

Eastern Montana Meats

LOCATED IN
SECTION 3 , TOWNSHIP 22 NORTH, RANGE 59 EAST, PMM
RICHLAND COUNTY, MONTANA

City Council Sewer Connection Proposal



PREPARED FOR:

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12314 County Road No. 351
Sidney, MT 59270

PREPARED BY:

ENGINEERING WEST

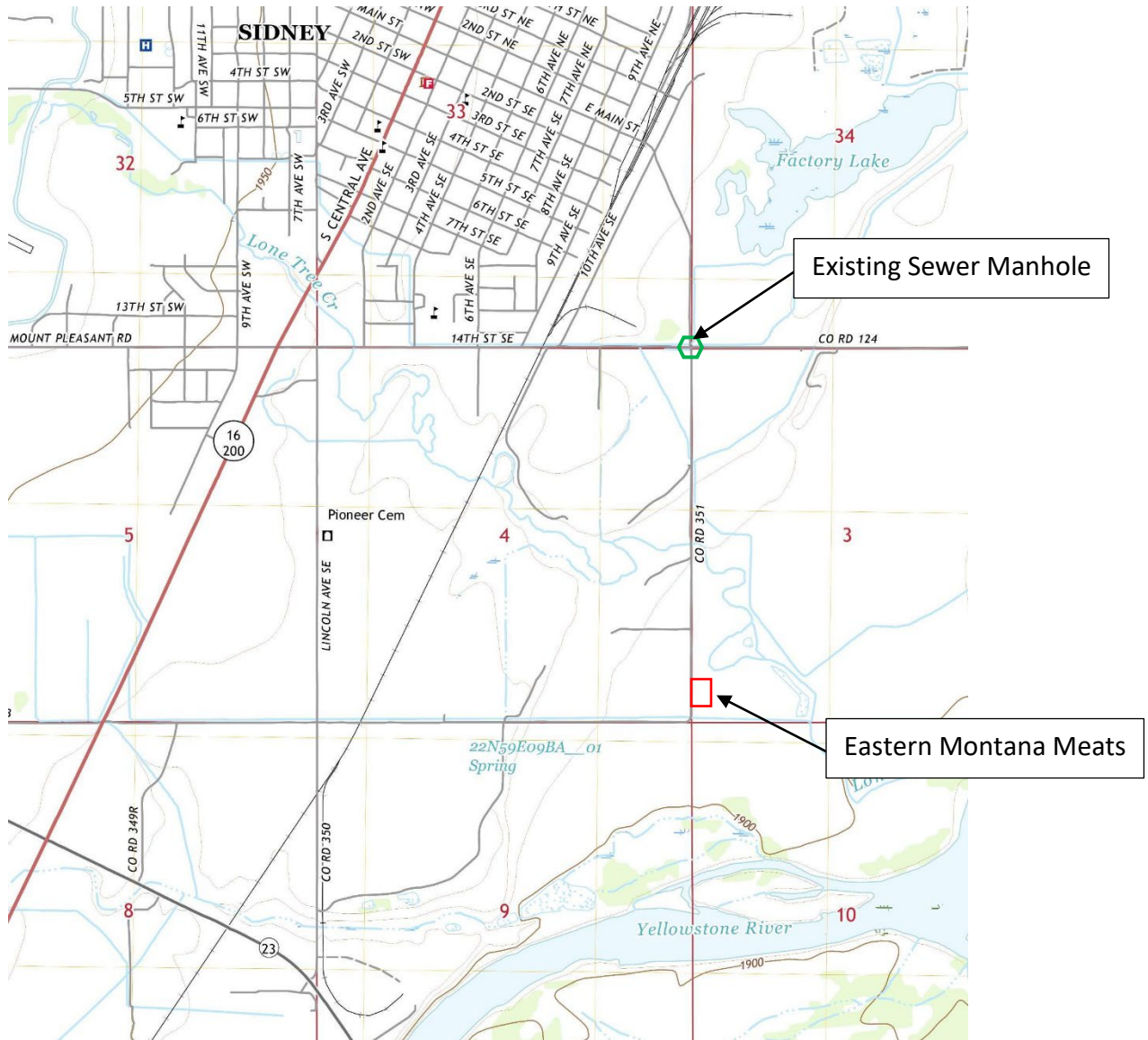
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Introduction

The following is a proposal to the City Council members of Sidney, Montana to consider the request to accept wastewater from Eastern Montana Meats located approximately 1.0 mile southeast of the City of Sidney along County Road No. 351 as shown below.



Eastern Montana Meats is a commercial beef slaughter and processing plant. Eastern Montana Meats is proposed to serve up to 100 employees and process 100 cows (beef) per day. The proposed water supply for this facility is proposed to be a new public well drilled on-site which shall be reviewed and approved by the Montana Department of Environmental Quality. Eastern Montana Meats is proposed to produce a daily wastewater flows of 6,200 gallons per day.

Wastewater Usage Demand		No. of Units	GPD
Beef Carcass Rinse (10 gpd)		100	1,000
Hand Washing Sinks/Equipment Cleaning Sinks			600
Wash Water (Cleaning of Plant)			3,000
Industrial Building Employee (16 gpd)		100	1,600
Average Wastewater Daily Flows =		6,200	gpd

The wastewater produced from this facility is defined into three (3) types of wastewater. Domestic wastewater produced by employees by use of the bathroom facilities is proposed to generate 1,600 gallons of per day. Industrial wastewater produced by the washing of the facilities and floor drains located within the plant is proposed to generate 4,600 gallons per day. The proposed industrial wastewater will mainly consist of wash water and a small portion of blood that is washed down the floor drains when the beef carcass are washed down and the plant is cleaned. The third type of wastewater generated by this plant is blood that is drained from the cow when killed. The blood is collect within the kill floor and diluted with water to keep the blood from coagulating and drained to a separate tank located beneath the kill floor. The blood tank is pumped out and land applied under a contract with Door Buster. The owner of Eastern Montana Meats is currently in the process of applying to MDEQ for its own land application permit. The blood wastewater is not proposed to be pumped to the City of Sidney’s municipality sewer system.

Proposed Sewer Pumping Facilities

Eastern Montana Meats currently has two 2,000-gallon concrete septic tanks that are currently acting as temporary holding tanks. One 2,000-gallon concrete tank is collecting the domestic wastewater (wastewater generated from the bathroom facilities) and the second 2,000-gallon concrete septic tank is collecting the industrial wastewater. This request proposes to install a sewer lift station located at the plant facility and pump the domestic and industrial wastewater to the existing City of Sidney’s sewer manhole located at the intersection of County Road No. 351, County Road No. 124, 14th Street SE and East Main Street. The preliminary plan is to trench approximately 4,650 linear feet of 4” diameter HDPE pipe within the county road easement area (obtaining private land owner easements) and connect to the existing sewer manhole.

Wastewater Strength

On April 7, 2021 the two existing septic tanks were sampled and submitted to Energy Labs for analytical analysis for BOD₅, pH, Total Suspended Solids (TSS), Total Nitrogen, Phosphorous and FOGs (Fats, Oils, and Grease). The following are the results from these two tanks.

Sewer Septic Tank Results



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Engineering West
Project: Eastern Montana Meats
Lab ID: B21040558-001
Client Sample ID: EMM (Sewer Tank)

Report Date: 04/15/21
Collection Date: 04/07/21 11:30
Date Received: 04/08/21
Matrix: Waste Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.9	s.u.	H	0.1		A4500-H B	04/08/21 12:10 / mh
pH Measurement Temp	13	C				A4500-H B	04/08/21 12:10 / mh
Solids, Total Suspended TSS @ 105 C	81	mg/L		10		A2540 D	04/08/21 14:46 / pjw
AGGREGATE ORGANICS							
Oxygen Demand, Biochemical (BOD)	520	mg/L		120		A5210 B	04/08/21 16:21 / ean
NUTRIENTS							
Nitrogen, Kjeldahl, Total as N	218	mg/L	D	3		E351.2	04/13/21 13:43 / kej
Phosphorus, Total as P	20.7	mg/L	D	0.1		E365.1	04/15/21 13:19 / kej
ORGANIC CHARACTERISTICS							
Oil & Grease (HEM)	38	mg/L		1		E1664A	04/14/21 10:35 / eli-g
- The pH of the sample at the time of E1664A analysis was >2. Additional preservative was added prior to analysis.							

Wash Water Tank Results



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Engineering West
Project: Eastern Montana Meats
Lab ID: B21040558-002
Client Sample ID: EMM (Wash Tank)

Report Date: 04/15/21
Collection Date: 04/07/21 11:30
Date Received: 04/08/21
Matrix: Waste Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.3	s.u.	H	0.1		A4500-H B	04/08/21 12:13 / mh
pH Measurement Temp	14	C				A4500-H B	04/08/21 12:13 / mh
Solids, Total Suspended TSS @ 105 C	157	mg/L		10		A2540 D	04/08/21 14:46 / pjw
AGGREGATE ORGANICS							
Oxygen Demand, Biochemical (BOD)	660	mg/L		350		A5210 B	04/08/21 16:28 / ean
NUTRIENTS							
Nitrogen, Kjeldahl, Total as N	39.8	mg/L	D	0.6		E351.2	04/12/21 16:54 / jpv
Phosphorus, Total as P	2.88	mg/L	D	0.02		E365.1	04/15/21 13:20 / kej
ORGANIC CHARACTERISTICS							
Oil & Grease (HEM)	82	mg/L		1		E1664A	04/14/21 10:36 / eli-g
- The pH of the sample at the time of E1664A analysis was >2. Additional preservative was added prior to analysis.							

Domestic strength wastewater is defined by MDEQ Circular-4 Section 3.3.2 as wastewater having the following:

- BOD₅ = less than or equal to 300 mg/L
- TSS = less than or equal to 150 mg/L
- FOG = less than or equal to 25 mg/L

In order to ensure that the wastewater generated from Eastern Montana Meats is acceptable to the City of Sidney, we are proposing that the wastewater be sampled on a quarterly basis by a third party and result submitted to the City for review.

Impact Fees

Eastern Montana Meats is proposing to pay impact fees in the sum of \$24,885 based upon a 2” diameter water meter that is installed upon the water system.

TABLE 6

**WASTEWATER IMPACT FEE FOR NEW OR EXPANDED SERVICE
(Includes administrative fee)**

RESIDENTIAL LAND USES	EDUs	ADOPTED FEE
Hotel Room	1/2	\$1,750
Detached Single-Family Residence (includes mobile homes)	1	\$3,500
Two-Family Residence	2	\$7,000
Three-Family Residence	2.5	\$8,750
Four-Family Residence	3	\$10,500
Five-Family Residence	3.25	\$11,375
Six-Family Residence	3.5	\$12,250
Seven-Family Residence	3.75	\$13,125
Eight-Family Residence	4	\$14,000

Residential structures larger than eight-family are charged at a rate of ½ EDU per dwelling unit.

NON-RESIDENTIAL LAND USES
Non-residential buildings or facilities are charged using water meter size and an EDU conversion factor shown below

METER SIZE (inches)	EDUs	ADOPTED FEE
5/8 or 3/4	1	\$3,500
1	1.78	\$6,230
1.5	4	\$14,000
2	7.11	\$24,885
3	16	\$56,000
4	28.44	\$95,540

Sources: Sidney Municipal Code Section 3-5-4, MDEQ Circular DEQ 4, and Murtagh Municipal Engineering, Inc.

Sewer Rates

Eastern Montana Meats is proposing to pay base monthly sewer fee \$156.94 plus \$3.63 per 1,000 gallons over base rate based upon a 2" diameter water meter that is installed upon the water system. The estimated monthly sewer rate would be \$755.89 per month based upon a daily wastewater demand of 6,200 gallons per day.

Eastern Montana Meats is proposing to pay impact fees in the sum of \$24,885 based upon a 2" diameter water meter that is installed upon the water system.

PROPOSED RESIDENTIAL AND COMMERCIAL – WATER RATES

<u>Meter Size</u>	<u>EDU Multiplier</u>	<u>Gallons (included in base rate)</u>	<u>Proposed Base Rate</u>	<u>Proposed Usage Charge</u>
3/4"	1	3,000	\$21.98	\$3.63/1,000 gallons over base
1"	1.79	5,370	\$39.34	\$3.63/1,000 gallons over base
1 1/2"	4	12,000	\$87.92	\$3.63/1,000 gallons over base
2"	7.14	21,420	\$156.94	\$3.63/1,000 gallons over base
3"	16	48,000	\$351.68	\$3.63/1,000 gallons over base
4"	28.57	85,710	\$627.97	\$3.63/1,000 gallons over base

A proposed 2" diameter water flow meter shall be installed upon the 2" diameter water piping serving the facility. The flow meter shall be to the City of Sidney's specification so that the meter can be read remotely for monthly sewer rates and billing.

Maintenance

The construction and maintenance of the sewer lift station and sewer force main shall be the responsibility of Eastern Montana Meats.

Conclusion

If the City Council will allow for Eastern Montana Meats to disposal of their wastewater to the City's municipal's sewer system then the original proposed lagoon system located south of the facility can be eliminate and the issues presented by the public can be mitigated. Thank you for you consideration and I look forward to presenting this proposal and answering any questions at your next board meeting.