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 – PUBLIC COMMENT

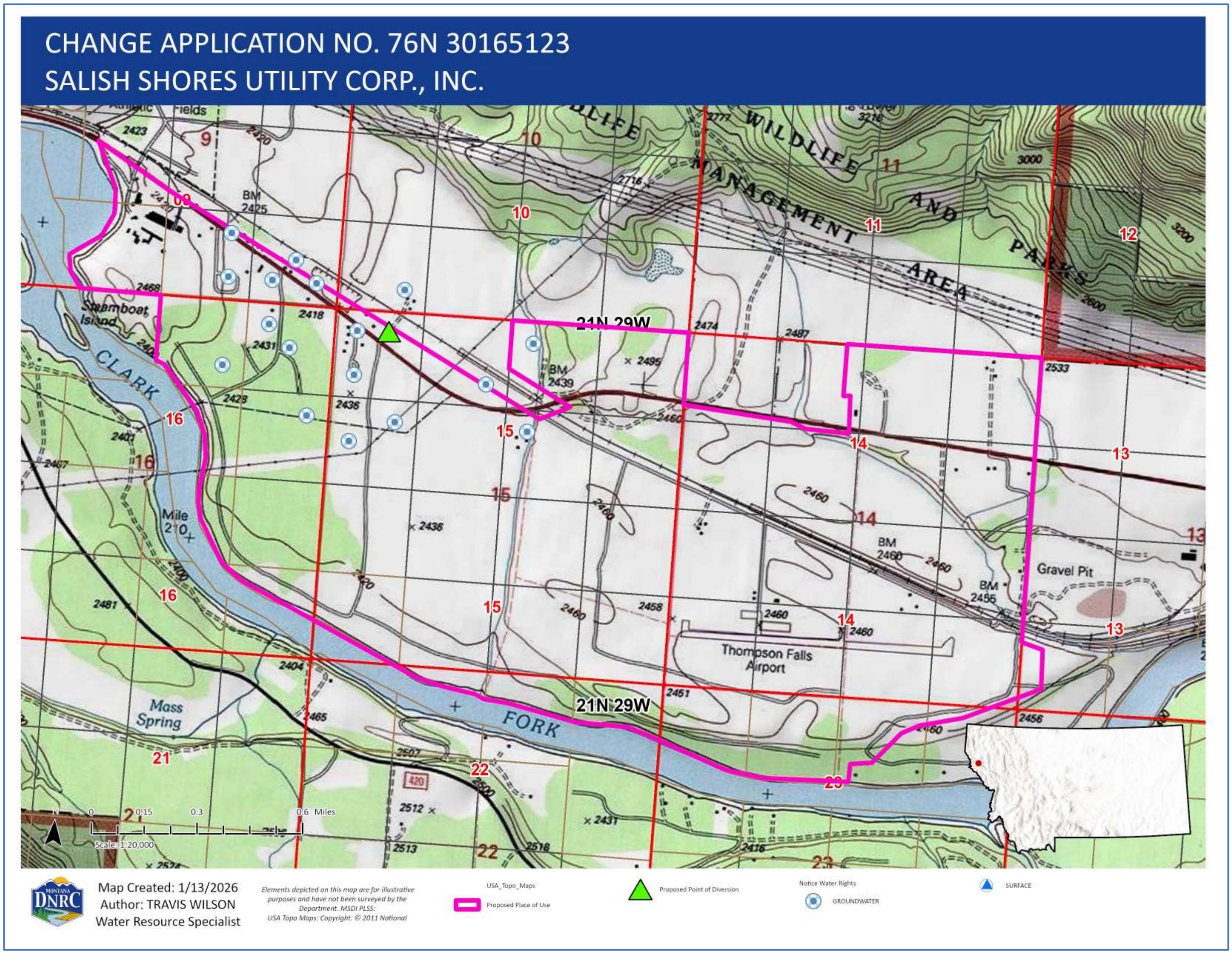
Application No. 76N 30165123 Regional Office # 08

Applicant's Name SALISH SHORES UTILITY CORP., INC.

Indian Reservation ☐ Yes ☒ No If yes, Reservation ____________

Irrigation District ☐ Yes ☒ No If yes, District ____________

Specialist TRAVIS WILSON Date 01/22/2026



Water Right Owner(s)*	Water Right No. (Basin ID, and Number)
Applicant: SALISH SHORES UTILITY CORP., INC.	76N 30165123
Consultant: GEOSYNTEC CONSULTANTS, INC. (formerly ASPECT CONSULTING)	
1CFC	KRO STANDARD NOTICE CONTACTS
1FWS	
1FWP	
1WQB	
1PPL	
1WWP	
1DSL	
2FWP	
2BIA	
8KAL	
1BRW	
LINDA L BELLOWS; MICHAEL L BELLOWS	76N 30149114
RAZZ BROTHERS LLC	76N 5784 00
RICHARD A KOSTKA	76N 745 00
SALISH SHORES UTILITY CORP INC	76N 81519 00
PHOENIX INVESTING GROUP INC	76N 30162977
SALISH SHORES UTILITY CORP INC	76N 85780 00
GEORGE A SCOTT; JOYCE K SCOTT; WILDCATTER HOLDINGS LLC	76N 89272 00
EDNA E GINGERICH; JOSEPH H GINGERICH	76N 30162113
LEUFKENS FAMILY LLC	76N 78605 00
DIANE L HEDAHL; MARK H HEDAHL; BERNICE A ROBBINS	76N 133264 00
RON M CHISENHALL	76N 11614 00
PHOENIX INVESTING GROUP INC	76N 52687 00
AMY RESLER	76N 30020830
SALISH SHORES UTILITY CORP INC	76N 97278 00
LEUFKENS FAMILY LLC	76N 54346 00
JONATHAN C PREBLE; LORI N PREBLE	76N 64921 00
PAR MONTANA LLC; PHILLIPS 66 COMPANY	76N 97311 00
LEUFKENS FAMILY LLC	76N 88576 00
SALISH SHORES UTILITY CORP INC	76N 30016270
DK LEASING LLC	76N 105428 00
OHANA RANCH LLC	76N 30155933
CARRIE SNOW; CHARLES SNOW	76N 30001426
GARY L CAMPBELL; BENJAMIN T TRAVER; ERIN M TRAVER	76N 54303 00
JAY GARRISON; JOE GARRISON; HILLCREST RANCH INC	76N 3659 00
YOUNG, JOHN & MOODY & SMITH INC	76N 81487 00
WOODLIN WATER COOP	76N 110855 00
KAYLEEN WINE; LEROY WINE	76N 44521 00
HAILEY SISSON	76N 30066 00
LEUFKENS CO	76N 9986 00
PUBLISHED: SANDERS COUNTY LEDGER General legal land description of notice area: Sections 9, 10, 15, & 16 of Township 21N, Range 29W, Sanders County**	

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

***Notice area: Notice sent to all active and severed groundwater rights within 0.5 miles of the proposed point of diversion.*

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:

SALISH SHORES UTILITY CORP., INC.
PO BOX 1030
THOMPSON FALLS MT 59873-1030

2. TYPE OF ACTION:

Application to Change a Water Right No. 76N 30165123

3. WATER SOURCE NAME:

Groundwater

4. LOCATION AFFECTED BY PROJECT:

Table 1: Proposed Points of Diversion for the Water Rights Proposed for Change

GWIC ID	1/4	1/4	1/4	Section	Township	Range	County
135335	SW	NE	SE	16	21 N	29 W	Sanders
131977	SW	NE	SE	16	21 N	29 W	Sanders
139319	SW	SW	SE	15	21 N	29 W	Sanders
139318	SW	SW	SE	15	21 N	29 W	Sanders
175584	NE	SW	NW	15	21 N	29 W	Sanders
175632	NE	SW	NW	15	21 N	29 W	Sanders
175585	NW	SE	NW	15	21 N	29 W	Sanders
76372	NE	NW	NW	15	21 N	29 W	Sanders

Table 2: Proposed Places of Use for the Water Rights Proposed for Change

1/4	1/4	1/4	Section	Township	Range	County
---	E2	SW	9	21 N	29 W	Sanders
---	W2	SE	9	21 N	29 W	Sanders
---	SE	SE	9	21 N	29 W	Sanders
---	SW	SW	10	21 N	29 W	Sanders
---	W2	SW	13	21 N	29 W	Sanders
---	---	---	14	21 N	29 W	Sanders
---	---	---	15	21 N	29 W	Sanders
---	---	E2	16	21 N	29 W	Sanders
---	N2	N2	22	21 N	29 W	Sanders
---	N2	N2	23	21 N	29 W	Sanders

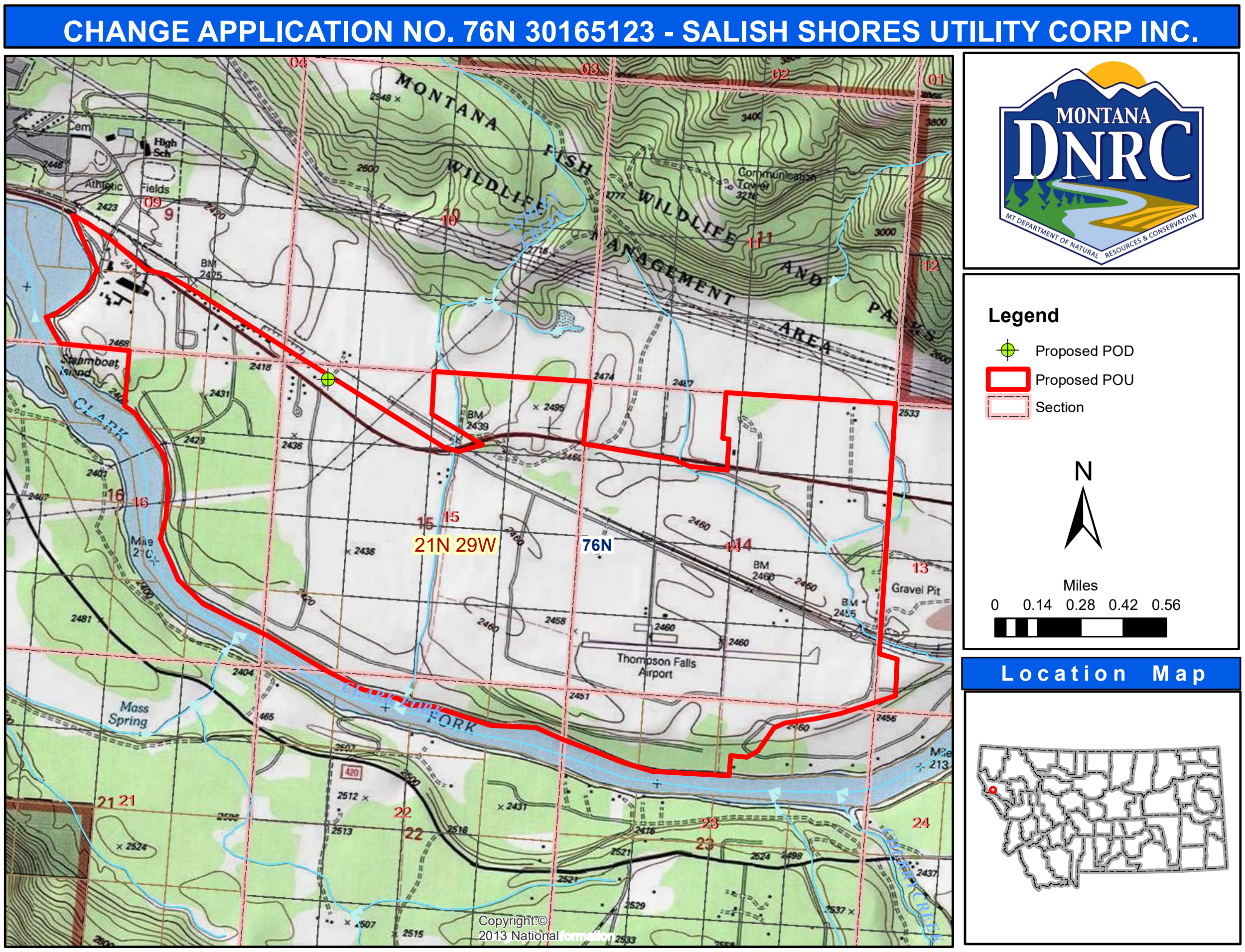


Figure 1: Map of Applicant's proposed point of diversion and place of use.

5. NARRATIVE SUMMARY OF THE PROPSED PROJECT, PURPOSE, ACTION TO BE TAKEN, AND BENEFITS:

The Applicant proposes adding an eighth point of diversion (well GWIC ID No. 76372) to Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 and changing their place of use to include the entire projected service area of the Salish Shores PWS system as part of the Montana Public Service Commission's Master Development Plan. The proposed new well will divert water at 167.5 GPM, though no additional flow rate or volume for the overall Salish Shores PWS system is requested in this application. The locations of the proposed and existing PODs and places of use are detailed in Tables 1 and 2, respectively. No changes to the purpose of use are proposed in this change and there is no storage component to these water rights.

The project is in Water Right Basin 76N (Clark Fork River, Below Flathead River) in an area that is not subject to water right basin closures or controlled groundwater area restrictions

The DNRC shall grant the requested water right change if the applicant proves the criteria in 85-2-402 MCA are met.

6. AGENCIES CONSULTED DURING PREPARATION OF THE ENVIRONMENTAL ASSESSMENT:

- U.S. Fish and Wildlife Service (USFWS): National Wetlands Inventory Wetlands Mapper
- Montana Natural Heritage Program: Endangered, Threatened Species, and Species of Special Concern
- Montana Department of Fish Wildlife & Parks (DFWP): Dewatered Stream Information
- Montana Department of Environmental Quality (MDEQ): Clean Water Act Information Center
- U.S. Natural Resource Conservation Service (NRCS): Web Soil Survey

Part II. Environmental Review

1. ENVIRONMENTAL IMPACT CHECKLIST:

PHYSICAL ENVIRONMENT

1.1 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.*

The Lower Clark Fork River is not listed as chronically or periodically dewatered by MTDFWP.

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.*

Clark Fork River, Flathead River to Thompson Falls Reservoir: MDEQ Clean Water Act Information Center's 2024 Water Quality Information report lists the Clark Fork River as:

i. Water Quality Category 5: Waters where one or more applicable beneficial uses have been assessed as being impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat.
ii. Use Class B-1: Waters classified as suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply;
iii. "Fully supporting" for: agricultural, drinking water, and primary contact recreation beneficial uses; and,
iv. "Not fully supporting" for: aquatic life with probable causes for this designation being fish passage barrier and dissolved gas supersaturation.

Thompson Falls Reservoir: MDEQ Clean Water Act Information Center's 2024 Water Quality Information report lists the Thompson Falls Reservoir as:

i. Water Quality Category 3: Waters for which there is insufficient data to assess the use support of any applicable beneficial use, so no use support determinations have been made; and,
ii. Use Class B-1: Waters classified as suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

Adding a new POD for the diversion of water for the continuation of historically practiced municipal use and changing the place of use to include the entire Salish Shores PWS system service area is not anticipated to significantly affect water quality in these sources.

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.*

The proposed PWS well is drilled and completed to 303.0-feet below ground surface (BGS) in glacial lake deposits which represent a leaky-confined to confined aquifer system.

The Applicant performed an 8.1-hour yield and drawdown test on well GWIC ID No. 76372 at an average flow rate of 167.5 GPM in support of this application. The distance of the historical and proposed wells from the Clark Fork River, the similar distances along the length of the river, and similar completion depth of the existing wells and the proposed well results in no change to the location or timing of net depletions to surface water sources.

It is not anticipated that adding a new POD and changing the place of use of these water rights will impact groundwater quality or supply.

Determination: No significant impact.

1.2 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.*

Specifications of the proposed POD:

i. GWIC ID No. 76372; drilled to 303.0 feet BGS and completed with an open bottom at a depth of 303.0 feet BGS by Kane Well Drilling and Pump Service (WWC-23) on December 12, 1979.
ii. Equipped with a Goulds 5CHC010 submersible pump capable of diverting up to 180.0 GPM at an engineer-estimated total dynamic head of 158 feet.

The Salish Shores PWS system is a registered PWS regulated by the Montana DEQ as Water System No. MT0003911. All modifications to the PWS system are being designed by Montana licensed professional engineers with IMEG Engineering Consultants and will be reviewed and approved by the Montana DEQ prior to their implementation. This PWS system expansion is being undertaken as part of the Montana Public Service Commission's Master Development Plan for the Salish Shores PWS system. The existing and proposed Salish Shores PWS system water conveyance infrastructure consists of approximately 30,000 feet of 3- to 6-inch Class 200 PVC distribution. The system capacity is designed to accommodate the maximum permitted combined flow rate of 1,448.5 GPM.

The Department finds that the new POD is capable of diverting, conveying, and distributing the proposed flow rate of 167.5 GPM which will supplement the seven existing wells in diverting and conveying up to 1,448.5 GPM and up to 377.3 AF/year.

This project will not have any channel or riparian impacts, nor will it create barriers or dams on any surface water sources.

Determination: No significant impact.

1.3 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, 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, aquatic species, or any "species of special concern" in the project area that could be impacted by the proposed project. Twenty-two species of concern (Table 1) were identified in the general vicinity of the project area. This general area has been in agricultural production for decades, and it is not anticipated that any species of concern will be further impacted by the proposed project. This project will not create any barriers to the migration or movement of fish or wildlife.

Table 1. Species of Concern		
Species Group	**Common Name**	**Scientific Name**
Mammals	Fisher	*Pekania pennanti*
Mammals	Fringed Myotis	*Myotis thysanodes*
Mammals	Grizzly Bear*	*Ursus arctos*
Mammals	Long-eared Myotis	*Myotis evotis*
Mammals	Silver-haired Bat	*Lasionycteris noctivagans*
Mammals	Townsend's Big-eared Bat	*Corynorhinus townsendii*
Mammals	Wolverine*	*Gulo gulo*
Birds	American Goshawk	*Accipiter atricapillus*
Birds	Cassin's Finch	*Haemorhous cassinii*
Birds	Clark's Nutcracker	*Nucifraga columbiana*
Birds	Evening Grosbeak	*Coccothraustes vespertinus*
Birds	Great Blue Heron	*Ardea herodias*
Birds	Lewis's Woodpecker	*Melanerpes lewis*
Birds	Varied Thrush	*Ixoreus naevius*
Reptiles	Northern Alligator Lizard	*Elgaria coerulea*
Fish	Bull Trout*	*Salvelinus confluentus*
Fish	Westslope Cutthroat Trout	*Oncorhynchus lewisi*
Invertebrates	Shortface Lanx	*Fisherola nuttalli*
Vascular Plants	Diamond Clarkia	*Clarkia rhomboidea*
Vascular Plants	Long-sheath Waterweed	*Elodea bifoliata*
Vascular Plants	Water Star-grass	*Heteranthera dubia*
Vascular Plants	Pale-yellow Jewel-weed	*Impatiens aurella*

*Species listed as Threatened by the USFWS.

Determination: No significant impact.

Wetlands and Ponds - *Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted. For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.*

There are several areas of Freshwater Emergent Wetlands totaling 1.39 acres along the bank of the Clark Fork River along the southwest margin of the Salish Shores PWS service area. There is also a 0.56-acre Forested Shrub Wetland near the northern boundary of the service area. It is not anticipated that adding a POD to the Salish Shores system and changing its place of use will impact these wetland resources. The Applicant is responsible for ensuring they obtain all permits from the relevant agencies for work near any wetlands. This project does not involve a pond.

Determination: No significant impact.

1.4 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.*

It is not anticipated that the proposed addition of a new POD and change in place of use will negatively impact the soil quality, stability, or moisture content. The soils in the project area are presented in Table 2.

Table 2: Soils			
Soil Map Unit Symbol	**Soil Map Unit Name**	**Capacity of most limiting layer to transmit water**	**Maximum Salinity**
1A	Grantsdale silt loam, 0 to 4 percent slopes	Moderately high to high	Nonsaline to very slightly saline
3A	Gird silt loam, 0 to 4 percent slopes	Moderately high to high	Nonsaline to very slightly saline
41B	Oldtrail-Glaciercreek-Larchpoint complex, 0 to 8 percent slopes	Moderately high to high	Not stated
41C	Sacheen loamy fine sand, 2 to 8 percent slopes	Very high	Not stated
103B	Gird -McCollum complex, 0 to 4 percent slopes	Moderately high to high	Nonsaline to very slightly saline
54C	Yellowbay gravelly loam, 2 to 8 percent slopes	High	Not stated
94A	Revais silt loam, 0 to 2 percent slopes	Moderately high to high	Not stated
152E	Bigarm, cool-Hogsby-Rock outcrop complex, 8 to 30 percent slopes	Moderately high to high	Nonsaline to very slightly saline
292B	McCollum fine sandy loam, 0 to 4 percent slopes	High	Nonsaline to very slightly saline
350B	Bigarm gravelly loam, alluvial, 2 to 8 percent slopes	Moderately high to high	Not stated
351C	McCollum-Belton fine sandy loams, 4 to 8 percent slopes	Very low to high	Nonsaline to very slightly saline
421B	Selon fine sandy loam, moist, 0 to 4 percent slopes	High	Not stated
472B	Elkrock gravelly ashy silt loam, moist, 0 to 4 percent slopes	Moderately high to high	Not stated

Determination: No significant impact.

1.5 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.*

It is not anticipated that adding a new POD and changing the place of use to include the entire Salish Shores PWS system service area will significantly impact any existing native vegetation. This general area is already significantly developed. It is not anticipated that the authorization of the requested water right change will contribute to the establishment or spread of noxious weeds in the project area. Noxious weed prevention and control will be the responsibility of the landowners, who must follow local noxious weed regulations.

Determination: No significant impact.

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

There will be no impact to air quality associated with the authorization of the proposed water right change.

Determination: No significant impact.

1.7 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.

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

All impacts to land, water, and energy have been identified and no further impacts are anticipated.

Determination: No significant impact.

HUMAN ENVIRONMENT

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

The project is consistent with planned land uses.

Determination: No significant impact.

1.10 **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.

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

This proposed use will not adversely impact human health.

Determination: No significant impact.

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

There are no government regulatory impacts on private property rights resulting from this project.

Determination: No impact.

1.13 **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:

The only alternative to the proposed action would be the no action alternative. The no action alternative would be to not grant the requested water right change of adding a new point of diversion and changing the place of use.

Part III. Conclusion

1. PREFFERED ALTERNATIVE:

Authorize the requested water right change if the Applicant proves the criteria in 85-2-402 MCA are met.

2. COMMENTS AND RESPONSES:

None.

3. FINDING:

Based on the significant criteria evaluated in this EA, is an EIS required? ___**Yes** __**X**__**No**

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

No significant impacts related to the proposed project have been identified.

4. NAME OF PERSON(S) RESPONSIBLE FOR PREPARATION OF EA:

Name: Travis Wilson
Title: Water Resource Specialist
Date: December 16, 2025

Montana Fish, Wildlife & Parks

FWP DEWATERING CONCERN AREAS

Revised, May 2005

The following is a list of Montana streams that support important fisheries or contribute to important fisheries (i.e., provide spawning and rearing habitats) that are significantly dewatered. Dewatering refers to a reduction in streamflow below the point where stream habitat is adequate for fish.

This is the third revision of the Dewatered Streams List compiled by FWP dated January 24, 1991 and last updated in May 2003. List entries and updates were provided by FWP regional fisheries biologists from field observations. Further revisions may be necessary as water use patterns change, and additional or more detailed information becomes available.

This revised list includes a total of 323 stream reaches on 314 streams, which are chronically dewatered, and 113 stream reaches on 109 streams, which are periodically dewatered. The reaches do not overlap between categories.

The two categories of dewatering are:

1. **Chronic dewatering** -- streams where dewatering is a significant problem in virtually all years; and

2. **Periodic dewatering** -- streams where dewatering is a significant problem only in drought or water-short years.

Most man-made dewatering occurs during the irrigation season (July-September). Although most dewatering is caused by irrigation withdrawals, a few of the listed waters are dewatered through dam regulation for agricultural and power production purposes or by natural causes.

Each listed stream shows the length (in miles) of the dewatered reach. For larger/longer streams, the boundaries of the dewatered reach (Point A - Point B) are given. For streams that have no reach boundaries given, the miles shown as dewatered are from the mouth upstream. All mileages are approximate.

The dewatered reaches shown are typical for the stream. However, the number of miles dewatered may vary from year to year depending upon the amount of water available in the stream system.

CHRONIC DEWATERING

STREAM AND REACH	MILES DEWATERED
Beaverhead-Red Rock River Drainage	
Beaverhead River: West Side Canal – mouth	39
Big Sheep Creek: BLM Boundary - Red Rock River	3
Blacktail Deer Creek: Axes Canyon Rd - Beaverhead River	5.5
Horse Prairie Creek: Red Butte - Clark Canyon Reservoir	15
Junction Creek: I-15 - Red Rock River	4
Rattlesnake Creek: Dillon/Argenta Rd - mouth	7.5
Red Rock River: Dell-Briggs Ranch	6
Subtotal for Drainage	80.0
Big Hole River Drainage	
Alder Creek	0.1
Big Hole River:	
Big Lake Creek - Swamp Creek	9
Glen Bridges - mouth	24.4
Birch Creek: Beaverhead/Willow Ditch - mouth	9.8
Governor Creek	5
Wise River: Wise River Ditch - mouth	5
Subtotal for Drainage	53.3
Bitterroot River Drainage	
Baker Creek	1
Bass Creek	1
Bear Creek:	
North Channel	4
South Channel	4
Big Creek	3
Bitterroot River: Corvallis-Stevensville	17
Blodgett Creek	2
Burnt Fork Creek	5
Carlton Creek	5
Chaffin Creek	2
Eightmile Creek	3
Kootenai Creek	2
Lolo Creek	3
Lost Horse Creek	4
Mill Creek	3
Mill Creek (Trib. to Lolo Creek)	0.5
O'Brien Creek	1.5
Reimel Creek	1
Rock Creek	5
Skalkaho Creek	4
South Fork of Lolo Creek	0.5
Sweathouse Creek	2

Sweeney Creek	1
Tin Cup Creek *[1]	2
Tolan Creek	1
Subtotal for Drainage	77.5

Blackfoot River Drainage

Arrastra Creek: Stream mile 2.5-2.0	0.5
Bear Creek (North Fork)	1
Blackfoot River: Seven-Up Pete Creek - Poorman Cr.	11
Blanchard Creek*	1.2
Burnt Bridge Creek	1.0
Chamberlain Creek*	0.5
Chimney Creek (Nevada Creek)	0.5
Cottonwood Creek*: Stream mile 10.0-4.4	5.6
Dick Creek: Stream mile 6.0-3.5	2.5
Douglas Creek	14
Dry Creek	0.5
Dunham Creek	5
Fish Creek	0.3
Frazier Creek	1.5
Frazier Creek, North Fork	0.5
Gallagher Creek	3
Humbug Creek	1
Jefferson Creek	1
McElwain Creek	1
Monture Creek: Stream mile 15.0-12.0	3
Murray Creek	3
Nevada Creek: Stream mile 31.7-6.4	25.3
No-Name Creek	0.5
North Fork of Blackfoot River: River mile 12.0-6.2	5.8
Owl Creek	4.3
Pearson Creek*	2
Poorman Creek	2
Rock Creek: stream fmile 7.0-1.4	5.6
Spring Creek (Cottonwood Creek)	1
Spring Creek (North Fork)	2.5
Trail Creek	1
Union Creek: Stream mile 7.0-0.5	6.5
Wales Creek	1.9
Warm Springs Creek	1
Warren Creek	6
Washington Creek: Sections 24 and 26	1
Wasson Creek	2
Willow Creek	2
Wilson Creek	0.8
Yourname Creek	1
Subtotal for Drainage	129.8

[1] Asterisk (*) indicates that FWP currently holds a water lease on the stream to improve the dewatered condition.

Dearborn River Drainage

Dearborn River: Bean Lake Canal – mouth	44
Middle Fork Dearborn River	4
Subtotal for Drainage	48

Flathead River Drainage

Lost Creek: 4 miles Above Lore Lake - Stillwater River	7
Mount Creek: Welcome Springs - mouth	5
South Fork Flathead River: Hungry Horse Dam - mouth	5.3
Walker Creek: Entire Length	7
Subtotal for Drainage	24.3

Flint Creek Drainage (Clark Fork)

Cow Creek	3
Douglas Creek	2
Flint Creek: Georgetown Lake - mouth	42.4
Gird Creek	1
Henderson Creek: USFS Boundary - mouth	4
Lower Willow Creek: Reservoir - mouth	9.4
Marshall Creek: USFS Boundary - mouth	5
Subtotal for Drainage	66.8

Gallatin River Drainage

Baker Creek	10
Big Bear Creek	5
Bridger Creek	10
Gallatin River: Shedd's Bridge - Mouth	32.7
Hyalite (Middle) Creek	20
South Cottonwood Creek	6
Subtotal for Drainage	83.7

Jefferson River Drainage

Antelope Creek	7
Boulder River: Boulder - Cold Springs	36
Fish Creek	10
Jefferson River: Headwaters - mouth	84
Little Boulder River	10
North Willow Creek	9
Pipestone Creek	8
South Boulder River	10
South Willow Creek	8
Whitetail Creek	24
Subtotal for Drainage	206

Judith River Drainage

Cottonwood Creek: McMillan ditch to Big Spring Creek	17
Judith River: Ackley Lake diversion – Big Spring Creek	37
Ross Fork Creek	10
Subtotal for Drainage	64

Kootenai River Drainage

Grave Creek: Glen Lake Diversion Dam -Fortine Creek	5
Indian Creek: Burma Road - mouth	3
Kootenai River: Libby Dam - Montana/Idaho border	45
Phillips Creek: US/Canadian Border - Sophie Lake	3
Pleasant Valley Fisher River: Lost Prairie - Loon Lake	25
Sinclair Creek: Source - mouth	4
Therriault Creek: Glen Lake Irrigation Diversion - US Hwy 93	2
Subtotal for Drainage	87

Little Blackfoot River Drainage

Carpenter Creek	4.8
Dog Creek	2
Galleger Creek	3
Gimlet Creek	2
Jefferson Creek	1
Little Blackfoot River: Elliston - mouth	25.5
North Trout Creek	5.1
Ophir Creek	4
Sixmile Creek	9
Snowshoe Creek: USFS Boundary - mouth	6
Spotted Dog Creek: Private Reservoir – mouth	2.5
Threemile Creek	8
Washington Creek	1
Willson Creek	0.8
Subtotal for Drainage	74.7

Lower Clark Fork River Drainage

Beaver Creek	5
Big Beaver Creek– Stream miles: 5.7 to 12.0	6.3
Boyer Creek: Deemer Creek - mouth	2
Clear Creek – Stream miles: 4.1 to 8.3	4.2
Cooper Gulch	1.7
Deep Creek	0.7
Dry Creek – Stream miles: 0.5 to 4.1	3.6
East Fork Blue Creek – Stream miles: 1.1 to 3.0	1.9
East Fork Elk Creek – Stream miles: 2.4 to 5.1	2.7
East Fork Trout Creek	2.3
Elk Creek	0.7
Graves Creek	0.4
Henry Creek: Section 31 - mouth	2
Little Beaver Creek – Stream miles: 5.6 to 8.1	2.5
Little Trout Creek – Stream miles: 0.0 to 0.5 and 1.1 to 3.2	2.6
Lynch Creek	2
Marten Creek– Stream miles: 5.3 to 9.0	3.7
McKay Creek	4
Middle Fork Bull River – Stream miles: 0.4 to 1.2	0.8
North Branch Marten Creek	0.2
North Fork Bull River	0.4
Pilgrim Creek – Stream miles: 5.0 to 7.0	2

Prospect Creek – Stream miles: 8.4 to 11.1 and 12.3 to 16.5	6.9
South Fork Marten Creek – Stream miles: 0.2 to 3.3	3.1
South Fork Pilgrim Creek	2.3
Squaw Creek	0.5
Stevens Creek – Stream miles: 4.0 to 6.2	2.2
Swamp Creek – Stream miles: 0.5 to 2.8 and 3.7 to 4.3	2.9
Trout Creek – Stream miles: 7.0 to 9.1	2.1
Tuscor Creek – Stream miles: 0.9 to 1.2 and 3.0 to 4.3	1.6
West Fork Elk Creek – Stream miles: 0.0 to 0.1 and 1.3 to 1.8	0.6
West Fork Pilgrim Creek	1.0
West Fork Rock Creek	0.2
West Fork Trout Creek	1.0
Whitepine Creek – Stream miles: 3.4 to 10.2	6.8
Subtotal for Drainage	82.9

Madison River Drainage

Bear Creek	6.0
Indian Creek	5.8
Jack Creek	4.6
Moore Creek	5
North Meadow Creek	10.1
South Meadow Creek	3.5
Watkins Creek	1
Wigwam Creek	2.0
Subtotal for Drainage	38.0

Marias River Drainage

Birch Creek: Swift Dam - mouth	61
Dupuyer Creek: Above Dupuyer - mouth	20
Subtotal for Drainage	81

Middle Clark Fork River Drainage (Rock Creek to Flathead River)

Albert Creek	1
Big Creek (Tributary to St. Regis River)	0.5
Butler Creek	4
Cedar Creek	2
Cold Creek: Road 69 (near mouth) to 1 mile upstream	1
Deep Creek (near Lozeau)	2.5
Deep Creek (near Harper’s Bridge)	2.5
Dirty Ike Creek	0.5
Donovan Creek	0.5
Dry Creek: Dry Fork to mouth	2.5
First Creek	2
Grant Creek	5
Johnson Creek	2
Kendall Creek	0.5
Lavalle Creek	4
Little Joe Creek (Tributary to St. Regis River)	1.5

Meadow Creek	3.5
Nemote Creek: Sheridan Creek to Miller Creek	4
O’Keefe Creek: Section 34 to Mullan Road	6
Pardee Creek: Section 9 to mouth	2.5
Patrick Creek	1.5
Petty Creek: Gus Creek to 1.5 miles above mouth	6
Quartz Creek	1
Rock Creek (near Rivulet): Section 15 – Road 343 crossing	2
Rock Creek (downstream of Harper’s Bridge)	2.5
Second Creek	1.5
Sixmile Creek	1
Siegel Creek:	2
Slowey Gulch: Little Pittsburg Mine to mouth	2.5
Sunrise Creek	3
Swartz Creek	0.5
Tamarack Creek: below Dry Fork to Section 4	2
Thompson Creek: Sectoin 11 to Section 32	2.5
Turah Creek	0.5
Twelvemile Creek (Tributary to St. Regis River)	1
Wallace Creek	1
West Mountain Creek	1.5
Subtotal for Drainage	80.0

Musselshell River Drainage

American Fork Creek	10
Big Elk Creek	10
Careless Creek: Bercail - Franklin	25
Cottonwood Creek	3
Flatwillow Creek: Durfee Creek - Petrolia Reservoir	69
McDonald Creek	50
Musselshell River: Deadmans Basin Supply Canal - mouth	309
North Fork McDonald Creek	26
North Fork Musselshell River: Bair Reservoir - mouth	25
South Fork Musselshell River: Muddy Creek - mouth	13
South Fork McDonald Creek	31
Spring Creek	6
Swimming Woman Creek	20
Subtotal for Drainage	597

Rock Creek Drainage (Clark Fork)

Brewster Creek	0.5
North Fork Spring Creek	3
Ranch Creek	1
Ross's Fork	5
South Fork Spring Creek	5
Upper Willow Creek: USFS Boundary - mouth	7.4
Subtotal for Drainage	21.9

Ruby River Drainage

Indian Creek: National Forest - Leonard Slough	8.5
Mill Creek: National Forest - BN RR Bridge	6
Ruby River: Alder, MT - Clear Creek	10
Thompson Ditch - mouth	18
Sweetwater Creek: Irrigation Diversion - mouth	3.3
Wisconsin Creek: National Forest - mouth	7
Subtotal for Drainage	52.8

Shields River Drainage

Bangtail Creek	5
Canyon Creek	0.7
Cottonwood Creek	5.9
Rock Creek	2
Willow Creek	12.2
Subtotal for Drainage	25.8

Smith River Drainage

Big Birch Creek	5
Camas Creek	5
North Fork of Smith River: Dam - mouth	23
Smith River: McKamey Diversion - mouth	28
Subtotal for Drainage	61

Sun River Drainage

Elk Creek: Augusta vicinity	7
Sun River: Diversion Dam - Fort Shaw	60
Subtotal for Drainage	67

Teton River Drainage

Deep Creek: T23N, R5W, Sec 10 - mouth	5
Spring Creek: Above Choteau - mouth	5
Teton River: Bynum Diversion - mouth	188
Subtotal for Drainage	198

Upper Clark Fork River Drainage

Bear Creek: Forks - Clark Fork River	2.2
Blum Creek (Tributary to Gold Creek)	2
Clark Fork River: Racetrack - Rock Creek	92.7
Cottonwood Creek: USFS Boundary - mouth	8
Crevise Creek (Tributary to Gold Creek)	2
Dempsey Creek: Jct. North/South forks - mouth	8.4
Gold Creek: Pioneer - mouth	6.5
Harvey Creek	0.5
Hoover Creek: Miller Lake - mouth	5.4
Lost Creek: State Park - mouth	12
Mill Creek: BA&P Tracks - Settling Ponds	6.6
Morris Creek	4
Peterson Creek: USFS Boundary - mouth	10.5
Powell Creek: Powell Lake - mouth	6.5
Racetrack Creek: USGS Station - mouth	11.3
Rock Creek: Rock Creek Lake - mouth	10.9
Storm Lake Creek (Tributary to Warm Spring Creek)	2
Swartz Creek	0.5
Taylor Creek: Lower Taylor Reservoir - mouth	4.7
Tigh Creek	1
Tin Cup Joe Creek: Conley's Lake - mouth	5.2
Twin Lakes Creek (Tributary to Warm Spring Creek)	2
Warm Spring Creek: Hwy 273 - mouth	8
Warm Spring Creek (near Garrison): Falls - mouth	5.4
Willow Creek: Mt. Haggin WMA - Settling Ponds	6.5
Subtotal for Drainage	224.8

Upper Missouri River Drainage

Beaver Creek (Tributary to Canyon Ferry Reservoir)	6
Confederate Creek (Tributary to Canyon Ferry Reservoir)	4
Crow Creek	15
Deep Creek	6
Dry Creek	7
Duck Creek (Tributary to Canyon Ferry Reservoir)	3.5
Greyson Creek	4
Prickly Pear Creek: East Helena - Lake Helena	8
Sixmile Creek	7
Tenmile Creek (Tributary to Prickly Pear Creek)	13.5
Subtotal for Drainage	74.0

Yellowstone River Drainage

Big Creek	1.6
Big Timber Creek	5
Boulder River	5
Bridger Creek	3
Clarks Fork of the Yellowstone: State Line - Bluewater Creek	40
Deep Creek	3.3
East Boulder River: Forest Boundary - mouth	7
Eightmile Creek	2

Elbow Creek	4
Elk Creek (Tributary to East Boulder River)	2
Emigrant Creek	3
Fridley Creek	0.1
Little Trail Creek	8
Lower Deer Creek	4
Mill Creek*	0.7
Mission Creek	0.8
Pine Creek	1.6
Powder River: Montana/Wyoming Border - mouth	217.5
Pryor Creek	21
Rock Creek (Tributary to Clarks Fork): Red Lodge - mouth	41
Sage Creek (Tributary to Shoshone-Bighorn): Res. Boundary - State Line	18
Sixmile Creek	3
Soap Creek (Tributary to Bighorn River)	9
Strawberry Creek	1
Suce Creek	1.5
Sweet Grass Creek	6
Tongue River: T&Y Diversion - mouth	20.4
Trail Creek	5
Upper Deer Creek	5
Subtotal for Drainage	439.5

PERIODIC DEWATERING

STREAM AND REACH	MILES DEWATERED
Beaverhead - Red Rock River Drainage	
Beaverhead River: Clark Canyon Dam - West Side Canal	21
Big Beaver Creek	0.7
Blacktail Deer Creek: West Fork - Axes Canyon Rd.	19.8
Bloody Dick Creek (Tributary to Horse Prairie Cr.)	10
Grasshopper Creek:	
Polaris - Bannock	14
Frency Place Placer - mouth	6
Jones Creek: BLM boundary - mouth	1.5
Little Sheep Creek: Road crossing - mouth	7.5
Medicine Lodge Creek (Tributary to Horse Prairie Cr.): Ayers Cyn - mouth	16.8
Peet Creek: Jones Diversion - mouth	1.7
Sage Creek: Rock Island Ranch - mouth	11
Trail Creek (Tributary to Horse Prairie Cr.): Source - mouth	7
Subtotal for Drainage	117.0
Big Hole River Drainage	
Big Hole River:	
Hamby Creek - Big Lake Creek	23.4
Swamp Creek - Glen Bridges	84.5
Big Lake Creek	7.5
Canyon Creek	6
Deep Creek	5.1
Divide Creek	9.5
Doolittle Creek	1.5
Fishtrap Creek	2.4
Francis Creek	7.7
Jerry Creek	3.1
Johnson Creek	3.7
Moose Creek	3.0
Mussigbrod Creek	9.4
North Fork Big Hole River	25
Pintlar Creek	10.8
Rock Creek	3
Rock Creek (Tributary to Big Lake Cr)	7
Ruby Creek	4.3
Sandhollow Creek	4.8
Steel Creek	8.6
Swamp Creek	17.4
Trapper Creek	6
Warm Springs Creek	9
Willow Creek	5.5
Subtotal for Drainage	268.2

Bitterroot River Drainage

Lolo Creek	1
Subtotal for Drainage	1

Blackfoot River Drainage

Arkansas Creek	2
Ashby Creek	2
Blackfoot River: Stream mile 84.9-54.1	30.8
Clearwater River	3.5
Elk Creek	3
Hoyt Creek	1
Nevada Creek: Stream mile 34.0-40.0	6
Shanley Creek	1.6
Subtotal for Drainage	49.9

Dearborn River Drainage

South Fork Dearborn River	10
Subtotal for Drainage	10

Flathead River Drainage

Ashley Creek: US Hwy. 2 Bridge – mouth	20
Blaine Creek: Above Lake Blaine - Lake Blaine	3
Bowser Spring Creek: Hwy 424 - Kalispell	8
Dayton Creek: Co. Line - mouth	10
Echo Creek: Sec. 27 - mouth	3
Evergreen Spring Creek	5
Garnier Creek: USFS - mouth	3
Lynch Creek: Sec. 12 - mouth	5
Meadow Creek (Big Fork): USFS - mouth	3
Ronan Creek: Lake Mary Ronan - mouth	5
Spring Creek: North of Kalispell	5
Trumbull Creek: USFS - Rose Crossing	20
Subtotal for Drainage	90

Gallatin River Drainage

Bozeman (Sourdough) Creek	8
Gallatin River: Gallatin Gateway - Shedd's Bridge	5.3
Subtotal for Drainage	13.3

Jefferson River Drainage

Hells Canyon Creek*	0.3
Willow Creek	10
Subtotal for Drainage	10.3

Judith River Drainage

Judith River: Utica to Ackley Lake diversion	5
Subtotal for Drainage	5

Kootenai River Drainage

Fortine Creek: Crystal Lake - mouth	5
Libby Creek: US 2 Bridge - mouth	14
Pinkham Creek: Still Cr. in Sec. 3 - mouth	15
Young Creek: Sec. 15-16 Crossing - mouth	5
Subtotal for Drainage	39

Lower Clark Fork River Drainage

Rock Creek – Stream miles: 0.0 to 1.5 and 2.6 to 5.3	4.2
Fishtrap Creek – Stream miles: 2.7 to 3.7	1
Subtotal for Drainage	5.2

Madison River Drainage

Ruby Creek	0.4
Blaine Spring Creek	2.3
Subtotal for Drainage	2.7

Marias River Drainage

Cut Bank Creek: City of Cut Bank – mouth	18
Subtotal for Drainage	18

Middle Clark Fork River Drainage (Rock Creek to Flathead River)

Bear Creek (Tributary to Fish Creek)	2
Nemote Creek	2
Ninemile Creek	3
West Fork Fish Creek	2
Subtotal for Drainage	9

Milk River Drainage

Beaver Creek: Ft. Assiniboine - mouth	6
Clear Creek: Clear Creek Rd - mouth	15
Subtotal for Drainage	21

Musselshell River Drainage

Cottonwood Creek	10
Musselshell River: N/S Forks Confluence – Deadmans Supply Canal	55
North Willow Creek	20
Painted Robe Creek	28
Subtotal for Drainage	113

Shields River Drainage

Brackett Creek	14
Flathead Creek	12
Shields River	82
Subtotal for Drainage	108

Smith River Drainage

Hound Creek: East Fork - mouth	25
Sheep Creek: Jumping Creek - mouth	30

Smith River: Jct. North/South forks - McKamey Diversion	97
South Fork of Smith River	15
Subtotal for Drainage	167

Upper Clark Fork River Drainage

Clark Fork River: Warm Springs - Racetrack	9
Subtotal for Drainage	9

Upper Missouri River Drainage

Little Prickly Pear Creek: Canyon Creek - mouth	26
Missouri River: Headwaters - Townsend	42
Subtotal for Drainage	68

Yellowstone River Drainage

Bad Canyon Creek (Tributary to Stillwater River): BLM - Mouth	1.0
Bighorn River: Afterbay Dam - Little Bighorn R.	42
Cedar Creek*	0.7
Clarks Fork of the Yellowstone: Bluewater Creek - mouth	32
Crooked Creek (Tributary to Bighorn River): Tillet - State Line	4.0
Fishtail Creek (Tributary to Stillwater River): At Fishtail	2
Fleshman Creek	1
Locke Creek*	0.3
Mill Creek*: Stream mile 4.9-0.7	4.2
Mol Heron Creek	0.8
Sand Creek-Tributary of Spidel WPA	5.0
Stillwater River: Cliff Swallow - Rosebud Creek	11
Suce Creek: Stream mile 3.0-1.5	1.5
Sweet Grass Creek	2
Tongue River: state line to T&Y Diversion	185.3
Trail Creek: Stream mile 31.2-17.7	13.5
Yellowstone River: Springdale - Bighorn River	179
Subtotal for Drainage	485.3

Total Number of Dewatered Streams: 314 (chronic); 109 (periodic)
Total Number of Dewatered Reaches: 323 (chronic); 113 (periodic)

Assessment Record Summary

Reporting Cycle: 2024 **Assessment Record:** MT76N001_010 **Status:** Unassigned

WATER INFORMATION — Status: Unassigned

Reporting Cycle: 2024

Assessment Unit: MT76N001_010

Name: Clark Fork River

Location Description: CLARK FORK RIVER, Flathead River to Thompson Falls Reservoir

Water Type:	Size (Miles/Acres)	Use Class:
RIVER	36.3 MILES	B-1

Trophic Status:

Trophic Trend:

1 - Hydrologic Unit Code: 17010213

2 - HUC Name: Lower Clark Fork

3 - Watershed: Pend Oreille

4 - Basin: Columbia

5 - TMDL Planning Area: Clark Fork River

6 - Ecoregion: Northern Rockies

7 - County: Sanders County

8 - LAT/LONG AU Upstream: Start: 47.365638 / -114.777261

9 - LAT/LONG AU Downstream: End: 47.592801 / -115.360439

LAT/LONG: End (d/s) endpoint

Water Quality Category: 5 - Waters where one or more applicable beneficial uses have been assessed as being impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat.

Assessment Record Summary

Reporting Cycle: 2024 **Assessment Record:** MT76N001_010 **Status:** Unassigned

Beneficial Use Support Information

Use Name	Fully Supporting	Not Fully Supporting	Threatened	Insufficient Information	Not Assessed
Aquatic Life		X			
Agricultural	X				
Drinking Water	X				
Primary Contact Recreation	X				

Assessment Information

Use Name	Assessment Type	Assessment Confidence
NA		

Use Name	Assessment Methods
NA	

Impairment Information

Use Name	Probable Causes	Probable Sources	TMDL Completed
Aquatic Life	Fish Passage Barrier	Hydrostructure Impacts on Fish Passage	N
	Dissolved Gas Supersaturation	Dam or Impoundment	N

Assessment Record Summary

Reporting Cycle: 2024 **Assessment Record:** MT76N001_010 **Status:** Unassigned

Use Name	Observed Effects
NA	

Delisting / Category Changes

Cause	Reason for Change	Change Date	Comments
Cadmium	Applicable WQS attained, according to new assessment method	01/03/2014	

Assessment Record Summary

Reporting Cycle: 2024 **Assessment Record:** MT76N002_020 **Status:** Unassigned

WATER INFORMATION **Status:** Unassigned

Reporting Cycle: 2024

Assessment Unit: MT76N002_020

Name: Thompson Falls Reservoir

Location Description: THOMPSON FALLS RESERVOIR

Water Type:	Size (Miles/Acres)	Use Class:
FRESHWATER LAKE	203 ACRES	B-1

Trophic Status:

Trophic Trend:

1 - Hydrologic Unit Code: 17010213

2 - HUC Name: Lower Clark Fork

3 - Watershed: Pend Oreille

4 - Basin: Columbia

5 - TMDL Planning Area: Clark Fork River

6 - Ecoregion: Northern Rockies

7 - County: Sanders County

Water Quality Category: 3 - Waters for which there is insufficient data to assess the use support of any applicable beneficial use, so no use support determinations have been made.

Assessment Record Summary

Reporting Cycle: 2024 **Assessment Record:** MT76N002_020 **Status:** Unassigned

Beneficial Use Support Information

Use Name	Fully Supporting	Not Fully Supporting	Threatened	Insufficient Information	Not Assessed
Aquatic Life					X
Agricultural					X
Drinking Water					X
Primary Contact Recreation					X

Assessment Information

Use Name	Assessment Type	Assessment Confidence
NA		

Use Name	Assessment Methods
NA	

Impairment Information

Use Name	Probable Causes	Probable Sources	TMDL Completed
NA			

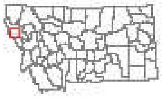
Use Name	Observed Effects
NA	

Delisting / Category Changes

Cause	Reason for Change	Change Date	Comments
NA			

MONTANA STATE LIBRARY
NATURAL HERITAGE PROGRAM
A program of the **Montana State Library's Natural Resource Information System.**

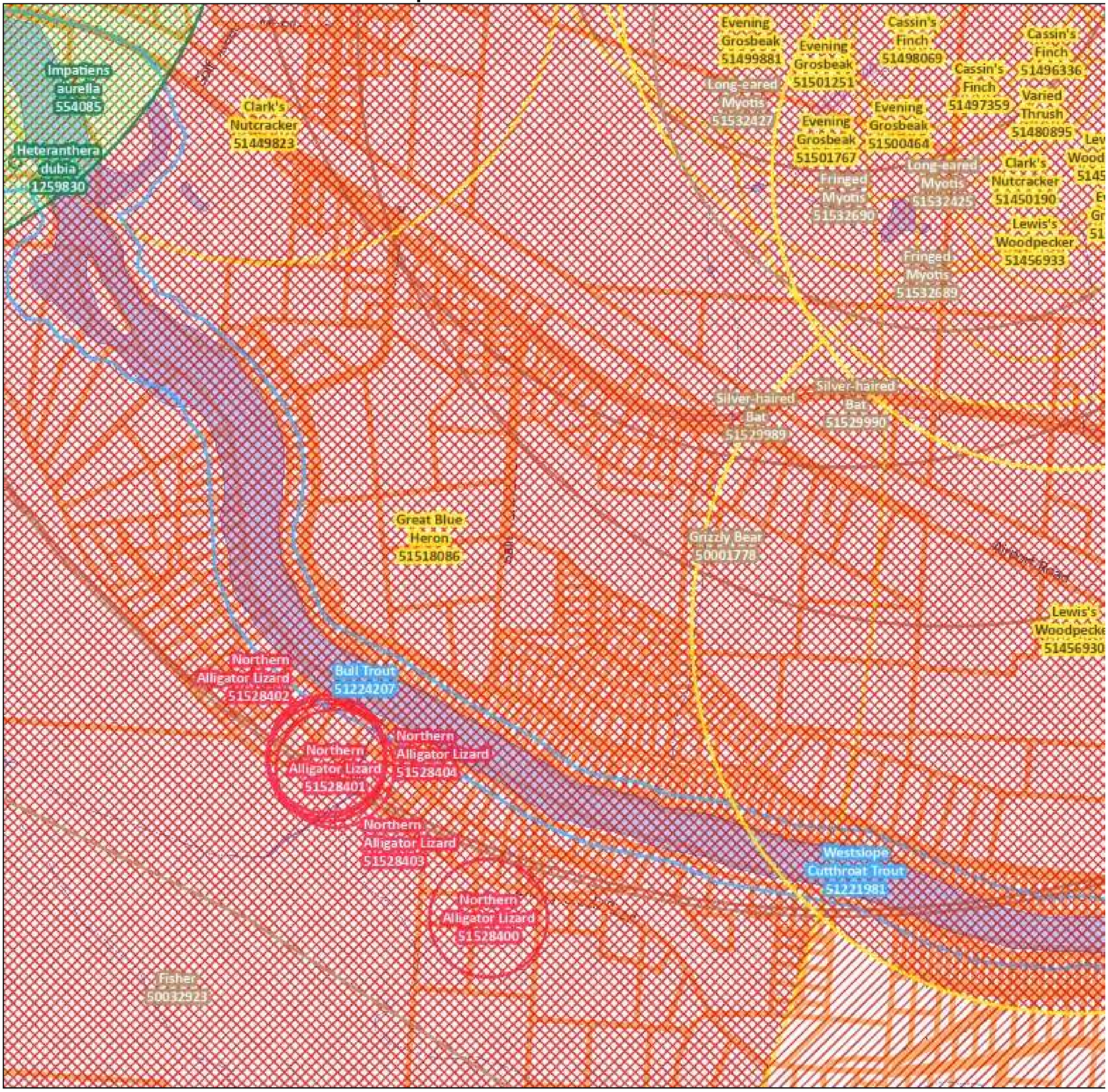
Latitude	Longitude
47.55715	-115.24779
47.59875	-115.35014



Montana SOC Occurrences Report

SOC Occurrences with MT Status = Species of Concern

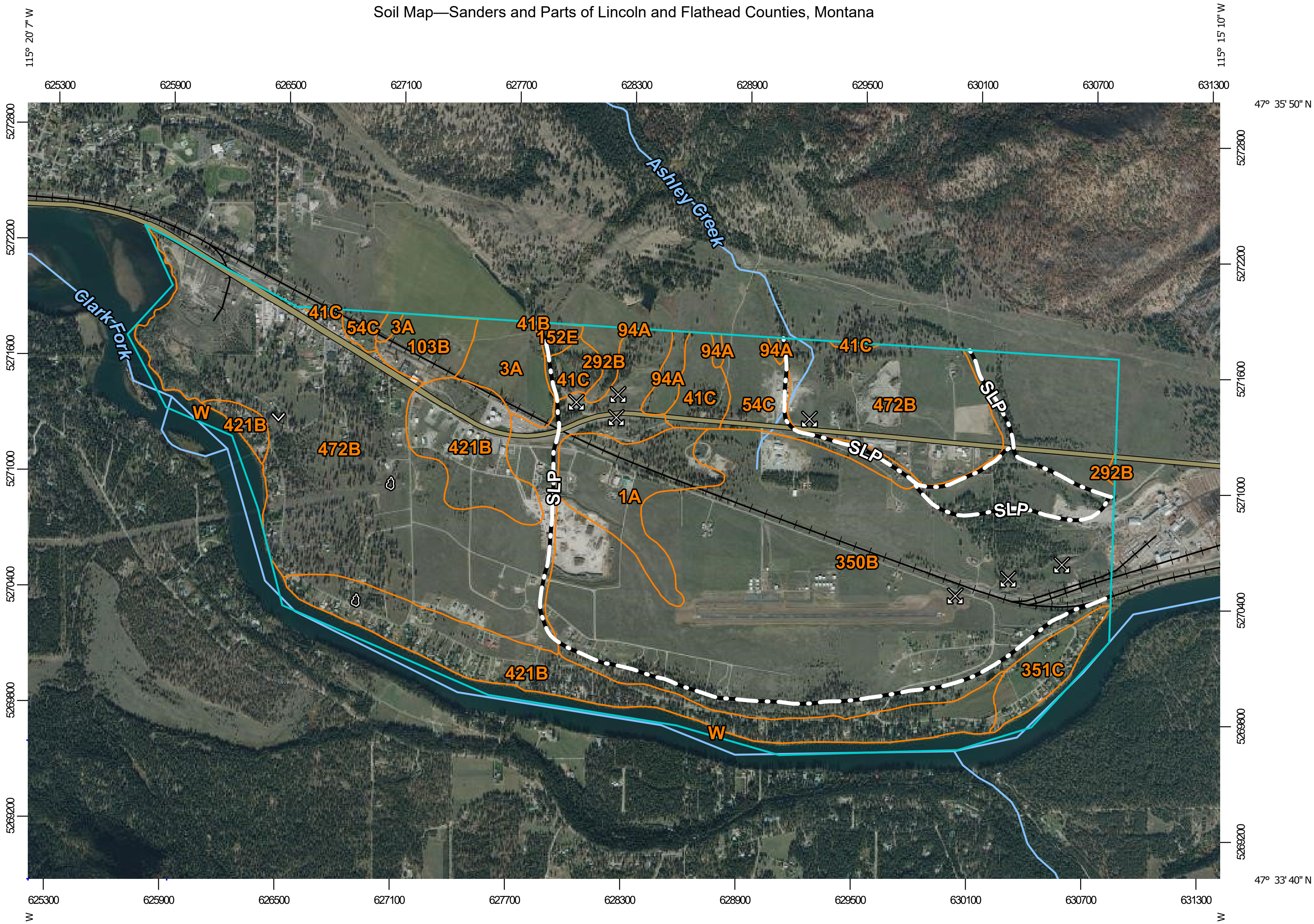
Report generated 12/12/2025 6:28:43 PM



⊞ **Mammals - Fisher** *(Pekania pennanti)*	**SO Count**: 2	**Obs Count**: 265	**Earliest Obs**: 1965	**Recent Obs**: 2025
⊞ **Mammals - Fringed Myotis** *(Myotis thysanodes)*	**SO Count**: 2	**Obs Count**: 2	**Earliest Obs**: 2014	**Recent Obs**: 2014
⊞ **Mammals - Grizzly Bear** *(Ursus arctos)*	**SO Count**: 1	**Obs Count**: 461	**Earliest Obs**: 1912	**Recent Obs**: 2023
⊞ **Mammals - Long-eared Myotis** *(Myotis evotis)*	**SO Count**: 2	**Obs Count**: 2	**Earliest Obs**: 2014	**Recent Obs**: 2014
⊞ **Mammals - Silver-haired Bat** *(Lasionycteris noctivagans)*	**SO Count**: 3	**Obs Count**: 3	**Earliest Obs**: 1986	**Recent Obs**: 2014

Species	SO Count	Obs Count	Earliest Obs	Recent Obs
Mammals - Townsend's Big-eared Bat *(Corynorhinus townsendii)*	**SO Count**: 1	**Obs Count**: 1	**Earliest Obs**: 2025	**Recent Obs**: 2025
Mammals - Wolverine *(Gulo gulo)*	**SO Count**: 2	**Obs Count**: 274	**Earliest Obs**: 1952	**Recent Obs**: 2025
Birds - American Goshawk *(Accipiter atricapillus)*	**SO Count**: 1	**Obs Count**: 1	**Earliest Obs**: 1999	**Recent Obs**: 1999
Birds - Cassin's Finch *(Haemorhous cassinii)*	**SO Count**: 5	**Obs Count**: 9	**Earliest Obs**: 1995	**Recent Obs**: 2022
Birds - Clark's Nutcracker *(Nucifraga columbiana)*	**SO Count**: 3	**Obs Count**: 3	**Earliest Obs**: 1992	**Recent Obs**: 1995
Birds - Evening Grosbeak *(Coccothraustes vespertinus)*	**SO Count**: 6	**Obs Count**: 10	**Earliest Obs**: 1995	**Recent Obs**: 2022
Birds - Great Blue Heron *(Ardea herodias)*	**SO Count**: 1	**Obs Count**: 1	**Earliest Obs**: 2011	**Recent Obs**: 2011
Birds - Lewis's Woodpecker *(Melanerpes lewis)*	**SO Count**: 3	**Obs Count**: 3	**Earliest Obs**: 1992	**Recent Obs**: 1996
Birds - Varied Thrush *(Ixoreus naevius)*	**SO Count**: 2	**Obs Count**: 2	**Earliest Obs**: 1995	**Recent Obs**: 2020
Reptiles - Northern Alligator Lizard *(Elgaria coerulea)*	**SO Count**: 5	**Obs Count**: 5	**Earliest Obs**: 2014	**Recent Obs**: 2025
Fish - Bull Trout *(Salvelinus confluentus)*	**SO Count**: 1	**Obs Count**: 1301	**Earliest Obs**: 1960	**Recent Obs**: 2022
Fish - Westslope Cutthroat Trout *(Oncorhynchus lewisi)*	**SO Count**: 1	**Obs Count**: 2510	**Earliest Obs**: 1983	**Recent Obs**: 2023
Invertebrates - *Fisherola nuttalli* (Shortface Lanx)	**SO Count**: 1	**Obs Count**: 1	**Earliest Obs**: 2019	**Recent Obs**: 2019
Vascular Plants - *Clarkia rhomboidea* (Diamond Clarkia)	**SO Count**: 2	**Obs Count**: 8	**Earliest Obs**: 1989	**Recent Obs**: 2005
Vascular Plants - *Elodea bifoliata* (Long-sheath Waterweed)	**SO Count**: 2	**Obs Count**: 2	**Earliest Obs**: 2019	**Recent Obs**: 2019
Vascular Plants - *Heteranthera dubia* (Water Star-grass)	**SO Count**: 1	**Obs Count**: 1	**Earliest Obs**: 2008	**Recent Obs**: 2008
Vascular Plants - *Impatiens aurella* (Pale-yellow Jewel-weed)	**SO Count**: 1	**Obs Count**: 1	**Earliest Obs**: 1937	**Recent Obs**: 1937

Citation for this report:
Montana SOC Occurrences Report
SOC Occurrences with MT Status = Species of Concern
Within Lat/Long: (47.55715,-115.24779) to (47.59875,-115.35014)
Natural Heritage Map Viewer. Montana Natural Heritage Program.
Retrieved on December 12, 2025, from https://mtnhp.org/MapViewer/SOReport.aspx



Map Scale: 1:28,400 if printed on A landscape (11" x 8.5") sheet.

Meters: 0, 400, 800, 1600, 2400

Feet: 0, 1000, 2000, 4000, 6000

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 30, 2021—Oct 11, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1A	Grantsdale silt loam, 0 to 4 percent slopes	86.3	3.8%
3A	Gird silt loam, 0 to 4 percent slopes	47.2	2.1%
41B	Oldtrail-Glaciercreek-Larchpoint complex, 0 to 8 percent slopes	0.1	0.0%
41C	Sacheen loamy fine sand, 2 to 8 percent slopes	46.3	2.0%
54C	Yellowbay gravelly loam, 2 to 8 percent slopes	60.5	2.7%
94A	Revais silt loam, 0 to 2 percent slopes	16.0	0.7%
103B	Gird-McCollum complex, 0 to 4 percent slopes	33.5	1.5%
152E	Bigarm, cool-Hogsby-Rock outcrop complex, 8 to 30 percent slopes	7.4	0.3%
292B	McCollum fine sandy loam, 0 to 4 percent slopes	13.4	0.6%
350B	Bigarm gravelly loam, alluvial, 2 to 8 percent slopes	883.5	39.1%
351C	McCollum-Belton fine sandy loams, 4 to 8 percent slopes	34.2	1.5%
421B	Selon fine sandy loam, moist, 0 to 4 percent slopes	252.2	11.2%
472B	Elkrock gravelly ashy silt loam, moist, 0 to 4 percent slopes	686.5	30.4%
W	Water	92.1	4.1%
Totals for Area of Interest		**2,259.6**	**100.0%**

Sanders and Parts of Lincoln and Flathead Counties, Montana

1A—Grantsdale silt loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 576d
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Grantsdale and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grantsdale

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 7 inches: silt loam
Bw - 7 to 14 inches: silt loam
Bk - 14 to 27 inches: silt loam
2C - 27 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Mccollum

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB110MT - Sandy (Sy) LRU 44A-B
Hydric soil rating: No

Gird

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Grantsdale

Percent of map unit: 3 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Lamoose

Percent of map unit: 2 percent
Landform: Swales on stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AP806MT - Subirrigated Grassland Group
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

3A—Gird silt loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 57cn
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 11 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Gird and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gird

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 9 inches: silt loam
Bw - 9 to 16 inches: silt loam
Bk - 16 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group

Hydric soil rating: No

Minor Components

Mccollum

Percent of map unit: 8 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB110MT - Sandy (Sy) LRU 44A-B
Hydric soil rating: No

Grantsdale

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Gird, greater slope

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

41B—Oldtrail-Glaciercreek-Larchpoint complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 57cx
Elevation: 2,200 to 3,500 feet
Mean annual precipitation: 24 to 34 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Oldtrail and similar soils: 40 percent
Glaciercreek and similar soils: 33 percent
Larchpoint and similar soils: 20 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oldtrail

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 4 inches: gravelly sandy loam
C1 - 4 to 12 inches: extremely gravelly loamy coarse sand
C2 - 12 to 60 inches: extremely cobbly loamy coarse sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.13 to 7.09 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Ecological site: R043AP802MT - Bottomland Group
Other vegetative classification: grand fir/twinflower (PK590)

Hydric soil rating: No

Description of Glaciercreek

Setting

Landform: Stream terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Volcanic ash over alluvium or outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Bw - 1 to 15 inches: gravelly ashy silt loam
2C - 15 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F043AP909MT - Upland Cool Woodland Group
Other vegetative classification: grand fir/twinflower (PK590)
Hydric soil rating: No

Description of Larchpoint

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 7 inches: silt loam
Cg1 - 7 to 27 inches: silt loam
2Cg2 - 27 to 31 inches: loamy coarse sand
3Cg3 - 31 to 60 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: About 12 to 24 inches

Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: R043AP802MT - Bottomland Group
Hydric soil rating: No

Minor Components

Oldtrail

Percent of map unit: 7 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R043AP802MT - Bottomland Group
Other vegetative classification: grand fir/twinflower (PK590)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

41C—Sacheen loamy fine sand, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 57cy
Elevation: 1,300 to 4,600 feet
Mean annual precipitation: 15 to 24 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Sacheen and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sacheen

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits

Typical profile

A - 0 to 8 inches: loamy fine sand
C - 8 to 60 inches: fine sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F043AP911MT - Upland Warm Woodland Group
Other vegetative classification: ponderosa pine/Idaho fescue-rough fescue phase (PK142), ponderosa pine/bitterbrush-Idaho fescue phase (PK162)

Hydric soil rating: No

Minor Components

Selon

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: ponderosa pine/Idaho fescue-Idaho fescue phase (PK141), Douglas-fir/pinegrass-ponderosa pine phase (PK324), ponderosa pine/bitterbrush-Idaho fescue phase (PK162)
Hydric soil rating: No

Sacheen, fine sand

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: ponderosa pine/Idaho fescue-rough fescue phase (PK142), Douglas-fir/ninebark-pinegrass phase (PK262), Douglas-fir/pinegrass-ponderosa pine phase (PK324), ponderosa pine/bitterbrush-Idaho fescue phase (PK162)
Hydric soil rating: No

Sacheen

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: ponderosa pine/Idaho fescue-rough fescue phase (PK142), Douglas-fir/ninebark-pinegrass phase (PK262), Douglas-fir/pinegrass-ponderosa pine phase (PK324), ponderosa pine/bitterbrush-Idaho fescue phase (PK162)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

54C—Yellowbay gravelly loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 57hh
Elevation: 2,200 to 4,000 feet
Mean annual precipitation: 19 to 28 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Farmland of local importance

Map Unit Composition

Yellowbay and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yellowbay

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: gravelly loam
Bw - 3 to 18 inches: very gravelly sandy loam
BC - 18 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F043AP909MT - Upland Cool Woodland Group
Other vegetative classification: Douglas-fir/ninebark-pinegrass phase (PK262)
Hydric soil rating: No

Minor Components

Yellowbay, greater slope

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Douglas-fir/ninebark-pinegrass phase (PK262), Douglas-fir/pinegrass-ponderosa pine phase (PK324), ponderosa pine/bitterbrush-Idaho fescue phase (PK162)
Hydric soil rating: No

Beaverdump

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: grand fir/queencup beadlily (PK520)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

94A—Revais silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 57rb
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 11 to 19 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 95 to 120 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Revais and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Revais

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 5 inches: silt loam
C1 - 5 to 14 inches: silt loam
C2 - 14 to 38 inches: very fine sandy loam
C3 - 38 to 44 inches: fine sandy loam
C4 - 44 to 49 inches: silt loam
C5 - 49 to 55 inches: fine sandy loam
C6 - 55 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R043AP802MT - Bottomland Group

Other vegetative classification: ponderosa pine/bluebunch wheatgrass (PK130), ponderosa pine/snowberry (PK170)
Hydric soil rating: No

Minor Components

Grantsdale

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Horseplains

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: ponderosa pine/bluebunch wheatgrass (PK130), ponderosa pine/snowberry (PK170)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

103B—Gird-McCollum complex, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 573g
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Gird and similar soils: 50 percent
Mccollum and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gird

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 9 inches: silt loam
Bw - 9 to 16 inches: silt loam
Bk - 16 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Mccollum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw - 10 to 21 inches: fine sandy loam
C - 21 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.13 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Mccollum, greater slope

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB110MT - Sandy (Sy) LRU 44A-B
Hydric soil rating: No

Grantsdale

Percent of map unit: 4 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear

Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Sacheen

Percent of map unit: 1 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F043AP911MT - Upland Warm Woodland Group
Other vegetative classification: ponderosa pine/Idaho fescue-rough fescue phase (PK142), ponderosa pine/bitterbrush-Idaho fescue phase (PK162)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

152E—Bigarm, cool-Hogsby-Rock outcrop complex, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 575n
Elevation: 2,600 to 6,000 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Bigarm and similar soils: 55 percent
Hogsby and similar soils: 20 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bigarm

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from argillite and quartzite

Typical profile

A - 0 to 14 inches: cobbly loam
Bw - 14 to 29 inches: very gravelly loam
C - 29 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R043AP810MT - Upland Grassland Group
Hydric soil rating: No

Description of Hogsby

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium or residuum from argillite and quartzite

Typical profile

A - 0 to 9 inches: cobbly loam
Bw - 9 to 12 inches: very cobbly loam
C - 12 to 17 inches: extremely channery loam
R - 17 to 21 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R043AP805MT - Shallow Grassland Group
Hydric soil rating: No

Minor Components

Bigarm, greater slope

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Rubble land

Percent of map unit: 5 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

292B—McCollum fine sandy loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 5792
Elevation: 1,300 to 4,600 feet
Mean annual precipitation: 11 to 20 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 95 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mccollum and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mccollum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw - 10 to 21 inches: fine sandy loam
C - 21 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.13 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group

Hydric soil rating: No

Minor Components

Grantsdale

Percent of map unit: 8 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Sacheen

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F043AP911MT - Upland Warm Woodland Group
Other vegetative classification: ponderosa pine/Idaho fescue-rough fescue phase (PK142), ponderosa pine/bitterbrush-Idaho fescue phase (PK162)
Hydric soil rating: No

Mccollum

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB110MT - Sandy (Sy) LRU 44A-B
Hydric soil rating: No

Horseplains, channeled

Percent of map unit: 1 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: ponderosa pine/bluebunch wheatgrass (PK130), ponderosa pine/snowberry (PK170)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

350B—Bigarm gravelly loam, alluvial, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 57b7
Elevation: 2,400 to 5,500 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 90 to 120 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Bigarm and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bigarm

Setting

Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from argillite and quartzite

Typical profile

A - 0 to 12 inches: gravelly loam
Bw - 12 to 38 inches: very gravelly loam
C - 38 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Bigarm, stony

Percent of map unit: 5 percent
Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Yellowbay

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Douglas-fir/ninebark-pinegrass phase (PK262), Douglas-fir/pinegrass-ponderosa pine phase (PK324), ponderosa pine/bitterbrush-Idaho fescue phase (PK162)
Hydric soil rating: No

Bigarm

Percent of map unit: 5 percent
Landform: Alluvial fans, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

351C—McCollum-Belton fine sandy loams, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: 57bc
Elevation: 2,400 to 3,500 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mccollum and similar soils: 45 percent
Belton and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mccollum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw - 10 to 21 inches: fine sandy loam
C - 21 to 60 inches: fine sandy loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.13 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Description of Belton

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Btn1 - 8 to 17 inches: silty clay loam
Btn2 - 17 to 21 inches: silty clay loam
C - 21 to 60 inches: silty clay

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R044AP808MT - Upland Grassland Group
Hydric soil rating: No

Minor Components

Gird

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB032MT - Loamy (Lo) LRU 44A-B
Hydric soil rating: No

Bemishave

Percent of map unit: 5 percent
Landform: Escarpments
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: ponderosa pine/bitterbrush-Idaho fescue phase (PK162), ponderosa pine/snowberry-snowberry phase (PK171)
Hydric soil rating: No

Mccollum

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB110MT - Sandy (Sy) LRU 44A-B
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

421B—Selon fine sandy loam, moist, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 57d4
Elevation: 2,300 to 7,000 feet
Mean annual precipitation: 14 to 60 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 70 to 130 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Selon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Selon

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 4 inches: fine sandy loam
E/Bw - 4 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.13 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F044AP903MT - Upland Cool Woodland Group
Other vegetative classification: Douglas-fir/ninebark-pinegrass phase (PK262), grand fir/twinflower-twinflower phase (PK591)
Hydric soil rating: No

Minor Components

Scotmont

Percent of map unit: 5 percent
Landform: Lake plains, lake terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F044AP903MT - Upland Cool Woodland Group
Other vegetative classification: grand fir/queencup beadlily-queencup beadlily phase (PK521), grand fir/twinflower-twinflower phase (PK591)
Hydric soil rating: No

Selon

Percent of map unit: 5 percent
Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Douglas-fir/ninebark-pinegrass phase (PK262), grand fir/twinflower-twinflower phase (PK591)
Hydric soil rating: No

Selon

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: grand fir/queencup beadlily-queencup beadlily phase (PK521), grand fir/twinflower-twinflower phase (PK591)
Hydric soil rating: No

Mccollum

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R044AB110MT - Sandy (Sy) LRU 44A-B
Other vegetative classification: grand fir/queencup beadlily-queencup beadlily phase (PK521), grand fir/twinflower-twinflower phase (PK591)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

Sanders and Parts of Lincoln and Flathead Counties, Montana

472B—Elkrock gravelly ashy silt loam, moist, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 57fc
Elevation: 2,400 to 2,800 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 100 to 120 days
Farmland classification: Farmland of local importance

Map Unit Composition

Elkrock and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elkrock

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 4 inches: gravelly ashy silt loam
Bw - 4 to 15 inches: very gravelly ashy silt loam
2C - 15 to 60 inches: extremely cobbly loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F044AP903MT - Upland Cool Woodland Group

Other vegetative classification: Douglas-fir/ninebark-pinegrass phase (PK262), Douglas-fir/ninebark-ninebark phase (PK261)
Hydric soil rating: No

Minor Components

Elkrock, stony

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F044AP903MT - Upland Cool Woodland Group
Other vegetative classification: Douglas-fir/ninebark-pinegrass phase (PK262), Douglas-fir/ninebark-ninebark phase (PK261)
Hydric soil rating: No

Elkrock

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F044AP903MT - Upland Cool Woodland Group
Other vegetative classification: Douglas-fir/ninebark-pinegrass phase (PK262), Douglas-fir/ninebark-ninebark phase (PK261)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sanders and Parts of Lincoln and Flathead Counties, Montana
Survey Area Data: Version 26, Sep 3, 2025

U.S. Fish and Wildlife Service

National Wetlands Inventory

76N 30165123 - wetlands

December 17, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

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

Water Resources Division – Kalispell Regional Office
655 Timberwolf Pkwy, Ste. 4
Kalispell, MT 59901-1215
(406) 752-2288
DNRCKalispellWater@mt.gov

December 16, 2025

SALISH SHORES UTILITY CORP., INC.
PO BOX 1030
THOMPSON FALLS MT 59873-1030

Subject: Draft Preliminary Determination to Grant Change Application No. 76N 30165123

Dear Applicant,

The Department of Natural Resources and Conservation (Department) has completed a preliminary review of your application. This review consists of an evaluation of the criteria for issuance of a change found in §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 January 8, 2026, the Department will prepare a notice of opportunity to provide public comment per §85-2-307(4), MCA.

Please note that if you request and 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 contact me at (406) 752-2746 or Travis.Wilson@mt.gov if you have any questions.

Sincerely,

Travis Wilson
Water Resource Specialist
Kalispell Regional Office

Encl.: Draft Preliminary Determination to Grant Change Application No. 76N 30165123

Cc via email: Bryan Gartland, Aspect Consulting

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

* * * * * * *

APPLICATION TO CHANGE WATER RIGHT NO. 76N 30165123 BY SALISH SHORES UTILITY CORP., INC.	)))	**DRAFT PRELIMINARY DETERMINATION TO GRANT CHANGE**

* * * * * * *

The Salish Shores Utility Corp., Inc. (Applicant) submitted Application to Change an Existing Water Right No. 76N 30165123 to change Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 to the Kalispell Regional Office of the Department of Natural Resources and Conservation (Department or DNRC) on July 28, 2025. The Department published receipt of the application on its website on August 7, 2025. The Department sent Applicant a deficiency letter under §85-2-302, Montana Code Annotated (MCA), dated August 18, 2025. The Applicant responded with information dated September 18, 2025. A preapplication meeting was held between the Department and the Applicant's consultant, Aspect Consulting, on January 8, 2025, in which the Applicant designated that the technical analyses for this application would be completed by the Department. The Applicant returned the completed Preapplication Meeting Form on January 31, 2025. The Department delivered the Department-completed technical analyses on March 20, 2025. The Application was determined to be correct and complete as of October 17, 2025. An Environmental Assessment for this application was completed on December 16, 2025.

INFORMATION

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

Application as filed:

- Change Preapplication Meeting Form, Form 606P.
    - Attachments:
        - Attachment A: Historic Use Map

        - Attachment B: Proposed Use Map
        - Attachment C: Historic Use – Supporting Municipal Use Information
        - Attachment D: Aquifer Testing Addendum and Aquifer Test Data, Forms 606-ATA and 633, respectively.

- Application to Change a Water Right, Form 606.
    - Attachments:
        - Attachment A: Preapplication and Technical Analyses Information
            - Attachment A.1: Application to Change a Water Right Technical Analyses Addendum, Form 606-TAA
            - Attachment A.2: Department-completed Groundwater Change Technical Analyses Report based on information provided in the Preapplication Meeting Form, dated March 20, 2025.
        - Attachment B: Maps
            - Attachment B.1: Existing (Historical) Use Map
            - Attachment B.2: Proposed Use Map
        - Attachment C: Points of Diversion and Place of Use
            - Attachment C.1: Existing and Proposed Points of Diversion
            - Attachment C.2: Proposed Municipal Place of Use Details
        - Attachment D: Adverse Effect
            - Attachment D.1: Diversion Control
            - Attachment D.2: Existing Water Right Protection
            - Attachment D.3: Calls for Water
        - Attachment E: Adequate Means of Diversion and Operation
            - Attachment E.1: Diversion Capacity
            - Attachment E.2: System Conveyance
            - Attachment E.3: Easements
            - Attachment E.4: Plan of Operation
        - Attachment F: Proposed Beneficial Use
            - Attachment F.1: Municipal Beneficial Use

Information Received after Application Filed

- A memorandum from the Applicant's consultant was received by the Department on September 18, 2025. This memorandum contained information in response to the Department's deficiency letter, dated August 18, 2025.

Information within the Department's Possession/Knowledge

- Administrative file for Provisional Permit No. 76N 81519-00.
- Administrative file for Provisional Permit No. 76N 85780-00.
- Administrative file for Provisional Permit No. 76N 97278-00.
- Administrative file for Provisional Permit No. 76N 30016270.

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, part 4, MCA).

For the purposes of this document:

AF means acre-feet	**BGS** means below ground surface
BTC means below top of casing	**CFS** means cubic feet per second
Department or **DNRC** means the Department of Natural Resources and Conservation	
DEQ means Department of Environmental Quality	**FOF** means finding of fact
GPM means gallons per minute	**NHD** means the National Hydrographic Dataset
POD means point of diversion	**PVC** means polyvinyl chloride
PWS means Public Water Supply	**S** means Storativity
SWL means static water level	**T** means Transmissivity
USGS means the United States Geological Survey	**VFD** means variable frequency drive

WATER RIGHTS TO BE CHANGED

FINDINGS OF FACT

1. The Applicant proposes to change Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270, which serve the municipal uses of the Salish Shores PWS system. The current active versions of all of these water rights is version 2 – change authorization version. The details of these existing water rights are summarized in **Tables 1 and 2**. These water

rights were previously changed by unperfected water right Change Authorization No. 76N 30027719. Provisional Permit Nos. 76N 81519-00, 76N 85780-00, and 76N 97278-00 are perfected permits, while Provisional Permit No. 76N 30016270 is unperfected. Provisional Permit No. 76N 81519-00 was perfected on December 31, 2003, and Provisional Permit Nos. 76N 85780-00 and 76N 97278-00 were both perfected on June 19, 2007.

Table 1: Summary of Water Rights Proposed for Change

Water Right Number	Priority Date	Purpose	Flow Rate (GPM)	Volume (AF)	Period of Diversion & Use	Means of Diversion	Points of Diversion & Places of Use
76N 81519-00	May 14, 1992	Municipal	110.00	48.90	01/01 – 12/31	Seven Wells	See Table 2
76N 85780-00	June 1, 1993		210.00	104.32			
76N 97278-00	May 17, 1996		440.00	25.98			
76N 30016270	August 19, 2005		688.50	198.10			

Table 2: Summary of the Points of Diversion and Places of Use for the Water Rights Proposed for Change

The four provisional permit water rights proposed for change are the only four water rights that serve a manifold system and share all of the same points of diversion and places of use.

Points of Diversion

Well ID	GWIC ID	1/4	1/4	1/4	Section	Township	Range	County
H1	135335	SW	NE	SE	16	21 N	29 W	Sanders
H2	131977	SW	NE	SE	16	21 N	29 W	Sanders
H3	139319	SW	SW	SE	15	21 N	29 W	Sanders
H4	139318	SW	SW	SE	15	21 N	29 W	Sanders
H5	175584	NE	SW	NW	15	21 N	29 W	Sanders
H6	175632	NE	SW	NW	15	21 N	29 W	Sanders
H7	175585	NW*	SE*	NW	15	21 N	29 W	Sanders

Places of Use

POU ID	---	1/4	1/4	1/4	Section	Township	Range	County
1	---	---	---	---	15	21 N	29 W	Sanders
2	---	---	---	E2	16	21 N	29 W	Sanders
3	---	---	W2	SW	13	21 N	29 W	Sanders
4	---	---	---	---	14	21 N	29 W	Sanders
5	---	---	N2	N2	22	21 N	29 W	Sanders
6	---	---	N2	N2	23	21 N	29 W	Sanders

*The Applicant pointed out that the legal land description quarter sections of this well should be the "NWSENW" but has been erroneously coded on previous water right versions as "NESWNW." The Department will present the true and correct legal land description quarter sections for this well in this document and will work with the Applicant to correct this error on all previous water right versions as well.

CHANGE PROPOSAL

FINDINGS OF FACT

2. The Applicant proposes adding an eighth point of diversion (well GWIC ID No. 76372) to Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 and changing their place of use to include the entire projected service area of the Salish Shores PWS system as part of the Montana Public Service Commission's Master Development Plan. The proposed new well will divert water at 167.5 GPM, though no additional flow rate or volume for the overall Salish Shores PWS system is requested in this application. The locations of the proposed new POD and places of use are detailed in **Tables 3 and 4**, respectively. The full details of the proposed change are displayed in **Tables 5 – 7**.

3. No changes to the purpose of use are proposed in this change and there is no storage component to these water rights. The project is in Water Right Basin 76N (Clark Fork River, Below Flathead River) in an area that is not subject to water right basin closures or controlled groundwater area restrictions.

Table 3: Proposed New Point of Diversion for the Water Rights Proposed for Change

GWIC ID	1/4	1/4	1/4	Section	Township	Range	County
76372	NE	NW	NW	15	21 N	29 W	Sanders

Table 4: Proposed New Places of Use for the Water Rights Proposed for Change

1/4	1/4	1/4	Section	Township	Range	County
---	E2	SW	9	21 N	29 W	Sanders
---	W2	SE	9	21 N	29 W	Sanders
---	SE	SE	9	21 N	29 W	Sanders
---	SW	SW	10	21 N	29 W	Sanders
---	NE	NW	14	21 N	29 W	Sanders
---	---	NE	14	21 N	29 W	Sanders
---	SE	NW	14	21 N	29 W	Sanders
---	NE	SE	14	21 N	29 W	Sanders
---	N2	NE	15	21 N	29 W	Sanders

Note: The legal land descriptions in this table represent only the proposed new places of use. The overall places of use for the subject provisional permits are summarized in their most simplified form in Table 7. See Figure 2 for a visual representation of the existing and proposed places of use.

Table 5: Summary of the Proposed Changes (Bold underlined text identifies the water right elements proposed for change)							
Water Right Number	Priority Date	Purpose	Flow Rate (GPM)	Volume (AF)	Period of Diversion & Use	Means of Diversion	Points of Diversion & Places of Use
76N 81519-00	May 14, 1992	Municipal	110.00	48.90	01/01 - 12/31	Eight Wells	**<u>See Tables 6 & 7</u>**
76N 85780-00	June 1, 1993		210.00	104.32			
76N 97278-00	May 17, 1996		440.00	25.98			
76N 30016270	August 19, 2005		688.50	198.10			

Table 6: Points of Diversion for the Water Rights Proposed for Change (Bold underlined text identifies the water right elements proposed for change)							
GWIC ID	**1/4**	**1/4**	**1/4**	**Section**	**Township**	**Range**	**County**
135335	SW	NE	SE	16	21 N	29 W	Sanders
131977	SW	NE	SE	16	21 N	29 W	Sanders
139319	SW	SW	SE	15	21 N	29 W	Sanders
139318	SW	SW	SE	15	21 N	29 W	Sanders
175584	NE	SW	NW	15	21 N	29 W	Sanders
175632	NE	SW	NW	15	21 N	29 W	Sanders
175585	NW	SE	NW	15	21 N	29 W	Sanders
<u>76372</u>	**<u>NE</u>**	**<u>NW</u>**	**<u>NW</u>**	**<u>15</u>**	**<u>21 N</u>**	**<u>29 W</u>**	**<u>Sanders</u>**

Table 7: Places of Use for the Water Rights Proposed for Change (Bold underlined text identifies the water right elements proposed for change)						
1/4	**1/4**	**1/4**	**Section**	**Township**	**Range**	**County**
---	**<u>E2</u>**	**<u>SW</u>**	**<u>9</u>**	**<u>21 N</u>**	**<u>29 W</u>**	**<u>Sanders</u>**
---	**<u>W2</u>**	**<u>SE</u>**	**<u>9</u>**	**<u>21 N</u>**	**<u>29 W</u>**	**<u>Sanders</u>**
---	**<u>SE</u>**	**<u>SE</u>**	**<u>9</u>**	**<u>21 N</u>**	**<u>29 W</u>**	**<u>Sanders</u>**
---	**<u>SW</u>**	**<u>SW</u>**	**<u>10</u>**	**<u>21 N</u>**	**<u>29 W</u>**	**<u>Sanders</u>**
---	W2	SW	13	21 N	29 W	Sanders
---	---	---	**<u>14</u>**	**<u>21 N</u>**	**<u>29 W</u>**	**<u>Sanders</u>**
---	---	---	**<u>15</u>**	**<u>21 N</u>**	**<u>29 W</u>**	**<u>Sanders</u>**
---	---	E2	16	21 N	29 W	Sanders
---	N2	N2	22	21 N	29 W	Sanders
---	N2	N2	23	21 N	29 W	Sanders

4. To ensure that adding an eighth POD does not adversely affect existing water users by increasing the diverted flow rate or volume from combined use of eight PODs, this change will be subject to the following condition:

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 JANUARY 31 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR UNTIL A PROJECT COMPLETION NOTICE (FORM 617) IS SUBMITTED. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THE PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE KALISPELL WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

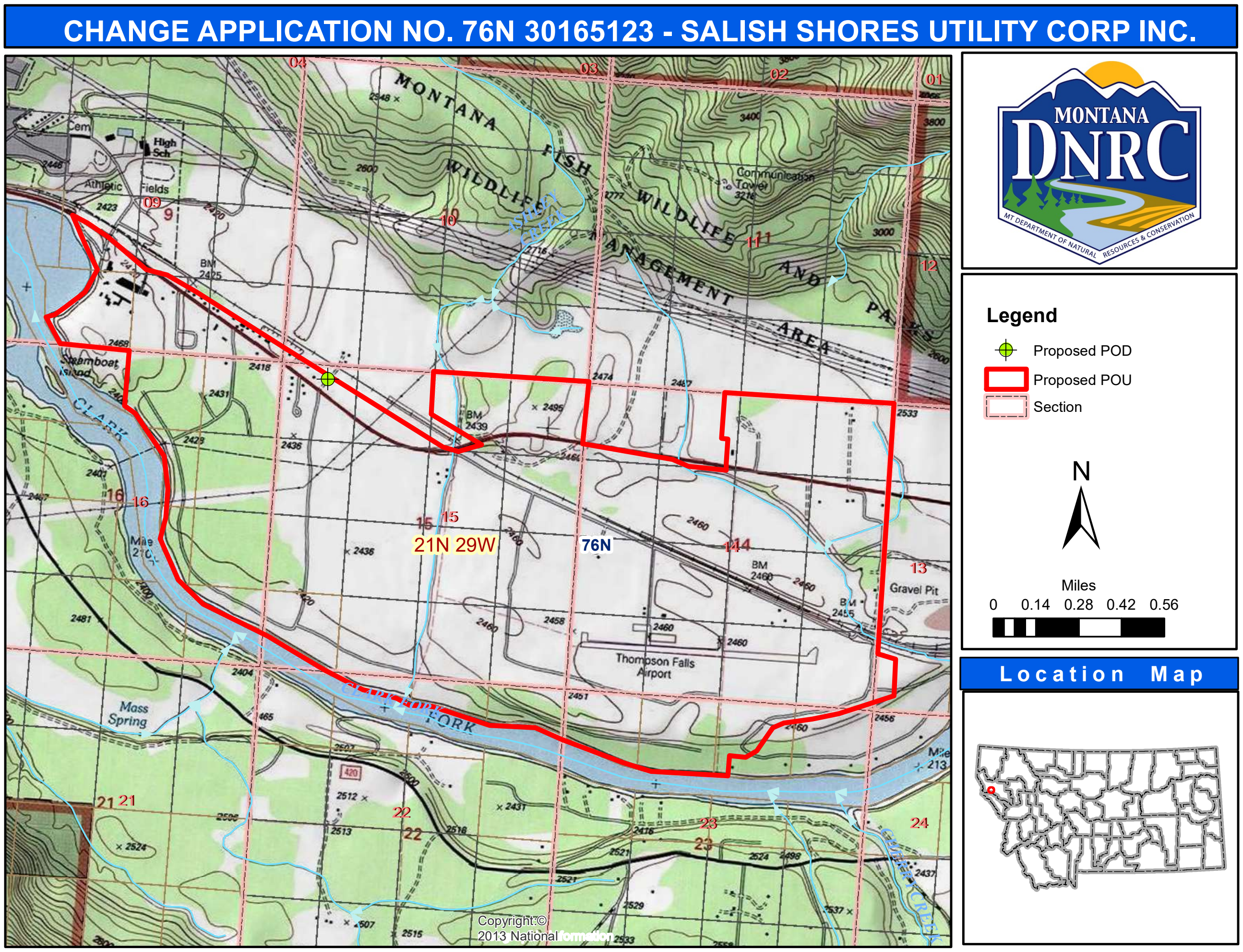


Figure 1: Applicant's proposed point of diversion and place of use.

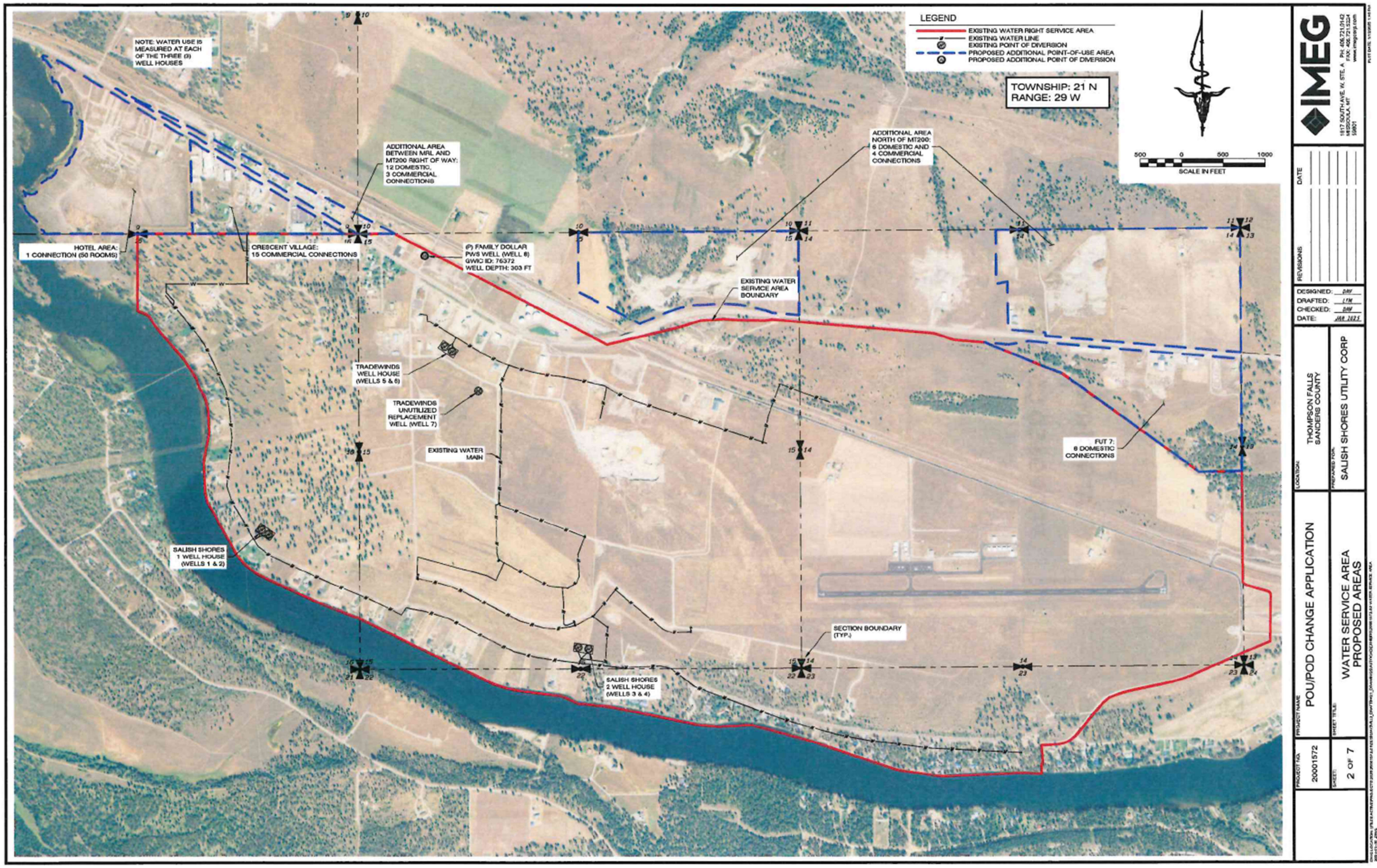


Figure 2. Map of the Applicant's proposed point of diversion, proposed place of use, existing/historical points of diversion, and historical place of use. The solid red outline delineates the existing place of use, while the dashed blue outlines delineate the proposed new places of use.

CHANGE CRITERIA

5. 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.

6. 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

FINDINGS OF FACT

7. The Applicant proposes adding an eighth POD (GWIC ID No. 76372) to Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 and changing their place to include the entire projected Salish Shores PWS system service area. Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 were previously changed by unperfected Change Authorization No. 76N 30027719. The changes authorized under unperfected Change Authorization No. 76N 30027719 were to add an additional POD (well), change the purpose to municipal, manifold all wells into the PWS system, add a place of use, and make the place of use on all permits match the Salish Shores PWS system service area. As with the subject change authorization application, no additional flow or volume was required to accomplish the requested changes.

8. Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 are supplemental because they all share the same points of diversion and places of use. The historical use of these water rights was proven by the applicant and quantified by the DNRC in Change Authorization No. 76N 30027719. The applicant did not submit additional addenda or information with this application contradicting the Department's previous findings, therefore the DNRC will use the findings from the previous historical use analysis for this application. Provisional Permit Nos. 76N 81519-00, 76N 85780-00, and 76N 97278-00 are perfected permits. Provisional Permit No. 76N 30016270 is unperfected and therefore carries forward its full flow rate and volume to this change application. The historical use of these water rights, as proven in Change Authorization No. 76N 30027719, is summarized in **Table 8**.

9. The Department did not make findings on the historically consumed volume in Change Authorization No. 76N 30027719. The Department standard for consumption for domestic or institutional purposes (or municipal use not associated with a Municipality) using individual drainfields for water treatment is 10-percent. Employing DNRC standards, the total consumed

volume is 37.73 AF/year (48.90 AF + 104.32 AF + 25.98 AF + 198.10 AF = 377.30 AF x 0.10 = 37.73 AF).

Table 8: Summary of the Historical Use of the Water Rights Proposed for Change							
Water Right Number	Historical Purpose	Historical Period of Diversion & Use	Historical Places of Use	Historical Points of Diversion	Maximum Historical Flow Rate (GPM)	Historically Consumed Volume (AF)	Historically Diverted Volume (AF)
76N 81519-00	Multiple Domestic	01/01 - 12/31	See Table 2		110.00	4.89	48.90
76N 85780-00	Multiple Domestic				210.00	10.43	104.32
76N 97278-00	Commercial; Lawn and Garden				440.00	2.60	25.98
76N 30016270	Municipal				688.50	19.81	198.10
Total					1,448.50	37.73	377.30

10. The Department will rely on its previous findings of historical use for Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 from Change Authorization No. 76N 30027719 as presented in **Table 8** for analysis of this application.

ADVERSE EFFECT

FINDINGS OF FACT

11. The Applicant proposes adding an eighth POD (GWIC ID No. 76372) to Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 and changing their place to include the entire projected Salish Shores PWS system service area. The historical diverted and consumed volumes of 377.30 AF/year and 33.73 AF/year, respectively, were found for the municipal use.

12. The Applicant asserted in their application that during times of water shortage, senior appropriators will be satisfied prior to the Applicant's diversion of water from the source aquifer. Should a call for water be made on the source aquifer by a senior appropriator, the Applicant will promptly reduce pumping from the source aquifer and will implement water conservation practices for the system and its users. They further assert that since complete cessation of this municipal water supply could create significant public health and safety issues to its end users, the Applicant would contact senior appropriators to identify water saving methods that may

reduce the Applicant's cumulative impact on the source aquifer while maintaining the basic needs of Salish Shores PWS system water users.

13. Potential adverse effect resulting from the proposed change was evaluated by using the Applicant's proposed pumping schedule and associated volume to model drawdown in nearby wells and changes in net depletions to hydraulically connected surface water sources.

GROUNDWATER

14. Information provided by the Applicant shows that four of the seven existing wells are the primary Production Wells for the service area (GWIC ID Nos. 135335, 131977, 175584, and 175632). Therefore, the existing (historical) pumping schedule was apportioned to four wells (**Table 9**), while the proposed pumping schedule was apportioned to five wells (GWIC ID Nos. 135335, 131977, 175584, 175632, and 76372 [proposed well]) (**Table 10**). The three redundant wells (GWIC ID Nos. 139319, 139318, and 175585) were not assigned proportions of historical or proposed pumping volumes. The list of wells, including well depth and estimated capacity is shown in **Table 11**. The total flow rate and volume proposed for change is 1,448.5 GPM and 377.3 AF/year for municipal purpose with a period of diversion and period of use from January 1 to December 31.

15. Drawdown in existing wells was modeled for existing (four wells) and proposed (five wells) conditions with the Hantush (1960[1]) leaky-confined early-time solution, a T of 6,750 ft^2/day, S of 1.7×10^{-4}, β (leakage parameter) of 0.14, and the monthly pumping schedules identified in **Tables 9 and 10** for a period of five years. The Applicant provided water use records for 2023 and 2024 which reflects approximate monthly use shown in **Table 9 and 10**.

16. Due to the proximity of GWIC ID Nos. 135335 and 131977, and GWIC ID Nos. 175584 and 175632, the monthly pumping schedules were modeled as centroids between each well pair. The maximum drawdown at the end of August of the fifth year of pumping under existing conditions (**Table 9**) show maximum drawdown at the centroid of the well pairs. The maximum drawdown at the end of August of the fifth year of pumping under proposed conditions (**Table 10**) show maximum drawdown at the centroid of the well pairs and the proposed well (GWIC ID No. 76372).

[1] Hantush, M.S. 1960. Modification of the theory of leaky aquifers, Jour. of Geophys. Res., vol. 65, no. 11, pp. 3713-3725.

Table 9: Monthly pumping schedules for existing wells				
Month	GWIC ID 135335 and 131977 (GPM)	GWIC ID 175584 and 174632 (GPM)	Total pumping schedule (GPM)	Total pumping volume (AF)
January	71.6	24.4	95.9	13.1
February	95.7	32.6	128.3	15.9
March	100.3	34.2	134.5	18.4
April	151.1	51.5	202.6	26.9
May	211.3	71.9	283.2	38.8
June	302.8	103.1	405.9	53.8
July	242.8	82.7	325.4	44.6
August	362.2	123.3	485.5	66.5
September	198.8	67.7	266.5	35.3
October	178.7	60.8	239.5	32.8
November	103.1	35.1	138.2	18.3
December	70.3	23.9	94.2	12.9
Total				**377.3**

Table 10: Monthly Pumping Schedules for Proposed Wells					
Month	GWIC ID 135335 and 131977 (GPM)	GWIC ID 175584 and 174632 (GPM)	GWIC ID 76372 (GPM)	Total pumping schedule (GPM)	Total pumping volume (AF)
January	70.0	23.8	2.1	95.9	13.1
February	93.6	31.9	2.8	128.3	15.9
March	98.1	33.4	3.0	134.5	18.4
April	147.8	50.3	4.5	202.6	26.9
May	206.6	70.3	6.3	283.2	38.8
June	296.1	100.8	9.0	405.9	53.8
July	237.4	80.8	7.2	325.4	44.6
August	354.2	120.6	10.7	485.5	66.5
September	194.5	66.2	5.9	266.5	35.3
October	174.7	59.5	5.3	239.5	32.8
November	100.8	34.3	3.1	138.2	18.3
December	68.7	23.4	2.1	94.2	12.9
Total					**377.3**

Table 11: Well Information		
GWIC ID	Well Depth (feet BTC)	Estimated Capacity (GPM)
135335	121.0	246.0
131977	141.0	245.0
139319	240.0	427.0
139318	246.0	307.0
175584	367.0	160.0
175632	355.0	240.0
175585	423.0	75.0
76372 (proposed)	303.0	167.5

17. Using the Applicant-provided monthly pumping schedule, the one-foot drawdown contour for well pair GWIC ID 135335 and 131977 extends approximately 50 feet from the centroid of the two wells. The one-foot drawdown contour for well pair GWIC ID 175584 and 175632 extends approximately 15 feet from the centroid of the two wells. No existing water rights are within the modeled one-foot contour for either existing well pair.

18. With the addition of the proposed well and using the Applicant provided monthly pumping schedule, the one-foot drawdown contour for well pair GWIC ID 135335 and 131977 reduces to approximately 40 feet from the centroid of the proposed wells. The one-foot drawdown contour reduces to approximately 10 feet from well pair GWIC ID 175584 and 175632. The proposed well, GWIC ID No. 76372, has a maximum drawdown extent of approximately 0.3 feet. No water rights are within the modeled one-foot contour for either existing well pair or the proposed well.

<u>SURFACE WATER</u>

19. Net surface water depletion is equal to the consumed volume for a proposed groundwater use and is described as the calculated volume, rate, timing, and location of reductions to surface water that are offset by return flows (non-consumed water) from the place of use. Net depletion is evaluated by:

i. Quantifying the consumed volume associated with the proposed use;
ii. Identifying hydraulically connected surface waters; and,
iii. Calculating the monthly rate and timing of depletions to affected surface water(s).

20. Consumed groundwater does not return to the source aquifer. Consumed volume depends on the proposed use and its associated percentage of known consumption. Depletion is assumed

to be equivalent to consumption on an annual basis unless return flows do not accrete to the potentially affected surface water. The Department found a total annual consumed volume of 33.73 AF/year for the municipal use associated with the Salish Shores PWS system.

21. Net depletions to surface water depend on propagation of drawdown to locations where surface water is hydraulically connected to groundwater, the hydraulic properties of an aquifer, and is not a function of groundwater flow rate or direction (Theis, 1938[2]; Leake, 2011[3]). Hydraulic connection depends on the depth to groundwater beneath the beds of surface waters and can vary along a reach and with time of year. Drawdown from pumping can propagate through the entire thickness of the confining layer to overlying aquifers or surface waters (Konikow and Neuzil, 2007[4]).

22. Per DNRC (2018[5]) hydraulic connection of individual stream reaches to groundwater is evaluated by comparing streambed elevations to static groundwater elevations measured in wells less than 50 feet deep and within 1,000 feet of surface water or from published water table maps. Surface water within that area is considered hydraulically connected to the unconfined aquifer if static groundwater elevations are above or within 10 feet of the elevation of the stream bed. Hydraulic connection of a confined aquifer to surface water is based on information such as the continuity and thickness of a confining layer and whether overlying shallow unconfined aquifers are connected to surface water (DNRC, 2018).

23. The Clark Fork River near the proposed and existing wells is classified as perennial per the USGS NHD and is approximately 600 feet from the Applicant's PODs. Shallow wells near the project location north of the Clark Fork River that meet the criteria for DNRC (2018) include GWIC ID No. 134163 in Section 23, Township 21 N, Range 29 W (**Figure 3**) and GWIC ID Nos. 76359 and 132636 in Section 9, Township 21 N, Range 29 W. Based on information from well logs with shallow static water levels upgradient and downgradient of the proposed wells, the adjacent terraces and steep banks which may cause a greater river incision depth into sediments of the shallow alluvium, and the ability of the aquitard to transmit water under the known vertical

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[2] Theis, C.V. 1938. The significance and nature of the cone of depression in ground water bodies. Economic Geology 38,889–902.
[3] Leake, S.A. 2011. Capture – rates and direction of groundwater flow don't matter! Groundwater, Vol. 49, No. 4, p. 456 – 458.
[4] Konikow, L. F. and C. E. Neuzil, 2007. A method to estimate groundwater depletion from confining layers, Water Resources Research., 43, W07417, doi:10.1029/2006WR005597.
[5] DNRC Technical Memorandum: Net Surface Water Depletion from Groundwater Pumping, dated July 6, 2018.

hydraulic conductivity, the Clark Fork River is considered hydraulically connected to the source aquifer. The Clark Fork River was identified as hydraulically connected and had depletions due to groundwater pumping modeled for it in Provisional Permit No. 76N 30016270.

24. Ashley Creek, another nearby surface water body, is approximately 3,100 feet from proposed well GWIC ID No. 76372. Ashley Creek is noted as intermittent in NHD and aerial imagery shows no defined stream channel. No wells less than 50 feet deep with shallow static groundwater elevations are mapped within the vicinity of Ashley Creek. As such, Ashley Creek was not considered a hydraulically connected source.

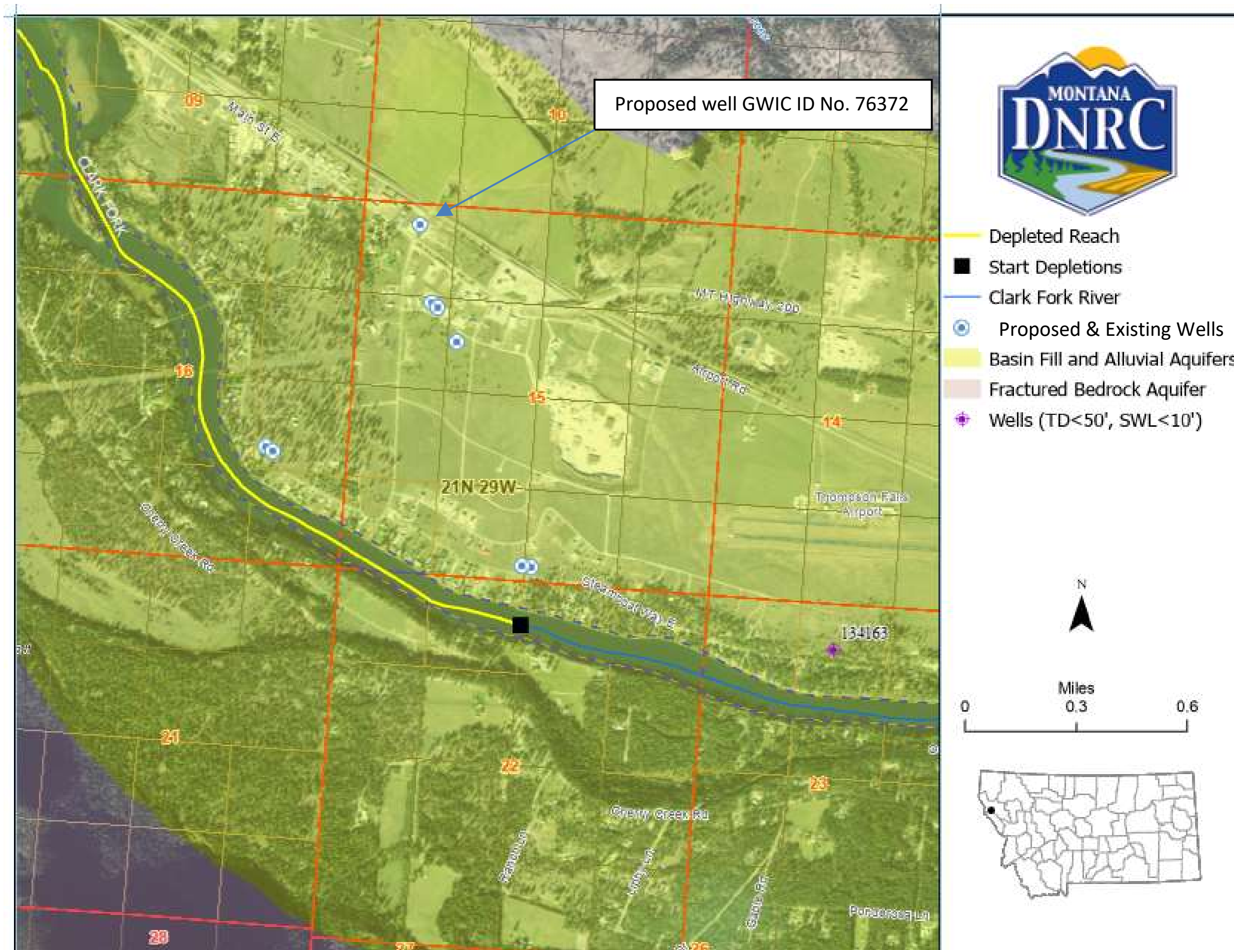

Figure 3: Proposed/existing wells and the historical and proposed starting point of net depletions on the Clark Fork River.

25. Net depletion caused by pumping the source aquifer primarily occurs as propagation of drawdown through the overlying confining layer to the affected reach of the Clark Fork River. As identified in **Table 12**, net depletion effects are expected to be dampened resulting in a constant

year-round rate of depletion to Clark Fork River downstream of the eastern boundary of the NENW of Section 22, Township 21 N, Range 29 W (**Figure 3**).

26. The distance of the historical and proposed wells from the Clark Fork River, the similar distances along the length of the river, and similar completion depth of the existing wells and the proposed well results in no change to the location or timing of net depletions (constant year-round). As identified in **Table 12**, the calculated historical and proposed annual net depletion volume of 37.7 AF to the Clark Fork River will result in a monthly net depletion rate of 23.4 GPM.

Table 12: Net Depletion to the Clark Fork River under Historical and Proposed Conditions and Net Effect from the Proposed Change				
Month	Historical and Proposed Consumed Volume (AF)	Historical Net Depletion (GPM)	Proposed Net Depletion (GPM)	Net Effect (GPM)
January	3.2	23.4	23.4	0.0
February	2.9	23.4	23.4	0.0
March	3.2	23.4	23.4	0.0
April	3.1	23.4	23.4	0.0
May	3.2	23.4	23.4	0.0
June	3.1	23.4	23.4	0.0
July	3.2	23.4	23.4	0.0
August	3.2	23.4	23.4	0.0
September	3.1	23.4	23.4	0.0
October	3.2	23.4	23.4	0.0
November	3.1	23.4	23.4	0.0
December	3.2	23.4	23.4	0.0
Total	**37.7**	---		

27. To ensure that adding an eighth POD does not adversely affect existing water users by increasing the diverted flow rate or volume from combined use of eight PODs, this change will be subject to the following condition:

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 JANUARY 31 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES

DURING THE YEAR UNTIL A PROJECT COMPLETION NOTICE (FORM 617) IS SUBMITTED. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THE PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE KALISPELL WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

28. The Department determines that the proposed change will not increase the amount of flow or volume diverted or consumed, nor will it change the timing and location of the manifestation of net depletions to any hydraulically connected surface water source. The Department finds that the proposed change will not adversely effect existing water users within the area of potential adverse effect.

BENEFICIAL USE

FINDINGS OF FACT

29. The Applicant proposes adding an eighth POD (GWIC ID No. 76372) to Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 and changing their place to include the entire projected Salish Shores PWS system service area. The historically diverted and consumed municipal volumes were quantified in the Historical Use section above (**Table 8**). The proposed beneficial use is to continue to provide municipal water to the Salish Shores PWS system end users within the historical place of use and within additional areas that the Salish Shores PWS system will expand into. The total number of connections proposed for service by the Salish Shores PWS system is 604 (485 residential and 119 commercial).

30. The Applicant stated in their application that this project requires 110.0 GPM, 210.0 GPM, 440.0 GPM, and 688.5 GPM for Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270, respectively. The maximum authorized combined flow rate of these four provisional permits is 1,448.5 GPM (3.23 CFS), however, the system will rarely if ever be required to pump the full permitted flow rate under all four provisional permits simultaneously. The Applicant used the American Water Works Association Manual M22 to calculate a projected peak instantaneous water demand for all 604 connections. This exercise found that in the unlikely scenario that all 485 residential and 119 commercial connections were to simultaneously require their full flow demands, the peak demand would be 1,399.0 GPM, which is within the 1,448.5

GPM permitted under all four provisional permits. Each provisional permit could still divert its full individually permitted flow rate on its own. The purpose of the addition of a new POD is for increased redundancy and operational flexibility and will not increase the total diverted flow rate or volume of Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270.

31. The Salish Shores PWS system is currently authorized to serve 569 total connections comprised of 477 residential and 92 commercial connections. As of 2024, 144 of the 569 authorized connections have been completed (117 residential and 27 commercial). Between 2007 and 2024, the highest annual water volume diverted by the Salish Shores PWS system occurred in 2023, when a total of 52.98 AF was diverted. This equates to an average of 0.37 AF/connection/year (52.98 AF ÷ 144 connections = 0.37 AF/connection). The proposed expansion of the Salish Shores PWS system service area would add 35 new connections comprised of eight residential and 27 commercial connections, increasing the total connections from 569 to 604. Assuming an average use of 0.37 AF/connection, the total annual volume demand for all 604 connections is 223.48 AF/year, which is less than the 377.3 AF/year currently authorized under Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270. Provisional Permit No. 76N 30016270 has 198.1 AF of unperfected volume available to appropriate. The volume demand gap between the total annual volume demand for all 604 connections (223.48 AF/year) and the 2023 annual water volume (52.98 AF/year) is 170.5 AF/year. The unperfected volume under Provisional Permit No. 76N 30016270 (198.1 AF) is sufficient to provide the remaining volume needed for full build out of the Salish Shores PWS system service area with a buffer of 27.6 AF of additional volume.

32. The Department finds that the proposed change in point of diversion and place of use supports the continuation of the historically proven municipal purpose at the historically proven flow rates and volumes.

ADEQUATE MEANS OF DIVERSION

FINDINGS OF FACT

33. The Applicant proposes adding an eighth POD (GWIC ID No. 76372) to Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 and changing their place of use to include the entire projected Salish Shores PWS system service area.

VARIANCES

34. No variances were required from ARM 36.12.121.

AQUIFER TEST ANALYSIS

35. In lieu of submitting a new aquifer test on the proposed well to provide data to model aquifer properties, the Applicant submitted aquifer testing and aquifer property information from Provisional Permit No. 76N 30016270 and Geomatrix Consultants, Inc. (2005[6]). An evaluation of the potentially available water column remaining in the Production Well (GWIC ID No. 76372) was modeled using the Hantush (1960) leaky-confined early-time solution with a T of 6,750 ft^2/day, S of 1.7×10^{-4}, and β of 0.14. Predicted theoretical drawdown for the proposed well was modeled for the period of diversion using the monthly pumping schedule identified in **Table 13**. The Applicant proposes that a volume of 8.3 AF/year of the total 377.3 AF/year will be diverted from the proposed well. Applicant-provided water use records were used to distribute the volume to the proposed well and existing wells.

[6] Geomatrix Consultants, Inc. 2005. Hydrogeologic Summary Report Salish Shores Public Water Supply. 24 p.

Table 13: Applicant-provided Monthly Pumping Schedule for Municipal Purposes for the Proposed Well and for All Wells				
Month	Proposed Well Diverted Volume (AF)	Proposed Well Diverted Flow Rate (GPM)	All Wells Diverted Volume (AF)	All Wells Diverted Flow Rate (GPM)
January	0.3	2.1	13.1	95.9
February	0.4	2.8	15.9	128.3
March	0.4	3.0	18.4	134.5
April	0.6	4.5	26.9	202.6
May	0.9	6.3	38.8	283.2
June	1.2	9.0	53.8	405.9
July	1.0	7.2	44.6	325.4
August	1.5	10.7	66.5	485.5
September	0.8	5.9	35.3	266.5
October	0.7	5.3	32.8	239.5
November	0.4	3.1	18.3	138.2
December	0.3	2.1	12.9	94.2
Total	**8.3**	**---**	**377.4**	**---**

REMAINING AVAILABLE WATER COLUMN

36. The Applicant provided data from an 8.1-hour drawdown and yield test performed on well GWIC ID No. 76372 to demonstrate adequacy of diversion. The test had an average discharge of 167.5 GPM, with minimum and maximum discharge rates of 161.0 and 176.0 GPM, respectively. The maximum drawdown in GWIC ID No. 76372 was 32.91 feet below the SWL of 44.55 feet BTC, leaving approximately 226.7 feet above the bottom of the well.

37. As identified in **Table 14**, total drawdown is the sum of interference drawdown and predicted drawdown with well loss. Well loss is calculated by dividing the predicted theoretical maximum drawdown by a well efficiency value. Well efficiency is calculated by dividing the modeled maximum drawdown for the aquifer test by the maximum observed drawdown of the drawdown and yield test. The aquifer adjacent to the proposed well would experience a predicted total drawdown of 0.3 feet at the end of August of the first year of pumping the proposed well. The remaining available water column for the proposed well is 256.8 feet and is equal to the available drawdown above the bottom of the well minus total drawdown.

Table 14: Remaining Available Water Column for the Proposed Well	
Drawdown Estimate	**Proposed Well (GWIC ID 76372)**
Total Depth at Bottom of Well (feet BTC)[1]	304.00
Pre-Test Static Water Level (feet BTC)	44.35
Available Drawdown Above Bottom of Well (feet)	259.70
Observed Drawdown of Aquifer Test (feet)	32.90
Modeled Drawdown Using Mean Aquifer Test Rate (feet)	3.10
Well Efficiency (%)	9.40
Predicted Theoretical Maximum Drawdown (feet)	0.30
Predicted Drawdown with Well Loss (feet)	2.90
Interference Drawdown (feet)	0.00
Total Drawdown (feet)	2.90
Remaining Available Water Column (feet)	**256.8**

[1]The total well depth measuring point (BGS) was adjusted to the top of well casing based on a 1-foot well casing stickup reported on the well log.

WATER SYSTEM DESIGN AND SPECIFICATIONS

38. Change Authorization No. 76N 30027719 consolidated Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 into a single system as required by the Public Service Commission Master Development Plan. Since that change, the permits have been operated in a supplemental fashion with all seven wells being physically manifold into one system capable of serving the entire Salish Shores PWS service area. The system has primarily relied on four of the seven wells as the primary PODs (wells H1, H2, H5, and H6 in **Table 2**) with the other three serving as redundant backup wells. The proposed POD (GWIC ID No. 76372) will primarily serve the Family Dollar store in addition to providing redundancy to the Salish Shores PWS system once it is connected to the distribution infrastructure.

39. Specifications of the proposed POD:

   i. GWIC ID No. 76372; drilled to 303.0 feet BGS and completed with an open bottom at a depth of 303.0 feet BGS by Kane Well Drilling and Pump Service (WWC-23) on December 12, 1979.

      a. Equipped with a Goulds 5CHC010 submersible pump capable of diverting up to 180.0 GPM at an engineer-estimated total dynamic head of 158 feet.

40. The Salish Shores PWS system is a registered PWS regulated by the Montana DEQ as Water System No. MT0003911. All modifications to the PWS system are being designed by Montana licensed professional engineers with IMEG Engineering Consultants and will be reviewed and approved by the Montana DEQ prior to their implementation. This PWS system expansion is being undertaken as part of the Montana Public Service Commission's Master Development Plan for the Salish Shores PWS system. The existing and proposed Salish Shores PWS system water conveyance infrastructure consists of approximately 30,000 feet of 3- to 6-inch Class 200 PVC distribution. The system capacity is designed to accommodate the maximum permitted combined flow rate of 1,448.5 GPM.

41. The Department finds that the new POD is capable of diverting, conveying, and distributing the proposed flow rate of 167.5 GPM which will supplement the seven existing wells in diverting and conveying up to 1,448.5 GPM and up to 377.3 AF/year.

POSSESSORY INTEREST

FINDINGS OF FACT

42. 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.

CONCLUSIONS OF LAW

HISTORICAL USE AND ADVERSE EFFECT

43. 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).[7]

44. 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 Royston*, 249 Mont. at 429, 816 P.2d at 1057; *Hohenlohe*, ¶¶ 43-45.[8]

45. The cornerstone of evaluating potential adverse effect to other appropriators is the

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

[8] *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).

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.[9] 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; <u>Town of Manhattan v. DNRC</u>, 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); <u>Matter of Application For Beneficial Water Use Permit By City of Bozeman</u>, *Memorandum*, Pgs. 8-22 (Adopted by DNRC *Final Order* January 9,1985)(evidence of historic use must be compared to the proposed 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

[9]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

juniors).[10]

46. 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 subsequent water users).[11]

47. 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

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[10] 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)("Once 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.)

[11] 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).

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.

48. 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).

49. 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.

50. Based upon the Applicant's evidence of historic use, the Applicant has proven by a preponderance of the evidence the historic use of Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 to be diverted volumes of 48.9 AF, 104.32 AF, 25.98 AF, and 198.1 AF, respectively, historically consumed volumes of 4.89 AF, 10.43 AF, 2.6 AF, and 19.81 AF, respectively, and flow rates of 110.0 GPM, 210.0 GPM, 440.0 GPM, and 688.5 GPM, respectively. (FOF Nos. 7-10)

51. Based upon the Applicant's comparative analysis of historical 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)(b), MCA. (FOF Nos. 11-28)

BENEFICIAL USE

52. 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).

53. Applicant proposes to use water for municipal use which is a recognized beneficial use. Section 85-2-102(5), MCA. Applicant has proven by a preponderance of the evidence that municipal use is a beneficial use and that 377.3 AF of diverted volume and 1,448.5 GPM flow rate of water requested is the amount needed to sustain the beneficial use and is within the standards set by DNRC Rule. Section 85-2-402(2)(c), MCA (FOF Nos. 29-32)

<u>ADEQUATE MEANS OF DIVERSION</u>

54. Pursuant to § 85-2-402 (2)(b), MCA, the Applicant must prove by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate. This codifies the prior appropriation principle that the means of diversion must be reasonably effective for the contemplated use and may not result in a waste of the resource. *Crowley v. 6th Judicial District Court*, 108 Mont. 89, 88 P.2d 23 (1939*); In the Matter of Application for Beneficial Water Use Permit No. 41C-11339900 by Three Creeks Ranch of Wyoming LLC* (DNRC Final Order 2002) (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).

55. 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 Nos. 33-41)

POSSESSORY INTEREST

56. Pursuant to § 85-2-402(2)(d), MCA, the 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. See also ARM 36.12.1802.

57. 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 No. 42)

DRAFT PRELIMINARY DETERMINATION

Subject to the terms and analysis in this DRAFT Preliminary Determination Order, the Department preliminarily determines that this Application to Change Water Right No. 76LJ 30165123 should be GRANTED subject to the following.

The Department determines the Applicant may add an eighth point of diversion (well GWIC ID No. 76372) to Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 and may change their place of use to include the entire projected Salish Shores PWS system service area. The proposed POD will contribute up to 167.5 GPM of the total permitted 1,448.5 GPM of flow to the manifold Salish Shores PWS system. The tables below summarize the details of the granted change.

Table i: Summary of the Granted Change
(bold underlined text identifies the changed water right elements)

Water Right Number	Priority Date	Purpose	Flow Rate (GPM)	Volume (AF)	Period of Diversion & Use	Means of Diversion	Points of Diversion & Places of Use
76N 81519-00	May 14, 1992	Municipal	110.00	48.90	01/01 - 12/31	Eight Wells	**See Tables ii & iii**
76N 85780-00	June 1, 1993		210.00	104.32			
76N 97278-00	May 17, 1996		440.00	25.98			
76N 30016270	August 19, 2005		688.50	198.10			

Table ii: Points of Diversion for the Granted Change
(bold underlined text identifies the changed water right elements)

GWIC ID	1/4	1/4	1/4	Section	Township	Range	County
135335	SW	NE	SE	16	21 N	29 W	Sanders
131977	SW	NE	SE	16	21 N	29 W	Sanders
139319	SW	SW	SE	15	21 N	29 W	Sanders
139318	SW	SW	SE	15	21 N	29 W	Sanders
175584	NE	SW	NW	15	21 N	29 W	Sanders
175632	NE	SW	NW	15	21 N	29 W	Sanders
175585	NW	SE	NW	15	21 N	29 W	Sanders
76372	**NE**	**NW**	**NW**	**15**	**21 N**	**29 W**	**Sanders**

Table iii: Places of Use for the Granted Change (bold underlined text identifies the changed water right elements)						
1/4	**1/4**	**1/4**	**Section**	**Township**	**Range**	**County**
---	**E2**	**SW**	**9**	**21 N**	**29 W**	**Sanders**
---	**W2**	**SE**	**9**	**21 N**	**29 W**	**Sanders**
---	**SE**	**SE**	**9**	**21 N**	**29 W**	**Sanders**
---	**SW**	**SW**	**10**	**21 N**	**29 W**	**Sanders**
---	W2	SW	13	21 N	29 W	Sanders
---	---	---	**14**	**21 N**	**29 W**	**Sanders**
---	---	---	**15**	**21 N**	**29 W**	**Sanders**
---	---	E2	16	21 N	29 W	Sanders
---	N2	N2	22	21 N	29 W	Sanders
---	N2	N2	23	21 N	29 W	Sanders

To satisfy the adverse effect criterion, this change is subject to the following condition:

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 JANUARY 31 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR UNTIL A PROJECT COMPLETION NOTICE (FORM 617) IS SUBMITTED. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THE PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE KALISPELL WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

NOTICE

The Department will provide a notice of opportunity for public comment on this Application 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 this Application pursuant to §§ 85-2-307, and -308, MCA. If this Application receives public comment, the Department shall consider the public comments, respond to the public comments, and issue a preliminary determination to grant the application, grant the application in modified form, or deny the application. 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 16th day of December, 2025.

James Ferch, Manager
Kalispell Regional Water Resources Office
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 16th day of December, 2025, by first class United States mail.

SALISH SHORES UTILITY CORP., INC.
PO BOX 1030
THOMPSON FALLS MT 59873-1030

****

Via email:
BRYAN GARTLAND
ASPECT CONSULTING

TRAVIS WILSON
Kalispell Regional Office, (406) 752-2288

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

Water Resources Division – Kalispell Regional Office
655 Timberwolf Pkwy, Ste. 4
Kalispell, MT 59901-1215
(406) 752-2288
DNRCKalispellWater@mt.gov

October 17, 2025

SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS MT 59873-1030

Subject: Correct and Complete Application for Beneficial Water Use Permit Application No. 76N 30165123

Dear Applicant,

The Department of Natural Resources and Conservation (Department) has determined that your application is correct and complete pursuant to Administrative Rules of Montana 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), Montana Code Annotated (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.

Please contact me at (406) 752-2746 or Travis.Wilson@mt.gov if you have any questions.

Sincerely,

Travis Wilson
Water Resource Specialist
Kalispell Regional Water Resources Office

Cc via email: Bryan Gartland, Aspect Consulting

RECEIVED
18 SEP 2025
DNRC
KALISPELL WATER RESOURCES

MEMORANDUM

To: Travis Wilson, Water Resource Specialist, DNRC Kalispell Regional Office

From: Salish Shores Utility Corp, Inc.

Date: 9/18/2025

RE: Salish Shores Deficiency Response (Change Application No. 76N 30165132)

Salish Shores Utility Corp, Inc. (Salish Shores) presents this response to the August 18, 2025 Deficiency Letter for Change Application No. 76N 30165132. The responses and question numbers correlate to DNRC Form 606 (revised 2/2025).

Question 16

The application, as filed on July 28, 2025, included the response excerpted below for Question 16, indicating that a point of diversion and place of use change is proposed for all four subject water right permits. It appears that a glitch occurred during electronic filing and check boxes were inexplicably left blank under Permit No. 76N 97278-00.

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

Water Right No.	76N 30016270	76N 97278-00	76N 85780-00	76N 81519-00	
Point of Diversion	☑	☑	☑	☑	☐
Place of Use	☑	☑	☑	☑	☐
Purpose of Use	☐	☐	☐	☐	☐
Place of Storage	☐	☐	☐	☐	☐

Question 19.a

The point of diversion (POD) location DNRC identified in the March 20, 2025 Technical Analysis (**NENWNW Sec 15, T21N, R29W**) more accurately describes the location of the proposed POD. Please replace the location provided in the July 28 application with this information.

Questions 37 and 37.a

The Applicant (Salish Shores) has possessory interest in the land where all proposed PODs are located. Leufkens Family LLC and Salish Shores are listed as separate entities in Montana Cadastral records, but the management and ownership are one and the same as documented in the Cadastral and Montana Secretary of State records presented below and the attached statement from Todd Wakefield (Managing Partner, Salish Shores and Leufkens Family LLC).

- **Montana Cadastral**[1]
  - Salish Shores Wells 1 and 2 wellhouse location:

Property Address:	36 W STEAM BOAT WAY THOMPSON FALLS, MT 59873
Geocode:	35-3091-16-4-01-95-0000
Tax Year:	2025

Summary

Primary Information

Property Category: RP	**Subcategory:** Residential Property
Geocode: 35-3091-16-4-01-95-0000	**Assessment Code:** 0000005838
Primary Owner: SALISH SHORES UTILITY CORP INC PO BOX 1030 THOMPSON FLS, MT 59873-1030 *Note: See Owners section for all owners*	**Property Address:** 36 W STEAM BOAT WAY THOMPSON FALLS, MT 59873
Certificate of Survey:	**Legal Description:** SALISH SHORES, S16, T21 N, R29 W, SALISH SHORES WELL SITE .574 AC

Last Modified: 7/12/2025 16:40:37 PM

  - Salish Shores Well 8 location:

Property Address:	2413 MAIN ST E THOMPSON FALLS, MT 59873
Geocode:	35-3091-15-2-01-06-0000
Tax Year:	2025

Summary

Primary Information

Property Category: RP	**Subcategory:** Commercial Property
Geocode: 35-3091-15-2-01-06-0000	**Assessment Code:** 0000005067
Primary Owner: LEUFKENS FAMILY LLC PO BOX 1030 THOMPSON FALLS, MT 59873-1030 *Note: See Owners section for all owners*	**Property Address:** 2413 MAIN ST E THOMPSON FALLS, MT 59873
Certificate of Survey: 2847	**Legal Description:** S15, T21 N, R29 W, C.O.S. 2847, PARCEL B, ACRES 1.4, LYING NE OF MT 200 IN N1/2NWNW

Last Modified: 7/12/2025 16:40:37 PM

[1] Montana Cadastral (information as of 8/27/2025)

- **Montana Secretary of State Business Search**[2]
    - Salish Shores Utility Corp, Inc. (D074115):

SALISH SHORES UTILITY CORP., INC. (D074115)
Domestic Profit Corporation

Filing Number	D074115
Entity Type	Domestic Profit Corporation
Entity SubType	Close Corporation that operates with directors
Status	Active-Good Standing
Formed In	Montana
Principal Address	2806 Tradewinds Way Thompson Fls, MT 59873
Mailing Address	PO BOX 1030 THOMPSON FLS, MT 59873-1030
Registration Date	07/20/1992
AR Due Date	04/15/2026
Registered Agent	Noncommercial RA1259950 Sue Whittenburg 211 W HALEY AVE THOMPSON FALLS, MT 59873

- Leufkens Falily, LLC (C1082664):

Leufkens Family, LLC (C1082664)
Domestic Limited Liability Company

Filing Number	C1082664
Entity Type	Domestic Limited Liability Company
Entity SubType	Limited Liability Company
Status	Active-Good Standing
Managed By	Member
Formed In	Montana
Principal Address	2806 TRADEWINDS WAY THOMPSON FALLS, MT 59873
Mailing Address	PO BOX 1030 THOMPSON FLS, MT 59873-1030
Registration Date	05/21/2018
AR Due Date	04/15/2026
Registered Agent	Noncommercial RA1247118 Sue Whittenburg 211 W HALEY AVE THOMPSON FALLS, MT 59873

[2] Search | Official Montana Secretary of State (information as of 8/27/2025)

Questions 39.b, 39.c, and 39.d

Please see the attached well logs for all existing and proposed wells, which provide the driller names and their license numbers. All wells associated with the Salish Shores system have been completed and are detailed in the attached documentation.

Question 40.b

Water use standards for municipal water rights are not established in administrative rule (ARM 36.12.115). The sub-types of beneficial uses associated with municipal rights are diverse, dependent on the site-specific characteristics of a project, and greatly influence the quantities of water used. Since the Salish Shores Utility Corp, Inc. (Salish Shores) water distribution system is physically manifolded, wherein each point of diversion is capable of serving the entire service area (place of use), and it serves numerous existing and proposed end users, only a generalized water use assessment that considers the system as a whole is feasible.

DNRC issued a Technical Assessment (TA) for Salish Shores Change Application No. 76N 30165123 on March 20, 2025. The proposed change incorporates all water rights owned by Salish Shores (three perfected permits and one un-perfected permit: 76N 30016270). The total combined diverted volume authorized by the four permits is 377.3 ac-ft/year, and the maximum combined flow rate for the permits is 1,448.5 gpm. DNRC's historical use analysis in the March 20, 2025 TA confirmed that the authorized diverted volume and flow rates equate to the historical diverted volumes and flow rates. The March 20, 2025 TA also found that the total combined historical consumed volume for the Salish Shores water rights portfolio is 37.73 ac-ft/yr, or 10% of the diverted volume.

Salish Shores is currently authorized to serve 569 connections (477 domestic and 92 commercial). A portion of the domestic and commercial uses are assumed to include a small amount of lawn and garden irrigation; data are not available to differentiate the water use distribution among the sub-purposes extant within the broader municipal appropriation.

As of 2024, only 144 of the authorized connections have been completed (117 domestic and 27 commercial), or 25% of the authorized number of connections. The highest annual water volume diverted in the Salish Shores system between 2007 and 2024 occurred in 2023, when a total of 52.98 ac-ft was diverted during that calendar year. **This is an average of 0.37 ac-ft/connection/year** (52.98 ac-ft / 144 users).

Table 1 presents a summary of the existing and proposed system water use. The Applicant's proposal to add 35 connections (8 domestic and 27 commercial) to the service area (place of use) would increase the total number of authorized connections to 604. Assuming an average use of 0.37 ac-ft per connection, the proposed 35 new connections would equate to 12.95 ac-ft/year of additional use.

Table 1: Salish Shores Authorized, Existing, and Proposed Water Use

	System Connections		
Connection Type	**Authorized**	**In Use (2024)**	**Proposed**
Domestic	477	117	485
Commercial	92	27	119
Total	569	144	604
Max diverted vol	377.3 ac-ft	52.98 ac-ft(2)	223.48 ac-ft(3)
Vol per connection	0.66 ac-ft(1)	0.37 ac-ft	0.37 ac-ft(2)
[1] 377.3 ac-ft / 569 connections = 0.66 ac-ft [2] 52.98 ac-ft / 144 connections = 0.37 ac-ft; from the highest annual volume diverted in 2023 [3] 604 connections x 0.37 ac-ft = 223.48 ***estimated***			

Following authorization to increase the number of connections to 604, approximately 223.48 ac-ft/yr (604 connections x 0.37 ac-ft/connection) is expected to be diverted by the Salish Shores system, which is well below the total authorized diverted volume of 377.3 ac-ft/yr, and there is ample un-perfected water authorized under Permit No. 76N 30016270 to grow into.

Using the AWWA Manual M22 water line/meter sizing methodology, a project water demand calculation was made to estimate the peak instantaneous demand needed if all 604 proposed authorized connections were drawing on the system. Per the attached calculation summary, typical fixtures for the 485 proposed authorized residential connections and the 119 proposed authorized commercial connections were analyzed using AWWA's methodology and a peak demand was calculated for each use. This resulted in a peak demand of 1,222 gpm for residential connections and 177 for commercial connections for a total peak demand of 1,399 gpm, which is less than the authorized maximum combined flow rate of 1,448.5 gpm. Simultaneous use by all connections is extremely unlikely, but should the scenario occur, sufficient flow rate would be available for all users. See the attached AWWA Sizing Calculation Summary for further detail.

In addition to all of this, Salish Shores has ample unperfected water rights capacity to service additional areas with municipal water, from both a volumetric and flow rate perspective (see Permit No. 76N 30016270).

Attachments:

- Well Logs for all Existing and Proposed PODs
- Possessory Interest Letter signed by Todd Wakefield
- AWWA Instantaneous Peak Demand Calculation Summary

Well 1

MONTANA WELL LOG REPORT	Other Options
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.	**Return to menu** **Plot this site in State Library Digital Atlas** **Plot this site in Google Maps** **View scanned well log (7/14/2009 2:46:40 PM)**

Site Name: LEUFKIN BUD & JUDY
GWIC Id: 135335
DNRC Water Right: 81519

Section 1: Well Owner(s)

1) LEUFKIN, BUD AND JUDY (MAIL)
BOX 1030
THOMPSON FALLS MT 59873 [04/08/1992]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	16	SW¼ NE¼ SE¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.575657	-115.316001	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water

There are no uses assigned to this well.

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Wednesday, April 8, 1992

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	121	10

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
2	121	6.625	0.25		WELDED	STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
121	121	6.625			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

Section 7: Well Test Data

Total Depth: 121
Static Water Level: 22
Water Temperature:

Air Test *

50 gpm with drill stem set at _ feet for 3 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level 30 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	25	BOULDERS; DARK SAND
25	114	YELLOW CLAY
114	121	BLUE CLAY; GRAVEL; WATER

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:	GARRY KANE
Company:	KANE WELL DRILLING & PUMP SERVICE
License No:	WWD-34
Date Completed:	4/8/1992

Well 2

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 (7/14/2009 2:45:57 PM)

Site Name: LEUFKENS BUD
GWIC Id: 131977

Section 1: Well Owner(s)

1) LEUFKENS, BUD (MAIL)
BOX 1030
THOMPSON FALLS MT 59873 [07/14/1992]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	16	SW¼ NE¼ SE¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.575657	-115.316001	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water

TEST WELL (1)

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Tuesday, July 14, 1992

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	141	10

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
2	141	6.625	0.25		WELDED	STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
141	141	6.625			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	18	BENTONITE	

Section 7: Well Test Data

Total Depth: 141
Static Water Level: 21
Water Temperature:

Air Test *

100 gpm with drill stem set at _ feet for 2 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level 60 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	1	SOIL
1	20	BOULDERS- GRAVEL
20	22	CLAY(YELLOW)
22	35	WATER- GRAVEL
35	121	BROWN CLAY
121	141	GRAVEL- WATER

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: EUGENE KANE
Company: KANE WELL DRILLING & PUMP SERVICE
License No: WWC-23
Date Completed: 7/14/1992

Well 3

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 (7/14/2009 2:41:52 PM)

Site Name: LE SKIN BUD
GWIC Id: 139319

Section 1: Well Owner(s)

1) LE SKIN, BUD (MAIL)
PO BOX 1030
THOMPSON FALLS MT 59873 [06/10/1993]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	15	SW¼ SW¼ SE¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.571978	-115.299863	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot
SALISH SHORES		

Section 3: Proposed Use of Water

DOMESTIC (1)
TEST WELL (2)

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, June 10, 1993

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	240	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
2	240	6	0.25			STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
240	240	6.625			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

Section 7: Well Test Data

Total Depth: 240
Static Water Level: 35
Water Temperature:

Air Test *

_250_ gpm with drill stem set at _ feet for _3_ hours.
Time of recovery _1_ hours.
Recovery water level _35_ feet.
Pumping water level _60_ 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	28	BOULDERS GRAVEL
28	228	BLUE CLAY FINE DARK SAND
228	240	YELLOW CLAY GRAVEL WATER

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: GARRY KANE
Company: KANE WELL DRILLING & PUMP SERVICE
License No: WWD-34
Date Completed: 6/10/1993

Well 4

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 (7/14/2009 2:41:39 PM)

Site Name: LE SKIN BUD
GWIC Id: 139318

Section 1: Well Owner(s)

1) LE SKIN, BUD (MAIL)
PO BOX 1030
THOMPSON FALLS MT 59873 [06/13/1993]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	15	SW¼ SW¼ SE¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.571978	-115.299863	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot
SALISH SHORES		

Section 3: Proposed Use of Water

DOMESTIC (1)
TEST WELL (2)

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Sunday, June 13, 1993

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	246	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
2	246	6.625	0.25			STEEL

There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

Section 7: Well Test Data

Total Depth: 246
Static Water Level: 33
Water Temperature:

Air Test *

_50_ gpm with drill stem set at _ feet for _2_ hours.
Time of recovery _0.5_ hours.
Recovery water level _33_ feet.
Pumping water level _40_ 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	26	BOULDERS GRAVEL
26	224	BLUE CLAY FINE DARK SAND
224	246	GRAVEL YELLOW CLAY WATER

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: GARRY KANE
Company: KANE WELL DRILLING & PUMP SERVICE
License No: WWD-34
Date Completed: 6/13/1993

Well 5

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 (7/14/2009 2:38:53 PM)

Site Name: THE LEUFKENS CO
GWIC Id: 175584

Section 1: Well Owner(s)

1) THE LEUFKENS COMPANY (MAIL)
BOX 1030
THOMPSON FALLS MT 59873 [02/09/1995]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	15	SW¼ NW¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.580198	-115.309286	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, February 9, 1995

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	367	7.625

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	367	6	0.25		WELDED	STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
367	367	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

Section 7: Well Test Data

Total Depth: 367
Static Water Level: 50
Water Temperature:

Air Test *

160 gpm with drill stem set at _ feet for 2 hours.
Time of recovery 0 hours.
Recovery water level _ 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	TOPSOIL CLAY
3	19	CLAY GRAVEL
19	330	SAND SILT FINE MOIST
330	350	CLAY BROWN SOFT
350	367	GRAVEL COBBLES

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:	ANTHONY KRAUT
Company:	KRASS DRILLING & PUMP SERVICE
License No:	WWC-66
Date Completed:	2/9/1995

Well 6

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 (7/14/2009 2:38:39 PM)

Site Name: THE LEUFKENS CO
GWIC Id: 175632

Section 1: Well Owner(s)

1) THE LEUFKENS COMPANY (MAIL)
BOX 1030
THOMPSON FALLS MT 59873 [07/31/1997]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	15	SW¼ NW¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.580198	-115.309286	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water

There are no uses assigned to this well.

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, July 31, 1997

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	355	7.5

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	355	6.625	0.25		WELDED	A53B STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
355	355	6.625			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	25	BENTONITE	Y

Section 7: Well Test Data

Total Depth: 355
Static Water Level: 30
Water Temperature:

Air Test *

_200_ gpm with drill stem set at _ feet for _10_ hours.
Time of recovery _1_ hours.
Recovery water level _30_ feet.
Pumping water level _150_ feet.

Pump Test *

Depth pump set for test _160_ feet.
_240_ gpm pump rate with _150_ feet of drawdown after _5_ hours of pumping.
Time of recovery _1_ hours.
Recovery water level _30_ 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	10	TOPSOIL SAND GRAVEL
10	15	COARSE GRAVEL
15	35	SAND GRAVEL
35	200	FINE SILTY CLAY BROWN
200	240	FINE SILTY CLAY HARD BROWN
240	315	FINE SILTY CLAY SOFT BROWN
315	325	FINE SAND WATER GRAY
325	350	SILTY SAND FINE
350	355	GRAVEL BOULDERS

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: HARLAN KRASS
Company: KRASS DRILLING & PUMP SERVICE
License No: WWC-481

Date Completed: 7/31/1997

Well 7

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 (7/14/2009 2:39:11 PM)

Site Name: THE LEUFKENS CO
GWIC Id: 175585

Section 1: Well Owner(s)

1) THE LEUFKENS COMPANY (MAIL)
BOX 1030
THOMPSON FALLS MT 59873 [08/18/1998]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	15	NE¼ SW¼ NW¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.581111	-115.30794	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water

There are no uses assigned to this well.

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Tuesday, August 18, 1998

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	423	7.5

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	423	6.625	0.25		WELDED	A53B STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
423	423	6.625			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	25	BENTONITE	

Section 7: Well Test Data

Total Depth: 423
Static Water Level: 32
Water Temperature:

Air Test *

75 gpm with drill stem set at _ feet for _ hours.
Time of recovery 0.5 hours.
Recovery water level 32 feet.
Pumping water level 180 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	20	SAND GRAVEL
20	40	COARSE GRAVEL
40	50	SAND FINE SILTY BROWN
50	70	CLAY BROWN
70	90	SAND FINE SILTY BROWN
90	135	CLAY BROWN
135	145	SAND FINE SILTY BROWN
145	155	CLAY SOFT BROWN
155	265	SAND FINE SILTY TAN
265	285	CLAY SOFT TAN
285	405	SAND FINE SILTY TAN
405	415	CLAY MED SOFT TAN
415	423	SILT SAND GRAVEL
423	423	BOULDERS WATER

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:	HARLAN KRASS
Company:	KRASS DRILLING & PUMP SERVICE
License No:	WWC-481
Date Completed:	8/18/1998

Well 8 (Family Dollar)

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 (7/14/2009 2:32:43 PM)

Site Name: HOMESTEAD ENTERPRISE
GWIC Id: 76372

Section 1: Well Owner(s)
1) HOMESTEAD ENTERPRISE (MAIL)
RT. #3 BOX 10
THOMPSON FALLS MT 59873 [12/12/1979]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	15	NW¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.582024	-115.306593	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water
COMMERCIAL (1)

Section 4: Type of Work
Drilling Method: FORWARD ROTARY
Status: NEW WELL

Section 5: Well Completion Date
Date well completed: Wednesday, December 12, 1979

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	303	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1	303	6				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
303	303	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	30	SAND AND CLAY	

Section 7: Well Test Data

Total Depth: 303
Static Water Level: 75
Water Temperature:

Unknown Test Method *

Yield _50_ gpm.
Pumping water level _100_ feet.
Time of recovery _ hours.
Recovery 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	1	SOIL
1	40	BOULDERS AND SAND
40	165	FINE SAND, SEEPAGE
165	298	CLAY, SAND, SEEPAGE
298	303	GRAVEL, SAND, CLAY AND WATER

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:	EUGENE KANE
Company:	KANE WELL DRILLING & PUMP SERVICE
License No:	WWC-23
Date Completed:	12/12/1979

August 25, 2025

Montana Department of Natural Resources and
Conservation
655 Timberwolf Pkwy
Kalispell, MT 59901

RE: Salish Shores Utility Corp. Change Application (No. 76N 30165123)
Leufkens Family, LLC & Salish Shores Utility Corp. Shared Entity
Thompson Falls, Sanders County, MT

To Whom It May Concern,

This letter is in response to the deficiency comment regarding Qs. 37. and 37.a in Salish Shores Utility Corp's recent change application (No. 76N 30165123). Although the proposed point of diversion is located on a property not owned by the utility corporation, I am the managing partner of both Leufkens Family, LLC and Salish Shores Utility Corp, and have a right to use all existing and proposed points of diversion. In addition to myself being the managing partner for both entities, the principal address, mailing address, and registered agent for each entity is also identical. This fact can be verified on the Montana Secretary of State website.

Sincerely,

Todd Wakefield
Managing Partner
Salish Shores Utility Corp. and Leufkens Family, LLC
PO Box 1030
Thompson Falls, MT 59873

Todd Wakefield
Signature

8-26-2025
Date

Todd Wakefield
Print Name

Manager
Title

\\files\Active\Projects\2020\20001572.01\Design\Civil\1_ENG DESIGN\Water Rights\Aspect Change App RFI\ltr.2025-08-25.DNRC.ManagingPartner.doc

IMEG Consultants Corp.
(406) 721-0142

1817 South Ave W, Suite A
Missoula, MT 59801

PROJECTED WATER DEMAND

PROJECT: 20001572.02 - Salish Shores Utility Corp. POU/POD Change
PREPARED BY: IMEG Consultants Corp.
September 17, 2025

Fixture Values based on 60 psi at Meter Outlet
(from AWWA Manual M22 for Sizing Water Service Lines & Meters)

AWWA WATER DEMAND FIXTURE ANALYSIS

Fixture Type	Number of Units	Fixture Value	Subtotal Fixture Value
Toilet (tank)	1208	4	4832
Toilet (flush valve)	0	5	0
Urinal (wall or stall)	0	6	0
Urinal (flush valve)	0	7	0
Bidet	0	8	0
Shower (single head)	1208	9	10872
Faucet (lavatory)	1208	10	12080
Faucet (kitchen sink)	485	11	5335
Faucet (utility sink)	0	12	0
Dishwasher	485	13	6305
Bathtub	1208	14	16912
Clothes washer	485	15	7275
Hose connections (with 50 ft of hose)	0	16	0
1/2 in. (13 mm)	0	17	0
5/8 in. (16 mm)	0	18	0
3/4 in. (19 mm)	1208	19	22952
Miscellaneous	0	20	0
Bedpan washers	0	21	0
Drinking fountains	0	22	0
Dental units	0	23	0
TOTAL FIXTURE COUNTS			**86563**

Demand (gpm) via Graph Lower Line:		**1399**	60 psi
Multiplier:	0.74	1035.3	35 psi
Multiplier:	0.80	1119.2	40 psi
Multiplier:	0.90	1259.1	50 psi
Multiplier:	1.00	1399.0	60 psi
Multiplier:	1.09	1524.9	70 psi
Multiplier:	1.17	1636.8	80 psi
Multiplier:	1.25	1748.8	90 psi
Multiplier:	1.34	1874.7	100 psi

Instructions: Fill out the red numbers in the Assumptions box below; the calculations will automatically populate in the table to the left. Once the Total Fixture count is calculated, use the curves below to determine Demand (gpm). Enter this value in the Green cell.

Assumptions for Residential Connections: Used for Fixture Analysis				
# of Units	# of Bathrooms/Unit	# of Kitchens/Unit	# of Laundry rooms/Unit	# of 3/4" Hose Connections/Unit
485	2	1	1	2

PROJECTED WATER DEMAND

PROJECT: 20001572.02 - Salish Shores Utility Corp. POU/POD Change
PREPARED BY: IMEG Consultants Corp.
September 17, 2025

Fixture Values based on 60 psi at Meter Outlet
(from AWWA Manual M22 for Sizing Water Service Lines & Meters)

AWWA WATER DEMAND FIXTURE ANALYSIS

Fixture Type	Number of Units	Fixture Value	Subtotal Fixture Value
Toilet (tank)	970	4	3880
Toilet (flush valve)	0	35	0
Urinal (wall or stall)	0	16	0
Urinal (flush valve)	0	35	0
Bidet	0	2	0
Shower (single head)	970	2.5	2425
Faucet (lavatory)	970	1.5	1455
Faucet (kitchen sink)	485	2.2	1067
Faucet (utility sink)	0	4	0
Dishwasher	485	2	970
Bathtub	970	8	7760
Clothes washer	485	6	2910
Hose connections (with 50 ft of hose)	0		0
1/2 in. (13 mm)	0	5	0
5/8 in. (16 mm)	0	9	0
3/4 in. (19 mm)	970	12	11640
Miscellaneous	0		0
Bedpan washers	0	10	0
Drinking fountains	0	2	0
Dental units	0	2	0
TOTAL FIXTURE COUNTS			**32107**

Demand (gpm) via Graph Lower Line:		1222	60 psi
Multiplier:	0.74	904.3	35 psi
Multiplier:	0.80	977.6	40 psi
Multiplier:	0.90	1099.8	50 psi
Multiplier:	1.00	1222.0	60 psi
Multiplier:	1.09	1332.0	70 psi
Multiplier:	1.17	1429.7	80 psi
Multiplier:	1.25	1527.5	90 psi
Multiplier:	1.34	1637.5	100 psi

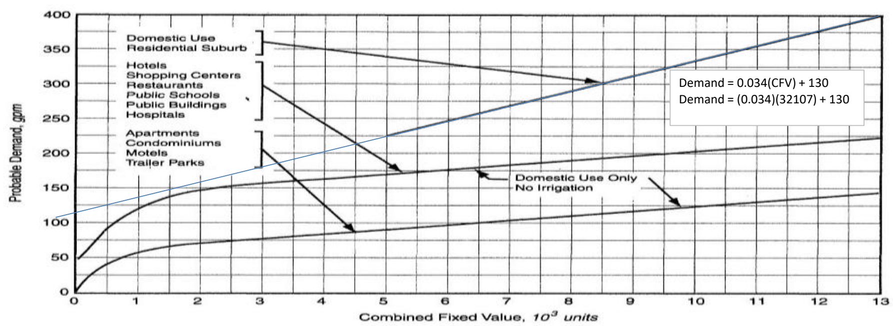

Figure 4-3 Water flow demand per fixture value—high range

PROJECTED WATER DEMAND

PROJECT: 20001572.02 - Salish Shores Utility Corp. POU/POD Change
PREPARED BY: IMEG Consultants Corp.
September 17, 2025

Fixture Values based on 60 psi at Meter Outlet
(from AWWA Manual M22 for Sizing Water Service Lines & Meters)

AWWA WATER DEMAND FIXTURE ANALYSIS

Fixture Type	Number of Units	Fixture Value	Subtotal Fixture Value
Toilet (tank)	238	4	952
Toilet (flush valve)	0	35	0
Urinal (wall or stall)	0	16	0
Urinal (flush valve)	0	35	0
Bidet	0	2	0
Shower (single head)	238	2.5	595
Faucet (lavatory)	238	1.5	357
Faucet (kitchen sink)	0	2.2	0
Faucet (utility sink)	0	4	0
Dishwasher	0	2	0
Bathtub	238	8	1904
Clothes washer	0	6	0
Hose connections (with 50 ft of hose)	0		0
1/2 in. (13 mm)	0	5	0
5/8 in. (16 mm)	0	9	0
3/4 in. (19 mm)	238	12	2856
Miscellaneous	0		0
Bedpan washers	0	10	0
Drinking fountains	0	2	0
Dental units	0	2	0
TOTAL FIXTURE COUNTS			**6664**

Demand (gpm) via Graph Lower Line:		177	60 psi
Multiplier:	0.74	131.0	35 psi
Multiplier:	0.80	141.6	40 psi
Multiplier:	0.90	159.3	50 psi
Multiplier:	1.00	177.0	60 psi
Multiplier:	1.09	192.9	70 psi
Multiplier:	1.17	207.1	80 psi
Multiplier:	1.25	221.3	90 psi
Multiplier:	1.34	237.2	100 psi

Instructions: Fill out the red numbers in the Assumptions box below; the calculations will automatically populate in the table to the left. Once the Total Fixture count is calculated, use the curves below to determine Demand (gpm). Enter this value in the Green cell.

Assumptions for Commercial Connections: Used for Fixture Analysis				
# of Units	# of Bathrooms/Unit	# of Kitchens/Unit	# of Laundry rooms/Unit	# of 3/4" Hose Connections/Unit
119	2	0	0	2

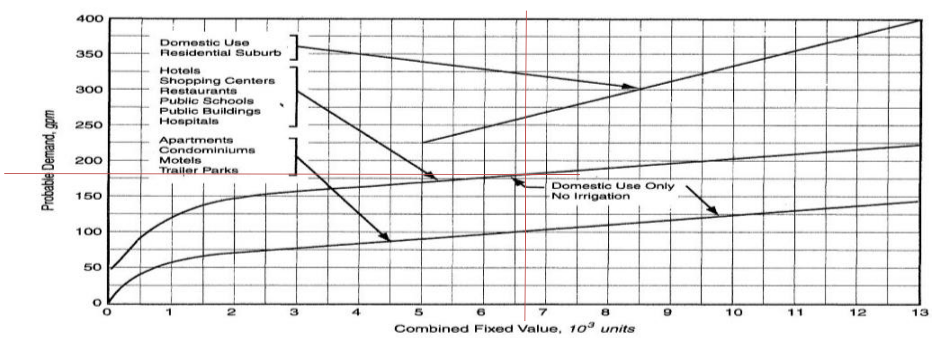

Figure 4-3 Water flow demand per fixture value—high range

Water Resources Division – Kalispell Regional Office
655 Timberwolf Pkwy, Ste. 4
Kalispell, MT 59901-1215
(406) 752-2288
DNRCKalispellWater@mt.gov

August 18, 2025

SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS MT 59873-1030

Subject: Deficiency Letter for Change Application No. 76N 30165123

Dear Applicant,

The Department of Natural Resources and Conservation (DNRC or Department) has begun reviewing your application. This letter is to notify you of the deficiencies in your application as required in ARM 36.12.1501(1) and §85-2-302(5)(b), MCA. An Applicant is required to submit substantial and credible information addressing the rules and statutes that are relative to your application. You must provide the information specified below for your application to be considered correct and complete. “Correct and complete” means all of the information provided is substantial and credible and provides all of the information as required by applicable rules and statutes. The application as submitted contains deficiencies in the following section(s):

- **Form 606, question 16. ARM 36.12.1305(2)(a):** *Identify the water right elements proposed for change, with a checkmark, for each water right proposed for change.*
  - **Your answer:**

Water Right No.	76N 30016270	76N 97278-00	76N 85780-00	76N 81519-00	
Point of Diversion	☑	☐	☑	☑	☐
Place of Use	☑	☐	☑	☑	☐
Purpose of Use	☐	☐	☐	☐	☐
Place of Storage	☐	☐	☐	☐	☐

  - **Deficiency:** You did not check any boxes for Provisional Permit 76N 97278-00. Were no boxes checked intentionally, or was it simply an accidental oversight?
- **Form 606, question 19.a. ARM 36.12.1305:** *Describe the location for all new and unchanged points of diversion to the nearest 10 acres. Label POD ID with the same POD ID number assigned for the proposed use map (question 18).*
  - **Your answer:** NE ¼ NE ¼ NW ¼ of Section 15, Township 21N, Range 29W, Sanders County.

- **Deficiency:** If you revisit the Groundwater Change Technical Analyses Report – Part A I issued to you on March 20, 2025, you will see that I amended your proposed point of diversion legal land description to the NE ¼ NW ¼ NW ¼ of Section 15, Township 21N, Range 29W, Sanders County based on the maps you provided. Please review your maps and the Technical Analyses Report and verify the true legal land description of the proposed point of diversion.

- **Form 606, questions 37. and 37.a. ARM 36.12.1802 and 36.12.1904:**

  Q. 37. If you propose to add one or more points of diversion, do you own the land where all proposed points of diversion are located? If you do not propose to add one or more points of diversion, mark "NA" instead.

  - **Your answer:** Yes
  - **Deficiency:** Per Department of Revenue property ownership records, the land where the proposed point of diversion is located is owned by LEUFKENS FAMILY LLC, not SALISH SHORES UTILITY CORP INC. If you do own the land where the proposed point of diversion is located, please provide documentation proving your ownership of this property.

  Q. 37.a. If no, submit documentation to show you have the right to use all points of diversion located on each property you do not own. This may include, but is not limited to, a well agreement, an easement, or permission of the party that owns the property where the proposed point(s) of diversion are located.

  - **Your answer:** Question left blank.
  - **Deficiency:** Per Department of Revenue property ownership records, the land where the proposed point of diversion is located is owned by LEUFKENS FAMILY LLC, not SALISH SHORES UTILITY CORP INC. If you do own the land where the proposed point of diversion is located, please provide documentation proving your ownership of this property. If your answer to question 37. should have been 'No,' please submit documentation to show you have the right to use all points of diversion located on each property you do not own.

- **Form 606, questions 39.b., 39.c., and 39.c. ARM 36.12.1904:**

  Q. 39.b. For all wells that have been drilled, what is the name of the well driller and, if available, what is their license number?

  - **Your answer:** Question left blank
  - **Deficiency:** Please answer this question.

  Q. 39.c. For all wells yet to be drilled, will a licensed well driller construct the wells? If no wells are yet to be drilled, mark "NA" instead.

  - **Your answer:** Question left blank
  - **Deficiency:** Please answer this question.

  Q. 39.d. Submit any well logs not yet submitted to the Department, such as for wells drilled after submittal of Form 606P. If all well logs have been submitted to the Department, mark "NA."

- **Your answer:** Question left blank
- **Deficiency:** Please answer this question.

- **Form 606, question 40.b. ARM 36.12.1801(2)(b):** *For any of the purposes with no Department standard or with proposed beneficial use that falls outside of Department standards, explain how the use is reasonable for that purpose.*
  - **Your answer:** Salish Shores has ample unperfected water rights capacity to service additional areas with municipal water (see Permit No. 76N 30016270). Proposed water use will continue to fall under the multiple sub-purposes that municipal water rights encompass (e.g., domestic, lawn and garden, commercial) and the amount of water Salish Shores is requesting to change is beneficial to the Thompson Falls community. The project completion notice will refine and provide more specific information regarding the fully perfected use.
  - **Deficiency:** Per ARM 36.12.1801(2)(b), you must explain that the requested flow rate and volume for each purpose is reasonably needed to accomplish that purpose. Your request to change the place of use entails expanding the Salish Shores Utility Corp's municipal water service area. You must provide information demonstrating <u>how</u> the flow rate and volume of water currently permitted under Provisional Permits 76N 30016270, 76N 97278-00, 76N 85780-00, and 76N 81519-00 will be adequate to satisfy the existing service area's water requirements as well as the requirements of the proposed new service areas.

As stated above, the information submitted to address the rules and statutes listed in this deficiency letter must be substantial credible information to be acceptable at the correct and complete determination. §§85-2-102 (9) and (26), MCA.

Please submit the information specified above to the Kalispell Regional Office by December 16, 2025. <u>This is the only deficiency letter that will be sent</u>. An application not corrected or completed within 120 days from the date of this letter is terminated per ARM 36.12.1501(2) and §85-2-302(6)(a), MCA.

<u>IMPORTANT NOTICE</u>: This will be the final opportunity for you to provide the required information to the Department. If all of the requested information in this letter is not postmarked or submitted within 120 days of this letter, the application will be terminated within 30 days, and the application fee will not be refunded.

Please contact me at (406) 752-2746 or Travis.Wilson@mt.gov if you have any questions.

Sincerely,

T. Wil

Travis Wilson
Water Resource Specialist
Kalispell Regional Office

Cc via email: Bryan Gartland, Aspect Consulting

Application Materials

- Application
- Any information submitted with Application including maps

Application Materials

APPLICATION TO
CHANGE A WATER RIGHT
§ 85-2-302, MCA
Form No. 606 *(Revised 2/2025)*

For Department Use Only

RECEIVED
28 JUL 2025
DNRC
KALISPELL WATER RESOURCES

Application # 30165123 Basin 76N
Priority Date 07/28/2025 Time 13:45 AM/PM
Rec'd By TW
Fee Rec'd $ 1,500.00 Check # 4020
Deposit Receipt # MSS2601312
Payor Salish Shores Utility Corp / Leufkens, Buddy & Judy
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)). If application is eligible for a filing fee reduction, $500 paid for Form 606P-B will be credited toward filing fees shown above.

Applicant Information: ***Add more as necessary.***
Applicant Name SALISH SHORES UTILITY CORP INC
Mailing Address PO Box 1030 City Thompson Falls State MT Zip 59873
Phone Numbers: Home ________ Work 406-531-0801 Cell ________
Email Address Todd Wakefield (owner/operator) - twakefield58@gmail.com

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 ☑ Consultant ☐ Attorney ☐ Other
Contact/Representative Name Bryan Gartland, Aspect Consulting (Geosyntec)
Mailing Address PO Box 134 City Helena State MT Zip 59624
Phone Numbers: Home ________ Work 206-413-5414 Cell 406-599-7840
Email Address bryan.gartland@aspectconsulting.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 (ARM 36.12.122(2)). 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 (ARM 36.12.122(3)).*

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 marked 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. Responses in the form of a table may be entered into the table provided on this form or in an attachment. If an attachment is used, the table must have the exact headings found on this form, and "see attachment" must be entered as a response to the relevant question. Clearly label all units in tables and narrative responses.

PREAPPLICATION AND TECHNICAL ANALYSES INFORMATION

1. ☑ **Y** ☐ **N** Do you elect for Department technical analyses to be used for criteria assessment?

2. ☑ **Y** ☐ **N** Did you have a preapplication meeting AND complete a Change Preapplication Meeting Form Part A and Part B (Form 606P-A and 606P-B)?

Preapplication meeting held 1/8/2025, prior to introduction of Form 606P Parts A and B.

IF QUESTION 2 IS NO, answer 2.a and 2.b:

2.a. ☐ **S** Submit the Technical Analyses Addendum (Form 606-TAA).

2.b. ☐ **S** ☐ **NA** Submit the technical analyses, if you elected in question 1 for Applicant technical analyses to be used for criteria assessment. Select "NA" if you elected for Departmental technical analyses.

IF QUESTION 2 IS YES, answer 2.c, 2.d, and 2.e:

2.c. ☐ **Y** ☑ **N** Has any element of the project described in this application changed from the mandatory elements of the project described in the completed Form 606P? **If yes,**

2.c.i. Please explain.

The project elements detailed in DNRC's 3/20/2025 Technical Analysis Report remain the same.

2.c.ii. ☑ **S** Submit the Technical Analyses Addendum (Form 606-TAA). See Attachment A.1

2.d. ☑ **Y** ☐ **N** Are the technical analyses to be used for criteria assessment exactly the same as those completed during the preapplication process? **If no:**

2.d.i. Please explain.

The technical analyses completed during the preapplication process have not changed.

2.d.ii. ☑ **S** Submit the Technical Analyses Addendum (Form 606-TAA). See Attachment A.1

2.e. ☑ **Y** ☐ **N** Did you elect in question 1 for Department technical analyses to be used for criteria assessment? **If no:**

2.e.i. ☑ **S** Submit the technical analyses. See Attachment A.2

APPLICATION ADDENDA AND REVIEW

3. ☐ **S** ☑ **NA** If the proposed change involves one or more places of storage, submit a Change Storage Addendum (Form 606-SA). This does not include reservoirs, pits, pit-dams, or ponds with a capacity less than 0.1 AF; water tanks; or cisterns (ARM 36.12.113(6)).

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

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

6. ☐ **S** ☑ **NA** If the proposed purposes include marketing or selling water, submit a Water Marketing Purpose Addendum (Form 600/606-WMA). This doesn't include marketing for mitigation/aquifer recharge.

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

8. ☐ **S** ☑ **NA** If the proposed purposes include mitigation, aquifer recharge, or marketing for mitigation/aquifer recharge, submit a Mitigation Purpose Addendum (Form 606/606-MIT).

9. ☐ **S** ☑ **NA** If the project is in designated sage grouse habitat, submit a review letter from the Montana Sage Grouse Habitat Conservation Program.

10. ☐ **S** ☑ **NA** If you propose to add a point of diversion or place of use on State of Montana Trust Land, submit documentation of consent from DRNC Trust Lands Management Division. If you propose to add a place of use on Trust Land with all points of diversion on private land, then, at a minimum, that component of the change authorization will be temporary for the duration of the lease term (§ 85-2-441, MCA).

11. ☐ **Y** ☑ **NA** You must provide a written notice of the application to each owner of an appropriation right sharing a point of diversion or means of conveyance (e.g., canal, ditch, flume, pipeline, or constructed waterway) pursuant to § 85-2-302(4)(c), MCA. Submit a copy of this notice and the recipient list.

APPLICATION DETAILS

12. How many change applications will be needed for this project? Refer to ARM 36.12.1305 for more information. One (1)

13. Fill out the table below for the water rights proposed for change.

Water Right No.	Current Authorized Flow Rate			Flow Rate Needed for Project			Means of Diversion
	Flow	*GPM*	*CFS*	*Flow*	*GPM*	*CFS*	
76N 30016270	688.5	☑	☐	688.5	☑	☐	Wells
76N 97278-00	440.0	☑	☐	440.0	☑	☐	Wells
76N 85780-00	210.0	☑	☐	210.0	☑	☐	Wells
76N 81519-00	110.0	☑	☐	110.0	☑	☐	Wells
		☐	☐		☐	☐	

14. Is the source surface water or groundwater? Groundwater

15. What is the source name? Groundwater

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

Water Right No.	76N 30016270	76N 97278-00	76N 85780-00	76N 81519-00	
Point of Diversion	☑	☐	☑	☑	☐
Place of Use	☑	☐	☑	☑	☐
Purpose of Use	☐	☐	☐	☐	☐
Place of Storage	☐	☐	☐	☐	☐

17. ☑ **S** Submit a historical use map created on an aerial photograph or topographic map that shows the following: section corners, township and range, scale bar, north arrow, all historical points of diversion (POD) labeled with a unique POD ID ("H" followed by a number), 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. More than one map may be submitted, if necessary, to clearly convey all required information.

See Attachment B.1 (Figure 1)

18. ☑ **S** Submit a proposed use map created on an aerial photograph or topographic map that shows section corners, township and range, scale bar, north arrow, and the following elements: points of diversion labeled with a unique POD ID ("P" followed by a number), places of use, conveyance structures, places of storage, and place of use for all overlapping water rights. Include all elements that will be on the water rights after the proposed change, regardless of whether the element will be modified by the change. The map should fully depict the water rights, as proposed, after the change. More than one map may be submitted, if necessary, to clearly convey all required information.

See Attachment B.2 (Figure 2)

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

IF YES,

19.a. Describe the location for all *new* and *unchanged* points of diversion to the nearest 10 acres. Label POD ID with the same POD ID number assigned for the proposed use map (question 18).

POD ID	¼	¼	¼	Sec.	Twp.	Rge.	County	Lot	Block	Tract	Subdivision	Gov. Lot	New or Unchanged

See Attachment C.1

19.b. ☑ **NA** Describe the location of all historical PODs you propose to *retire*. Label POD ID with the same POD ID assigned for the historical use map (question 17). If none are proposed for retirement, select "NA" checkbox.

POD ID	¼	¼	¼	Sec.	Twp.	Rge.	County	Lot	Block	Tract	Subdivision	Gov. Lot

19.c. What is the means of diversion for all *new* PODs? 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.

Well

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

IF YES,

20.a. What are the geocodes of the proposed place of use?

N/A - Municipal Use	

20.b. 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
	Total							

See Attachment C.2

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

IF YES,

21.a. ☑ **Y** ☐ **N** Do other water rights supplement or overlap the proposed place of use?

IF YES,

21.a.i. How will the water rights be operated to serve the proposed purposes?

Although other existing water rights overlap the proposed place of use, they are not part of the Salish Shores municipal water system and are not considered supplemental to the Salish Shores permits proposed for change. Per Kalispell Regional Office (1/8/2025 preapplication meeting), overlapping water rights do not need to be detailed for a municipal use.

21.a.ii. 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.

Water Right No.	Avg. Period of Diversion	Avg. Period of Use	Flow Rate			Volume Contributed
	MM/DD-MM/DD	*MM/DD-MM/DD*	*Flow*	*GPM*	*CFS*	*AF*
N/A	See 21.a.i.			☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	

22. ☐ **Y** ☑ **N** Are you filing on behalf of another entity? If yes, describe.

23. ☐ **Y** ☑ **N** Do you own the entire historical place of use for all water rights proposed for change?

IF QUESTION 23 IS NO,

23.a. ☑ **Y** ☐ **N** Was the water historically used for sale, rental, distribution, municipal use, or any other context in which water is being supplied to another and it is clear that the ultimate user would not accept the supply without consenting to the use of water on the user's place of use?

IF QUESTION 23.a IS NO,

23.a.i. ☐ **Y** ☐ **N** List the water rights for which you do not own the entire historical place of use.

23.a.ii. ☐ **Y** ☐ **N** Are the water rights listed in question 23.a.i severed from the historical place of use?

IF QUESTION 23.a.ii IS YES,

23.a.ii.1. ☐ **Y** ☐ **N** Do you own the entirety of the severed water rights proposed for change? If yes, skip to question 24. If no, answer question 23.a.iii.

IF QUESTION 23.a.ii OR 23.a.ii.1 IS NO,

23.a.iii. ☐ **Y** ☐ **N** ☐ **NA** Are all owners of the historical place of use or, if applicable, owners of the severed water rights, willing to sign the application?

IF QUESTION 23.a.iii IS NO,

23.a.iii.1. ☐ **S** Submit a Form 641 or 642 to split the water rights being changed for which all owners will not sign.

ADVERSE EFFECT

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

See Attachment D.1

25. Describe any plans you have for ensuring existing water rights will be satisfied during times of water shortage.

See Attachment D.2

26. ☐ **Y** ☑ **N** Are you aware of any calls that have been made on the source of supply or, if groundwater, on nearby surface water sources?

26.a. If yes, explain.

27. Describe how the proposed change will or will not affect your ability to make call.

See Attachment D.3

28. ☐ **Y** ☑ **N** Does a water commissioner distribute water or oversee water distribution on your proposed source, or if groundwater, on nearby surface water sources?

28.a. If yes, list the sources.

29. When was the last time each water right proposed for change was appropriated and used beneficially?

2025

IF THERE HAS BEEN A PERIOD OF NONUSE,

29.a. Why was the water right not used?

N/A

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

N/A

29.c. ☐ **Y** ☐ **N** Is the period of nonuse greater than 10 years for any of the water rights proposed for change? If yes, list which water rights.

N/A

29.d. ☐ **Y** ☐ **N** Have new water rights been authorized to use the source during the period of nonuse for any of the water rights proposed for change? If yes, explain.

N/A

30. ☑ **Y** ☐ **N** Do you propose to add one or more points of diversion or use new or existing conveyance infrastructure that will be shared with one or more existing water rights?

30.a. If yes, describe how the capacity of the shared points of diversion and/or conveyance infrastructure is sufficient for all water rights and how the proposed project will not adversely affect these water rights.

The proposed groundwater point of diversion and associated conveyance infrastructure will be associated with Salish Shores' existing water rights and distribution system only. No other water rights or water users will be impacted and/or adversely affected by the proposed change. The diversion and conveyance infrastructure has been designed by project engineers to accommodate the respective pumping rates of the authorized wells and the max combined diversion rate of 1,448.5 GPM.

31. ☐ **NA** Answer questions 31.a to 31.b for point of diversion changes. If you do not propose a point of diversion change, mark "NA" instead.

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

All points of diversion (existing and proposed) are wells with a groundwater source.

31.b. ☐ **Y** ☑ **N** Are there intervening water users between the historical and proposed points of diversion?

31.b.i. If yes, list the water rights.

N/A - Groundwater

ADEQUATE MEANS OF DIVERSION AND OPERATION

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

See Attachment B.2

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 E.1

34. Describe the size, materials, capacity, and configuration of infrastructure to convey water from all proposed points of diversion to all proposed places of use.

See Attachment E.2

35. ☑ **Y** ☐ **N** Does the proposed conveyance require easements?

35.a. If yes, explain.

See Attachment E.3

36. Describe your plan of operations, including 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.

See Attachment E.4

37. ☑ **Y** ☐ **N** ☐ **NA** If you propose to add one or more points of diversion, do you own the land where all proposed points of diversion are located? If you do not propose to add one or more points of diversion, mark "NA" instead.

37.a. ☐ **S** If no, submit documentation to show you have the right to use all points of diversion located on each property you do not own. This may include, but is not limited to, a well agreement, an easement, or permission of the party that owns the property where the proposed point(s) of diversion are located.

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

38.a. If yes, explain the wastewater disposal method.

38.b. ☐ **Y** ☐ **N** ☐ **NA** Have the necessary permits been obtained to comply with §§ 75-5-410 and/or 85-2-364, MCA?

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

IF YES,

39.a. ☑ **Y** ☐ **N** Have all wells been drilled?

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

39.c. ☐ **Y** ☐ **N** ☐ **NA** For all wells yet to be drilled, will a licensed well driller construct the wells? If no wells are yet to be drilled, mark "NA" instead.

39.d. ☐ **S** ☐ **NA** Submit any well logs not yet submitted to the Department, such as for wells drilled after submittal of Form 606P. If all well logs have been submitted to the Department, mark "NA."

BENEFICIAL USE

40. ☐ **Y** ☑ **N** Does the Department have a standard period of diversion, period of use, flow rate, and/or volume for any of the purposes for which water is used? Department standards can be found in the DNRC Water Calculation Guide, ARM 36.12.112, ARM 36.12.115, and ARM 36.12.1902.

40.a. If yes, list the purposes for which the Department has a standard and note whether the water use falls within or outside the standard.

N/A

40.b. For any of the purposes with no Department standard or with proposed beneficial use that falls outside of Department standards, explain how the use is reasonable for that purpose.

See Attachment F.1

41. ☑ **Y** ☐ **N** Will your proposed project be subject to Montana Department of Environmental Quality (DEQ) requirements for a public water supply (PWS) system or Certificate of Subdivision Approval (COSA)?

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

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

42.a.i. ☐ **S** If yes, submit the COSA.

POSSESSORY INTEREST

43. ☑ **Y** ☐ **N** Do you meet one of the exceptions to possessory interest requirements, pursuant to ARM 36.12.1802 and § 85-2-402(2)(d), MCA? Exceptions include cases 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, and applications for the purposes of instream flow, mitigation, and marketing for mitigation.

43.a. If yes, explain.
All water rights proposed for change are municipal use.

44. ☐ **Y** ☐ **N** ☑ **NA** Do you own all proposed places of use? Mark "NA" if you meet one of the exceptions to the possessory interest requirement.

44.a. ☐ **S** If no, explain and submit documentation that shows you either have possessory interest or written permission of the parties with possessory interest of the proposed place of use.

PROPOSED COMPLETION PERIOD

45. How many years will be needed to complete this project and to submit to the DNRC a Project Completion Notice (Form 618)? 25 years (2050)

46. Describe why this amount of time is needed to complete this project.
Applicant needs additional time to develop and utilize water under un-perfected Permit No. 76N 30016270.

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. If a preapplication meeting form was submitted, 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.

Printed Name Todd E Wakefield, vice President

Applicant Signature Todd E Wakefield Date: 7-22-2025

Printed Name ______________________

Applicant Signature ______________________ Date: __________

Printed Name ______________________

Applicant Signature ______________________ Date: __________

TABLE OF CONTENTS
Salish Shores Utility Corporation, Inc.
Change Application No. 76N 30165123
July 2025

FORM:

Application			Water Rights	Purpose
Count	Form	Type		
1	606	Application to Change a Water Right	76N 30016270 76N 81519-00 76N 85780-00 76N 97278-00	Change POU and Add POD

FORM 606 ATTACHMENTS:

TRANSMITTAL LETTER

TO: DNRC Kalispell
ATTN: Travis Wilson
655 Timberwolf Pkwy, Ste. 4
Kalispell, MT 59901

Delivery Method: Hand delivered to Missoula Office

DATE: 7/23/2025
FROM: IMEG Corp. c/o David Friedlander, P.E.
JOB NAME: Salish Shores Utility Corp., Inc.
Change App No. 76N 30165123
LOCATION: Thompson Falls, MT
IMEG #: 20001572.02
SECTION #:

WE ARE TRANSMITTING THE FOLLOWING TO YOU:

- Wet-ink Signed Affidavit and Certification, Form 606
- $1,500.00 Fee Check for Form 606 – Check # 4020

RECEIVED
DNRC Water Resources
JUL 28 2025
Kalispell Unit

- ☐ For Your Information
- ☐ For Review/Comment
- ☐ For Signature
- ☐ As Requested
- ☐ For Distribution
- ☐ Shop Drawings
- ☐ For Your Use

REMARKS:

ATTACHMENT A

PREAPPLICATION AND TECHNICAL ANALYSIS INFORMATION

A.1 - *Questions 2.c.ii. and 2.d.ii.* **Technical Analysis Addendum (Form 606-TAA)**

A.2 - *Question 2.e.i.* **Technical Analysis Report (DNRC, 3/20/2025**)

Form No. 606-TAA *(Revised 02/2025)* **Applicant Name** SALISH SHORES UTILITY CORP INC

APPLICATION TO CHANGE A WATER RIGHT

TECHNICAL ANALYSES ADDENDUM

§ 85-2-402, MCA

Answer every question and applicable follow-up questions. Use the checkboxes to denote yes ("Y") or no ("N"). Questions that require items to be submitted to the Department have a submitted ("S") checkbox, which is marked when the required item is attached to the Technical Analyses Addendum. 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, mark the see attachment ("A") checkbox on this form and label the attachment with the question number. If no attachment is needed, leave the see attachment ("A) checkbox blank. Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Responses in the form of a table may be entered into the table provided on this form or 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 on this form must be marked. Label units in narrative responses and tables.

APPLICATION DETAILS

Questions, Narrative Responses, and Tables	Check-boxes
1. Did you have a preapplication meeting AND complete a Change Preapplication Meeting Form (Form 606P)?	■ Y ☐ N
a. If no, complete the remainder of Form 606-TAA. Skip to question 2.	
b. If yes,	
i. Do the technical analyses submitted with Form 606 remain unchanged from those completed during the preapplication meeting process?	■ Y ☐ N
1. If yes, has any element of the project described in Form 606 changed from the mandatory elements of the project described in Forms 606P-A and/or 606P-B?	☐ Y ■ N
a. If yes, complete the remainder of Form 606-TAA. Skip to question 2.	
b. If no, Form 606-TAA is complete.	
2. If no,	
a. Are you submitting new technical analyses with Form 606 to replace the technical analyses completed during the preapplication meeting process?	☐ Y ☐ N
i. If yes, complete the remainder of Form 606-TAA. Skip to question 2.	
ii. If no, are you correcting the technical analyses in response to a Departmental scientific credibility review completed during the preapplication meeting process?	☐ Y ☐ N

Per Form 606-TAA Question 1.b.i.1.b., additional information is not required on this form and pages 2-40 have been omitted from the application package.

Water Resources Division – Kalispell Regional Office
655 Timberwolf Pkwy, Ste. 4
Kalispell, MT 59901-1215
(406) 752-2288
DNRCKalispellWater@mt.gov

March 20, 2025

SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS MT 59873-1030

Subject: Completed Technical Analyses Report for Change Preapplication No. 76N 30165123

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. 76N 30165123 based on the information provided in your Preapplication Meeting Form accepted by the Department on February 3, 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 Travis Wilson (Kalispell Regional Office), and a Part B completed by Evan Norman (Water Sciences Bureau).

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 Kalispell Regional Office by September 16, 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)).

If you have any questions, please contact me at (406) 752-2746 or Travis.Wilson@mt.gov.

Sincerely,

Travis Wilson
Water Resource Specialist
Kalispell Regional Water Resource Office

Encl.: Groundwater Change Technical Analyses Report Parts A-B

Cc via email: Bryan Gartland, Aspect Consulting

Groundwater Change Technical Analyses Report – Part A

Department of Natural Resources and Conservation (DNRC or Department)
Water Resources Division
Travis Wilson, Water Resources Specialist, Kalispell Regional Office

Application No.	76N 30165123	**Proposed Point of Diversion**	NENWNW of Sec 15, Twp 21N, Rge 29W, Sanders County
Applicant	Salish Shores Utility Corp Inc.		

Overview

This report is Part A of a two-part publication which analyzes data submitted by the Applicant in support of the above-mentioned water right 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 Groundwater Change Technical Analyses Report – Part A contains the following sections:

Variances

No variances were required from ARM 36.12.121.

1.0 Application Details

The Applicant proposes to add an eighth point of diversion (POD) to the Salish Shores water system and to change the place of use to cover the full projected Salish Shores water service area. No additional flow rate or volume is requested or required to supply the expanded service area. The project is in Sanders County and the source is groundwater. This change involves Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270, which are the water rights serving the manifold Salish Shores water system. The details of these existing water rights are summarized in Tables 1 and 2. These water rights were previously changed by unperfected water right Change Application No. 76N 30027719. Provisional Permit Nos. 76N 81519-00, 76N 85780-00, and 76N 97278-00 are perfected permits, while Provisional Permit No.

76N 30016270 is unperfected. The proposed eighth POD and proposed new places of use are summarized in Tables 3 and 4, respectively.

Table 1: Summary of Water Rights Proposed for Change

Water Right Number	Priority Date	Purpose	Flow Rate (GPM)	Volume (AF)	Period of Diversion & Use	Means of Diversion	Points of Diversion	Places of Use
76N 81519-00	May 14, 1992	Municipal	110.0	48.90	01/01 - 12/31	Wells (7x)	See Table 2 (same for all four provisional permits)	
76N 85780-00	June 1, 1993		210.0	104.32				
76N 97278-00	May 17, 1996		440.0	25.98				
76N 30016270	August 19, 2005		688.5	198.10				

Table 2: Summary of the Points of Diversion and Places of Use for the Water Rights Proposed for Change

The four provisional permit water rights proposed for change serve a manifold system and share all of the same points of diversion and places of use.

POD ID	GWIC ID	1/4	1/4	1/4	Section	Township	Range	County
1	135335	SW	NE	SE	16	21 N	29 W	Sanders
2	131977	SW	NE	SE	16	21 N	29 W	Sanders
3	139319	SW	SW	SE	15	21 N	29 W	Sanders
4	139318	SW	SW	SE	15	21 N	29 W	Sanders
5	175584	NE	SW	NW	15	21 N	29 W	Sanders
6	175632	NE	SW	NW	15	21 N	29 W	Sanders
7	175585	NE	SW	NW	15	21 N	29 W	Sanders
POU ID	**---**	**1/4**	**1/4**	**1/4**	**Section**	**Township**	**Range**	**County**
1	---	---	---	---	15	21 N	29 W	Sanders
2	---	---	---	E2	16	21 N	29 W	Sanders
3	---	---	W2	SW	13	21 N	29 W	Sanders
4	---	---	---	---	14	21 N	29 W	Sanders
5	---	---	N2	N2	22	21 N	29 W	Sanders
6	---	---	N2	N2	23	21 N	29 W	Sanders

Table 3: Proposed Point of Diversion for the Water Rights Proposed for Change

GWIC ID	1/4	1/4	1/4	Section	Township	Range	County
76372	NE	NW	NW	15	21 N	29 W	Sanders

Table 4: Proposed Places of Use for the Water Rights Proposed for Change						
POU ID	**1/4**	**1/4**	**Section**	**Township**	**Range**	**County**
7	E2	SW	9	21 N	29 W	Sanders
8	W2	SE	9	21 N	29 W	Sanders
9	SE	SE	9	21 N	29 W	Sanders
10	SW	SW	10	21 N	29 W	Sanders
11	NE	NW	14	21 N	29 W	Sanders
12	---	NE	14	21 N	29 W	Sanders
13	SE	NW	14	21 N	29 W	Sanders
14	NE	SE	14	21 N	29 W	Sanders
15	N2	NE	15	21 N	29 W	Sanders

Note: These are the legal land descriptions of the proposed new places of use only. These will be combined with the existing places of use and summarized in their most simplified form to describe the place of use of the total Salish Shores service area in the official water right records. See Figure 2 for a breakdown of the existing and proposed places of use.

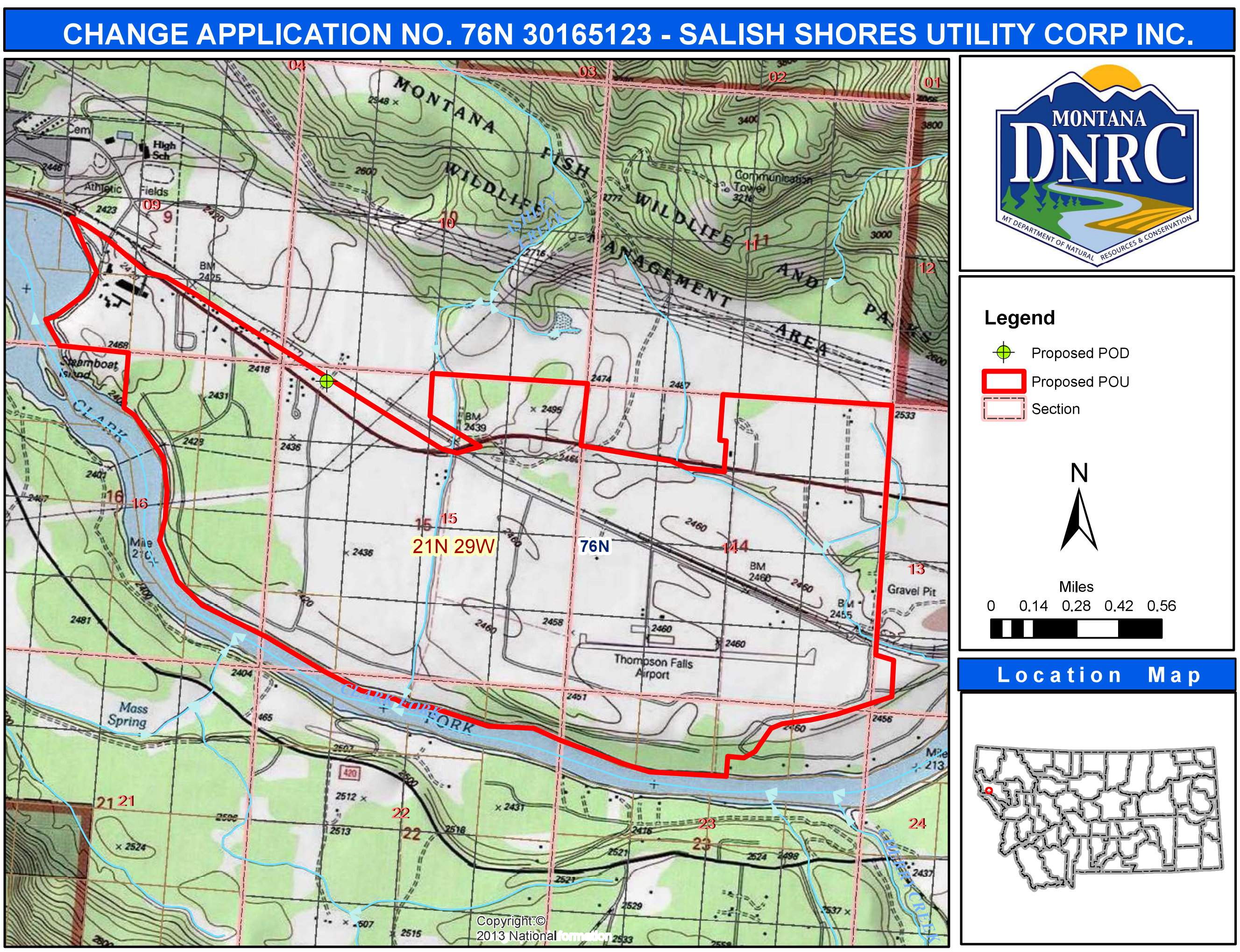

Figure 1: Project vicinity/overview map.

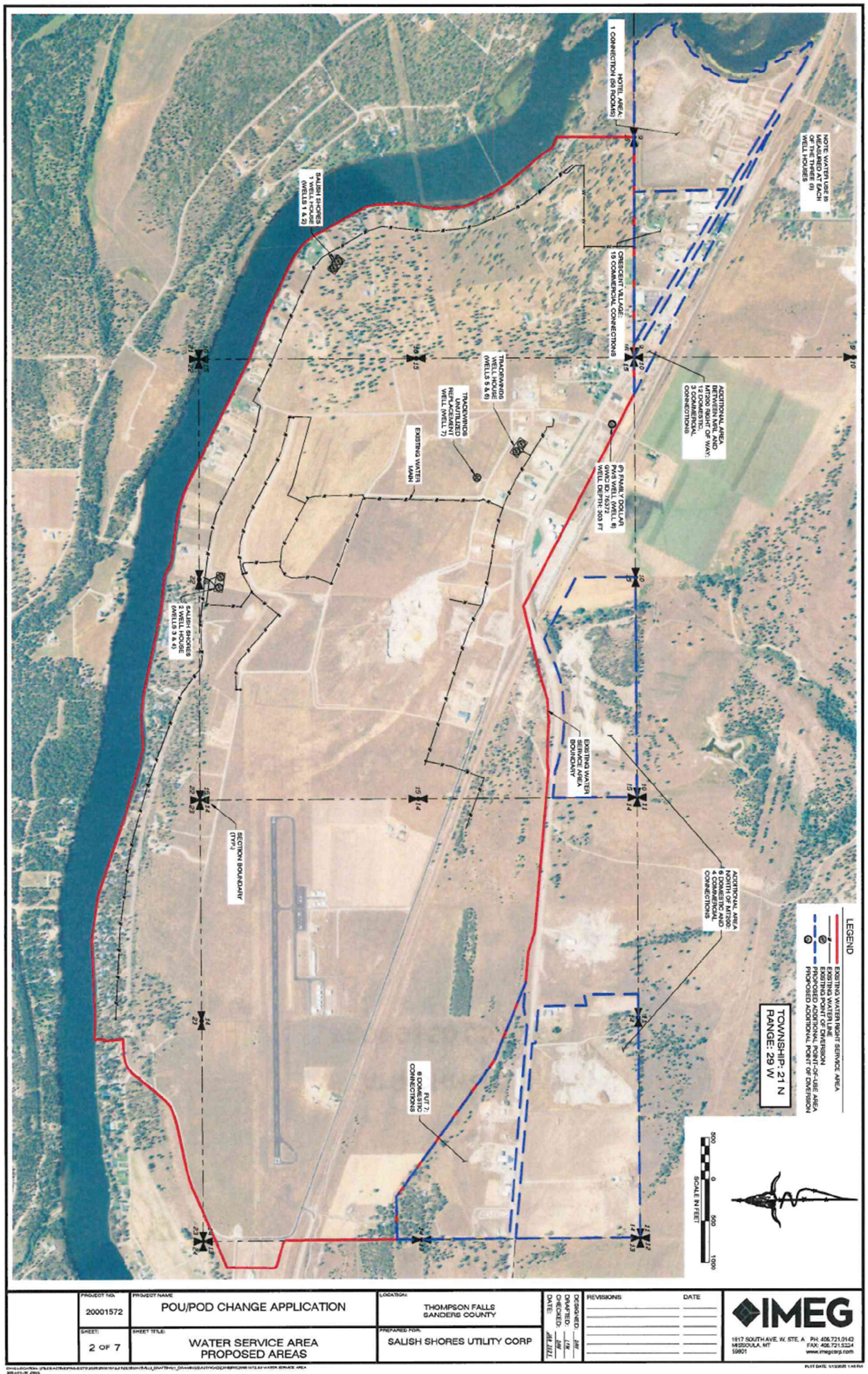

Figure 2. Map of the Applicant's proposed point of diversion, proposed place of use, existing/historical points of diversion, and historical place of use. The solid red outline delineates the existing place of use, while the dashed blue outlines delineate the proposed new places of use.

2.0 Historical Use Analysis

2.1 Summary of Historical Use

Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 were previously changed by unperfected water right Change Authorization No. 76N 30027719. These water rights are supplemental because they all share the same points of diversion and places of use. The historical use of these water rights was proven by the applicant and quantified by the DNRC in Change Authorization No. 76N 30027719. The applicant did not submit additional addenda or information with this application contradicting the Department's previous findings, therefore the DNRC will use the findings from the previous historical use analysis for this application. Provisional Permit Nos. 76N 81519-00, 76N 85780-00, and 76N 97278-00 are perfected permits. Provisional Permit No. 76N 30016270 is unperfected and therefore carries forward its full flow rate and volume to this change application. The historical use of these water rights is summarized in Table 5.

The Department will consider the following values when evaluating the historical use of Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 for the adverse effect criterion:

Table 5: Proposed Places of Use for the Water Rights Proposed for Change

Water Right Number	Historical Purpose	Historical Places of Use	Historical Points of Diversion	Maximum Historical Flow Rate (GPM)	Historically Consumed Volume (AF)	Historically Diverted Volume (AF)
76N 81519-00	Municipal	See Table 2		110.00	4.89	48.90
76N 85780-00				210.00	10.43	104.32
76N 97278-00				440.00	2.60	25.98
76N 30016270				688.50	19.81	198.10

****

Review

This document has been reviewed by the Department on March 20, 2025.

References

Department Standard Practice for Determining Historical Use

Groundwater Change Technical Analyses Report- Part B

Department of Natural Resources and Conservation (DNRC)
Water Resources Division
Evan Norman, Groundwater Hydrologist, Water Sciences Bureau (WSB)

Applicant	Salish Shores Utility Corp.	**Point of Diversion Legal Land Description**	NW¼ Section 15, Township 21North, Range 29 West
Application No.	76N 30165123		

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).

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

1.0 Executive Summary

Application Details

The Applicant proposes to add a point of diversion (POD) and change the place of use (POU) for Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and unperfected Permit No. 76N 30016270. A previous Change Authorization No. 76N 30027719 added an additional POD to the existing permits for a total of 7 wells. The proposed change would add one well to the existing municipal water supply system for a total of 8 wells and change the POU to include the entire Salish Shores water service area near Thompson Falls, Sanders County, Montana.

Information provided by the Applicant shows that four (Montana Bureau of Mines and Geology (MBMG) Groundwater Information Center (GWIC) IDs 135335, 131977, 175584, 175632) of the 7 existing wells are the primary Production Wells for the service area. Therefore, the existing (historical) pumping schedule was apportioned to four wells (**Table 6)**, with the proposed pumping schedule apportioned to 5 wells (**Table 7)**, including GWIC ID 76372. The redundant wells, GWIC IDs 139319, 139318, and 175585 were not assigned proportions of historical or proposed pumping volumes. The list of wells, including well depth and estimated capacity is shown in **Table 1**. The total flow rate and volume proposed for change is 1,448.5 gallons per minute (gpm) and 377.4 acre-ft (AF) per year for municipal purpose with a period of diversion and period of use from January 1 to December 31.

Table 1: PODs for Change Application No. 76N 30165123.

GWIC ID	Well Depth (ft, btc)	Estimated Capacity (gpm)
135335	121	246.0
131977	141	245.0
139319	240	427.0
139318	246	307.0
175584	367	160.0
175632	355	240.0
175585	423	75.0
76372 (proposed)	303	167.5

Approved Variances from ARM 36.12.121

No variances were required from ARM 36.12.121.

WSB Technical Findings

Based on information submitted, the WSB estimated aquifer properties, evaluated the production well(s) available water column, and evaluated potential impacts to existing groundwater and surface water rights. Adverse effects were evaluated by comparing drawdown in existing wells, net depletions to surface water for existing and proposed conditions. These analyses are in support of the following criteria assessment: adequacy of diversion and adverse effect. A summary of WSB findings described in subsequent sections are listed below.

TECHNICAL ANALYSES FINDINGS

AQUIFER TEST ANALYSIS	An aquifer Transmissivity (T) of 6,750 ft^2/day, Storativity (S) of 1.7×10^{-4}, and leakage parameter (β) of 0.14 from information in Provisional Permit No. 76N 30016270 and Geomatrix Consultants, Inc. (2005) are recommended for aquifer properties.
ADEQUACY OF DIVERSION	The proposed well using the Hantush (1960) early-time solution, a T of 6,750 ft^2/day, S of 1.7×10^{-4}, β of 0.14 and the monthly pumping schedule identified in **Table 5** would experience 2.9 feet (ft) of drawdown after the first year, leaving approximately 256.8 ft of available water column above the bottom of the well.
ADVERSE EFFECT (DRAWDOWN IN EXISTING WELLS)	After five years, assuming wells are pumped according to Applicant provided schedule, no new groundwater rights in the source aquifer are predicted to experience drawdown greater than or equal to one foot.
ADVERSE EFFECT (NET DEPLETION TO SURFACE WATER)	The Clark Fork River, starting at the eastern boundary of NENW of Section 22, Township 21 North, Range 29 West, is identified as being hydraulically connected to the source aquifer. Monthly net depletions resulting from the historical and proposed conditions are identified in **Table 2** and the starting point of net depletions in **Figure 6**. The depth of the wells and semi-confining unit cause net depletions to be dampened resulting in a constant year-round depletion. No change in the rate, timing, and location of net depletions to surface water would occur because of the proposed change.

Table 2: Net depletion to the Clark Fork River under historical and proposed conditions and net effect from the proposed change.

Month	Historical and Proposed Consumed Volume (AF)	Historical Net Depletion (gpm)	Proposed Net Depletion (gpm)	Net Effect (gpm)
January	3.2	23.4	23.4	0.0
February	2.9	23.4	23.4	0.0
March	3.2	23.4	23.4	0.0
April	3.1	23.4	23.4	0.0
May	3.2	23.4	23.4	0.0
June	3.1	23.4	23.4	0.0
July	3.2	23.4	23.4	0.0
August	3.2	23.4	23.4	0.0
September	3.1	23.4	23.4	0.0
October	3.2	23.4	23.4	0.0
November	3.1	23.4	23.4	0.0
December	3.2	23.4	23.4	0.0
Total	37.7			

2.0 Hydrogeologic Setting

As identified in **Figure 1**, the proposed well (GWIC ID 76372) is approximately 0.6 miles from the Clark Fork River. The well is completed 303 ft below ground surface (bgs) with a pre-test static water level (swl) of 44.55 ft below top of casing (btc). The proposed well will be one of eight wells, all completed in glacial-lake deposits which represent a leaky-confined to confined aquifer system. The well log of GWIC ID 76372 (112DRFT) describes coarse gravelly alluvium assumed to be a glacial flood deposit unit connected to the Clark Fork River, above glacial-lake deposits of fine sand, clay with sand; and gravel, sand, and clay (Lonn et al., 2007).

The shallow Quaternary aged alluvial aquifers are recharged by local streams, groundwater recharge from the Clark Fork River, and by infiltration of precipitation. The deep Pleistocene aged alluvial aquifer is recharged by mountain front recharge and losses from streams along the shallow alluvium. The groundwater flow direction is parallel to the Clark Fork River from southeast to the northwest. The width of the Clark Fork River alluvium varies throughout the watershed and is approximately 1.3 miles wide at the proposed change location. The source aquifer discharges to springs and seeps along valley bottoms and reaches of streams that interact with groundwater. The alluvial aquifer is bounded by Precambrian-aged Belt Supergroup sedimentary rock including formations of metasediments (Kendy and Tresch, 1996).

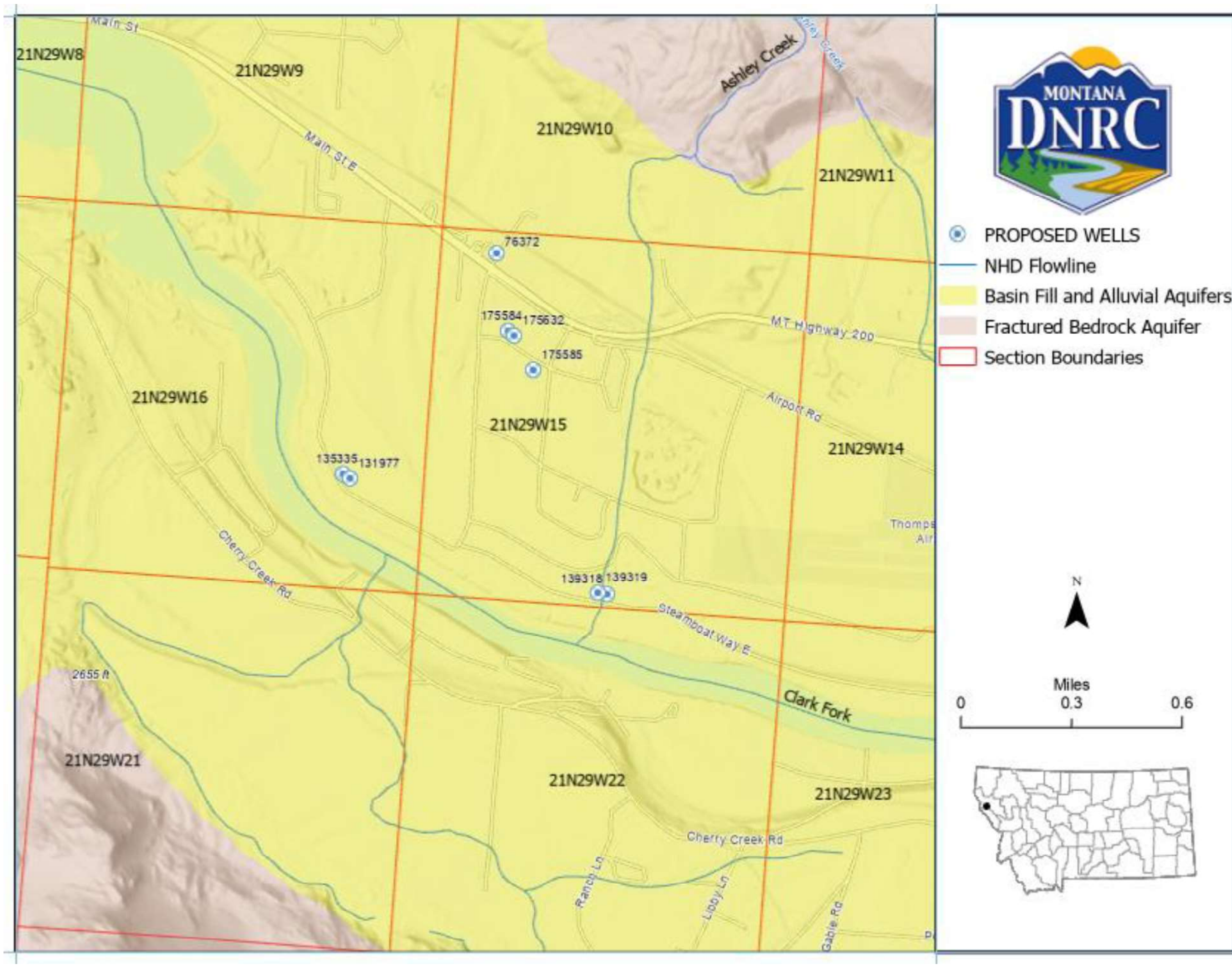

Figure 1: Map of the Applicant's historical (existing) and proposed well (GWIC ID 76372).

3.0 Drawdown and Yield Test Summary

A "Drawdown and Yield Test" is a pumping test that is meant to evaluate well construction and the ability of the aquifer to yield water to the well. This is also known as demonstrating "adequacy of diversion". The minimum duration of these tests is 8-hours. Observation Wells, pre-test, and post-test data is not required for Drawdown and Yield Tests.

Field Methods and Equipment

An 8.1-hour drawdown and yield test was performed on GWIC ID 76372. Water levels during the test were collected using LevelTroll 700 electronic pressure transducers and verified with manual e-tape measurements. The discharge was measured with a MasterMeter Octave in-line 3" ultrasonic flowmeter.

Background Data

Background data is not required as part of drawdown and yield tests and was not collected.

Drawdown and Recovery Data

The 8.1-hour drawdown and yield test started on October 4, 2023, at 4:19 P.M. on GWIC ID 76372 and is considered (t=0) for the computation of drawdown. The test had an average discharge of 167.5 gpm, with minimum and maximum discharge rates of 161.0 and 176.0 gpm, respectively. The maximum drawdown in GWIC ID 76372 was 32.91 ft below the swl of 44.55 ft btc, leaving approximately 226.7 ft above the bottom of the well. Recovery water level data is not required as part of drawdown and yield tests, however, the Applicant provided approximately 10 minutes of recovery data after the cessation of pumping.

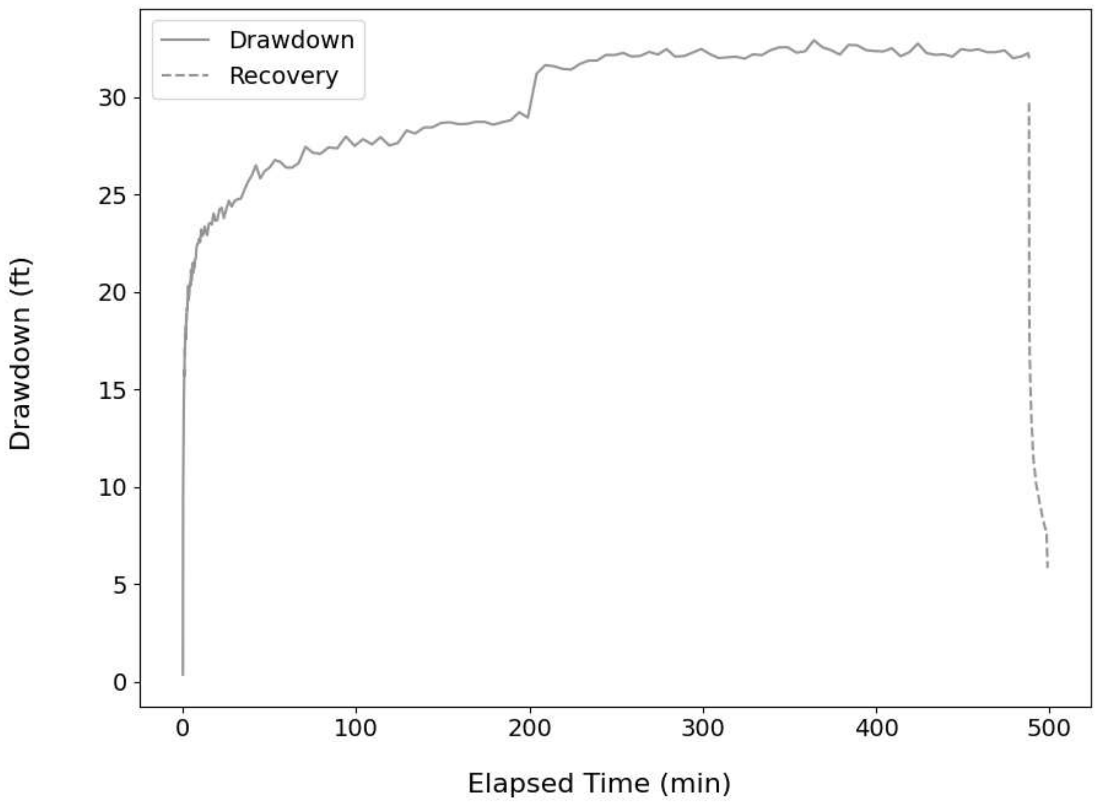

Figure 2: Drawdown and yield test including recovery measurements for Production Well, GWIC ID 76372.

4.0 Aquifer Properties

An "Aquifer Test" is a pumping test that is meant to provide data to model aquifer properties. The minimum duration of these tests is either 24-hours or 72-hours, depending on the proposed flow rate and volume (ARM 36.12.121(3)(e)), and DNRC only requires one of these tests per application. In lieu of submitting an aquifer test on the proposed well the Applicant submitted aquifer testing and aquifer property information from Provisional Permit No. 76N 30016270 Geomatrix Consultants, Inc. (2005). A summary of aquifer properties derived from aquifer testing on existing municipal wells is shown in **Table 3.**

Table 3: Aquifer tests analysis summary for GWIC ID 135335 and 139319.

Production Well (GWIC ID)	Observation Well (GWIC ID)	Solution	T (ft^2/day)	S	Duration (hrs)	Pumping Rate (gpm)
135335	131977	Hantush-Jacob	6,594	7.0E-5	72.0	246.0
139319	139318	Hantush-Jacob	5,366	2.7E-4	74.0	427.0

The recommended T of 6,750 ft^2/day utilized in Provisional Permit No. 76N 30016270, was calculated with the average horizontal hydraulic conductivity of 30 ft per day from aquifer tests performed on GWIC ID 135335 and GWIC ID 139319. The saturated thickness of 225 ft used to calculate T was estimated based on drillers well logs and Herrick (2005). The recommended S of 1.7×10^{-4} is from the average of data from Observation Wells, GWIC ID 131977 and GWIC ID 139318 (**Table 3**).

The aquifer properties in Geomatrix Consultants, Inc. (2005) were derived from the Hantush-Jacob (1955) leaky-confined aquifer solution which does not consider aquitard storage. The Hantush-Jacob (1955) solution and Hantush (1960) leaky-confined complete solutions also assume infinite constant head source plane source above the aquitard. Therefore, the Hantush (1960) leaky-confined early-time solution was chosen for forward modeling using a leakage parameter described below.

The leakage parameter (β) was calculated (**Eq. 1**) using the recommended T of 6,750 ft^2/day, an average aquitard thickness of 200 ft, and vertical hydraulic conductivity of the aquitard (K') of 0.1 ft per day from Geomatrix Consultants, Inc. (2005) which represents sandy silts (Fetter, 1994) and very fine sand, silt, loess or loam (Bear, 1972) primarily described in well logs. The radial distance from the pumping well to observation well (r) was represented with the radius of the pumping well. The recommended β of 0.14 is within the range of recommended values from Kruseman and de Ridder (1991).

$$\beta = \frac{r}{B} = \frac{r}{\sqrt{\frac{T \cdot b'}{K'}}} \qquad \textbf{Eq. 1}$$

Aquifer Property Comparison
The two aquifer tests performed on GWIC ID 135335 and 139319 are the only aquifer properties within the region of Application No. 76N 30165123, therefore, no additional tests were used as comparison for aquifer properties.

5.0 Adequacy of Diversion Analysis

An evaluation of the potentially available water column remaining in the Production Well is modeled using the Hantush (1960) early-time solution, with a T of 6,750 ft^2/day, S of 1.7×10^{-4} and β of 0.14. Predicted theoretical drawdown for the proposed well is modeled for the period of diversion using the monthly pumping schedule identified in **Table 4**. The Applicant requests a volume of 8.3 AF for the proposed well. Applicant-provided water use records were used to distribute the volume to the proposed well and existing wells.

Table 4: Applicant provided monthly pumping schedule for municipal purposes.

Month	Proposed Well Diverted Volume (AF)	Proposed Well Diverted Flow Rate (gpm)	All Wells Diverted Volume (AF)	All Wells Diverted Flow Rate (gpm)
January	0.3	2.1	13.1	95.9
February	0.4	2.8	15.9	128.3
March	0.4	3.0	18.4	134.5
April	0.6	4.5	26.9	202.6
May	0.9	6.3	38.8	283.2
June	1.2	9.0	53.8	405.9
July	1.0	7.2	44.6	325.4
August	1.5	10.7	66.5	485.5
September	0.8	5.9	35.3	266.5
October	0.7	5.3	32.8	239.5
November	0.4	3.1	18.3	138.2
December	0.3	2.1	12.9	94.2
Total	**8.3**		**377.4**	

As identified in **Table 5,** total drawdown is the sum of interference drawdown and predicted drawdown with well loss. Well loss is calculated by dividing the predicted theoretical maximum drawdown by a well efficiency value. Well efficiency is calculated by dividing the modeled maximum drawdown for the aquifer test by the maximum observed drawdown of the drawdown and yield test. The aquifer adjacent to the proposed well would experience a predicted total drawdown of 0.3 ft at the end of August of the first year of pumping (**Figure 3**). The remaining available water column for the proposed well is 256.8 ft and is equal to the available drawdown above the bottom of the well minus total drawdown. The saturated thickness (b) of 260 ft (**Figure 3; Table 5)** is the calculation of the approximate available drawdown above the bottom of the well.

Table 5: Remaining available water column for the proposed well.

Drawdown Estimate	Proposed Well (GWIC ID 76372)
Total Depth at Bottom of Well (ft btc)[1]	304.0
Pre-Test Static Water Level (ft btc)	44.35
Available Drawdown Above Bottom of Well (ft)	259.7
Observed Drawdown of Aquifer Test (ft)	32.9
Modeled Drawdown Using Mean Aquifer Test Rate (ft)	3.1
Well Efficiency (%)	9.4
Predicted Theoretical Maximum Drawdown (ft)	0.3
Predicted Drawdown with Well Loss (ft)	2.9
Interference Drawdown (ft)	0.0
Total Drawdown (ft)	2.9
Remaining Available Water Column (ft)	**256.8**

[1]The total well depth measuring point (bgs) was adjusted to the top of well casing based on a 1-foot well casing stickup reported on the well log.

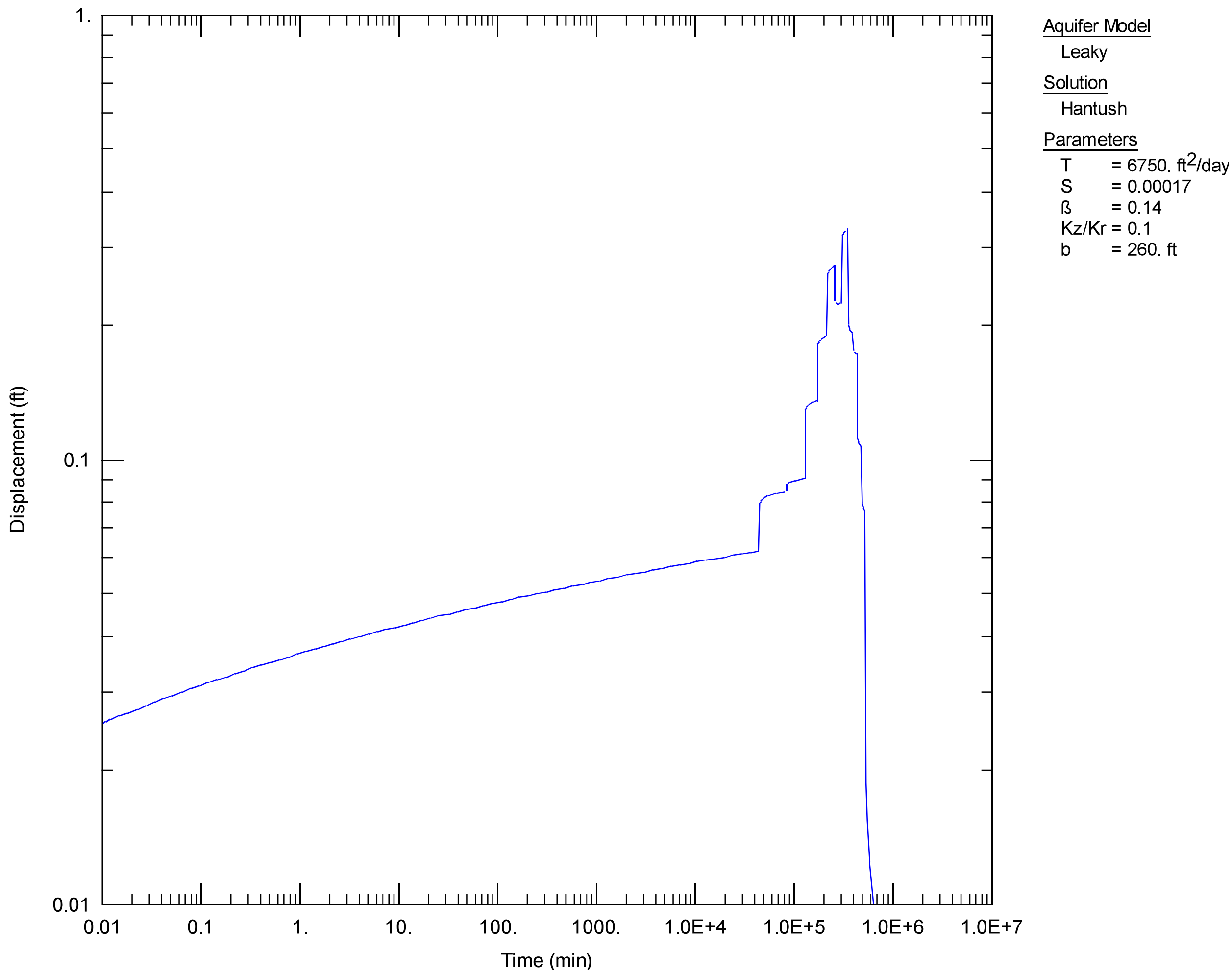

Figure 3: Hantush (1960) solution time-drawdown plot using the assumed pumping schedule for the proposed well (**Column 3, Table 4**).

6.0 Adverse Effect Analyses

Under §85-2-402, Montana Code Annotated (MCA), using the Applicant's proposed pumping schedule and associated volume, adverse effect is evaluated by modeling drawdown in nearby wells and changes in net depletions to surface water.

6.1 Adverse Effect Groundwater - Drawdown in Existing Wells

Drawdown in existing wells was modeled for existing and proposed conditions with the Hantush (1960) early-time solution, a T of 6,750 ft^2/day, S of 1.7 x 10^{-4}, β of 0.14, and the monthly pumping schedules identified in **Table 6** and **Table 7** for a period of five years. The Applicant provided water use records in 2023 and 2024 which reflects approximate monthly use shown in **Table 6** and **Table 7**.

Due to the proximity of GWIC ID 135335 and 131977, and GWIC ID 175584 and 175632, the monthly pumping schedules were modeled as centroids between each well pair. The maximum drawdown at the end of August of the fifth year of pumping under existing conditions (**Table 6)** show maximum drawdown at the centroid of the well pairs (**Figure 4**). The maximum drawdown at the end of August of the fifth year of pumping under proposed conditions (**Table 7)** show maximum drawdown at the centroid of the well pairs and the proposed well (GWIC ID 76372) (**Figure 5**).

Table 6: Monthly pumping schedules for existing wells.

Month	GWIC ID 135335 and 131977 (gpm)	GWIC ID 175584 and 174632 (gpm)	Total pumping schedule (gpm)	Total pumping volume (AF)
January	71.6	24.4	95.9	13.1
February	95.7	32.6	128.3	15.9
March	100.3	34.2	134.5	18.4
April	151.1	51.5	202.6	26.9
May	211.3	71.9	283.2	38.8
June	302.8	103.1	405.9	53.8
July	242.8	82.7	325.4	44.6
August	362.2	123.3	485.5	66.5
September	198.8	67.7	266.5	35.3
October	178.7	60.8	239.5	32.8
November	103.1	35.1	138.2	18.3
December	70.3	23.9	94.2	12.9
Total	**---**	**---**	**---**	**377.4**

Table 7: Monthly pumping schedules for proposed wells.

Month	GWIC ID 135335 and 131977 (gpm)	GWIC ID 175584 and 174632 (gpm)	GWIC ID 76372 (gpm)	Total pumping schedule (gpm)	Total pumping volume (AF)
January	70.0	23.8	2.1	95.9	13.1
February	93.6	31.9	2.8	128.3	15.9
March	98.1	33.4	3.0	134.5	18.4
April	147.8	50.3	4.5	202.6	26.9
May	206.6	70.3	6.3	283.2	38.8
June	296.1	100.8	9.0	405.9	53.8
July	237.4	80.8	7.2	325.4	44.6
August	354.2	120.6	10.7	485.5	66.5
September	194.5	66.2	5.9	266.5	35.3
October	174.7	59.5	5.3	239.5	32.8
November	100.8	34.3	3.1	138.2	18.3
December	68.7	23.4	2.1	94.2	12.9
Total	**---**	**---**	**---**	---	**377.4**

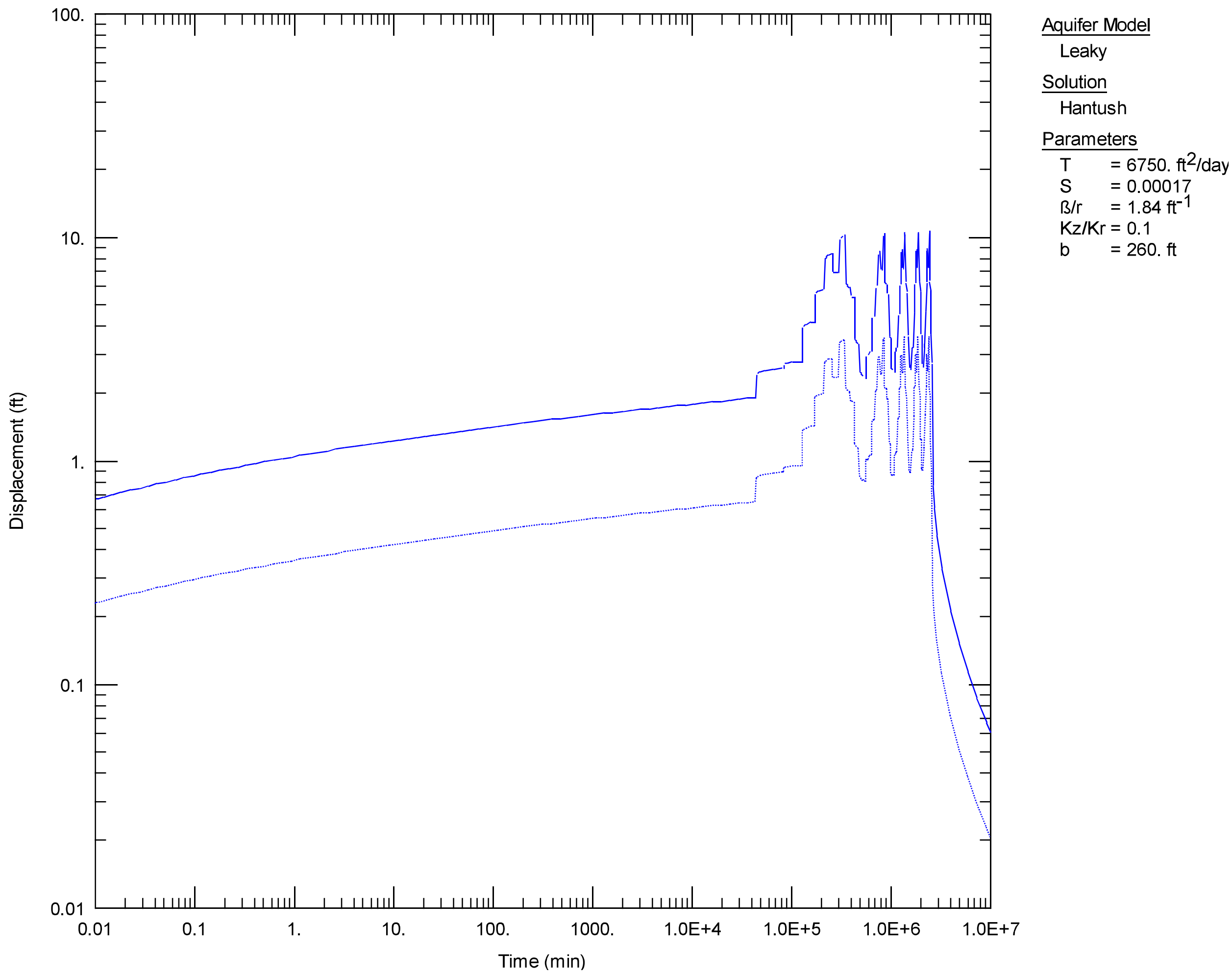

Figure 4: Hantush (1960) solution modeled time-drawdown plot using the Applicant-provided monthly pumping schedule for the existing wells (solid line: well pair GWIC IDs 135335 and 131977; dashed line: well pair GWIC IDs 175584 and 175632).

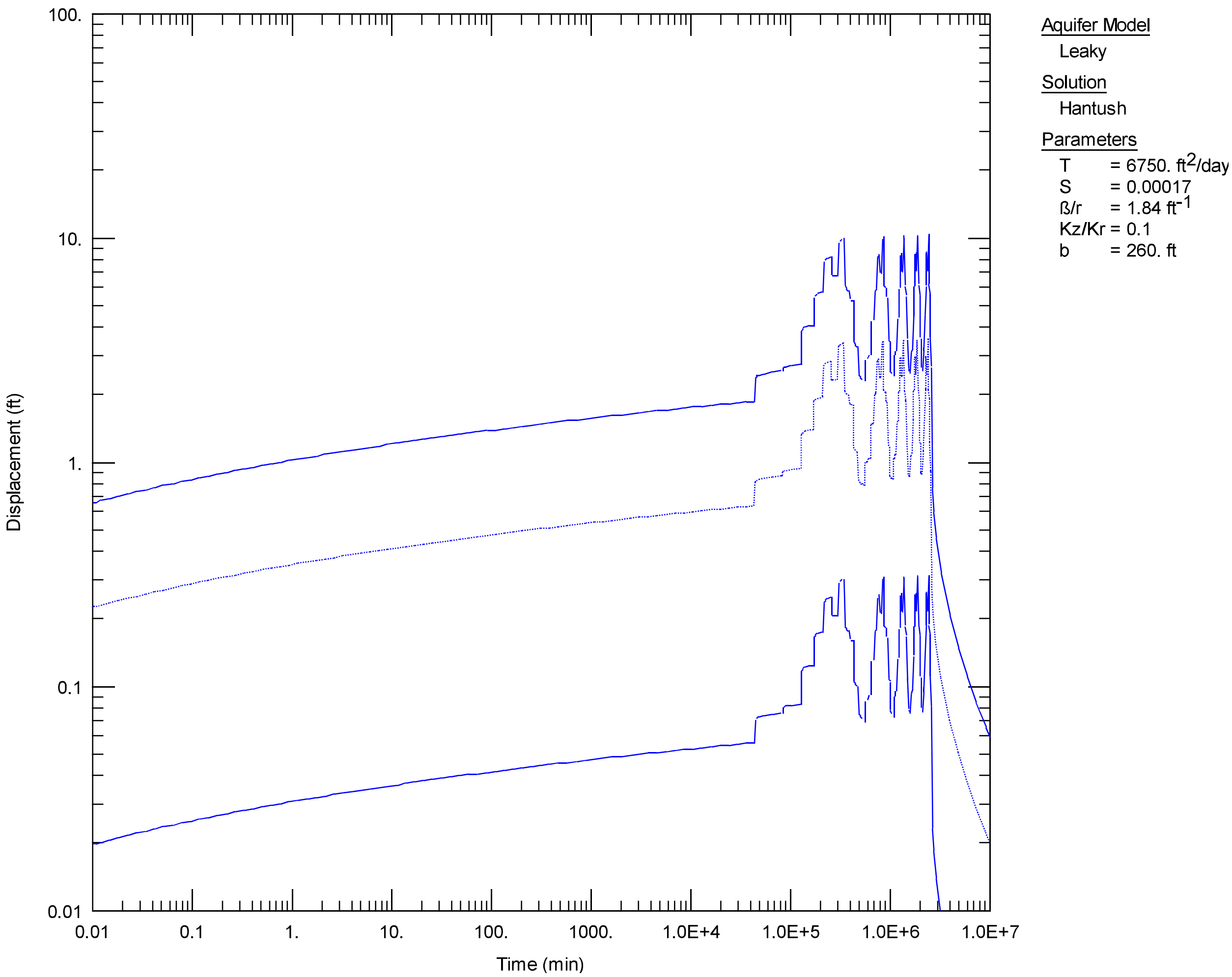

Figure 5: Hantush (1960) solution modeled time-drawdown plot using the Applicant provided monthly pumping schedule for the proposed wells (upper solid line: well pair GWIC IDs 135335 and 131977; dashed line: well pair GWIC IDs 175584 and 175632; lower solid line: GWIC ID 76372).

Using the Applicant-provided monthly pumping schedule, the one-foot drawdown contour for well pair GWIC ID 135335 and 131977 extends approximately 50 ft from the centroid of the two wells. The one-foot drawdown contour for well pair GWIC ID 175584 and 175632 extends approximately 15 ft from the centroid of the two wells. No existing water rights are within the modeled one-foot contour for either existing well pair.

With the addition of the proposed well, using the Applicant provided monthly pumping schedule, the one-foot drawdown contour for well pair GWIC ID 135335 and 131977 reduces to approximately 40 ft from the centroid of the proposed wells. The one-foot drawdown contour reduces to approximately 10 ft from well pair GWIC ID 175584 and 175632. The proposed well, GWIC ID 76372, has a maximum drawdown extent of approximately 0.3 ft. No water rights are within the modeled one-foot contour for either existing well pair or the proposed well.

6.2 Adverse Effect Surface Water - Net Depletions (Consumed Water)

Net depletion is equal to the consumed volume for a proposed groundwater use and is described as the calculated volume, rate, timing, and location of reductions to surface water that are offset by return flows (non-consumed water) from the place of use. Net depletion is evaluated by 1.) quantifying the consumed volume associated with the proposed use; 2.) identifying hydraulically connected surface waters; and 3.) calculating the monthly rate and timing of depletions to affected surface water(s).

1. Consumed Volume

Consumed groundwater does not return to the source aquifer. Consumed volume depends on the proposed use and its associated percentage of known consumption. Depletion is assumed to be equivalent to consumption on an annual basis unless return flows do not accrete to the potentially affected surface water.

Monthly consumption for irrigation is based on the net irrigation requirement calculated using the USDA Natural Resources Conservation Service (NRCS) Irrigation Water Requirements (IWR) program with inputs consistent with DNRC consumptive use rules in ARM 36.12.1902. Monthly consumption for irrigation of turf grass (lawns) is based on the net irrigation requirement from IWR with the following inputs for pasture grass and sprinkler irrigation:

- dry year
- have IWR re-calculate start and end date using default temperature
- 1-inch net irrigation application
- 0.25-inches of carryover moisture at the beginning and end of growing season.

Consumption for domestic or institutional purposes listed in **Table 8** are based on the results of studies by Kimsey and Flood (1987), Vanslyke and Simpson (1974), and Paul, Poeter, and Laws (2007).

Table 8: Percent consumption for domestic use by wastewater disposal/treatment method.

Wastewater Treatment/Disposal	Consumed
Individual drain fields	10%
Central treatment facility with minimal consumption	5%
Evaporation basin or land application	100%

For the subject application, the historical and proposed uses include municipal purposes with individual drain fields. Following DNRC standards, the total annual consumed volume is equal to 37.7 AF.

2. Hydraulically Connected Surface Water(s)

Net depletions to surface water depend on propagation of drawdown to locations where surface water is hydraulically connected to groundwater, the hydraulic properties of an aquifer, and is not a function of groundwater flow rate or direction (Theis, 1938; Leake, 2011). Hydraulic connection depends on the depth to groundwater beneath the beds of surface waters and can vary along a reach and with time of year. Drawdown from pumping can propagate through the entire thickness of the confining layer to overlying aquifers or surface waters (Konikow and Neuzil, 2007).

Per DNRC (2018) hydraulic connection of individual stream reaches to groundwater is evaluated by comparing streambed elevations to static groundwater elevations measured in wells less than 50 ft deep and within 1,000 ft of surface water or from published water table maps. Surface water within that area is considered hydraulically connected to the unconfined aquifer if static groundwater elevations are above or within 10 ft of the elevation of the stream bed. Hydraulic connection of a confined aquifer to surface water is based on information such as the continuity and thickness of a confining layer and whether overlying shallow unconfined aquifers are connected to surface water (DNRC, 2018).

The Clark Fork River near the proposed and existing wells is classified as perennial per the USGS National Hydrographic Dataset (NHD) and is approximately 600 ft from the Applicant's PODs. Shallow wells near the project location, north of the Clark Fork River, that meet the criteria for DNRC (2018) include GWIC ID 134163 in Section 23, Township 21 North, Range 29 West, (**Figure 6)** and GWIC IDs 76359 and 132636 in Section 9, Township 21 North, Range 29 West. Based on information from well logs with shallow static water levels upgradient and downgradient of the proposed wells, the adjacent terraces and steep banks which may cause a greater river incision depth into sediments of the shallow alluvium, and the ability of the aquitard to transmit water under the vertical hydraulic conductivity (K') as shown in **Eq. 1**, the Clark Fork River is considered hydraulically connected to the source aquifer.

Further, Provisional Permit No. 76N 30016270 identified the Clark Fork River as hydraulically connected and modeled depletions to it. Ashley Creek, a nearby surface water body, is approximately 3,100 ft from proposed well GWIC ID 76372. Ashley Creek is noted as intermittent in NHD and aerial imagery shows no defined stream channel. No wells less than 50 ft deep with shallow static groundwater elevations are mapped within the vicinity of Ashley Creek. As such, Ashley Creek was not considered a hydraulically connected source.

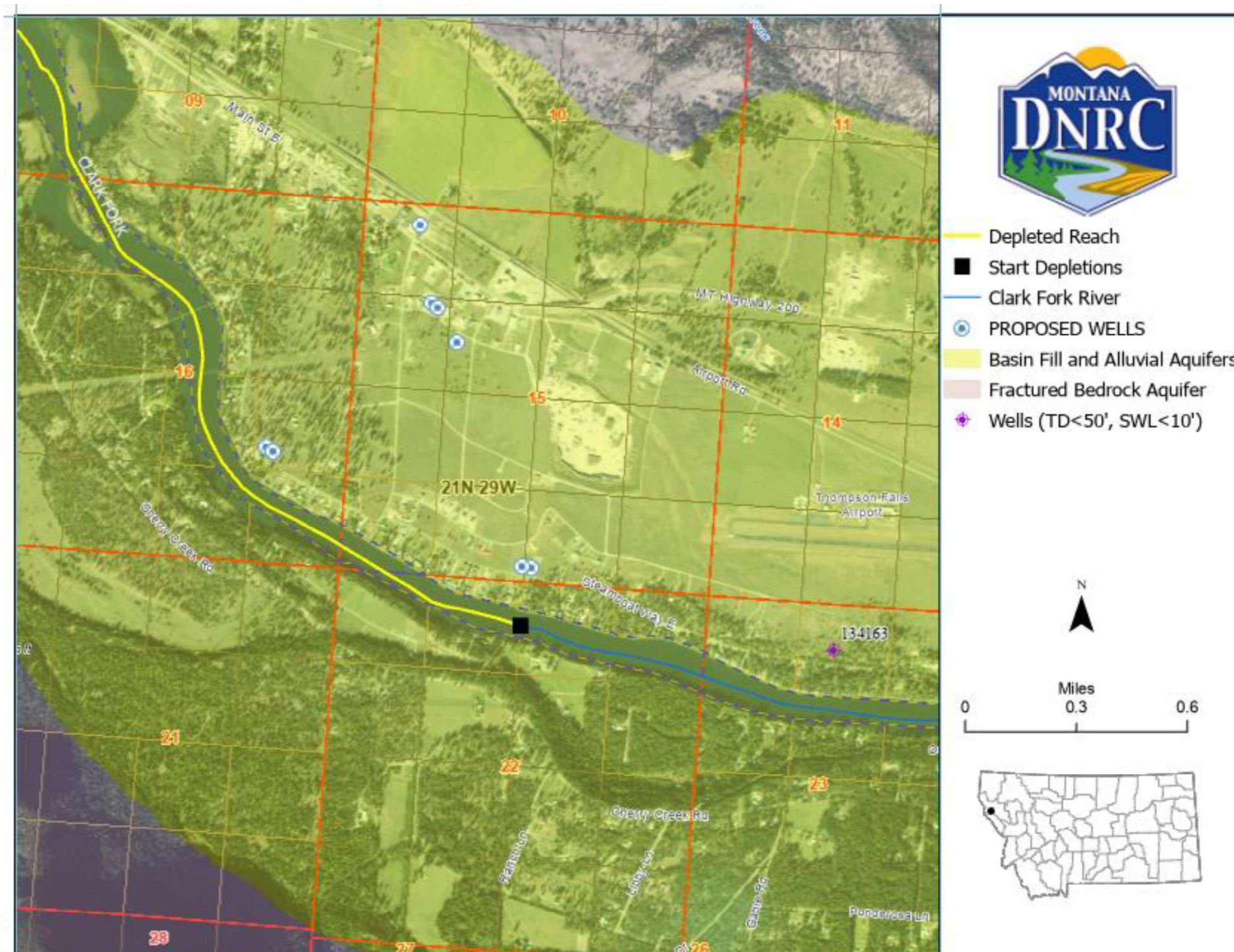

Figure 6: Proposed well and historical and proposed starting point of net depletions on the Clark Fork River.

3. Rate and Timing of Depletions

Evaluations of the rate and timing of depletions caused by pumping are based on the basic concept that groundwater pumping eventually is offset by an equivalent increase in recharge or decrease in discharge (Theis, 1940; Leake et al., 2008), a process defined as capture by Lohman (1972). Capture occurs as drawdown propagates to surface water and areas of phreatophyte vegetation that takes water directly from groundwater. In the absence of credible evidence to the contrary, capture of ET by phreatophytes is neglected and net depletion is assumed to equal total capture. This assumption is justified because published estimates for conditions common in Montana alluvial valleys indicate capture of ET generally is less than 10 percent of total capture (Xunhong, 2006). Capture of ET in ephemeral drainages may be significant and will be evaluated on an application-by-application basis.

The rate and timing of net depletion caused by pumping may be modeled using a variety of analytical and numerical models selected to fit site-specific conditions and needs. Simple models including the Alluvial Water Accounting System (AWAS) and the Well Pumping Depletion Model

(WPDM) typically are used by DNRC to model depletions to one source with simple aquifer boundaries. Adjustments may be made for more complex conditions or multiple sources using methods like those described by Contor (2011), analytical models by Hunt (2003) and Butler et al. (2001) or a superposition numerical groundwater flow model.

Modeling is not necessary in some situations such as where a proposed use is constant year-round because of the depth to the source aquifer and a distance to potentially affected stream reaches. Modeling of depletions can be simplified if the proposed place of use is located the same relative distance from the potentially affected surface water as the proposed wells and all non-consumed water infiltrates the source aquifer and returns to the potentially affected surface water as return flows. Under those simplifying assumptions, depletion can be modeled based on withdrawal of the monthly consumed amounts. Otherwise, depletion by the full withdrawals and return flows need to be modeled separately with net depletion calculated as depletion minus return flows.

Net depletion caused by pumping the source aquifer primarily occurs as propagation of drawdown through the overlying confining layer to the affected reach of the Clark Fork River. As identified in **Table 2**, net depletion effects are expected to be dampened resulting in a constant year-round rate of depletion to Clark Fork River downstream of the eastern boundary of NENW¼, Section 22, Township 21 North, Range 29 West.

The distance of the historical and proposed wells from the Clark Fork River, the similar distances along the length of the river, and similar completion depth of the existing wells and proposed well, results in no change to the location of net depletions and timing of net depletions (constant year-round). As identified in **Table 2**, the calculated historical and proposed annual net depletion volume of 37.7 AF to the Clark Fork River will result in monthly net depletion rates of 23.4 gpm.

Review

This document has been reviewed on March 12, 2025 in accordance with Category 7 of DNRC's Water Sciences Bureau Minimum Standards of Review, Version 2, February 2024.

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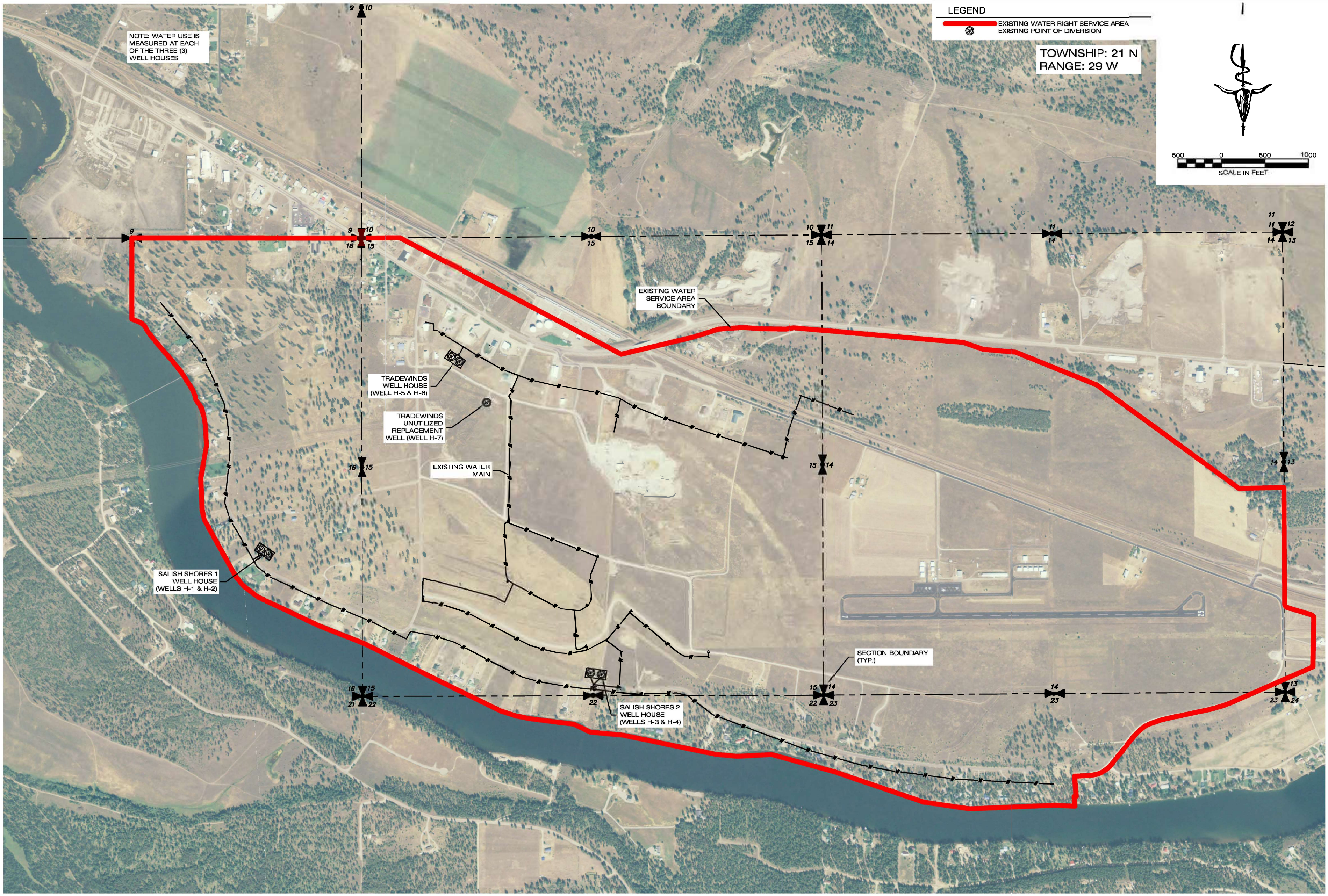
ATTACHMENT B

MAPS

B.1 – *Question 17* **Historical Use Map (Figure 1)**

B.2 – *Questions 18 and 32* **Proposed Use Map (Figure 2)**



IMEG
1817 SOUTH AVE. W. STE. A
MISSOULA, MT
59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

PLOT DATE: 5/29/2025 8:51 AM

REVISIONS	DATE

DESIGNED: DMF
DRAFTED: LTM
CHECKED: DMF
DATE: MAY, 2025

LOCATION: THOMPSON FALLS SANDERS COUNTY

PREPARED FOR: SALISH SHORES UTILITY CORP

PROJECT NAME: POU/POD CHANGE APPLICATION

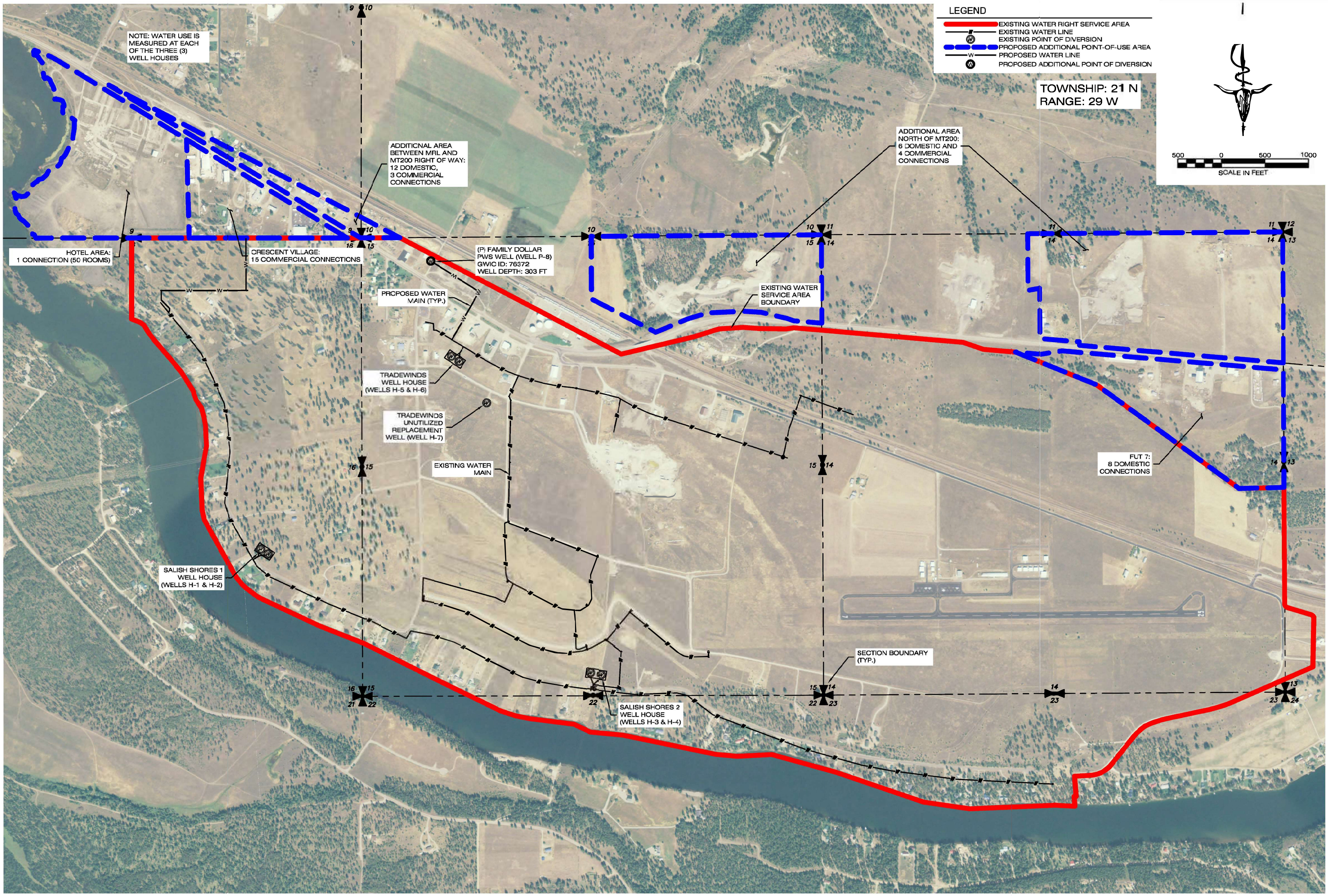
SHEET TITLE: WATER SERVICE AREA EXISTING CONDITIONS

PROJECT NO. 20001572

SHEET: 1 OF 2

FIGURE 1

DWG LOCATION: G:\2020\20001572.01\DESIGN\CIVIL\3_DRAFTING\1_DRAWINGS\AUTOCAD\EXHIBITS\20001572.02 WATER SERVICE AREA 2024-01-30.DWG



1817 SOUTH AVE. W. STE. A
MISSOULA, MT
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PH: 406.721.0142
FAX: 406.721.5224
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PLOT DATE: 5/29/2025 9:40 AM

REVISIONS	DATE

DESIGNED: DMF
DRAFTED: LTM
CHECKED: DMF
DATE: MAY. 2025

LOCATION: THOMPSON FALLS SANDERS COUNTY

PREPARED FOR: SALISH SHORES UTILITY CORP

PROJECT NAME: POU/POD CHANGE APPLICATION

SHEET TITLE: WATER SERVICE AREA PROPOSED AREAS

PROJECT NO.: 20001572

SHEET: 2 OF 2

FIGURE 2

DWG LOCATION: G:\2020\20001572.01\DESIGN\CIVIL3_DRAFTING\1_DRAWINGS\AUTOCAD\EXHIBITS\20001572.02 WATER SERVICE AREA 2024-01-30 .DWG

ATTACHMENT C

POINTS OF DIVERSION AND PLACE OF USE

C.1 – *Question 19.a* **Existing and Proposed Points of Diversion**

C.2 – *Question 20.b* **Proposed Place of Use Details**

C.1 – EXISTING AND PROPOSED POINTS OF DIVERION

Table 1: Salish Shores Points of Diversion

POD ID[1]	1/4	1/4	1/4	Sec	Twp	Rge	County	Lot	Blk	Tr	Sub	New
H1	SW	NE	SE	16	21N	29W	Sanders				Salish Shores	N
H2	SW	NE	SE	16	21N	29W	Sanders				Salish Shores	N
H3	SW	SW	SE	15	21N	29W	Sanders	19A			Salish Shores 2	N
H4	SW	SW	SE	15	21N	29W	Sanders	19A			Salish Shores 2	N
H5	NE	SW	NW	15	21N	29W	Sanders	12			Tradewinds Comm Village Phase 2	N
H6	NE	SW	NW	15	21N	29W	Sanders	12			Tradewinds Comm Village Phase 2	N
H7[2]	NW	SE	NW	15	21N	29W	Sanders				COS 3942	N
P8	NE	NE	NW	15	21N	29W	Sanders	B			COS 2874	Y

[1] H1-H7 = Historical or existing point of diversion ID; P8 = Proposed point of diversion.

[2]The Qtr Qtr Qtr Section description in DNRC records for H7 appears to be in error, the details presented in Table 1 are more accurate.

C.2 - MUNICIPAL PLACE OF USE (PROPOSED)

Table 2: Salish Shores Proposed Place of Use

1/4	1/4	Section	Township	Range	County
NE	SW	9	21 North	29 West	Sanders
SE	SW	9	21 North	29 West	Sanders
NW	SE	9	21 North	29 West	Sanders
SW	SE	9	21 North	29 West	Sanders
SE	SE	9	21 North	29 West	Sanders
SW	SW	10	21 North	29 West	Sanders
NE	NW	14	21 North	29 West	Sanders
NW	NE	14	21 North	29 West	Sanders
NE	NE	14	21 North	29 West	Sanders
SE	NW	14	21 North	29 West	Sanders
SW	NE	14	21 North	29 West	Sanders
SE	NE	14	21 North	29 West	Sanders
NE	SE	14	21 North	29 West	Sanders
NE	NE	15	21 North	29 West	Sanders
NW	NE	15	21 North	29 West	Sanders

ATTACHMENT D

ADVERSE EFFECT

D.1 – *Question 24* **Diversion Control**

D.2 – *Question 25* **Existing Water Right Protection**

D.3 – *Question 27* **Calls for Water**

D.1 – DIVERSION CONTROL

Should a call for water be made on the source aquifer by senior water right holders, the Applicant will promptly reduce pumping from the source of supply and implement water conservation practices for the system and its users.

D.2 – EXISTING WATER RIGHT PROTETCTION

During times of water shortage, existing (senior) water rights will be satisfied prior to the Applicant's diversion of water from the authorized points of diversion. Since many end users rely on the Salish Shores municipal water system and complete cessation of system water supply would create significant public health and safety issues, existing water right holders would be promptly contacted to identify water savings methods that reduce the cumulative impact to the source aquifer, while maintaining the basic minimal needs of all involved water users.

D.3 – CALLS FOR WATER

The proposed change in use would add an additional well point of diversion and expand the Salish Shores water service area (place of use). The Salish Shores PWS will otherwise continue to be operated as it has since the prior (2008) change authorization, wherein the system pump, conveyance, and monitoring program will be maintained and operated to serve all system users. The additional point of diversion and new places of use should in no way change the Applicant's ability to make a call for water as the system will generally operate as it has historically.

ATTACHMENT E

ADEQUATE MEANS OF DIVERSION AND OPERATION

E.1 – *Question 33* **Diversion Capacity**

E.2 – *Question 34* **System Conveyance**

E.3 – *Question 35.a.* **Easements**

E.4 – *Question 36* **Plan of Operation**

E.1 – DIVERSION CAPACITY

Wells H-1 & H-2:

Goulds 5CHC010 – 165 gpm @ 180' of TDH (calculated during 2011 full system analysis based on WaterCAD model). See pump curves at end of Attachment E.

Wells H-3, H-4, H-5, & H-6:

Goulds 150H10-4 – 220 gpm @ 140' of TDH (calculated during 2011 full system analysis based on WaterCAD model). See pump curves at end of Attachment E.

Wells H-7 & P-8:

Goulds 5CHC010 – 180 gpm @ 158' of TDH (theoretical because these are not currently connected into the system, but they have the same pump as H-1 and H-2 and both have roughly 22' higher static water levels than H-1 and H-2. See pump curves at end of Attachment E.

E.2 – SYSTEM CONVEYANCE

The existing and proposed Salish Shores water conveyance system will consist of 3-inch to 6-inch Class 200 PVC distribution lines. The total length of the water distribution system is approximately 30,000 ft. The system capacity is designed to handle the maximum combined flow rate of Salish Shores' water right permits (1,448 gpm).

E.3 – EASEMENTS

Easements may be needed to locate new main lines and service lines to system end users. Standard practices will be followed to establish any needed easements, and documentation can be provided to DNRC when available if requested by the Department.

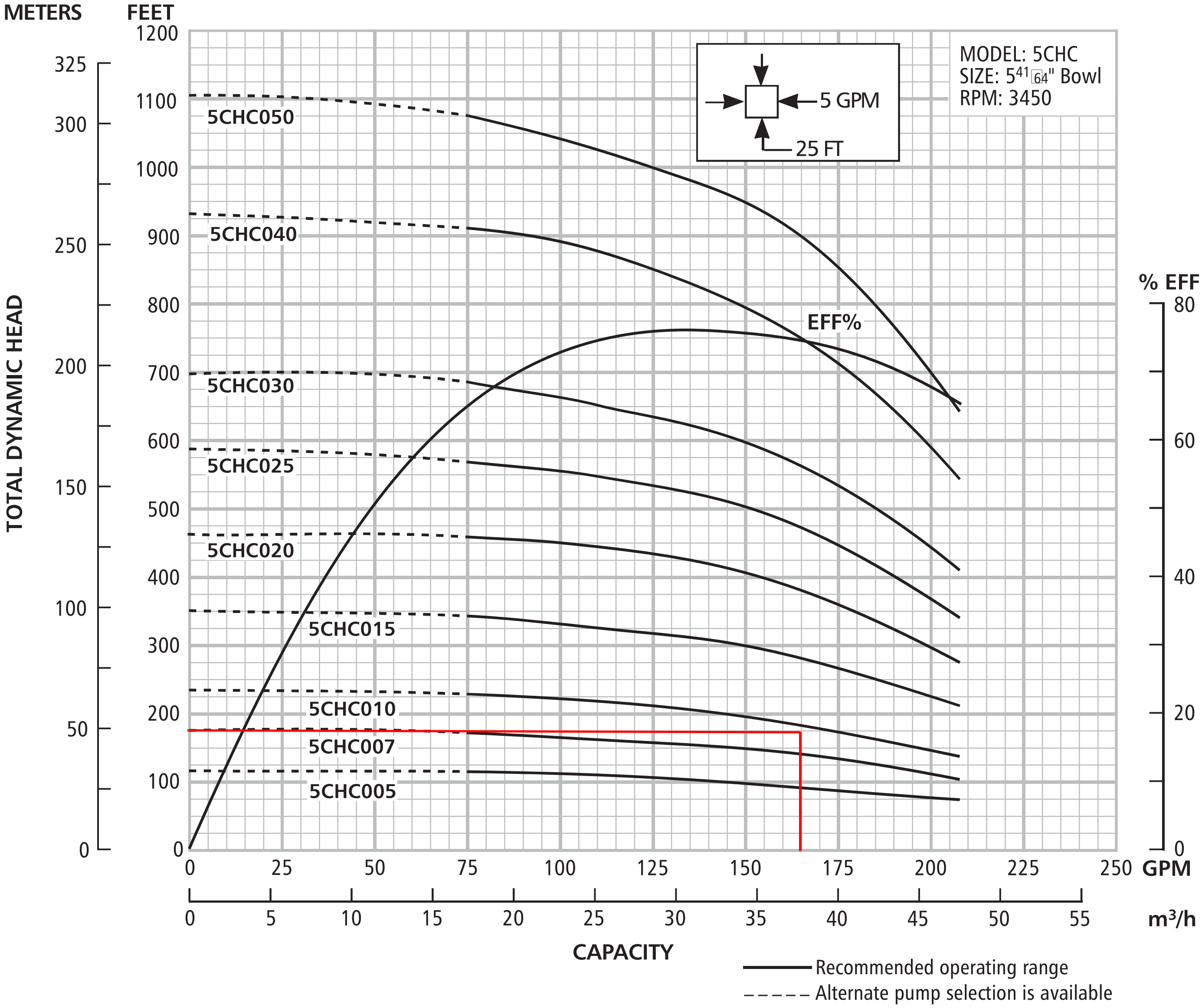
E.4 – PLAN OF OPERATION

A 2008 change authorization (76N 30027719) consolidated all four Project water right permits into a single system as required by the Public Service Commission Master Development Plan. Following the change authorization, the permits have been operated and administered as supplemental municipal rights, physically manifold as one system, with all seven groundwater PODs having the capability of serving the entirety of the POU or service area. Prior to the 2008 authorization, each permit served smaller, stand-alone service areas that generally reflected the incremental, or phased, growth of Salish Shores.

The manifold system has primarily relied on four wells that serve as the main sources of water, with the other three wells serving as backups. Wells 1 and 2 are located in a well house (Salish Shores I) situated in the SWNESE Sec 16, T21N, R29W (Figures 1 and 2). Wells 3 and 4 are located in a well house (Salish Shores II) situated in the SWSWSE Sec 15, T21N, R29W. Wells 5 and 6 are located in a third well house (Tradewinds) situated in the NESWNW Sec 15, T21N, R29W. The four wells located in the Salish Shores I and Tradewinds wellhouses are the primary sources of water. Well 7 is a stand-alone well also used for backup purposes, if needed, and is located in the NWSENW Sec 15, T21N, R29W (note that the Well 7 location currently on record with DNRC appears to be incorrect).

The proposed POD (Well 8) is located in NENENW Sec 15, T21N, R29W, will serve the Family Dollar Store on Montana Highway 200, in addition to providing redundancy to the larger Salish Shores system once connected to the distribution infrastructure.

WELLS 1 & 2

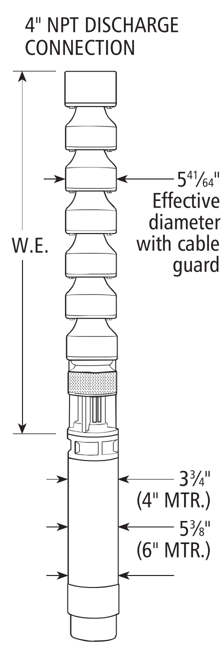


DIMENSIONS AND WEIGHTS

HP	Stages	W.E. Order Number	W.E. Length	W.E. Wt. (lbs.)
5	2	05CHC00544CTB	20.2	57
		05CHC00564CTB	22.8	62
7.5	3	05CHC00744CTB	25.2	70
		05CHC00764CTB	27.5	75
10	4	05CHC01064CTB	32.1	88
15	6	05CHC01564CTB	41.4	114
20	8	05CHC02064CTB	50.7	140
25	10	05CHC02564CTB	59.9	166
30	12	05CHC03064CTB	69.2	192
40	16	05CHC04064CTB	87.7	244
50	19	05CHC05064CTB	101.6	283

(All dimensions in inches and weights in lbs. Do not use for construction purposes.)

PLEASE NOTE:
- Order motors separately.
- For intermediate horsepower pumps consult factory.
- Solid line is recommended operating range. The dotted line (– – – –) signifies an alternate pump selection is available.
- Please specify all options changes in W.E. order number.

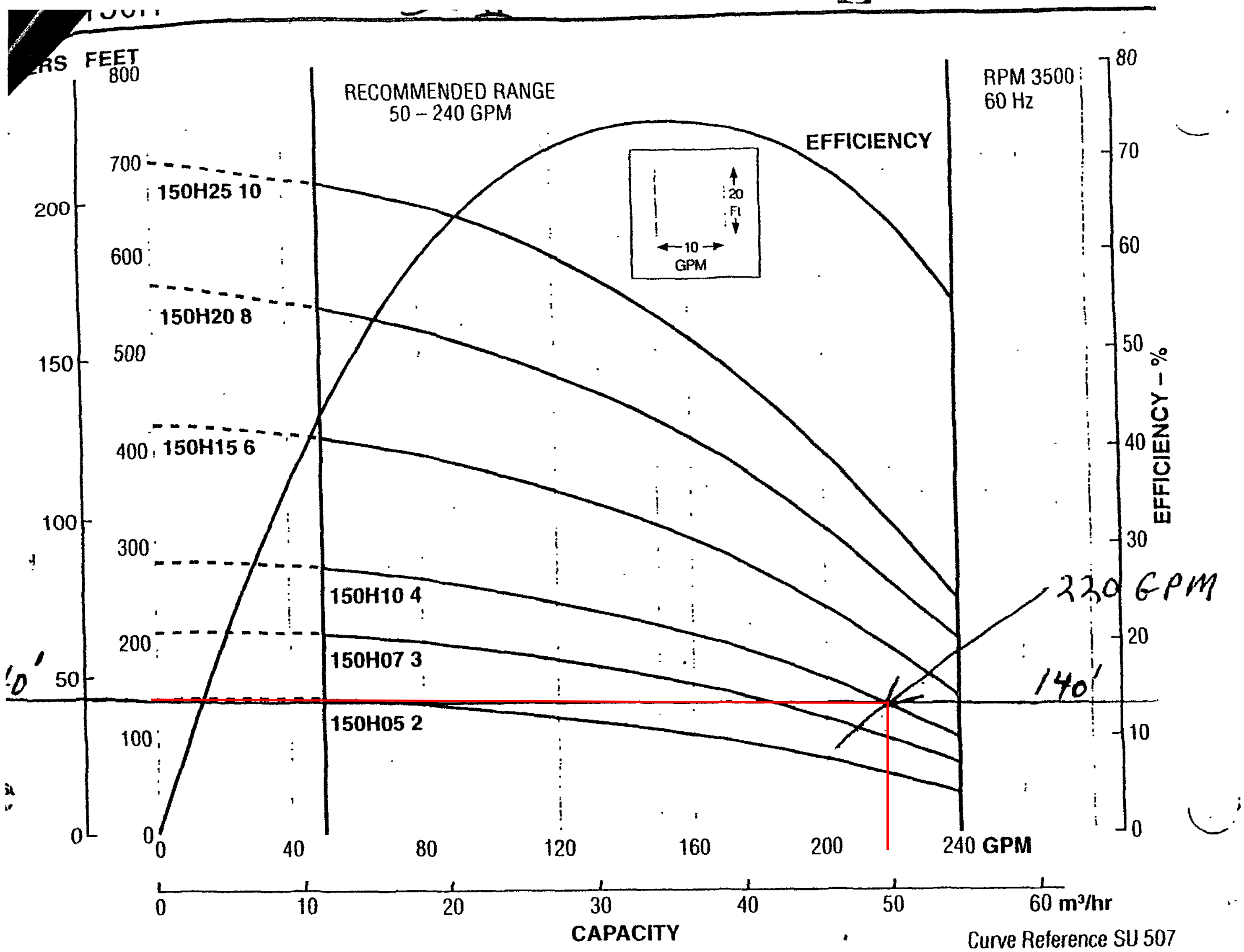


MATERIALS OF CONSTRUCTION

Part Name	Material
Shaft	ASTM A582 TYPE 416
Coupling	ASTM A582 S41600 CD
Suction Adapter	Ductile Iron ASTM A536
Discharge Bowl	ASTM A48 CL 30B
Bronze Bearings	ASTM B584
Discharge Bowl Bearing	ASTM B584
Taperlocks	ASTM A108 GR 101B
Bowl	ASTM A48 CL 30B
Upthrust Collar	Polyethylene
Impeller	ASTM B584
Fasteners	SAEJ429 GR 8
Cable Guard	ASTM A240 S 30400
Suction Strainer	ASTM A240 S 30400

WELLS 3, 4, 5, & 6

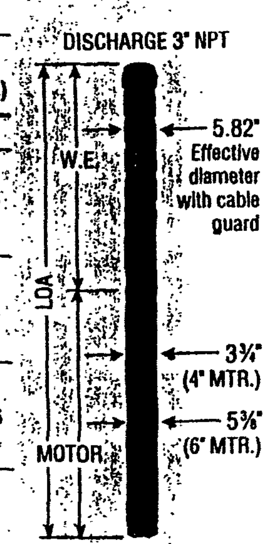
GOULDS PUMPS, INC.



IMENSIONS AND WEIGHTS

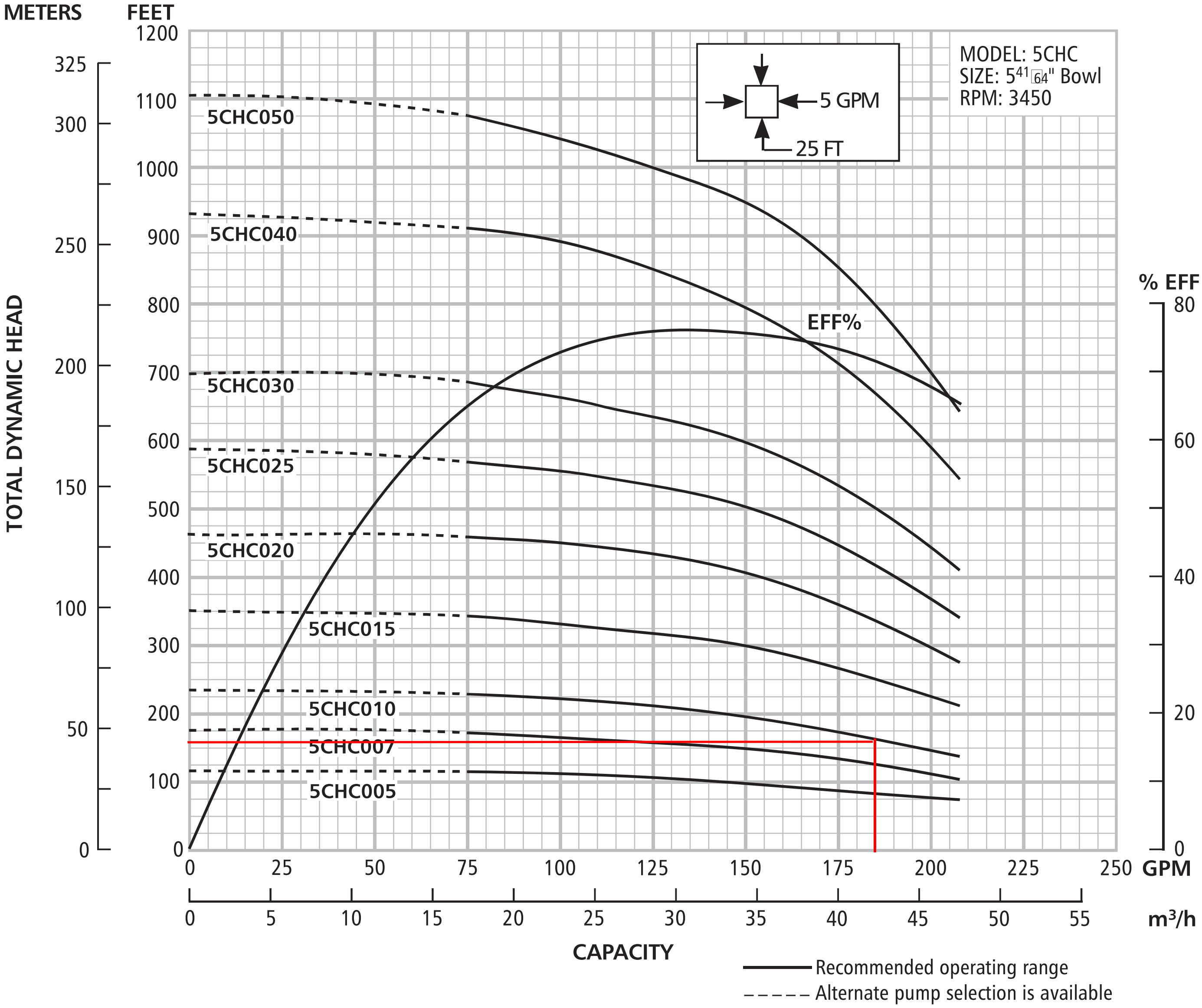
IP	Stages	W.E. Order No.	Motor Order No.	PH	Motor Volts	Motor Lgth.	W.E. Lgth.	LOA	Wt. (lbs.)
			S10940	1	230	29.5	18.0	47.5	95
5	2	150H05 2	S10978 S10970 S10975 S10979	3	200 230 460 575	23.5	18.0	41.5	95
			S11970	1	230	28.0	24.3	52.3	185
7.5	3	150H07 3	S11978 S11971 S11972 *S11979	3	200 230 460 575	24.2	24.3	48.5	160
			S12970	1	230	30.6	29.3	59.9	215
10	4	150H10 4	S12978 S12971 S12972 *S12979	3	200 230 460 575	25.5	29.3	54.8	185

HP	Stages	W.E. Order No.	Motor Order No.	PH	Motor Volts	Motor Lgth.	W.E. Lgth.	LOA	Wt. (lbs.)
			S13970	1	230	33.1	39.3	72.4	255
15	6	150H15 6	S13978 S13971 S13972 *S13979	3	200 230 460 575	28.0	39.3	67.3	229
20	8	150H20 8	S14978 S14971 S14972 *S14979	3	200 230 460 575	30.6	49.3	79.9	274
25	10	150H25 10	S15978 S15971 S15972 *S15979	3	200 230 460 575	33.2	59.3	92.5	316



All dimensions are in inches and weights in lbs. Do not use for construction purposes.)
*Non-stock motors have a six (6) week lead time.

GOULDS PUMPS



DIMENSIONS AND WEIGHTS

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10	4	05CHC01064CTB	32.1	88
15	6	05CHC01564CTB	41.4	114
20	8	05CHC02064CTB	50.7	140
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(All dimensions in inches and weights in lbs. Do not use for construction purposes.)

PLEASE NOTE:
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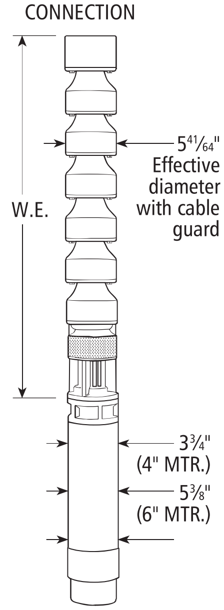

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Taperlocks	ASTM A108 GR 101B
Bowl	ASTM A48 CL 30B
Upthrust Collar	Polyethylene
Impeller	ASTM B584
Fasteners	SAEJ429 GR 8
Cable Guard	ASTM A240 S 30400
Suction Strainer	ASTM A240 S 30400

ATTACHMENT F

BENEFICIAL USE

F.1 – *Question 40.b.* **Municipal Beneficial Use**

F.1 - MUNICIPAL BENEFICIAL USE (QUESTION 40.b.)

Salish Shores has ample unperfected water rights capacity to service additional areas with municipal water (see Permit No. 76N 30016270). Proposed water use will continue to fall under the multiple sub-purposes that municipal water rights encompass (e.g., domestic, lawn and garden, commercial) and the amount of water Salish Shores is requesting to change is beneficial to the Thompson Falls community. The project completion notice will refine and provide more specific information regarding the fully perfected use.

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

Water Resources Division – Kalispell Regional Office
655 Timberwolf Pkwy, Ste. 4
Kalispell, MT 59901-1215
(406) 752-2288
DNRCKalispellWater@mt.gov

March 20, 2025

SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS MT 59873-1030

Subject: Completed Technical Analyses Report for Change Preapplication No. 76N 30165123

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. 76N 30165123 based on the information provided in your Preapplication Meeting Form accepted by the Department on February 3, 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 Travis Wilson (Kalispell Regional Office), and a Part B completed by Evan Norman (Water Sciences Bureau).

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 Kalispell Regional Office by September 16, 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)).

If you have any questions, please contact me at (406) 752-2746 or Travis.Wilson@mt.gov.

Sincerely,

Travis Wilson
Water Resource Specialist
Kalispell Regional Water Resource Office

Encl.: Groundwater Change Technical Analyses Report Parts A-B

Cc via email: Bryan Gartland, Aspect Consulting

Groundwater Change Technical Analyses Report – Part A

Department of Natural Resources and Conservation (DNRC or Department)
Water Resources Division
Travis Wilson, Water Resources Specialist, Kalispell Regional Office

Application No.	76N 30165123	**Proposed Point of Diversion**	NENWNW of Sec 15, Twp 21N, Rge 29W, Sanders County
Applicant	Salish Shores Utility Corp Inc.		

Overview

This report is Part A of a two-part publication which analyzes data submitted by the Applicant in support of the above-mentioned water right 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 Groundwater Change Technical Analyses Report – Part A contains the following sections:

Variances

No variances were required from ARM 36.12.121.

1.0 Application Details

The Applicant proposes to add an eighth point of diversion (POD) to the Salish Shores water system and to change the place of use to cover the full projected Salish Shores water service area. No additional flow rate or volume is requested or required to supply the expanded service area. The project is in Sanders County and the source is groundwater. This change involves Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270, which are the water rights serving the manifold Salish Shores water system. The details of these existing water rights are summarized in Tables 1 and 2. These water rights were previously changed by unperfected water right Change Application No. 76N 30027719. Provisional Permit Nos. 76N 81519-00, 76N 85780-00, and 76N 97278-00 are perfected permits, while Provisional Permit No.

76N 30016270 is unperfected. The proposed eighth POD and proposed new places of use are summarized in Tables 3 and 4, respectively.

Table 1: Summary of Water Rights Proposed for Change

Water Right Number	Priority Date	Purpose	Flow Rate (GPM)	Volume (AF)	Period of Diversion & Use	Means of Diversion	Points of Diversion	Places of Use
76N 81519-00	May 14, 1992	Municipal	110.0	48.90	01/01 - 12/31	Wells (7x)	See Table 2 (same for all four provisional permits)	
76N 85780-00	June 1, 1993		210.0	104.32				
76N 97278-00	May 17, 1996		440.0	25.98				
76N 30016270	August 19, 2005		688.5	198.10				

Table 2: Summary of the Points of Diversion and Places of Use for the Water Rights Proposed for Change

The four provisional permit water rights proposed for change serve a manifold system and share all of the same points of diversion and places of use.

POD ID	GWIC ID	1/4	1/4	1/4	Section	Township	Range	County
1	135335	SW	NE	SE	16	21 N	29 W	Sanders
2	131977	SW	NE	SE	16	21 N	29 W	Sanders
3	139319	SW	SW	SE	15	21 N	29 W	Sanders
4	139318	SW	SW	SE	15	21 N	29 W	Sanders
5	175584	NE	SW	NW	15	21 N	29 W	Sanders
6	175632	NE	SW	NW	15	21 N	29 W	Sanders
7	175585	NE	SW	NW	15	21 N	29 W	Sanders
POU ID	**---**	**1/4**	**1/4**	**1/4**	**Section**	**Township**	**Range**	**County**
1	---	---	---	---	15	21 N	29 W	Sanders
2	---	---	---	E2	16	21 N	29 W	Sanders
3	---	---	W2	SW	13	21 N	29 W	Sanders
4	---	---	---	---	14	21 N	29 W	Sanders
5	---	---	N2	N2	22	21 N	29 W	Sanders
6	---	---	N2	N2	23	21 N	29 W	Sanders

Table 3: Proposed Point of Diversion for the Water Rights Proposed for Change

GWIC ID	1/4	1/4	1/4	Section	Township	Range	County
76372	NE	NW	NW	15	21 N	29 W	Sanders

Table 4: Proposed Places of Use for the Water Rights Proposed for Change

POU ID	1/4	1/4	Section	Township	Range	County
7	E2	SW	9	21 N	29 W	Sanders
8	W2	SE	9	21 N	29 W	Sanders
9	SE	SE	9	21 N	29 W	Sanders
10	SW	SW	10	21 N	29 W	Sanders
11	NE	NW	14	21 N	29 W	Sanders
12	---	NE	14	21 N	29 W	Sanders
13	SE	NW	14	21 N	29 W	Sanders
14	NE	SE	14	21 N	29 W	Sanders
15	N2	NE	15	21 N	29 W	Sanders

Note: These are the legal land descriptions of the proposed new places of use only. These will be combined with the existing places of use and summarized in their most simplified form to describe the place of use of the total Salish Shores service area in the official water right records. See Figure 2 for a breakdown of the existing and proposed places of use.

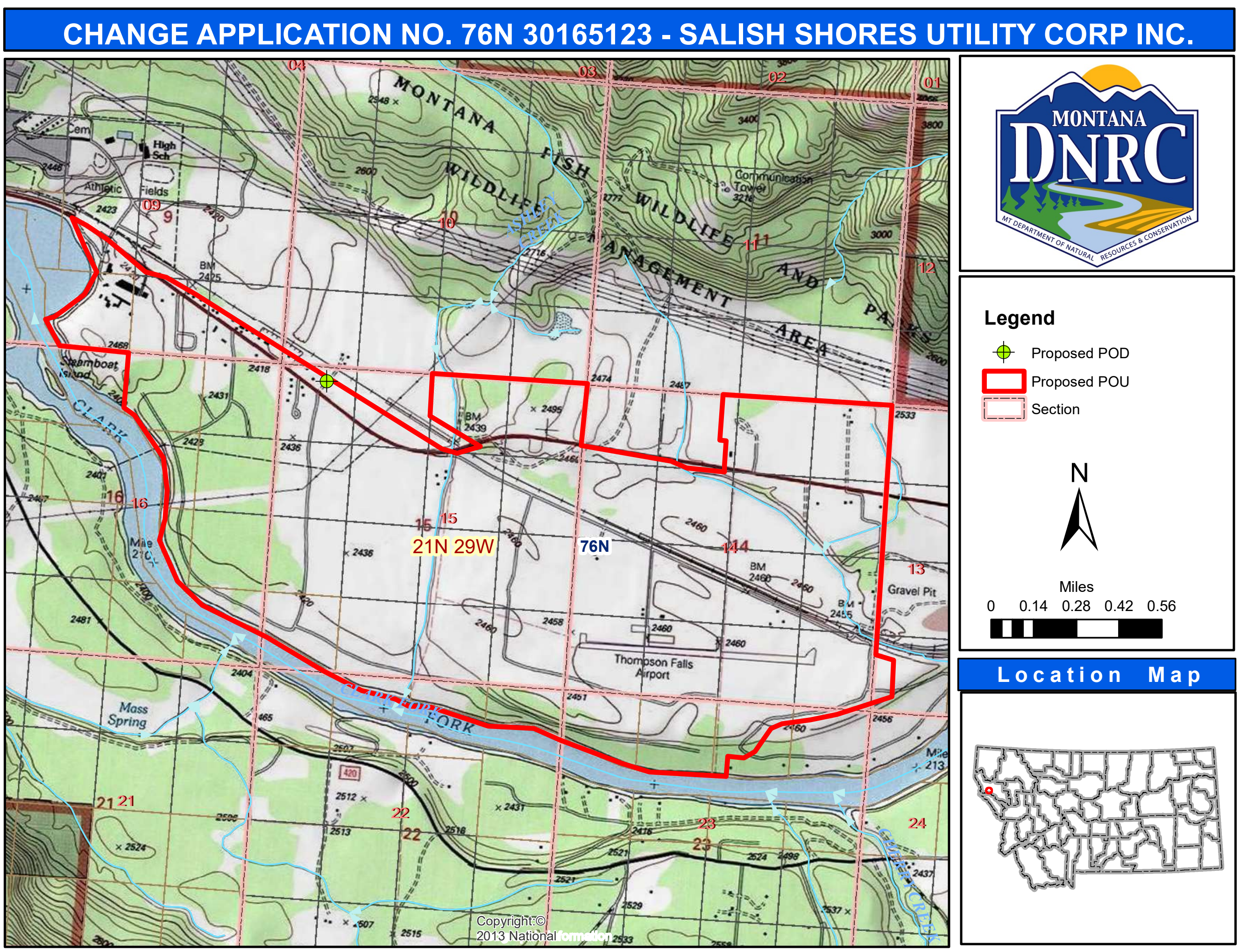

Figure 1: Project vicinity/overview map.

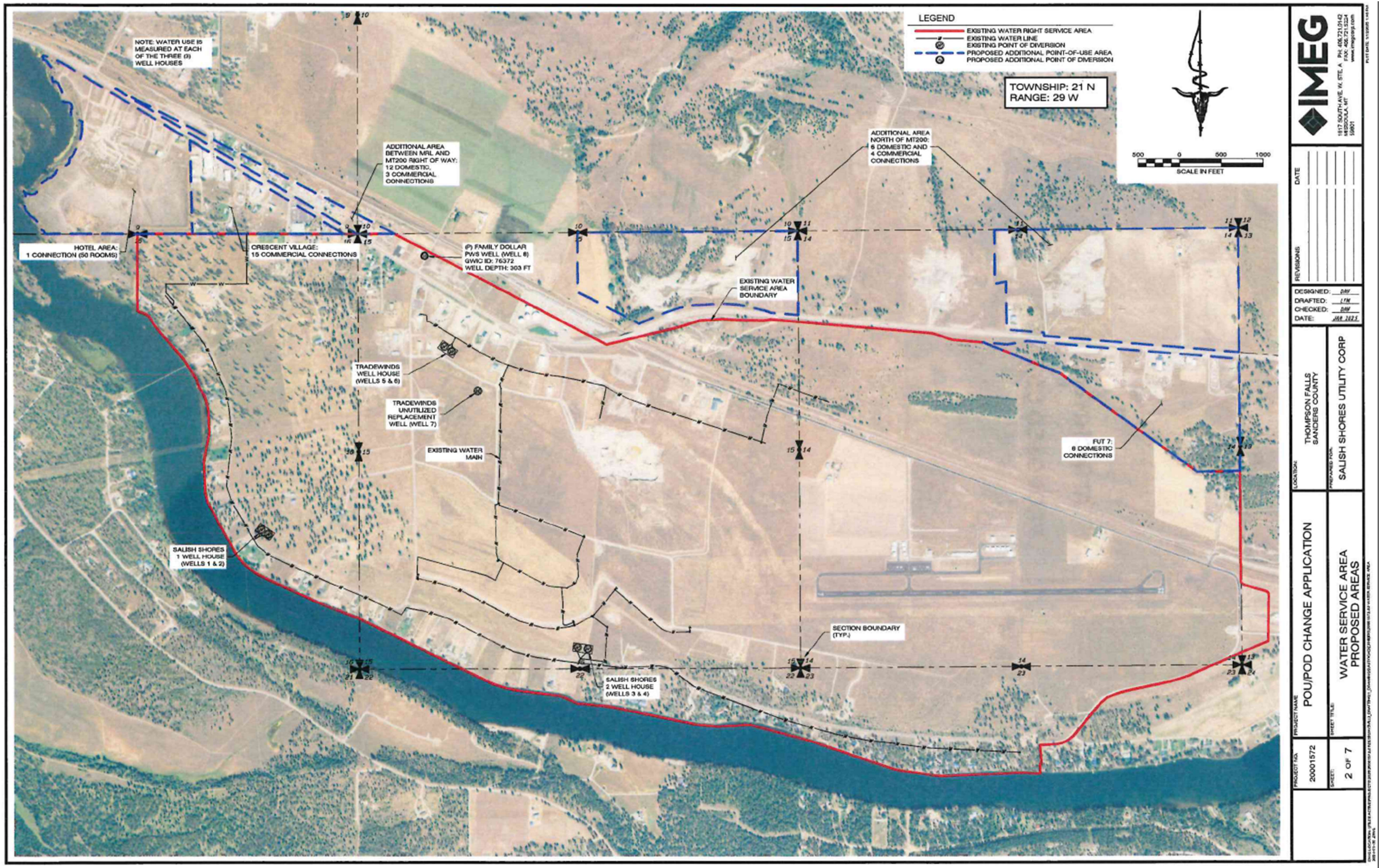

Figure 2. Map of the Applicant's proposed point of diversion, proposed place of use, existing/historical points of diversion, and historical place of use. The solid red outline delineates the existing place of use, while the dashed blue outlines delineate the proposed new places of use.

2.0 Historical Use Analysis

2.1 Summary of Historical Use

Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 were previously changed by unperfected water right Change Authorization No. 76N 30027719. These water rights are supplemental because they all share the same points of diversion and places of use. The historical use of these water rights was proven by the applicant and quantified by the DNRC in Change Authorization No. 76N 30027719. The applicant did not submit additional addenda or information with this application contradicting the Department's previous findings, therefore the DNRC will use the findings from the previous historical use analysis for this application. Provisional Permit Nos. 76N 81519-00, 76N 85780-00, and 76N 97278-00 are perfected permits. Provisional Permit No. 76N 30016270 is unperfected and therefore carries forward its full flow rate and volume to this change application. The historical use of these water rights is summarized in Table 5.

The Department will consider the following values when evaluating the historical use of Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and 76N 30016270 for the adverse effect criterion:

Table 5: Proposed Places of Use for the Water Rights Proposed for Change

Water Right Number	Historical Purpose	Historical Places of Use	Historical Points of Diversion	Maximum Historical Flow Rate (GPM)	Historically Consumed Volume (AF)	Historically Diverted Volume (AF)
76N 81519-00	Municipal	See Table 2		110.00	4.89	48.90
76N 85780-00				210.00	10.43	104.32
76N 97278-00				440.00	2.60	25.98
76N 30016270				688.50	19.81	198.10

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Review

This document has been reviewed by the Department on March 20, 2025.

References

Department Standard Practice for Determining Historical Use

Groundwater Change Technical Analyses Report- Part B

Department of Natural Resources and Conservation (DNRC)
Water Resources Division
Evan Norman, Groundwater Hydrologist, Water Sciences Bureau (WSB)

Applicant	Salish Shores Utility Corp.	**Point of Diversion Legal Land Description**	NW¼ Section 15, Township 21North, Range 29 West
Application No.	76N 30165123		

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).

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

1.0 Executive Summary

Application Details

The Applicant proposes to add a point of diversion (POD) and change the place of use (POU) for Provisional Permit Nos. 76N 81519-00, 76N 85780-00, 76N 97278-00, and unperfected Permit No. 76N 30016270. A previous Change Authorization No. 76N 30027719 added an additional POD to the existing permits for a total of 7 wells. The proposed change would add one well to the existing municipal water supply system for a total of 8 wells and change the POU to include the entire Salish Shores water service area near Thompson Falls, Sanders County, Montana.

Information provided by the Applicant shows that four (Montana Bureau of Mines and Geology (MBMG) Groundwater Information Center (GWIC) IDs 135335, 131977, 175584, 175632) of the 7 existing wells are the primary Production Wells for the service area. Therefore, the existing (historical) pumping schedule was apportioned to four wells (**Table 6)**, with the proposed pumping schedule apportioned to 5 wells (**Table 7)**, including GWIC ID 76372. The redundant wells, GWIC IDs 139319, 139318, and 175585 were not assigned proportions of historical or proposed pumping volumes. The list of wells, including well depth and estimated capacity is shown in **Table 1**. The total flow rate and volume proposed for change is 1,448.5 gallons per minute (gpm) and 377.4 acre-ft (AF) per year for municipal purpose with a period of diversion and period of use from January 1 to December 31.

Table 1: PODs for Change Application No. 76N 30165123.

GWIC ID	Well Depth (ft, btc)	Estimated Capacity (gpm)
135335	121	246.0
131977	141	245.0
139319	240	427.0
139318	246	307.0
175584	367	160.0
175632	355	240.0
175585	423	75.0
76372 (proposed)	303	167.5

Approved Variances from ARM 36.12.121

No variances were required from ARM 36.12.121.

WSB Technical Findings

Based on information submitted, the WSB estimated aquifer properties, evaluated the production well(s) available water column, and evaluated potential impacts to existing groundwater and surface water rights. Adverse effects were evaluated by comparing drawdown in existing wells, net depletions to surface water for existing and proposed conditions. These analyses are in support of the following criteria assessment: adequacy of diversion and adverse effect. A summary of WSB findings described in subsequent sections are listed below.

TECHNICAL ANALYSES FINDINGS

AQUIFER TEST ANALYSIS	An aquifer Transmissivity (T) of 6,750 ft^2/day, Storativity (S) of 1.7 x 10^{-4}, and leakage parameter (β) of 0.14 from information in Provisional Permit No. 76N 30016270 and Geomatrix Consultants, Inc. (2005) are recommended for aquifer properties.
ADEQUACY OF DIVERSION	The proposed well using the Hantush (1960) early-time solution, a T of 6,750 ft^2/day, S of 1.7 x 10^{-4}, β of 0.14 and the monthly pumping schedule identified in **Table 5** would experience 2.9 feet (ft) of drawdown after the first year, leaving approximately 256.8 ft of available water column above the bottom of the well.
ADVERSE EFFECT (DRAWDOWN IN EXISTING WELLS)	After five years, assuming wells are pumped according to Applicant provided schedule, no new groundwater rights in the source aquifer are predicted to experience drawdown greater than or equal to one foot.
ADVERSE EFFECT (NET DEPLETION TO SURFACE WATER)	The Clark Fork River, starting at the eastern boundary of NENW of Section 22, Township 21 North, Range 29 West, is identified as being hydraulically connected to the source aquifer. Monthly net depletions resulting from the historical and proposed conditions are identified in **Table 2** and the starting point of net depletions in **Figure 6**. The depth of the wells and semi-confining unit cause net depletions to be dampened resulting in a constant year-round depletion. No change in the rate, timing, and location of net depletions to surface water would occur because of the proposed change.

Table 2: Net depletion to the Clark Fork River under historical and proposed conditions and net effect from the proposed change.

Month	Historical and Proposed Consumed Volume (AF)	Historical Net Depletion (gpm)	Proposed Net Depletion (gpm)	Net Effect (gpm)
January	3.2	23.4	23.4	0.0
February	2.9	23.4	23.4	0.0
March	3.2	23.4	23.4	0.0
April	3.1	23.4	23.4	0.0
May	3.2	23.4	23.4	0.0
June	3.1	23.4	23.4	0.0
July	3.2	23.4	23.4	0.0
August	3.2	23.4	23.4	0.0
September	3.1	23.4	23.4	0.0
October	3.2	23.4	23.4	0.0
November	3.1	23.4	23.4	0.0
December	3.2	23.4	23.4	0.0
Total	37.7			

2.0 Hydrogeologic Setting

As identified in **Figure 1**, the proposed well (GWIC ID 76372) is approximately 0.6 miles from the Clark Fork River. The well is completed 303 ft below ground surface (bgs) with a pre-test static water level (swl) of 44.55 ft below top of casing (btc). The proposed well will be one of eight wells, all completed in glacial-lake deposits which represent a leaky-confined to confined aquifer system. The well log of GWIC ID 76372 (112DRFT) describes coarse gravelly alluvium assumed to be a glacial flood deposit unit connected to the Clark Fork River, above glacial-lake deposits of fine sand, clay with sand; and gravel, sand, and clay (Lonn et al., 2007).

The shallow Quaternary aged alluvial aquifers are recharged by local streams, groundwater recharge from the Clark Fork River, and by infiltration of precipitation. The deep Pleistocene aged alluvial aquifer is recharged by mountain front recharge and losses from streams along the shallow alluvium. The groundwater flow direction is parallel to the Clark Fork River from southeast to the northwest. The width of the Clark Fork River alluvium varies throughout the watershed and is approximately 1.3 miles wide at the proposed change location. The source aquifer discharges to springs and seeps along valley bottoms and reaches of streams that interact with groundwater. The alluvial aquifer is bounded by Precambrian-aged Belt Supergroup sedimentary rock including formations of metasediments (Kendy and Tresch, 1996).

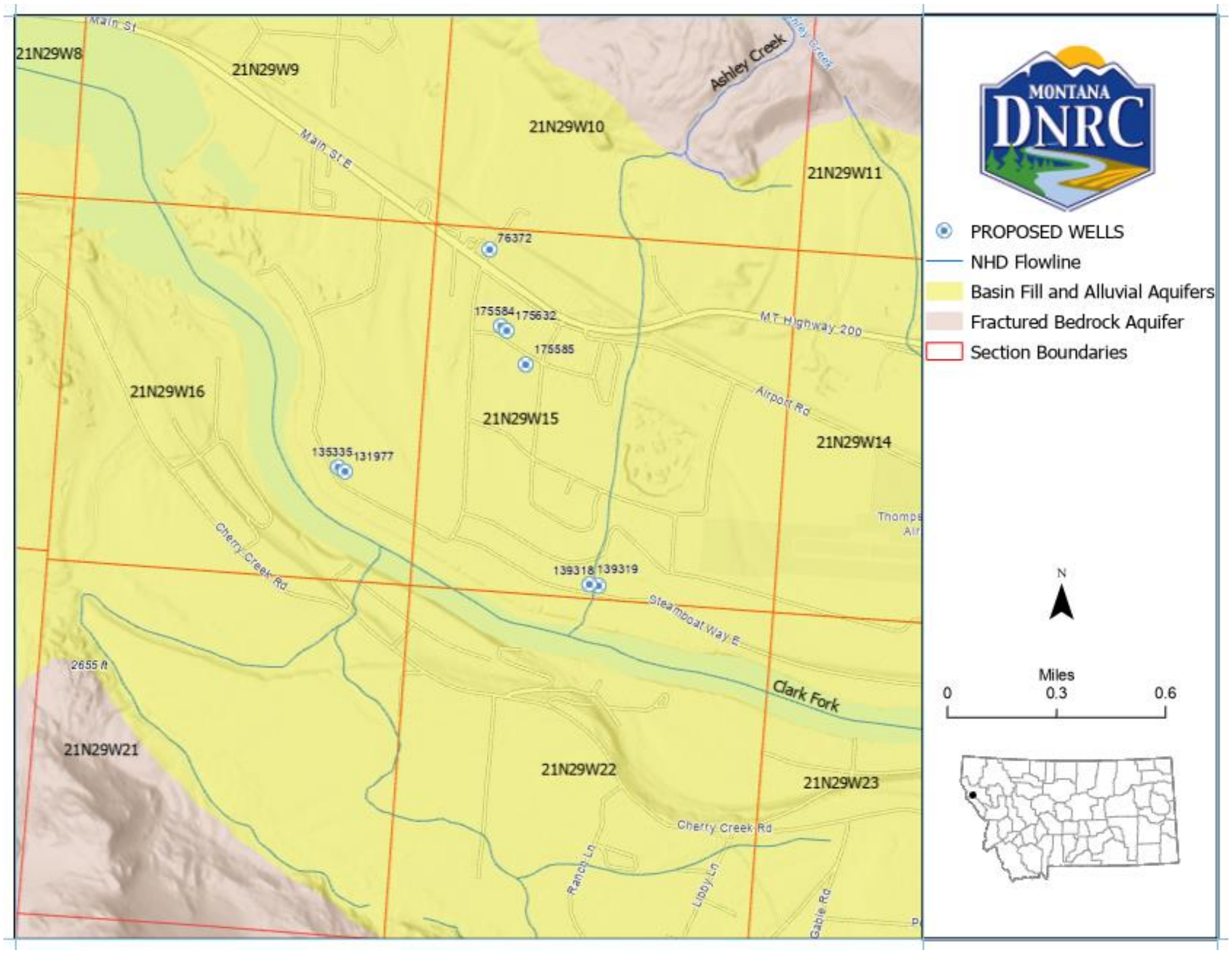

Figure 1: Map of the Applicant's historical (existing) and proposed well (GWIC ID 76372).

3.0 Drawdown and Yield Test Summary

A "Drawdown and Yield Test" is a pumping test that is meant to evaluate well construction and the ability of the aquifer to yield water to the well. This is also known as demonstrating "adequacy of diversion". The minimum duration of these tests is 8-hours. Observation Wells, pre-test, and post-test data is not required for Drawdown and Yield Tests.

Field Methods and Equipment

An 8.1-hour drawdown and yield test was performed on GWIC ID 76372. Water levels during the test were collected using LevelTroll 700 electronic pressure transducers and verified with manual e-tape measurements. The discharge was measured with a MasterMeter Octave in-line 3" ultrasonic flowmeter.

Background Data

Background data is not required as part of drawdown and yield tests and was not collected.

Drawdown and Recovery Data

The 8.1-hour drawdown and yield test started on October 4, 2023, at 4:19 P.M. on GWIC ID 76372 and is considered (t=0) for the computation of drawdown. The test had an average discharge of 167.5 gpm, with minimum and maximum discharge rates of 161.0 and 176.0 gpm, respectively. The maximum drawdown in GWIC ID 76372 was 32.91 ft below the swl of 44.55 ft btc, leaving approximately 226.7 ft above the bottom of the well. Recovery water level data is not required as part of drawdown and yield tests, however, the Applicant provided approximately 10 minutes of recovery data after the cessation of pumping.

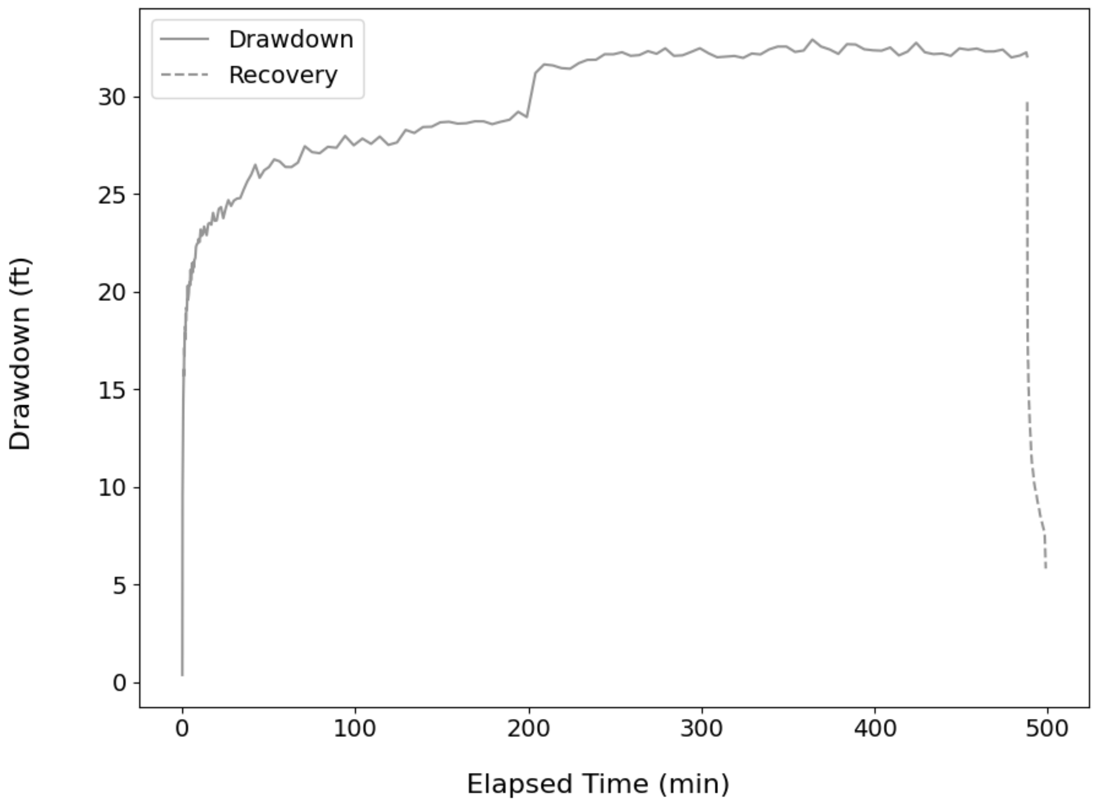

Figure 2: Drawdown and yield test including recovery measurements for Production Well, GWIC ID 76372.

4.0 Aquifer Properties

An “Aquifer Test” is a pumping test that is meant to provide data to model aquifer properties. The minimum duration of these tests is either 24-hours or 72-hours, depending on the proposed flow rate and volume (ARM 36.12.121(3)(e)), and DNRC only requires one of these tests per application. In lieu of submitting an aquifer test on the proposed well the Applicant submitted aquifer testing and aquifer property information from Provisional Permit No. 76N 30016270 Geomatrix Consultants, Inc. (2005). A summary of aquifer properties derived from aquifer testing on existing municipal wells is shown in **Table 3.**

Table 3: Aquifer tests analysis summary for GWIC ID 135335 and 139319.

Production Well (GWIC ID)	Observation Well (GWIC ID)	Solution	T (ft^2/day)	S	Duration (hrs)	Pumping Rate (gpm)
135335	131977	Hantush-Jacob	6,594	7.0E-5	72.0	246.0
139319	139318	Hantush-Jacob	5,366	2.7E-4	74.0	427.0

The recommended T of 6,750 ft^2/day utilized in Provisional Permit No. 76N 30016270, was calculated with the average horizontal hydraulic conductivity of 30 ft per day from aquifer tests performed on GWIC ID 135335 and GWIC ID 139319. The saturated thickness of 225 ft used to calculate T was estimated based on drillers well logs and Herrick (2005). The recommended S of 1.7×10^{-4} is from the average of data from Observation Wells, GWIC ID 131977 and GWIC ID 139318 (**Table 3**).

The aquifer properties in Geomatrix Consultants, Inc. (2005) were derived from the Hantush-Jacob (1955) leaky-confined aquifer solution which does not consider aquitard storage. The Hantush-Jacob (1955) solution and Hantush (1960) leaky-confined complete solutions also assume infinite constant head source plane source above the aquitard. Therefore, the Hantush (1960) leaky-confined early-time solution was chosen for forward modeling using a leakage parameter described below.

The leakage parameter (β) was calculated (**Eq. 1**) using the recommended T of 6,750 ft^2/day, an average aquitard thickness of 200 ft, and vertical hydraulic conductivity of the aquitard (K') of 0.1 ft per day from Geomatrix Consultants, Inc. (2005) which represents sandy silts (Fetter, 1994) and very fine sand, silt, loess or loam (Bear, 1972) primarily described in well logs. The radial distance from the pumping well to observation well (r) was represented with the radius of the pumping well. The recommended β of 0.14 is within the range of recommended values from Kruseman and de Ridder (1991).

$$\beta = \frac{r}{B} = \frac{r}{\sqrt{\frac{T \cdot b'}{K'}}} \qquad \textbf{Eq. 1}$$

Aquifer Property Comparison
The two aquifer tests performed on GWIC ID 135335 and 139319 are the only aquifer properties within the region of Application No. 76N 30165123, therefore, no additional tests were used as comparison for aquifer properties.

5.0 Adequacy of Diversion Analysis

An evaluation of the potentially available water column remaining in the Production Well is modeled using the Hantush (1960) early-time solution, with a T of 6,750 ft^2/day, S of 1.7×10^{-4} and β of 0.14. Predicted theoretical drawdown for the proposed well is modeled for the period of diversion using the monthly pumping schedule identified in **Table 4**. The Applicant requests a volume of 8.3 AF for the proposed well. Applicant-provided water use records were used to distribute the volume to the proposed well and existing wells.

Table 4: Applicant provided monthly pumping schedule for municipal purposes.

Month	Proposed Well Diverted Volume (AF)	Proposed Well Diverted Flow Rate (gpm)	All Wells Diverted Volume (AF)	All Wells Diverted Flow Rate (gpm)
January	0.3	2.1	13.1	95.9
February	0.4	2.8	15.9	128.3
March	0.4	3.0	18.4	134.5
April	0.6	4.5	26.9	202.6
May	0.9	6.3	38.8	283.2
June	1.2	9.0	53.8	405.9
July	1.0	7.2	44.6	325.4
August	1.5	10.7	66.5	485.5
September	0.8	5.9	35.3	266.5
October	0.7	5.3	32.8	239.5
November	0.4	3.1	18.3	138.2
December	0.3	2.1	12.9	94.2
Total	**8.3**		**377.4**	

As identified in **Table 5,** total drawdown is the sum of interference drawdown and predicted drawdown with well loss. Well loss is calculated by dividing the predicted theoretical maximum drawdown by a well efficiency value. Well efficiency is calculated by dividing the modeled maximum drawdown for the aquifer test by the maximum observed drawdown of the drawdown and yield test. The aquifer adjacent to the proposed well would experience a predicted total drawdown of 0.3 ft at the end of August of the first year of pumping (**Figure 3**). The remaining available water column for the proposed well is 256.8 ft and is equal to the available drawdown above the bottom of the well minus total drawdown. The saturated thickness (b) of 260 ft (**Figure 3; Table 5)** is the calculation of the approximate available drawdown above the bottom of the well.

Table 5: Remaining available water column for the proposed well.

Drawdown Estimate	Proposed Well (GWIC ID 76372)
Total Depth at Bottom of Well (ft btc)[1]	304.0
Pre-Test Static Water Level (ft btc)	44.35
Available Drawdown Above Bottom of Well (ft)	259.7
Observed Drawdown of Aquifer Test (ft)	32.9
Modeled Drawdown Using Mean Aquifer Test Rate (ft)	3.1
Well Efficiency (%)	9.4
Predicted Theoretical Maximum Drawdown (ft)	0.3
Predicted Drawdown with Well Loss (ft)	2.9
Interference Drawdown (ft)	0.0
Total Drawdown (ft)	2.9
Remaining Available Water Column (ft)	**256.8**

[1]The total well depth measuring point (bgs) was adjusted to the top of well casing based on a 1-foot well casing stickup reported on the well log.

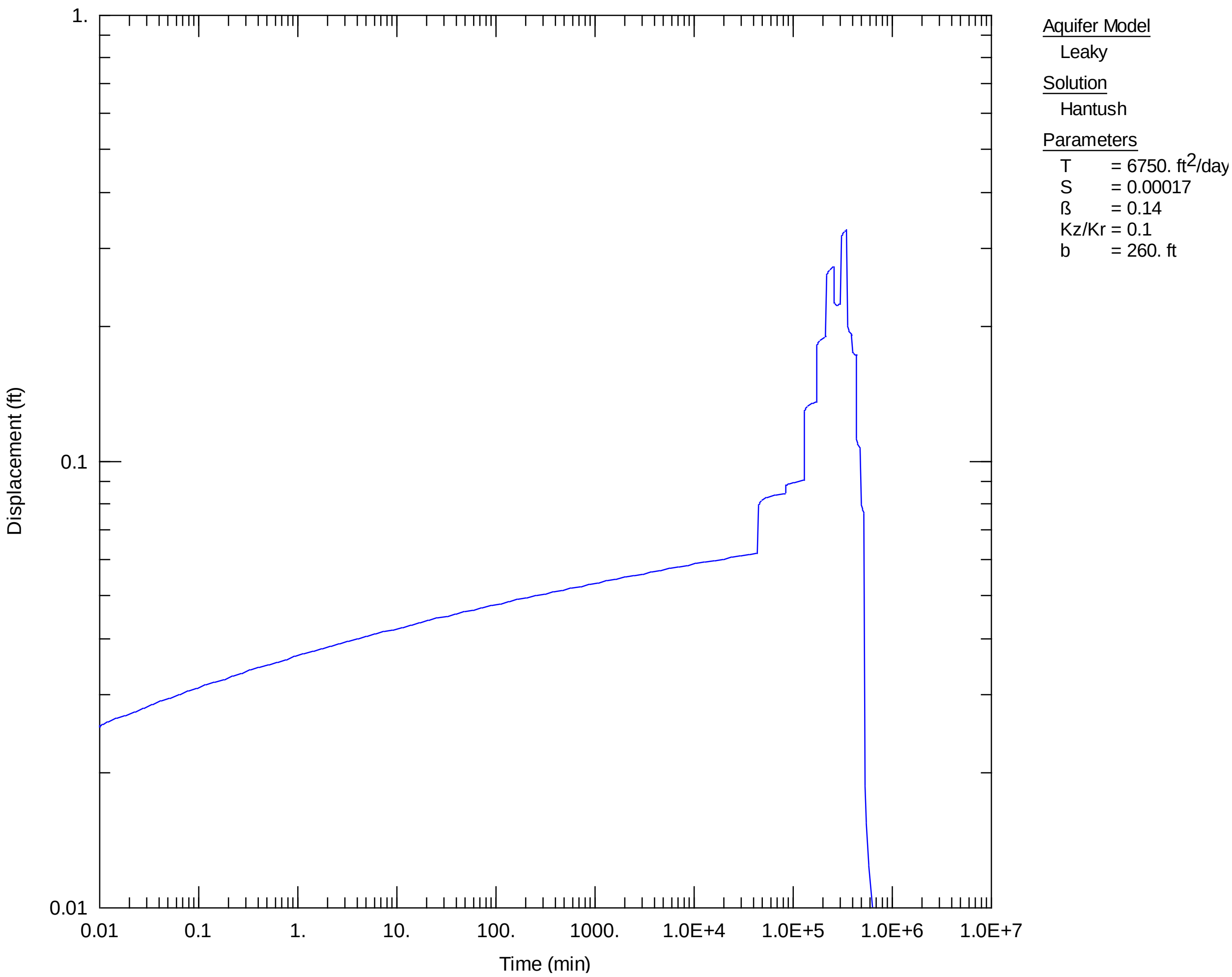

Figure 3: Hantush (1960) solution time-drawdown plot using the assumed pumping schedule for the proposed well (**Column 3, Table 4**).

6.0 Adverse Effect Analyses

Under §85-2-402, Montana Code Annotated (MCA), using the Applicant's proposed pumping schedule and associated volume, adverse effect is evaluated by modeling drawdown in nearby wells and changes in net depletions to surface water.

6.1 Adverse Effect Groundwater - Drawdown in Existing Wells

Drawdown in existing wells was modeled for existing and proposed conditions with the Hantush (1960) early-time solution, a T of 6,750 ft^2/day, S of 1.7×10^{-4}, β of 0.14, and the monthly pumping schedules identified in **Table 6** and **Table 7** for a period of five years. The Applicant provided water use records in 2023 and 2024 which reflects approximate monthly use shown in **Table 6** and **Table 7**.

Due to the proximity of GWIC ID 135335 and 131977, and GWIC ID 175584 and 175632, the monthly pumping schedules were modeled as centroids between each well pair. The maximum drawdown at the end of August of the fifth year of pumping under existing conditions (**Table 6)** show maximum drawdown at the centroid of the well pairs (**Figure 4**). The maximum drawdown at the end of August of the fifth year of pumping under proposed conditions (**Table 7)** show maximum drawdown at the centroid of the well pairs and the proposed well (GWIC ID 76372) (**Figure 5**).

Table 6: Monthly pumping schedules for existing wells.

Month	GWIC ID 135335 and 131977 (gpm)	GWIC ID 175584 and 174632 (gpm)	Total pumping schedule (gpm)	Total pumping volume (AF)
January	71.6	24.4	95.9	13.1
February	95.7	32.6	128.3	15.9
March	100.3	34.2	134.5	18.4
April	151.1	51.5	202.6	26.9
May	211.3	71.9	283.2	38.8
June	302.8	103.1	405.9	53.8
July	242.8	82.7	325.4	44.6
August	362.2	123.3	485.5	66.5
September	198.8	67.7	266.5	35.3
October	178.7	60.8	239.5	32.8
November	103.1	35.1	138.2	18.3
December	70.3	23.9	94.2	12.9
Total	**---**	**---**	**---**	**377.4**

Table 7: Monthly pumping schedules for proposed wells.

Month	GWIC ID 135335 and 131977 (gpm)	GWIC ID 175584 and 174632 (gpm)	GWIC ID 76372 (gpm)	Total pumping schedule (gpm)	Total pumping volume (AF)
January	70.0	23.8	2.1	95.9	13.1
February	93.6	31.9	2.8	128.3	15.9
March	98.1	33.4	3.0	134.5	18.4
April	147.8	50.3	4.5	202.6	26.9
May	206.6	70.3	6.3	283.2	38.8
June	296.1	100.8	9.0	405.9	53.8
July	237.4	80.8	7.2	325.4	44.6
August	354.2	120.6	10.7	485.5	66.5
September	194.5	66.2	5.9	266.5	35.3
October	174.7	59.5	5.3	239.5	32.8
November	100.8	34.3	3.1	138.2	18.3
December	68.7	23.4	2.1	94.2	12.9
Total	**---**	**---**	**---**	**---**	**377.4**

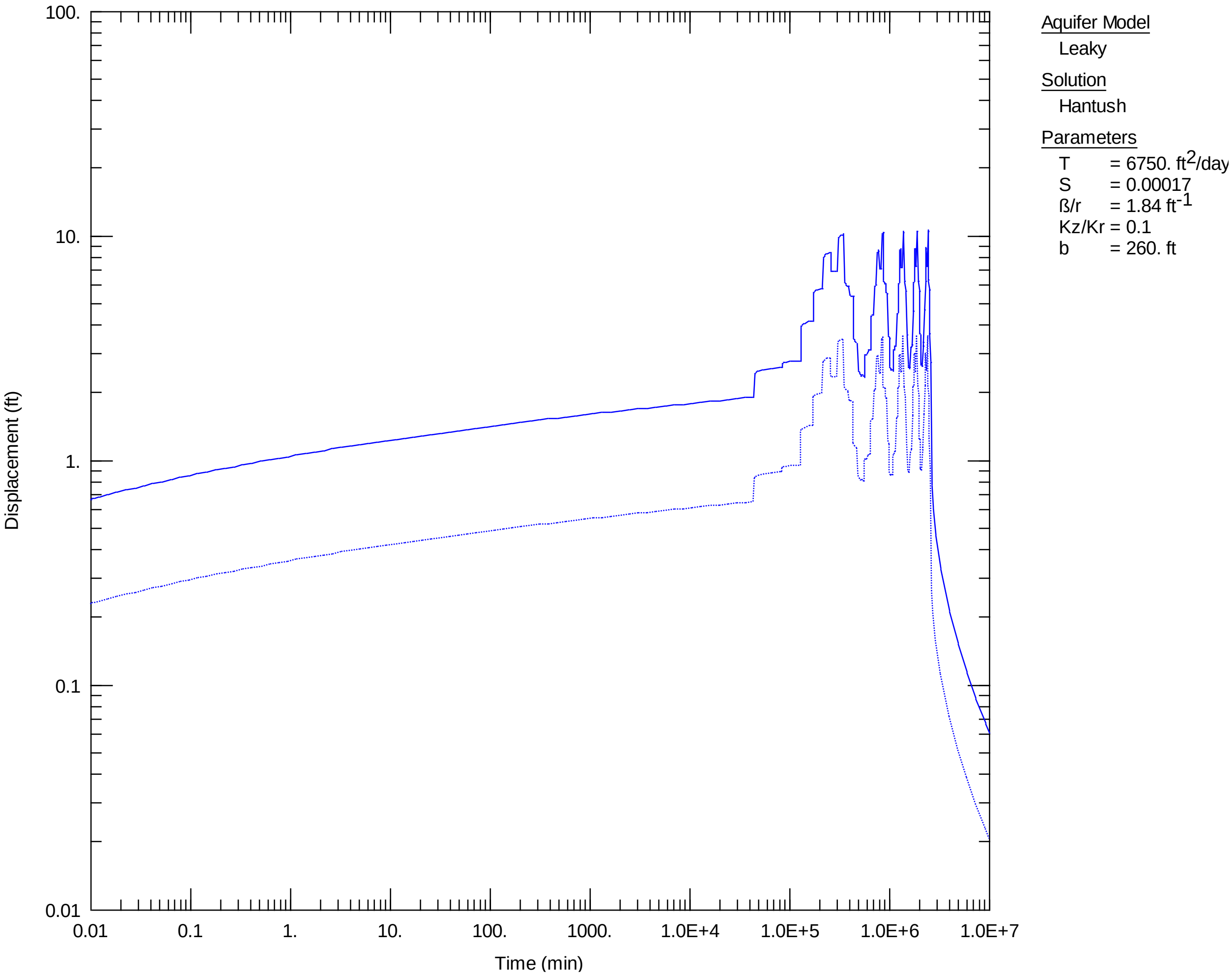

Figure 4: Hantush (1960) solution modeled time-drawdown plot using the Applicant-provided monthly pumping schedule for the existing wells (solid line: well pair GWIC IDs 135335 and 131977; dashed line: well pair GWIC IDs 175584 and 175632).

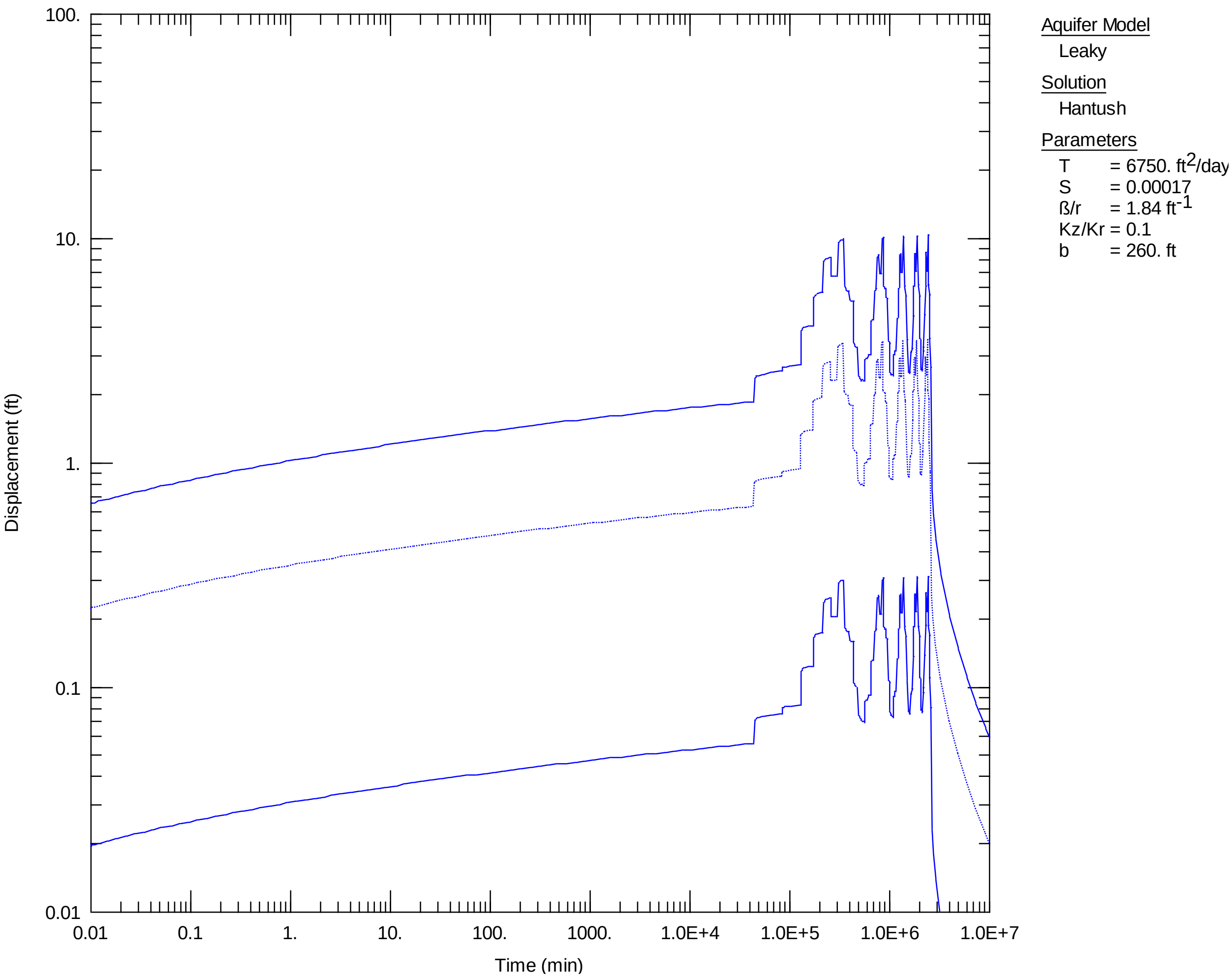

Figure 5: Hantush (1960) solution modeled time-drawdown plot using the Applicant provided monthly pumping schedule for the proposed wells (upper solid line: well pair GWIC IDs 135335 and 131977; dashed line: well pair GWIC IDs 175584 and 175632; lower solid line: GWIC ID 76372).

Using the Applicant-provided monthly pumping schedule, the one-foot drawdown contour for well pair GWIC ID 135335 and 131977 extends approximately 50 ft from the centroid of the two wells. The one-foot drawdown contour for well pair GWIC ID 175584 and 175632 extends approximately 15 ft from the centroid of the two wells. No existing water rights are within the modeled one-foot contour for either existing well pair.

With the addition of the proposed well, using the Applicant provided monthly pumping schedule, the one-foot drawdown contour for well pair GWIC ID 135335 and 131977 reduces to approximately 40 ft from the centroid of the proposed wells. The one-foot drawdown contour reduces to approximately 10 ft from well pair GWIC ID 175584 and 175632. The proposed well, GWIC ID 76372, has a maximum drawdown extent of approximately 0.3 ft. No water rights are within the modeled one-foot contour for either existing well pair or the proposed well.

6.2 Adverse Effect Surface Water - Net Depletions (Consumed Water)

Net depletion is equal to the consumed volume for a proposed groundwater use and is described as the calculated volume, rate, timing, and location of reductions to surface water that are offset by return flows (non-consumed water) from the place of use. Net depletion is evaluated by 1.) quantifying the consumed volume associated with the proposed use; 2.) identifying hydraulically connected surface waters; and 3.) calculating the monthly rate and timing of depletions to affected surface water(s).

1. Consumed Volume

Consumed groundwater does not return to the source aquifer. Consumed volume depends on the proposed use and its associated percentage of known consumption. Depletion is assumed to be equivalent to consumption on an annual basis unless return flows do not accrete to the potentially affected surface water.

Monthly consumption for irrigation is based on the net irrigation requirement calculated using the USDA Natural Resources Conservation Service (NRCS) Irrigation Water Requirements (IWR) program with inputs consistent with DNRC consumptive use rules in ARM 36.12.1902. Monthly consumption for irrigation of turf grass (lawns) is based on the net irrigation requirement from IWR with the following inputs for pasture grass and sprinkler irrigation:

- dry year
- have IWR re-calculate start and end date using default temperature
- 1-inch net irrigation application
- 0.25-inches of carryover moisture at the beginning and end of growing season.

Consumption for domestic or institutional purposes listed in **Table 8** are based on the results of studies by Kimsey and Flood (1987), Vanslyke and Simpson (1974), and Paul, Poeter, and Laws (2007).

Table 8: Percent consumption for domestic use by wastewater disposal/treatment method.

Wastewater Treatment/Disposal	Consumed
Individual drain fields	10%
Central treatment facility with minimal consumption	5%
Evaporation basin or land application	100%

For the subject application, the historical and proposed uses include municipal purposes with individual drain fields. Following DNRC standards, the total annual consumed volume is equal to 37.7 AF.

2. Hydraulically Connected Surface Water(s)

Net depletions to surface water depend on propagation of drawdown to locations where surface water is hydraulically connected to groundwater, the hydraulic properties of an aquifer, and is not a function of groundwater flow rate or direction (Theis, 1938; Leake, 2011). Hydraulic connection depends on the depth to groundwater beneath the beds of surface waters and can vary along a reach and with time of year. Drawdown from pumping can propagate through the entire thickness of the confining layer to overlying aquifers or surface waters (Konikow and Neuzil, 2007).

Per DNRC (2018) hydraulic connection of individual stream reaches to groundwater is evaluated by comparing streambed elevations to static groundwater elevations measured in wells less than 50 ft deep and within 1,000 ft of surface water or from published water table maps. Surface water within that area is considered hydraulically connected to the unconfined aquifer if static groundwater elevations are above or within 10 ft of the elevation of the stream bed. Hydraulic connection of a confined aquifer to surface water is based on information such as the continuity and thickness of a confining layer and whether overlying shallow unconfined aquifers are connected to surface water (DNRC, 2018).

The Clark Fork River near the proposed and existing wells is classified as perennial per the USGS National Hydrographic Dataset (NHD) and is approximately 600 ft from the Applicant's PODs. Shallow wells near the project location, north of the Clark Fork River, that meet the criteria for DNRC (2018) include GWIC ID 134163 in Section 23, Township 21 North, Range 29 West, (**Figure 6)** and GWIC IDs 76359 and 132636 in Section 9, Township 21 North, Range 29 West. Based on information from well logs with shallow static water levels upgradient and downgradient of the proposed wells, the adjacent terraces and steep banks which may cause a greater river incision depth into sediments of the shallow alluvium, and the ability of the aquitard to transmit water under the vertical hydraulic conductivity (K') as shown in **Eq. 1**, the Clark Fork River is considered hydraulically connected to the source aquifer.

Further, Provisional Permit No. 76N 30016270 identified the Clark Fork River as hydraulically connected and modeled depletions to it. Ashley Creek, a nearby surface water body, is approximately 3,100 ft from proposed well GWIC ID 76372. Ashley Creek is noted as intermittent in NHD and aerial imagery shows no defined stream channel. No wells less than 50 ft deep with shallow static groundwater elevations are mapped within the vicinity of Ashley Creek. As such, Ashley Creek was not considered a hydraulically connected source.

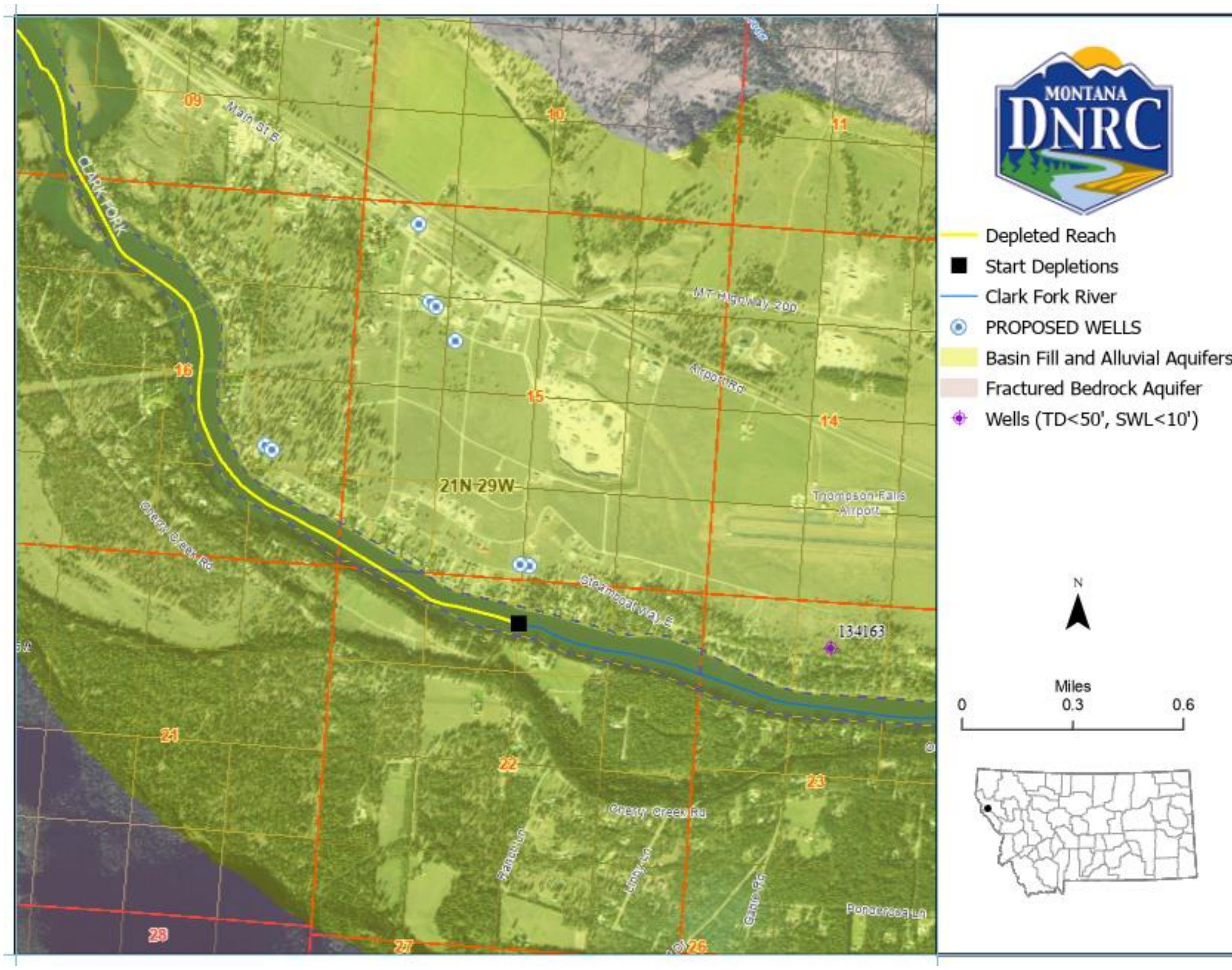

Figure 6: Proposed well and historical and proposed starting point of net depletions on the Clark Fork River.

3. Rate and Timing of Depletions

Evaluations of the rate and timing of depletions caused by pumping are based on the basic concept that groundwater pumping eventually is offset by an equivalent increase in recharge or decrease in discharge (Theis, 1940; Leake et al., 2008), a process defined as capture by Lohman (1972). Capture occurs as drawdown propagates to surface water and areas of phreatophyte vegetation that takes water directly from groundwater. In the absence of credible evidence to the contrary, capture of ET by phreatophytes is neglected and net depletion is assumed to equal total capture. This assumption is justified because published estimates for conditions common in Montana alluvial valleys indicate capture of ET generally is less than 10 percent of total capture (Xunhong, 2006). Capture of ET in ephemeral drainages may be significant and will be evaluated on an application-by-application basis.

The rate and timing of net depletion caused by pumping may be modeled using a variety of analytical and numerical models selected to fit site-specific conditions and needs. Simple models including the Alluvial Water Accounting System (AWAS) and the Well Pumping Depletion Model

(WPDM) typically are used by DNRC to model depletions to one source with simple aquifer boundaries. Adjustments may be made for more complex conditions or multiple sources using methods like those described by Contor (2011), analytical models by Hunt (2003) and Butler et al. (2001) or a superposition numerical groundwater flow model.

Modeling is not necessary in some situations such as where a proposed use is constant year-round because of the depth to the source aquifer and a distance to potentially affected stream reaches. Modeling of depletions can be simplified if the proposed place of use is located the same relative distance from the potentially affected surface water as the proposed wells and all non-consumed water infiltrates the source aquifer and returns to the potentially affected surface water as return flows. Under those simplifying assumptions, depletion can be modeled based on withdrawal of the monthly consumed amounts. Otherwise, depletion by the full withdrawals and return flows need to be modeled separately with net depletion calculated as depletion minus return flows.

Net depletion caused by pumping the source aquifer primarily occurs as propagation of drawdown through the overlying confining layer to the affected reach of the Clark Fork River. As identified in **Table 2**, net depletion effects are expected to be dampened resulting in a constant year-round rate of depletion to Clark Fork River downstream of the eastern boundary of NENW¼, Section 22, Township 21 North, Range 29 West.

The distance of the historical and proposed wells from the Clark Fork River, the similar distances along the length of the river, and similar completion depth of the existing wells and proposed well, results in no change to the location of net depletions and timing of net depletions (constant year-round). As identified in **Table 2**, the calculated historical and proposed annual net depletion volume of 37.7 AF to the Clark Fork River will result in monthly net depletion rates of 23.4 gpm.

Review

This document has been reviewed on March 12, 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

February 3, 2025

Salish Shores Utility Corp. LLC
PO Box 1030
Thompson Falls, MT 59873

Subject: Complete Preapplication Form for Beneficial Water Use Permit Application No. 76N 30165123

Dear Applicant,

The Kalispell Regional Office of the Department of Natural Resources and Conservation (DNRC or Department) received your updated Preapplication Meeting Form and preapplication meeting fee on January 31, 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 the preapplication being deemed adequate, February 3, 2025.

If you have any questions, please contact me at 406.752.2735 or Kristal.Kiel@mt.gov.

Best,

KKiel

Kristal Kiel
Water Resources Specialist
Kalispell Regional Office
655 Timberwolf Parkway, Suite 4
Kalispell, MT 59901

CC:

Bryan Gartland
Aspect Consulting
PO Box 134
Helena, MT 59624

SALISH SHORES UTILITY CORP INC

APPLICATION TO CHANGE A WATER RIGHT NO. 76N 30165123

FORM 606P FOLLOW-UP RESPONSES

5) Historic Use Map

See Attachment A

6) Proposed Use Map

See Attachment B

9.a.ii) Proposed Place of Use – Legal Land Descriptions

1/4	1/4	**Section**	**Township**	**Range**	**County**
NE	SW	9	21 North	29 West	Sanders
SE	SW	9	21 North	29 West	Sanders
NW	SE	9	21 North	29 West	Sanders
SW	SE	9	21 North	29 West	Sanders
SE	SE	9	21 North	29 West	Sanders
SW	SW	10	21 North	29 West	Sanders
NE	NW	14	21 North	29 West	Sanders
NW	NE	14	21 North	29 West	Sanders
NE	NE	14	21 North	29 West	Sanders
SE	NW	14	21 North	29 West	Sanders
SW	NE	14	21 North	29 West	Sanders
SE	NE	14	21 North	29 West	Sanders
NE	SE	14	21 North	29 West	Sanders
NE	NE	15	21 North	29 West	Sanders
NW	NE	15	21 North	29 West	Sanders

30.d.1) Historic Use – Supporting Municipal Use Information

See Attachment C for:

- Public Service Commission documentation (2007)
- Measurement records (2023-2024)
- DNRC 2008 Municipal Change in Use Authorization (76N 30027719)

40.e.ii) Historic Use – Consumed Volume

See Attachment C

67) New Point of Diversion – Flow Rate and Volume

POD #	Flow Rate	Volume	Period of Diversion
8	35 GPM	8.33 AF/yr	1/1 - 12/31

68) Pumping Schedule

Yes – The expected pumping schedule for the new point of diversion will differ from an allocation of diverted volume by the number of days in the month.

68.a) Monthly Pumping Schedule

POD No. 8 Projected Pumping Schedule:

The pumping schedule presented below reflects system water use in 2023-2024, which should approximate future patterns of use.

MONTH	VOLUME (AF)	MONTH	VOLUME (AF)
January	1.48	July	5.01
February	1.78	August	7.47
March	2.07	September	3.97
April	3.02	October	3.69
May	4.36	November	2.06
June	6.05	December	1.45

70) Adequacy of Diversion

Yes - Applicant is submitting Form 633 as a follow-up item. Form 633 is included with the Form 606-ATA materials in Attachment D (Excel file).

70.a) Adequacy of Diversion – Form 633

See Attachment D (Excel file)

71.a) Adequacy of Diversion – Well Details

GWIC ID: 76372

Well depth = 303 feet

See Attachment B

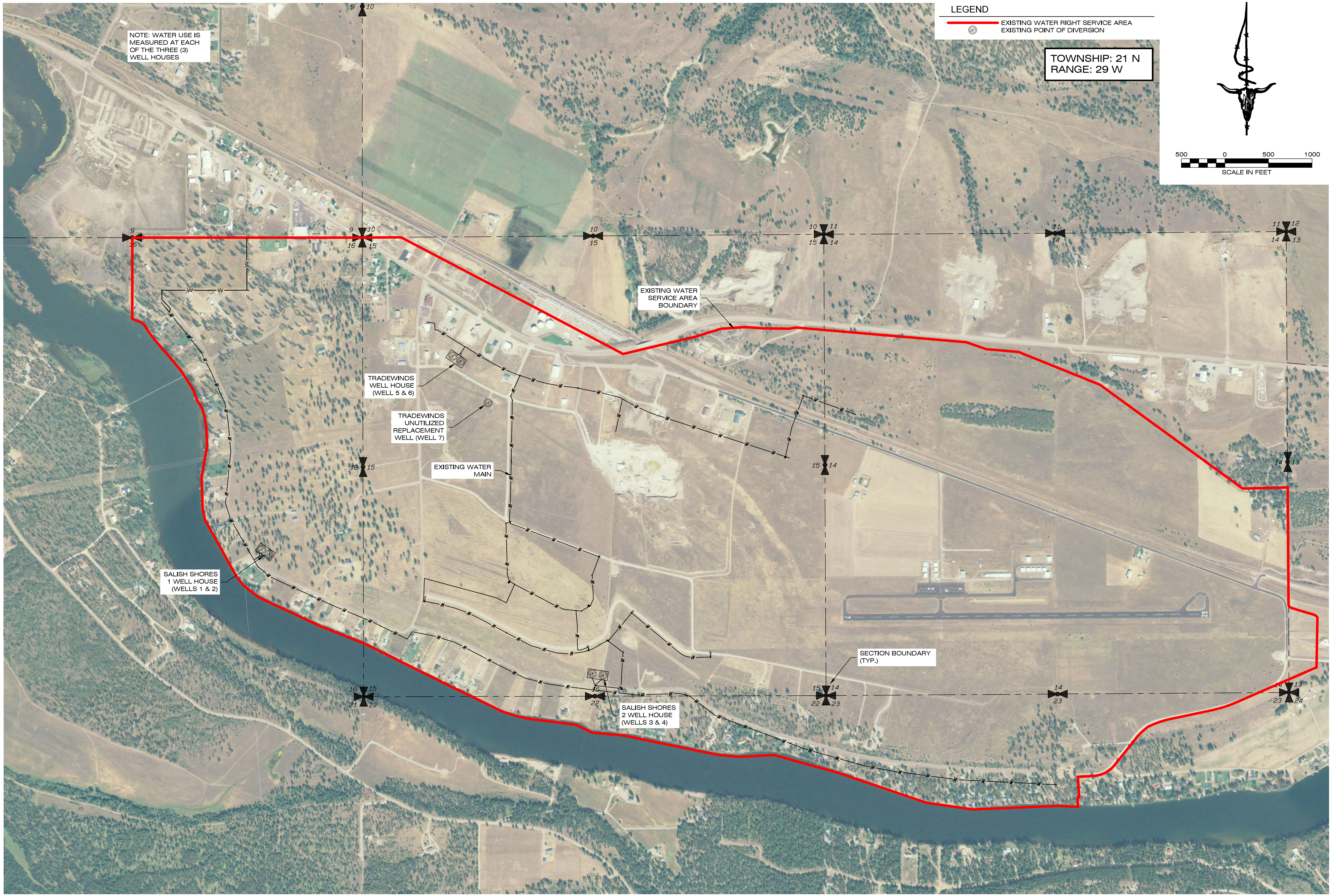
Form 606-ATA Aquifer Testing Addendum

Form 606-ATA is not identified as a follow-up item on the Department's 606P form dated January 8, 2025. Per an email request from Kristal Kiel, DNRC Water Resource Specialist, on December 31, 2024, a completed Form 606-ATA and Form 653 (Variance Request) are being submitted at this time.

See Attachment D

ATTACHMENT A

HISTORIC USE MAP



IMEG
1817 SOUTH AVE. W. STE. A
MISSOULA, MT
59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

PLOT DATE: 1/7/2025 1:11 PM

REVISIONS	DATE

DESIGNED: DMF
DRAFTED: LTM
CHECKED: DMF
DATE: JAN 2025

LOCATION: THOMPSON FALLS SANDERS COUNTY

PREPARED FOR: SALISH SHORES UTILITY CORP

PROJECT NAME: POU/POD CHANGE APPLICATION

SHEET TITLE: WATER SERVICE AREA EXISTING CONDITIONS

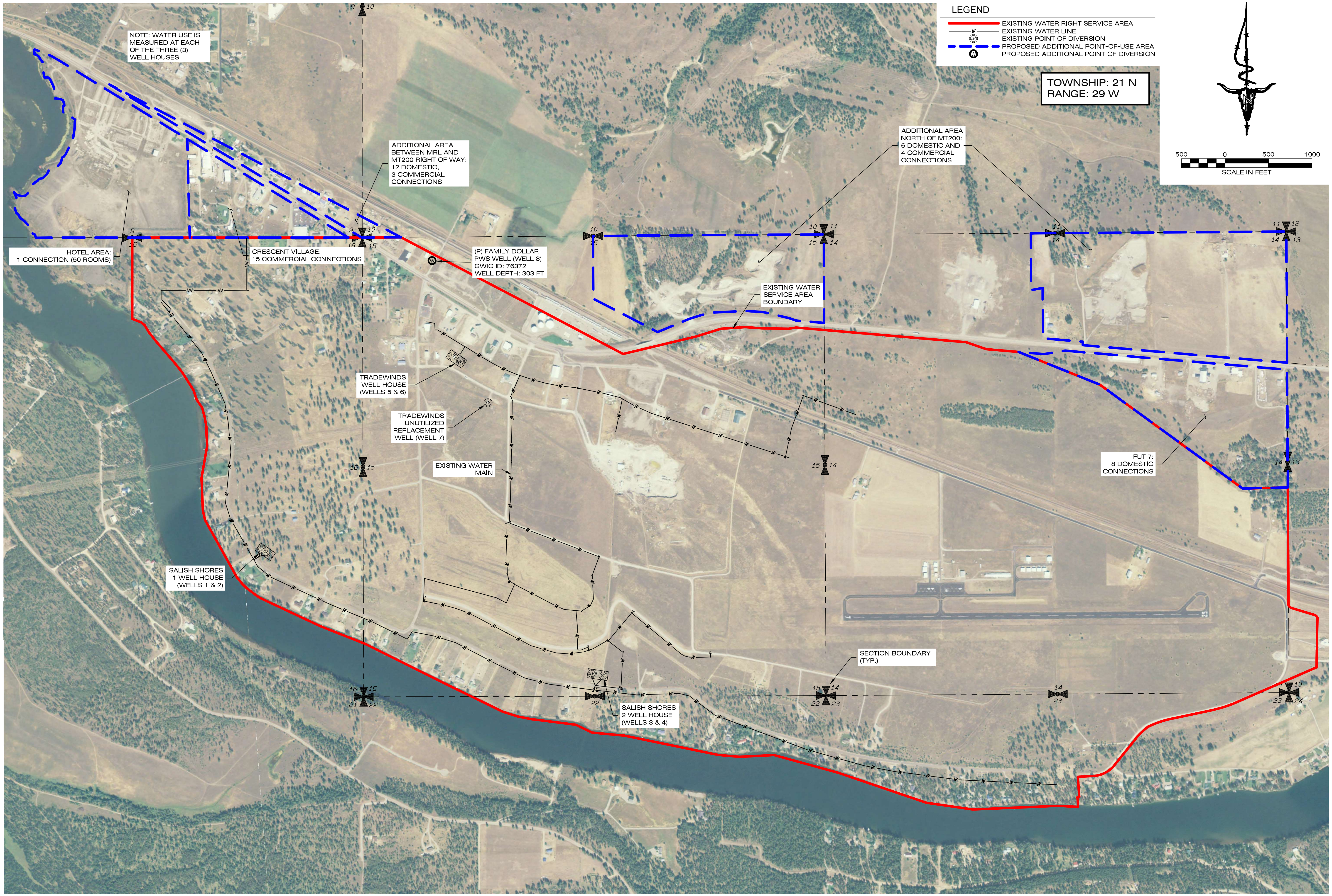
PROJECT NO.: 20001572

SHEET: 1 OF 7

DWG LOCATION: \\FILES\ACTIVE\PROJECTS\2020\20001572.01\DESIGN\CIVIL\3_DRAFTING\1_DRAWINGS\AUTOCAD\EXHIBITS\20001572.02 WATER SERVICE AREA 2024-01-30 .DWG

ATTACHMENT B

PROPOSED USE MAP



IMEG
1817 SOUTH AVE. W. STE. A
MISSOULA, MT
59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

PLOT DATE: 1/13/2025 1:46 PM

REVISIONS	DATE

DESIGNED: DMF
DRAFTED: LTM
CHECKED: DMF
DATE: JAN 2025

LOCATION: THOMPSON FALLS SANDERS COUNTY

PREPARED FOR: SALISH SHORES UTILITY CORP

PROJECT NAME: POU/POD CHANGE APPLICATION

SHEET TITLE: WATER SERVICE AREA PROPOSED AREAS

PROJECT NO.: 20001572

SHEET: 2 OF 7

DWG LOCATION: \\FILES\ACTIVE\PROJECTS\2020\20001572.01\DESIGN\CIVIL\3_DRAFTING\1_DRAWINGS\AUTOCAD\EXHIBITS\20001572.02 WATER SERVICE AREA 2024-01-30 .DWG

ATTACHMENT C

HISTORIC USE – SUPPORTING MUNICIPAL USE INFORMATION

- **Public Service Commission Documents**
- **Measurement Records (2023-2024)**
- **DNRC 2008 Municipal Change in Use Authorization (76N 30027719)**

Salish Shores Utility Corporation
PO Box 1030
Thompson Falls, MT 59873
406-827-3277

January 17, 2007

Montana Public Service Commission
1701 Prospect Avenue
Helena, MT 59620

The enclosed tariffs are being submitted for approval pursuant to Commission Order No. 6797, dated January 10, 2007.

Salish Shores Utility Corp.

Buddy Leufkens
Buddy Leufkens

Public Service Commission of Montana

Salish Shores Utility Corp. Sheet No. 1

METERED WATER SERVICE

Schedule M

Availability: For the Salish Shores Service Area Sanders County, Montana for all purposes except resale.

Rate:

Applicable to all residential and small commercial customers.

Customer Charge $13.16/bimonthly

Quantity Charge
For all usage per 1000 gallons or fraction there of $1.974

The Customer Charge is applicable to all lots in the water service area. It is a readiness to serve charge which is added to the charge computed at the Quantity Rates for water used during the billing period.

Issued: 1/4/2007 (Date) By: Buddy Leufken (Signature of Officer of Utility)

FOR OFFICE USE ONLY DO NOT PRINT BELOW THIS LINE

PUBLIC SERVICE COMMISSION

(Secretary)

Public Service Commission of Montana

Salish Shores Utility Corp. Sheet No. 2

METERED WATER SERVICE

Schedule M-1

Availability: For the Tradewinds Service Area Sanders County, Montana for all purposes except resale.

Rate:

Applicable to all residential and small commercial customers.

Customer Charge $15.94/bimonthly

Quantity Charge
For all usage per 1000 gallons or fraction there of $1.867

The Customer Charge is applicable to all lots in the water service area. It is a readiness to serve charge which is added to the charge computed at the Quantity Rates for water used during the billing period.

Issued: 1/4/2007 By: Buddy Seuffere
(Date) (Signature of Officer of Utility)

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PUBLIC SERVICE COMMISSION

(Secretary)

Public Service Commission of Montana

Salish Shores Utility Corp. Sheet No. 3

FLAT RATE WATER SERVICE

Schedule M-2

Availability: For the Trailhead Terrace Service Area Sanders County, Montana for all purposes except resale.

Rate:

Applicable to all residential and small commercial customers not provided service by meter.

Flat Rate Residential/Small Commercial Domestic $25.52/bimonthly

Metered Service
Customer Charge $9.89/bimonthly

Quantity Charge
For all usage per 1000 gallons or fraction there of $2.733

The Customer Charge is applicable to all lots in the water service area, except those receiving service on a flat rate basis. It is a readiness to serve charge which is added to the charge computed at the Quantity Rates for water used during the billing period.

Issued: 1/4/2007 (Date) By: Buddy [illegible] (Signature of Officer of Utility)

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PUBLIC SERVICE COMMISSION

(Secretary)

Public Service Commission of Montana

Salish Shores Utility Corp. Sheet No. 4

WATER SERVICE

Special Rules of Service **Schedule R**

Consumer Deposits

Any new customer or customer that has been previously been disconnected for non-payment will be charged a deposit of approximately twice the average monthly billing. This amount will be refunded when the customer has paid the bill on time for 12 months or upon termination of service.

Unauthorized use of service

Unauthorized use of service is defined as any deliberate interference such as tampering with the Company's meter, connections, equipment, seals, procedure or records that result in a loss of revenue to the company. Unauthorized service is also defined as reconnection of service, that has been terminated, without the company's consent.

Cost incurred to repair damage to company owned property installed on the customer's premise will be billed to the customer

Charges for unauthorized use of service will be:

a. time, material and transportation costs used in investigation or surveillance.

b. estimated charge for water

c. on-premise time to correct situation.

d. costs incurred to repair company owned property if any damage.

Reconnection of Service

Water service disconnected for unauthorized use of service shall not be reconnected until the customer furnishes satisfactory evidence of compliance with the company's rules and conditions of service and paid all outstanding service charges.

Late payment fee

An account having a balance left unpaid 30 days after the bill date is subject to a 1.0% late payment charge.

Issued: 1/4/2007 By: Buddy Loughlin
(Date) (Signature of Officer of Utility)

FOR OFFICE USE ONLY DO NOT PRINT BELOW THIS LINE

PUBLIC SERVICE COMMISSION

(Secretary)

2023/2024 Pumping Data - Salish Shores Trade Winds Comm Village PWS

	Well 1	Well 2	Well 5	Well 6	All Potable Wells
Feb-23	0.534293	0.463095	0.079177	0.018106	1.094672105
Mar-23	1.654744	1.060914	0.269448	0.260549	3.245655223
Apr-23	2.077023	1.638786	0.642625	0.560993	4.919426364
May-23	2.067202	2.549938	1.067666	0.692034	6.376840949
Jun-23	2.661953	3.24811	0.852844	0.90256	7.665466732
Jul-23	1.291388	2.073954	0.736533	0.626667	4.728541573
Aug-23	2.58431	3.194098	2.14638	1.730239	9.655026377
Sep-23	2.145766	1.439308	0.484577	0.773973	4.843624847
Oct-23	1.522168	1.699857	0.920359	0.973758	5.11614204
Nov-23	0.880771	0.723644	0.453582	0.379008	2.437003416
Dec-23	1.009357	0.856833	0.614698	0.41921	2.900098511
Jan-24	0.69541	0.498694	0.213901	0.068436	1.476441687
Feb-24	0.692648	0.80681	0.928645	0.045726	2.473830063
Mar-24	0.012582	0.003069	0.051557	0.827065	0.894273763
Apr-24	0.358446	0.301672	0.224336	0.231087	1.115540538
May-24	0.949207	1.103572	0.219119	0.070278	2.342174798
Jun-24	0.905015	1.175998	1.392354	0.954117	4.427483727
Jul-24	2.355371	2.594744	0.162804	0.177382	5.290301395
Aug-24	2.355371	2.594744	0.162804	0.177382	5.290301395
Sep-24	1.408619	1.526158	0.104649	0.058002	3.097427966
Oct-24	0.894581	1.150526	0.127052	0.085622	2.257780397
Nov-24	0.518642	0.417062	0.448364	0.295841	1.679908915
2023 Total	18.42898	18.94854	8.267889	7.337096	52.98249814
2024 Total	11.14589	12.17305	4.035587	2.990938	30.34546464

*all volumes in AF

Average Monthly Volume (23/24) (AF)	
Jan	1.476441687
Feb	1.784251084
Mar	2.069964493
Apr	3.017483451
May	4.359507873
Jun	6.046475229
Jul	5.009421484
Aug	7.472663886
Sep	3.970526406
Oct	3.686961218
Nov	2.058456166
Dec	1.450049256

STATE OF MONTANA

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

1424 9TH AVENUE P.O.BOX 201601 HELENA, MONTANA 59620-1601

CHANGE AUTHORIZATION

UPON FINDING THE REQUIREMENTS OF SECTION 85-2-402, MCA HAVE BEEN MET, APPLICATION TO CHANGE WATER RIGHT NUMBER 76N-30027719 SUBMITTED ON MAY 3, 2007, IS APPROVED.

Application From: SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS, MT 59873

Water Right Number(s) Changed:

Wr #	Ext	Type
76N-81519	00	PROVISIONAL PERMIT
76N-85780	00	PROVISIONAL PERMIT
76N-97278	00	PROVISIONAL PERMIT
76N-30016270		PROVISIONAL PERMIT

Authorization Limits

Flow Rate: 1,448.50 GPM

Volume: 377.30 AC-FT

Change Description:

FOUR PROVISIONAL WATER USE PERMITS HAVE BEEN ISSUED FOR INCREMENTAL PHASES OF WHAT IS NOW A MASTER DEVELOPMENT PLAN REGULATED BY THE PUBLIC SERVICE COMMISSION (PSC) FOR THE AREA ENCOMPASSED BY THE FOUR SUBJECT PERMITS. THIS CHANGE APPLICATION IS TO ADD AN ADDITIONAL POINT OF DIVERSION BY MEANS OF A BACK-UP WELL, CHANGE THE PURPOSE OF USE TO MUNICIPAL, MANIFOLD ALL WELLS AS THE MASTER PLAN DELINEATES, ADD A PLACE OF USE AND MAKE THE PLACE OF USE ON ALL WATER USE PERMITS IDENTICAL. THERE WILL BE NO INCREASE IN THE FLOW RATE OR VOLUME OF THE FOUR SUBJECT PERMITS ALREADY ISSUED. THE PROPOSED CHANGE IS FOR THE MAXIMUM COMBINED FLOW AND VOLUME OF THE EXISTING PERMITS.

COMPLETION DEADLINE

THE DEADLINE TO COMPLETE THIS AUTHORIZATION AND FILE A PROJECT COMPLETION NOTICE FOR CHANGE OF APPROPRIATION WATER RIGHT (FORM 618) IS **DECEMBER 31, 2021** . IF YOU CANNOT MEET THE DEADLINE, FILE A FORM 607, APPLICATION FOR EXTENSION OF TIME, BY **DECEMBER 31, 2021** . OTHERWISE, THE AUTHORIZATION IS VOID.

CONDITIONAL APPROVAL

THIS AUTHORIZATION IS LIMITED TO THE AMOUNT OF THE HISTORIC USE RECOGNIZED BY THE DEPARTMENT IN THIS PROCEEDING AS SUBJECT TO CHANGE, AND WILL THEREAFTER NOT EXCEED THAT AMOUNT. IF THE HISTORIC USE IS REDUCED UNDER ADJUDICATION PROCEEDINGS PURSUANT TO TITLE 85, CHAPTER 2, PART 2, MCA, THIS AUTHORIZATION WILL BE LIMITED TO A LESSER AMOUNT.

FAILURE TO COMPLY WITH ANY OF THESE TERMS AND CONDITIONS MAY RESULT IN THE LOSS OF THIS CHANGE AUTHORIZATION.

Kathy Olsen
Witness Signature

Water Resources Division

DATE ISSUED: MARCH 20, 2008

THE INFORMATION SHOWN BELOW REFLECTS THE ENTIRE WATER RIGHT.
AN ASTERISK (*) HAS BEEN PLACED NEXT TO EACH ITEM ALTERED BY THIS CHANGE AUTHORIZATION.

Water Right Number: 76N 81519-00 PROVISIONAL PERMIT
Version: 2 -- CHANGE AUTHORIZATION
Version Status: ACTIVE

Owners: SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS, MT 59873

Priority Date: MAY 14, 1992 at 10:46 A.M.
Enforceable Priority Date: MAY 14, 1992 at 10:46 A.M.

Purpose (use): MUNICIPAL
Maximum Flow Rate: 110.00 GPM
Maximum Volume: 48.90 AC-FT
Source Name: GROUNDWATER
Source Type: GROUNDWATER

***Point of Diversion and Means of Diversion:**

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1		SWNESE	16	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 121.00 FEET
Static Water Level: 22.00 FEET
Casing Diameter: 6.63 INCHES
Pump Size: 20.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
2		SWNESE	16	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 141.00 FEET
Static Water Level: 21.00 FEET
Casing Diameter: 6.63 INCHES
Pump Size: 10.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*3		SWSWSE	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 240.00 FEET
Static Water Level: 35.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*4		SWSWSE	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 246.00 FEET
Static Water Level: 33.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*5		NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 367.00 FEET
Static Water Level: 160.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*6		NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 355.00 FEET
Static Water Level: 30.00 FEET
Casing Diameter: 6.00 INCHES

*7	NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 423.00 FEET
Static Water Level: 32.00 FEET
Casing Diameter: 6.00 INCHES

***Purpose (Use):** MUNICIPAL
Volume: 48.90 AC-FT
Period of Use: JANUARY 1 to DECEMBER 31

***Place of Use:**

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*1				15	21N	29W	SANDERS
*2			E2	16	21N	29W	SANDERS
*3			W2SW	13	21N	29W	SANDERS
*4				14	21N	29W	SANDERS
*5			N2N2	22	21N	29W	SANDERS
*6			N2N2	23	21N	29W	SANDERS

ASSOCIATED RIGHT
THIS WATER RIGHT IS ASSOCIATED TO WATER RIGHT NO. 76N 85780, 76N 30016270, 76N 97278. THEY ARE A MANIFOLD SYSTEM AND HAVE OVERLAPPING PLACES OF USE.

CLARK FORK RIVER BASIN LAW
THIS PROVISIONAL WATER USE PERMIT HAS A PRIORITY DATE THAT IS JUNIOR TO THE RIGHTS OF SENIOR WATER RIGHT HOLDERS IN THE CLARK FORK RIVER BASIN. IN ACCORDANCE WITH MONTANA LAW, YOU MAY BE SUBJECT TO A CALL BY SENIOR WATER RIGHT HOLDERS, IN WHICH CASE YOU MAY BE REQUIRED TO DISCONTINUE YOUR USE OF WATER FOR THE PERIOD OF THE CALL.

GROUNDWATER WASTE & CONTAMINATION
THIS RIGHT IS SUBJECT TO SECTION 85-2-505, MCA, REQUIRING A WELL BE CONSTRUCTED SO IT WILL NOT ALLOW WATER TO BE WASTED OR CONTAMINATE OTHER WATER SUPPLIES OR SOURCES, AND A FLOWING WELL MUST BE CAPPED OR EQUIPPED SO THE FLOW OF THE WATER MAY BE STOPPED WHEN NOT BEING PUT TO BENEFICIAL USE.

GROUNDWATER WELL - ACCESS PORT
THE FINAL COMPLETION OF THE WELL(S) MUST INCLUDE AN ACCESS PORT OF AT LEAST .50 INCH SO THE STATIC LEVEL OF THE WELL MAY BE ACCURATELY MEASURED.

WATER MEASUREMENT-INLINE FLOW METER REQUIRED
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OWNERSHIP UPDATE RECEIVED
OWNERSHIP UPDATE ID # 45878 RECEIVED 05/03/2007

THE INFORMATION SHOWN BELOW REFLECTS THE ENTIRE WATER RIGHT.
AN ASTERISK (*) HAS BEEN PLACED NEXT TO EACH ITEM ALTERED BY THIS CHANGE AUTHORIZATION.

Water Right Number: 76N 85780-00 PROVISIONAL PERMIT
Version: 2 -- CHANGE AUTHORIZATION
Version Status: ACTIVE

Owners:
SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS, MT 59873

Priority Date: JUNE 1, 1993 at 09:33 A.M.
Enforceable Priority Date: JUNE 1, 1993 at 09:33 A.M.
Purpose (use): MUNICIPAL
Maximum Flow Rate: 210.00 GPM
Maximum Volume: 104.32 AC-FT
Source Name: GROUNDWATER
Source Type: GROUNDWATER

***Point of Diversion and Means of Diversion:**

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*1		SWNESE	16	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Flow Rate: 110 GPM
Well Depth: 121.00 FEET
Static Water Level: 22.00 FEET
Casing Diameter: 6.63 INCHES
Pump Size: 20.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*2		SWNESE	16	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Flow Rate: 110 GPM
Well Depth: 141.00 FEET
Static Water Level: 21.00 FEET
Casing Diameter: 6.63 INCHES
Pump Size: 10.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
3		SWSWSE	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Flow Rate: 210 GPM
Well Depth: 240.00 FEET
Static Water Level: 35.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
4		SWSWSE	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 246.00 FEET
Static Water Level: 33.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*5		NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Flow Rate: 210 GPM
Well Depth: 367.00 FEET
Static Water Level: 160.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*6		NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 355.00 FEET
Static Water Level: 30.00 FEET
Casing Diameter: 6.00 INCHES

*7	NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 423.00 FEET
Static Water Level: 32.00 FEET
Casing Diameter: 6.00 INCHES

***Purpose (Use):** MUNICIPAL
Volume: 104.32 AC-FT
Period of Use: JANUARY 1 to DECEMBER 31

***Place of Use:**

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*1				15	21N	29W	SANDERS
*2			W2SW	13	21N	29W	SANDERS
*3				14	21N	29W	SANDERS
*4			E2	16	21N	29W	SANDERS
*5			N2N2	22	21N	29W	SANDERS
*6			N2N2	23	21N	29W	SANDERS

ASSOCIATED RIGHT
THIS WATER RIGHT IS ASSOCIATED TO WATER RIGHT NO. 76N 81519, 76N 97278, 76N 30016270. THEY ARE A MANIFOLD SYSTEM AND HAVE OVERLAPPING PLACES OF USE.

CLARK FORK RIVER BASIN LAW
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OWNERSHIP UPDATE RECEIVED
OWNERSHIP UPDATE ID # 45878 RECEIVED 05/03/2007

THE INFORMATION SHOWN BELOW REFLECTS THE ENTIRE WATER RIGHT.
AN ASTERISK (*) HAS BEEN PLACED NEXT TO EACH ITEM ALTERED BY THIS CHANGE AUTHORIZATION.

Water Right Number: 76N 97278-00 PROVISIONAL PERMIT
Version: 2 – CHANGE AUTHORIZATION
Version Status: ACTIVE

Owners: SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS, MT 59873

Priority Date: MAY 17, 1996 at 09:01 A.M.
Enforceable Priority Date: MAY 17, 1996 at 09:01 A.M.

Purpose (use): MUNICIPAL
Maximum Flow Rate: 440.00 GPM
Maximum Volume: 25.98 AC-FT
Source Name: GROUNDWATER
Source Type: GROUNDWATER

***Point of Diversion and Means of Diversion:**

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*1		SWNESE	16	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 121.00 FEET
Static Water Level: 22.00 FEET
Casing Diameter: 6.63 INCHES
Pump Size: 20.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*2		SWNESE	16	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 141.00 FEET
Static Water Level: 21.00 FEET
Casing Diameter: 6.63 INCHES
Pump Size: 10.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*3		SWSWSE	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 240.00 FEET
Static Water Level: 35.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*4		SWSWSE	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 246.00 FEET
Static Water Level: 33.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
5		NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 367.00 FEET
Static Water Level: 160.00 FEET
Casing Diameter: 6.00 INCHES
Pump Size: 10.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
6		NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 355.00 FEET
Static Water Level: 30.00 FEET
Casing Diameter: 6.00 INCHES
Pump Size: 10.00 HP

*7		NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 423.00 FEET
Static Water Level: 32.00 FEET
Casing Diameter: 6.00 INCHES

***Purpose (Use):** MUNICIPAL
Volume: 25.98 AC-FT
Period of Use: JANUARY 1 to DECEMBER 31

***Place of Use:**

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*1				15	21N	29W	SANDERS
*2			E2	16	21N	29W	SANDERS
*3			W2SW	13	21N	29W	SANDERS
*4				14	21N	29W	SANDERS
*5			N2N2	22	21N	29W	SANDERS
*6			N2N2	23	21N	29W	SANDERS

ASSOCIATED RIGHT
THIS WATER RIGHT IS ASSOCIATED TO WATER RIGHT NO. 76N 30016270, 76N 85780, 76N 81519. THEY ARE A MANIFOLD SYSTEM AND HAVE OVERLAPPING PLACES OF USE.

CLARK FORK RIVER BASIN LAW
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GROUNDWATER WELL - ACCESS PORT
THE FINAL COMPLETION OF THE WELL(S) MUST INCLUDE AN ACCESS PORT OF AT LEAST .50 INCH SO THE STATIC LEVEL OF THE WELL MAY BE ACCURATELY MEASURED.

WATER MEASUREMENT-INLINE FLOW METER REQUIRED
THE APPROPRIATOR SHALL INSTALL AN IN-LINE FLOW METER APPROVED BY THE REGIONAL MANAGER AT A POINT IN THE DELIVERY LINE APPROVED BY THE REGIONAL OFFICE TO RECORD THE FLOW RATE AND VOLUME OF WATER DIVERTED. 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 YEARLY WRITTEN RECORDS OF THE FLOW RATE AND VOLUME MEASUREMENTS AND SHALL SUBMIT THE RECORDS BY NOVEMBER 30 OF EACH YEAR. THE REGIONAL MANAGER MAY ALSO REQUEST MEASUREMENT RECORDS AT OTHER TIMES DURING THE YEAR. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OR MODIFICATION OF A PERMIT OR CHANGE. THE RECORDS MUST BE SENT TO THE WATER RESOURCES REGIONAL OFFICE AT THE ADDRESS LISTED BELOW. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE ACCURATELY. 3220 HIGHWAY 93 S, PO BOX 860, KALISPELL, MT 59903-0860 PH: 406-752-2288 FAX: 406-752-2843

OWNERSHIP UPDATE RECEIVED
OWNERSHIP UPDATE ID # 45878 RECEIVED 05/03/2007

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AN ASTERISK (*) HAS BEEN PLACED NEXT TO EACH ITEM ALTERED BY THIS CHANGE AUTHORIZATION.

Water Right Number: 76N 30016270 PROVISIONAL PERMIT
Version: 2 – CHANGE AUTHORIZATION
Version Status: ACTIVE

Owners: SALISH SHORES UTILITY CORP INC
PO BOX 1030
THOMPSON FALLS, MT 59873

Priority Date: AUGUST 19, 2005 at 02:09 P.M.
Enforceable Priority Date: AUGUST 19, 2005 at 02:09 P.M.

Purpose (use): MUNICIPAL
Maximum Flow Rate: 688.50 GPM
Maximum Volume: 198.10 AC-FT

Source Name: GROUNDWATER
Source Type: GROUNDWATER

***Point of Diversion and Means of Diversion:**

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
1		SWSWSE	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 240.00 FEET
Static Water Level: 35.00 FEET
Casing Diameter: 6.00 INCHES
Pump Size: 20.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
2		SWSWSE	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 246.00 FEET
Static Water Level: 33.00 FEET
Casing Diameter: 6.00 INCHES
Pump Size: 10.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
3		SWNESE	16	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 121.00 FEET
Static Water Level: 22.00 FEET
Casing Diameter: 6.00 INCHES
Pump Size: 20.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
4		SWNESE	16	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 141.00 FEET
Static Water Level: 21.00 FEET
Casing Diameter: 6.00 INCHES
Pump Size: 10.00 HP

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*5		NESWNW	15	21N	29W	SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 367.00 FEET
Static Water Level: 160.00 FEET
Casing Diameter: 6.00 INCHES

ID	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*6		NESWNW	15	21N	29W	SANDERS

Diversion Means: WELL
Well Depth: 355.00 FEET
Static Water Level: 30.00 FEET
Casing Diameter: 6.00 INCHES

*7 NESWNW 15 21N 29W SANDERS

Period of Diversion: JANUARY 1 TO DECEMBER 31
Diversion Means: WELL
Well Depth: 423.00 FEET
Static Water Level: 32.00 FEET
Casing Diameter: 6.00 INCHES

***Purpose (Use):** MUNICIPAL
Volume: 198.10 AC-FT
Period of Use: JANUARY 1 to DECEMBER 31

***Place of Use:**

ID	Acres	Govt Lot	Qtr Sec	Sec	Twp	Rge	County
*1				15	21N	29W	SANDERS
*2			E2	16	21N	29W	SANDERS
*3			W2SW	13	21N	29W	SANDERS
*4				14	21N	29W	SANDERS
*5			N2N2	22	21N	29W	SANDERS
*6			N2N2	23	21N	29W	SANDERS

ASSOCIATED RIGHT
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OWNERSHIP UPDATE RECEIVED
OWNERSHIP UPDATE ID # 45878 RECEIVED 05/03/2007

CHANGE APPLICATION CRITERIA ASSESSMENT

Application No.: 76N-30027719 Salish Shores Utility Corp INC

Date: January 16, 2008

Final Decision Maker: Terry Eccles

X **GRANT APPLICATION**: The findings and conclusions show that the criteria have been met.

☐ DENY APPLICATION: The findings and conclusions do not show that the criteria have been met. A Notice and Statement of Opinion will be sent to the applicant.

☐ MODIFY APPLICATION: The findings and conclusions show the criteria have been met, however application modifications are required. A Notice and Statement of Opinion will be sent to the applicant.

The following criteria must be met by an applicant. Complete this form if no objections were received to an application or if the objections were settled.

Application Details: This is an application to change four Provisional Water Use Permits issued for incremental phases of what is now being considered a single development in a Master Development Plan. This master plan is regulated by the Public Service Commission (PSC) for the area which is encompassed by the four subject permits containing seven wells. This change application changes the purpose of use from multiple domestic to municipal, manifolds all points of diversion as the Master Plan delineates and makes all places of use identical considered to be a general service area. Generally, four wells will be the primary diversions and the other three wells will be used for emergency and back-up purposes. The wells will serve the entire service area described as the place of use by the previously issued permits. There is no increase in the flow rate and volume of the four subject permits already issued. This application is to commingle the water in a manifold system for municipal use required by the Master Development Plan to ensure adequate service.

The following Provisional Permits are proposed to be changed or modified to municipal use and include the new point of diversion, well #7, and/or place of use: 76N-81519, POD, (wells #1 & #2), 76N-85780, POD, (wells #3 & #4), 76N-97278, POD (wells #5, #6) and 76N-30016270, POD, (wells #1 & #4).

Water Right #	Flow (gpm)	Volume ac/ft	Priority Date
76N 81519-00	110.0	48.90	5/14/92
76N 85780-00	210.0	104.32	6/01/93
76N 97278-00	440.0	25.98	5/17/96
76N 30016270	688.5	198.1	8/19/05

Historic Use: The applicant must prove the amount of water being changed for each water right will not exceed or increase the flow rate historically diverted under the historic use, nor exceed or increase the historic volume consumptively used under the existing use.

FINDINGS OF FACT: 76N-81519 was filed for the entire Salish Shores 1 subdivision. The permit was issued for 44-lots with a flow rate of 110 gpm and a volume of 71.72 acre-feet from 2-groundwater wells. The Project Completion Notice was due December 31, 2003 but was not timely filed, therefore the permit was revoked. On June 23, 2004 a Project Completion Notice was received and the permit was reinstated based on the evidence submitted with the project completion notice identifying what was "completed" by the original December 31, 2003 deadline. The right was reduced to 30-lots with a volume of 48.9 acre-feet. The flow rate was perfected and remains as issued for 110 gpm. Historic operation of the right consists of two wells used continually year around for the entire subdivision. The total flow rate and volume has been utilized based upon the number of homes completed, the flow and volume necessary for this number of homes and the verification that the beneficial use is reasonable and necessary to serve the domestic lots throughout the period of diversion and use.

76N-85780 was filed for Salish Shores 2 subdivision. The permit was issued for 64-lots with a maximum flow rate of 210 gpm and an annual volume of 104.32 acre-feet from 2-groundwater wells. The Project Completion Notice due date was December 31, 2009; however, all 64-lots are developed, 210 gpm has been used and the volume of 104.32 acre-feet achieved. The Project Completion Notice was received June 19, 2007 and the permit was certified confirming the flow rate, volume and 64-households on June 26, 2007. The total flow rate and volume has been utilized. The total flow rate and volume has been utilized based upon the number of homes completed, the flow and volume necessary for this number of homes and the verification that the beneficial use is reasonable and necessary to serve the domestic lots throughout the period of diversion and use.

76N-97278 is a permit for commercial and lawn and garden purposes for the Tradewinds Commercial Village Phase 1 and one additional lot. The permit covers a total of 11-lots with water from two wells producing a maximum flow rate of 440 gpm and an annual volume of 25.98 acre-feet. The Project Completion Notice due date was December 31, 2007; however the full flow rate and volume has been utilized and the Project Completion Notice was received on June 19, 2007. The permit was certified June 26, 2007 confirming the project was completed as proposed. The total flow rate and volume has been utilized based upon the number of homes completed, the flow and volume necessary for this number of homes and the verification that the beneficial use is reasonable and necessary to serve the domestic lots throughout the period of diversion and use.

76N-30016270 is a permit issued for the 14-lots that were lost from permit 76N-81519 when the Project Completion Notice was missed and an Extension of Time was not filed. The permit is for increased and combined usage of the four wells permitted by 76N-81519 and 76N-85780. The total increased amount of water is 688.5 gpm and 198.1 acre-feet from all four wells combined. The permit is also for future use that was proposed in the original application. Most of the new uses have not yet been developed, but the wells are fully operational and have been used continuously year around for the developments completed to date. The permit application included extensive pump tests for all four wells and each well is capable of providing the full extent of the proposed future uses. The Project Completion Notice is not due until December 31, 2021 and the Project Completion Notice for this Change Authorization will be correlated with that date.

CONCLUSIONS OF LAW: Department administrative rulings have held that a water right in a change proceeding is defined by actual beneficial use, not the amount claimed or even decreed. <u>In the Matter of Application for Change Authorization No. G(W)028708-41I by Hedrich/Straugh/Ringer</u>, December 13, 1991, Final Order ; <u>In the Matter of Application for Change Authorization No. 008323-g76L by Starkel/Koester</u>, April 1, 1992, Final Order.

The historic flow rate and volume are supported by a preponderance of the evidence and define the actual beneficial use.

<u>Adverse Affect:</u> The applicant must prove 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.

FINDINGS OF FACT: The Department has permitted all of the water rights proposed to be changed. The proposed change is to combine the individual systems into one manifold Public Water Supply mandated by the PSC that serves the entire project area. The individual permits were issued for specific portions of the development. Due to the development of the Master Plan a revised water right is being requested through this proposed change. The change is for the maximum combined flow rate and volume of the existing Provisional Permits. The manifold system combining the water rights to cover the entire project area will not adversely affect any existing water rights or other perfected or planned uses and no State water reservations have been issued in this area. The water will be used as described and utilized historically. Combining the water rights into one manifold system to coincide with the Master Development Plan will not cause or create an avenue that will enhance the possibility for adverse affect. The consolidation of the water rights will make it easier to measure and monitor the actual use of water.

The applicant is requesting a consolidation of water rights of which the individual water being changed has been used for the beneficial purposes and developments to which they were permitted. The proposed changes are to combine the water rights to coincide with the Master Development Plan and accurately permit the future uses as outlined in the Plan. There will be no adverse impact because there is really no "change in the overall usage as currently permitted. The wells will be incorporated into a manifold system to more efficiently serve the current developments and the proposed future developments. There will be no increase in the flow rate or volume of the four subject permits already issued. The proposed change is for the maximum combined flow and volume of the exiting permits.

CONCLUSIONS OF LAW: 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 reservation has been issued. Mont. Code Ann. § 85-2-402(2)(a).

Adequacy Of Appropriation Works: The applicant must prove, except for a lease authorization pursuant to 85-2-436 or a temporary change in appropriation right authorization to maintain or enhance streamflows to benefit the fishery resource pursuant to 85-2-408, the proposed means of diversion, construction, and operation of the appropriation works are adequate.

FINDINGS OF FACT: The means of diversion are 7-wells constructed to the Board of Water Well Contractor standards and approved by the Department of Environmental Quality. The wells are properly grouted and submersible pumps are installed. It is an engineered system that operates on demand for a municipal water supply. Public water supply wells of this type must comply with many construction standards. The proposed means of diversion, construction and operation of the system are adequate to divert and supply the proposed service area.

CONCLUSIONS OF LAW: Applicant has proven that the proposed means of diversion, construction and operation of the appropriation works are adequate. Mont. Code Ann. § 85-2-402(2)(b).

Beneficial Use: The applicant must prove the proposed use of water is a beneficial use and that the flow rate and volume are the amounts of water needed to sustain the proposed beneficial use.

FINDINGS OF FACT: The purpose of use is municipal which is recognized as a beneficial use by Montana Water Law §85-2-102(2)(a) MCA. "Municipal Use" means water appropriated by and provided for those in and around a municipality and/or and unincorporated town. The Salish Shores Utility Corp. Inc. is a public utility corporation under the control of the Public Service Commission. The Corporation serves the people within the general service area, which is near the town of Thomson Falls. The proposed amounts of water have all previously been permitted by the Department and considered reasonable for the proposed purpose at the time the permits were granted. Three of the four permits have Project Completion Notices on file with the Department providing evidence the water rights are perfected and reasonable for the purpose intended. The fourth permit was deemed reasonable at the time of issuance and has a project completion due date of December 31, 2021. This Change Authorization will have a Project Completion Notice due date that bears this same date.

The applicant shall install a department approved in-line flow meter at a point in the delivery line approved by the department. The applicant has agreed to this condition as noted in a notice and statement of opinion that was signed June 1, 2007 which will become a part of this permit.

This application is for a designated municipality and the wells will serve the entire proposed service area. The use is being described as municipal. Salish Shores Utility Corp. Inc. is a public utility corporation under the control of the Public Service Commission.

CONCLUSIONS OF LAW: Applicant has proven that the proposed use of water is a beneficial use and that the flow rate and volume are the amounts of water needed to sustain the proposed beneficial use. Mont. Code Ann. § 85-2-402(2)(c).

Possessory Interest: The applicant must prove, except for a lease authorization pursuant to 85-2-436 or a temporary change in appropriation right authorization pursuant to 85-2-408, 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.

FINDINGS OF FACT: This application is for instream flow, sale, rental, distribution, or is a municipal use application 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.

CONCLUSIONS OF LAW: The Applicant has proven a possessory interest in the property where water is to be put to beneficial use. Mont. Code Ann. § 85-2-311(1)(e). See also ARM, 36.12.1802

Salvage Water: If the change in appropriation right involves salvaged water, the proposed water-saving methods will salvage at least the amount of water asserted by the applicant.
The application does not involve salvaged water. Mont. Code Ann. § 85-2-402(2)(e).

Water Quality Issues: The applicant must prove that the water quality criteria have been met only if a valid objection is filed. The water quality of a prior appropriator will not be adversely affected or 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. No objections relative to water quality or the ability of a discharge permit holder to satisfy effluent limitations of the permit holder were filed against this Application.

Public Notice: The Application was properly noticed pursuant to Mont. Code Ann. §85-2-307.

Environmental Assessment: The Environmental Assessment prepared by the Department for this Application was reviewed and is included in the application file.

ATTACHMENT D

AQUIFER TESTING ADDENDUM – FORM 606-ATA

Form 606-ATA Attachments:

- **ATA.1.a – Variance Request Form 653**
- **ATA.2.a – Proposed POD Map**
- **ATA.2.b – Well Log**
- **ATA.2.c – Form 633 (see Excel file)**
- **ATA.2.d-3.h – Narrative Responses**
- **Attachment 1 – Geomatrix Hydrogeologic Summary Report (2005)**

Form No. 600-ATA/606-ATA *(04/2024)* **Applicant Name** Salish Shores Utility Corp

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

AQUIFER TESTING ADDENDUM

ARM 36.12.121

Complete this addendum if the source of water for a Beneficial Water Use Permit or Water Right Change application is groundwater. Check the box denoting the information is attached or data was collected following minimum testing procedures. On a separate document, address the required information. Attachments must be labeled as shown in the sections below (i.e., ATA.3.a).

Section 1. Attachments must make specific reference to the section item shown.

VARIANCE INFORMATION:

ATA.1.a ■ The Applicant submitted a variance request per ARM 36.12.123 for a variance from the requirements of ARM 36.12.121 and has provided a copy of the written request.

Section 2. Attachments must make specific reference to the section item shown.

MINIMUM INFORMATION THAT MUST BE SUBMITTED WITH APPLICATIONS:

ATA.2.a ■ Provide a map with labeled location of production and observation wells.

ATA.2.b ■ Provide well logs of production and observation wells.

ATA.2.c ■ Provide Form No. 633, in electronic format, with all information and data provided.

ATA.2.d ■ Provide a description of testing methods and quality of the aquifer test and data.

Section 3. Attachments must make specific reference to the section item shown.

MINIMUM TESTING PROCEDURES:

For any of the following, if the answer is "NO" or "NA", provide information explaining why on a separate attachment.

ATA.3.a YES ■ NO ❑ NA ❑ Pumping was maintained throughout the duration of the test and the rate did not depart from the average pumping rate by more than 5%.

ATA.3.b YES ❑ NO ❑ NA ■ The average pumping rate is equal to or greater than the proposed flow rate if the application is for one well or if the total proposed rate for multiple wells can be obtained from a single well.

ATA.3.c YES ■ NO ❑ NA ❑ The proposed pumping rate was demonstrated by testing multiple wells, and 3.e was met by one well and the remaining flow rate demonstrated by eight-hour drawdown and yield tests on additional production wells under 3.e.ii and 3.e.iii.

ATA.3.d YES ■ NO ❑ NA ❑ The pumping rate was measured with a reliable measuring device and recorded with clock time according to the schedule on Form No. 633.

ATA.3.e YES ■ NO ❑ NA ❑ The duration of pumping during an aquifer test was at least 24 hours for a proposed pumping rate and volume equal to or less than 150 gpm or 50 acre-feet, or at least 72 hours for a proposed pumping rate and volume greater than 150 gpm or 50 acre-feet.

i. If a variance from 3.e was granted, at a minimum, eight-hour drawdown and yield tests were completed on all new production wells.
ii. In addition to 3.e, if more than one new production well is proposed, at a minimum, eight-hour drawdown and yield tests were completed on all subsequent new production wells.
iii. The testing procedures for a minimum eight-hour drawdown and yield test performed on any production well followed 3.a, 3.d, and 3.h.

ATA.3.f YES ❑ NO ❑ NA ■ One or more observation wells were completed in the same source aquifer as the proposed production well and close enough to the production well so that drawdown is measurable and far enough away so that well hydraulics do not affect the observation well.

ATA.3.g YES ❑ NO ❑ NA ■ Background groundwater levels in the production well and observation well(s) were monitored at frequent intervals for at least two days prior to beginning the aquifer test according to Form No. 633.

ATA.3.h YES ■ NO ❑ NA ❑ Water levels in the production well and observation well(s) were reported with 0.01-foot precision according to the schedule specified on Form No. 633 (8-hour drawdown and yield test only need to provide water levels for drawdown; no background and recovery data are necessary).

VARIANCE REQUEST

ARM 36.12.123
Form No. 653 *(Revised 11/2024)*

For Department Use Only

RECEIVED
DNRC Water Resources
JAN 21 2025
Kalispell Unit

Application # 30165123 Basin 76 N
Received Date 1.21.25
Received By KK

INSTRUCTIONS
Use this form to request a variance from the requirements of ARM 36.12.121 or 36.12.1702, as provided for in ARM 36.12.123.

Submit this completed form to the appropriate regional office by the deadline established during the preapplication meeting or, if a preapplication meeting is not held, include this request with your filed application or as part of a deficiency response.

Applicant Name SALISH SHORES UTILITY CORP
Mailing Address PO Box 1030
City THOMPSON FALLS State MT Zip 59873-1030
Home Phone ______ Other Phone 406-531-0801
Email: TODD WAKEFIELD twakefield58@gmail.com

Representative Name (if other than Applicant) ______
■ Representative is Consultant ☐ Representative is Attorney ☐ Representative is Other (describe) ______
Mailing Address Bryan Gartland, Aspect, PO Box 134
City Helena State MT Zip 59624
Home Phone ______ Other Phone 406-599-7840
Email: Bryan.Gartland@aspectconsulting.com

Identify from which section(s) of ARM 36.12.121 or 36.12.1702 you are requesting a variance. Refer to the rule for a full list of requirements in these sections.

■ ARM 36.12.121 Aquifer Testing Requirements
- ☐ (2)(a) map with labeled location of production and observation wells
- ☐ (2)(b) well logs of the production and observation wells
- ☐ (2)(c) Form No. 633, in electronic format, with all information and data provided
- ☐ (3)(a) pumping rate may not depart from the average pumping rate by more than +/- 5%
- ☐ (3)(b) average pumping rate equal to or greater than the proposed flow rate if the application is for one well or if the total proposed rate for multiple wells can be obtained from a single well
- ☐ (3)(c) proposed pumping rate may be demonstrated by testing multiple wells as long as (e) is met by one well and the remaining flow rate is demonstrated by eight-hour drawdown and yield tests on additional production wells under (e)(i)(i)
- ☐ (3)(d) pumping rate must be measured with a reliable measuring device and recorded with clock time according to the schedule on Form No. 633
- ☐ (3)(e) minimum duration of pumping during an aquifer test must be 24 hours for a proposed pumping rate and volume equal to or less than 150 GPM or 50 AF, or 72 hours for a proposed pumping rate and volume greater than 150 GPM or 50 AF
- ☐ (3)(e)(i) at a minimum an eight-hour drawdown and yield test is required on all new production wells
- ☐ (3)(e)(ii) In addition to (e), if more than one new production well is proposed, at a minimum an eight-hour drawdown and yield test is required on all subsequent new production wells
- ☐ (3)(e)(iii) the testing procedures for a minimum eight-hour drawdown and yield test performed on any production well must follow (a), (d), and (h)
- ☐ (3)(f) one or more observation wells must be completed in the same source aquifer as the proposed production well and close enough to the production well so that drawdown is measurable and far enough that well hydraulics do not affect the observation well
- ☐ (3)(g) background groundwater levels in the production well and observation well(s) must be monitored at frequent intervals for at least two days prior to beginning the aquifer test according to the Form No. 633
- ■ (3)(h) groundwater levels in the production and/or observation well(s) must be reported with 0.01-foot precision according to the schedule specified on Form No. 633

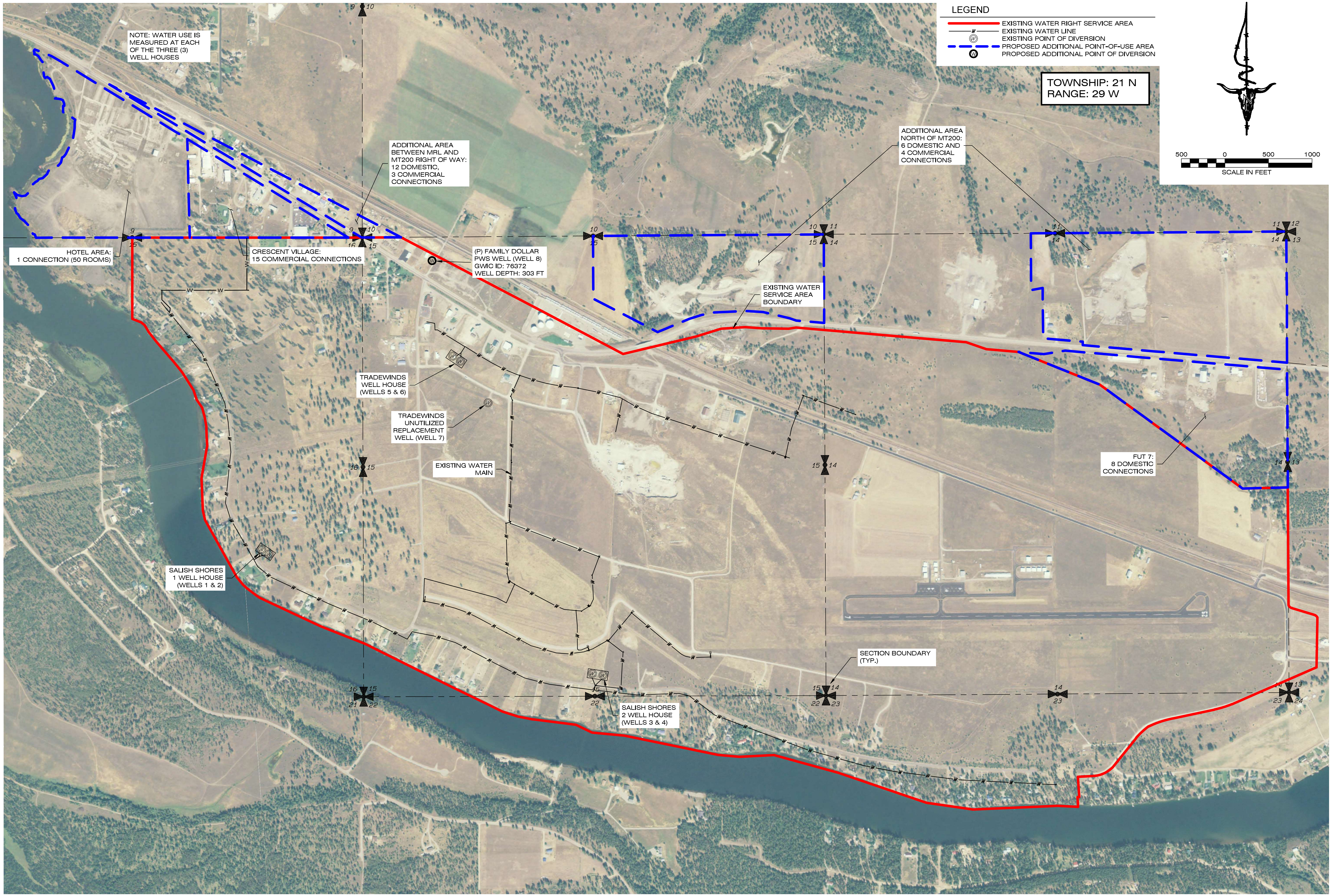
Explain the specific variance you are requesting and the reason for requesting it. Also identify your proposed alternative testing methodology or aquifer test data, if applicable. Attach additional sheets if necessary.

(3)(h) We did not report pumping period water levels "according to the schedule specified on Form No. 633"; rather, we reported water levels more frequently than required.

☐ ARM 36.12.1702 Physical Surface Water Availability

- ☐ (1)(b) at a minimum, three measurements that reflect high, moderate, and low flows during the period of diversion
- ☐ (4) once monthly measurements at department-approved intervals during the proposed period of diversion

Explain the specific variance you are requesting and the reason for requesting it. Also identify your proposed alternative measurement methodology, if applicable. Attach additional sheets if necessary.



IMEG
1817 SOUTH AVE. W. STE. A
MISSOULA, MT
59801
PH: 406.721.0142
FAX: 406.721.5224
www.imegcorp.com

PLOT DATE: 1/13/2025 1:46 PM

REVISIONS	DATE

DESIGNED: DMF
DRAFTED: LTM
CHECKED: DMF
DATE: JAN 2025

LOCATION: THOMPSON FALLS SANDERS COUNTY

PREPARED FOR: SALISH SHORES UTILITY CORP

PROJECT NAME: POU/POD CHANGE APPLICATION

SHEET TITLE: WATER SERVICE AREA PROPOSED AREAS

PROJECT NO. 20001572

SHEET: 2 OF 7

DWG LOCATION: \\FILES\ACTIVE\PROJECTS\2020\20001572.01\DESIGN\CIVIL\3_DRAFTING\1_DRAWINGS\AUTOCAD\EXHIBITS\20001572.02 WATER SERVICE AREA 2024-01-30 .DWG

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 (7/14/2009 2:32:43 PM)

Site Name: HOMESTEAD ENTERPRISE
GWIC Id: 76372

Section 1: Well Owner(s)

1) HOMESTEAD ENTERPRISE (MAIL)
RT. #3 BOX 10
THOMPSON FALLS MT 59873 [12/12/1979]

Section 2: Location

Township	Range	Section	Quarter Sections
21N	29W	15	NW¼

County	Geocode
SANDERS	

Latitude	Longitude	Geomethod	Datum
47.582024	-115.306593	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water

COMMERCIAL (1)

Section 4: Type of Work

Drilling Method: FORWARD ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Wednesday, December 12, 1979

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	303	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1	303	6				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
303	303	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	30	SAND AND CLAY	

Section 7: Well Test Data

Total Depth: 303
Static Water Level: 75
Water Temperature:

Unknown Test Method *

Yield _50_ gpm.
Pumping water level _100_ feet.
Time of recovery _ hours.
Recovery 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	1	SOIL
1	40	BOULDERS AND SAND
40	165	FINE SAND, SEEPAGE
165	298	CLAY, SAND, SEEPAGE
298	303	GRAVEL, SAND, CLAY AND WATER

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:	EUGENE KANE
Company:	KANE WELL DRILLING & PUMP SERVICE
License No:	WWC-23
Date Completed:	12/12/1979

Form 606-ATA Narrative Responses
Salish Shores Change Application 76N 30165123
January 10, 2025

ATA.2.d
The applicant conducted an 8-hour adequacy of diversion pumping test on the proposed point of diversion (Well 8). ATA.2.c presents the test data. The average pumping rate was approximately 170 gpm. The quality of the test and data are sufficient for the objective of demonstrating adequacy of diversion for this change application.

ATA.3.a
Form 633 documents an average pumping rate of approximately 170 gpm. Over the 8-hour pumping period, the pumping rate varied -5.4% (which rounds to -5%) to +3.4%. The pumping rate data meets the criteria for ATA.3.a.

ATA.3.b
Not applicable. Well 8 is a redundant backup well.

ATA.3.c
Attachment 1 presents Geomatrix (2005) which documents 72+ hour pumping tests on Salish Shores' Wells No. 1 and 3 (GWIC IDs 135335 and 139319, respectively). In an email dated September 22, 2023, Melissa Brickl of the WSB indicated that, although Form 633s do not exist for the 2005 Wells No. 1 and 3 pumping tests, Geomatrix (2005) and the pumping test data presented therein are substantial and credible and can be used to establish aquifer properties. In that email, the WSB instructed this applicant to conduct an 8-hour drawdown and yield test on the proposed additional POD, and to submit the data on Form 633

ATA.3.e
See response above to ATA.3.c.

ATA.3.f
Observation well monitoring not required for an 8-hour drawdown and yield test.

ATA.3.g
Background water level monitoring not required for an 8-hour drawdown and yield test.

ATA.3.h
We did not report pumping period water levels "according to the schedule specified on Form No. 633"; rather, we reported water levels more frequently than required.

HYDROGEOLOGIC SUMMARY REPORT
SALISH SHORES PUBLIC WATER SUPPLY

Thompson Falls, Montana

Prepared for:

Leufkens Company
P.O. Box 1030
Thompson Falls, Montana 59873

Prepared by:

Geomatrix Consultants, Inc.
1001 S. Higgins Ave, Building B
Missoula, Montana 59801
(406) 542-0129

August 2005
Revised September 2005

WORK COPY

Project No. 10730.001

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

The Leufkens Company is proposing to develop several parcels of land east of Thompson Falls, Montana (Figure 1). This report summarizes hydrogeologic information needed to support a Montana Department of Natural Resources and Conservation (DNRC) Application for Beneficial Water Use Permit (Form 600 and Criteria Addendum A) to supply water for the planned development.

The Salish Shores Utility Corporation currently operates a Public Water Supply (PWS) MT0003911 that provides water to Salish Shores 1 and Salish Shores 2 subdivisions in Thompson Falls. The Salish Shores PWS is a community non-transient system. The Montana Department of Environmental Quality (DEQ) prepared a Source Water Delineation and Assessment Report for the Salish Shores PWS in January 2005 (Herrick 2005).

Two pairs of production wells serve the Salish Shores PWS: Wells 1 and 2 serve Salish Shores 1 and Wells 3 and 4 serve Salish Shores 2 (Figure 2). Wells 3 and 4 are located approximately 4,000 feet west southwest of Wells 1 and 2 (Figure 2). During normal operation the wells alternately pump between each well in the respective pair. Wells 1 and 2 are 138 feet apart and Wells 3 and 4 are separated by 59 feet. Wells 1, 2, 3, and 4 are completed at total depths of 121, 141, 240, and 246 feet below ground surface (bgs), respectively. The wells are constructed of open-ended, 6-inch diameter steel casing with no perforations.

Two existing water rights cover 30 lots in Salish Shores 1 and all of Salish Shores 2. The Leufkens Company is seeking a third appropriation to supply water to the following existing and proposed developments:

- 14 existing residential lots in Salish Shores 1
- 2 existing lots just north of Salish Shores 2
- 28 residential lots in the proposed Salish Shores 3 subdivision
- 80 residential lots in the proposed Salish Shores 4 subdivision
- 20 residential lots for Airport housing
- 30 residential lots in the proposed Salish Bluffs East subdivision
- 40 commercial connections in the Tradewinds subdivision
- 10 commercial connections for the airport

This report includes descriptions of methods and results of aquifer tests performed on the four existing Salish Shores PWS wells. Data collected during the tests are necessary to meet DNRC requirements for an Application for Beneficial Water Use Permit to supply water to the parcels described above.

2.0 HYDROGEOLOGIC SETTING

The subject area is located in the Clark Fork River Valley immediately north of the Clark Fork River. The Valley is a northwest trending intermontane basin bounded by the Cabinet Mountains to the north and Coeur d'Alene Mountains to the south. The subject area is on a broad river terrace between the Clark Fork River and Cabinet Mountains. Several unconfined sand and gravel aquifers of high transmissivity are present in the Clark Fork River Valley near Thompson Falls (Herrick 2005). Groundwater flow is from the mountains toward the river at the valley margin and then shifts parallel to the river near the river.

Table 1 is a summary of water well information in three sections (15, 16, and 17) of Township 21 North, Range 29 West that make up the river terrace north of the Clark Fork River surrounding the Salish Shores PWS wells. This information was obtained from the Ground-Water Information Center (GWIC) website (www.mbmgwic.mtech.edu) maintained by the Montana Bureau of Mines and Geology (MBMG). Well depths in the area range from 34 to 424 feet bgs and well yields range from 10 to 750 gallons per minute (gpm). Lithologic descriptions provided for many of these wells are highly variable, but layers of sand and gravel, clay, and gravel with clay were noted.

The four wells (Wells 1 through 4, Figure 2) comprising the Salish Shores PWS are all located within a few hundred feet of the Clark Fork River (Figure 2). According to Herrick (2005) the Salish Shores PWS wells pump water from a confined aquifer. Well logs for the four wells (Appendix A) indicate that there is 100 to 200 feet of silt/clay above the aquifer in these locations. According to Herrick (2005), this confining unit is laterally extensive, and the confined aquifer is overlain by an extensive shallow unconfined aquifer.

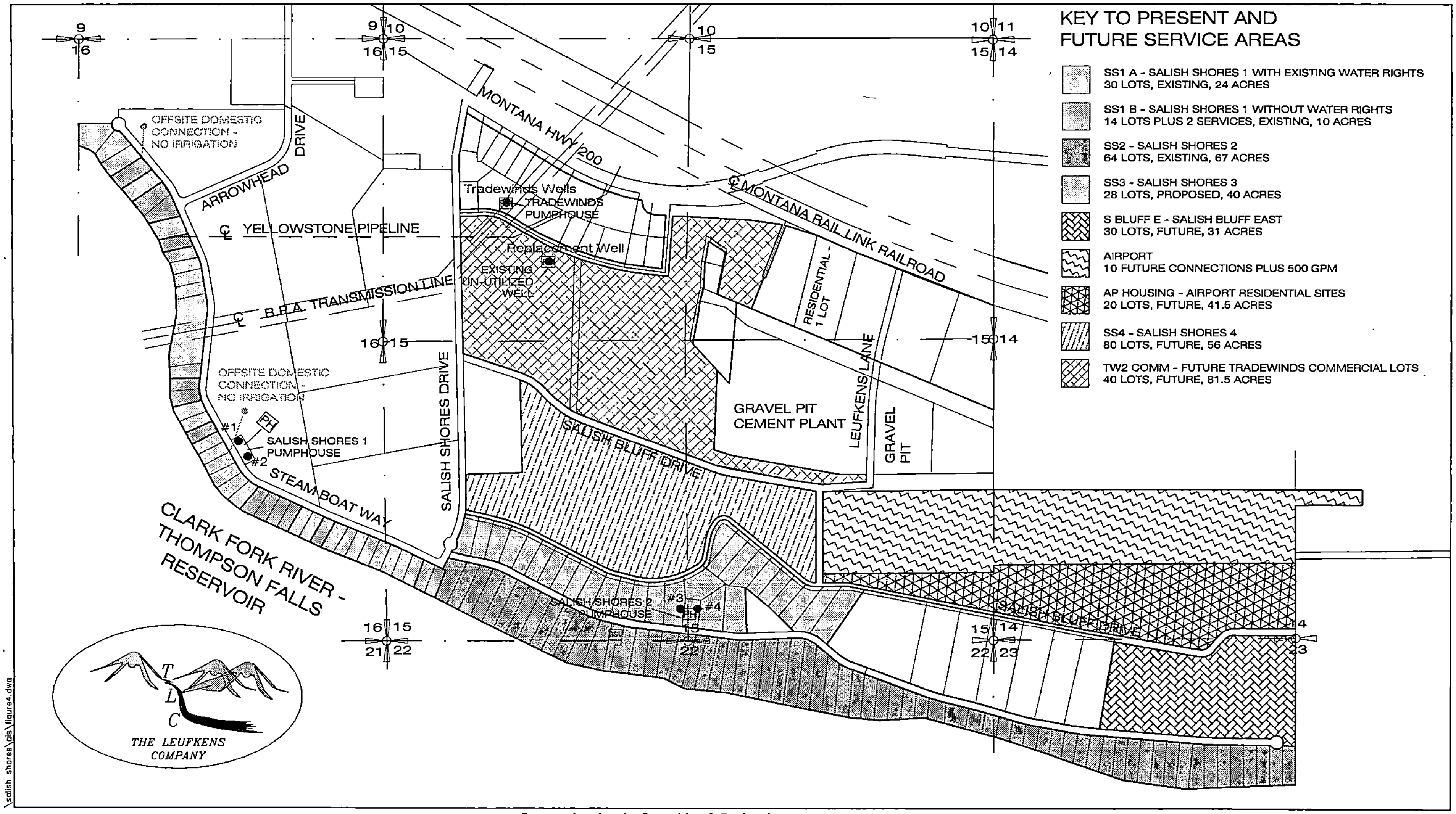
To investigate to nature and extent of the fine-grained unit present beneath the shallow unconfined aquifer, Geomatrix examined all of the well logs available through GWIC in sections 15 and 16 (within the above referenced township and range). Out of a total of 34 well logs inspected, only 6 do not show any clay encountered during drilling. These wells are located within section 16 on the opposite side of the Clark Fork River from the Salish Shores subdivision (Figure 2). In the remaining 28 logs, the depth at which clay is encountered and the thickness of the clay layer(s) is highly variable; suggesting that the silt/clay unit(s) encountered in the Salish Shores wells may be discontinuous. The stratigraphy is likely highly variable, consisting of multiple sand and gravel water-bearing units segregated by semi-continuous low-permeability silts and clays.

The driller's log for the "Replacement" well (Appendix A), which is located approximately 3,000 feet northeast of Wells 1 and 2 (Figure 2), indicates that at this location the upper 50 feet of subsurface material consists of sand and gravel. From 50 to 426 feet bgs layers of clay and silty sand were encountered. A gravel and boulder water-bearing zone was encountered from 415 to 423 feet bgs.

The aquifer intercepted by the four wells in the Salish Shores PWS is bounded by bedrock of the Belt Supergroup below and at the valley margins. According to Herrick (2005), depth to bedrock near Thompson Falls is thought to be 400 feet. Bedrock was not encountered at a depth of 423 feet bgs at the replacement well. However, shale was reportedly encountered in the Giles Gates well (Table 1) between 260 and 424 feet bgs.

3.0 AQUIFER TESTING

Pumping tests were performed on each of the existing Salish Shores PWS wells to evaluate the hydraulic response of the aquifer to pumping these wells. Aquifer testing was performed from April 20 to May 2, 2005. The following subsections describe the implementation of testing procedures, data acquisition, data analysis, and results.



Source: Landworks Consulting & Design, Inc

● Points of Diversion
● Other Wells
#1 ● Public Water Supply Well

Geomatrix 0000000

Current and Future Supplied Parcels
Salish Shores PWS
Thompson Falls, Montana
FIGURE 2

Table 1. Summary of Information for Wells Near the Salish Shores PWS

GWIC #	DNRC Water Right Number	Original Owner	Location	Ver?	Td	Pwl	Swl	Yeild	Date	Use
76371		MURRAY O.J.	21N29W15ACBB	NO			30	700	1/1/1919	DOMESTIC STOCKWATER
76375		GREEN GEORGE	21N29W15BBB	NO			334	160	1/1/1958	DOMESTIC
76380		MURRAY O.J.	21N29W16AAA	NO	34	29	28	30	1/1/1962	DOMESTIC
76368		MILLER J.G. & F.K.	21N29W14CBB	NO	36		34	30	1/1/1957	DOMESTIC
142580		BLUELL MARK &	21N29W15	NO	40	17		27	7/29/1994	DOMESTIC
149182	92294	J & M CONSTRUCTION	21N29W15BBB	NO	40	17		27	7/29/1994	DOMESTIC
76374		ZIMMERMAN KLAR	21N29W15BB	NO	40		32	10	8/15/1958	DOMESTIC
76378		OLIVER EARL C & A D	21N29W16	NO	55		37	15	1/1/1962	DOMESTIC IRRIGATION
189684		OWEN SCOTT	21N29W16DCB	NO	60		21	50	3/5/2001	DOMESTIC
205786		GORDON TAMARA C	21N29W16DCB	NO	60		13.83	60	5/15/2002	DOMESTIC
214460		MONTOURE, KEN	21N29W16ACBD	NO	60		18	35	9/10/2004	DOMESTIC
76373		EGGENSPERGER K.A.	21N29W15BB	NO	64	55	44	20	1/1/1962	DOMESTIC
76377		PYATT JOHN	21N29W15CC	NO	65	60	45	750	1/1/1958	DOMESTIC
122704	C076918-00	DOYLE JAMES AND	21N29W14ADD	NO	77		64	6	11/17/1990	DOMESTIC
76367		FAGAN FRED	21N29W14ABB	NO	86	72	62	5	1/1/1987	DOMESTIC
205787		SMITH MONTY	21N29W16DC	NO	90		55	40	5/13/2002	DOMESTIC
137575		JACOBI DALE	21N29W14	NO	95	90	26	7.5	12/12/1992	DOMESTIC
148525	93062	OLIVER DONALD E	21N29W16DCB	NO	100	70	50	35	6/19/1994	DOMESTIC
168521		OLIVER DONALD	21N29W16DDC	NO	100	65	55	30	7/1/1998	DOMESTIC
132996		HAMILTON T J AND	21N29W14AA	NO	110		75	1.3	2/22/1992	DOMESTIC
135336	81519	LEUFKIN BUD & JUDY (Salish Shores Well 1)	21N29W16DAC	NO	121	30	22	50	4/8/1992	
189687		MANIN BETHANNE AND	21N29W16DCC	NO	140		92	40	5/8/2001	DOMESTIC
205783		COCKRELL PAUL	21N29W16CDA	NO	140		92	75	5/1/2002	DOMESTIC
209268		RICHARDSON DIANE	21N29W16DCC	NO	140		93	30	2/21/2004	DOMESTIC
211461		SHIVELY JUDSON AND	21N29W16DCC	NO	140		23	100	4/1/2004	DOMESTIC
211463		SHIVELY JUDSON AND	21N29W16DCC	NO	140		23	100	4/1/2004	DOMESTIC
217263		SMITH, PHYLLIS M. &	21N29W16CDA	NO	140		65	40	3/21/2005	DOMESTIC
131977		LEUFKENS BUD (Salish Shores 2)	21N29W16DAC	NO	141	60	21	100	7/14/1992	TEST WELL
139316		HILLCREST RANCHES	21N29W15ABC	NO	182	170	33	20	6/30/1993	DOMESTIC
152760		HINCHCLIFFE RON	21N29W15BC	NO	222		50	100	7/7/1995	DOMESTIC
139319		LEUFKENS BUD (Salish Shores Well 3)	21N29W15DCC	NO	240	60	35	250	6/10/1993	DOMESTIC TEST WELL
139594	89272	VON-HEEDER CHIP	21N29W16ABD	NO	240	220	62	10	10/27/1993	UNKNOWN
139318		LEUFKENS BUD (Salish Shores Well 4)	21N29W15DCC	NO	246	40	33	50	6/13/1993	DOMESTIC TEST WELL
175586		WOOD GRANGER	21N29W16AA	NO	260		60	20	7/11/1999	
76372		HOMESTEAD ENTERPRISE	21N29W15B	NO	303	100	75	50	1/1/1979	PUBLIC WATER SUPPLY
168520		DOTY MICHAEL	21N29W15AC	NO	306		24	30	11/13/1998	DOMESTIC
139317		PETROLANE	21N29W15BB	NO	313	45	42	35	11/1/1993	INDUSTRIAL
208358		RESLER AMY	21N29W15BB	NO	314		44	75	9/23/2003	DOMESTIC
76376	64921	KUNTZ RON	21N29W15BBC	NO	327	55	48	50	1/1/1986	DOMESTIC
160492	99866	OLIVER DONALD	21N29W16BB	NO	340	330	40	10	9/20/1996	DOMESTIC
180434		LUNDGRESS CLARK	21N29W16BDB	NO	340		30	10	1/10/2000	DOMESTIC
175632		THE LEUFKENS CO	21N29W15BC	NO	355	150	30	200	7/31/1997	
76379	82532	OLIVER EARL	21N29W16BB	NO	360		35	5	9/19/1988	DOMESTIC
164971	C105428-00	WEAVER SAM AND	21N29W15BBC	NO	361		100	100	8/22/1997	COMMERCIAL
175584		THE LEUFKENS CO	21N29W15BC	NO	367		160		2/9/1995	
76369	C065645-00	FIRST NATIONAL BANK	21N29W14DAA	NO	380	75	45	5	6/6/1987	DOMESTIC
156611		CONOCO INC	21N29W15BA	NO	381		48	20	5/1/1996	INDUSTRIAL
175585		THE LEUFKENS CO	21N29W15BCA	NO	423	180	32	75	8/18/1998	
154127		GATES GILES	21N29W16AA	NO	424		35	20	11/9/1995	DOMESTIC

Notes:
Td = Total depth of well in feet below ground
Pwl = Pumping water level in feet below ground
Swl = Static water level in feet above/below ground - Negative values are reported for water levels that are above land surface.
Yield = Yield in gallons per minute
Date = Completion date of well/borehole
Use = Reported use of water
Ver? = Was location verified?

3.1 TEST IMPLEMENTATION

Aquifer testing was conducted by Maxim Technologies (Maxim) and Salish Shores Utility Corporation personnel. Utility personnel coordinated installation and operation of the temporary pumps and discharge piping, recorded manual water level and flow rate measurements, and collected water quality samples. Discharge from both tests was pumped directly into the Clark Fork River (located approximately 400 feet south of each respective well). Maxim personnel setup, installed, and downloaded electronic water level and flow rate instruments. Discharge was measured during the test using a digital paddlewheel sensor connected to an electronic data logger.

3.2 TESTING SEQUENCE, PUMPING RATES, AND DURATION

After conferring with Bill Uthman (personal communication, April 4, 2005) of DNRC it was determined that four pumping tests would be necessary to support a beneficial water use permit application for the Salish Shores PWS. For each pair of wells, a 72-hour constant rate discharge test and recovery test was required, and on the second well of each pair, an 8-hour yield test was required. The aquifer testing sequence, average pumping rates, test dates, and test durations are summarized in Table 2. Plots showing flow rate in each well during the test are presented in Appendix D.

Table 2. Sequence of Aquifer Testing, Flow Rates, and Test Durations

Pumping Well	Average Pumping Rate (gpm)	Pumping Date(s)	Pumping Duration (hours)
Well 3	427	4/20 – 4/23/05	74
Well 4	305[1]	4/25/05	8
Well 1	246	4/29 – 5/2/05	72
Well 2	245	5/2/05	8

(1) Flow rate varied considerably during the test due to gravel plugging the pump intake

3.3 WATER LEVEL MONITORING

Water levels were monitored in all four production wells before, during and after each of the four tests. Water levels were also monitored in a fifth well (the "Replacement Well") during all four tests. This well is completed to a total depth of 423 feet bgs and is located 800 feet south of Highway 200 and approximately 3,000 feet from each of the four Salish Shores production wells (Figure 2).

3.4 DATA REDUCTION

Water-level data were downloaded from the data loggers and were compiled in a spreadsheet. Pressure measurements collected with the transducers were converted into relative water level elevations and subsequently into drawdown data.

Barometric pressure in the site vicinity was measured continuously with a pressure transducer throughout the four aquifer tests. These barometric data were plotted along with water level changes in the pumping and observation wells. No direct correlation between changes in barometric pressure and water level changes was identified. Therefore, it was not necessary to correct drawdown and recovery data for changes in barometric pressure.

4.0 DATA ANALYSIS

Time versus drawdown and recovery data collected during each aquifer test were used to qualitatively and quantitatively evaluate aquifer characteristics. Qualitative interpretations included evaluating whether the aquifer is confined or unconfined and assessing if the presence or absence of aquifer boundary conditions within the area influenced during each test. Quantitative interpretation of the data includes developing estimates of various aquifer properties: transmissivity (T), storativity (S), and hydraulic conductivity (K). Time-drawdown plots for wells monitored during the testing period are included in Appendix B.

4.1 BACKGROUND MONITORING

Water levels were monitored continuously during the period of April 20 to May 2, 2005. With the exception of variability in drawdown during the 72 hour test in Well 1 (discussed in Sections 4.2), water levels observed in Wells 1 through 4 prior to the start of testing and between pumping periods did not vary by more than 0.1 feet during the period monitored. Therefore no trend corrections were applied to drawdown or recovery data prior to analysis.

4.2 AQUIFER TEST RESPONSES

Drawdown responses were detected in observation wells closest to the well being tested during testing of Wells 1, 3, and 4, while no drawdown was observed in any of the other wells monitored. No drawdown was measured in any observation well during the testing of Well 2. Time-drawdown plots for wells monitored during each test are presented in Figures B-1 through B-3 contained in Appendix B. Test responses shown in these plots are summarized as follows:

- Well 1 was pumped for a total of 72 hours at an average flow rate of 246 gpm (Appendix D). A maximum drawdown of 5.20 feet was measured in the pumping well, while a maximum of 0.85 feet of drawdown was observed in Well 2, located 138 feet from the pumping well. Maximum drawdown in both the pumping and observation wells was observed approximately 2,800 minutes (46.5 hours) into the pumping period. Between this time and the shutdown of the test, water levels in Wells 1 and 2 decreased approximately 0.6 feet. This observed trend may be the result of pumping/recovery influence from another well in the area. Following shutdown of the pumping well, the water level Well 1 recovered completely in approximately 7 seconds.
- Well 3 was pumped for a total of 74 hours at an average flow rate of 427 gpm (Appendix D). A maximum drawdown of 36.99 feet was measured in the pumping well, while a maximum of 4.86 feet of drawdown was observed in Well 4, located 59 feet from the pumping well. Ninety percent of the total drawdown measured in the pumping well (Well 3) occurred within the first 17 minutes of pumping. Following the cessation of pumping, the water level in Well 3 recovered to 90 percent of the pre-pumping level in approximately 12 seconds, and reached full recovery (99%) in approximately 20 minutes.

- Well 2 was pumped for a total of 8 hours at an average flow rate of 245 gpm (Appendix D). A maximum of 4.04 feet of drawdown was measured in the pumping well approximately 7 seconds after the pump was started. No drawdown was observed in Well 1, located 138 feet from the pumping well. The water level in Well 2 recovered to near pre-pumping levels almost immediately following shutdown of the well.
- Well 4 was pumped for a total of 8 hours at an average flow rate of 305 gpm. The flow rate varied considerably because gravel was pulled into the pump intake during the test and restricted flow into the pump bowls (Appendix D). This caused the drawdown in the pumping well to also vary during the test (Figure B-3). A maximum drawdown of 72.98 feet was measured in the pumping well, while a maximum of 3.67 feet of drawdown was observed in Well 3, located 59 feet from the pumping well. Similar to Well 3, the water level in Well 4 recovered to near pre-pumping levels almost immediately following shutdown of the well.

4.3 RESULTS

Drawdown and recovery data from the pumping and observation wells were analyzed using standard curve-matching techniques and AquiferWin 32 ™ software to calculate estimates of aquifer properties including transmissivity and storativity. This software combines statistical parameter estimation methods with interactive curve-matching capabilities for several aquifer testing solution methods.

The Hantush-Jacob leaky confined aquifer solution (Hantush and Jacob, 1955) provided the best fit to time-drawdown data from the observation wells in tests of Wells 1, 3 and 4. Figure 3 includes log-log plots of the observed response in Well 4 during the test of Well 3 fitted to the Theis (Theis 1935) and Hantush-Jacob type curves. This plot shows that as the pumping period progresses, the observed drawdown values diverge from the Theis curve. The fact that these later-time data fall below the Theis curve suggests that vertical leakage into the pumped aquifer is occurring from an overlying leaky aquitard. This leaky confined response is consistent with the conceptual model of the lithologic system discussed previously (Section 2.0).

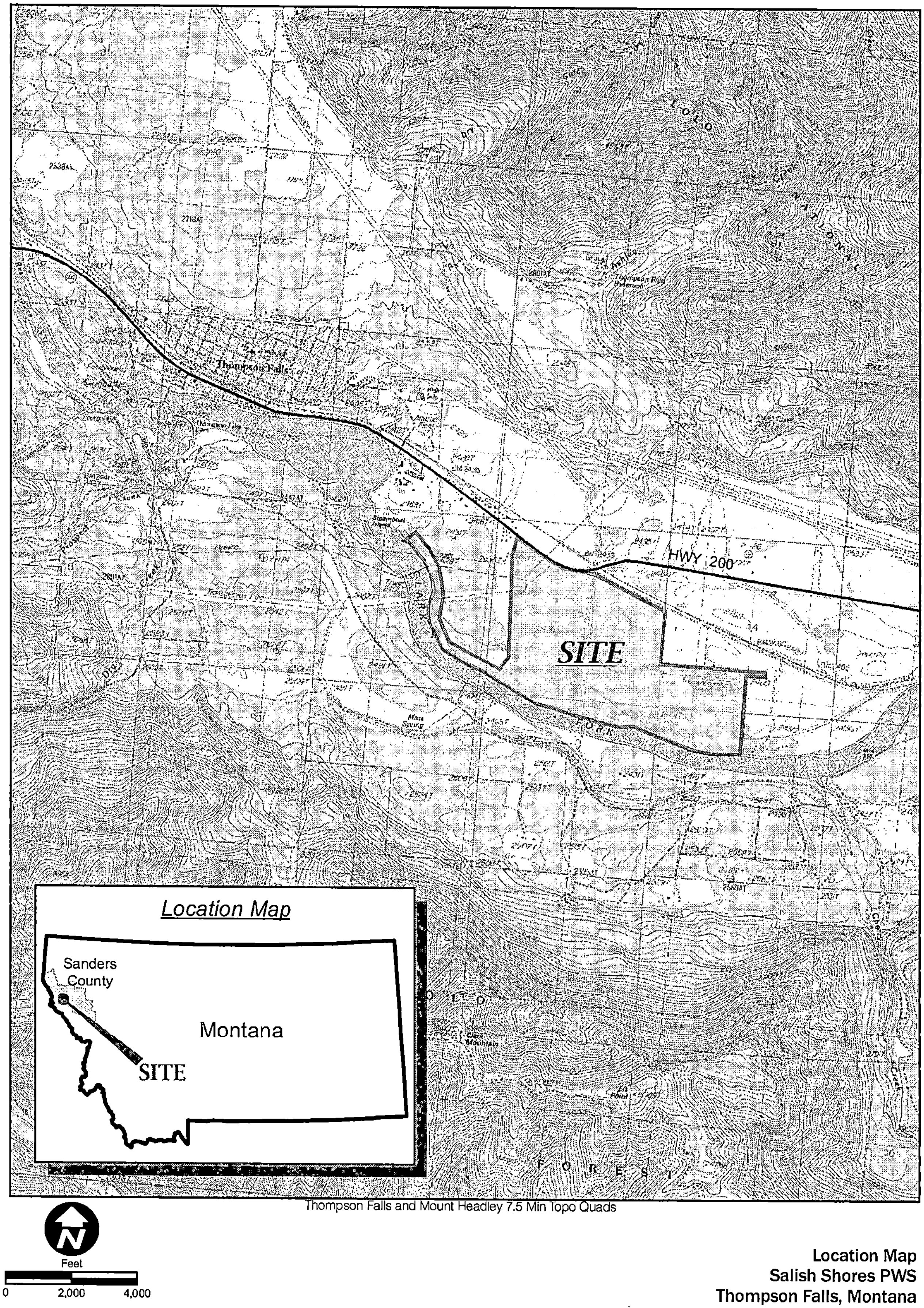
Aquifer test curve matches are presented in Appendix B. Aquifer parameters estimated from each of the 72-hour tests are summarized in Table 3. Drawdown responses to each of the four tests were fitted to Hantush-Jacob curves while recovery data were matched to the Theis Recovery solution. Parameter estimates from the aquifer tests are summarized below:

- **Well 1**: Drawdown observed during the 72-hour test in the pumping well and in the nearest observation well (Well 2) was typical of a leaky confined aquifer (Figure B-1). Transmissivity estimates based on drawdown and recovery data from the observation well were 6,594 to 9,197 ft^2/day, respectively. Hydraulic conductivity estimates range from 29 to 41 feet per day. Calculated storativity is 7.0×10^{-5}.
- **Well 3:** Drawdown curves (Figure B-2) for the pumping well and in the nearest observation well (Well 4) are also typical of a leaky confined aquifer. Transmissivity estimates based on drawdown and recovery data from the observation well were 4,740 to

5,366 ft2/day, respectively. Hydraulic conductivity estimates range from 24 to 27 feet per day. Calculated storativity is 2.7 x 10-4.

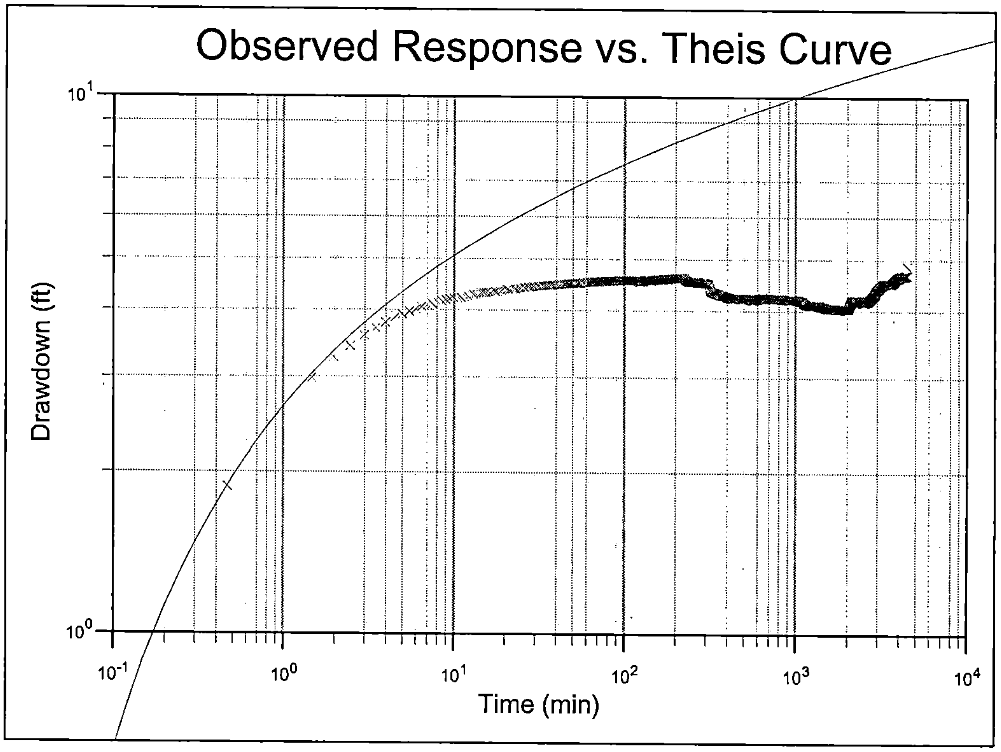
- **Well 2**: During the 8-hour test in Well 2, a maximum of 4.04 feet of drawdown was observed in the pumping well. Drawdown was not observed in the nearest observation well (Well 1).

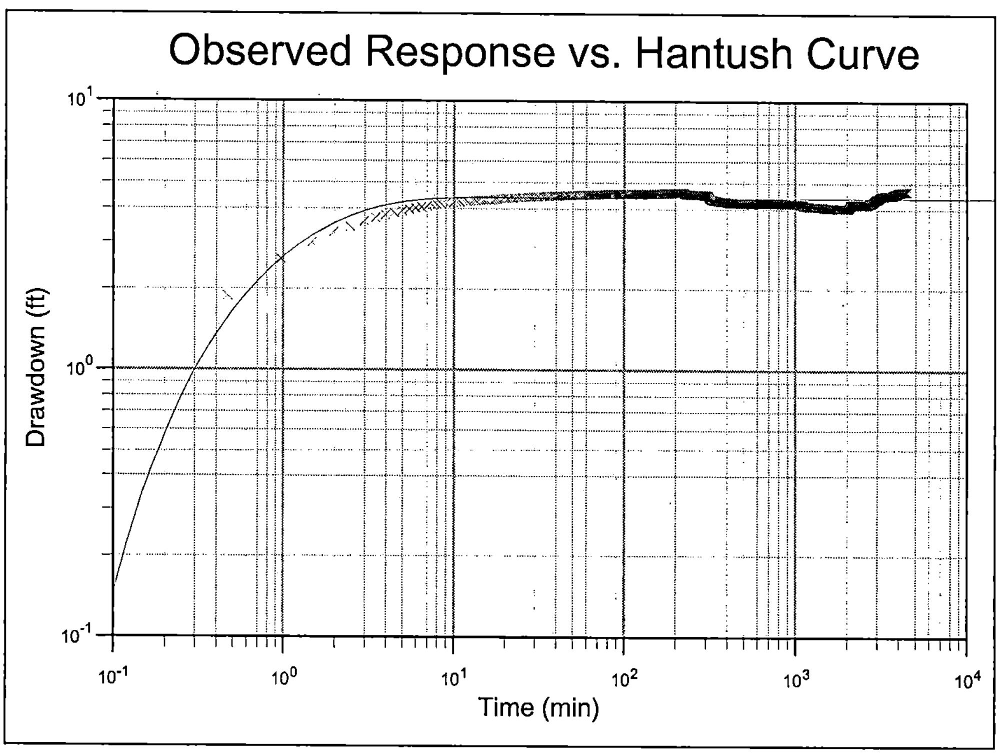
- **Well 4:** During the 8-hour test in Well 4, drawdown responses were observed in the pumping well (72.98 feet) and in the nearest observation well (Well 3, 3.67 feet). Most of the drawdown in the pumping well appeared to be due to well inefficiency.



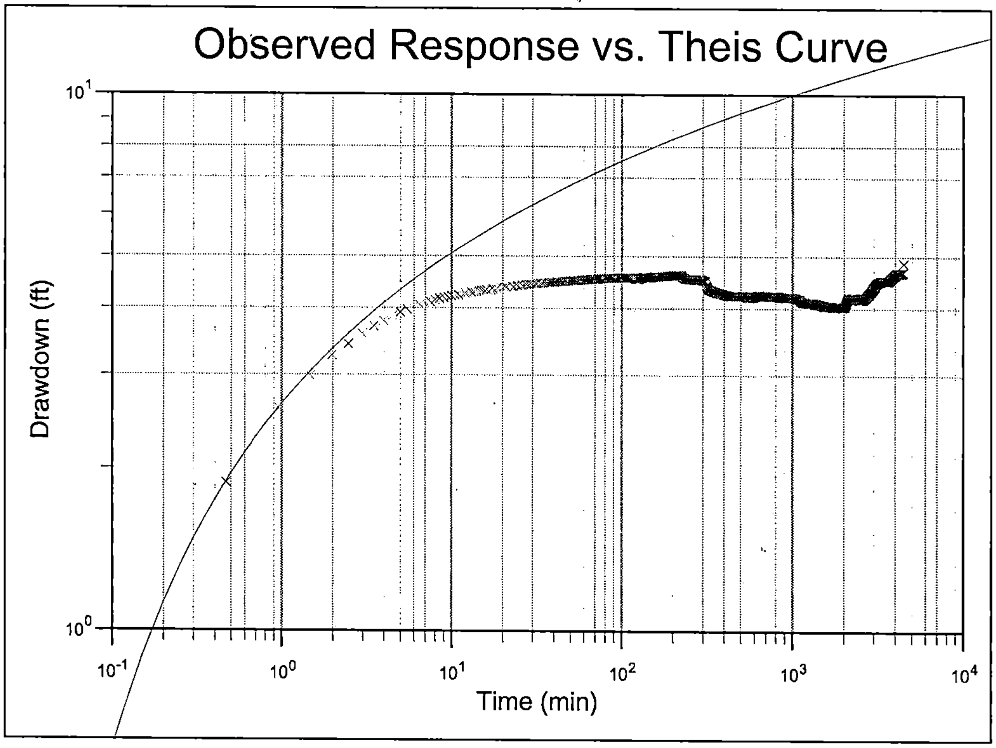
Geomatrix

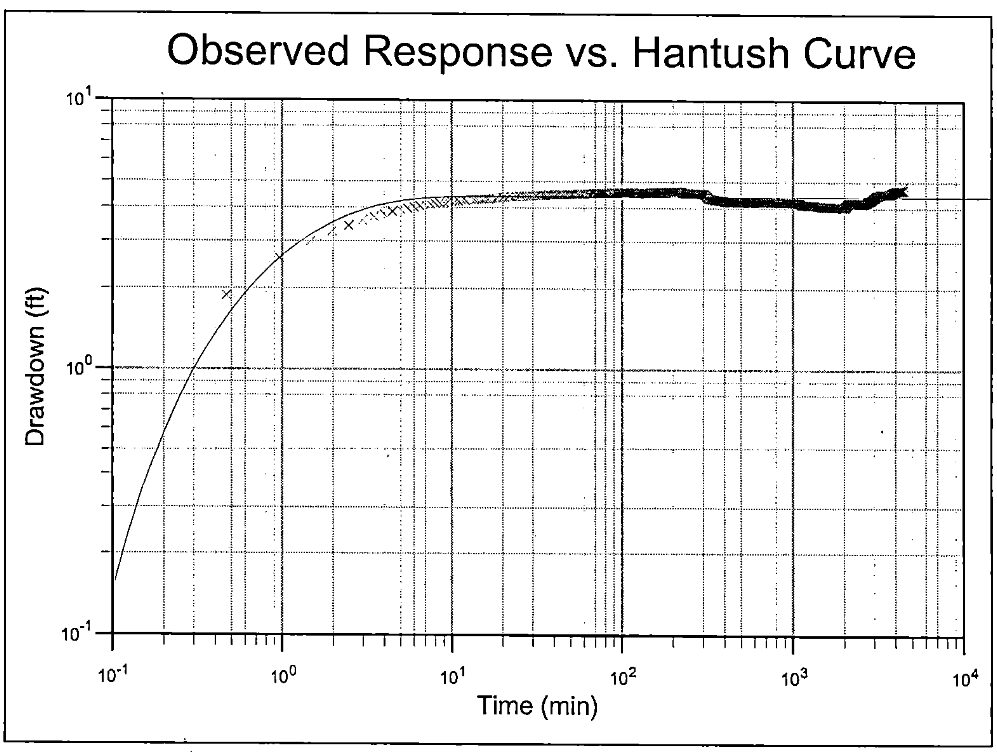
Location Map
Salish Shores PWS
Thompson Falls, Montana
FIGURE 1





Drawdown in Well 3 During Well 4 Test
Match to Theis and Hantush Solutions
FIGURE 3





Drawdown in Well 3 During Well 4 Test
Match to Theis and Hantush Solutions
FIGURE 3

Table 3. Results of Aquifer Test Analysis

Pumping Well and Pumping Parameters	Observation Well	Distance from Pumping Well (ft)	Response Observed Yes(Y) or No(N)	Maximum Drawdown (ft)	Method of Analysis	Transmissivity (ft^2/day)	Approximate Aquifer Thickness (ft) [1]	Hydraulic Condcutivity (ft/day)	Storage Coefficient
Well #1 Pumping Rate = 246 gpm Maximum Drawdown = 5.20 ft Test Duration = 72 hours	Well #2	138	Y	0.85	Hantush-Jacob	6,594	226	29	0.00007
					Theis Recovery	9,197		41	NA
	Replacement Well	3,300	N	--	--	--	--	--	--
	Well #3	4,074	N	--	--	--	--	--	--
	Well #4	4,125	N	--	--	--	--	--	--
Well #3 Pumping Rate = 427 gpm Maximum Drawdown = 36.99 ft Test Duration = 74 hours	Well #4	59	Y	4.86	Hantush-Jacob	5,366	174	31	0.00027
					Theis Recovery	4,740		27	NA
	Replacement Well	3,300	N	--	--	--	--	--	--
	Well #2	3,962	N	--	--	--	--	--	--
	Well #1	4,074	N	--	--	--	--	--	--
Well #2 Pumping Rate = 245 gpm Maximum Drawdown = 4.04 ft Test Duration = 8 hours	Well #1	138	N	--	--	--	--	--	--
	Replacement Well	3,300	N	--	--	--	--	--	--
	Well #3	3,962	N	--	--	--	--	--	--
	Well #4	4,012	N	--	--	--	--	--	--
Well #4 Pumping Rate = 305 gpm Maximum Drawdown = 72.98 ft Test Duration = 8 hours	Well #3	59	Y	3.67	--	--	--	--	--
	Replacement Well	3,300	N	--	--	--	--	--	--
	Well #2	4,012	N	--	--	--	--	--	--
	Well #1	4,125	N	--	--	--	--	--	--

(1) - Aquifer thicknes estimates based on drillers log and estimated depth to base of aquifer presented in Herrick (2005)

NA - not available; cannot be calculated from recovery data

5.0 WATER QUALITY MONITORING

Water quality samples were collected during the aquifer tests of Well 3 and Well 4. Samples were analyzed for total iron, manganese, and total arsenic. Three samples were collected from Well 3 during the 74-hour pumping period and one sample was taken from Well 4 near the conclusion of the 8-hour pumping period. Samples were submitted under chain of custody documentation to Montana Environmental Laboratory, LLC in Kalispell, Montana for analysis. Table 4 summarizes analytical laboratory results and includes DEQ's water quality standards.

Table 4. Summary of Water Quality Results – Salish Shores II Wells

Pumping Well	Sample Collection Date & Time	Arsenic Concentration (mg/L)[1]	Iron Concentration (mg/L)	Manganese Concentration (mg/L)
Well 3	4/20/05 @ 13:30	0.029	14.8	0.81
	4/21/05 @ 16:50	0.022	0.39	0.38
	4/22/05 @ 17:30	0.020	0.39	0.37
Well 4	4/25/05 @ 1900	0.019	1.30	0.38
WQB-7 Drinking Water Standard[2]		*0.050*	*0.30*	*0.05*

Note:
(1) mg/L – milligrams per liter
(2) WQB-7 – Montana Numeric Water Quality Standards, January 2004

6.0 EXISTING RIGHTS AND PROJECTED WATER NEEDS

Two Provisional Permits cover exiting water usage from the Salish Shores PWS (Table 5). These permits allow for a total of 320 gpm to be pumped from the four Salish Shores PWS wells. If the pumping rates used to test the four wells are summed, the total peak capacity of the system is 1,223 gpm.

Table 5. Summary of Existing Water Rights for Salish Shores PWS

Existing WR #	Type	Owner	Source	Flow Rate
81519-00	Provisional Permit	Bud Leufkens	Groundwater	110 gpm
85780-00	Provisional Permit	Bud Leufkens	Groundwater	210 gpm
			Total Flow Rate	320 gpm
			Total Capacity of Wells 1, 2, 3 & 4	1,223 gpm
			Excess Capacity	903 gpm

Figure 2 shows the parcels that the Leufkens Company is seeking to supply with water using the existing Salish Shores PWS wells. Table 6 includes estimated water demands for domestic, commercial, and lawn and garden uses after full build-out of the Salish Shores area. The Leufkens Company is seeking a water right for irrigation, domestic and commercial supply of 688.7 gpm for a total of 198.1 acre-feet per year.

7.0 GROUNDWATER MODELING

Geomatrix developed a numerical groundwater model of the hydrogeologic system near Thompson Falls using MODFLOW (McDonald and Harbaugh 1989) to support the Beneficial Water Use Permit Application. The following subsections describe the conceptual model and assumptions, model design, and model results.

7.1 CONCEPTUAL MODEL AND ASSUMPTIONS

The first step in the groundwater modeling process is the development of the conceptual model. Assumptions and the conceptual model that the numerical model is based on are summarized below.

- The aquifer hosting the Salish Shores PWS wells is semi-confined, overlain by a leaky confining unit, consists of sand and gravel, and is an average of 225 feet thick with a transmissivity of 6,750 feet.
- The semi-confined aquifer is overlain by approximately 100 to 200 feet of fine-grained material (silt and clay) with a hydraulic conductivity of 0.1 feet per day. This is representative of a sandy silt (Fetter 1988), which is conservative.
- Above these units is an unconfined sand and gravel unit that is approximately 25 feet thick with a hydraulic conductivity of 90 feet per day. The upper sand and gravel unit is in hydraulic communication with the Clark Fork River.
- Groundwater flow is parallel to the Clark Fork River (northwest).
- The four Salish Shores PWS wells are simulated using MODFLOW's Well Package.
- The Clark Fork River is simulated using MODFLOW's River Package.

Table 6. Projected Water Demand for Buildout of Parcels to be Supplied by Salish Shores PWS

Use Type	Commercial		Domestic							
	Airport	Tradewinds 2 Commercial	Salish Shores 1 (14 lots)	Salish Shores 3	Salish Bluffs East	Airport Housing	Salish Shores 4	Totals	Units	Equations and Notes
Commercial Flow Rates										
Ave. Annual Daily Demand per Capita, Qr:	100	100							gpcd	
No. of Persons per Home :	0	0							persons	
Wastewater Flow (Commercial), Qc:	50	200								
Number of Connections, Nc:	10	40						50	lots	
Population:	0	0							people	
Assume a Population, P, of:	0	0							people	
Total Ave. Annual Daily Demand, Q:	500	8,000						**8,500**	gpd	= P X Qr or = Nc X Qc
Peaking Factor, PF	4	4								
Peak Demand	**1.4**	**22.2**						**23.6**	gpm	= Q *PF / 1440
Domestic Flow Rates										
Ave. Annual Daily Demand per Capita, Qr:			100	100	100	100	100		gpcd	
No. of Persons per Home :			2	2	2	2	2		persons	
Wastewater Flow (Commercial), Qc:			0	0	0	0	0			
Number of Connections, Nc:			16	28	30	20	80	174	lots	
Population:			32	56	60	40	160	348	people	
Assume a Population, P, of:			32	60	60	40	160	352	people	
Total Ave. Annual Daily Demand, Q:			3,200	6,000	6,000	4,000	16,000	**35,200**	gpd	= P X Qr or = Nc X Qc
Peaking Factor, PF			4	4	4	4	4			
Peak Demand									gpm	= Q *PF / 1440
Lawn and Garden Flow Rates										
Acres to be Irrigated, A:	0	18	8	14	15	10	40	105.3	acres	assumes an average of 0.5 acres of irrigated lawn per lot
Water Application Required, a:	1	1	1	1	1	1	1		inches/week	
Length of Irrigation Season, Ti:	17	17	17	17	17	17	17		weeks	
Summer Daily Demand, Qi:	0	70,983	31,031	54,305	58,184	38,789	155,157	**408,448**	gpd	= (A X 43560 SF/ac X a X 7.48 Gal/CF) / (7 days/week X 1 ft/
Peak Irrigation Demand	0.0	98.6	43.1	75.4	80.8	53.9	215.5	**567.3**	gpm	= (Qi * 2 / 1440)
Ave. Annual Daily Irrigation Demand, Qid:	0	23,142	10,117	17,705	18,969	12,646	50,585	133,165	gpd	= (Qi X (Ti X 7))/365

Summary of Requested Flow Rates and Volumes

	Flow Rate (gpm)	Volume (acre-feet)		
Total Commercial Supply	23.6	9.5	Number of Homes	174
Total Domestic Supply	0.0	39.4	Number Commercial Lots	50
Total Lawn and Garden	567.3	149.2		
Total Amount Requested	590.9	198.1		

Notes

Information supplied by Landworks Consulting and Design, Inc.

gcpd gallons per capita per day

gpd gallons per minute

gpm gallons per day

7.2 MODEL DESIGN AND CHECK

Figure 4 shows the model grid and boundary conditions. The three-layer model consists of 72 rows and 63 columns. The grid has a uniform spacing of 300 feet which telescopes down to 75 feet near the four Salish Shores PWS system wells. Layers 1, 2 and 3 represent the shallow unconfined aquifer, the leaky confining unit, and the deep semi-confined aquifer, respectively. The layers were assigned the following MODFLOW layer types:

- Layer 1; Unconfined (Type 1)
- Layer 2; Unconfined (T-varies; Type 3)
- Layer 3; Confined (Type 0)

The upgradient boundaries in all three layers are constant head boundaries. Each layer has a uniform hydraulic conductivity based on the values listed in Section 7.1. Available data are not sufficient to allow a formal calibration of the model. As a check of the model's general ability to simulate the groundwater system, the model was run in transient mode with pumping in Well 3 (427 gpm) for 72 hours. Figure 5 shows the drawdown computed by the model at the location of Well 4. The simulated drawdown of approximately 5.9 feet is slightly higher than the drawdown measured in Well 4 during the 72-hour test (Table 3). The shape of the drawdown curve is similar to that observed during the test (Figure B-2, Appendix B) with the exception of 0.5 feet of drawdown observed between about 250 minutes and 72 hours during the test (discussed further in Section 4.2). Excluding this exception, the model reasonably simulates the response to pumping Well 3.

7.3 PUMPING SIMULATION

To assess the potential impact to senior water rights holders, a transient pumping schedule was developed for future full build-out of the Salish Shores area. For this schedule, the average daily demand was assumed to occur over a 12 hour period and assumed to be produced from one well from each well pair at a time. Based on this assumption, the following pumping schedule was developed.

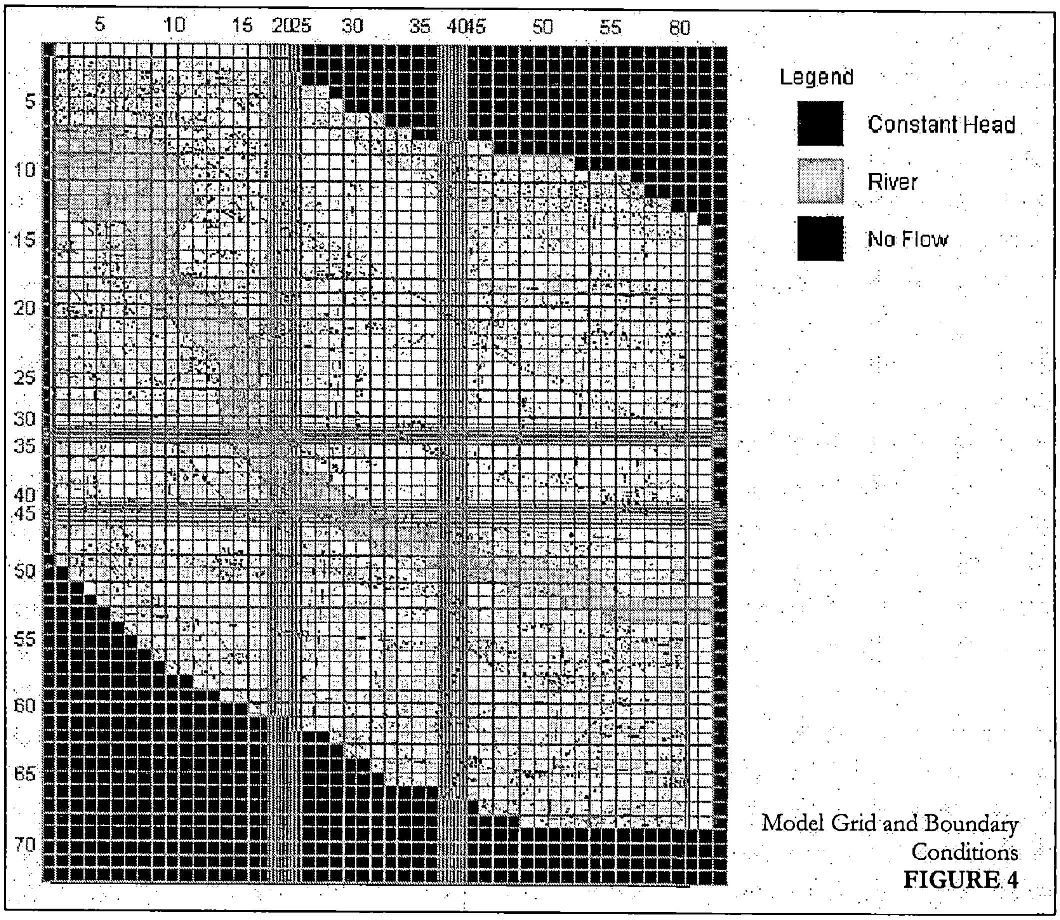
A transient model was developed with 730 12-hour stress periods. Pumping rates for Wells 1 and 3 were input to the MODFLOW model using the values in Table 7. The model was then executed.

Table 7. Transient Pumping Inputs

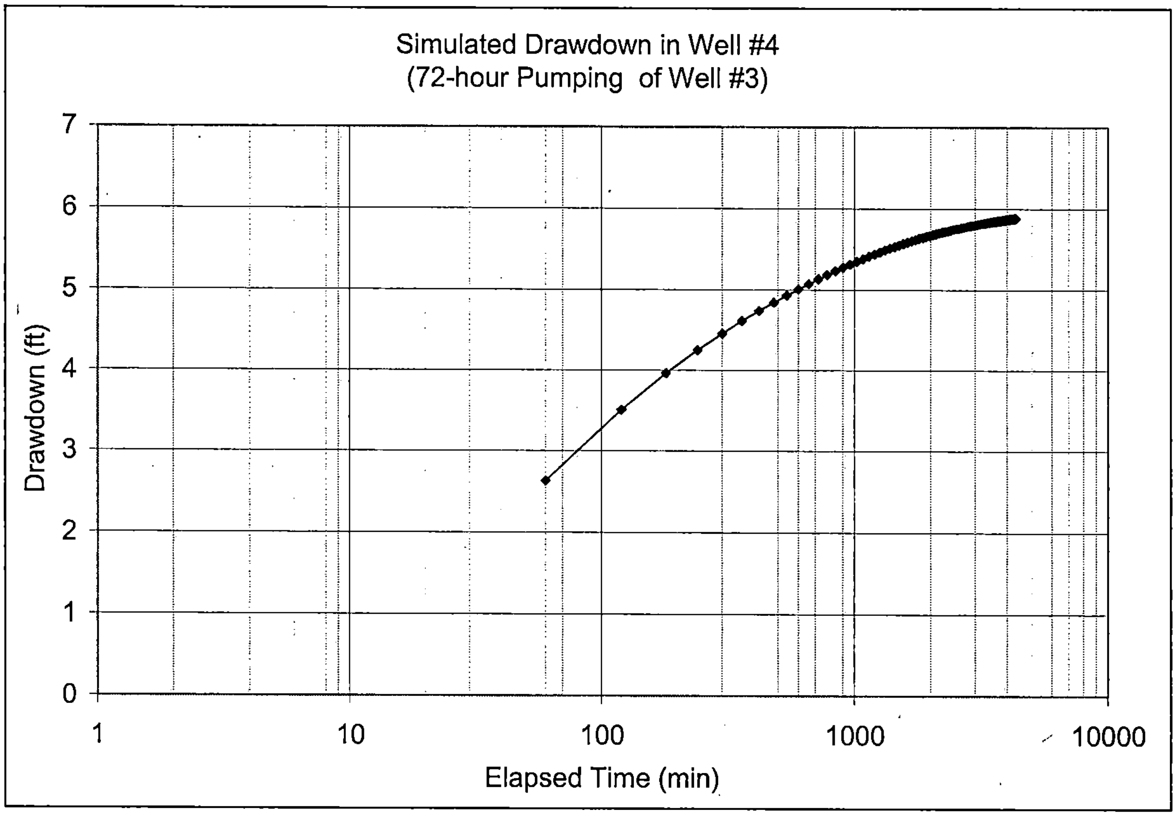
Time Period	Duration	Well 1 Pump Rate (gpm)	Well 3 Pump Rate (gpm)	Total Pump Rate (gpm)
1	16 weeks	30.3	30.3	60.6
2	17 weeks (irrigation season)	122.8	122.8	245.6
3	16 weeks	30.3	30.3	60.6

Model output indicates that maximum drawdown occurs at the end of the simulated 17 week irrigation season (Time Period 2, Table 7). Figure 6a indicates that maximum drawdown at Well 4 (located within 59 feet of the pumping wells) after the simulated 17-week irrigation season is about 1.6 feet.

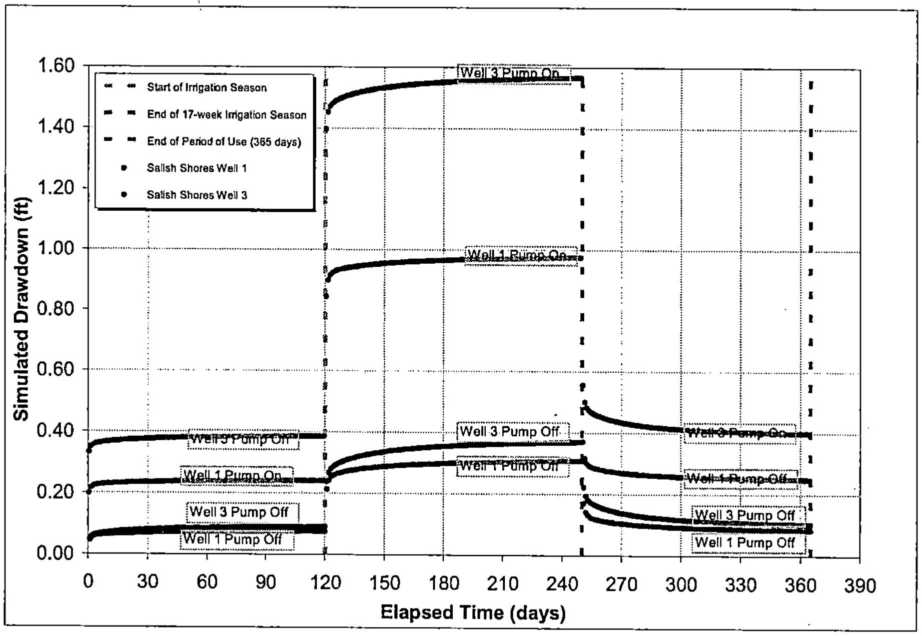
Figures 7a and 7b are maps of simulated drawdown at the end of the 17-week irrigation season, and at the end of the 365 day period of diversion, respectively. These figures show that the zone of influence for both periods is about 13,000 feet in diameter and extends to the bedrock contact at the valley margins. Figures 7a and 7b also indicate that the zone of influence of the PWS wells extends beneath the Clark Fork River. The model predicts that at the end of the 365-day period of diversion an additional 22 gpm (0.05 cubic feet per second [cfs]) of Clark Fork River water would recharge the groundwater system compared to non-pumping (steady state) conditions, and. at the end of the of the 17-week irrigation season, an additional 72 gpm (0.16 cubic feet per second [cfs]) of water would be drawn from the river.



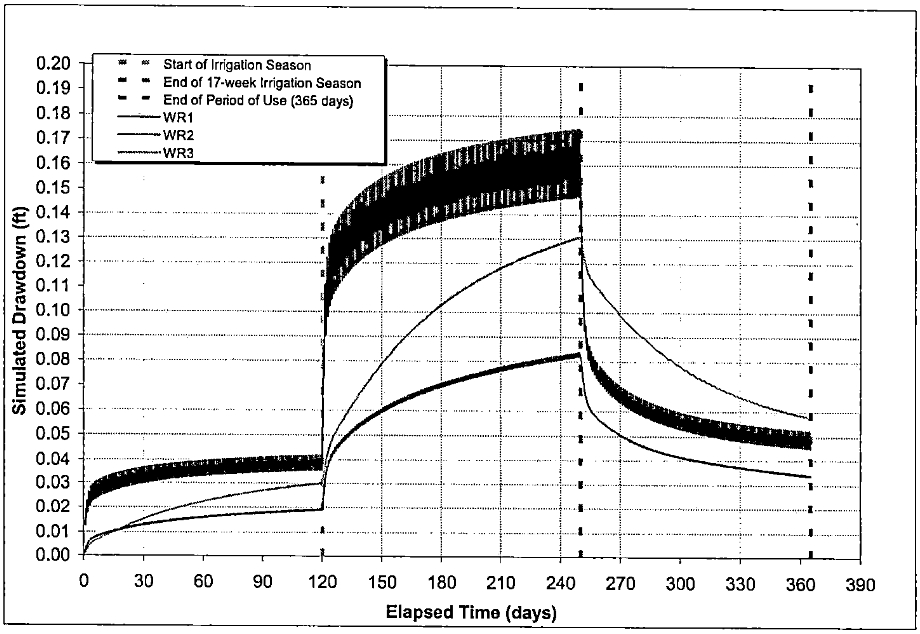
Model Grid and Boundary Conditions
FIGURE 4



Simulated Drawdown in Well 4 after 72 Hours of Pumping in Well 3
FIGURE 5

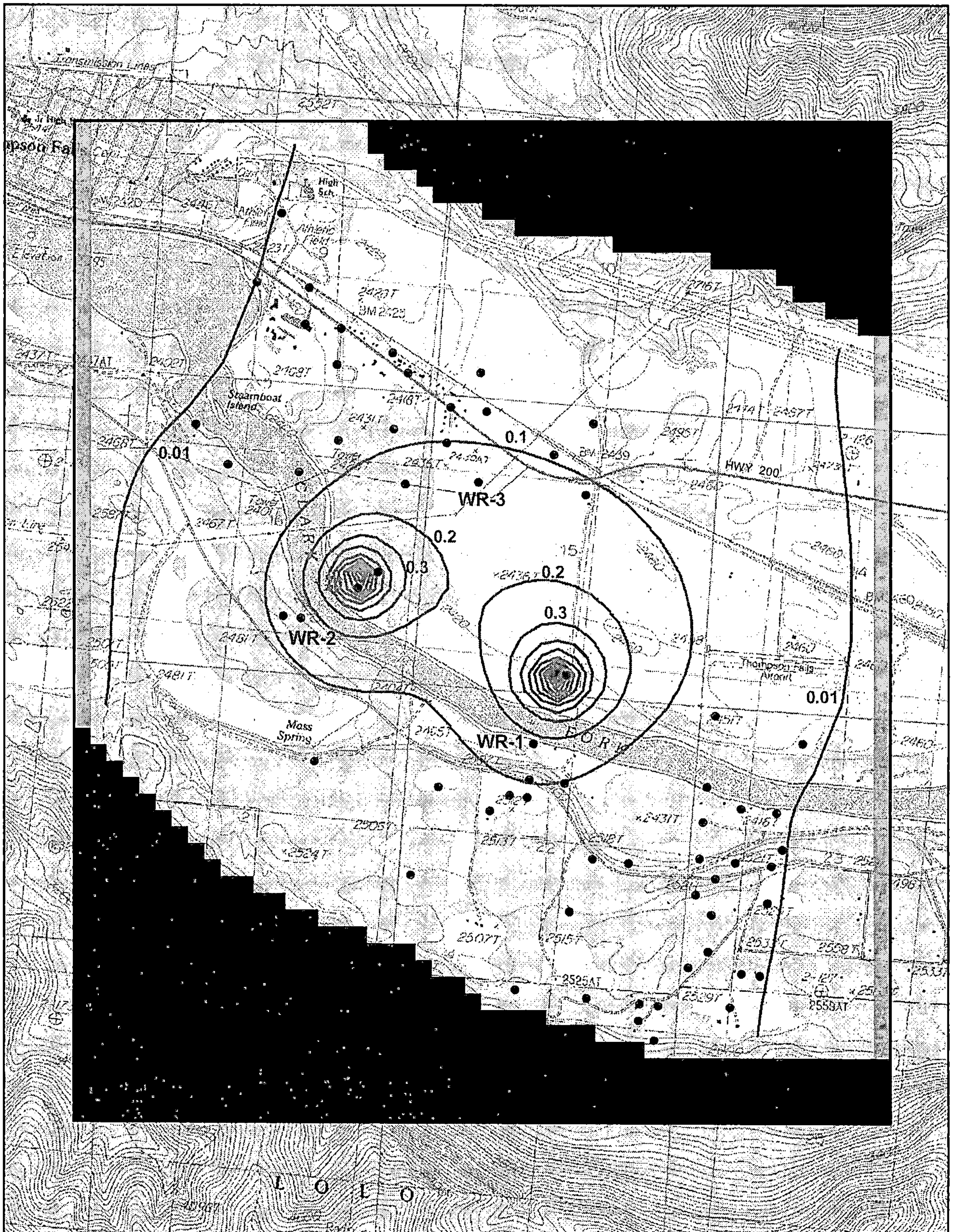


Simulated Drawdown in Wells 1 and 3
Caused by Proposed Pumping in Salish Shores Wells 1 and 3
FIGURE 6a

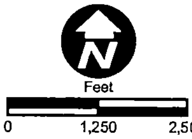


Simulated Drawdown in Nearby Wells (WR1 through WR3)
Caused by Proposed Pumping in Salish Shores Wells 1 and 3
FIGURE 6b

NOTES:
WR 1, 2 and 3 groundwater rights (locations shown on Figure 7)
Pump on/off interval is 12 hours



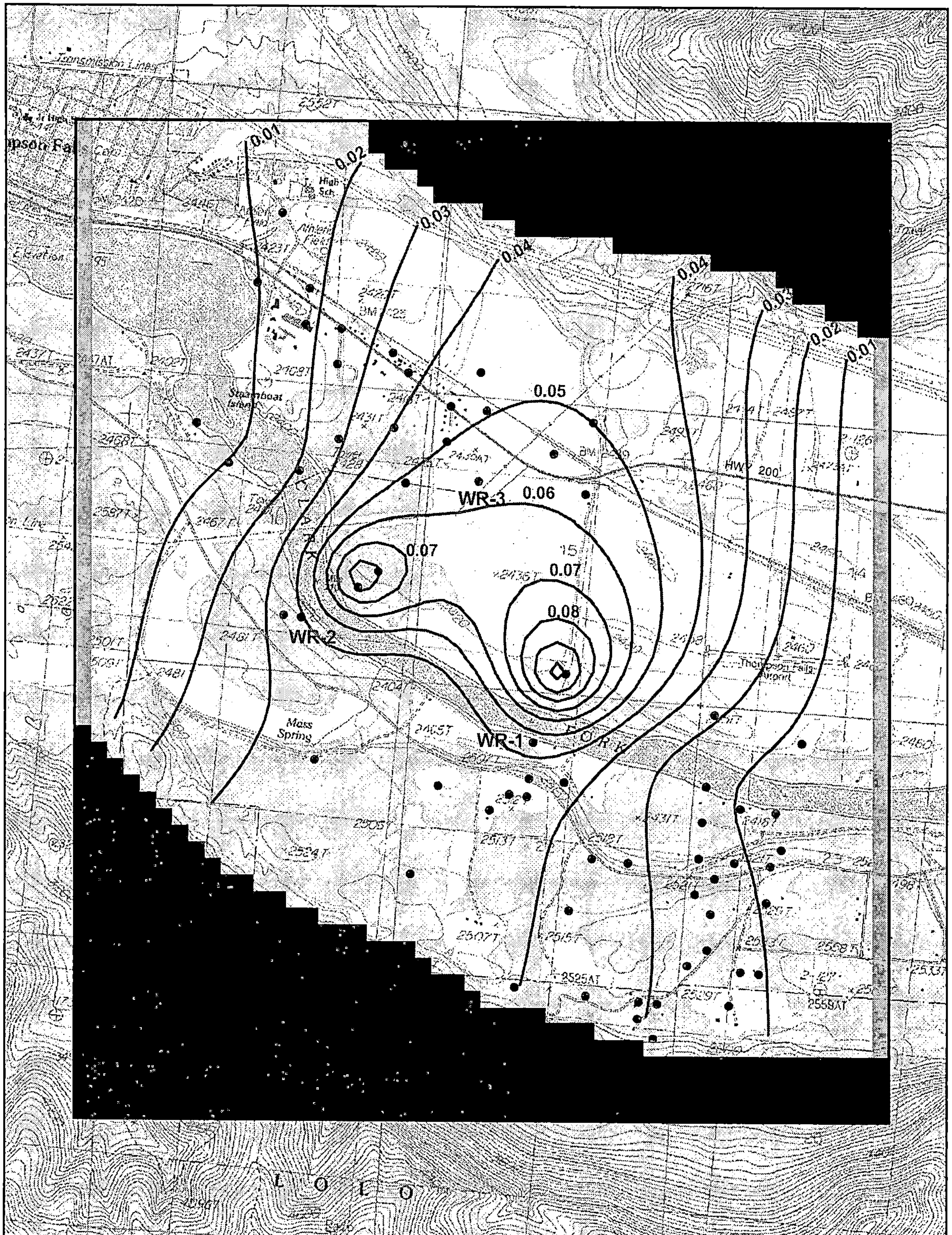
Thompson Falls and Mount Headley 7.5 Min Topo Quads



Water Rights
Predicted Drawdown Contours (feet)
0.01ft Drawdown Contour Considered Extent of Zone of Influence
Model Domain
Constant Head Cell
No Flow Cell

Geomatrix

Simulated Maximum Drawdown Contours
(Zone of Influence) at the End of Irrigation Period
Salish Shores PWS
Thompson Falls, Montana
FIGURE 7a



Thompson Falls and Mount Headley 7.5 Min Topo Quads

N

Feet

0 1,250 2,500

Geomatrix

- Water Rights
- Drawdown Contours (feet)
- 0.01ft Drawdown Contour Considered Extent of Zone of Influence
- Model Domain
- Constant Head Cell
- No Flow Cell

Simulated Maximum Drawdown Contours (Zone of Influence) at the End of Period of Diversion
Salish Shores PWS
Thompson Falls, Montana
FIGURE 7b

8.0 CALCULATION OF GROUNDWATER FLUX AND LEGAL AVAIALBLITY

One of the DNRC's requirements for an Application for Beneficial Water Use Permit is an estimate of aquifer yield. This is accomplished using Darcy's Law:

$$Q = K*i*W*b$$

Where
- Q = Discharge
- K = hydraulic conductivity
- i = hydraulic gradient
- W = aquifer width
- b = aquifer thickness

Transmissivity (T) is the product of K and the aquifer thickness (b). Because transmissivity was measured during aquifer testing rather than hydraulic conductivity and because well logs for Wells 1 through 4 (Appendix A) illustrate the aquifer thickness is variable, it is appropriate to transform Darcy's Law as follows:

$$Q = T*i*W$$

Groundwater modeling indicates that the zone of influence is about 13,000 feet across. A source water delineation and assessment report for Sanders County Harvest Foods (PWS ID# MT0003709) located approximately one-half mile north of the Salish Shores area was prepared by DEQ's Source Water Protection Program (2002). In this report, the gradient for the confined aquifer in this area was reported to be 0.006 feet/ft. Using a representative T value of 6,750 feet per day (Table 3) we arrive at the following:

$$Q = T*i*W$$
$$Q = 6{,}750 \text{ feet}^2/\text{day} *0.006*13{,}000 \text{ feet}$$
$$Q = 526{,}500 \text{ feet}^3/\text{day}$$
$$Q = 4{,}412 \text{ acre-feet/year}$$

Table 6 indicates that the Leufkens Company is currently seeking a water right for a total of 198 acre-feet/year. Table C-1 includes all groundwater rights identified within the zone of influence of the Salish Shores PWS wells at the end of the 365-day period of diversion (Figure 7b) and indicates that the total annual volume allocated to these wells is 523.75 acre-feet/year. This probability overstates the water allocated from the confined aquifer because well depths indicate that several of these wells may be completed in the shallow aquifer.

The following is a calculation used to determine if groundwater is available:

4,412 acre feet -	198 acre-feet -	524 acre-feet =	3690 acre-feet
(volume available)	(volume requested)	(volume existing rights)	(volume available)

A comparison of estimated groundwater flux with existing appropriations indicates that the groundwater requested is legally available.

Table 8 is a list of surface water rights on the Clark Fork River downstream of the Salish Shores PWS. The legal availability of surface water cannot be determined until a final decree on Clark Fork River appropriations has been issued.

8.1 POTENTIAL FOR ADVERSE EFFECTS

Predicted drawdown at wells with existing groundwater rights WR-1 through WR-3 is less than 0.2 feet at the end of the irrigation season (Figure 7a) and less than 0.06 feet at the end of the period of diversion (Figure 7b). While specific pump placement information is not available for each of the wells located within the predicted zone of influence, it is uncommon to have pumps installed in wells such that the intake is only 0.2 ft (2.4 inches) below the pumping water level in the well during low water conditions. Therefore, while the predicted drawdown does represent an impact, it is not likely to be an adverse impact unless there are existing problems with the placement of pumps in these wells. Furthermore, natural seasonal variability in water levels in alluvial aquifer systems in Montana typically exceeds 0.2 feet, and a decrease in water level of less than 0.2 feet due to pumping influence would be indistinguishable from changes due to natural factors.

Groundwater modeling results suggest that there is the potential for an induced increase in leakage from the leaky confining unit above the semi-confined aquifer as a result of PWS well pumping. This leakage could in turn induce an increased rate of seepage from the Clark Fork River into the underlying shallow aquifer near the Salish Shores PWS. The model indicates that at the end of the irrigation season, up to 72 gpm (0.16 cfs) could be captured from the Clark Fork River and that at the end of the period of diversion (365 days) only 0.05 cfs would be captured. It should be noted that the groundwater model has not been formally calibrated or validated and the precision of the model's predictive capabilities have not been quantified.

The 0.05 cfs predicted to be captured from the Clark Fork River by pumping of the Salish Shores PWS wells at the end of the period of diversion is small relative to the flow of the river. The lowest flow rate measured in the last 30 years at the nearest U.S. Geological Survey (USGS) gauging station (Plains, Montana, 30 miles upstream of the site) was 4,930 cfs (9/7/1988). The induced flow rate predicted by the model is 0.001 percent of the 30-year low flow rate for the Clark Fork River at Plains. Because standard stream gauging techniques are only accurate within approximately 10 to 20 percent, the predicted induced change in flow in the Clark Fork River would not be a measurable effect.

Table 8. Clark Fork River Water Rights Downstream of Salish Shores PWS

Water Right Number	Water Right Type	Means of Diversion	TR	Section	1/4 Section
11445	PROVISIONAL PERMIT	PUMP	26N32W	33	
131508	PROVISIONAL PERMIT	PUMP	22N30W	3	SWNENW
144656	PROVISIONAL PERMIT	PUMP	21N29W	8	SESWNW
149573	PROVISIONAL PERMIT	DAM	21N29W	7	SENE
16007	PROVISIONAL PERMIT	PUMP	21N29W	8	SWNWSE
166931	STATEMENT OF CLAIM	DAM	21N29W	7	SENE
166933	STATEMENT OF CLAIM	DAM	21N29W	8	NESE
166935	STATEMENT OF CLAIM	PUMP	21N29W	7	S2NE
167031	PROVISIONAL PERMIT	PUMP	24N31W	7	NWNWNW
177237	STATEMENT OF CLAIM	PUMP	27N34W	21	NWSW
177240	STATEMENT OF CLAIM	PUMP	27N34W	21	SWSW
207444	STATEMENT OF CLAIM	PUMP	21N29W	16	SENWNW
213058	STATEMENT OF CLAIM	PUMP	24N31W	26	SWNWNW
213929	STATEMENT OF CLAIM	DAM	26N32W	33	S2SW
220399	STATEMENT OF CLAIM	PUMP	22N30W	26	SESWNE
220498	STATEMENT OF CLAIM	PUMP	21N29W	8	SESWNW
220501	STATEMENT OF CLAIM	PUMP	21N29W	8	SWSENW
23915	PROVISIONAL PERMIT	PUMP	22N30W	11	SWSENW
26510	STATEMENT OF CLAIM	PUMP	21N29W	6	SWNWSW
288471	STATEMENT OF CLAIM	DAM	26N32W	33	S2SW
288472	STATEMENT OF CLAIM	DAM	26N32W	33	S2SW
288510	STATEMENT OF CLAIM	DAM	21N29W	7	SENE
288511	STATEMENT OF CLAIM	DAM	21N29W	7	SENE
288512	STATEMENT OF CLAIM	DAM	21N29W	8	NESE
288513	STATEMENT OF CLAIM	DAM	21N29W	8	NESE
288518	STATEMENT OF CLAIM	DAM	26N32W	33	S2SW
290731	STATEMENT OF CLAIM	HEADGATE	27N34W	26	SENWSE
291683	STATEMENT OF CLAIM	PUMP	21N30W	1	NWSENE
31038	STATEMENT OF CLAIM	PUMP	22N30W	26	NWNE
316955	STATEMENT OF CLAIM	DAM	26N32W	33	S2SW
316961	STATEMENT OF CLAIM	DAM	21N29W	7	SENE
317279	STATEMENT OF CLAIM	PUMP	21N29W	9	NWSESW
317332	STATEMENT OF CLAIM	PUMP	21N29W	8	SESWNW
325024	PROVISIONAL PERMIT	PUMP	22N30W	14	SENESE
325212	PROVISIONAL PERMIT	PUMP	24N31W	26	NWNWNW
325746	PROVISIONAL PERMIT	PUMP	22N30W	11	NWSENW
34219	STATEMENT OF CLAIM	PUMP	27N34W	20	NWSESE
35803	STATEMENT OF CLAIM	PUMP	22N30W	35	SENWNE
51322	STATEMENT OF CLAIM	PUMP	22N30W	26	NWSWNE
53466	STATEMENT OF CLAIM	PUMP	27N34W	35	SWSENE
58004	PROVISIONAL PERMIT	PUMP	26N33W	5	NWNWNW
62924	STATEMENT OF CLAIM	PUMP	21N29W	9	NWSESW
65787	PROVISIONAL PERMIT	PUMP	26N33W	13	NWSESE
67287	PROVISIONAL PERMIT	PUMP	22N30W	23	SWSESE
70041	PROVISIONAL PERMIT	PUMP	21N29W	8	SWSWNW
70286	PROVISIONAL PERMIT	PUMP	21N29W	8	SWSWNW
81389	PROVISIONAL PERMIT	PUMP	24N31W	26	SWNENE
83374	STATEMENT OF CLAIM	PUMP	27N34W	19	NWSENE
83376	STATEMENT OF CLAIM	PUMP	27N34W	19	W2NWNE
84288	PROVISIONAL PERMIT	PUMP	22N30W	3	SESENW
84777	PROVISIONAL PERMIT	PUMP	25N32W	10	SWSENE
86340	PROVISIONAL PERMIT	PUMP	21N29W	6	NWSWSW

9.0 REFERENCES

Cooper, H.H. and C.E. Jacob. (1946). A generalized graphical method for evaluating formation constants and summarizing well field history. *Transactions, American Geophysical Union, Vol. 27, No. 4, pp.* 526-534.

Environmental Simulations Inc. (1996). *Guide to Using Groundwater Vistas Advanced Model Design and Analysis.* Herndon, Virginia.

Fetter, C. W.., 1988, Applied Hydrogeology, Second Edition, Charles E. Merrill and Co., Columbus, Ohio, 592 p.

Hantush, M.S. and C.E. Jacob. (1955). Non-steady radial flow in an infinite leaky aquifer. *Transactions, American Geophysical Union, Vol. 36, No. 1, pp.* 95-100.

McDonald and Harbaugh. 1989. A Modular Three-Dimensional Finite-Difference Ground-Water Flow Model (MODFLOW), Techniques of Water-Resources Investigations of the United States Geological Survey (USGS). Book 6, Chapter A-1. U.S. Government Printing Office, Washington D.C.

Rumbaugh, D. and J. Rumbaugh. Aquifer Win32 (Version 3.11) [Computer software]. Environmental Simulations, Inc, 2005.

Source Water Protection Program, Montana Department of Environmental Quality, 2002. Source Water Delineation and Assessment Report, Sanders County Harvest Foods, Public Water Supply, PWS ID #MT0003709. October 21.

Form No. 603 (R 2-88)

WELL LOG REPORT

File ____

State law requires that the Bureau's copy be filed by the water well driller within 60 days after completion of the well.

1. WELL OWNER
Name Bud & Trudy Leukin

2. CURRENT MAILING ADDRESS
Box 1030
Thompson Falls MT 59873

3. WELL LOCATION
____ ¼ NE ¼ SE ¼ Section 16
Township 21 N/S Range 29 E/W County Sanders
Gov't Lot ____, or Lot ____, Block ____
Subdivision Name ____
Tract Number ____

4. PROPOSED USE: Domestic ☐ Stock ☐ Irrigation ☐
Other ☐ specify ____

5. TYPE OF WORK:
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

6. DIMENSIONS: Diameter of Hole
Dia. 10 in. from 0 ft. to 25 ft.
Dia. ____ in. from ____ ft. to ____ ft.
Dia. ____ in. from ____ ft. to ____ ft.

7. CONSTRUCTION DETAILS:
Casing; Steel Dia. 6 5/8 from 2 ft. to 121 ft.
Threaded ☐ Welded ☒ Dia. ____ from ____ ft. to ____ ft.
Type ____ Wall Thickness .250
Casing; Plastic Dia. ____ from ____ ft. to ____ ft.
Weight ____ Dia. ____ from ____ ft. to ____ ft.
PERFORATIONS: Yes ☐ No ☐
Type of perforator used ____
Size of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
SCREENS: Yes ☐ No ☒
Manufacturer's Name ____
Type ____ Model No. ____
Dia. ____ Slot size ____ from ____ ft. to ____ ft.
Dia. ____ Slot size ____ from ____ ft. to ____ ft.
GRAVEL PACKED: Yes ☐ No ☒ Size of gravel ____
Gravel placed from ____ ft. to ____ ft.
GROUTED: To what depth? 20 ft.
Material used in grouting Bentonite

8. WELL HEAD COMPLETION:
Pitless Adapter ☐ Yes ☒ No

9. PUMP (if installed)
Manufacturer's name ____
Type ____ Model No. ____ HP ____

10. WELL TEST DATA
The information requested in this section is required for all wells. All depth measurements shall be from the top of the well casing.
All wells under 100 gpm must be tested for a minimum of one hour and provide the following information:
a) Air X Pump ____ Bailer ____
b) Static water level immediately before testing 22 ft. If flowing; closed-in pressure ____ psi. ____ gpm.
Flow controlled by: ____ valve, ____ reducers, ____ other, (specify) ____
c) Depth at which pump is set for test 123
d) The pumping rate: 50 gpm.
e) Pumping water level 30 ft. at 3 hrs. after pumping began.
f) Duration of test: Pumping time 3 hrs.
g) Recovery time 0 hrs
h) Recovery water level 22 ft. at ½ hrs. after pumping stopped.

Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation. In addition to the above information, water level data shall be collected and recorded on the Department's "Aquifer Test Data" form.

NOTE: All wells shall be equipped with an access port ½ inch minimum or a pressure gauge that will indicate the shut-in pressure of a flowing well. Removable caps are acceptable as access ports.

11. WAS WELL PLUGGED OR ABANDONED? ____ Yes X No
If yes, how? ____

12. WELL LOG

Depth (ft.) From	To	Formation
0	25	Boulders, Dark Sand
25	114	Yellow Clay
114	121	Blue Clay, Gravel Water

ATTACH ADDITIONAL SHEETS IF NECESSARY

13. DATE COMPLETED 4-8-92

14. DRILLER/CONTRACTOR'S CERTIFICATION
This well was drilled under my jurisdiction and this report is true to the best of my knowledge.

4-22-92
Date

Kane Well Drilling & Service Pump
Firm Name

168 Mullan Rd. West Superior, MT 59872
Address

Harry Kane WWD-34
Signature License No.

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION
1520 EAST SIXTH AVENUE HELENA, MONTANA 59620-2301 444-6610

DNRC

DEPARTMENT COPY
DRILLER: Please give this copy to the well owner to complete reverse side.
OWNER: Complete reverse side and send to DNRC when the well is completed and the water has been used beneficially for the intended purpose.

Montana Bureau of Mines and Geology
Ground-Water Information Center Site Report
LEUFKIN BUD & JUDY

Plot this site on a topographic map

Location Information

GWIC Id: 135335
Location (TRS): 21N 29W 16 DAC
County (MT): SANDERS
DNRC Water Right: 081519
PWS Id:
Block:
Lot:
Addition:

Source of Data: LOG
Latitude (dd): 47.5747
Longitude (dd): -115.3138
Geomethod: TRS-TWN
Datum: NAD27
Altitude (feet):
Certificate of Survey:
Type of Site: WELL

Well Construction and Performance Data

Total Depth (ft): 121.00
Static Water Level (ft): 22.00
Pumping Water Level (ft): 30.00
Yield (gpm): 50.00
Test Type: AIR
Test Duration: 3.00
Drill Stem Setting (ft):
Recovery Water Level (ft):
Recovery Time (hrs):
Well Notes:

How Drilled: ROTARY
Driller's Name: KANE
Driller License: WWD034
Completion Date (m/d/y): 4/8/1992
Special Conditions:
Is Well Flowing?:
Shut-In Pressure:
Geology/Aquifer: Not Reported
Well/Water Use: Not Reported

Hole Diameter Information

No Hole Diameter Records currently in GWIC.

Annular Seal Information

From	To	Description
0.0	20.0	BENTONITE

Casing Information[1]

From	To	Dia	Wall Thickness	Pressure Rating	Joint	Type
2.0	121.0	6.0				STEEL

Completion Information[1]

No Completion Records currently in GWIC.

Lithology Information

From	To	Description
0.0	25.0	BOULDERS;DARK SAND
25.0	114.0	YELLOW CLAY
114.0	121.0	BLUE CLAY;GRAVEL;WATER

89'

[1] - All diameters reported are **inside** diameter of the casing.

Form No. 603 (R 2-89)

WELL LOG REPORT

File No. ____________

State law requires that the Bureau's copy be filed by the water well driller within 60 days after completion of the well.

1. WELL OWNER
Name: Bud Leufkens

2. CURRENT MAILING ADDRESS
Box 1030
Thompson Falls, MT 59873

3. WELL LOCATION
SW ¼ NE ¼ SE ¼ Section 16
Township 21 N/S Range 27 E/W County Sanders
Gov't Lot ______, or Lot ______, Block ______
Subdivision Name ______
Tract Number ______

4. PROPOSED USE: Domestic ☐ Stock ☐ Irrigation ☐
Other ☒ specify Test (Subdivision)

5. TYPE OF WORK:
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

6. DIMENSIONS: Diameter of Hole
Dia. 10 in. from 0 ft. to 20 ft.
Dia. ______ in. from ______ ft. to ______ ft.
Dia. ______ in. from ______ ft. to ______ ft.

7. CONSTRUCTION DETAILS:
Casing; Steel Dia. 6 5/8 from 2 ft. to 141 ft.
Threaded ☐ Welded ☒ Dia. ______ from ______ ft. to ______ ft.
Type ______ Wall Thickness .250
Casing; Plastic Dia. ______ from ______ ft. to ______ ft.
Weight ______ Dia. ______ from ______ ft. to ______ ft.
PERFORATIONS: Yes ☐ No ☒
Type of perforator used ______
Size of perforations ______ in. by ______ in.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.
SCREENS: Yes ☐ No ☒
Manufacturer's Name ______
Type ______ Model No. ______
Dia. ______ Slot size ______ from ______ ft. to ______ ft.
Dia. ______ Slot size ______ from ______ ft. to ______ ft.
GRAVEL PACKED: Yes ☐ No ☒ Size of gravel ______
Gravel placed from ______ ft. to ______ ft.
GROUTED: To what depth? 18 ft.
Material used in grouting Bentonite

8. WELL HEAD COMPLETION:
Pitless Adapter ☐ Yes ☒ No

9. PUMP (if installed)
Manufacturer's name ______
Type ______ Model No. ______ HP. ______

10. WELL TEST DATA
The information requested in this section is required for all wells. All depth measurements shall be from the top of the well casing.
All wells under 100 gpm must be tested for a minimum of one hour and provide the following information:
a) Air ☒ Pump ______ Bailer ______
b) Static water level immediately before testing 21 ft. If flowing; closed-in pressure ______ psi. ______ gpm.
Flow controlled by: ______ valve, ______ reducers, ______ other, (specify) ______
c) Depth at which pump is set for test 135
d) The pumping rate: 100 gpm.
e) Pumping water level 60 ft. at 2 hrs. after pumping began.
f) Duration of test: Pumping time 2 hrs.
g) Recovery time 0 hrs.
h) Recovery water level 21 ft. at 1/2 hrs. after pumping stopped.

Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation. In addition to the above information, water level data shall be collected and recorded on the Department's "Aquifer Test Data" form.

NOTE: All wells shall be equipped with an access port ½ inch minimum or a pressure gauge that will indicate the shut-in pressure of a flowing well. Removable caps are acceptable as access ports.

11. WAS WELL PLUGGED OR ABANDONED? ______ Yes X No
If yes, how? ______

12. WELL LOG

From	To	Formation
0	1	Soil
1	20	Boulders, Gravel
20	22	Clay (yellow)
22	35	Water, Gravel
35	121	Brown Clay
121	141	Gravel, Water

ATTACH ADDITIONAL SHEETS IF NECESSARY

13. DATE COMPLETED 7-14-92

14. DRILLER/CONTRACTOR'S CERTIFICATION
This well was drilled under my jurisdiction and this report is true to the best of my knowledge.

7-14-92
Date

Kane Well Drilling + Pump Service
Firm Name

168 Mullan Rd. W. Superior, MT 59872
Address

Eugene L. Kane
Signature

23
License No.

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION **DNRC**
1520 EAST SIXTH AVENUE HELENA, MONTANA 59620-2301 444-6610

DEPARTMENT COPY
DRILLER: Please give this copy to the well owner to complete reverse side.
OWNER: Complete reverse side and send to DNRC when the well is completed and the water has been used beneficially for the intended purpose.

Montana Bureau of Mines and Geology
Ground-Water Information Center Site Report
LEUFKENS BUD

Plot this site on a topographic map

Location Information

GWIC Id: 131977
Location (TRS): 21N 29W 16 DAC
County (MT): SANDERS
DNRC Water Right:
PWS Id:
Block:
Lot:
Addition:

Source of Data: LOG
Latitude (dd): 47.5747
Longitude (dd): -115.3138
Geomethod: TRS-TWN
Datum: NAD27
Altitude (feet):
Certificate of Survey:
Type of Site: WELL

Well Construction and Performance Data

Total Depth (ft): 141.00
Static Water Level (ft): 21.00
Pumping Water Level (ft): 60.00
Yield (gpm): 100.00
Test Type: AIR
Test Duration: 2.00
Drill Stem Setting (ft):
Recovery Water Level (ft):
Recovery Time (hrs):
Well Notes:

How Drilled: ROTARY
Driller's Name: KANE
Driller License: WWD023
Completion Date (m/d/y): 7/14/1992
Special Conditions:
Is Well Flowing?:
Shut-In Pressure:
Geology/Aquifer: Not Reported
Well/Water Use: TEST WELL

Hole Diameter Information

No Hole Diameter Records currently in GWIC.

Annular Seal Information

From	To	Description
0.0	18.0	BENTONITE

Casing Information[1]

From	To	Dia	Wall Thickness	Pressure Rating	Joint	Type
2.0	141.0	6.0				STEEL

Completion Information[1]

No Completion Records currently in GWIC.

Lithology Information

From	To	Description
0.0	1.0	SOIL
1.0	20.0	BOULDERS- GRAVEL
20.0	22.0	CLAY(YELLOW)
22.0	35.0	WATER- GRAVEL
35.0	121.0	BROWN CLAY
121.0	141.0	GRAVEL- WATER

80'

[1] - All diameters reported are **inside** diameter of the casing.

State law requires that the Bureau's copy be filed by the water well driller within 60 days after completion of the well.

1. WELL OWNER
Name Bud Larkin

CURRENT MAILING ADDRESS
P.O. Box 1050
Thompson Falls, MT 5973

3. WELL LOCATION
SW ¼ SW ¼ SE ¼ Section 15
Township 21 N/S Range 29 E/W County Sanders
Gov't Lot ______ or Lot ______, Block ______
Subdivision Name Salish Shores
Tract Number ______

4. PROPOSED USE: Domestic ☐ Stock ☐ Irrigation ☐
Other ☐ specify Sub Division (Salish Shores)

5. TYPE OF WORK:

New well	☒	Method: Dug	☐	Bored	☐
Deepened	☐	Cable	☐	Driven	☐
Reconditioned	☐	Rotary	☒	Jetted	☐

6. DIMENSIONS: Diameter of Hole
Dia. 8 in. from 0 ft. to 20 ft.
Dia. ______ in. from ______ ft. to ______ ft.
Dia. ______ in. from ______ ft. to ______ ft.

7. CONSTRUCTION DETAILS:
Casing; Steel Dia. 6 5/8 from 2 ft. to 240 ft.
Threaded ☐ Welded ☐ Dia. ______ from ______ ft. to ______ ft.
Type ______ Wall Thickness .250
Casing; Plastic Dia. / from / ft. to / ft.
Weight / Dia. / from / ft. to / ft.
PERFORATIONS: Yes ☐ No ☒
Type of perforator used ______
Size of perforations / in. by / in.
/ perforations from / ft. to / ft.
/ perforations from / ft. to / ft.
______ perforations from ______ ft. to ______ ft.
SCREENS: Yes ☐ No ☒
Manufacturer's Name ______
Type / Model No. /
Dia. / Slot size / from / ft. to / ft.
Dia. / Slot size ______ from ______ ft. to ______ ft.
GRAVEL PACKED: Yes ☐ No ☒ Size of gravel /
Gravel placed from — ft. to — ft.
GROUTED: To what depth? 20 ft.
Material used in grouting Bentonite

8. WELL HEAD COMPLETION:
Pitless Adapter ☐ Yes ☒ No

9. PUMP (if installed)
Manufacturer's name /
Type / Model No. / HP. /

10. WELL TEST DATA
The information requested in this section is required for all wells. All depth measurements shall be from the top of the well casing.
All wells under 100 gpm must be tested for a minimum of one hour and provide the following information:
a) Air X Pump ______ Bailer ______
b) Static water level immediately before testing 35 ft. If flowing; closed-in pressure / psi. — gpm.
Flow controlled by: / valve, / reducers, —
other, (specify) ______
c) Depth at which pump is set for test 220
d) The pumping rate: 250 gpm.
e) Pumping water level 50 ft. at 3 hrs. after pumping began.
Test well

f) Duration of test: Pumping time 3 hrs.
g) Recovery time 0 hrs.
h) Recovery water level 35 ft. at 1 hrs. after pumping stopped.

Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation. In addition to the above information, water level data shall be collected and recorded on the Department's "Aquifer Test Data" form.

NOTE: All wells shall be equipped with an access port ½ inch minimum or a pressure gauge that will indicate the shut-in pressure of a flowing well. Removable caps are acceptable as access ports.

11. WAS WELL PLUGGED OR ABANDONED? ______ Yes X No
If yes, how? —

12. WELL LOG

Depth (ft.) From	To	Formation
0	28	Boulders, Gravel
28	228	Blue Clay, Some Dark Sand
228	240	Yellow Clay, Gravel Water

ATTACH ADDITIONAL SHEETS IF NECESSARY

13. DATE COMPLETED 6-12-93

14. DRILLER/CONTRACTOR'S CERTIFICATION
This well was drilled under my jurisdiction and this report is true to the best of my knowledge.

7-13-93
Date
Kane Well Drilling & Pump Service
Firm Name
168 Mullan Rd. W. Superior, MT 59872
Address
Harry Kane WWD 34
Signature License No.

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION **DNRC**
1520 EAST SIXTH AVENUE HELENA, MONTANA 59620-2301 444-6610

DEPARTMENT COPY
DRILLER: Please give this copy to the well owner to complete reverse side.
OWNER: Complete reverse side and send to DNRC when the well is completed and the water has been used beneficially for the intended purpose.

Montana Bureau of Mines and Geology
Ground-Water Information Center Site Report
LE SKIN BUD

Plot this site on a topographic map

Location Information

GWIC Id:	139319	Source of Data:	LOG
Location (TRS):	21N 29W 15 DCC	Latitude (dd):	47.5710
County (MT):	SANDERS	Longitude (dd):	-115.2977
DNRC Water Right:		Geomethod:	TRS-TWN
PWS Id:		Datum:	NAD27
Block:		Altitude (feet):	
Lot:		Certificate of Survey:	
Addition:	SALISH SHORES	Type of Site:	WELL

Well Construction and Performance Data

Total Depth (ft):	240.00	How Drilled:	ROTARY
Static Water Level (ft):	35.00	Driller's Name:	KANE
Pumping Water Level (ft):	60.00	Driller License:	WWD034
Yield (gpm):	250.00	Completion Date (m/d/y):	6/10/1993
Test Type:	AIR	Special Conditions:	
Test Duration:	3.00	Is Well Flowing?:	
Drill Stem Setting (ft):		Shut-In Pressure:	
Recovery Water Level (ft):		Geology/Aquifer:	Not Reported
Recovery Time (hrs):		Well/Water Use:	DOMESTIC TEST WELL
Well Notes:			

Hole Diameter Information

No Hole Diameter Records currently in GWIC.

Casing Information[1]

From	To	Dia	Wall Thickness	Pressure Rating	Joint	Type
2.0	240.0	6.0				STEEL

Annular Seal Information

From	To	Description
0.0	20.0	BENTONITE

Completion Information[1]

No Completion Records currently in GWIC.

Lithology Information

From	To	Description
0.0	28.0	BOULDERS GRAVEL
28.0	228.0	BLUE CLAY FINE DARK SAND
228.0	240.0	YELLOW CLAY GRAVEL WATER

212'

1 - All diameters reported are **inside** diameter of the casing.

..2-88) . LOG REPORT File No. ____

State law requires that the Bureau's copy be filed by the water well driller within 60 days after completion of the well.

1. WELL OWNER
Name Bud Luskin

2. CURRENT MAILING ADDRESS
P.O. Box 1030
Thompson Falls, MT 59873

3. WELL LOCATION
SW ¼ SW ¼ SE ¼ Section 15
Township 21 N/S Range 29 E/W County Sanders
Gov't Lot ____ or Lot ____, Block ____
Subdivision Name Salish Shores
Tract Number ____

4. PROPOSED USE: Domestic ☒ Stock ☐ Irrigation ☐
Other ☒ specify Subdivision (Salish Shores)

5. TYPE OF WORK:
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

6. DIMENSIONS: Diameter of Hole
Dia. 8 in. from 0 ft. to 20 ft.
Dia. ____ in. from ____ ft. to ____ ft.
Dia. ____ in. from ____ ft. to ____ ft.

7. CONSTRUCTION DETAILS:
Casing; Steel Dia. 6 5/8 from 2 ft. to 246 ft.
Threaded ☐ Welded ☐ Dia. ____ from ____ ft. to ____ ft.
Type ____ Wall Thickness .250
Casing; Plastic Dia. / from / ft. to / ft.
Weight / Dia. / from / ft. to / ft.
PERFORATIONS: Yes ☐ No ☒
Type of perforator used /
Size of perforations / in. by / in.
/ perforations from / ft. to / ft.
/ perforations from / ft. to / ft.
____ perforations from ____ ft. to ____ ft.
SCREENS: Yes ☐ No ☒
Manufacturer's Name ____
Type ____ Model No. ____
Dia. / Slot size / from / ft. to / ft.
Dia. / Slot size / from / ft. to / ft.
GRAVEL PACKED: Yes ☐ No ☒ Size of gravel /
Gravel placed from ____ ft. to ____ ft.
GROUTED: To what depth? 20 ft.
Material used in grouting Bentonite

8. WELL HEAD COMPLETION:
Pitless Adapter ☐ Yes ☒ No

9. PUMP (if installed)
Manufacturer's name ____
Type ____ Model No. / HP. ____

10. WELL TEST DATA
The information requested in this section is required for all wells. All depth measurements shall be from the top of the well casing.
All wells under 100 gpm must be tested for a minimum of one hour and provide the following information:
a) Air X Pump ____ Bailer ____
b) Static water level immediately before testing 33 ft. If flowing; closed-in pressure / psi. ____ gpm.
Flow controlled by: ____ valve, ____ reducers,
other, (specify) ____
c) Depth at which pump is set for test 240
d) The pumping rate 250 gpm.
e) Pumping water level 40 ft. at 2 hrs. after pumping began.
test well

f) Duration of test: Pumping time 2 hrs.
g) Recovery time 0 hrs.
h) Recovery water level 33 ft. at 2 hrs. after pumping stopped.

Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation. In addition to the above information, water level data shall be collected and recorded on the Department's "Aquifer Test Data" form.

NOTE: All wells shall be equipped with an access port ½ inch minimum or a pressure gauge that will indicate the shut-in pressure of a flowing well. Removable caps are acceptable as access ports.

11. WAS WELL PLUGGED OR ABANDONED? ____ Yes X No
If yes, how? ____

12. WELL LOG

Depth (ft.) From	To	Formation
0	26	Boulders, Gravel
26	224	Blue Clay Rock Broke Sand
224	246	Gravel, Yellow Clay Water

ATTACH ADDITIONAL SHEETS IF NECESSARY

13. DATE COMPLETED 6-13-93

14. DRILLER/CONTRACTOR'S CERTIFICATION
This well was drilled under my jurisdiction and this report is true to the best of my knowledge.

7-13-93
Date

Kane Well Drilling + Pump Service
Firm Name

168 Mullan Rd. W. Superior, MT 59872
Address

Garry Kane WWD 34
Signature License No.

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION **DNRC**
1520 EAST SIXTH AVENUE HELENA, MONTANA 59620-2301 444-6610

DEPARTMENT COPY
DRILLER: Please give this copy to the well owner to complete reverse side.
OWNER: Complete reverse side and send to DNRC when the well is completed and the water has been used beneficially for the intended purpose.

Montana Bureau of Mines and Geology
Ground-Water Information Center Site Report
LE SKIN BUD

Plot this site on a topographic map

Location Information

GWIC Id: 139318
Location (TRS): 21N 29W 15 DCC
County (MT): SANDERS
DNRC Water Right:
PWS Id:
Block:
Lot:
Addition: SALISH SHORES

Source of Data: LOG
Latitude (dd): 47.5710
Longitude (dd): -115.2977
Geomethod: TRS-TWN
Datum: NAD27
Altitude (feet):
Certificate of Survey:
Type of Site: WELL

Well Construction and Performance Data

Total Depth (ft): 246.00
Static Water Level (ft): 33.00
Pumping Water Level (ft): 40.00
Yield (gpm): 50.00
Test Type: AIR
Test Duration: 2.00
Drill Stem Setting (ft):
Recovery Water Level (ft):
Recovery Time (hrs):

Well Notes:

How Drilled: ROTARY
Driller's Name: KANE
Driller License: WWD034
Completion Date (m/d/y): 6/13/1993
Special Conditions:
Is Well Flowing?:
Shut-In Pressure:
Geology/Aquifer: Not Reported
Well/Water Use: DOMESTIC
TEST WELL

Hole Diameter Information

No Hole Diameter Records currently in GWIC.

Annular Seal Information

From	To	Description
0.0	20.0	BENTONITE

Casing Information[1]

From	To	Dia	Wall Thickness	Pressure Rating	Joint	Type
2.0	246.0	6.0				STEEL

Completion Information[1]

No Completion Records currently in GWIC.

Lithology Information

From	To	Description
0.0	26.0	BOULDERS GRAVEL
26.0	224.0	BLUE CLAY FINE DARK SAND
224.0	246.0	GRAVEL YELLOW CLAY WATER

220'

[1] - All diameters reported are **inside** diameter of the casing.

…tate law requires that the Bureau's … be filed by the water well driller within 60 … after completion of the well.

1. **WELL OWNER**
Name THE LEUFKENS Co

2. **CURRENT MAILING ADDRESS**
Box 1030
THOMPSON FALLS MT 59873

3. **WELL LOCATION**
NE 1/4 SW 1/4 NW 1/4 Section 15
Township 21 N/S Range 29 E/(W) County SANDERS
Govn't Lot ______, or Lot ______, Block ______
Subdivision Name ______
Tract Number ______

4. **PROPOSED USE:** Domestic ☐ Stock ☐ Irrigation ☐
Other ☐ specify Industrial development

5. **TYPE OF WORK:**
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

6. **DIMENSIONS:** Diameter of Hole
Dia. 7½ in. from 0 ft. to 423 ft.
Dia. ______ in. from ______ ft. to ______ ft.
Dia. ______ in. from ______ ft. to ______ ft.

7. **CONSTRUCTION DETAILS:**
Casing; Steel Dia. 6 5/8 from +2 ft. to 423 ft.
Threaded ☐ Welded ☒ Dia. ______ from ______ ft. to ______ ft.
Type A-53 Wall Thickness .250
Casing; Plastic Dia. ______ from ______ ft. to ______ ft.
Weight ______ Dia. ______ from ______ ft. to ______ ft.

PERFORATIONS: Yes ☐ No ☒
Type of perforator used ______
Size of perforations ______ in. by ______ in.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.

SCREENS: Yes ☐ No ☒
Manufacturer's Name ______
Type ______ Model No. ______
Dia. ______ Slot size ______ from ______ ft. to ______ ft.
Dia. ______ Slot size ______ from ______ ft. to ______ ft.

GRAVEL PACKED: Yes ☐ No ☒ Size of gravel ______
Gravel placed from ______ ft. to ______ ft.

GROUTED: To what depth? 25' + ft.
Material used in grouting #8 Bentonite pellets

8. **WELL HEAD COMPLETION:**
Pitless Adapter ☒ Yes ☐ No

9. **PUMP** (if installed)
Manufacturer's name ______
Type SUB Model No. ______ HP. 7½

10. **WELL TEST DATA**
The information requested in this section is required for all wells. All depth measurements shall be from the top of the well casing.
All wells under 100 gpm must be tested for a minimum of one hour and provide the following information:
a) Air 75 Pump 300 Bailer ______
b) Static water level immediately before testing 32 ft. If flowing; closed-in pressure ______ psi. ______ gpm.
Flow controlled by ______ valve ______ reducers ______
f) Duration of test: Pumping time 20 hrs. days.
g) Recovery time 1/2 hrs.
h) Recovery water level 32 ft. at 1/2 hrs. after pumping stopped.

Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation. In addition to the above information, water level data shall be collected and recorded on the Department's "Aquifer Test Data" form.

NOTE: All wells shall be equipped with an access port ½ inch minimum or a pressure gauge that will indicate the shut-in pressure of a flowing well. Removable caps are acceptable as access ports.

11. **WAS WELL PLUGGED OR ABANDONED?** ______ Yes X No
If yes, how? ______

12. **WELL LOG**

Depth (ft.) From	To	Formation
0	20	sand -gravel
20	40	coarse gravel
40	50	sand- fine, silty, brown
50	70	clay - brown
70	90	sand- fine, silty, brown
90	135	clay - brown
135	145	sand- fine, silty, brown
145	155	clay- soft, brown
155	265	sand- fine, silty, tan
265	285	clay- soft, tan
285	405	sand- fine, silty, tan
405	415	clay- med soft, tan
415	423	silt sand , gravel
423		boulders -water

ATTACH ADDITIONAL SHEETS IF NECESSARY

13. **DATE COMPLETED** 8-18-1998

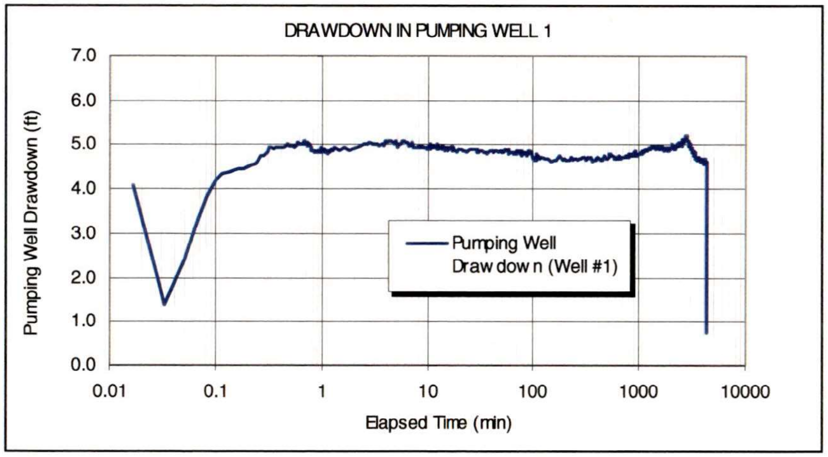
14. **DRILLER/CONTRACTOR'S CERTIFICATION**
This well was drilled under my jurisdiction and this report is true to the best of my knowledge.

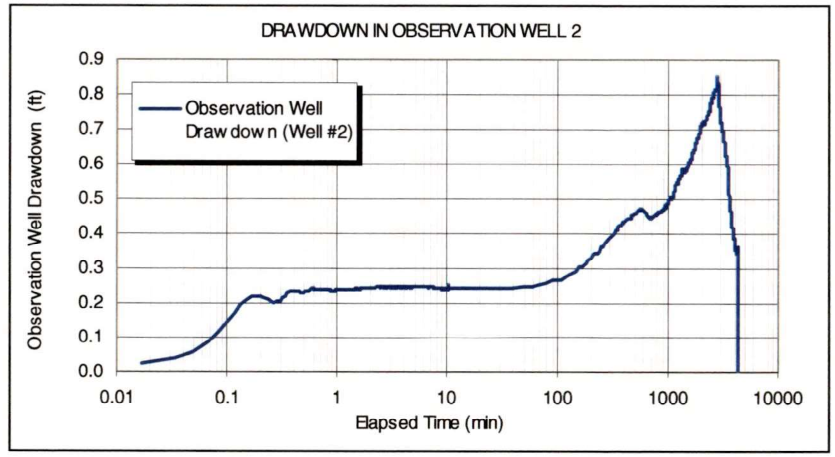
10-15-98
Date

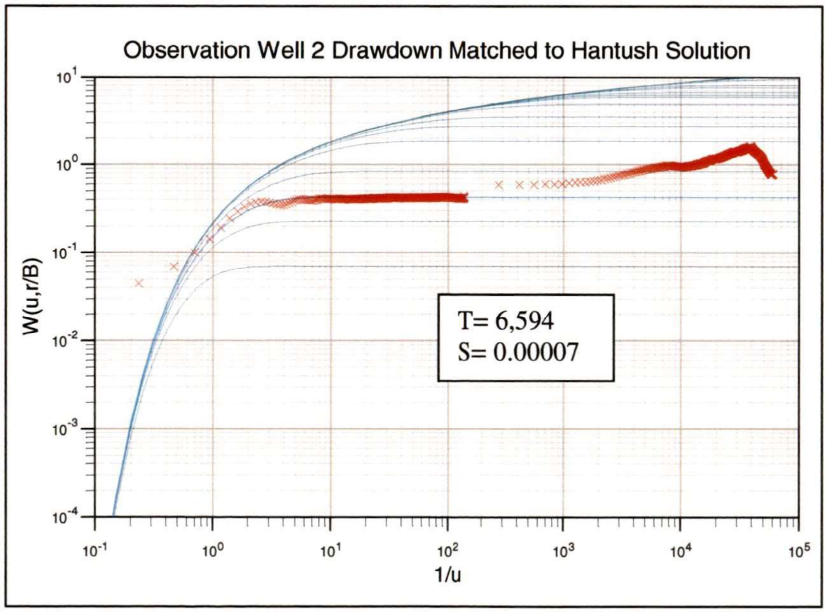
KRASS DRILLING & PUMP SVC. INC.
Firm Name

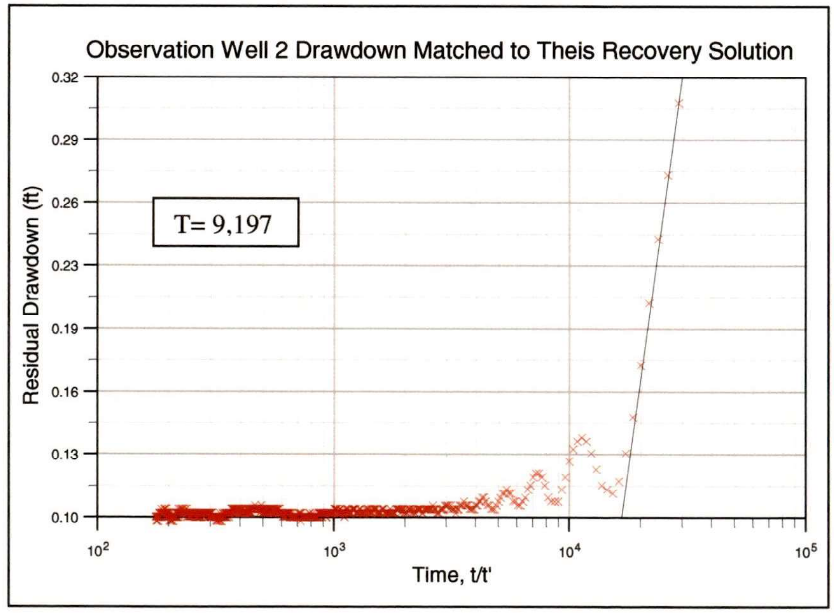
APPENDIX B

TIME—DRAWDOWN PLOTS





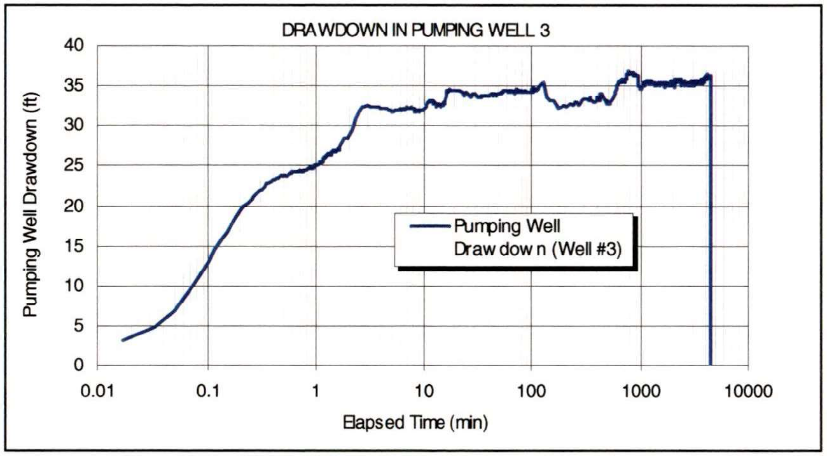


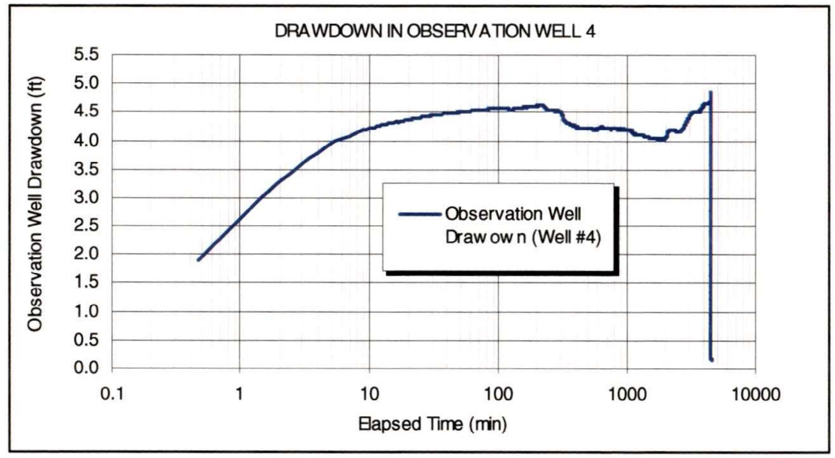


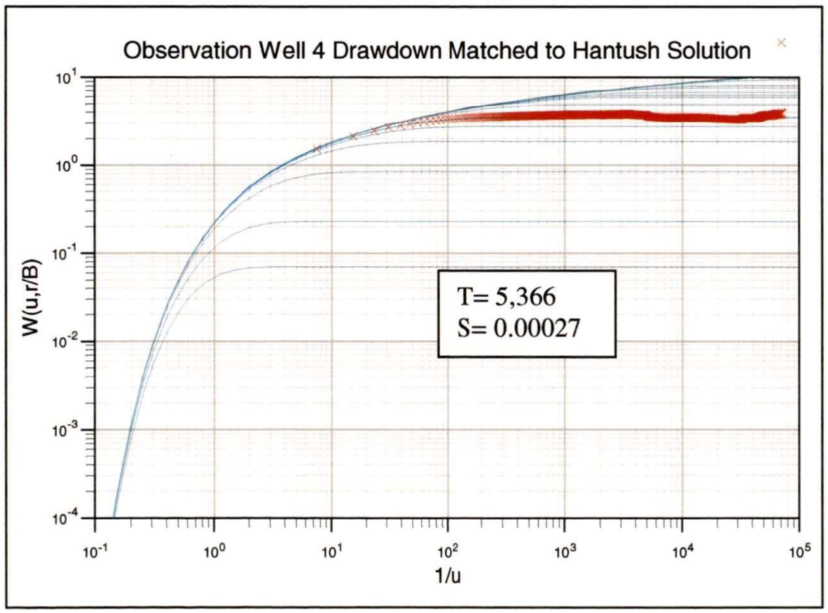
NOTES:

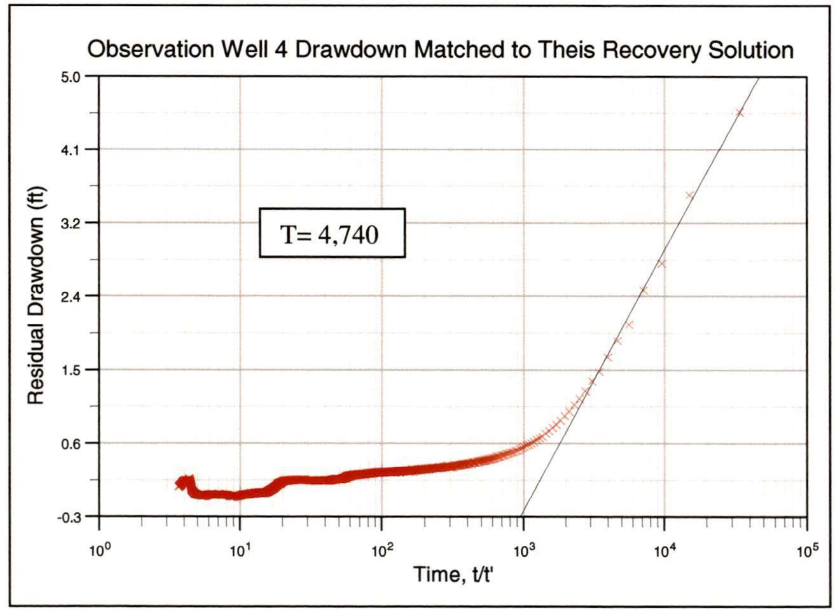
- Well 1 was pumped at an average flow rate of 246 gpm for 72 hours
- Drawdown measured in Well 2 (located 138 feet away) is presented above
- No Drawdown was observed in Wells 3 and 4 (located 4,074 and 4,125 feet away, respectively)

Drawdown Response and Curve Matching Solutions
72-hour Aquifer Test of Well 1
Salish Shores PWS
Thompson Falls, Montana
Appendix B-1





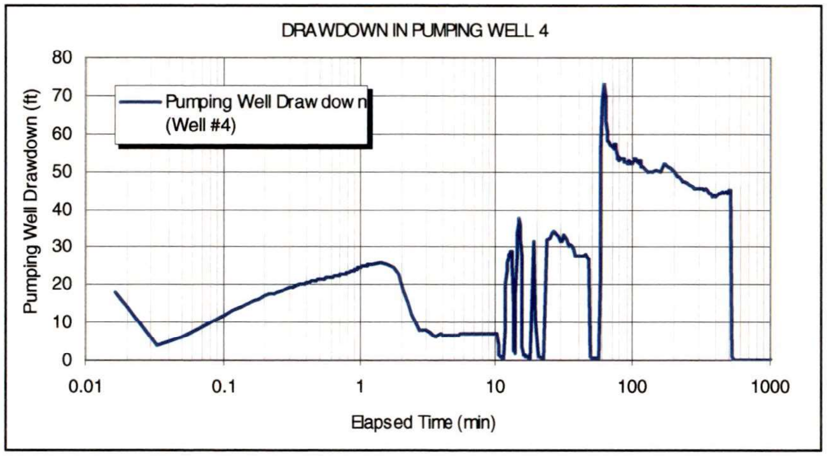


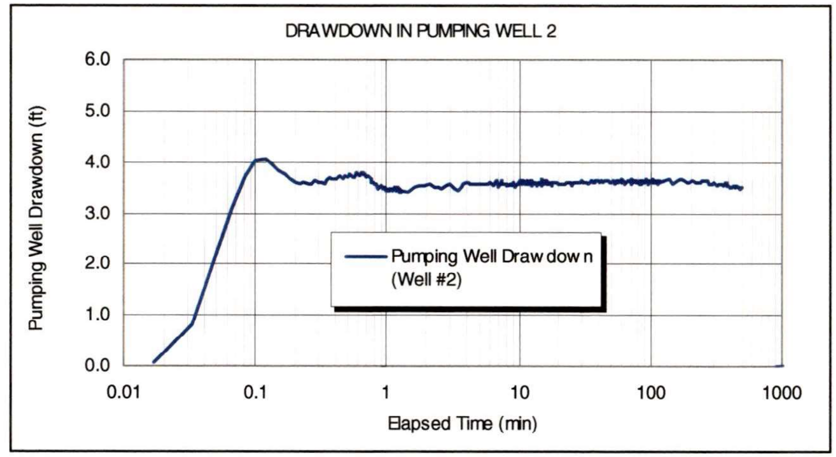


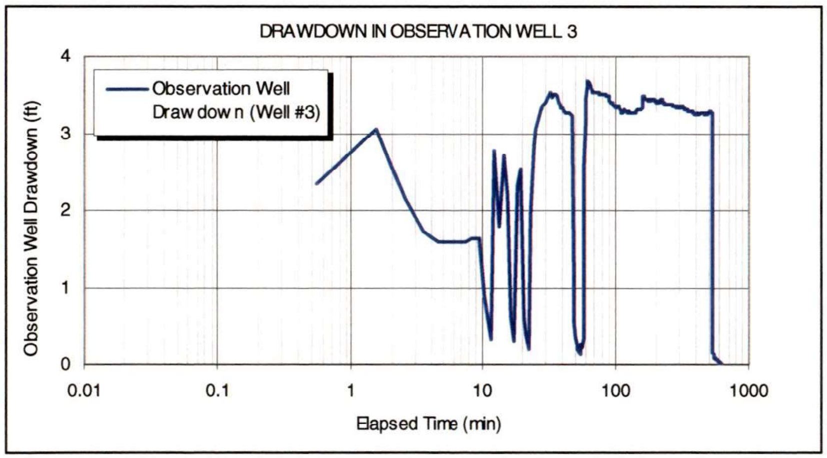
NOTES:

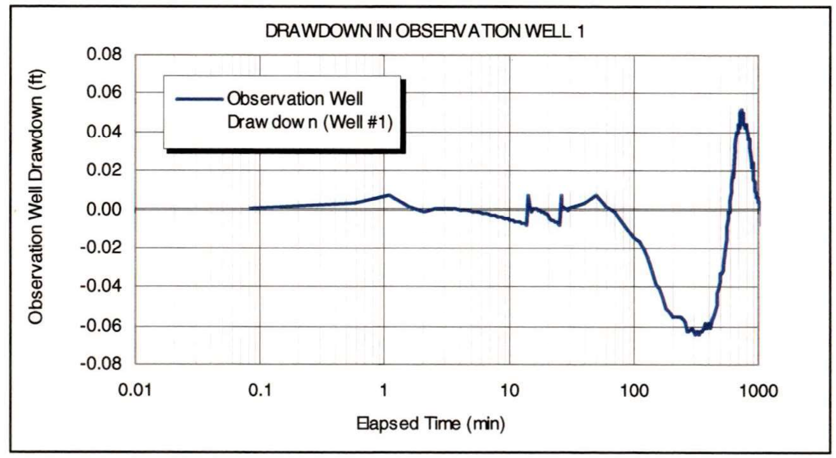
- Well 3 was pumped at an average flow rate of 427 gpm for 74 hours
- Drawdown measured in Well 4 (located 59 feet away) is presented above
- No Drawdown was observed in Wells 1 and 2 (located 4,074 and 3,962 feet away, respectively)

Drawdown Response and Curve Matching Solutions
72-hour Aquifer Test of Well 3
Salish Shores PWS
Thompson Falls, Montana
Appendix B-2









NOTES:

- Well 4 was pumped at an average flow rate of 305 gpm for 8 hours
- A drawdown response was not measured in Well 3 (located 59 feet away; above)
- No Drawdown was observed in Wells 1 and 2 (located 4,125 and 4,012 feet away, respectively)

NOTES:

- Well 2 was pumped at an average flow rate of 245 gpm for 8 hours
- A drawdown response was not measured in Well 1 (located 138 feet away; above)
- No Drawdown was observed in Wells 3 and 4 (located 3,962 and 4,012 feet away, respectively)

Drawdown Responses During 8-hour Aquifer Tests of Wells 4 and 2
Salish Shores PWS
Thompson Falls, Montana
Appendix B-3

Figure B-4

PROJECTED DRAWDOWN IN WELL 3

Salish Shores PWS

Thompson Falls, Montana

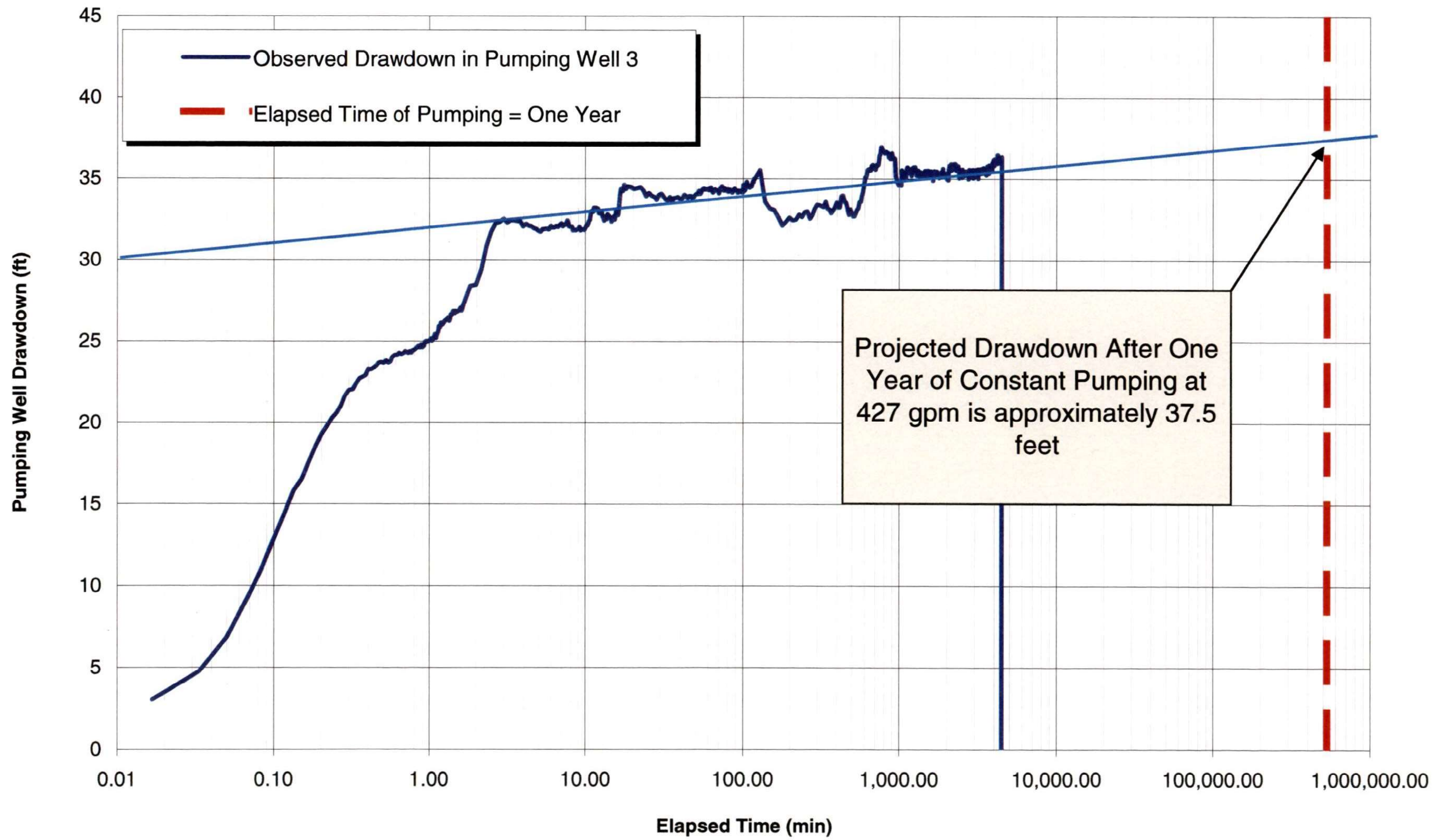


FIGURE B-5

PROJECTED DRAWDOWN IN WELL 4

Salish Shores PWS

Thompson Falls, Montana

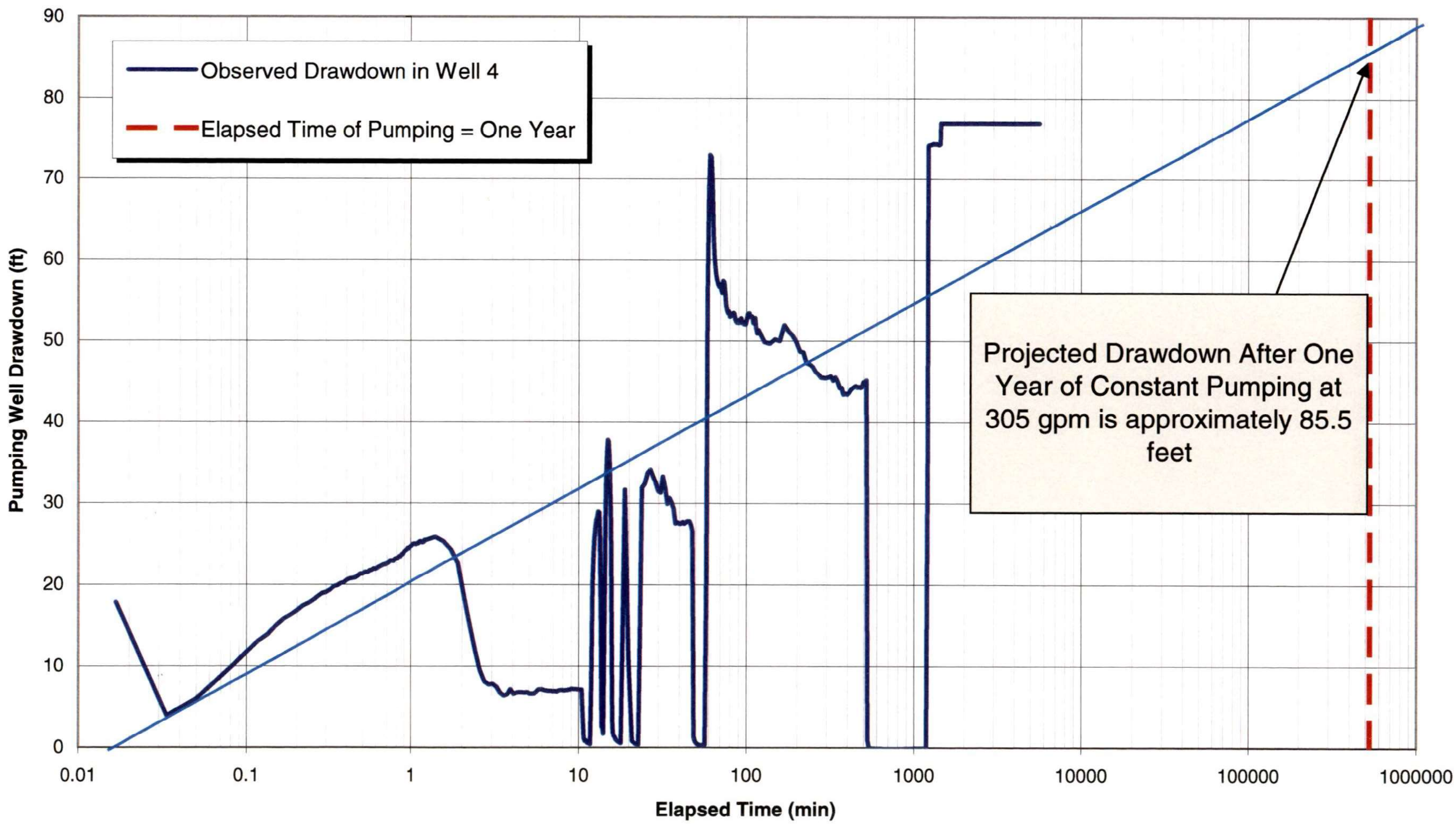


Figure B-6
PROJECTED DRAWDOWN IN WELL 1
Salish Shores PWS
Thompson Falls, Montana

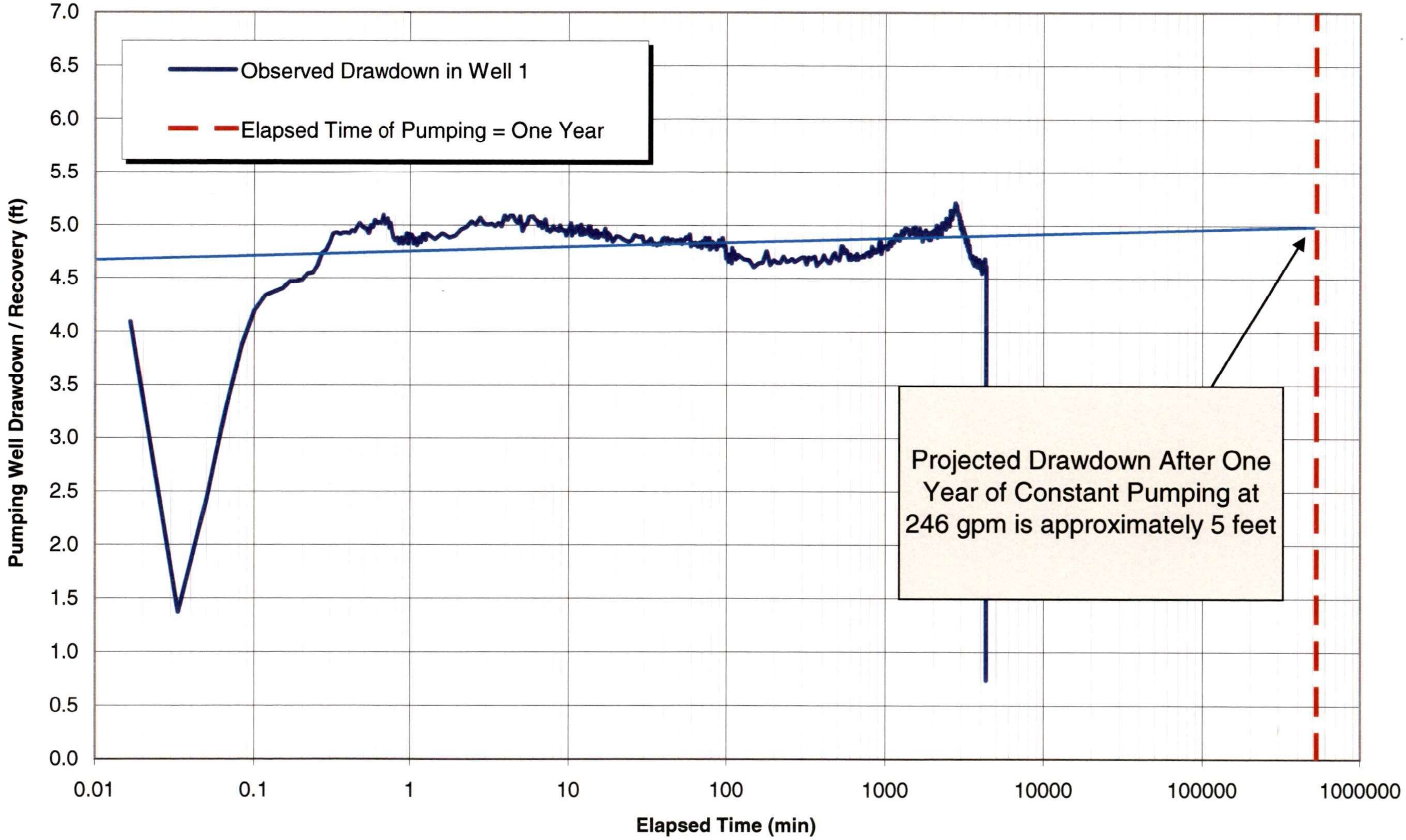
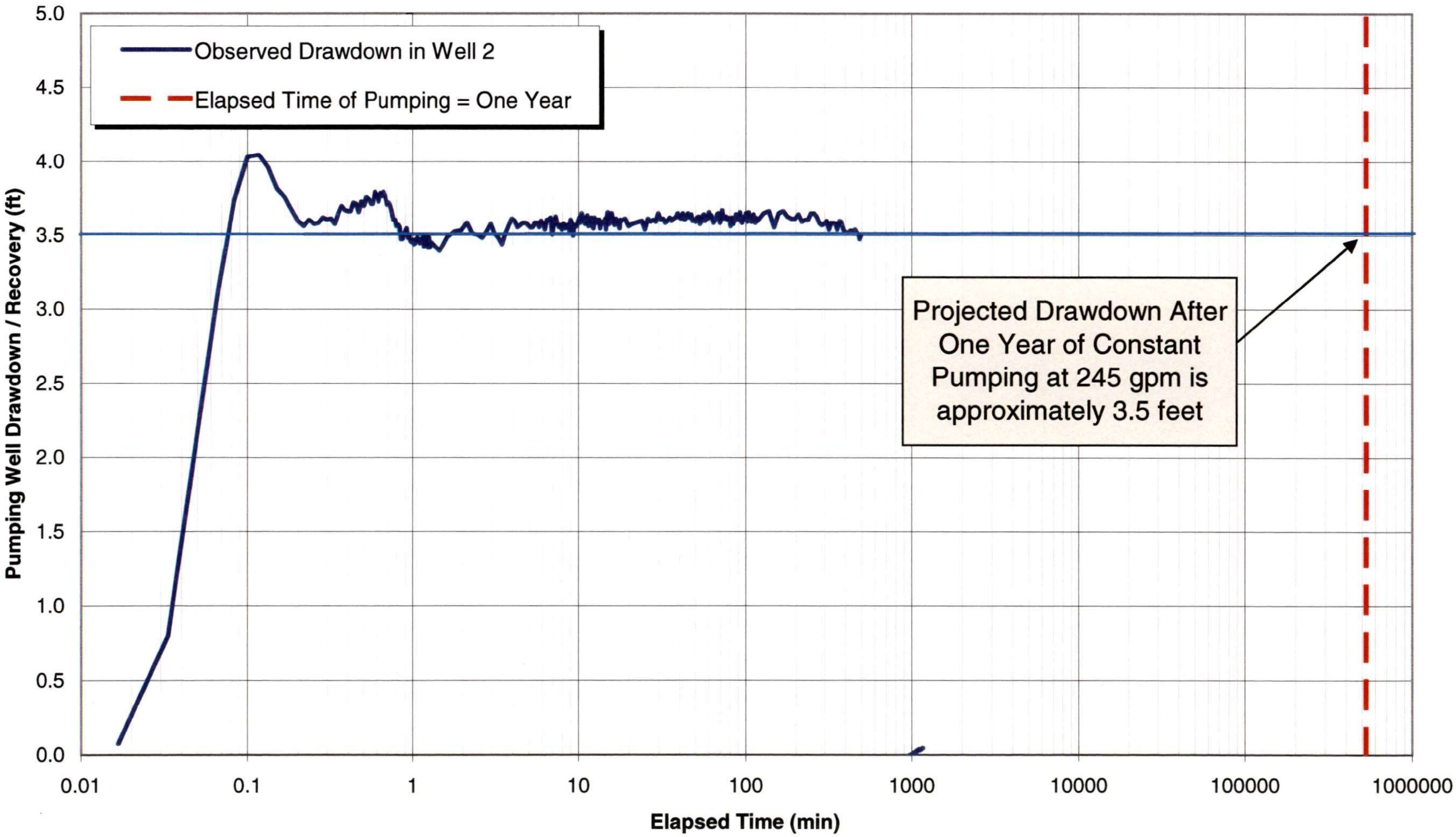


Figure B-7
PROJECTED DRAWDOWN IN WELL 2
Salish Shores PWS
Thompson Falls, Montana



APPENDIX C

SUMMARY OF GROUNDWATER RIGHTS WITHIN ZONE OF INFLUENCE

Table C-1
Groundwter Rights Within the Zone of Influence of Salish Shores Wells

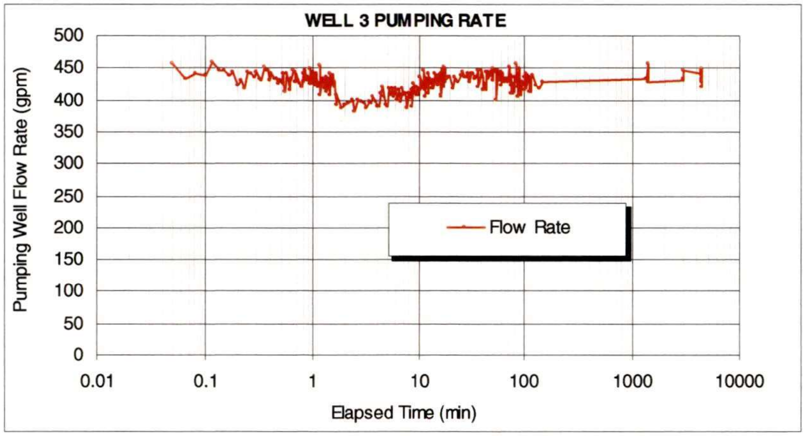
Water Right	Water Right Key	Type	Flow Rate (gpm)	Well Depth	Maximum Volume (ac-ft/yr)	Period of Use (yyyymmdd)	Source Name	Point of Diversion	Purpose of use
76L 110537 00	194811-1	GROUND WATER CERTIFICATE	11	57	1.63	19991222	GROUNDWATER	WELL	DOMESTIC
76N 102576 00	181021-1	GROUND WATER CERTIFICATE	14	60	1.63	19971015	GROUNDWATER	WELL	DOMESTIC
76N 105272 00	185683-1	GROUND WATER CERTIFICATE	30	62	1.63	19980618	GROUNDWATER	WELL	DOMESTIC
76N 105358 00	185831-1	GROUND WATER CERTIFICATE			5.08	19980826	GROUNDWATER	WELL	IRRIGATION
76N 105428 00	185955-1	GROUND WATER CERTIFICATE	18	361	8.91	19981016	GROUNDWATER	WELL	COMMERCIAL
76N 106882 00	188479-1	GROUND WATER CERTIFICATE	14	160	1.63	19990317	GROUNDWATER	WELL	DOMESTIC
76N 108174 00	190718-1	GROUND WATER CERTIFICATE	28	60	1.23	19990521	GROUNDWATER	WELL	DOMESTIC
76N 108258 00	335230-1	GROUND WATER CERTIFICATE	10	198	1.63	19990718	GROUNDWATER	WELL	DOMESTIC
76N 110855 00	303656-1	STATEMENT OF CLAIM	105		6.00	19460919	GROUNDWATER	WELL	MUNICIPAL
76N 111205 00	335656-1	GROUND WATER CERTIFICATE	12	240	2.63	20000503	GROUNDWATER	WELL	MULTIPLE DOMESTIC
76N 114059 00	200893-1	GROUND WATER CERTIFICATE	10	340	2.62	20001208	GROUNDWATER	WELL	COMMERCIAL
76N 115858 00	203891-1	GROUND WATER CERTIFICATE	33	380	9.57	20010608	GROUNDWATER	WELL	DOMESTIC
76N 11614 00	29611-1	STATEMENT OF CLAIM	25		1.50	19580807	GROUNDWATER	WELL	DOMESTIC
76N 117649 00	206740-1	GROUND WATER CERTIFICATE	20	160	1.63	20011001	GROUNDWATER	WELL	DOMESTIC
76N 118301 00	207445-1	STATEMENT OF CLAIM	221		26.00	19040604	UNNAMED TRIBUTARY OF CLARK FORK RIVER	PUMP	IRRIGATION
76N 118303 00	207447-1	STATEMENT OF CLAIM	25			19080227	MASS SPRING	FLOWING	STOCK
76N 118307 00	207450-1	STATEMENT OF CLAIM	25		5.00	19080227	MASS SPRING	MULTIPLE	DOMESTIC
76N 12175 00	30588-1	GROUND WATER CERTIFICATE	99	250	45.00	19770411	GROUNDWATER	WELL	DOMESTIC
76N 12846 00	31771-1	GROUND WATER CERTIFICATE	4	190		19770516	GROUNDWATER	WELL	DOMESTIC
76N 133264 00	306494-1	STATEMENT OF CLAIM	15		2.00	19470801	GROUNDWATER	WELL	DOMESTIC
76N 14217 00	34143-1	STATEMENT OF CLAIM	25		1.50	19480430	UNNAMED TRIBUTARY OF CLARK FORK RIVER	PUMP	DOMESTIC
76N 14218 00	34145-1	STATEMENT OF CLAIM	25			19480430	UNNAMED TRIBUTARY OF CLARK FORK RIVER	PUMP	STOCK
76N 15084 00	35638-1	GROUND WATER CERTIFICATE	14	166	1.50	19770907	GROUNDWATER	WELL	DOMESTIC
76N 163922 00	246966-1	STATEMENT OF CLAIM	8		3.00	19820430	GROUNDWATER	WELL	COMMERCIAL
76N 23427 00	50149-1	GROUND WATER CERTIFICATE	10	250	1.50	19790703	GROUNDWATER	WELL	DOMESTIC
76N 24080 00	51284-1	GROUND WATER CERTIFICATE	10	168	1.50	19790726	GROUNDWATER	WELL	DOMESTIC
76N 24080 01	51283-1	GROUND WATER CERTIFICATE	10		1.50	19790726	GROUNDWATER	WELL	DOMESTIC
76N 26937 00	56237-1	GROUND WATER CERTIFICATE	40	89	17.80	19800318	GROUNDWATER	WELL	DOMESTIC
76N 28000 00	58084-1	GROUND WATER CERTIFICATE	50	303	16.80	19800130	GROUNDWATER	WELL	IRRIGATION
76N 28108 00	58274-1	GROUND WATER CERTIFICATE	15	170	1.50	19800714	GROUNDWATER	WELL	DOMESTIC
76N 28561 00	59065-1	GROUND WATER CERTIFICATE	12	79	1.50	19800807	GROUNDWATER	WELL	DOMESTIC
76N 30001426	337965-1	GROUND WATER CERTIFICATE	20	424	6.15	20010326	GROUNDWATER	WELL	DOMESTIC
76N 30001804	338302-1	GROUND WATER CERTIFICATE	22	60	2.25	20010529	GROUNDWATER	WELL	DOMESTIC
76N 30007033	343027-1	GROUND WATER CERTIFICATE		60		20030728	GROUNDWATER	WELL	DOMESTIC
76N 30008329	344217-1	GROUND WATER CERTIFICATE				20031008	GROUNDWATER	WELL	DOMESTIC
76N 30009277	344965-1	GROUND WATER CERTIFICATE		180		20031229	GROUNDWATER	WELL	DOMESTIC
76N 30010393	346057-1	GROUND WATER CERTIFICATE		60		20040422	GROUNDWATER	WELL	DOMESTIC
76N 30013410	348823-1	GROUND WATER CERTIFICATE		60		20041214	GROUNDWATER	WELL	DOMESTIC
76N 30066 00	61675-1	GROUND WATER CERTIFICATE	14	35	1.52	19800729	GROUNDWATER	WELL	DOMESTIC
76N 30785 00	62927-1	STATEMENT OF CLAIM	250		4.05	19720922	GROUNDWATER	WELL	INDUSTRIAL
76N 34960 00	324523-1	GROUND WATER CERTIFICATE	10		1.50	19810724	GROUNDWATER	WELL	DOMESTIC
76N 35443 00	71035-1	GROUND WATER CERTIFICATE	10		1.51	19810416	GROUNDWATER	WELL	DOMESTIC
76N 3659 00	292206-1	STATEMENT OF CLAIM	60		48.51	19050311	UNNAMED TRIBUTARY OF CLARK FORK RIVER	PUMP	COMMERCIAL
76N 36832 00	73451-1	GROUND WATER CERTIFICATE	30		5.50	19810929	GROUNDWATER	WELL	DOMESTIC
76N 44521 00	86808-1	GROUND WATER CERTIFICATE	20		1.50	19820430	GROUNDWATER	WELL	DOMESTIC
76N 47137 00	91339-1	GROUND WATER CERTIFICATE	20		1.61	19820415	GROUNDWATER	WELL	DOMESTIC
76N 48012 00	92858-1	GROUND WATER CERTIFICATE	30	46	1.50	19820722	GROUNDWATER	WELL	DOMESTIC
76N 52687 00	100454-1	GROUND WATER CERTIFICATE	10	300	1.50	19830502	GROUNDWATER	WELL	COMMERCIAL
76N 54303 00	103233-1	GROUND WATER CERTIFICATE	20		1.50	19831109	GROUNDWATER	WELL	COMMERCIAL
76N 54324 00	103267-1	GROUND WATER CERTIFICATE	50	75	3.50	19831121	GROUNDWATER	WELL	DOMESTIC
76N 54346 00	103309-1	GROUND WATER CERTIFICATE	8		4.40	19831202	GROUNDWATER	WELL	COMMERCIAL
76N 56282 00	327725-1	GROUND WATER CERTIFICATE	10	250	1.50	19840516	GROUNDWATER	WELL	DOMESTIC
76N 57595 00	108900-1	GROUND WATER CERTIFICATE	20	48	0.75	19840920	GROUNDWATER	WELL	DOMESTIC
76N 5784 00	15781-1	GROUND WATER CERTIFICATE	20	250		19750623	GROUNDWATER	WELL	DOMESTIC

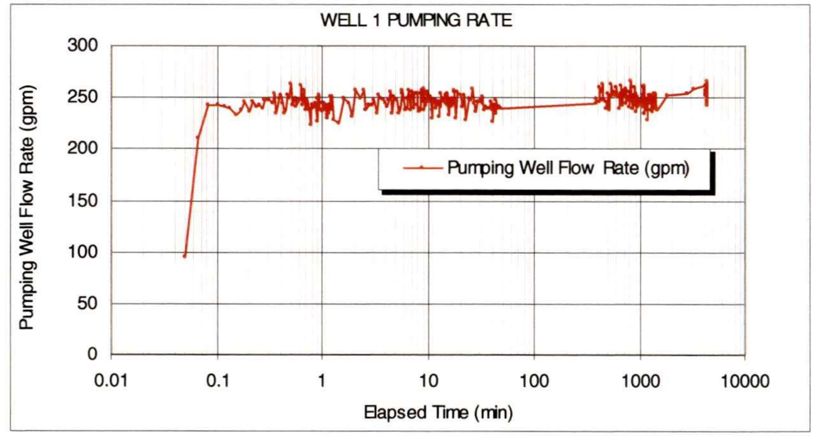
Table C-1
Groundwter Rights Within the Zone of Influence of Salish Shores Wells

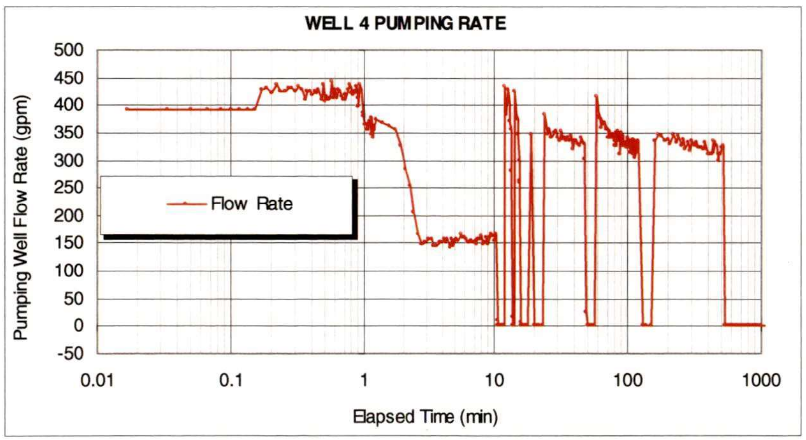
Water Right	Water Right Key	Type	Flow Rate (gpm)	Well Depth	Maximum Volume (ac-ft/yr)	Period of Use (yyyymmdd)	Source Name	Point of Diversion	Purpose of use
76N 60114 00	112893-1	GROUND WATER CERTIFICATE	40	175	1.50	19850528	GROUNDWATER	WELL	DOMESTIC
76N 61930 00	115803-1	GROUND WATER CERTIFICATE	40	176	1.50	19851122	GROUNDWATER	WELL	DOMESTIC
76N 62987 00	117634-1	GROUND WATER CERTIFICATE	15	177	1.50	19860522	GROUNDWATER	WELL	DOMESTIC
76N 64921 00	328980-1	GROUND WATER CERTIFICATE	50	327	1.50	19861023	GROUNDWATER	WELL	DOMESTIC
76N 6526 00	319727-1	GROUND WATER CERTIFICATE	50			19750924	GROUNDWATER	WELL	DOMESTIC
76N 66581 00	123830-1	GROUND WATER CERTIFICATE	30		6.12	19871005	GROUNDWATER	WELL	DOMESTIC
76N 67268 00	329333-1	GROUND WATER CERTIFICATE	15	180	1.50	19871029	GROUNDWATER	WELL	DOMESTIC
76N 68893 00	127814-1	GROUND WATER CERTIFICATE	4		1.50	19880906	GROUNDWATER	WELL	DOMESTIC
76N 745 00	2090-1	STATEMENT OF CLAIM	25		1.50	19631231	GROUNDWATER	WELL	DOMESTIC
76N 75091 00	138540-1	GROUND WATER CERTIFICATE	20		3.00	19900713	GROUNDWATER	WELL	MULTIPLE DOMESTIC
76N 78605 00	331024-1	GROUND WATER CERTIFICATE	10	318	9.87	19910807	GROUNDWATER	WELL	DOMESTIC
76N 81487 00	331455-1	GROUND WATER CERTIFICATE	20	258	5.23	19920416	GROUNDWATER	WELL	COMMERCIAL
76N 81506 00	331457-1	GROUND WATER CERTIFICATE	20	200	1.00	19920430	GROUNDWATER	WELL	DOMESTIC
76N 81519 00	331459-1	PROVISIONAL PERMIT	110	141	48.90	19920514	GROUNDWATER	WELL	MULTIPLE DOMESTIC
76N 85001 00	153252-1	EXEMPT RIGHT	20		14.35	19480601	GROUNDWATER	DEVELOPED SPRING	DOMESTIC
76N 85780 00	153922-1	PROVISIONAL PERMIT	210	246	104.32	19930601	GROUNDWATER	WELL	MULTIPLE DOMESTIC
76N 87539 00	155454-1	GROUND WATER CERTIFICATE	20	36	2.63	19930920	GROUNDWATER	WELL	MULTIPLE DOMESTIC
76N 87598 00	155504-1	GROUND WATER CERTIFICATE	20	204	3.58	19931014	GROUNDWATER	WELL	DOMESTIC
76N 88546 00	156802-1	GROUND WATER CERTIFICATE	10	60	2.88	19931118	GROUNDWATER	WELL	DOMESTIC
76N 88576 00	156856-1	GROUND WATER CERTIFICATE	10		0.11	19931209	GROUNDWATER	WELL	COMMERCIAL
76N 88630 00	332401-1	GROUND WATER CERTIFICATE	30	62	1.63	19940106	GROUNDWATER	WELL	DOMESTIC
76N 89272 00	158062-1	GROUND WATER CERTIFICATE	12.9	240	2.70	19940408	GROUNDWATER	WELL	MULTIPLE DOMESTIC
76N 91030 00	161093-1	GROUND WATER CERTIFICATE	35	200	1.63	19940809	GROUNDWATER	WELL	DOMESTIC
76N 93062 00	164591-1	GROUND WATER CERTIFICATE	10	100	0.97	19941219	GROUNDWATER	WELL	DOMESTIC
76N 94358 00	166834-1	GROUND WATER CERTIFICATE	35		3.92	19950406	GROUNDWATER	WELL	INDUSTRIAL
76N 95899 00	169455-1	GROUND WATER CERTIFICATE	12	200	1.63	19951215	GROUNDWATER	WELL	DOMESTIC
76N 97148 00	333634-1	GROUND WATER CERTIFICATE	5	140	1.05	19960116	GROUNDWATER	WELL	DOMESTIC
76N 97261 00	171807-1	GROUND WATER CERTIFICATE	32	150	4.50	19960509	GROUNDWATER	WELL	LAWN AND GARDEN
76N 97278 00	171837-1	PROVISIONAL PERMIT	440	367	25.98	19960517	GROUNDWATER	WELL	COMMERCIAL
76N 97311 00	171895-1	GROUND WATER CERTIFICATE	13	381	0.30	19960606	GROUNDWATER	WELL	COMMERCIAL
76N 9986 00	26518-1	STATEMENT OF CLAIM	20		1.50	19530501	GROUNDWATER	WELL	DOMESTIC
76N 99865 00	176322-1	GROUND WATER CERTIFICATE	10	166	0.02	19961202	GROUNDWATER	WELL	LAWN AND GARDEN
76N 99866 00	176325-1	GROUND WATER CERTIFICATE	10	340	1.63	19961202	GROUNDWATER	WELL	DOMESTIC
76N 99870 00	176331-1	GROUND WATER CERTIFICATE	14	50	1.63	19961204	GROUNDWATER	WELL	DOMESTIC
			Total Volume:		523.75				

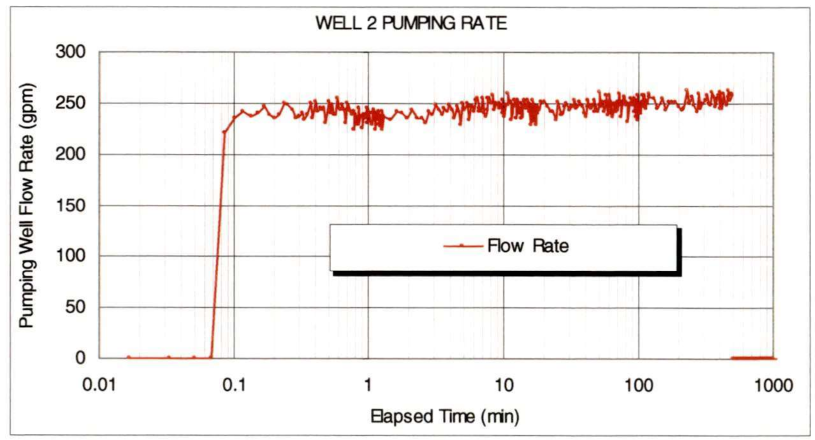
APPENDIX D

TIME-FLOW RATE PLOTS









Pumping Well Flow Rates During Each Aquifer Test
Salish Shores PWS
Thompson Falls, Montana
Appendix D

Form 606P, Question 71.a - Adequacy of Diversion		
Application #: 30165123		
Well ID	**GWIC ID**	**Well Depth**
1	135335	121
2	131977	141
3	139319	240
4	139318	246
5	175584	367
6	175632	355
7	175585	423
**Please note that these Well IDs correspond with those shown on the proposed and existing exhibits submitted with this application package.		

SALISH SHORES UTILITY CORP INC

APPLICATION TO CHANGE A WATER RIGHT NO. 76N 30165123

FORM 606P AMENDED RESPONSES

8) Proposed Point of Diversion Location

POD #	¼	¼	¼	SEC	TWP	RGE	COUNTY	SOURCE	MEANS
8	NE	NW	NW	15	21N	29W	Sanders	GW	Well

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

For Department Use Only

Application # 30165123 Basin 76N
Meeting Date 1/8/2025 Time 13:00 AM/PM
Completed Form Deadline 7/7/2025

RECEIVED
DNRC Water Resources
JAN 31 2025
Kalispell Unit

Completed Form Received 1·31·2025
Fee Rec'd $ 500 Check # 1377
Deposit Receipt # MSS 2513499
Payor IMEG Corp.
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 Salish Shores Utility Corp. LLC
Mailing Address PO Box 1030 City Thompson Falls State MT Zip 59873
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 Bryan Gartland, Aspect Consulting
Mailing Address PO Box 134 City Helena State MT Zip 59624
Phone Numbers: Home 406.599.7840 Work ____ Cell ____
Email Address bryan.gartland@aspectconsulting.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
Ferch, Wilson, Kiel	DNRC	Water Resource Staff
Bryan Gartland	Aspect Consulting	Senior Scientist
Peter Scott	Scott Law	Legal Council
Todd Wakefield	Owner	
Jason Rice/David Fredlander	IMEG	Civil Engineer
Evan Norman	DNRC	Hydrologist

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)
76N 30016270	688.5 GPM	688.5 GPM
76N 97278	440 GPM	440 GPM
76N 85780	210 GPM	210 GPM
76N 81519	110 GPM	110 GPM

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.		
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.	☐ 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 #	76N 30016270	76N 97278	76N 85780	76N 81519			
Point of diversion	x	x	x	x			
Place of use	x	x	x	x			
Purpose of use							
Place of storage							

8. Does the change involve a change in point of diversion?	■ 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**
8	NE	NE	NW	15	21N	29W	Sanders						GW	Groundwater	Well Diversion

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

Municipal- service area, see 9.a.ii instead	

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.	☐ A	■ F

Acres	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County
	Total							

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. ______________________		☐ 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. one unperfected and three perfected municipal permits	☐ 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

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**
76N 30016270	due12/31/2031	76N 30027719	12/31/2031	1/16/2008-full	yes
76N 97278	6/26/2007	76N 30027719	12/31/2031	1/16/2008-full	yes
76N 85780	6/26/2007	76N 30027719	12/31/2031	1/16/2008-full	yes
76N 81519	1/18/2005	76N 30027719	12/31/2031	1/16/2008-full	yes

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. 2007 Change (76N 30027719)- establishment of municipal purpose of use	☐ 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**
76N 30016270	☐ 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: NA- unperfected, brings forth full flow rate and volume
76N 97278	☐ New Historical Use Analysis. Date for new Historical Use Analysis:
	■ Existing Historical Use Analysis. Change authorization number with existing Historical Use Analysis: 76N 30027719
	☐ Full Historical Use Analysis NA. Water right number serving as historical use in lieu of analysis:
76N 85780	☐ New Historical Use Analysis. Date for new Historical Use Analysis:
	■ Existing Historical Use Analysis. Change authorization number with existing Historical Use Analysis: 76N 30027719
	☐ Full Historical Use Analysis NA. Water right number serving as historical use in lieu of analysis:

<table>
<tr><td rowspan="3">76N 81519</td><td>☐ New Historical Use Analysis.
Date for new Historical Use Analysis: ____</td></tr>
<tr><td>■ Existing Historical Use Analysis.
Change authorization number with existing Historical Use Analysis: 76N 30027719</td></tr>
<tr><td>☐ Full Historical Use Analysis NA.
Water right number serving as historical use in lieu of analysis: ____</td></tr>
<tr><td rowspan="3"></td><td>☐ New Historical Use Analysis.
Date for new Historical Use Analysis: ____</td></tr>
<tr><td>☐ Existing Historical Use Analysis.
Change authorization number with existing Historical Use Analysis: ____</td></tr>
<tr><td>☐ Full Historical Use Analysis NA.
Water right number serving as historical use in lieu of analysis: ____</td></tr>
<tr><td rowspan="3"></td><td>☐ New Historical Use Analysis.
Date for new Historical Use Analysis: ____</td></tr>
<tr><td>☐ Existing Historical Use Analysis.
Change authorization number with existing Historical Use Analysis: ____</td></tr>
<tr><td>☐ Full Historical Use Analysis NA.
Water right number serving as historical use in lieu of analysis: ____</td></tr>
</table>

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? Salish Shores Utilities has kept utility records	☐ 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?	■ 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
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?
1,2	WELL	SWSWSE SEC 15, T21N, R29W	NO
3,4	WELL	SWNESE SEC 15, T21N, R29W	NO
5,6,7	WELL	NESWNW SEC 15, T21N, R29W	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

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
1,2,3,4	246,245,427,305 GPM	Geomatix (2005) pumping rates
5, 7	160, 75 GPM	GWIC log air test rates
6	240 GPM	GWIC log pumping test rate

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?	☐ A	☐ F

Start Date (Month (MM)/Day (DD))	End Date (MM/DD)
1/1	12/31

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. Municipalites require broad discretion in their use of water, and therefore a period of use encompassing the entire year (1/1-12/31) is necessary.	☐ 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?		☐ F

i. If the crop(s) grown include hay, how many cuttings were there per season and how many days did they last? ________		☐ 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? 1/1-12/31		☐ F
ii. What was the duration of each historical diversion? 1/1-12/31		☐ 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)? perfected volume = 179 AF, unperfected 198 AF		☐ F
v. How did you determine the volume of water historically diverted? perfected volume verified at PCN (verified during previous change) and unperfected volume represents the authorized volume	☐ 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. ____________________ ____________________	☐ A	☐ F
b. What was the slope of the historical place of use? ____________________		☐ 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? ______		☐ F
e. What is the County Management Factor? ______		☐ F
f. What is evapotranspiration (ET) based on the irrigation method and county? ______		☐ F
g. What percent of applied water are irrecoverable losses per ARM 36.12.1902(17)? ______		☐ 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? ______	☐ 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? 198+ 179 AF= 377 AF		☐ 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. ______ ______ ______ ______ ______ ______	☐ 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? ______		☐ 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. ____________________ ____________________ ____________________	☐ 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.* ____________________ ____________________ ____________________	☐ 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. ____	☐ A	☐ F
53. What source(s) have been identified as needing mitigation water? ____		☐ 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). ____ ____ ____	☐ A	☐ F
55. What is the location (¼ ¼ ¼ section of start and end of reach) and length (FT) of the mitigation reach? ____		☐ F
56. 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			

57. How do the priority dates of the water rights proposed for change to mitigation compare to other water rights on the source? ____ ____ ____	☐ 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? ______ ______	☐ 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? ______		☐ 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? ______		☐ 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). __________ __________ __________ __________ __________	☐ 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? __________ __________ __________	☐ 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. __________ __________ __________ __________	☐ 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)**
			1/1-12/31

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)**

108. Explain why the requested flow rate and volume is the amount needed for the purpose. ____________________ ____________________ ____________________	☐ 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. ____________ ____________ ____________	☐ A
153. Explain how you can control your diversion in response to call being made. ____________ ____________ ____________	☐ 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. ____________ ____________	☐ 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? ____________________ If there has been a period of nonuse, explain below:	
a. Why the water right was not used. ____________________ ____________________	☐ A
b. Why a resumption of use will not adversely affect other water users. ____________________ ____________________	☐ 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? ____________________	
b. Are there intervening water users between the historical and proposed point of diversion?	☐ 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?	☐ 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? ____________________	
2. Who operates and maintains the gage? ____________________	

	3. Is the stream gage upstream or downstream of the point(s) of diversion? ____	
	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 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. ______ ______ ______	☐ 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. __________ __________ __________ __________	☐ 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? __________	

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. ____ ____ ____ ____	☐ 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. ____ ____	☐ 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. ___ ___ ___	☐ A
174. Describe any losses related to conveyance. ___ ___	☐ 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. ___	☐ 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. ___ ___ ___	☐ 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. ___ ___ ___	☐ 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. ______ ______ ______	☐ 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. ______ ______	☐ 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? ______ ______	☐ 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. ______ ______ ______ ______	☐ 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. ______________________________ ______________________________ ______________________________	☐ 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.

Todd E Wakefield (signature) Todd E Wakefield 1-10-2025

Applicant Signature — Date

Applicant Signature — Date

(signature) 01/13/2025

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

-5- please add Township/Range to map	-
-6- please add Township/Range to map	-
-9.a.ii- provide list of LLD of POU	-
-30.d.i- submit measurement records, useage data, PSC records, etc.	-
-	-
-	-
-40.e.ii- submit measurment records, useage data, PSC records, etc.	-
-67	-
-68	-
-68.a.	-
-70	-
-70.a.	-
-71.a.-please add Township/Range to map	-
-	-
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-	-
-	-
-	-
-	-
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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

-	-	-	-
- Question 8 - Proposed POD:	-	-	-
- NENWNW Sec 15, T21N, R29W	-	-	-
- Information above replaces existing	-	-	-
- details.	-	-	-
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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))."

Todd E. Wakefield 1-17-2025

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))."

01/21/2025

Department Signature Date

Department Signature Date