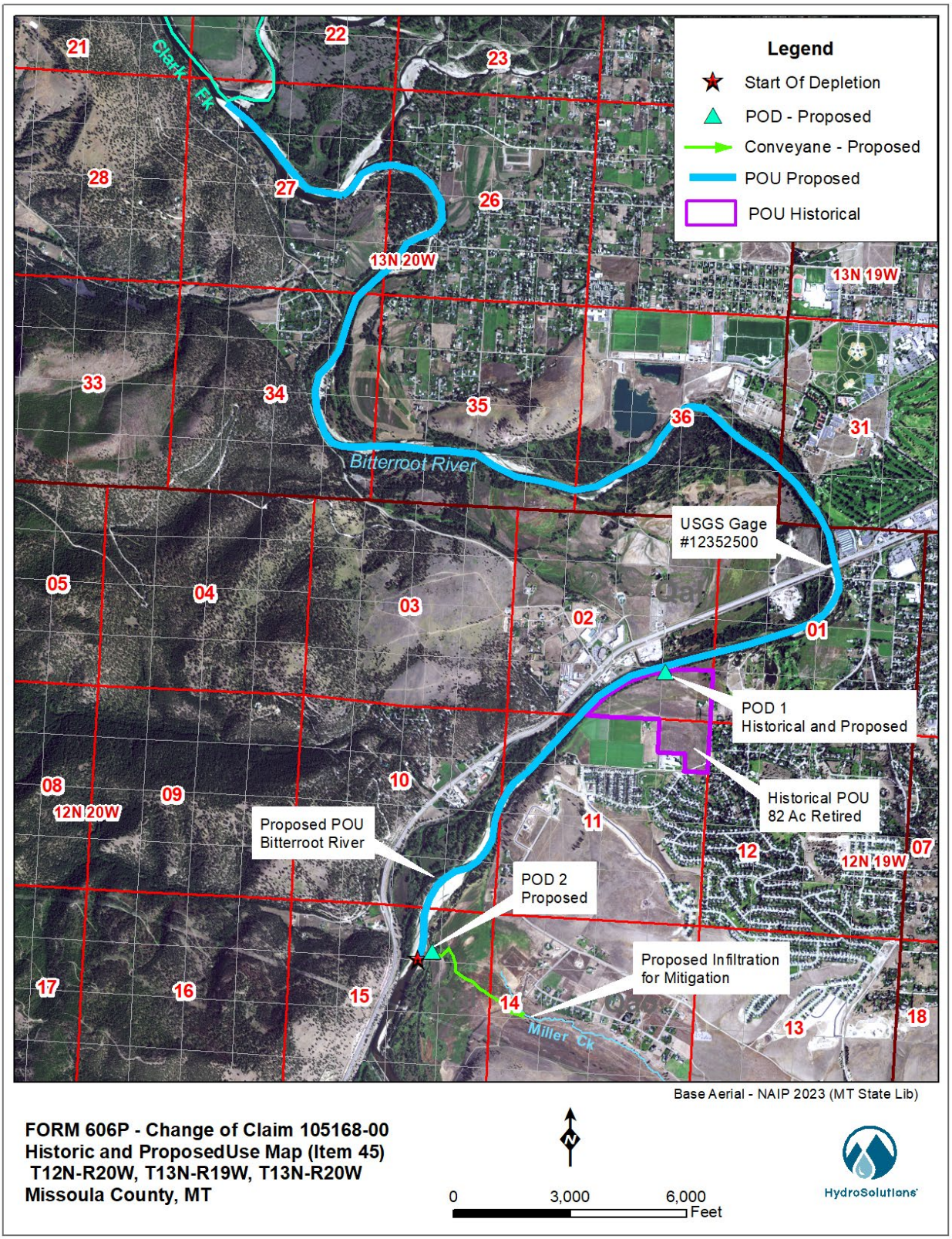
36. When was water diverted for the purpose(s) of the water right(s) being changed?

In an interview for the Peak change, Rock Ginter stated the sprinkler system was operated in 24-hour sets and, operating from every other riser, took 20 days for a first pass over the field. The return pass utilized the alternate risers, also taking 20 days. Application of three complete passes were completed in a normal irrigation season. Water was typically applied between late April through mid to late August. A single hay cutting occurred in August and the field was not irrigated after this cutting. The schedule described by Ginter indicates the average use on the historical place of use was typically irrigation for 120 days within the 214-day claimed period of use (April 1 to October 31). The maximum historical use might have added another 40-day rotation for 160 days total.

45. Provide a map showing the historical and proposed places of use created on an aerial photograph or topographic map with section corners, township and range, and a north arrow.

See Map 45 below.

Map 45. Historical and Proposed Places of Use



48. Do you have information for the Department to consider about the source and location where return flows historically accrued?

The following is from DNRC Change Technical Report 76H 30163647 - Part B:

3.0 Adverse Effect – Return Flow Analysis

3.1. Non-Consumed Volume

The consumed volume for irrigation is based on the net irrigation requirement (NIR) from USDA Natural Resources Conservation Service Irrigation Water Requirements (IWR) at a representative weather station. The NIR is multiplied by a county-wide management factor (from ARM36.12.1902) to produce an adjusted NIR representative of actual crop yields in Montana. Crop consumption is determined by multiplying the adjusted NIR by the number of acres of irrigation.

Crop consumption is then divided by the field efficiency identified from the irrigation method and ARM 36.12.115. Irrecoverable losses (IL) are 5% of the field applied volume for flood irrigation or 10% for sprinkler irrigation. The total consumed volume for irrigation is the crop consumption plus irrecoverable losses. The total non-consumed volume is the field applied volume minus the total consumed volume.

The historical consumed and non-consumed volumes have been calculated with the inputs shown in Table 1 following the methods described above and in ARM 36.12.1902.

Table 1: Historical use Statement of Claim No. 76H 105168-00.

Irrigation Method	Acres	IWR (in)[1]	Mgmt. Factor[2]	Field Efficiency	Crop Consumption (AF)	Applied Volume (AF)	IL (AF)	Total Consumed Volume (AF)	Non-Consumed Volume (AF)
Wheel line	82.0	19.5	70.0%	70%	92.4	132.0	13.2	105.6	26.4

1Missoula WSO AP IWR Weather Station

2Missoula County Historical Use Management Factor

Also from the Change Tech Report 76H 30163647-Part B

3.3 Location of Return Flows

The location of return flows from 82.0 acres of historical irrigation is the Bitterroot River downstream of the SESESW, Section 02, Township 12 North, and Range 20 West, Missoula County.

Under the proposed change, 82.0 acres of irrigation would be retired. Historically diverted, nonconsumed water (26.4 AF) associated with the retired 82.0 acres would be left instream below the historical point of diversion to offset the loss of return flows from the retired acres. As such, the rate and timing of return flows were not calculated.

55. What is the location (¼ ¼ ¼ section of start and end of reach) and length (FT) of the mitigation reach?

Start of depleted reach is SENWNE Section 15, T12N-R20W.

End of depleted reach is NENW Section 27, T13N-R20W.

Distance is measured at 47, 265 feet.

The end of the depleted reach is to the main (2nd) channel of the Clark Fork River. The length of the reach is 47,265 feet.

56. What is the amount, timing, and location (¼ ¼ ¼ section) of water needed for mitigation?

The amount of mitigation will be 101.1 AF. The location of mitigation is the upstream beginning of the affected reach of the Bitterroot River as defined in Table 1 of the TAR-Part 1. Depletions are assumed to propagate downstream to the confluence with the Clark Fork River. Mitigation will ensure that the timing of accretions offset depletions.

57. How do the priority dates of the water rights proposed for change to mitigation compare to other water rights on the source?

There are only 10 water rights with senior priority dates in the Bitterroot River reach between the confluence of Miller Creek and the Clark Fork River, which is the reach determined by the department to be depleted by new City Well 4 and for which mitigation under this change is required (discussed further for No. 153).

64. By what means will aquifer recharge water be made available? You must provide a copy of all relevant discharge permits at application submittal (§85-2-364, MCA).

Aquifer recharge will be made available by retiring all 82 acres of Applicant's irrigation and diverting up to the maximum historical consumed volume of that water at the new POD for aquifer recharge into Miller Creek for infiltration/mitigation.

Alanna Shaw, MPDES Section Supervisor for DEQ responded to an email inquiry, stating that a discharge permit for water transfers is not required under 40 CFR 122.3(i).

108. Explain why the requested flow rate and volume is the amount needed for the purpose.

The requested volume is up to the maximum historical consumed volume of claim 76H 105168-00 being changed. The requested flow rate is less than the maximum diverted under claim 76H 105168-00 and is the rate that may be needed at times to administer the change.

153. Explain how you can control your diversion in response to call being made.

The diversion pump can be turned off if a valid call is made. However, operation of the POD will not adversely affect senior water rights if a call is made. Although a cessation of pumping at Site 2 it will be rapid enough to not cause adverse effect should a call be made by a senior water right. However, there is zero likelihood of a valid call to Tollefson claim 76H 105168 00 by a senior claim because there are only 10 water rights between the Miller Creek confluence and the Clark Fork River that are senior to this claim, which is being proposed for change to mitigation. The combined maximum flow rate of claims senior to 76H 105168 00 is 29.8 CFS. Based on the 50th percentile of mean monthly flows in the Bitterroot River at USGS Gage 12352500, water in this reach is always physically available to these senior rights within the April 1 to October 31 historic period of diversion. Clearly, none of these senior claims would ever have to make a call on Tollefson claim

76H 105168 00. Further, because there are numerous water rights with priority dates junior to the June 1958 priority of claim 76H 105168, those junior rights would be called first. This process of calling junior rights would provide abundant time for planning to stop diverting, if necessary.

157. When was the last time water was appropriated and used beneficially?

Mr. Ginter states that water was last diverted to fully irrigate the place of use in 2010. Ginter sold claim 76H 105168 to Applicant (Tollefson Properties LLC) in July 2020 and the Applicant has been working with Woith Engineering to develop the property since that time. The lapse in use between 2010 and 2020 is attributed to Ginter's divorce and because his age limited his ability to operate the system after 2010 up to the time of the sale to Applicant. After Applicant's purchase in 2020 delays are attributed to 1) the Covid-19 pandemic, 2) to the complexities of land development, including negotiating with the City for services, and 3) To issues with defining a workable mitigation plan. Applicant's engineering consultant Woith Engineering first met with the City on April 2, 2020 regarding a change of this claim. The Applicant has now had multiple preapplication meetings with the Department, the first held on February 1, 2021.

Resumption of the use under this water right will not adversely affect other water users because the historic flow rate will be less, diversion of the historic consumed volume will not be exceeded, and because all diverted water will be returned to the Bitterroot River through accretion from the mitigation infiltration gallery proposed in this change.

158. For point of diversion changes:

b. Are there intervening water users between the historical and proposed point of diversion?

Yes, there are five water rights in this reach totaling 26.8 AF. A change in POD in the application will not adversely affect these rights. USGS Gage 12352500, located at the highway crossing over the river about three miles below Miller Creek, always flows at greater than 26.8 AF.

159. For place of use changes, will changes to the rate, location, volume, or timing of return flows adversely affect other appropriators?

Claim 76H 105168 is being changed to aquifer recharge and all 82 acres in the Applicant's historically irrigated place of use will be retired. All water up to the historically consumed volume of 101.1 AF for Applicant's 82 acres of irrigation will continue to be diverted at new POD 2. Under the proposed mitigation plan, this water will be conveyed for aquifer recharge and infiltration into lower Miller Creek where it will accrete to the Bitterroot River with rates and timing that offset depletions from new Well 4 under associated new permit application 76H 30163647. Water diverted from the river under the proposed change will be measured at the new POD, so the historical flow rate and volume will not be exceeded. The location of the new POD will be moved upstream and water diverted to the Miller Creek aquifer at an aquifer recharge/infiltration site located near new Well 4 so that the timing of infiltration accretions is similar to the timing of Bitterroot River depletions caused by pumping new Well 4.

All water up to the historically consumed volume of this water right will continue to be diverted at new POD 2. Because the location and timing of mitigation infiltration will accrete to the Bitterroot River at amounts equal to or greater than monthly depletions, no adverse effects are expected to any existing water right, certificate, permit, or water reservation.

170. Provide a diagram of how you will operate your system from the point of diversion to the place of use.

A diagram of the diversion is provided in Appendix B.

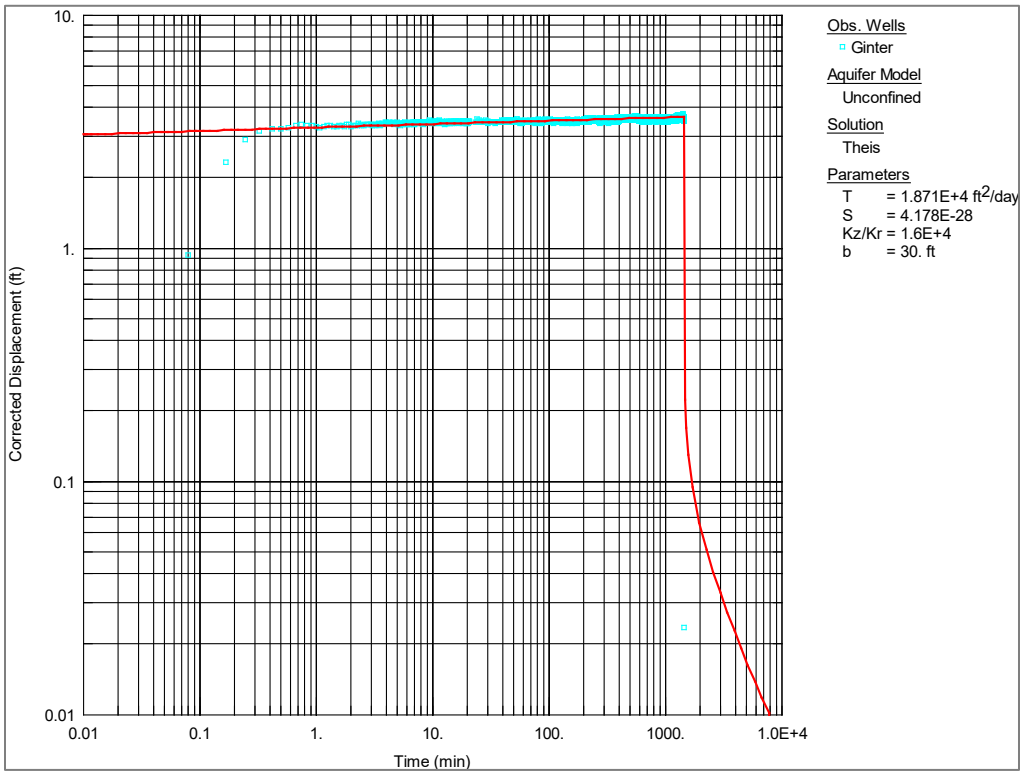
APPENDIX A

ITEM 48 – GINTER WELL

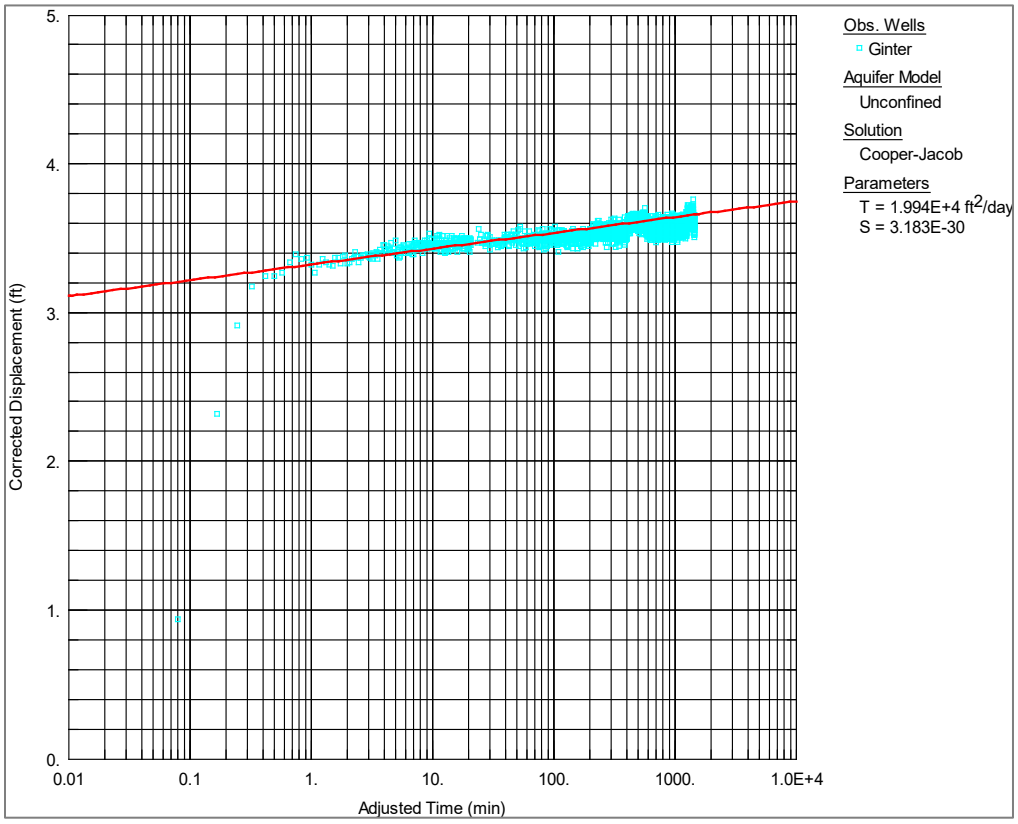
AQTESOV® OUTPUT

WELL LOG

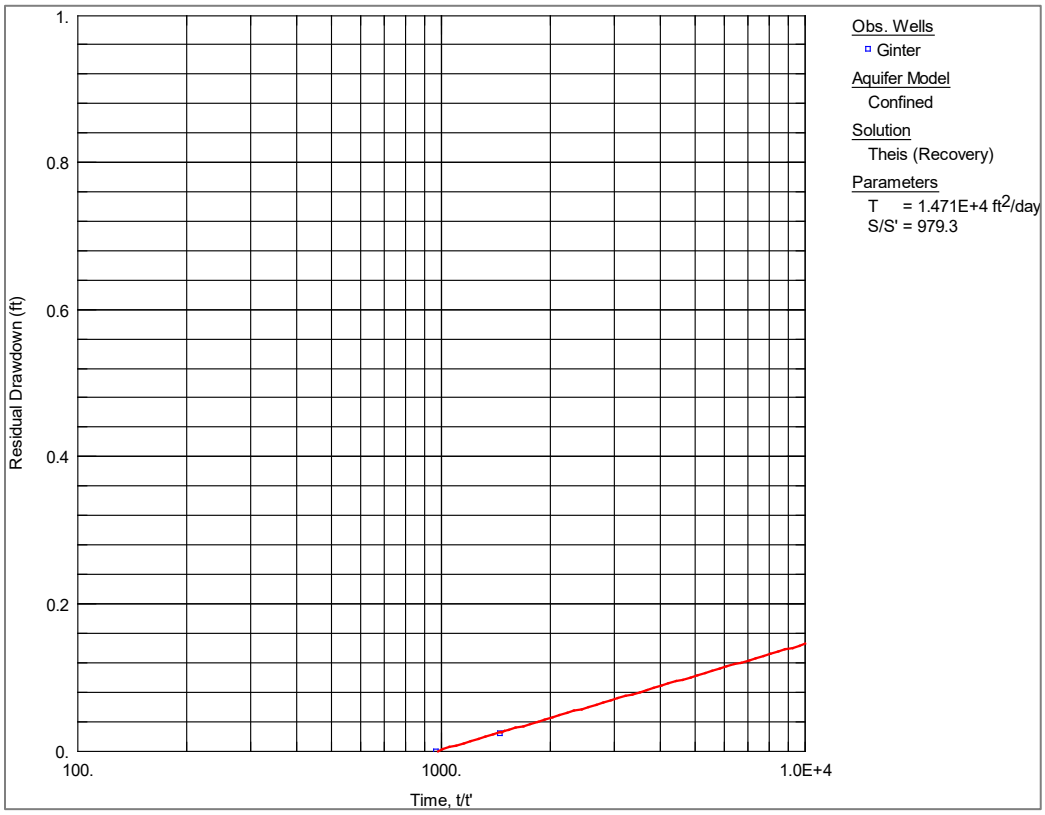
Theis Drawdown



Cooper-Jacob Drawdown.



Recovery


1.
0.8
0.6
0.4
0.2
0.
Residual Drawdown (ft)
100.
1000.
1.0E+4
Time, t/t'
Obs. Wells
Ginter
Aquifer Model
Confined
Solution
Theis (Recovery)
Parameters
T = 1.471E+4 ft2/day
S/S' = 979.3

Ginter Well

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Return to menu
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (2/7/2022 9:14:21 AM)

Site Name: TOLLEFSON PROPERTIES LLC
GWIC Id: 318758

Section 1: Well Owner(s)
1) TOLLEFSON PROPERTIES LLC (MAIL)
15311 TYSON WAY
FRENCHTOWN MT 59834 [01/21/2022]

Section 2: Location

Township	Range	Section	Quarter Sections
12N	20W	11	NE¼ NE¼

County	Geocode
MISSOULA	

Latitude	Longitude	Geomethod	Datum
46.81811900435	-114.0694630585	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water
IRRIGATION (1)
MONITORING (2)

Section 4: Type of Work
Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date
Date well completed: Friday, January 21, 2022

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	140	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	140	6			WELDED	STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
100	115	6			HOLTE PERFORATOR SLOTS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	Y

Section 7: Well Test Data

Total Depth: 140
Static Water Level: 17.58 ft
Water Temperature:

Air Test *

60 gpm with drill stem set at 140 feet for 2 hours.
Time of recovery 0.08 hours.
Recovery water level 23 feet.
Pumping water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log
Geologic Source
Unassigned

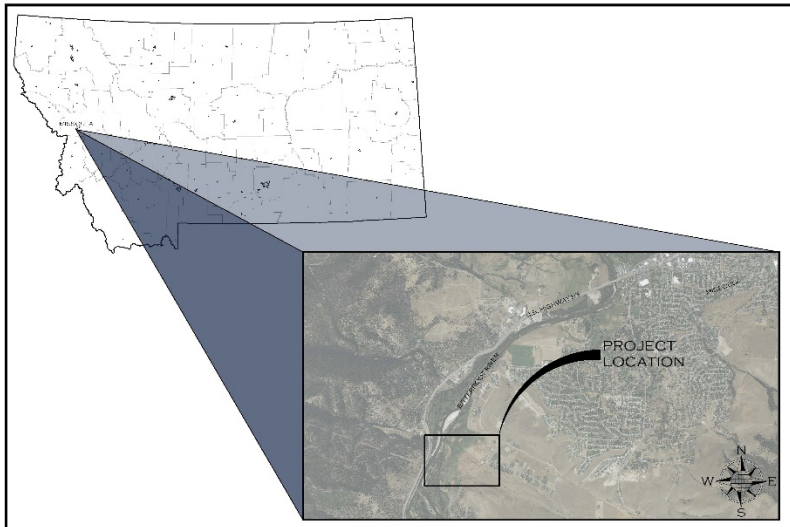
From	To	Description
0	3	SOIL
3	8	SOIL AND GRAVEL
8	23	SAND AND GRAVEL
23	70	SAND AND GRAVEL WITH WATER
70	79	SAND AND GRAVEL WITH WATER
79	97	SAND AND GRAVEL
97	117	SAND AND GRAVEL WITH WATER
117	121	RED CLAY
121	136	CLAY, SNAD, GRAVEL WITH WATER
136	140	CLAY

Driller Certification
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

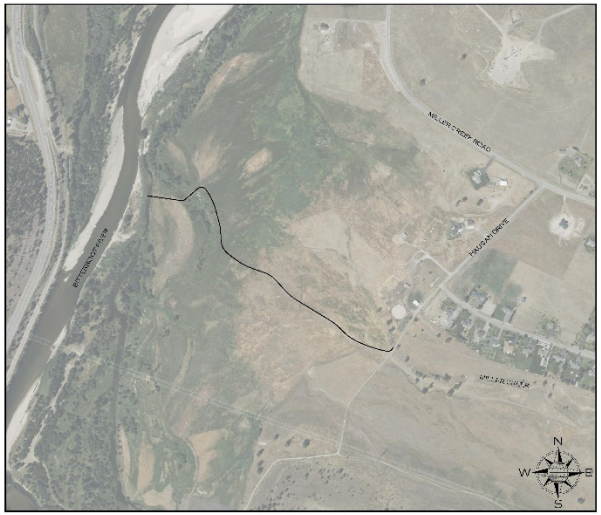
Name: BRADLEY MCKAY
Company: WESTERN MONTANA DRILLING CO.
License No: WWD-754
Date Completed: 1/21/2022

APPENDIX B

ITEM 170 – SPECIFIC INFORMATION ABOUT THE CAPACITY OF THE DIVERSIONARY STRUCTURE



VICINITY MAP
NOT TO SCALE



PROJECT MAP
NOT TO SCALE

811
Know what's below.
Call before you dig.

CONSTRUCTION PLANS FOR

OXBOW RANCH SURFACE WATER DIVERSION

MISSOULA, MONTANA

OCTOBER 2024

APPROVED BY:
NAME, PE OR PLS

PRELIMINARY - NOT FOR CONSTRUCTION

COLOR VERIFICATION
ELEMENTS ON THIS SHEET ARE INTENDED TO BE IN COLOR. IF PROPERLY REPRODUCED, RED, GREEN AND BLUE WILL BE VISIBLE

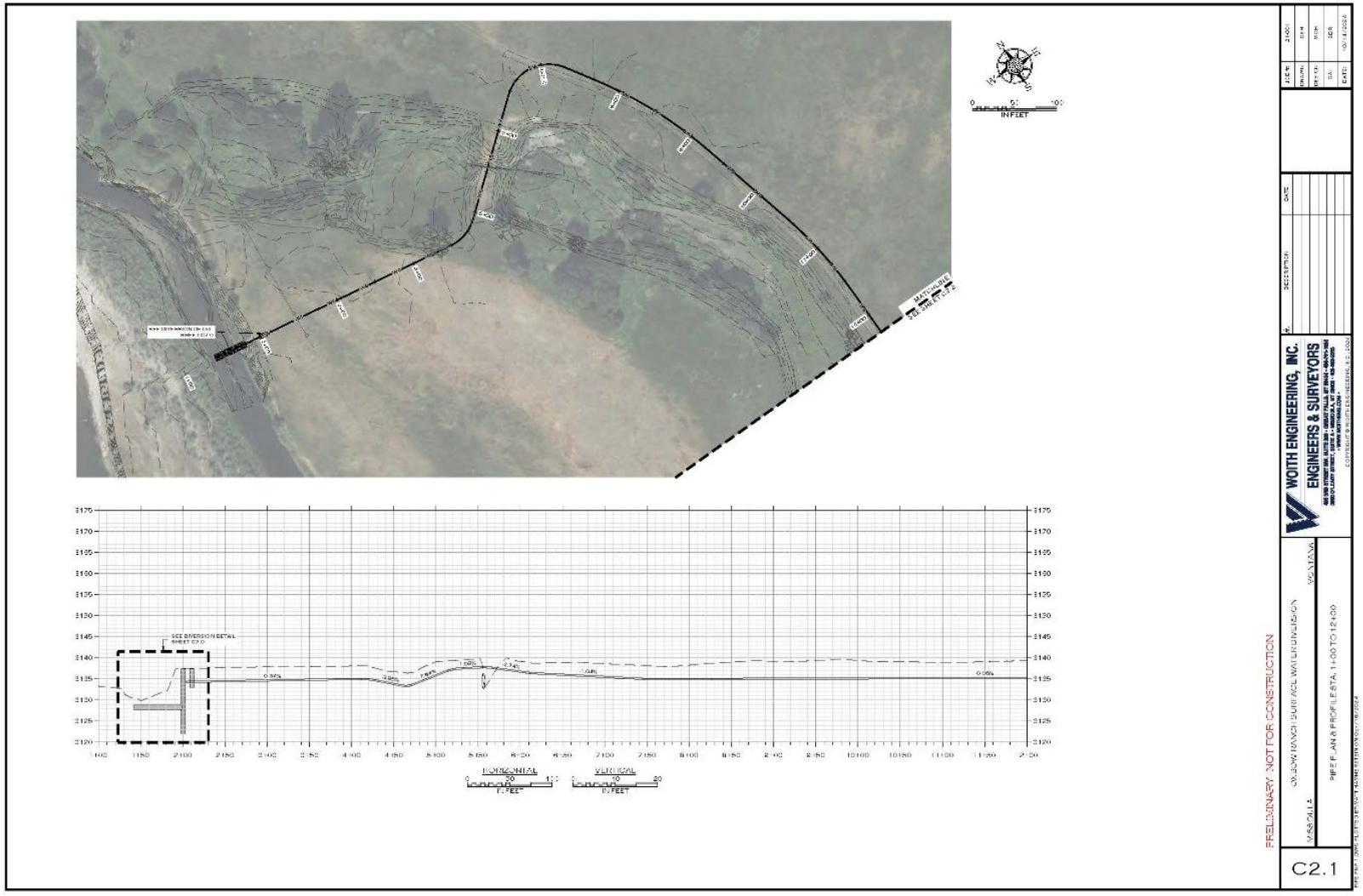
WOITH ENGINEERING, INC.
ENGINEERS & SURVEYORS

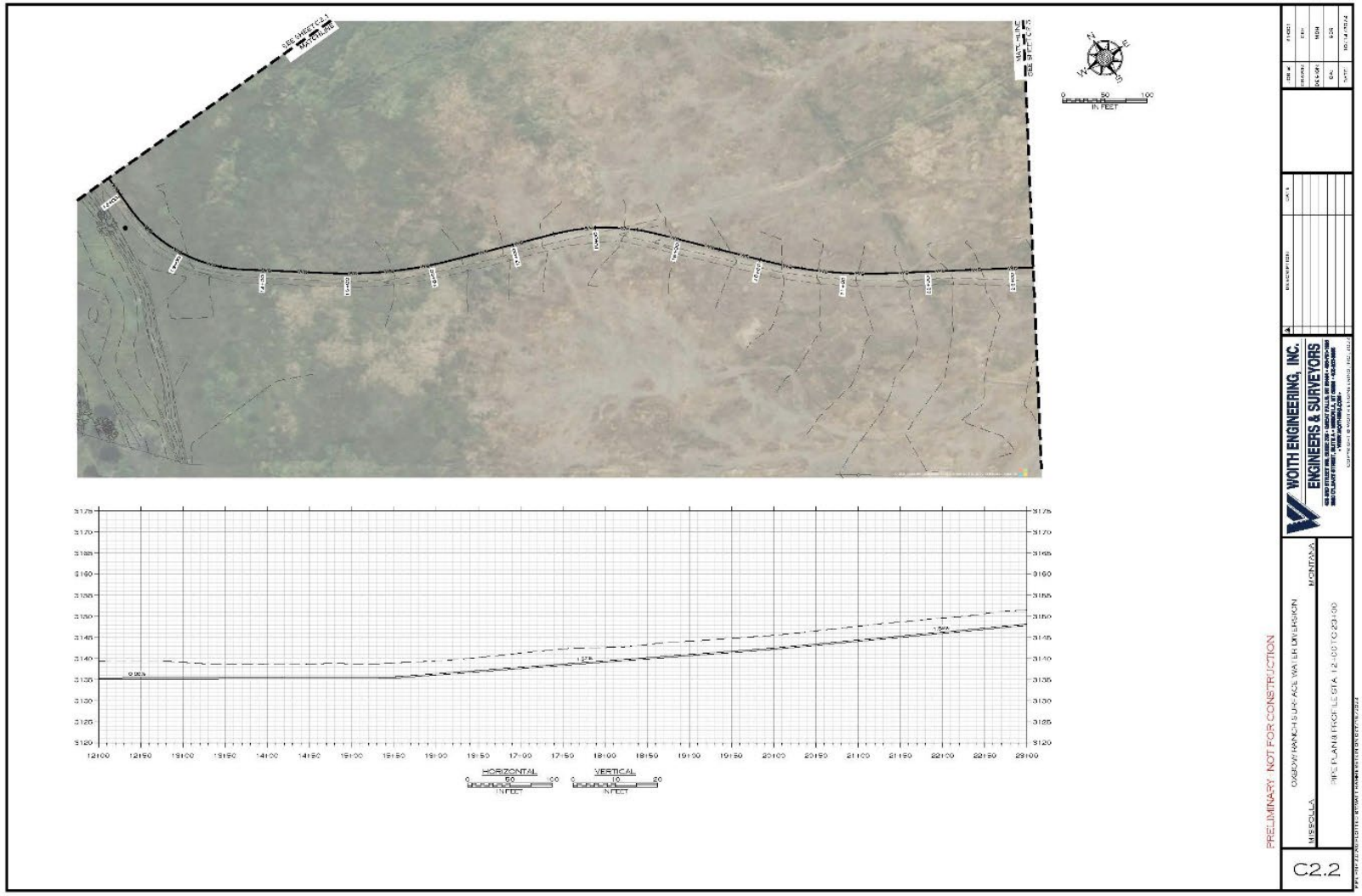
OXBOW RANCH I SUBD ACL WALK LOVELIGION
MISSOULA MONTANA
COVER

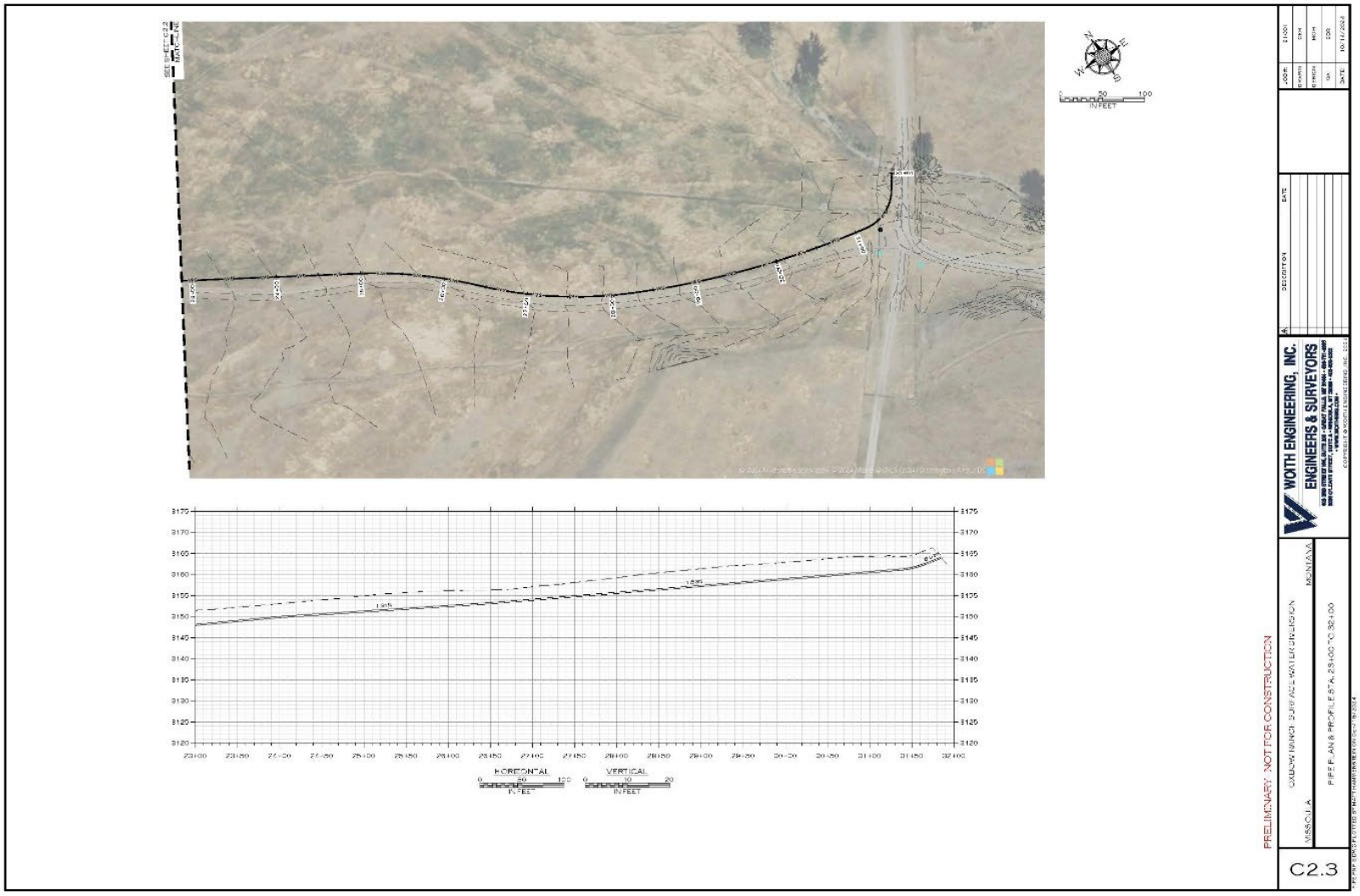
CO.0

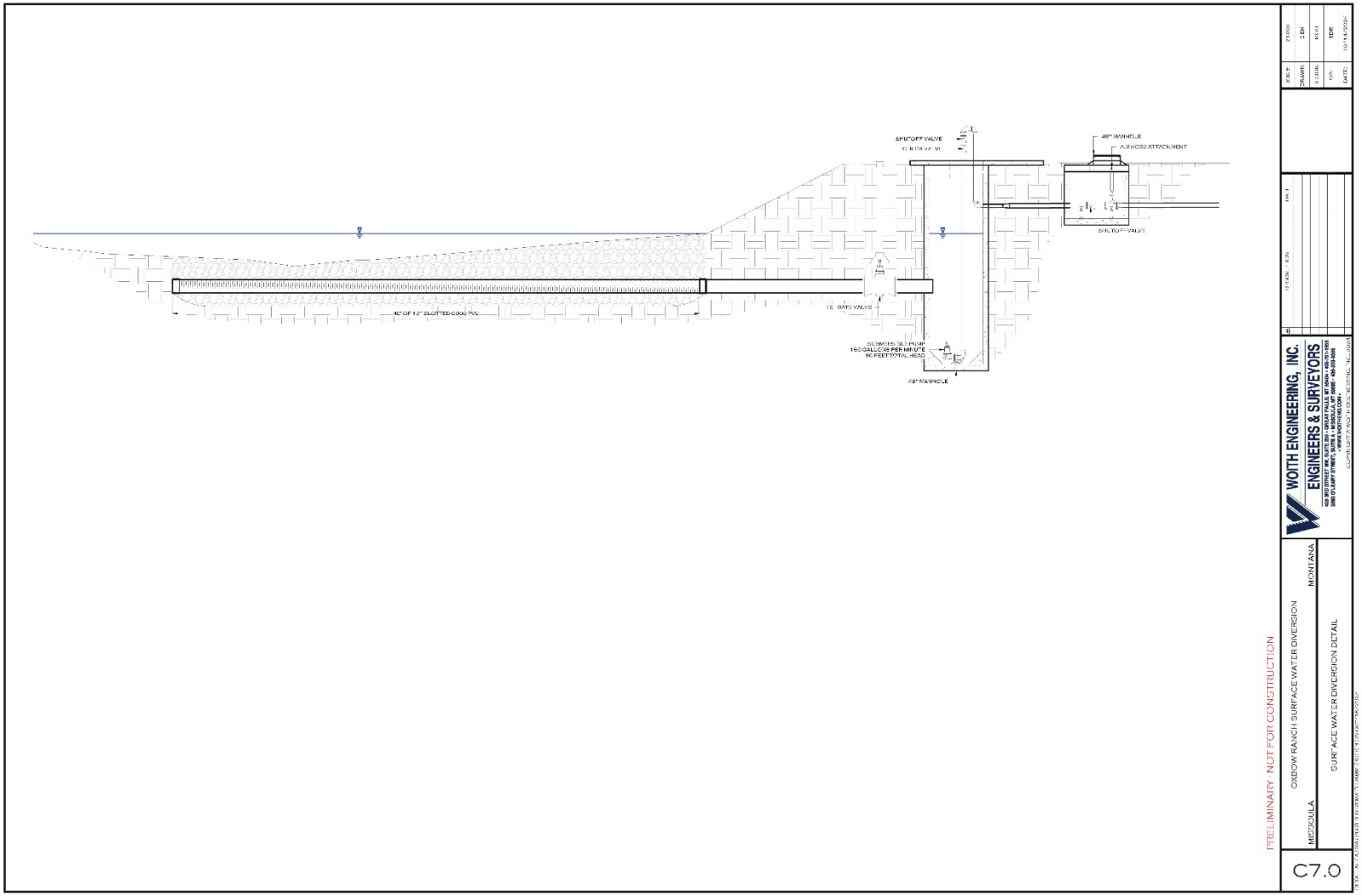
HydroSolutions


STA. 1+00 TO 12+00
SEE SHEET C2.1
STA. 12+00 TO 23+00
SEE SHEET C2.2
STA. 23+00 TO 32+00
SEE SHEET C2.3
PRELIMINARY - NOT FOR CONSTRUCTION
WOITH ENGINEERING, INC.
ENGINEERS & SURVEYORS
OXBOW RANCH SURFACE WATER DIVERSION
MISSOULA
MONTANA
OVERALL SITE PLAN
C2.0


0 50 100
IN FEET
HORIZONTAL
VERTICAL
PRELIMINARY - NOT FOR CONSTRUCTION
WOITH ENGINEERING, INC.
ENGINEERS & SURVEYS
C2.1


SEE SHEET C2.1
FOR DETAILS
SEE SHEET C2.3
0 50 100
IN FEET
HORIZONTAL
VERTICAL
PRELIMINARY NOT FOR CONSTRUCTION
WOITH ENGINEERING, INC.
ENGINEERS & SURVEYORS
OXBOW RANCH SUBDIVISION
MISSOULA
MONTANA
PIPE PLAN & PROFILE STA 12+00 TO 23+00
C2.2


SEE SHEET C2.2
50
100
IN FEET
HORIZONTAL
VERTICAL
PRELIMINARY: NOT FOR CONSTRUCTION
WOITH ENGINEERING, INC.
ENGINEERS & SURVEYORS
C2.3


SHUTOFF VALVE
48" MANHOLE
AIRHOSE ATTACHMENT
SHUTOFF VALVE
40' OF 12" SLOTTED C900 PVC
12" GATE VALVE
SUBMERSIBLE PUMP
160 GALLONS PER MINUTE
90 FEET TOTAL HEAD
48" MANHOLE
PRELIMINARY - NOT FOR CONSTRUCTION
WOITH ENGINEERING, INC.
ENGINEERS & SURVEYORS
OXBOW RANCH SURFACE WATER DIVERSION
MISSOULA
MONTANA
SURFACE WATER DIVERSION DETAIL
C7.0