

Seeley Lake Sewer District
REGULAR BOARD MEETING AGENDA

DATE: Thursday, April 18, 2024
PLACE: The Barn, 2920 Highway 83, Seeley Lake & Virtual Meeting, via Zoom
Computer: <https://us02web.zoom.us/j/86464976067?pwd=dFF0UU9yUVIvZjFZQmo4ZlRQR3VEQT09>
Telephone: 1 669 900 6833
Meeting ID: 864 6497 6067
Password: 032580
TIME: 6:00 p.m.

ROLL CALL

Tom Morris, President	○	05/2024
Pat Goodover, Vice President	○	05/2026
Jason Gilpin, Director	○	05/2024
Cheri Thompson, Director	○	05/2026
Troy Spence, Director	○	05/2026
Felicity Derry, Secretary	○	

1. OPENING: Scheduled for 6:00 PM Via Zoom
2. APPROVAL OF AGENDA:
3. PRESIDENT'S COMMENTS:
4. PUBLIC COMMENT: On Items not on the Agenda of the Meeting and within the Jurisdiction of the Sewer District [MCA 2-3-103 (1)a]
5. CORRESPONDENCE:
6. MINUTES: March 21, 2024 - *Action*
7. FINANCIAL REPORTS:
 - a} Invoices: April 2024 - *Action*
 - b} February 2024
8. MANAGER'S REPORT: Status Report
9. UNFINISHED BUSINESS:
 - a} Action Plan for 2023-2024 Committee Reports
 - i. Pathfinder Article & Email Newsletter - *Discussion/Action*
 - b} Fluorescence EEM Sampling - *Discussion/Action*
 - c} Test Result Map - *Discussion/Action*
 - d} Monitoring Well & Lake Sampling - *Discussion/Action*
 - e} WET Proposal Next Step - *Discussion/Action*
 - f} FY2025 Budget - *Discussion*
 - g} DNRC Grants - *Discussion/Action*
10. NEW BUSINESS:
 - a} FEMA Funding - *Discussion*
11. NEXT SCHEDULED MEETING: May16, 2024
12. AGENDA ITEMS FOR NEXT SCHEDULED MEETING:
13. ADJOURNMENT:

**SEELEY LAKE SEWER DISTRICT
REGULAR BOARD MEETING
March 21, 2024**

Tom Morris	President	PRESENT	Cheri Thompson	Director	PRESENT
Pat Goodover	Vice President	PRESENT	Troy Spence	Director	PRESENT
Jason Gilpin	Director	PRESENT	Felicity Derry	Secretary	PRESENT
Bill Decker	Manager	PRESENT			

Public Attendance – Appendix A

CALL TO ORDER:

The meeting was called to order at 6:11pm. The meeting was held remotely at the Barn, 2920 Highway 83, Seeley Lake, MT and via Zoom.

APPROVAL OF AGENDA:

There were no amendments to the agenda.

PRESIDENT’S COMMENTS:

Tom Morris read THE President’s comments (Appendix B)

PUBLIC COMMENT:

None

CORRESPONDENCE:

None

MINUTES:

February 15, 2024

Cheri Thompson moved to accept the minutes for the regular meeting (February 15, 2024) as circulated. Pat Goodover seconded the motion. There was no discussion. The motion was carried.

Tom Morris	Aye
Pat Goodover	Aye
Jason Gilpin	Aye
Cheri Thompson	Aye
Troy Spence	Aye

FINANCIAL REPORTS:

Invoices

Tom Morris reviewed the March invoices.

Cheri Thompson moved to approve the invoices as presented. Pat Goodover seconded the motion. There was no discussion. The motion was carried.

Tom Morris	Aye
Pat Goodover	Aye
Jason Gilpin	Aye
Cheri Thompson	Aye
Troy Spence	Aye

January 2024 Financial Reports

Felicity Derry reviewed the January financial reports.

MANGER'S REPORT:

Bill Decker noted that the Missoula City/County Health Department (MCCHD) had installed the transducers in the monitoring wells and would be testing these wells monthly. Missoula County would also be surveying the monitoring wells at no cost to the District. Bill Decker reviewed the results for the Fluorescence Excitation Emission Matrix (EEM) testing, which had been received today.

Shannon Therriault, MCCHD, added that seven of the transducers had been installed, the remainder would be installed in the next couple of weeks. The sampling would be performed in the ten monitoring wells that contained the transducers.

UNFINISHED BUSINESS:

Action Plan for 2023-2024 - Committee Reports

Pathfinder Article & Email Newsletter

There was discussion regarding putting an article in the Pathfinder.

Fluorescence Excitation Emission Matrix (EEM) Sampling

Tom Morris noted that the results had been received this afternoon. The preliminary report was that the source of nitrates was human, but the report still needed to be peer reviewed.

Test Map

Cheri Thompson reviewed the test map for the public that were present.

Monitoring Wells & Lake Sampling

Covered previously.

WET Proposal New Wells

Tom Morris summarized which wells were covered in the proposal and discussion followed.

Jess Alexander noted that he had recommended drafting a proposal to install the additional wells prior to the completion of the WET report investigating nitrates, as well as the Isotech report. After reviewing the Isotech report, it was obvious that the source of nitrates was anthropogenic. Therefore, Jess Alexander did not think that it was necessary to install the additional wells, and explained why. There was discussion regarding replacing the well at the Baptist Church.

WET Proposal Next Step

Jess Alexander noted that Josh Vincent and Steve Anderson were both attending the meeting. Josh Vincent noted that Missoula County collecting and paying for sampling would be helpful and would save the District money. The next step would be to start reevaluating the options to fix the nitrate problem. The District could apply for an Renewable Resources Grant Loan (RRGL) grant to offset some of the cost. The District should continue to coordinate with Missoula County, to ensure that the solution chosen meets all of the regulations. It was important to find the most cost-effective option that would meet needs of the District.

FY2025 Budget

Tom Morris noted that the Board should be ready to submit the budget by June. Tom Morris reviewed his thoughts on the 2025 budget and discussion followed. Bill Decker added that funds should be included for an income survey. Discussion followed on how to complete an income survey and the associated cost.

Ermine Contracting Proposal

Brandon Grosvenor noted that Gary Chilcott had prior family commitments and could not attend the meeting. Their presentation had three goals, to continue to nurture the relationship with the Board, for the Board to consider a motion to let Ermine pursue the permitting process and also financing options. This would allow Ermine to provide the Board with a customer cost, as well as a timeline.

Darryl Barton gave some background information and then began the presentation for Ermine. Ermine's design had been based on information from the District's PER. Darryl Barton felt that the Membrane BioReactor (MBR) was a cost-effective opportunity for Seeley Lake and then reviewed the reasons why. The composition of the effluent was reviewed. How the MBR and Clarified Activated Sludge (CAS), a conventional system, worked were explained. The proposed customer cost of the MBR was reviewed, noting that ultimately it would depend on the funding package. Compared to the previous project, Ermine's proposal had less lift stations and pipe, decreasing the O&M cost. The level of treatment was reviewed. Ermine's proposal utilized a design build, which would be more cost effective. The MBR had a small footprint and could be modified by adding cells for increased capacity.

To overcome the challenge that the District did not have a discharge permit on file, Darryl Barton would like to begin the process of apply for a discharge permit, at no cost to the District, and reviewed the requirements for this.

Darryl Barton reviewed the available funding opportunities and then outlined a possible timeline, beginning construction in late 2025, with completion in 2026.

John Richards questioned how much sludge would be produced. Darryl Barton replied that it was hard to estimate and would get him more information.

Tom Morris questioned the higher cost of the screen maintenance compared to a Sequenced Batch Reactor (SBR). Darryl Barton confirmed that had been an issue with the older MBR systems. Tom Morris questioned the cost of the collection system. Darryl Barton replied that the collection system was not included in the cost of \$6.5 million and that that cost of the collection system for phases 1 & 2 of the old project had been approximately \$11.5 million.

John Richards questioned the distribution system from the plant. Darryl Barton replied that they would design an underground drain field; however, including an irrigation system for the summer months would prolong the life of the drain field.

Public: Questioned if there was a timeframe for WET to develop a proposal that would be workable. Steve Anderson replied that the MBR was a state-of-the-art system. Currently it was not clear which areas would need to be added to the system, so the flow rate that would be required had not been defined, making it impossible to know if Ermine's MBR was the correct size. The MBR was one of the possibilities which should be evaluated and WET should work with Ermine to ensure that their system was what the District needed. If the District could secure funding to do the studies, they could be completed fairly quickly.

Cheri Thompson questioned if the District could buy the MBR and locate it somewhere other than the RV Park. Brandon Grosvenor replied that it could go anyway, but he already had a discharge permit. If the District wanted to own the property that the plant was situated on, he could sell them the land. There was discussion regarding fees for the engineering. Darryl Barton requested that the Board authorize them to pursue funding and permitting at no cost to the District.

Jess Alexander felt that the cart was before the horse. The MBR was great technology, but the District was not to the point where they could choose the technology. The needs should be evaluated, as well as all of the technologies, and then the Board could be presented with recommendations. WET could work with Ermine on the MBR, with the Board's approval. The logical next step would be to review what the community needed for treatment, work with Ermine to see what they had and if it was appropriate. With the Board's approval he would like to draft a proposal and a work plan with the next tasks. There were other technologies out there, but Seeley's needs had not been defined.

John Richards questioned that if a somebody brought the District a zero cost proposal, why wouldn't you do it. To apply for the permit would not cost the District a dime and DEQ would be basing the permit on data from the PER. Jess Alexander noted that it would be applying for a permit for a system that might not be appropriate for the Board's needs and recommended that the Board take a breath.

Bill Decker noted that it was not the only MBR or treatment system out there and asked what the cost would be if the District used their engineer. There was discussion regarding how the MBR sitting in a warehouse effected the cost. Tom Morris added that he agreed that the cart was before the horse and asked how long the offer was available and what was the warranty on the system. Darryl Barton replied that he would have to ask Gary Chilcott.

Tom Morris suggested that the Board give permission for Jess Alexander and WET to speak with Ermine and come back to the next meeting with a proposal. There was discussion regarding the next step.

Troy Spence left the meeting at 7:59pm

Tom Morris moved to give our engineer the permission to visit with Gary (Chilcott) and come up with a global proposal. Cheri Thompson seconded the motion. Jess Alexander clarified that WET should visit with Ermine and provide a proposal to evaluate the needs of the District and different treatment options at the next meeting. There was no further discussion. The motion was carried.

Tom Morris	Aye
Pat Goodover	Aye
Jason Gilpin	Aye
Cheri Thompson	Aye
Troy Spence	Absent

NEW BUSINESS:

FEMA Funding

Tom Morris noted that he and Bill Decker had visited with the folks from FEMA and the MCCHD. Shannon Therriault, MCCHD, reviewed the grants available to the District that could fund a feasibility study, which were often followed by an implementation grant. Discussion followed on matching funds and having FEMA attend the next meeting.

DNRC Grants

Bill Decker noted that work continued on the grant. Jess Alexander added that there was a remaining \$5,000 of funds in the Reclamation and Development Grant(RDG) for the remaining wells and recommended closing the grant out.

CRC Letters of Recommendation

Jon Haufler had provided a draft letter and noted that the Sewer Board could modify it in any way. Cheri Thompson noted that she did not have a problem with signing it. There was discussion with Jon Haufler regarding the CRC eDNA analysis that did not happen and why. The contents of the letters were discussed and the letter was reviewed. Discussion followed on the mission of the CRC.

Cheri Thompson moved to sign the letter. Tom Morris seconded the motion. There was no further discussion. The motion was carried

Tom Morris	Aye
Pat Goodover	Aye
Jason Gilpin	Nay
Cheri Thompson	Aye
Troy Spence	Absent

Board Election

Tom Morris noted that he had been approached by a person that would be willing to serve on the Board and had then received a letter from a second person. The terms were not up until May and so this would be added to the May agenda.

Barn Rent

Cheri Thompson added that the Barn rent was \$50 a meeting.

Tom Morris moved to pay \$50 a month for each meeting that we meet here. Cheri Thompson seconded the motion. There was no further discussion. The motion was carried.

Tom Morris	Aye
Pat Goodover	Aye
Jason Gilpin	Aye
Cheri Thompson	Aye
Troy Spence	Absent

NEXT REGULARLY SCHEDULED MEETING: April 18, 2024

The next meeting will be held in person at the Barn and via Zoom.

AGENDA ITEMS FOR NEXT SCHEDULED MEETING:

Tom Morris noted that the following items should be added to the April agenda: Action Plan – Committee Reports – Pathfinder Article; Mission Update; Test Result Map, EEM Sampling, Monitoring Well & Lake Sampling, WET proposal, FY2025 Budget, FEMA funding and DRNC Grants.

ADJOURNMENT OF MONTHLY BOARD MEETING:
Tom Morris moved to adjourn the meeting at 8:29pm.

Attest:

Tom Morris, President

Felicity Derry, Secretary

DRAFT

APPENDIX A

SEELEY LAKE – MISSOULA COUNTY SEWER DISTRICT
 Regular Board Meeting
 Virtual Meeting Via Zoom
 March 21, 2024

NAME	ADDRESS/EMAIL	PHONE #
Jeanna Miller, MCCHD		
Shannon Therriault, MCCHD		
Jess Alexander, WET		
Josh Vincent, WET		
Steve Anderson, WET		
Darryl Barton, Ermine		
Brandon Grosvenor, Lazy Acres		
John Richards		
Jon Haufler, CRC		
Mark Williams		
Jenny Lindemer		
Mike Lindemer		
Tom Beers		
Dee Strauss		
Kapp Johnson		
Keely Larson, Pathfinder		

APPENDIX B

As I have been preparing for this meeting a lot has been going through my mind. I've sat and listened for hours to bureaucrats and politicians who say they want to help the situation in Seeley Lake. So, let me give you a little bit of history – recent history. A few years ago, FEMA sent money down during the COVID pandemic to the states. They sent \$900 million to the state of Montana. The very first day Mike Hopkins, our state representative, who also chairs the Appropriations Committee called me. He said, “the Seeley Lake Sewer District was the first thing that came to mind when he saw that that money was coming.” He said, “we haven’t been given guidance yet on how this money can be spent,” but he asked me what would it take to get an affordable sewer system in Seeley Lake? I told him if we had \$50 million, we could build an affordable sewer for the residents of Seeley Lake. He said he would go to work on that. That very evening, on the Evening New, before the Appropriations Committee had even met, our US senator was on the news flaunting how that he had secured \$365 million of that money for the Flathead: Now mind you – the Appropriations Committee had not even met yet! They had not even been given guidance on how it could be appropriated, had not even discussed how the money was going to be dispersed: By the time the Appropriations Committee finally met and appropriated – Missoula County was allotted \$23 million. Missoula County did not even give Seeley Lake Sewer District a look! No call, nothing!

We are now living in a society that has bureaucrats and elected officials that are operating against the Constitution of the United States of America and the State of Montana! They have adopted a religion! They have established a religion and that religion is extreme environmentalism! That extreme environmentalism has eked its way out into every part of our government! They don't write law because they know that they can't! They write policies, they write regulations, they create expensive permit processes, they make it so restrictive that businesses can't afford to have business and people cannot afford to live! Our Constitution also guarantees, our Constitution and Bill of Rights that is, guarantees the inalienable right to the pursuit of happiness which by the way comes way ahead of the environment! More and more these people are trying to stop folks from living here. They're trying to stop industry! In fact, there's one group that's here tonight that their cover page actually admits, yes they want to remove humans from the wildlands interface! That is their goal! They want us to support them. These bureaucrats are going on TV, they're going to the news agencies, they're spreading untruths! One of them being a 60 milligram per liter nitrate level that's been measured in Seeley Lake! Where was that? Maybe that was a typo, but it hasn't been corrected! Another article claiming that we would have had a \$29.00 a month sewer bill!? Now the first thing about this is – these bureaucrats receive their paychecks from the taxpayers! They taxpayers in the Seeley Lake Sewer District voted to reject the bond issue, because it would have cost too much to live in Seeley Lake!

By my account, it would have cost me \$83,000 over the span of the life of the sewer! It would have been much more than that if inflation and interest were added to that! While it's true that Missoula County was going to subsidize the cost for the first three years, which would have reduced it, there was no guarantee of any subsidization later. Again, I emphasize, the voters turned down the bond election. All of us here on this Sewer Board, the County Commissioners, and the Department of Health, all work for the taxpayers and receive their paychecks from them. I'm pretty sure that some of you environmental extremists are sitting at home doing a little happy dance. You're going to force people out of Seeley Lake by regulation and policies that exceed the federal and state standards, but serve your purposes! Last year a major employer in Seeley Lake wanted to put in RV spots and a man camp so they would have a place for their employees to live temporarily. The permitting process in Missoula County was going to cost them \$1 million. Now we have all kinds of politicians showing up for emergency meetings and saying that they care, what can we do to help? On the environmental side we're being told that we're trying to be proactive to stop from health hazards, but on the industrial and cost of living and human side the only action is reactive. These folks are going on TV and to the press in passing down blame on the very people that they work for. I'm not going to blame anybody. I'm saying that we have not worked together proactively towards a common goal. We have not tried together to find an economically reasonable solution that 's also environmentally sound. We have a group that's here tonight that's asking us to send a letter of support them so they could get more money to push us out of the wildland interface! This whole area was in the last century, developed by the very people that live here now, and they want us to be gone! But they want our tax dollars! We're no longer going to have the ability in this community to do wildfire mitigation and other work in the forest to make our forest healthy! Now this religion that has taken over our society needs to stop! I don't care if this is my last meeting with the Sewer District, it's time for the truth to be told! We need to come up with affordable reasonable solutions and stop putting people out of their homes! In the meantime, the idea that we can continue to build low-income housing and leave nothing left for the medium income is an ideal that won't survive the test of time. The median income people are the ones who are paying their taxes and supporting the businesses. Now all you business owners, you should be really careful about what you say about the taxpayers and the voters because they're the ones that are paying your bills! You get some money from out of town, but who's going to serve them when there's no place left to live!

Let's start this meeting.

**Seeley Lake Sewer District
Invoices for April 2024**

District:

Seeley Lake Water District - <i>Inv#231 March 2024</i>	\$179.35
Stratum Reservoir <i>Inv#1002-022492</i>	\$3,260.00
Immense Impact <i>Inv#21-1006KMO (website)</i>	\$499.00
Bill Decker - <i>March/April 2024</i>	\$0.00
Felicity Derry - <i>March/April 2024</i>	\$231.16
The Barn - April Meeting	\$50.00
WET <i>Inv#10842</i>	\$2,248.75
	\$6,468.26

Account Balances as of 3/29/2024

Citizens Alliance Account	\$5,004.24		\$5,004.24
Reserve	\$28,000.00		\$28,000.00
Missoula County Account	\$221,503.67	(\$6,468.26)	\$215,035.41
	\$254,507.91		\$248,039.65

Seeley Lake - Missoula County Water District


PO Box 503
Seeley Lake, MT 59868-0503

Phone # 406-677-2559

Invoice

DATE	INVOICE #
4/1/2024	231

BILL TO
Seeley Lake Sewer District PO Box 403 Seeley Lake, MT 59868-0403

SHIP TO


P.O. NUMBER	TERMS	REP	SHIP	VIA	
	Due on Receipt		4/1/2024	Vince	

QUANTITY	ITEM CODE	DESCRIPTION	PRICE EACH	AMOUNT
11	MiscI	Bookkeeping & Admin March 2024	15.00	165.00
287	MiscO	Copies	0.05	14.35

THANK YOU!	Total \$179.35
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INVOICE

INVOICE NUMBER : 1002-022492

INVOICE DATE : Apr-4-2024

CUSTOMER : 5000478

BRANCH PLANT : Champaign

TERMS : Net30

Seeley Lake - Missoula Sewer District
281 Rice Ridge Road
Seeley Lake, MT 59868
USA

1308 Parkland Court
Champaign, IL 61821
USA
PH : 2173983490
FX : 2173983493



SHIP TO : Seeley Lake - Missoula Sewer District

281 Rice Ridge Road
Seeley Lake, MT 59868
USA

SALES ORDER NO : 40021811

CONTACT NAME : Bill Decker	CONTRACT NUMBER :
CONTACT NUMBER :	JOB NUMBER :57294 - STANDARD
CUSTOMER PO :	JOB NAME : Seeley Lake Sewer
CUSTOMER AFE :	EMAIL ADDRESS : slsdmanager@gmail.com

Sample Name Collection Date Client Sample ID
Trip Blank 2023-12-05 18:45
4 2024-01-09 09:00
13 2024-01-09 09:30
2 2024-01-09 10:00
Lyndys 2024-01-09 10:30

LINE NO	ITEM NUMBER	DESCRIPTION	DATE OF SERV/SALE	QTY	UOM	UNIT PRICE	GROSS AMOUNT	DISCOUNT (%)	TOTAL PRICE	TAX
1	2654415	Water Analysis Environmental WAB+Ba,Sr,Fe,Mn+F-Br-NO3-PO4_	Feb-14-2024	4.00	ea	315.00	1,260.00	0.00	1,260.00	N
2	1958068	Consulting Services	Feb-14-2024	8.00	ea	250.00	2,000.00	0.00	2,000.00	N

Please Remit To: Stratum Reservoir (Isotech), LLC P O Box 124040 Dallas, TX 75312-4040 USA Bank Account No : 1312051194 Routing No : 113008465 SWIFT Code : WONAUS44	SUBTOTAL (USD) :	3,260.00
	SALES TAX :	0.00
	TOTAL (USD)	3,260.00



Rural Water Impact & Municipal Impact
 (888) 551-4815
 P.O. Box 121034
 Arlington, TX 76012

IMMENSE IMPACT, LLC

Home of RuralWaterImpact.com & MunicipalImpact.com



Billed To
 Attn: Ms. Felicity Derry
 Seeley Lake Sewer District
 281 Rice Ridge Road
 P.O. Box 403
 Seeley Lake, MT 59868

Date of Issue
 04/10/2024

 Due Date
 05/10/2024

Invoice Number
 21-1006KMO

 Reference
 19-0510SLS

Amount Due (USD)
\$499.00

Description	Rate	Qty	Line Total
RWI Tier 1 Annual Subscription - 24 Rural Water Impact Tier 1 (0-750 connections) Annual Website Subscription. Includes Hosting, Unlimited Customer Support, All Website Software Updates, Upgrades & One Month Free (\$46.00).	\$499.00	1	\$499.00

Subtotal	499.00
Tax	0.00
Total	499.00
Amount Paid	0.00
Amount Due (USD)	\$499.00

Notes

Seeley Lake Sewer District's Annual Website Subscription Dates: May 10, 2024 to May 10, 2025.

Immense Impact, LLC thanks the good people of Seeley Lake Sewer District for their annual Rural Water Impact website subscription business! Our mission is to make life in your website world easier and more efficient :-)

Terms

Kindly Remit Payment to Immense Impact, LLC. (Home of Rural Water Impact) by: May 10, 2024.

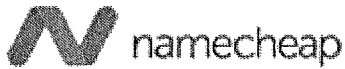
Payment of your website subscription invoice constitutes full and total agreement of the Terms & Conditions and Privacy Policy set forth by Immense Impact. Questions? Give us a call at (888) 551-4815 or email us at support@ruralwaterimpact.com.

Felicity Derry
March/April

Date	Time	Subject	Hours
3/19/2024	7:00-7:45p	Board Prep	0.75
3/21/2024	5:50-8:50p	Meeting	3.00
4/8/2024	7:15-8:45p	Minutes	1.50
4/9/2024	5:30-8:30p	Minutes	3.00
4/11/2024	6:30-8:45p	Minutes	2.25
4/12/2024	5:15-6:45p	Board Prep	1.50
			<u>12.00</u>
	12 x \$18 = \$216		

Domain Renewal - Name Cheap

	\$15.16
	<u>\$216.00</u>
	\$231.16



RECEIPT

Namecheap, Inc.
4600 East Washington Street. Suite 305,
Phoenix, AZ 85034
USA

www.namecheap.com

Order # 141629357

support@namecheap.com

Order Date	: 4/12/2024 7:01:55 PM	Payment Source	: CreditCard
Order Number	: 141629357	Initial Charge	: \$15.16
Transaction ID	: 171324990	Final Cost	: \$15.16
User Name	: SeeleySewer		
Address	: Felicity Derry 3360 Highway 83 N Seeley Lake MT , 59868 US	Total Refund	: \$0.00
		Refund Transaction ID	: N/A
		Refunded To	: N/A

TYPE	NAME	QTY	DURATION	PRICE	SUB TOTAL
RENEW	Domain Renewal seeleysewer.org	1	1 year	\$14.98	\$14.98 ICANN Fee \$0.18
RENEW	Domain Privacy	1	1 year	\$0.00	\$0.00 ICANN Fee \$0.00
Sub Total					\$15.16
TOTAL					\$15.16

Additional Transaction Details:

Order	# d24e611c-536b-450e-9b38-8d7d525c40db
Approval	# ch_3P4t6Tl2aKwfvOvn1Sug9TMW



Water & Environmental TECHNOLOGIES

480 East Park Street | Butte, Montana 59701



Bill Decker
Seeley Lake Sewer District
PO Box 403
Seeley Lake, MT 59868

April 03, 2024
Project No: 2023.1747
Invoice No: 10842
Due Date: May 03, 2024

Project 2023.1747 SEELEYLAKEM02 Phase I
Professional Services from February 01, 2024 to March 31, 2024

Task 003 Meetings
Professional Personnel

	Hours	Rate	Amount	
Senior III - Engineer	2.25	181.00	407.25	
Senior III - Scientist	10.00	181.00	1,810.00	
Totals	12.25		2,217.25	
Total Labor				2,217.25
				Total this Task \$2,217.25

Task 004 Reporting
Professional Personnel

	Hours	Rate	Amount	
Staff II - Engineer	.25	126.00	31.50	
Totals	.25		31.50	
Total Labor				31.50
				Total this Task \$31.50
				Total this Invoice <u>\$2,248.75</u>

To Pay by Check: Mail to 480 E Park, Butte, MT 59701
To Pay by *Credit Card: <https://waterenvtech.com> and click on Invoice & Bid Package Pay

*a 3% processing fee will be charged for all credit card payments

To Pay by ACH: Contact accounting@waterenvtech.com to set up

WET will mail you a form to fill out. WET will NEVER send our banking information or ask for your banking or personal information by email.

OPERATING BILLED INCOME	FEBRUARY 2024	MTHLY BUDGET	2024 FISCAL YTD	YTD BUDGET	2024 BUDGET	% OF BUDGET
Fee Assessment	\$347.38	\$2,500.26	\$19,280.27	\$20,002.08	\$30,003.12	64.3
Interest Income CAB	\$17.03	\$0.00	\$142.99	\$0.00	\$0.00	
Interest Income Missoula County	\$519.92	\$0.00	\$4,604.52	\$0.00	\$0.00	
TOTAL OPERATING INCOME	\$884.33	\$2,500.26	\$24,027.78	\$20,002.08	\$30,003.12	80.1

OPERATING EXPENSES

Audit	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.0
Bookeeping	\$172.50	\$250.00	\$922.50	\$2,000.00	\$3,000.00	30.8
Dues & Subscriptions	\$0.00	\$83.33	\$300.00	\$666.67	\$1,000.00	30.0
Election	\$0.00	\$83.33	\$0.00	\$666.67	\$1,000.00	0.0
Equipment	\$0.00	\$4.17	\$0.00	\$33.33	\$50.00	0.0
Income Survey	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.0
Insurance - Liability	\$0.00	\$250.00	\$0.00	\$2,000.00	\$3,000.00	0.0
Legal	\$0.00	\$1,250.00	\$0.00	\$10,000.00	\$15,000.00	0.0
Licenses & Fees	\$0.00	\$8.33	\$0.00	\$66.67	\$100.00	0.0
Meals, etc.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.0
Office Supplies	\$21.85	\$29.17	\$70.25	\$233.33	\$350.00	20.1
Postage	\$0.00	\$50.00	\$0.00	\$400.00	\$600.00	0.0
Public Relations	\$0.00	\$62.50	\$0.00	\$500.00	\$750.00	0.0
Manager	\$318.50	\$2,140.42	\$2,814.50	\$17,123.33	\$25,685.00	11.0
Secretary	\$171.00	\$500.00	\$756.00	\$4,000.00	\$6,000.00	12.6
Training	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.0
Travel	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.0
Nutrient Budget Analysis	\$0.00	\$959.58	\$0.00	\$7,676.67	\$11,515.00	0.0
Well/Lake Monitoring	\$0.00	\$1,159.91	\$2,555.79	\$9,279.25	\$13,918.88	18.4
Drill 5 Wells	\$0.00	\$833.33	\$0.00	\$6,666.67	\$10,000.00	0.0
Engineering Costs	\$4,105.75	\$2,083.33	\$18,676.50	\$16,666.67	\$25,000.00	74.7
TOTAL OPERATING EXPENSES	\$4,789.60	\$9,747.41	\$26,095.54	\$77,979.25	\$116,968.88	22.31
DISTRICT RESERVE OFFSET				(\$86,965.76)	(\$86,965.76)	
NET OP. INCOME (LOSS)	(\$3,905.27)	(\$7,247.15)	(\$2,067.76)	\$28,988.59	(\$0.00)	

BALANCE SHEET

ASSETS

12/31/23

01/31/24

02/29/24

CURRENT ASSETS

Cash Accounts

Citizens Alliance Bank Account

\$32,950.81

\$32,970.17

\$32,987.20

- District Reserve Funds

\$28,000.00

\$28,000.00

\$28,000.00

- General District Funds

\$4,950.81

\$4,970.17

\$4,987.20

Missoula County Account

\$235,809.11

\$235,587.07

\$222,369.77

Total Cash Assets

\$268,759.92

\$268,557.24

\$255,356.97

Accounts Receivable

\$0.00

\$0.00

\$0.00

TOTAL CURRENT ASSETS

\$268,759.92

\$268,557.24

\$255,356.97

FIXED ASSETS

Total Fixed Assets

\$2,033,813.16

\$2,033,813.16

\$2,033,813.16

TOTAL ASSETS

\$2,302,573.08

\$2,302,370.40

\$2,289,170.13

BALANCE SHEET**LIABILITIES & EQUITY**

12/31/23

01/31/24

02/29/24

CURRENT LIABILITIES

Accounts Payable	\$10,857.90	\$9,295.00	\$0.00
Total Current Liabilities	\$10,857.90	\$9,295.00	\$0.00

TOTAL LIABILITIES\$10,857.90\$9,295.00\$0.00**OWNERS' EQUITY**

Retained Earnings	\$2,291,237.89	\$2,291,237.89	\$2,291,237.89
Net Income (Loss)	\$477.29	\$1,837.51	(\$2,067.76)
Total Owners' Equity	\$2,291,715.18	\$2,293,075.40	\$2,289,170.13

TOTAL LIABILITIES & EQUITY\$2,302,573.08\$2,302,370.40\$2,289,170.13

CASH FLOW RECONCILIATION

	31-Jan	29-Feb	FISCAL YTD
TOTAL NET INCOME (LOSS)	\$1,060.22	(\$3,905.27)	(\$2,067.76)
Operating Activities			
Accounts Payable	(\$1,262.90)	(\$9,295.00)	(\$1,815.00)
Total Investing Activities	(\$1,262.90)	(\$9,295.00)	(\$1,815.00)
INCREASE (DECREASE) IN NON-CASH ASSETS			
Accounts Receivable	\$0.00	\$0.00	\$0.00
NET CASH INCREASE (DECREASE)	(\$202.68)	(\$13,200.27)	(\$3,882.76)
CHANGE IN ACCOUNT BALANCES			
Cash at Beginning of Period	\$268,759.92	\$268,557.24	\$259,239.73
Cash at End of Period	\$268,557.24	\$255,356.97	\$255,356.97
Change in Account Balances	(\$202.68)	(\$13,200.27)	(\$3,882.76)

Seeley Lake - Missoula County Sewer District
Check Detail
February 2024

Type	Num	Date	Name	Account	Paid Amount	Original Amount
Bill Pmt -Check	2055	02/15/2024	Seeley Lake Water District	1001 - Missoula Coun...		-194.35
Bill	Inv#229	02/01/2024		6652 - Bookkeeping Se... Copies	-172.50 -21.85	172.50 21.85
TOTAL					-194.35	194.35
Bill Pmt -Check	2056	02/15/2024	WET	1001 - Missoula Coun...		-9,295.00
Bill	Inv#10049	12/13/2023		Engineering - General	-9,295.00	9,295.00
TOTAL					-9,295.00	9,295.00
Check	2057	02/15/2024	Decker, William	1001 - Missoula Coun...		-318.50
TOTAL				6117 - Sewer District C...	-318.50	318.50
Check	2058	02/15/2024	Felicity Derry	1001 - Missoula Coun...		-171.00
TOTAL				6110 - Secretary	-171.00	171.00
Bill Pmt -Check	2059	02/15/2024	WET	1001 - Missoula Coun...		-4,105.75
Bill	Inv#10498	02/13/2024		Engineering - General	-4,105.75	4,105.75
TOTAL					-4,105.75	4,105.75

Manager's Report 3/15/24-4/12/24

As the Board is aware the Missoula County Health Dept has taken over the task of monitoring static levels and sampling from the Districts 15 monitoring wells. The County has agreed to sample for the same Nitrate, Keldahl, Chloride and Nitrogen that the District has been sampling. The County has also agreed to survey all the monitoring wells and has placed transducers in 10 of the wells. Rather than sampling every quarter as we have been doing the County will sample every month and the transducers will allow real time monitoring of the water levels in the monitoring wells.

I received an inquiry from EcoCity Builders about meeting with them and discussing options for the District in dealing with our elevated Nitrate groundwater levels. I met with Kirsten and she explained what EcoCity Builders does. Firstly, they are not builders, they work with communities to facilitate "Green" alternatives for development. Kirsten is very knowledgeable but I don't believe a campaign to install composting toilets in the District is our best option. If our consultants think differently then we will certainly invite Kirsten to give a presentation.

I attended the Community Council meeting to give an update on the Districts progress but ended up not giving an update. On the agenda was Emerine Construction and Lazy Acres RV Park. They were there to ask the Community Council to hear their proposal and pressure the District Board into accepting their proposal. Emerine and Lazy Acres are way out of line in their approach to this. Their only concern is personal and financial and I feel the District has been far too accommodating in dealing with these two. They are getting in between the District and the Districts chosen consultants. They are a nickel getting in the way of a dollar, they have a problem distinguishing between noise and progress. I requested that the Board remove them from the agenda and stop any communications with them until such time as the Board is prepared to accept bids on treatment systems. I am always 100% in favor of business, but it must benefit the District. The proposal from Emerine and Lazy Acres benefits only Emerine and Lazy Acres.

At that same meeting I spoke with Becky Beard who is running for Senate District 38. Becky has a background in water/wastewater issues and would be a good friend to the District. I also spoke with County Commissioners David Strohmaier and Juanita Vero. I stressed that with the pending closure of Pyramid and the Districts efforts to address the groundwater issue that Seeley Lake should be their #1 concern.

I would like to have the three individuals who assisted the District in interviewing and selecting a consultant to also assist the District in evaluating the options for treatment/collection that WET will be presenting during the next few months. One individual has already expressed a desire to help and I will approach the other two. As we did before I would like to have two Board Members also on this "selection committee."

I also met with Griffen from the Missoulian regarding the incorrect information on the cost of the proposed system to district residents.

Griffen came to Seeley and we had an interview. That was the same day as Pyramids last load. I expected the article to run last week and when it didn't, I figured it was canceled because of all the other news about Pyramid. I just heard from Griffen and the article should run on Tuesday.

I have no hours to bill for this period.

March 26, 2024

Bill Decker
Seeley Lake Sewer District
3360 Highway 83 North
Seeley Lake, MT 59868

Dear Mr. Decker,

Attached is the interpretive report discussing the analytical results of the groundwater and samples from the four monitoring wells located in Seeley Lake, Montana. The samples were assigned to Isotech Job number 57294 and submitted for water chemistry, fluorescence index excitation-emission matrix (FI-EEM), and pharmaceuticals and personal care products (PPCPs) analyses. Included are tables of the results and graphs to help illustrate the data for the discussion. Also included are data from a previous study completed in the 1990's and additional information you sent such as the site maps and chemical analyses in order to supplement the evaluation of the data for the most recent groundwater samples.

If you have any questions or if there is anything else we can do for you, please do not hesitate to contact us. Thank you for choosing Isotech for your analysis needs, we appreciate your business.

Sincerely,

Keith C. Hackley, Ph.D., PG
Senior Isotope Geochemist
Isotech Laboratories, Inc.
hackley@isotechlabs.com

Evaluation of Chemical Analyses for Shallow Groundwater Monitoring Wells in Seeley Lake, Montana.

K.C. Hackley
Stratum Reservoir (Isotech)
March 26, 2024

Introduction

Seeley Lake is located in western Montana, in Missoula County, within the Clearwater River valley (Figure 1). An increase in the concentration of dissolved nitrate in the shallow groundwater has been observed over time in the town of Seeley Lake. Analyses of some of the shallow groundwater wells within the village of Seeley Lake, have shown elevated nitrate (NO_3^-) concentrations, many above the background level of 1 mg/L (as $\text{NO}_3\text{-N}$) and some above the EPA maximum contamination level of 10 mg/L (as $\text{NO}_3\text{-N}$).

The village of Seeley Lake has a public water-supply system which intakes water near the middle of Seeley Lake (*Chappell, 2002*). The lake receives both groundwater and surface water influx from the surrounding area. According to personnel at the Seeley Lake Sewer District, there is no central wastewater collection system for the community of Seeley Lake. Since the last census in 2020, Seeley Lake's population has grown over ten percent (worldpopulationreview.com/us-cities/Seeley-lake-mt-population). With increased population growth and development in Seeley Lake, there are concerns about the degradation of local groundwater quality.

In order to help confirm whether the source of the elevated nitrate concentrations is associated with human inputs due to septic effluent or perhaps some other more natural sources (e.g. animal), four groundwater samples were submitted for the following analyses: water chemistry, fluorescence index excitation-emission matrix (FI-EEM), and pharmaceuticals and personal care products (PPCPs). Previous studies of the groundwater for the Seeley Lake site include data of nitrate and chloride concentrations from the 1990's (*Norbeck and McDonald, 1999*). We used both the most recent chemical analyses plus other previous data available for this site to help interpret the results.

Objective

The main objective for the community of Seeley Lake is to determine the primary source of the elevated nitrate in shallow groundwater monitoring wells located in village of Seeley Lake, Montana.

Conclusions

The following conclusions are based on the chemical analyses for the groundwater samples collected in January 2024 from four monitoring wells as well as consideration of previous data collected from multiple wells within the Seeley Lake community.

- The concentration of nitrate in the four shallow well samples were much greater than background levels determined in a previous study of the area.
- The chloride concentrations were also much greater than background levels for the Seeley Lake area and were greater than previously observed for samples collected in the 1990's.
- The chloride and bromide results for one groundwater sample (Well #4) that contained both constituents above the detection limits were characteristic of water affected by septic effluent.
- The fluorescence index excitation-emission matrix (FI-EEM) results did not show any significant distinguishing characteristics to make an informed interpretation concerning the dissolved organic matter (DOM).
- The pharmaceuticals and personal care product (PPCPs) analyses showed the detection of two or more pharmaceutical products in each of the four wells sampled.
 - PPCPs are commonly used on a daily basis by homeowners and are released into the surrounding environment predominantly via wastewater discharge.
- The water chemistry, detection of PPCPs in the four groundwater samples, and the higher nitrate concentrations in groundwater wells closer to where septic systems are more abundant suggest that the elevated nitrate concentrations observed in the shallow groundwater monitoring wells in the village of Seeley Lake are most likely related to effluent discharging from the numerous septic systems throughout the village.

Samples, Analyses, and Results

Groundwater samples were collected January 9th, 2024, from four shallow groundwater wells located within the village of Seeley Lake (Figure 2). Three wells (Well #2, Well #4, and Lyndeys) were located near the southern toe of the lake in the downtown area of the village. The fourth well (Well #13) was located south of the local lumber mill. The depths of the wells and depths of the water levels differ depending on the location of the well. Well #2 is drilled to a depth of 30.3 feet and the depth to the water surface was 22.1 feet during the sampling period. Well #4 is drilled to 48.8 feet while the depth to the water surface was 37 feet during sampling. The Lyndeys well is drilled to 47 feet while the depth to the water surface was 36.1 feet during

the sampling event. Well #13 is 28.4 feet deep and had a depth to the water surface of 19 feet during the sampling event.

The four groundwater samples were analyzed for water chemistry, fluorescence index excitation-emission matrix (FI-EEM), and pharmaceuticals and personal care products (PPCPs) analyses. The water chemistry was completed at Stratum Reservoir (Isotech) in Champaign, Illinois. The FI-EEM and PPCPs analyses were completed with the help of John Scott, a senior analytical chemist at the Illinois Sustainable Technology Center (ISTC) which is part of the Prairie Research Institute (PRI) at the University of Illinois, Champaign-Urbana, Illinois (UIUC).

The water chemistry for the four water wells showed nitrate (NO_3) concentrations ranging from 6.42 to 9.86 mg/L as $\text{NO}_3\text{-N}$ (Table 1). The chloride concentrations ranged from 12.37 to 89.95 mg/L. The Lyndeys well contained the highest chloride concentration and nitrate concentration, as well as the highest boron concentration.

Features of the FI-EEM analyses for natural water have been empirically related to properties of dissolved organic matter. Different ratios of fluorescence readings within an EEM contour can sometimes provide information regarding the chemical properties of dissolved organic matter (DOM) including the relative proportions of autochthonous (indigenous or native), allochthonous (imported or non-native), and anthropogenic humic matter in the DOM (*Vogt et al., 2023*). However, in this case the FI-EEM results did not show anything significant and did not allow anything specific to be said about the DOM in these particular samples.

PPCPs are commonly used on a daily basis by consumers and are released into the surrounding environment predominantly via wastewater discharge. The distribution of PPCPs in the subsurface groundwater will depend on the septic system design, local soil conditions, and redox conditions of the subsurface soil. The predominant processes that control PPCPs transport from a septic system to shallow groundwater are sorption, degradation, and rate of percolation through the soil zone (*Yang et al., 2017*). The PPCPs analyses showed the detection of pharmaceutical products in each of the four wells sampled (Table 2a). The control sample, deionized water (DI), did not show any detection of PPCPs. Background information on PPCPs is given in the Appendix.

Discussion of Results

The results of the groundwater chemistry for the four groundwater wells sampled in January 2024 in Seeley Lake show greater concentrations of nitrate compared to background levels of nitrate and chloride for the area. A previous investigation of the groundwater geochemistry in the Seeley Lake community indicated that the background concentrations for nitrate ($\text{NO}_3\text{-N}$) and chloride were 1 mg/L and 10 mg/L, respectively (*Norbeck and McDonald, 1999*). The U.S. Geological Survey has also indicated that $\text{NO}_3\text{-N}$ above 3 mg/L are generally indicative of

human-induced sources of nitrate (*Madison and Brunett, 1984*). The nitrate and chloride concentrations for the four groundwater wells sampled in January 2024 were much greater than the background and actually greater than most of the data observed for groundwater in the 1990's (Figure 3) (*Norbeck and McDonald, 1999*).

A comparison of the nitrate concentrations for the monitoring wells in the village of Seeley Lake is shown in Figure 4. Included in Figure 4 are data for wells sampled in the 1990's, data for water samples collected from wells in June and January 2023, and the most recent results for the four wells sampled in January 2024. Three of the wells located in the downtown part of the community sampled in 2024 all showed increases in nitrate concentration compared to the earlier sampling events. The earlier sampling events included wells further away from the most populated area of the village where there would be fewer septic systems nearby. The results for samples from wells located at the outskirts of the village showed much lower nitrate concentrations compared to the samples of wells located within the more populated parts of the community. Included in Figure 4 are groundwater flow lines showing the general direction of groundwater flow as determined in the 1990s.

The well with the greatest nitrate concentration (Lyndeys), also showed the highest nitrate and boron concentrations (Table 1). Elevated nitrate, chloride, and boron concentrations have often been associated with wastewater effluent (*Schaidler et al., 2016; Hackley et al., 2007*).

The groundwater sample from Well #4 contained bromide (Br) above the detection limit. When comparing the chloride concentration with the ratio of Cl/Br, the data for Well #4 is consistent with what has been observed in other studies for groundwater affected by septic waste effluent (Figure 5).

The pharmaceuticals and personal care products (PPCPs) analyses showed the detection of two or more pharmaceutical products in each of the four wells sampled (Table 2a). Most of the detected PPCPs were found well above their limit of quantification (LOQ). Figure 6 shows the total PPCPs reported for each well plotted with the nitrate concentrations. Some of the PPCPs tested for did not show any detection above the limit of detection (LOD). Besides the mechanisms that control the migration and degradation of the measured organic compounds through the vadose zone and local groundwater environment, the compounds and concentrations of PPCPs observed within the groundwater downgradient of septic systems also depend on the use of the particular compounds by the household residents. Caffeine was not detected in any of the four groundwater samples. Although caffeine is expected to be used frequently and would typically have a relatively high consumption by homeowners relative to most other pharmaceuticals, it has been found that caffeine has a very short half-life, e.g. 35 hours, in the soil due to microbial degradation whereas other compounds may have a half-life of several days to a month or so (*Kibuye, 2018; Yang et al, 2017*). Besides the half-life of a particular compound, the length of time it takes groundwater impacted by septic effluent to reach the monitoring well also affects whether a specific PPCPs would be detected. For example, if

groundwater impacted by septic effluent takes a couple of weeks/months to migrate to the monitoring wells sampled in this study, caffeine could have originally been present but degraded to below the LOD by the time the impacted groundwater reached the monitoring well. The rate, or how often, other PPCPs are used by homeowners would obviously have an impact for their detection in the groundwater. For example, studies of PPCPs observed that sulfamethoxazole were detected at a greater frequency and in higher concentrations than trimethoprim which is commonly prescribed with sulfamethoxazole, although trimethoprim is typically prescribed at much lower concentrations than sulfamethoxazole (*Kibuye, 2018*).

Summary

The elevated nitrate and chloride concentrations as well as the chloride/bromide ratio and the detections of PPCPs in all four groundwater wells sampled January 9th, 2024, suggest the high nitrate concentrations observed in the monitoring wells in Seeley Lake, Montana are primarily associated with septic system effluent discharge. The nitrate and chloride concentrations observed in the four groundwater samples were considerably above the background level of nitrate for the Seeley Lake region. The chloride and chloride/bromide ratio obtained for the groundwater well that contained measurable bromide was consistent with published results of groundwater affected by septic effluent. All four groundwater samples showed the detection of two to four of PPCPs analyzed. The source of PPCPs in groundwater is primarily from wastewater effluent. Thus, the results of this study are consistent with the most likely source of the elevated nitrate concentrations observed for the shallow groundwater in the community of Seeley Lake to be septic effluent.

References

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Table 1. Chemical analyses of groundwater samples from Seeley Lake, Montana, Isotech Job 57294.

					Isotech Lab No.	906443	906444	906445	906446
Isotech Job Number	57294				Sample Name	13	4	2	Lyndys
Client	Seeley Lake - Missoula Co. Sewer Dist.				Sample Date	1/9/2024	1/9/2024	1/9/2024	1/9/2024
Project	Seeley Lake Sewer				Sample Time	9:30:00	9:00:00	10:00:00	10:30:00
Water Properties									
	Method	Units	Mol Wt	Valence					
pH	EPA 9040C		NA	NA	7.111	7.113	6.940	7.295	
Density (25 °C)		kg/L	NA	NA	0.9972	0.9972	0.9972	0.9976	
Conductivity (25 °C)	EPA 9050A	µS/cm	NA	NA	437.540	414.328	285.656	1,020.10	
Resistivity (25 °C)		Ω*cm	NA	NA	2,285.51	2,413.55	3,500.71	980.30	
Hardness as CaCO ₃	SM 2340 B	mg/L	NA	NA	193.21	153.69	96.55	492.41	
TDS	Calculated Sum Major Ions	mg/L	NA	NA	345.2	254.0	170.6	777.2	
TDS	Calculated from Conductivity	mg/L	NA	NA	280.0	265.2	182.8	652.9	
ICP Elements - Cations					ICP Analysis Date	1/29/2024	1/29/2024	1/29/2024	1/29/2024
B	ICP-OES	mg/L	10.8	NA	0.04	0.04	0.03	0.09	
Ba	ICP-OES	mg/L	137.3	+2	0.32	0.34	0.25	1.10	
Ca	ICP-OES	mg/L	40.1	+2	48.10	35.29	20.21	134.88	
Fe	ICP-OES	mg/L	55.8	+2	<0.02	<0.02	<0.02	<0.02	
K	ICP-OES	mg/L	39.1	+1	2.13	2.01	2.34	2.05	
Li	ICP-OES	mg/L	6.9	+1	0.01	<0.01	<0.01	0.01	
Mg	ICP-OES	mg/L	24.3	+2	17.75	15.93	11.19	37.79	
Mn	ICP-OES	mg/L	54.9	+2	<0.005	0.01	0.01	<0.005	
Na	ICP-OES	mg/L	23.0	+1	13.67	13.40	10.32	18.49	
Sr	ICP-OES	mg/L	87.6	+2	0.06	0.05	0.08	0.10	
IC Elements - Anions					IC Analysis Date	1/25/2024	1/25/2024	1/25/2024	1/25/2024
F	IC	mg/L	19.0	-1	<0.08	<0.08	<0.08	<0.08	
Cl	IC	mg/L	35.5	-1	12.37	60.98	35.33	89.96	
Br	IC	mg/L	79.9	-1	<0.08	0.14	<0.08	<0.08	
SO ₄ ²⁻	IC	mg/L	96.1	-2	4.16	7.13	6.52	9.86	
NO ₃	IC	mg/L	62.0	-1	32.90	28.44	38.54	43.65	
PO ₄ ³⁻	IC	mg/L	95.0	-3	0.17	<0.06	<0.06	<0.06	
Alkalinity (as HCO ₃)	Titration	mg/L	61.0	-1	213.5	90.3	45.8	439.2	
Alkalinity (as CO ₃ ²⁻)	Titration	mg/L	60.0	-2	0.0	0.0	0.0	0.0	
Hydroxide (as OH)	Calculated	mg/L	17.0	-1	0.0	0.0	0.0	0.0	
Total Cation	Calculated	meq/L			4.516	3.711	2.443	10.714	
Total Anion	Calculated	meq/L			-4.471	-3.807	-2.503	-10.643	
Charge Difference	Calculated	meq/L			0.05	-0.10	-0.06	0.07	
Charge Balance	Calculated	%			0.51%	-1.27%	-1.20%	0.33%	
NO ₃ -N	Calculated	mg/L	14		7.43	6.42	8.70	9.86	

n.a. = not analyzed
 n.d. = not detected

Table 2a: Concentrations of 10 PPCPs in nanograms per liter (ng/L) for Seeley Lake water samples (ISTC, PRC, UIUC). See Appendix for explanation of compounds.

Sample	Caffeine	Carbamazepine	Estrone	Gemfibrozil	Ibuprofen	Metformin	Naproxen	Sitagliptin	Sulfamethoxazole	Trimethoprim
DI	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Lyndys	N.D.	2.72	N.D.	N.D.	3.31	N.D.	17.37	N.D.	2.05*	N.D.
#2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	3.73	1.17	N.D.	N.D.
#4	N.D.	N.D.	N.D.	N.D.	12.82	N.D.	6.05	N.D.	N.D.	N.D.
#13	N.D.	N.D.	561.1	N.D.	3.00	N.D.	N.D.	1.51	N.D.	N.D.

*Compound was detected between Limit of Detection (LOD) and Limit of Quantification (LOQ).
N.D.: <LOD.

Table 2b: Retention times and optimized LC-MS/MS parameters for analyzed PPCPs (ISTC, PRC, UIUC).

Compound	Corresponding Isotope	RT ³ (min)	ESI ⁴ model	MRM ⁵ ions	Isotope MRM ions	Cone (V ⁶)	Collision (eV)	LOD (ng L ⁻¹)	LOQ (ng L ⁻¹)
Caffeine	¹³ C ₃ -Caffeine	8.14	+	195.2>137.9	198.2>140.0	35	20	1.4	4.7
Carbamazepine	D ₁₀ -Carbamazepine	15.3	+	237.4>194.2	247.4>204.2	35	16	0.40	1.3
Naproxen	¹³ C ₄ -Naproxen	16.7	-	229.2>170.1	233.2>170.1	20	15	1.0	3.3
Ibuprofen	¹³ C ₃ -Ibuprofen	19.0	-	205.1>161.1	208.1>163.1	20	10	0.60	2.0
Gemfibrozil	D ₆ -Gemfibrozil	20.3	-	249.0>121.0	255.0>121.0	26	12	0.040	0.13
Sulfamethoxazole	¹³ C ₆ -Sulfamethoxazole	12.2	+	254.0>156.0	260.0>162.0	35	16	0.80	2.7
Trimethoprim	¹³ C ₃ -Trimethoprim	9.51	+	291.0>230.0	294.2>233.1	35	25	0.30	1.0
Estrone	¹³ C ₆ -Estrone	17.7	-	269.3>145.0	275.2>145.0	50	40	0.5	1.7
Metformin	Metformin-d6	2.41	+	129.8>71.1	136.2>77.0	15	20	2.0	6.7
Sitagliptin	Sitagliptin-d4	12.2	+	407.9>174.2	412.1>173.9	20	30	0.05	0.17

LC-MS/MS = liquid chromatography tandem-mass spectrometry.

³(RT) Retention Time, ⁴(ESI) Electrospray Ionization, ⁵(MRM) Multiple Reaction Monitoring, ⁶(V) Volts.

LOD calculated as the amount of each compound that produced a signal-to-noise ratio of 3.

LOQ calculated as the amount of each compound that produced a signal-to-noise ratio of 10.

All samples concentrated from 1 L to 1 mL for injection.

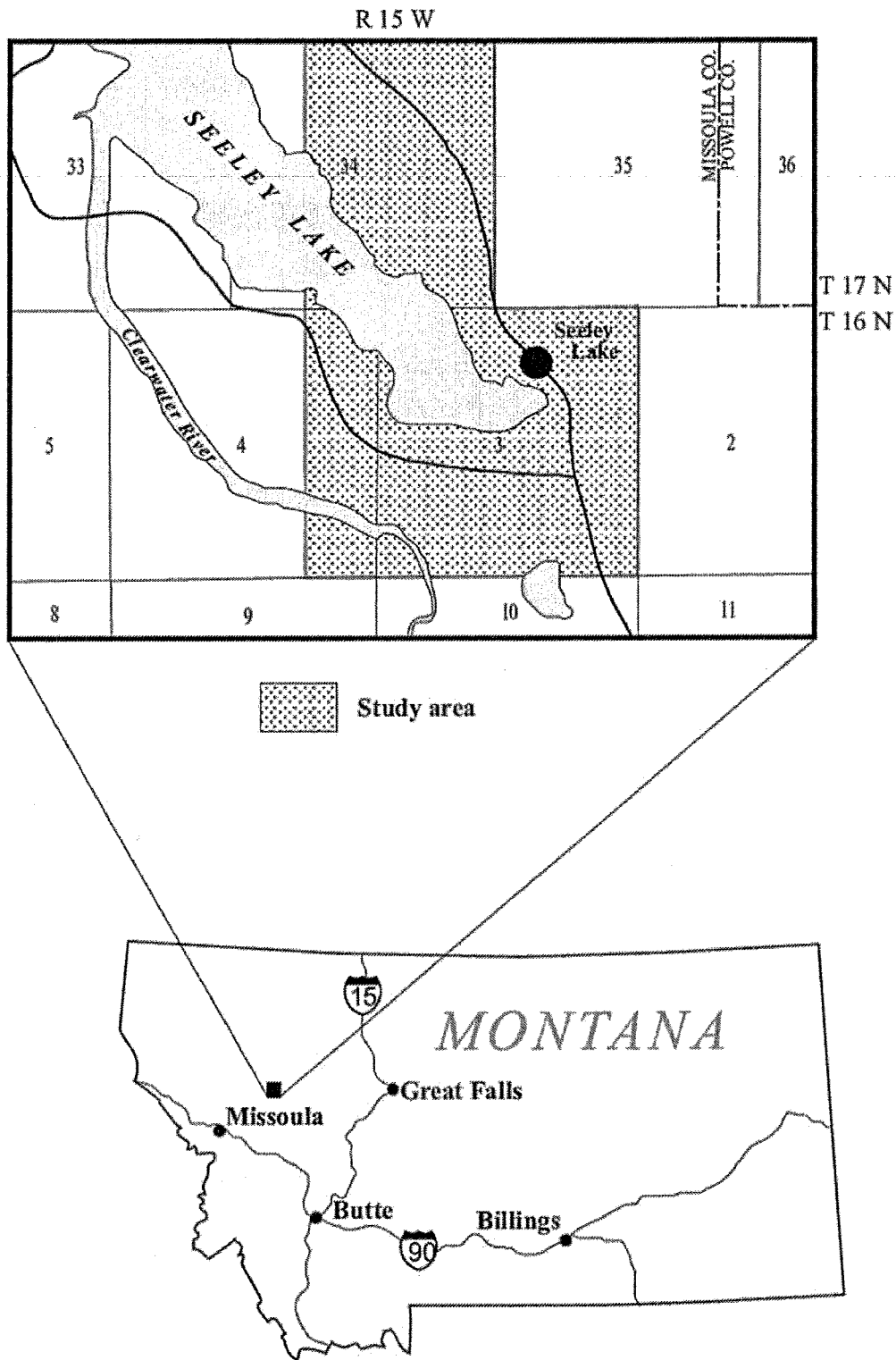


Figure 1. Map showing location of Seeley Lake in Montana for the groundwater chemistry and pharmaceutical and personal care product (PPCPs) investigation (diagram from *Norbeck and McDonald, 1999*).



Figure 2. Study site with location of monitoring wells of the shallow aquifer in and around Seeley Lake, MT. Wells circled in red were the wells sampled on January 9th, 2024. (Base map supplied by Seeley Lake Sewer District.)

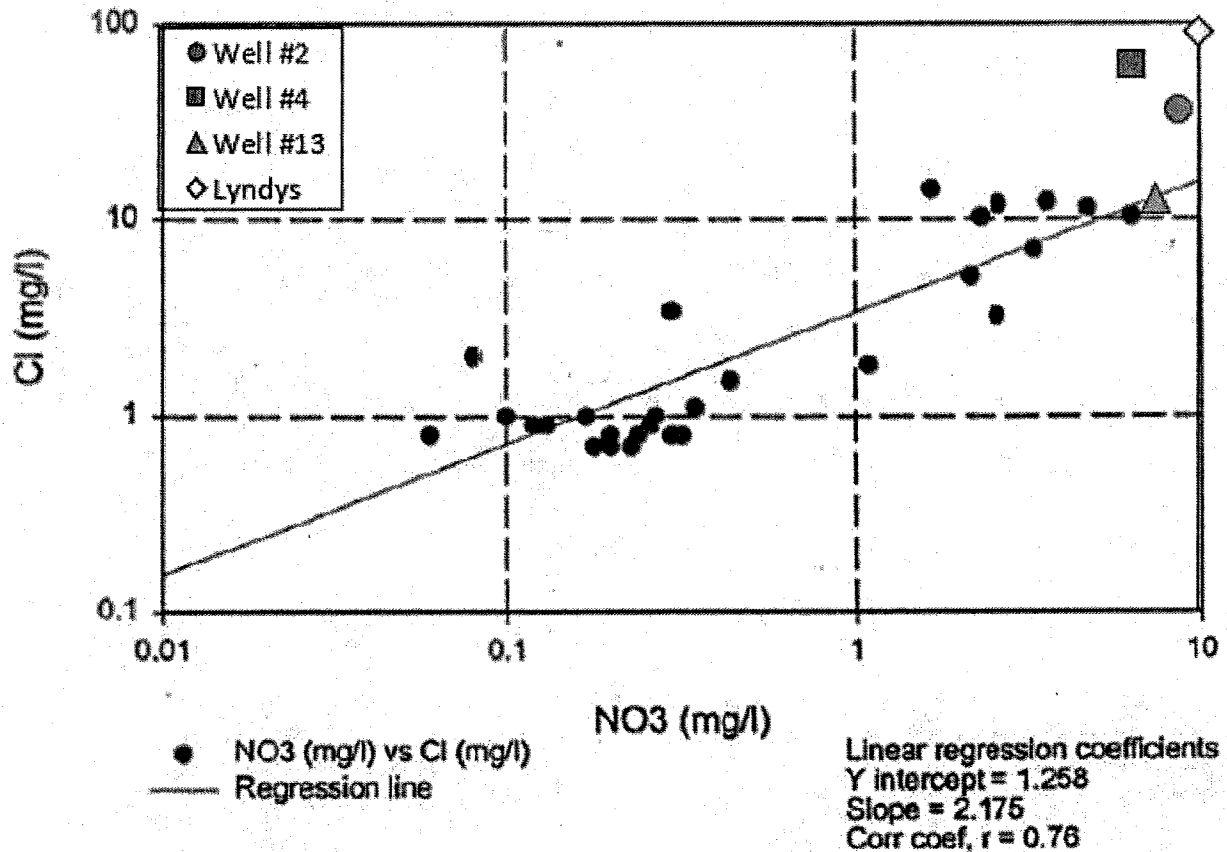


Figure 3. Graph of the chloride (Cl) versus the nitrate concentration (NO₃-N) showing the data for the groundwater samples from the village of Seeley Lake collected January 9th, 2024, (Isotech Job 57294, colored symbols) plotted on a published diagram with previous data from the 1990's (black dots). The diagram of the 1990 data is from *Norbeck and McDonald, 1999*.

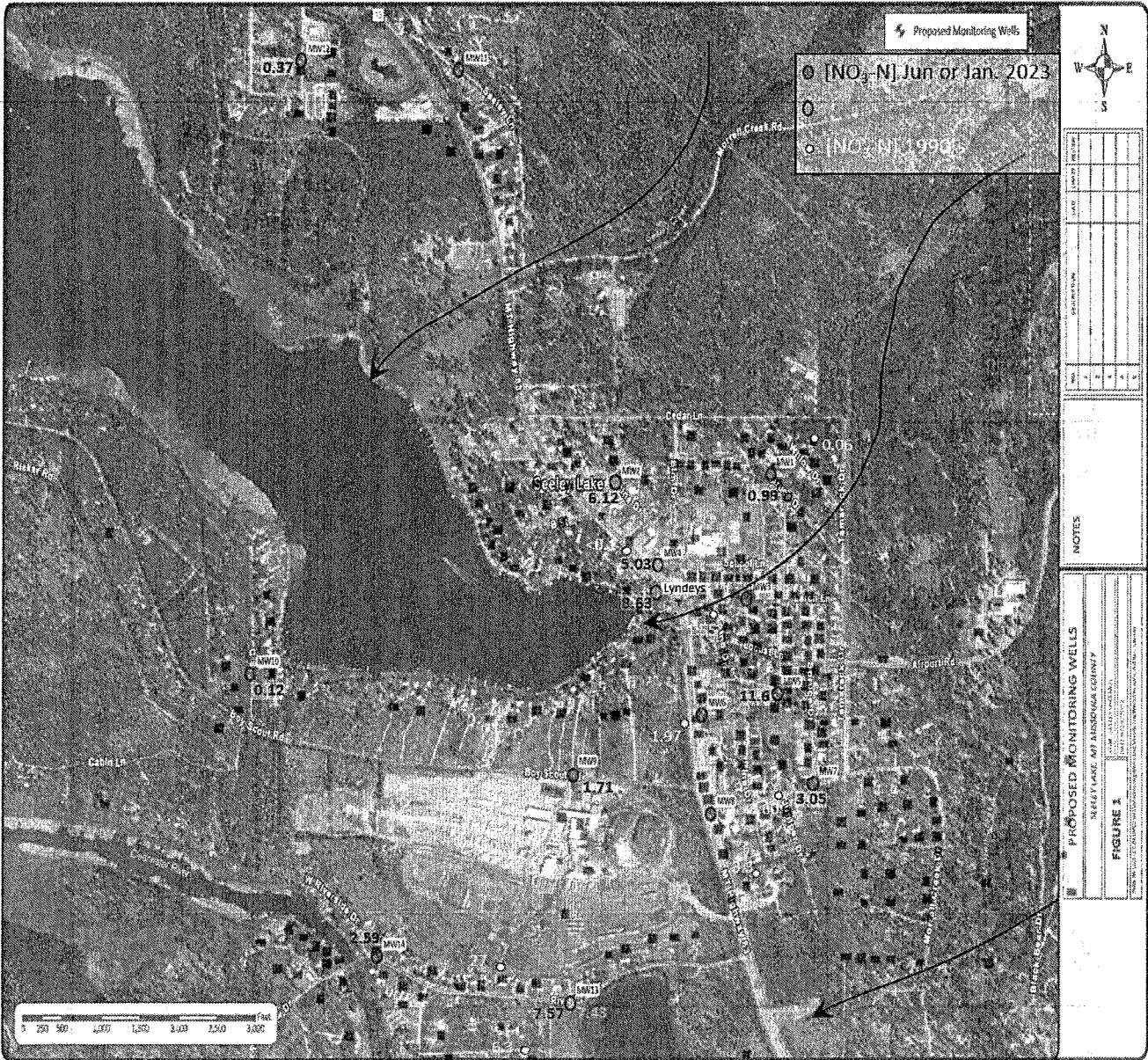


Figure 4. Map showing the village of Seely Lake, the location of the shallow groundwater monitoring wells (red circles and yellow dots), and the location of many of the known septic systems (black squares) throughout the community as reported by *Norbeck and McDonald, 1999*. The concentration of nitrate ($\text{NO}_3\text{-N}$ mg/L) is included next to several of the shallow groundwater monitoring wells (red values are for the samples collected by the Seeley Lake Sewer District in 2023, light blue values are for the samples collected January 9th, 2024, and yellow are for samples collected in the 1990's (*Norbeck and McDonald, 1999*). Also included is the general groundwater flow direction shown by the black arrows (*Norbeck and McDonald, 1999*).

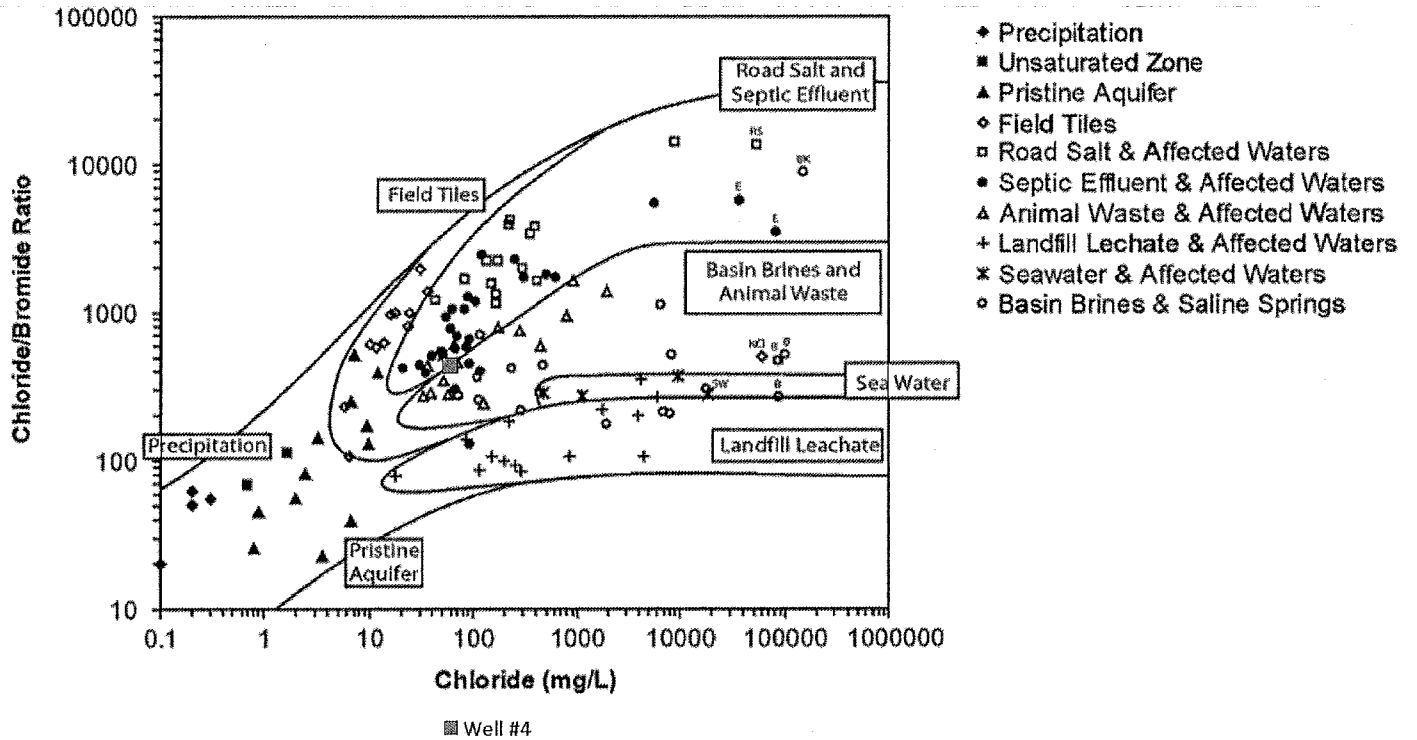


Figure 5. Graph of the chloride/bromide (Cl/Br) ratios versus the chloride (Cl) concentrations for the data for Well #4 (brown square) from Seeley Lake, MT (Job 57294) plotted on a published diagram showing the results of samples from various sources of water. The data for Well #4 are consistent with data from samples from septic effluent and groundwater affected by septic effluent (shown as the black dots in the published diagram). The published diagram is from *Panno et al., 2006*.

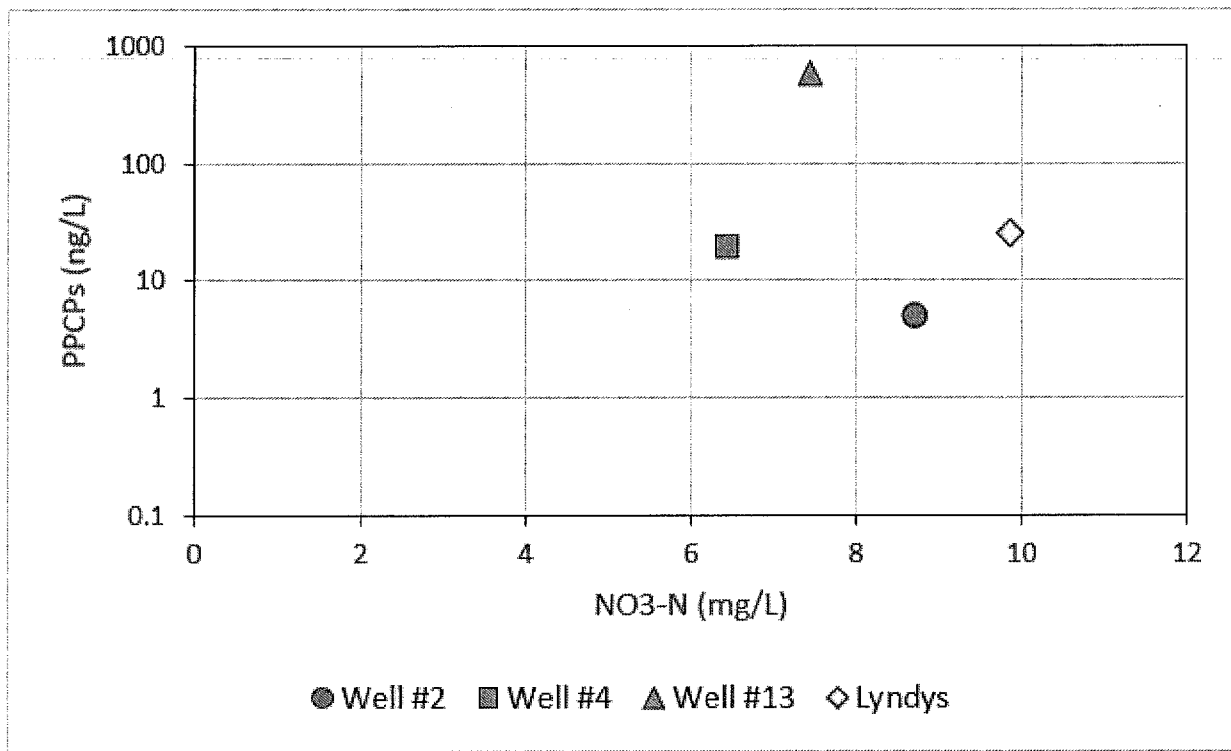


Figure 6. Graph of the total PPCPs versus nitrate concentration for the four shallow groundwater wells sampled January 9th, 2024 (Job 57294).

APPENDIX

Brief background concerning PPCPs

Pharmaceuticals and personal care products (PPCPs) include chemical compounds used by people for personal health or cosmetic purposes and products used by the agricultural industry to improve health and growth of livestock. PPCPs are defined by the US EPA as: “any product used by individuals for personal health or cosmetic reasons or used by agribusiness to enhance growth or health of livestock.” This actually takes in thousands of chemicals which are used in cosmetics, fragrances, commonly purchased drugs, as well as veterinary medicines.

The PPCPs are released into the environment primarily through septic and sewage waste effluent discharge. Large animal facilities have also been identified as potential sources of PPCPs due to runoff from fields where manure and/or sewage sludge had been applied to the fields (*Kibuye et al 2019*).

The following is a list of the PPCPs analyzed for this study with a short description of each (*Wikipedia*):

Caffeine: *found in coffee, tea, soft drinks, chocolate, kola nuts and certain medicines.*

Carbamazepine: *a mood-stabilizing and anticonvulsant drug typically used to treat epilepsy and bipolar disorder.*

Estrone: *an estrogen medication and one of three main estrogens produced by the human body.*

Gemfibrozil: *used to treat high cholesterol and triglyceride levels.*

Ibuprofen: *a nonsteroidal anti-inflammatory drug, commonly used for pain relief, and to treat fever and inflammation.*

Metformin: *typically used in the treatment of diabetes.*

Naproxen: *a nonsteroidal anti-inflammatory drug, commonly used to treat pain, and reduce inflammation and fever.*

Sitagliptin: *medication used in the treatment of diabetes.*

Sulfamethoxazole: *is an antibiotic drug used to treat bacterial infections.*

Trimethoprim: *an antibiotic drug used to treat bacterial infections often used with sulfamethoxazole.*



Client – Seeley Lake Sewer District
Project – Sanitary Sewer System Improvements – Phase 2

SCOPE OF WORK

Seeley Lake Sewer District (Client) has requested that Water & Environmental Technologies, Inc. The Seeley Lake Sewer District (Board) requested a proposal from Water & Environmental Technologies (WET) to outline the remaining tasks needed to complete the design and construction of a new wastewater treatment system based on the results of WET's recent groundwater monitoring well project. Below is a summary of the anticipated tasks for the wastewater treatment system project.

Task 1. Project Management

Task 1 covers meetings with the Board, the engineering design team, Missoula County, and the potential technology providers (only for Tasks 1-4).

Deliverable: Meeting notes, reports, and other documents required by the Board.

Task 2. Delineate Priority Treatment Zones

WET will use the information gathered from the Phase I Tasks to delineate sections of Seeley Lake into 'Areas' that are similar in characteristics and sanitary sewer upgrade needs. These Areas will be prioritized as to which are most in need of system upgrades. . Priority areas will be determined based on groundwater nitrogen concentrations, current/future land use, and feasibility of hooking to future collection system. Lower priority areas will not be considered for hooking into the new sewer system and will be evaluated for alternative technologies (i.e. Level 2 treatment, etc.). Examples of the factors that will be considered include:

- Groundwater nitrate concentrations;
- Hydrogeological conditions;
- Proximity to the Lake;
- Land use (Commercial/Residential); and
- Feedback from the Community and Government Agencies.

Deliverable: This information will be provided in a Summary Report/Map and presented to stakeholders such as the Board, Community, and Government Agencies for feedback and discussion.

Task 3. Develop Treatment Requirements for Treatment Zones

Based on the results of WET's recent well installation and groundwater monitoring project and the Treatment Zones identified in Task 2, WET proposes to determine treatment levels needed in each zone to ensure that no degradation of the groundwater occurs.

Deliverable: Memo report describing the required treatment for the treatment zones identified in Task 2.

Task 4. Evaluate Available Technologies

Based on the results of Task 1 through Task 3, WET proposes to re-evaluate the technologies identified in the Preliminary Engineering Report (PER), as well as additional technologies that may

be appropriate for previously identified treatment zones. The goal of this task is to provide the Board and the citizens of Seeley Lake a focused, cost effective, and environmentally friendly wastewater treatment solution that treats the existing wastewater flows, and also allows for residential and commercial growth to support the community's needs.

Deliverable: Memo report describing the recommended wastewater collection system and treatment technology with a conceptual configuration and cost estimate.

Task 5. Preliminary Treatment System and Collection System Designs

Once the wastewater treatment zones, technologies, and collection systems have been determined, WET will prepare preliminary (50%) design documents which will allow the project to apply for available funding for final design, bidding documents, and construction.

Deliverable: 50% Plan Set

Task 6. Identify Funding Sources

WET will assist the Client in identifying and applying for local, state, and federal grants and low interest loans to fund the project. WET will review the funding identified in the PER and reach out to the funding agencies to determine if these funds are still available and what steps should be taken to secure any additional funding. Furthermore, WET has an upstanding relationship with funding agencies and will reach out to them to identify available funding options. Once funding has been identified WET will work with the Client to assist with the funding application process.

Deliverable: Grant/loan applications to applicable funding sources.

Task 7. Construction Bid Documents/Permitting/Contractor Selection

WET will develop a comprehensive bid package that clearly identifies all aspects of the project design and construction requirements to potential bidders.

- Prepare standard project specifications section list;
- Prepare technical specifications general requirements;
- Prepare technical specifications sections;
- Prepare Special Provisions section;
- Prepare bidding documents – Invitation for Bid, Instruction to Bidders, Bid Form, Bid Submittals, Bonds, Agreement Form, Construction Forms, etc.; and
- Define Quality Control/Quality Assurance requirements.

WET is also capable of creating and facilitating all publication requirements of finalized bid package and facilitation bidding process. Upon the determination of the final design, WET will identify and pursue all required permitting to allow for the construction of the approved proposed project(s). WET will coordinate with the Client to publish finalized 100% complete EJCDC format bid document package(s).

WET will assist the Client in facilitating the Contractor selection process. This will include reviewing each bid to confirm it is responsive and that the submitting contractor is qualified for the proposed project(s). WET assumes a Design, Bid and Construction project delivery method will be utilized for

a project delivery method. WET will review all submitted bids and determine the best qualified Contractor. This recommendation will be based on the Contractor's proposed approach, qualifications, and costs.

Deliverable: Construction and Bid Documents.

Task 8. Construction Oversight and Records Drawings

WET will review of all contractor submittals, fabrication drawings and shop drawings, review of the monthly submitted critical path method (CPM) construction schedule, payment applications, change order negotiation, responses to requests for information, providing of guidance and review of issues pertaining to technical design, coordination and participation in all progress meetings, coordination with project subcontractors and subconsultants, quality assurance checks, and regular site visits to monitor the work progress and ensure that the work conforms to the requirements set forth in the contract documents. WET has made the following assumptions regarding Construction Oversight and Records Drawings:

- Client will be available to provide timely input on submittals and shop drawings;
- WET will provide recommendations for all change order requests; and
- WET will make visits to the site at intervals appropriate to the various stages of construction to observe the Contractor's work progress and quality.

Deliverable: WET will provide the Client with final electronic copies of the Contractor submittals and bi-weekly progress meeting minute reports and record drawings upon completion.

ASSUMPTIONS

WET has made the following assumptions when developing this proposal.

- Funding to accomplish Task 1 through Task 4 is currently available;
- Access to existing and future analytical data is provided.
- Access to current and future water user data is available.

COSTS and SCHEDULE

WET anticipates that this work can begin on or after May 1, 2024 and should take eight to ten weeks to complete Task 1 through Task 4. The cost estimate to complete Tasks 1-4 is work is broken down in Table 1 below. The costs to complete Tasks 5-8 will be determined once a technology is selected and the extent of the collection system is determined. Schedule for Tasks 5 – 8 will be determined based on future discussions with the Board and County officials. Most State and Federal grant fund applications are due in Spring 2024 for legislative approval during the 2025 session; as result, this project will likely not be eligible for fund application until the 2026 grant cycle and 2027 legislative session.

Table 1. Project Cost Estimate

Task	Labor	Expense	Total
1. Project Management	\$6,194	\$0	\$6,194
2. Delineate Priority Treatment Zones	\$8,000	\$0	\$8,000
3. Develop Treatment Requirements for Treatment Zones	\$6,404	\$0	\$6,404
4. Evaluate Available Technologies	\$10,604	\$0	\$10,604
5. Preliminary Design	TBD	TBD	TBD
6. Identify Funding Sources	TBD	TBD	TBD
7. Bid Documents, etc.	TBD	TBD	TBD
8. Oversight/Record Drawings	TBD	TBD	TBD
Total	\$31,202	\$0	\$31,202

The fees and charges to be paid by Client shall be according to the attached WET Standard Unit Rate Schedule. Attached rates will remain in effect for at least one year. WET may increase rates in subsequent years depending on project.

AGREED TO:

Client

Title

Date

Seeley Lake Sewer District
Operating Budget
FY24 (07/01/23 - 06/30/24)
Adopted 04 20 23

DESCRIPTION	FY2024
Bookkeeping	\$3,000.00
Dues & Subscriptions	\$1,000.00
Election	\$1,000.00
Equipment	\$50.00
Income Survey	\$0.00
Insurance-Liability	\$3,000.00
Legal	\$15,000.00
Licenses & Fees	\$100.00
Office Supplies	\$350.00
Postage	\$600.00
Public Relations	\$750.00
Manager	\$25,685.00
Secretary	\$6,000.00
Training	\$0.00
Travel	\$0.00
Nutrient Budget Analysis	\$11,515.00
Well/Lake Monitoring	\$13,918.88
Drill 5 Wells	\$10,000.00
Engineering Costs	\$25,000.00
TOTAL OPERATING EXPENSES	<u><u>\$116,968.88</u></u>
DISTRICT RESERVE OFFSET	-\$86,965.76
TOTAL AMOUNT BEING ASSESSED & SENT TO DOR	<u><u>\$30,003.12</u></u>