STILLWATER COUNTY

DECEMBER 2023

STILLWATER COUNTY

Industrial/Business Park Feasibility Study

STUDY CONDUCTED BY
KLJ ENGINEERING

Table of Contents

List of Figures

Appendices

Project Background

Early in 2022, Stillwater County in partnership with Beartooth Resource Conservation & Development Area (Beartooth RC&D), requested proposals for completion of an Industrial Park/Business Park Feasibility Study (the Project). While Stillwater County is sparsely populated and has considerable potential developable property, there had been no recent studies or assessments completed to determine if any of that property was available for development or to assess infrastructure needs.

The Project was prompted by inquiries to the County and continued inquiries at the state level regarding available industrial space on which to house manufacturing, warehousing, distribution operations and/or space for small business expansion. Recognizing that businesses generally seek location opportunities that are "ready-to-go" and do not require intensive time or capital, the County was concerned that without better information regarding developable property and related costs, businesses would continue to locate their operations in competing communities/areas.

While the County recognizes that additional planning and infrastructure assessment will be necessary to create "ready-to-go" developable space, the Project and this report seek to provide a high-level understanding of the best available/developable properties and related infrastructure needs/costs. While identified property owners were contacted and preliminary discussions held with some, the Project did not include formal property acquisition/sale discussions or agreements or formal preliminary engineering.

Project Objective

This report summarizes a high-level feasibility evaluation for potential development of a light industrial/business park within Stillwater County, Montana, the objective of which is to promote economic growth and diversification in Stillwater County. This evaluation assesses potential sites for development and performs a comparison of benefits and challenges for each site. The evaluation ranks and prioritizes sites based on established site selection criteria and probable cost; provides a schematic layout for the most highly preferred site; and provides a preliminary Engineer's Opinion of Probable Cost for provision of infrastructure to serve individual properties/businesses that could be developed within the recommended site. The evaluation also includes strategies for funding, interlocal agency agreements, and additional public engagement.

Sites Considered

KLJ Engineering worked with Stillwater County staff and the County Commission to investigate several site locations throughout Stillwater County. This included potential sites adjacent to the City of Columbus, near the Town of Park City and along the Burlington North Santa Fe (BNSF) rail corridor. Site evaluation was based on the following criteria as directed by the County Commission and their staff:

1. Development should be suitable for mixed use development, including light industrial and commercial uses.
2. Sites closer to developed communities would be preferred over remote areas of the County to promote commercial growth in those communities.
3. Sites with access to municipal services were preferred.
4. Sites with good truck/transportation access were preferred.
5. Rail access would be a factor, but was not a high priority, as the vision for the development is not heavy industrial.

Several sites were initially evaluated but removed from further consideration or analysis due to an inability to satisfy the identified criteria as well as local knowledge that landowners of some of those properties would be unwilling to sell/lease land for development. Additional sites were removed from consideration due to environmental constraints, including wetlands and in one case, an existing conservation easement. Out of all locations evaluated, three sites were chosen for further consideration and assessment based on the vision for development, most closely meeting the above noted criteria, and an understanding that landowners within these properties would be most open to additional discussion regarding development. Those sites are generally referred to as Columbus 1, Columbus 5, and Park City 3. These sites are illustrated in Figures 1 – 3.

FIGURE 1: Columbus 1 Site Alternative

FIGURE 2: Columbus 5 Site Alternative

FIGURE 3: Park City 3 Site Alternative

Columbus 1- Site Evaluation

Site Description

The Columbus 1 site is located on vacant land between Interstate-90 (I-90) and Highway 10, contiguous to the east edge of the City of Columbus. The site includes a total area of approximately 110-acres. The west side is bordered by developed residential property. The Stillwater Billings Clinic is located adjacent to the northwest corner of the site. A mini storage development is located adjacent to the southwest corner, and Silvertip Propane is located adjacent to the southeast corner.

Planning

The site is currently outside of the City of Columbus corporate limits, but within the City's zoning jurisdiction. Following are City zoning designations for this area:

- AO – Agricultural Open Space
- RE – Residential Estates
- RMH – Residential Manufacture Homes

The identified industrial/commercial land use associated with this evaluation, is not compatible with any of the current zoning designations. Development of the site as a business/industrial park would be contingent on an amendment to the city zoning and overall growth objectives for this area. It is advisable to consult with the Columbus City Council to confirm their willingness to consider a change in zoning, prior to progressing further with planning for development at this location.

Vehicular Access

This site has good access from Highway 10 on the south. A second access to the middle of the site could be constructed along the easterly extension of East 4th Avenue which has direct connectivity to Highway 78 (North 9th Street). This part of East 4th Avenue also passes exclusively through a commercial area which is compatible with the anticipated commercial traffic that would use this route to access the development.

A third primary access would be desired at the north end of the site from East 8th Avenue. Ideally, for traffic flow, the north access would be along the northly access road into the Stillwater Billings Clinic. This would involve a direct easterly extension of East 8th Avenue. This would allow all commercial traffic to access the site without being directed through any residential areas at another location. If acquiring a right-of-way (ROW) on the north side of the clinic is not achievable, the north access could be off 11th Street North, from the Falls Creek Drive intersection. This would be a secondary option, since it is not as direct a connection to East 8th Avenue and would direct commercial traffic along the existing residential neighborhood on 11th Street, from Falls Creek Drive to East 8th Avenue.

Overall potential for access to this site initially appears to be good, but there are some ROW issues that would need to be addressed in addition to an evaluation of traffic impacts.

Rail Access

This site is separated from the existing BNSF rail line by Highway 10 and a vacant tract of land between Highway 10 and rail. Obtaining rail access to the site may be possible with ROW acquisition across the vacant track and negotiating a highway/rail crossing agreement with the Montana Department of Transportation (MDT) and BNSF, but it would be challenging. The rail crossing may need to be at a

skewed angle with Highway 10, due to BNSF minimum turn radius standards and geometric constraints with the existing rail and highway alignments. Successful negotiation with MDT is uncertain, especially with the probability of a skewed angle crossing. If rail access was required, further discussion with BNSF regarding rail layout and allowances for a tighter radius would need to be pursued to ensure this is feasible.

Several other currently unknown factors would also factor into BNSF's willingness to participate in providing rail service. Some of these include type of rail service and number of cars desired, as well as siding options to get a unit train off the main line, for separation, prior to crossing the highway. Separating cars prior to crossing the highway may help for a tighter radius and decreasing the skew angle, but doing so would create operational delays that could impact Highway 10 traffic. Without additional evaluation and discussions with BNSF and MDT, it is difficult to determine if rail service to this site is technically feasible.

City of Columbus planning objectives are also a significant factor in determination of whether this site can or should be served by rail. The current City zoning for the area is less intense than the commercial/light industrial zoning that would be needed for the proposed development. Adding rail service would push the land use even further from the current zoning, into heavy industrial land use.

Overall, providing rail service to this site can be evaluated further, but that is not recommended at this time. If rail or heavy industrial development is needed, there may be better sites in more rural parts of Stillwater County that would better meet that need.

Water Supply

The assessment and conclusions regarding the ability to serve this site from the City of Columbus' water supply and distribution systems are based on the "Columbus Sanitary Sewer & Water Model Updates" (CSSWMU) letter issued by Interstate Engineering on 3/26/21 and Town of Columbus Water System Atlas Map (Water Atlas) prepared by Morrison Maierle, Inc.

WATER SUPPLY ALTERNATIVE 1 – EXTENSION OF CITY OF COLUMBUS WATER DISTRIBUTION SYSTEM

Figure 4: Columbus 1 Off Site Water Improvements, shows the location of this site (Columbus 1) relative to the City's existing water system with anticipated off-site water distribution improvements needed to serve the property. Extension of the City's water distribution system is believed to be the only applicable solution to provide water service to this site.

FIGURE 4
Columbus 1
Off-Site Water Improvements

Existing 8" Water Main
Existing 6" Water Main
Existing 4" Water Main

NOTES

Existing pipe locations and sizes are based on the City of Columbus Water Atlas prepared by Morrison Maierle, Inc and have not been verified.

Proposed off-site improvements are based on assumptions about the existing water distribution systems capacity at proposed connection points. Additional improvements may be needed. A capacity analysis of the existing system was not completed for this preliminary feasibility study.

WATER SUPPLY ALTERNATIVES NOT CONSIDERED

The following water supply alternatives were not considered for this site based on feasibility and related cost as compared to extension of the City's water service:

- Development of new on-site public water system:
  This site is located within the City of Columbus planning area and will ultimately be served by the City's water system. Development of a separate water supply system is not compatible with long-range growth plans.
- Development of on-site wells for each individual development within the area:
  As for development of a new on-site public water system, this is not compatible with the City's long-range growth plans. The current evaluation did not include consideration of water availability for wells in this area, which would also have to be evaluated should this alternative be considered.

CAPACITY OF CITY'S EXISTING WATER SUPPLY

Based on the CSSWMU, the City's Maximum Day Demand (MDD) in 2017 was approximately 0.84 million gallons per day (MGD). The City's water supply consists of three wells with a combined capacity of approximately 0.90 MGD, but capacity is only 0.86 MGD with the largest well out of service in accordance with Montana Department of Environmental Quality (DEQ) requirements. Therefore, the City's existing water supply system is currently at capacity and upgrades would be needed to provide added demands from development within this site. The City's plans to upgrade the system to serve this area would need to be discussed and clarified as the area is within the City's planned growth area.

CAPACITY OF CITY'S EXISTING WATER STORAGE

Based again on the CSSWMU, Columbus' existing water system is equipped with a 1.0 million-gallon (MG) storage tank. This tank is marginally sized to satisfy DEQ's minimum required volume during summer water demands combined with water volume needed for fire protection.
The CSSWMU analyzed the system based on a 1,500 gallon per minute (gpm), 2-hour fire flow. With this level of fire protection, the International Fire Code (IFC) limits fire separation areas of non-sprinkled buildings to 3,600 to 22,700 square feet, depending on the type of construction and building use. Fire suppression systems can be installed in buildings to increase this area. The same fire volume can support separate fire areas in sprinkled buildings of 18,000 to 128,700 square feet. Based on this guidance, it can be assumed that the City's storage is adequate to support fire protection requirements for light industrial / commercial development at this site, but it may limit the type of construction and occupancy levels. Additional water storage may also be needed due to increased normal operating demands. As with water supply, the City of Columbus would need to be consulted to clarify any plans to complete upgrades as this area is zoned for growth.

CAPACITY OF CITY'S EXISTING WATER DISTRIBUTION SYSTEM

The CSSWMU concludes that most of the water distribution system can provide a 1,500-gpm flow for fire protection while maintaining the minimum required residual pressure of 20 pounds-per-square-inch (psi). Because the Columbus 1 site is located at lower elevations than most of the existing system, it is likely that pressure and fire flow will be adequate. However, it is also likely there will need to be some off-site improvements to loop dead-end water mains near connection locations, alleviating bottlenecks that restrict flow to the site. Figure 4 shows the off-site improvements that are assumed to be needed.

Wastewater Collection and Treatment

The assessment and conclusions regarding the ability to serve this site from the City of Columbus' existing wastewater collection and treatment system are based on the CSSWMU letter and Town of Columbus Sewer System Atlas Map (Sewer Atlas) prepared by Morrison Maierle, Inc.

WASTEWATER SERVICE ALTERNATIVE 1 – EXTENSION OF CITY OF COLUMBUS SEWER SYSTEM

Figure 5: Columbus 1 Off Site Sanitary Sewer Improvements, shows the location of the Columbus 1 site relative to the City's existing sewer system with anticipated off-site wastewater collection improvements needed to serve the property. Extension of the City's wastewater collection system is believed to be the only applicable solution for wastewater disposal from this site.

FIGURE 5
Columbus 1
Off-Site Sanitary Sewer Improvements

Existing 8" Sanitary Sewer Main
Existing 10" Sanitary Sewer Main

NOTES

Existing pipe locations and sizes are based on the City of Columbus Sewer Atlas prepared by Morrison Maierle, Inc and have not been verified.

Proposed off-site improvements are based on the assumption that the existing collection system has capacity to handle flows from the development, or will have capacity following improvements being completed by the City of Columbus independently from the site development improvements

WASTEWATER SERVICE ALTERNATIVES NOT CONSIDERED

The following wastewater collection and treatment alternatives were not considered for this site based on feasibility and related cost as compared to extension of the City's sanitary sewer/wastewater system:

Individual on-site wastewater treatment systems:

- This site is located within the City of Columbus's planning area and will ultimately be served by the City's wastewater system. Development of a separate treatment system is not compatible with the City's identified long-range plans. Additionally, it is not permitted by state law, due to the proximity to the City's existing collection system, unless an exemption is warranted and granted.
- New public or multi-user wastewater treatment and disposal system:
  This was not considered for the same reasons as outlined for development of individual on-site systems.

CITY'S WASTEWATER TREATMENT CAPACITY

The capacity of the City's wastewater treatment system was not addressed in the CSSWMU. Since the area is within the City's long range growth plans and zoned accordingly, the City would need to be consulted to discuss and verify plans to upgrade their wastewater treatment system as needed to serve development in this area.

EXISTING COLLECTION SYSTEM CAPACITY

The Columbus 1 site would be served by connecting to an existing 10-inch diameter sewer main at the intersection of Highway 10 and 12th Street. This existing main flows south, under the BNSF rail to an existing 15-inch diameter sewer main that flows to the City's wastewater treatment plant. The CSSWMU identified capacity issues in the existing 10-inch main at the rail crossing and provides recommendations for the City of Columbus to correct this issue. The CSSWMU estimated that the collection system will have surplus capacity with buildout of the planning area after the recommended corrections are made. This includes the area of the Columbus 1 site. The City is considering completing the recommended corrections in the 2024 construction season.

Utility Services

Based on a cursory field review, the following utilities were noted at or adjacent to the Columbus 1 site:

- Gas – Properties along the west side of the site are served by natural gas.
- Power – An overhead electrical transmission line runs along the east side of 12th Street, along the west boundary of the site.
- Telecommunications/Data – An underground fiberoptic line runs along the north side of Highway 10, along the west boundary of the site.

Initial review indicates that the site appears to have great potential to be served by all essential utilities. Following further clarification of development objectives, coordination with each utility will be needed to determine capacity of each utility to serve the development as well as to address utility development costs.

Environmental Factors

The following environmental factors were considered for this site only to assess potential level of risk for development that could be restrained by environmental resources. Environmental factors outlined represent a high-level review and do not reflect an official environmental assessment.

- Floodplain – Columbus 1 is outside the FEMA identified 100-year floodplain.
- Wetlands – The National Wetland Inventory indicates there are no wetlands documented on this site. There are a few minor drainages that meander through the site, so it is possible that some isolated wetlands exist that have not been identified. If there are any, they should not be widespread across the site and are probably avoidable. Should this site be selected/considered for future development, a more thorough wetland investigation should be completed prior to progressing further with any site layout and development plans.
- Cultural Resources – The Montana National Register of Historical Places indicates there are no historical sites or cultural resources at this location. If the site is selected/considered for future business/light industrial development, a more thorough review will be needed to confirm this.
- Farmland – While there may have been previous attempts to farm in portions of this area, it is primarily unfarmed.

Columbus 5 – Site Evaluation

Site Description

The Columbus 5 site consists of a farm field, bordered on the south by I90, the west by Rapelje Road, the east by Keyser Creek and the north by vacant land. The site includes an area of approximately 38-acres. Surrounding properties consist of range land, farmland, and a few residences with acreage.

Planning

This site is near the City of Columbus, but outside the city limits. It is not currently zoned. Prior to progressing any further with development at this site, confirmation of whether the site is within the extra territorial City-County planning jurisdiction and the City's rule in planning for the area.

Vehicular Access

County staff has indicated that construction of an interchange at the intersection of I-90 and Rapelje Road has been a prior MDT consideration. If an interchange is constructed, this site would have excellent access for vehicles using I-90. It is not clear if or when the interchange will be constructed, so it is not advised that this site be assessed based on that. Re-evaluation of the site for vehicular access should be considered if interchange plans solidify.

In the current condition, without an interchange, traffic from I-90 would need to access this site along a 3.3-mile route through Columbus. This route would provide access from I-90, along North 9th Street, Highway 10, and Rapelje Road. This is not an ideal route for truck traffic and could have negative transportation infrastructure and traffic impacts along these routes.

Rail Access

There is no feasible option for rail access to this site since the site is separated from the existing BNSF rail by I-90 and multiple developed properties.

Water Supply

WATER SUPPLY ALTERNATIVE 1 – EXTENSION OF CITY OF COLUMBUS WATER DISTRIBUTION SYSTEM

Figure 6: Columbus 5 Off-site Water Improvements, shows the location of the site relative to the City's existing water system and anticipated off-site water distribution improvements needed to serve the property. It is anticipated that a 12-inch diameter water transmission main would be needed from the existing system to the site. The main would likely need to extend a few blocks into the existing system and connect to existing 6-inch mains at several locations to provide adequate connectivity to the system. The site is 40 to 90-feet higher than other parts of Columbus that are currently being served by the water system. The base of the existing water tank is approximately 100-feet higher than the site. That is equivalent to a static water pressure of at least 43 psi with a near empty tank. This is acceptable for a normal service pressure. However, pressures in a fire flow scenario may be marginal after factoring in pressure loss through the system. It is possible that a new booster station would be needed to provide required fire flow to this site.

FIGURE 6
Columbus 5
Off-Site Water Improvements

WATER SUPPLY ALTERNATIVE 2 – INDIVIDUAL OR MULTIUSER ON-SITE WELLS

The Montana Bureau of Mines and Geology Groundwater Information Center (GWIC) was used to investigate the feasibility of developing wells at this location. See Appendix A for GWIC data. Existing wells adjacent to the site recorded yields of 1 to 100 gallons per minute (gpm). The lowest yield well is in a higher area of rock outcropping, northwest of the site and may not be as representative as the others. This indicates there could be potential for wells at this location.

Development of individual on-site wells could be a good solution for industrial development that does not serve many workers or otherwise requires high water demands. This could include warehousing and similar types of developments. This limited development approach may not support the economic development and job creation objectives of the project.

WATER SUPPLY ALTERNATIVES NOT CONSIDERED

Based on feasibility and related costs, the following water supply alternatives were not considered for this site:

- Constructing additional on-site storage in conjunction with extending the City of Columbus's water distribution system:
  Addition of on-site storage could reduce the size of a transmission main from the existing system to the site and eliminate the potential need for a booster station. The storage volume would need to be relatively large to provide for fire suppression requirements. This is probably a more costly solution than Water Supply Alternative 1.
- Development of new on-site public water supply system:
  This is a possible solution, but it would have several issues associated with permitting, water rights, maintenance and operation that would not be a concern with Water Supply Alternative 1.

CAPACITY OF THE CITY OF COLUMBUS'S EXISTING WATER SYSTEM

This is a relatively small site. It is anticipated that Columbus's existing water treatment system would have capacity to support reasonable development at this location, however, there may not be as much incentive for the City to serve this property in lieu of properties that are already identified within the long-range growth plan. Providing water to this area may reduce the City's ability to serve other areas already planned for growth.

Wastewater Collection and Treatment

WASTEWATER SERVICE ALTERNATIVE 1 – EXTENSION OF CITY OF COLUMBUS SEWER SYSTEM

Figure 7: Columbus 5 Off-site Sanitary Sewer Improvements, shows the location of the site relative to the City's existing wastewater collection system, with anticipated off-site wastewater collection improvements needed to serve the property. This would likely require approximately 5,800 linear feet of new 8-inch diameter gravity sewer main, a new lift station, approximately 450 liner feet of sanitary force main, and several pipe borings to extend under I-90, Keyser Creek, and an existing irrigation ditch. The force main would discharge to an existing manhole at the north end of Stillwater Drive that runs into an 8" sanitary sewer main.

FIGURE 7
Columbus 5
Off-Site Sanitary Sewer Improvements

WASTEWATER SERVICE ALTERNATIVE 2 – INDIVIDUAL OR MULTI-USER ON-SITE WASTEWATER TREATMENT SYSTEM

Using GWIC well data, it appears there could be a chance of finding soils at the site that are conducive to on-site wastewater treatment and disposal. To ensure this is accurate, additional soil investigation and groundwater sampling would be needed. Development capacity could be limited by site constraints related to satisfying the State's non-degradation requirements for water quality. This alternative would be most applicable to low intensity development that serves a limited use and may not satisfy the project objectives related to economic development and job creation based on these limitations.

WASTEWATER SERVICE ALTERNATIVES NOT CONSIDERED

Based on feasibility and cost constraints, the following wastewater collection alternatives were not considered for this site:

- New public wastewater treatment and disposal system:
  This site is relatively small with limited development capacity. It does not offer enough development potential to warrant the capital cost, permitting and operational requirements associated with a new public wastewater treatment and disposal system.

Utility Services

Using a cursory field review, the following utilities were noted at or adjacent to the Columbus 5 site:

- Gas – Properties adjacent to the site are utilizing individual propane tanks. Natural gas does not appear to currently serve the area.
- Power – An overhead electrical transmission line runs along the north side of I-90, along the south boundary of the site.
- Telecommunications/Data – An underground fiberoptic line runs along the west side of Rapelje Road, adjacent to the west boundary of the site.

Upon initial review, the site appears to have potential to be served by all essential utilities. It is unknown if natural gas could be made available, however, propane is an acceptable alternative if necessary. If this site is selected for future development, coordination with each utility will be necessary to determine capacity of each utility to serve the development as well as utility development costs.

Environmental Factors

The following environmental factors were considered for this site only for purposes of anticipating a potential level of risk that might constrain site development based on environmental resources. Information provided does not represent an official environmental assessment.

- Floodplain – A Zone A Floodplain has been delineated for Keyser Creek, adjacent to the easterly site boundary, however the developable site area is generally outside of the floodplain. This floodplain would need to be considered when establishing development limits but does not appear to be overly restrictive.
- Wetlands – The National Wetlands Inventory does not identify any wetlands on this site. Wetlands have been identified along Keyser Creek adjacent to the east boundary of the site. These should be avoidable. It is unlikely there are any wetlands on the site that are not present on the National Wetlands Inventory as this site is currently being farmed.

- Cultural Resources – The Montana National Register of Historic Places indicates there are no historical sites or cultural resources at this location. It is unlikely there are cultural resources at this site that cannot be avoided as nearly the entire site is currently being farmed. If the site is selected for future development, a more thorough review will be needed to confirm these findings.
- Farmland – The entirety of this site is active farmland. Potential loss of this farmland should be considered in site selection for future development.

Park City 3 – Site Evaluation

Site Description

This site is located north of Park City and consists primarily of farmland with a large part being irrigated crops. The site is bordered on the south by additional farmland, developed residential property, a feed lot, and light industrial property. Other agricultural land borders the north and east boundaries. The northwest boundary is bordered by range land. The site includes a total area of approximately 250-acres but could be reduced to conform to specific identified development needs.

Planning

This site is located outside of any city planning jurisdiction and is not currently zoned.

Vehicular Access

Vehicular access to this site is good. Highway 10 passes through the middle of the site giving commercial traffic a direct connection to I90 at the Park City interchange.

Rail Access

There is no feasible option for rail access to this site since the site is separated from the existing BNSF rail by I-90 and several already developed properties.

Water Supply

WATER SUPPLY ALTERNATIVE 1 – INDIVIDUAL OR MULTI-USER ON-SITE WELLS

The well data in Appendix A shows there is potential for well development at this site, with many shallow wells in and adjacent to the site producing yields of 15 to over 30 gpm. The entire area of Park City is also served by wells. While potential for wells at this site is good, the types of industries and businesses developed with this water supply is limited. Further analysis would be needed to confirm whether individual or multi-user wells could support development at this location in a way that meets the growth and job creation objectives of the County.

WATER SUPPLY ALTERNATIVES NOT CONSIDERED

Due to feasibility and cost constraints, the following water supply alternatives have not been considered for this site:

- Extension of the existing Park City Water and Sewer District Services:
  The Park City Water and Sewer District only provides wastewater services. It does not have a water system.
- Development of new Public Water Supply System:

While this is an option for consideration, it has a significant number of challenges and could be very costly. To fully investigate the feasibility of this alternative, several unknowns would need to be resolved including water rights, water quality, source capacity, and additional considerations beyond the scope of this evaluation.

Wastewater Services

WASTEWATER SERVICE ALTERNATIVE 1 – INDIVIDUAL OR MULTI-USER ON-SITE WASTEWATER TREATMENT SYSTEMS

Individual and/or multi-user on-site wastewater treatment systems may be the only feasible alternative for this site. Further analysis would be needed to determine the extent to which the site could be developed using these types of systems. Montana's non-degradation policy is the greatest factor in this determination, as there are many downstream properties that depend on well water. Potential impact to groundwater quality would need to be analyzed to determine the level of development that could occur at this location.

WASTEWATER ALTERNATIVES NOT CONSIDERED

Based on feasibility and cost constraints, the following wastewater service alternatives were not considered for this site:

- Extension of Park City Water and Sewer Districts Wastewater Collection System:
  Park City's existing wastewater treatment plant is currently at capacity with very limited potential to add additional service. This alternative would require significant upgrades to the wastewater treatment plant and potentially the collection system.
- Development of new Public Wastewater Treatment and Disposal System:
  This solution would likely be more costly and more complex than upgrading the Park City wastewater treatment plant and extending the Park City wastewater collection system to serve the property. It would certainly have greater operational challenges, as it would require all permitting, operation and sampling requirements associated with an entirely new public wastewater system.

Utility Services

Using a cursory field review, the following utilities were noted at or adjacent to the Park City 5 site:

- Gas – Some properties adjacent to the south side of the site are served by natural gas. Properties north of the site are on individual propane tanks. There may be an opportunity to extend natural gas services into this area.
- Power –overhead electrical distribution lines run along the east boundary of the site and part way into the site from the northeast, along Highway 10.
- Telecommunications/Data – An underground fiberoptic line runs through the site along the south and east side of Highway 10.

Upon initial review, the site appears to have potential to be served by all essential utilities. It is unknown if natural gas access is feasible. Propane is an acceptable alternative, if necessary. The power distribution lines in the vicinity may not have capacity to serve a development at this location. It's possible that upgrades to the power supply system would be needed. If this site is selected for future development,

coordination with each utility would be needed to determine capacity to serve the development as well as utility development costs.

Environmental Factors

The following environmental factors were considered for this site only for purposes of estimating potential level of risk for development based on environmental constraints. Information provided is not an official environmental assessment.

- Floodplain – This site is outside of the FEMA identified 100-year floodplain.
- Wetlands – The National Wetlands Inventory does not identify wetlands on this site. As the site is almost entirely used for farming, it is unlikely that there are any significant wetland areas present that have not been inventoried.
- Cultural Resources – According to Montana's National Register of Historic Places, there are no historical sites or cultural resources at this location. It is unlikely that there are any cultural resources at this site that cannot be avoided, as nearly the entire site is currently being farmed. If the site is selected a more thorough review will be needed to confirm these findings. .
- Farmland – Almost all this site is active farmland. The potential loss of farmland should be considered in site selection for future business/light industrial development.

Recommended Alternative

Evaluation Matrix and Site Recommendation

The following tables provide a summary of probable benefits of each site related to access and potential ability to serve each site with water and wastewater services. Sites were also reviewed for potential to provide gas, electric, and telecommunication/data facilities, however, no significant advantages were noted between the sites evaluated in those categories.

Site	Access					
	Potential for Rail			Vehicular		
	Good	Poor	None	Good	Fair	Poor
Columbus 1		X		X		
Columbus 5			X			X
Park City 3			X	X		

Site	Water Service Potential						Wastewater Service Potential					
	Municipal Water Availability			Wells			Municipal Wastewater			On-site Treatment		
	Good	Poor	None	Good	Fair	Poor	Good	Poor	None	Good	Fair	Poor
Columbus 1	X			NA			X			NA		
Columbus 5		X		NA				X		NA		
Park City 3			X	X					X		X	

Based on a preliminary assessment, Columbus 1 has been identified as having the most potential to be served with municipal water and wastewater facilities. Columbus 1 also has good vehicular access. Park City 3 has the best vehicular access, but it has no opportunity to be served by municipal water and wastewater services. Development of Park City 3 would also result in the greatest loss of active farmland.

The Columbus 1 site is recommended as the best alternative for development of business/light industrial based on the priorities and targeted development as identified by the County. This is contingent on how receptive current property owners are and compatibility with City of Columbus Planning and Growth. Development of the Columbus 1 site as a light industrial/business park is not compatible with the City's current zoning designations. An amendment to the City's zoning and long-range growth plan would be required for this site to be feasible.

Columbus 1 Preliminary Layout

Figure 8 provides a preliminary layout for the Columbus 1 site. This is intended to show one possibility of how the site could be developed. Final layout should take into consideration the types of businesses and/or industries that are to be targeted. The City of Columbus may also have suggestions that influence the layout.

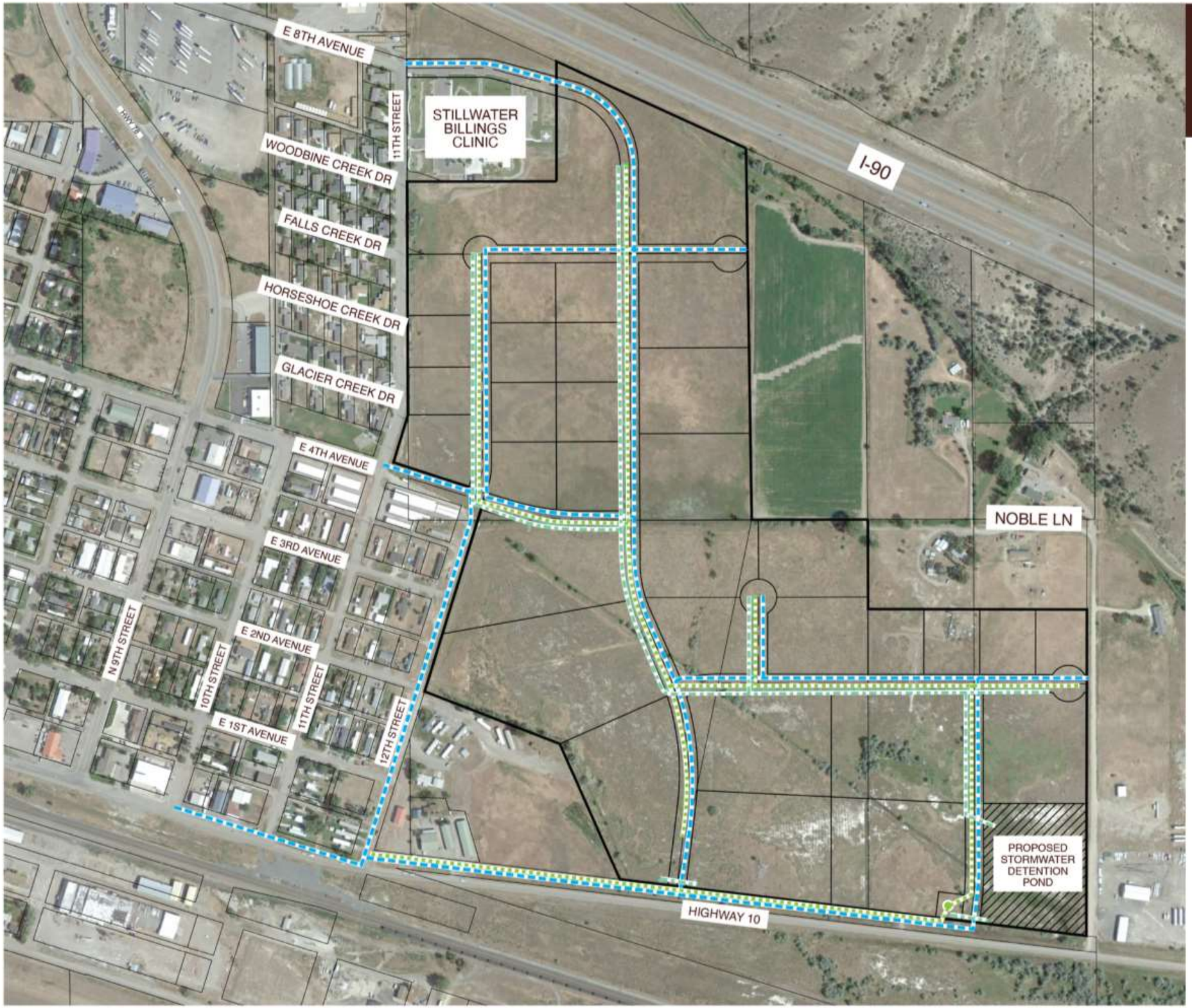


FIGURE 8
Columbus 1
Preliminary Site Layout

Proposed Water Main

Proposed Sewer Main

Proposed Storm Drain Trunk Main

N

200 0 200 400
SCALE FEET

KLJ

NO.	DATE	REVISION

DRAFTED: MK
REVIEWED: TC
PROJECT NUMBER: 2203-00281
ISSUE DATE: 11/7/2023

INDUSTRIAL/BUSINESS PARK FEASIBILITY STUDY
STILLWATER COUNTY, MT
COLUMBUS 1
CONCEPT LAYOUT

SHEET
C1

The preliminary layout considers access for all traffic to the site via Highway 10, East 4th Avenue, and East 8th Avenue, which pass through commercial districts. In this scenario, no traffic would be directed through residential areas. The East 8th Avenue access would require successful negotiations with Stillwater Billings Clinic. Alternatively, that access could be adjusted south, to the intersection of North 11th Street and Falls Creek Drive, but doing so would result in commercial traffic along the east side of the residential district between East 8th Avenue and Fall Creek Drive. Impact to residents and residential neighborhoods would need to be considered.

A variety of lot sizes are provided in the layout to market to a variety of commercial and industrial businesses. With exception to property that is currently owned by the hospital at the north end of the site, lot sizes range from approximately 1 to 7 acres. The hospital property has been left as two large pieces, divided by the north access. This assumes the hospital already has development plans for that property. With few exceptions, larger lots were kept to the south along Highway 10 and to east. This provides a buffer for more intensive/heavier industrial development from existing residential areas.

An area for stormwater detention is shown at the lower southeast corner of the site. This area is probably not large enough to provide stormwater management for a full buildout of all properties within the development. It is intended as part of a combined solution, including a regional pond and individual on-site stormwater detention ponds. This helps minimize initial infrastructure cost, without putting undue burden on lot developers if on-site soils are not ideal to infiltrating all stormwater on individual lots.

Columbus 1 Engineer's Opinion of Probable Cost

The Engineer's Opinion of Probable Cost (EOC) for construction of basic infrastructure for the Columbus 1 Site is $11.1 million. This total includes extending water and sewer to each lot as preliminarily outlined in the Columbus 1 Preliminary Site Layout, street improvements, and stormwater collection/management facilities. This does not include improvements to individual lots, landscaping, power, gas, or telecommunication/data services. A copy of the EOC is included in Appendix B.

Unknowns Related to Feasibility

It should be noted that the evaluation and recommendations in this report are based on engineer's assumptions, as well as tentative direction from County Commissioners and staff. The purpose of the Project was to determine, at a high level, if there were feasible industrial sites within the County and, if so, whether any of those sites appeared to be feasible enough to warrant further consideration and analysis at it relates to additional conversations with existing landowners and identified infrastructure needs. For all the identified sites, but specifically for Columbus 1, additional investigation, and analysis to verify feasibility and better assess cost is necessary and should include:

- Confirmation/discussion related to City of Columbus' growth and planning position
- Landowner's willingness or desire to sell/lease property for development
- City of Columbus' ability or desire to serve the site with water and sewer and the extent to which upgrades to the existing system would be required to accommodate the level of development
- Traffic impacts and determination of any transportation infrastructure improvements necessary to mitigate impacts
- Environmental impacts and any required permitting and/or improvements required to mitigate impacts
- Additional impacts and/or advantages to existing local services and utilities

Funding Strategy

Completion of the Project clarifies that there is property within Stillwater County that presents opportunity for development to support business/small industrial location and growth. While the costs to provide basic infrastructure to develop even the most promising of the locations evaluated (Columbus 1) are high, there are multiple funding opportunities that may be considered by the County to assist in funding/encouraging developers to consider locating in Stillwater County.

Creation of a Targeted Economic Development District (TEDD)

The purpose of a TEDD is the development of infrastructure to encourage the location and retention of value-adding projects. Montana law enables local governments to use tax revenue in designated TEDDs for development and redevelopment activities, capturing and utilizing increases in tax revenue (increment) to subsidize development. While TEDDs are a useful tool, to obtain revenues, development must occur, often creating a chicken or egg scenario in which development is not occurring because infrastructure is not in place and infrastructure is not in place because there is no development revenues/tax. There are typically two options for consideration to fill this funding/timing gap:

1. Form a developer partnership in which the developer/developers finance the infrastructure costs upfront and are then reimbursed by the TEDD tax increment accruals over time or,
2. A municipal bond backed by projected revenues and development rates. This has not been done in Montana for a TEDD before but is a common practice elsewhere in assisting in jump starting infrastructure needed to attract new development.

Local and State Resources

Stillwater County has, no doubt, successfully utilized several traditional federal, state, and local resources to address community infrastructure needs. Such programs as Montana's Transportation Alternatives Program (TA), Community Development Block Grant (CDBG), Montana Coal Endowment Program (MCEP-formerly TSEP), US Department of Agriculture (USDA), Economic Development Administration (EDA), and Big Sky Trust Fund (BSTF) planning and construction grants and loans are all feasible financial resources in addressing infrastructure development needs. In addition to these common grant and loan resources, the County has additional local resources at their disposal including, but not limited to, private and develop investments, bonding, and, as previously noted, development of a TEDD or other special taxing district and related revenues.

Federal Resources

For infrastructure development of this magnitude, with the potential for both regional and national economic significance, it will be beneficial and perhaps necessary for the County to consider larger federal grant programs that can provide higher and more meaningful levels of financial support than traditional state/local resources. The passage of the Infrastructure Investment and Jobs Act (IIJA) also known as the Bipartisan Infrastructure Law (BIL) in 2021, has provided more federal granting resources than ever before. At least through 2026, there are several new grant/loan programs available as well as significant increases to previously existing funding resources that could potentially contribute significant planning and construction resources to this Project. A comprehensive list of IIJA programs and financial resources can be found at https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf. . A small sampling of some of the potential programs/grant opportunities specific to this Project include:

Transportation:

- Infrastructure for Rebuilding America Program (INFRA), which supports freight and highway projects
- Rebuilding American Infrastructure with Sustainability and Equity (RAISE), which provides funding for road, rail, transit, and other surface transportation projects
- Rural Surface Transportation Grant (RURAL), which supports freight, public transportation, highway and bridge projects in rural communities
- Transportation Infrastructure Finance and Innovation Act (TIFIA), which provides low-interest loans for transportation infrastructure and related projects
- Safe Streets and Roads for All (SS4A), which provides grant dollars for development of a comprehensive traffic safety action plan and for design and development activities as well as construction of transportation infrastructure to address identified safety concerns.

Water:

- Drinking Water and Clean Water State Revolving Fund: IIJA provided significant increases in dollars available for both loan programs.
- Water and Groundwater Storage, and Conveyance, which provides funding for projects with an existing feasibility study and for projects with a storage capacity between 2,000 acre-feet and 30,000 acre-feet that increase surface water or groundwater storage or conveyance.
- WaterSmart Grants: This is an umbrella for multiple granting resources that support water management improvements that contribute to water supply sustainability, increase drought resilience, and that have environmental benefits.

In addition to the resources listed, there are several IIJA programs that address broadband, energy, and disaster response that might be considered depending on the type of development and further assessment of those needs for each site as outlined.

Public Engagement

After discussion with the County Commissioners and staff it was determined that while this Project could eventually directly impact the public, at this early stage of planning and assessment, widespread public meetings were not useful. Instead, a plan for targeted outreach and communications was created that resulted in:

- Multiple meetings/conversations with the County Commission and County staff to determine the scope of the Project and to narrow the properties to be assessed based on the specific criteria as outlined and local knowledge of property and property owners
- A press release in October of 2022 announcing the Project and providing contact information for individuals interested in learning more and/or participating in the process
- Direct outreach to property/landowners in the three identified locations (Columbus 1 & 5 and Park City 3) to begin dialogue related to willingness to further discuss development on each site
- A high-level invitation-only stakeholder breakfast in October of 2023 to review the three sites selected to date and to discuss concerns, preferences, and next steps
- Email of the draft report to the attendees of the October breakfast to obtain comment before finalizing the Project

Should the County move forward with further assessment of infrastructure needs, infrastructure development and/or development of any of the identified sites, additional public engagement will be essential and included in planning processes moving forward.

Recommended Next Steps in the Process

While this feasibility study provides a high-level overview of potential available property in Stillwater County for consideration of business/light industrial development, it does not provide the more micro-level assessments and planning necessary to move forward with development of essential infrastructure that will likely be necessary to attract developers and businesses to locate at those sites. Based on initial assessment of locations utilizing the County's outlined criteria, and per stakeholder consensus at the October 2023 breakfast meeting, Columbus 1 appears to be the most suitable site of the three assessed for consideration of future development. Should the County decide to continue consideration of this location, the following would be recommended next steps:

- Additional/more in-depth conversation with existing property owners to determine willingness to lease/sell land for business/light-industrial development.
- Additional/more in-depth conversation/coordination with the City of Columbus. As previously noted, the identified industrial/commercial land use associated with this Project is not compatible with any of the current zoning designations. Development of the site as a business/industrial park would be contingent on an amendment to the city zoning and overall growth objectives for this area.
- Conversations with the city of Columbus would also have to be held regarding serving the site with City water and sewer and the extent to which upgrades to the existing system would be required to accommodate the level of development identified.
- If the City of Columbus was amenable to providing water/wastewater services to the Columbus 1 site, a preliminary engineering report would need to be completed to better assess site needs and any related upgrades to the existing system required.
- A traffic study and more in-depth transportation infrastructure assessment needs to be completed to determine transportation impacts and infrastructure improvements necessary to mitigate impacts.
- A full environmental assessment needs to be completed to determine environmental impacts and to outline required permitting and/or steps/concessions required to mitigate impacts.
- Formal discussion with other utilities (power, telecommunications/data, and gas) providers would be necessary. While it appears that this site could be relatively easily served by these utilities, determination of feasibility of access/extension of services and related costs is necessary.
- As the Project moves forward, additional, and more targeted public engagement is recommended. While early assessment of sites has very little if any impact on the public, development of any or all the sites would have potentially significant impact even beyond landowners and/or adjacent properties. Engaging the public early and often can prevent community dissatisfaction and uncertainty later in the process.
- Each step of the process will require funding of some kind to execute. To that end, the County should consider local, state, and federal resources for each step of the process and create a funding strategy early that provides the best opportunity for steady progress and successful completion of each step of the process.

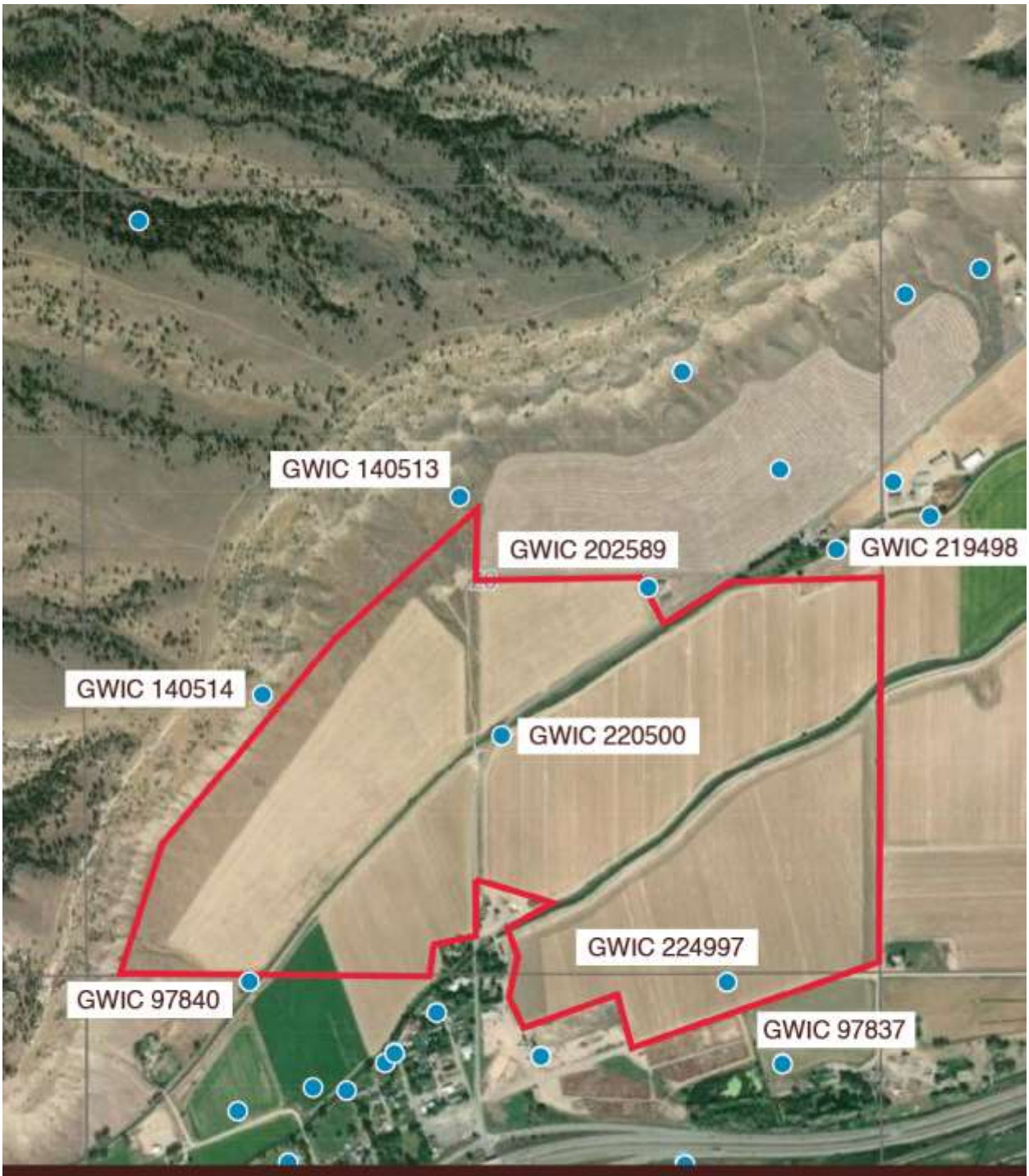
The Stillwater County Light Industrial/Business Park Feasibility Study was funded in part by the Montana Department of Commerce and Big Sky Economic Development Trust Fund Program.

Appendix A

Well Data from Groundwater Information Center

COLUMBUS 5

Well Data from Groundwater Information Center



PARK CITY 3

Well Data from Groundwater Information Center

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View field visits for this site
View water quality for this site
View scanned well log (5/18/2010 1:12:31 PM)

Site Name: PARKINS EVAN * COLUMBUS MT
GWIC Id: 7172
DNRC Water Right: 4722

Section 1: Well Owner(s)

1) PARKINS, EVAN (MAIL)
N/A
COLUMBUS MT 59019 [09/20/1974]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	16	NE¼ SW¼ SW¼ SW¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.65442	-109.272258	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date
3670			

Addition: Block: Lot:

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: FORWARD ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Friday, September 20, 1974

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	41	7
41	95	5

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	42.5	6				STEEL
15	95	4				PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
48	68	4			DRILLED HOLES
78	84	4			DRILLED HOLES

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 95
Static Water Level: 45
Water Temperature:

Air Test *

6 gpm with drill stem set at _ feet for 3 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level 95 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

211JDRV - JUDITH RIVER FORMATION (OF MONTANA GROUP)

From	To	Description
0	19	TOP SOIL AND CLAY
19	36	SHALE GRAVEL
36	41	GREY SHALE
41	57	GREY SANDSTONE (WATER)
57	95	GREY SHALE (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:
Company: B & H
License No: WWC-27
Date Completed: 9/20/1974

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 10:52:36 AM)

Site Name: WENTWORTH W.W.
GWIC Id: 97560
DNRC Water Right: 14630

Section 1: Well Owner(s)

1) WENTWORTH, W.W. (MAIL)
2005 LA BREA
BILLINGS MT [07/02/1976]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	22	SE¼ SE¼

County
STILLWATER

Geocode

Latitude	Longitude	Geomethod	Datum
45.640265	-109.235109	TRS-SEC	NAD83

Ground Surface Altitude **Ground Surface Method** **Datum** **Date**

Addition **Block** **Lot**
4

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: CABLE
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, January 1, 1976

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	50	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	50	6				STEEL

There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 51
Static Water Level: 30
Water Temperature:

Bailer Test *

25 gpm with 12 feet of drawdown after 3 hours.
Time of recovery _ 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
110SNGR - SAND AND GRAVEL (QUATERNARY)

From	To	Description
0	32	TOPSOIL
32	45	QUICK SAND
45	50	SAND & GRAVEL
50	51	BLUE SHALE

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:
Company:
License No: WWC-27
Date Completed: 1/1/1976

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View hydrograph for this site
View field visits for this site
View scanned well log (5/18/2010 10:59:48 AM)

Site Name: MITCHELL JOHN
GWIC Id: 97563

Section 1: Well Owner(s)

1) MITCHELL, JOHN (MAIL)
N/A
COLUMBUS MT 59019 [05/17/1984]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	27	NW¼ NE¼ NE¼ NE¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.6384	-109.2347	NAV-GPS	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date
3590			5/10/2005

Measuring Point Altitude	MP Method	Datum	Date Applies
3591.7			5/10/2005 11:43:00 AM

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: Sunday, January 1, 1984

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	42	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	42	6				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
37	40	6			3/16 PERF

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	24	BENTONITE	

Section 7: Well Test Data

Total Depth: 40
Static Water Level: 20
Water Temperature:

Air Test *

15 gpm with drill stem set at _ feet for 2 hours.
Time of recovery _ hours.
Recovery water level _ 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
112SNGR - SAND AND GRAVEL (PLEISTOCENE)

From	To	Description
0	24	TOPSOIL
24	40	SAND & GRAVEL

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:
Company: B & H
License No: WWC-309
Date Completed: 1/1/1984

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 11:03:31 AM)

Site Name: RADOR EARL
GWIC Id: 97564

Section 1: Well Owner(s)

1) RADOR, EARL (MAIL)
N/A
COLUMBUS MT 59019 [10/06/1966]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	27	SW¼ NW¼ NE¼

County
STILLWATER

Geocode

Latitude	Longitude	Geomethod	Datum
45.635703	-109.241707	TRS-SEC	NAD83

Ground Surface Altitude **Ground Surface Method** **Datum Date**

Addition **Block** **Lot**

Section 3: Proposed Use of Water

STOCKWATER (1)

Section 4: Type of Work

Drilling Method: CABLE
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Saturday, January 1, 1966

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	110	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	92	6				STEEL

There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 110
Static Water Level:
Water Temperature:

Bailer Test *

4 gpm with _ feet of drawdown after 2 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level 50 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
211JDRV - JUDITH RIVER FORMATION (OF MONTANA GROUP)

From	To	Description
0	5	TOPSOIL
5	35	CLAY & BROKEN SANDSTONE
35	66	BROWN SHALE
66	100	WATER SANDY GRAY SHALE
100	110	HARD GRAY SHALE

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:
Company: B & H
License No: -
Date Completed: 1/1/1966

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/19/2010 2:31:09 PM)

Site Name: MORRELL VERN
GWIC Id: 97837

Section 1: Well Owner(s)

Section 2: Location

Township	Range	Section	Quarter Sections
02S	23E	29	NE¼ NE¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.637633	-108.907629	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:
Status: NEW WELL

Section 5: Well Completion Date
Date well completed: Saturday, January 1, 1963

Section 6: Well Construction Details
There are no borehole dimensions assigned to this well.

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	0	6				

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
27	29	0			

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 30
Static Water Level: 18
Water Temperature:

Unknown Test Method *

Yield 15 gpm.
Pumping water level 25 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
110ALVM - ALLUVIUM (QUATERNARY)
Lithology Data

There are no lithologic details assigned to this well.

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:
Company:
License No: -0
Date Completed: 1/1/1983

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View hydrograph for this site
View field visits for this site
View water quality for this site
View scanned well log (6/2/2010 2:56:29 PM)

Site Name: COSSITT ANN
GWIC Id: 97840
DNRC Water Right: 56201

Section 1: Well Owner(s)

1) COSSITT, CARL AND ANNE (MAIL)
503 5TH AVE NW
PARK CITY MT 59063 [07/02/2003]
2) MCFADDEN, WILLIAM J. (MAIL)
RT 1
PARK CITY MT 59063 [09/01/1984]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	23E	29	NE¼ NE¼ NW¼ NW¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.6391	-108.9215	NAV-GPS	WGS84

Ground Surface Altitude	Ground Surface Method	Datum	Date
3475			7/22/2004

Measuring Point Altitude	MP Method	Datum	Date Applies
3477			7/22/2004 2:15:00 PM

Addition: Block: Lot:

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: FORWARD ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Saturday, September 1, 1984

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	74	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	12	6	0.250			STEEL
12	74	6	0.250			STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
68	74	6			1/8IN CUT PERF

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	RUBBER PACKER	
0	50	BENTONITE	

Section 7: Well Test Data

Total Depth: 74
Static Water Level: 54
Water Temperature:

Pump Test *

Depth pump set for test _ feet.
30 gpm pump rate with _ feet of drawdown after 1 hours of pumping.
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

112SNGR - SAND AND GRAVEL (PLEISTOCENE)

From	To	Description
0	2	TOPSOIL
2	45	SANDY CLAY
45	56	BROWN CLAY
56	80	SAND GRAVEL
80	80	SHALE

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:
Company: BILLINGS
License No: WWC-344
Date Completed: 9/1/1984

MONTANA WELL LOG REPORT

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Other Options

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps

Site Name: BILLINGS WATER * CALAMITY JANE CANAL
GWIC Id: 140513

Section 1: Well Owner(s)

1) SLOAM MISSOURI BASIN PROGRAM (MAIL)
BILLINGS
N/A N/A N/A [08/15/1974]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	23E	20	NE¼ SE¼ SE¼ NW¼

County STILLWATER **Geocode**

Latitude	Longitude	Geomethod	Datum
45.647969	-108.915987	TRS-SEC	NAD83

Ground Surface Altitude 3548 **Ground Surface Method** **Datum** **Date**

Addition **Block** **Lot**

Section 3: Proposed Use of Water

UNUSED (1)

Section 4: Type of Work

Drilling Method: POWER AUGER
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, August 15, 1974

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.
There are no casing strings assigned to this well.
There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 25
Static Water Level:
Water Temperature:

Unknown Test Method *

Yield _ gpm.
Pumping water level _ 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

HOLE NO: AH74-802 HOLE BACKFILLED UPON COMPLETION.

Section 9: Well Log

Geologic Source

211TPCK - TELEGRAPH CREEK FORMATION (OF MONTANA GROUP)

From	To	Description
0	20	SILTY SAND - ESTIMATE 70% PREDOMINANTLY FINE SAND W/OCCASIONAL COARSE SAND & SCATTERED SANDSTONE GRAVELS & 30% NON TO SLIGHT PLASTICITY FINES- NO TOUGHNESS- SCATTERED CLAY LANS BELOW 14'- MODERATE HCL REACTION TO 8' NON TO SLIGHT BELOW - COLOR
20	25	CLAYEY SAND- ESTIMATE 60% PREDOMINANTLY FINE SAND W/SOME COARSE SAND & 40% MOSTLY SLIGHT WITH LENS OF MODERATE PLASTICITY FINES- NO HCL REACTION- COLOR BROWNISH GRAY- MOISTURE MOIST- FIRM-MAX SIZE 1/2IN SANDSTONE GRAVEL.

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.

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps

Site Name: BILLINGS WATER * CALAMITY JANE CANAL
GWIC Id: 140514

Section 1: Well Owner(s)

1) SLOAM MISSOURI BASIN PROGRAM (MAIL)
BILLINGS
N/A N/A N/A [08/15/1974]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	23E	20	NE¼ SE¼ NW¼ SW¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.644322	-108.921119	TRS-SEC	NAD83

Ground Surface Altitude: 3551
Ground Surface Method:
Datum Date:

Addition:
Block:
Lot:

Section 3: Proposed Use of Water

UNUSED (1)

Section 4: Type of Work

Drilling Method: POWER AUGER
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, August 15, 1974

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.
There are no casing strings assigned to this well.
There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 25
Static Water Level:
Water Temperature:

Unknown Test Method *

Yield _ gpm.
Pumping water level _ 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

HOLE NO: AH74-801 HOLE BACKFILLED UPON COMPLETION.

Section 9: Well Log

Geologic Source

211TPCK - TELEGRAPH CREEK FORMATION (OF MONTANA GROUP)

From	To	Description
0	0.2	TOPSOIL- BROWN-MOIST-SCATTERED ROOTS & STEMS- CLAYEY SAND.
0.2	10	CLAYEY SAND- ESTIMATE 70% PREDOMINANTLY FINE SAND WITH SCATTERED SANDSTONE GRAVELS & 30% MODERATE PLASICITY FINES- SCATTERED WHITE CALCAREOUS BROWN- BELOW 5'- SLIGHT TO ACTIVE HCL REACTION-COLOR BRN MOISTURE MOIST- SOFT TO FIRM- MAX SIZE 1IN SAND-
10	11	WEATHERED SANDSTONE - FINE SAND W/SCATTERED SS CONCRETIONS- COLOR TAN- HARD-MOISTURE DRY.
11	25	WEATHERED SANDY SHALE- REMOLDS TO SANDY CLAY- SCATTERED GRAY BENTONITIC LENSES & A FEW FAINT OXIDE STAINS- SCATTERED SANDSTONE CONCRETIONS- COLOR LIGHT GRAY- MOISTURE DRY TO MOIST- FIRM TO VERY FIRM- MAX SIZE 1 1/2IN SANDSTONE CONCRETIONS.

Driller Certification

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 11:00:49 AM)

Site Name: FRADET ROBERT
GWIC Id: 143939

Section 1: Well Owner(s)

1) FRADET, ROBERT (MAIL)
BOX 155
COLUMBUS MT 59019 [06/13/1990]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	27	NE¼ NE¼

County	Geocode
STILLWATER	

Latitude	Longitude	Geomethod	Datum
45.636615	-109.235097	TRS-SEC	NAD83

Ground Surface Altitude	Ground Surface Method	Datum Date

Addition	Block	Lot
		B

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: FORWARD ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Wednesday, June 13, 1990

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	45	9

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	18	6				STEEL
18	45	6				PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
40	45	6			SAW CUT PERFS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	18	BENTONITE & CUTTINGS	

Section 7: Well Test Data

Total Depth: 45
Static Water Level: 15
Water Temperature:

Air Test *

30 gpm with drill stem set at _ feet for 4 hours.
Time of recovery _ hours.
Recovery water level 15 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

110SNGR - SAND AND GRAVEL (QUATERNARY)

From	To	Description
0	2	TOPSOIL
2	17	SANDY LIGHT SOIL
17	18	CLAY
18	45	GRAVEL; SHALE

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:
Company: MAYES DRILLING INC
License No: WWC-500
Date Completed: 6/13/1990

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 10:43:11 AM)

Site Name: EGELAND RON * MW 3
GWIC Id: 150952

Section 1: Well Owner(s)

1) EGELAND, RON (MAIL)
2727 CENTRAL AVE
BILLINGS MT 59102 [07/17/1995]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	22	SE¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.642095	-109.237766	TRS-SEC	NAD83

Ground Surface Altitude: Ground Surface Method: Datum: Date:

Addition: Block: Lot:

Section 3: Proposed Use of Water

MONITORING (1)

Section 4: Type of Work

Drilling Method: HOLLOW STEM AUGER
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Monday, July 17, 1995

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	19	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	9	2				PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
9	19	2			.020 SCREENS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	7	BENTONITE	

Section 7: Well Test Data

Total Depth: 20
Static Water Level:
Water Temperature:

Unknown Test Method *

Yield _ gpm.
Pumping water level _ 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

HANSEN ENVIRONMENTAL DRILLING FILE NO: 562

Section 9: Well Log

Geologic Source

Unassigned

From	To	Description
0	0.5	TOPSOIL ORGANICS
0.5	14.8	INTERBEDDED SANDY SILT LEAN CLAY VERY SOFT TO FIRM DARK YELLOWISH BROWN
14.8	20	POORLY GRADED SAND GRAVEL DENSE BROWN

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:
Company: HANSEN ENVIRONMENTAL DRILLING
License No: MWC-230
Date Completed: 7/17/1995

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 10:48:46 AM)

Site Name: MONTANA POWER CO
GWIC Id: 161013

Section 1: Well Owner(s)

1) MONTANA POWER COMPANY (MAIL)
PO BOX 897 COLUMBUS 59019
N/A N/A N/A [09/15/1993]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	22	NW¼ SW¼ SE¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.64118	-109.241751	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: Wednesday, September 15, 1993

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	53	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	48	6				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
48	53	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	

Section 7: Well Test Data

Total Depth: 48
Static Water Level: 17
Water Temperature:

Air Test *

50 gpm with drill stem set at _ feet for 2 hours.
Time of recovery 0.5 hours.
Recovery water level 17 feet.
Pumping water level 45 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
110SNGR - SAND AND GRAVEL (QUATERNARY)

From	To	Description
0	10	TOPSOIL
10	20	CLAY
20	50	SAND AND GRAVEL
50	53	SHALE

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:
Company: B & H
License No: WWC-309
Date Completed: 9/15/1993

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 11:12:17 AM)

Site Name: LINDELL RON
GWIC Id: 161014

Section 1: Well Owner(s)

1) LINDELL, RON (MAIL)
RT 1
PARK CITY MT 59063 [06/28/1994]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	27	NE¼ SE¼ NE¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.633879	-109.233774	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: Tuesday, June 28, 1994

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	28	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1.5	28	6				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
28	28	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	

Section 7: Well Test Data

Total Depth: 28
Static Water Level: 7
Water Temperature:

Air Test *

60 gpm with drill stem set at _ feet for 1 hours.
Time of recovery 0.01 hours.
Recovery water level 7 feet.
Pumping water level 28 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
110SNGR - SAND AND GRAVEL (QUATERNARY)

From	To	Description
0	1	TOPSOIL
1	28	GRAVEL

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:
Company: AAQUA DRILLING INC
License No: WWC-542
Date Completed: 6/28/1994

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 1:09:55 PM)

Site Name: WEBB JERRY
GWIC Id: 165304
DNRC Water Right: 101518

Section 1: Well Owner(s)

1) WEBB, JERRY (MAIL)
RR 1 BOX 2198
COLUMBUS MT 59019 [07/10/1997]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	16	NW¼ SW¼ NW¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.662944	-109.272905	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, July 10, 1997

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	13	8
12	37	7
37	38	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1.5	37	6				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
37	38	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	

Section 7: Well Test Data

Total Depth: 37
Static Water Level: 18
Water Temperature:

Air Test *

100 gpm with drill stem set at _ feet for 1 hours.
Time of recovery _ 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
110ALVM - ALLUVIUM (QUATERNARY)

From	To	Description
0	2	TOPSOIL
2	22	SANDSTONE & GRAVEL
22	41	SILT
41	47	SANDSTONE & GRAVEL

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:
Company: AAQUA DRILLING INC
License No: WWC-542
Date Completed: 7/10/1997

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 1:35:52 PM)

Site Name: CARAWAY PAUL & JUDITH
GWIC Id: 172194

Section 1: Well Owner(s)

1) CARAWAY, PAUL AND JUDITH (MAIL)
PO BOX 318
ABSAROKEE MT 59001 [07/10/1997]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	17	NE¼ NE¼ SE¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.659373	-109.275384	TRS-SEC	NAD83

Ground Surface Altitude: Ground Surface Method: Datum Date:

Addition: BOKMA
Block:
Lot:

Section 3: Proposed Use of Water

DOMESTIC (1)
IRRIGATION (2)

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, July 10, 1997

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	20	8
20	31	7
31	48	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1.5	31	6				STEEL
28	48	4				PLASTIC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
28	38	4			1/8X6 SAW PERF

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

Section 7: Well Test Data

Total Depth: 48
Static Water Level: 25
Water Temperature:

Air Test *

30 gpm with drill stem set at _ feet for _ hours.
Time of recovery 0.17 hours.
Recovery water level 25 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
110ALVM - ALLUVIUM (QUATERNARY)

From	To	Description
0	2	TOPSOIL
2	23	SILT
23	31	SANDSTONE & GRAVEL
31	48	SHALE

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:
Company: AAQUA DRILLING INC
License No: WWC-542
Date Completed: 7/10/1997

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/18/2010 10:38:46 AM)

Site Name: CITY OF COLUMBUS
GWIC Id: 192363

Section 1: Well Owner(s)

1) CITY OF COLUMBUS (MAIL)
400 3 AVE N
COLUMBUS MT 59019 [07/12/2001]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	22	SE¼ SE¼ SW¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.63935	-109.244408	TRS-SEC	NAD83

Ground Surface Altitude: Ground Surface Method: Datum Date:

Addition: Block: Lot:

Section 3: Proposed Use of Water

IRRIGATION (1)

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, July 12, 2001

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	11	8
11	21	7
31	32	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	31	6	0.250			STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
31	32	6			OPEN HOLE

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	

Section 7: Well Test Data

Total Depth: 31
Static Water Level: 6
Water Temperature:

Air Test *

65 gpm with drill stem set at 31 feet for 1 hours.
Time of recovery 0.08 hours.
Recovery water level 6 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
110SNGR - SAND AND GRAVEL (QUATERNARY)

From	To	Description
0	1	TOPSOIL TAN SOFT
1	17	CLAY TAN SOFT
17	31	GRAVEL GRAY MED

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:
Company: AAQUA DRILLING INC
License No: WWC-542
Date Completed: 7/12/2001

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/19/2010 9:23:51 AM)

Site Name: GREENWALT KEVIN
GWIC Id: 202589

Section 1: Well Owner(s)

1) GREENWALT, KEVIN (MAIL)
2895 HWY 10 E
PARK CITY MT 59063 [11/20/2002]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	23E	20	NW¼ NW¼ NE¼ SE¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.6464	-108.9104	NAV-GPS	NAD27

Ground Surface Altitude: Ground Surface Method: Datum Date:

Addition: Block: Lot:

Section 3: Proposed Use of Water

DOMESTIC (1)
IRRIGATION (2)
STOCKWATER (3)

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Wednesday, November 20, 2002

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	91	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	90.5	6	0.250			STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
90.5	91	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	CONT FED BENTONITE	

Section 7: Well Test Data

Total Depth: 90.5
Static Water Level: 60.3
Water Temperature:

Air Test *

25 gpm with drill stem set at 90 feet for 2 hours.
Time of recovery 0.25 hours.
Recovery water level 60.3 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
110CLVM - COLLUVIUM (QUATERNARY)

From	To	Description
0	2	TOPSOIL
2	55	SAND SANDY CLAY
55	74	SAND WITH BITS OF SANDSTONE RUBBLE
74	90.5	SAND GRAVEL
90.5	91	CLAY SHALE

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:
Company: PRO PUMP & EQUIPMENT INC
License No: WWC-508
Date Completed: 11/20/2002

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View field visits for this site
View water quality for this site

Site Name: WARK CHARLES
GWIC Id: 219498

Section 1: Well Owner(s)

1) WARK, CHARLES (MAIL)
2916 HIGHWAY 10
PARK CITY MT 59063 [06/13/2005]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	23E	20	SW¼ SE¼ SE¼ NE¼

County	Geocode
STILLWATER	

Latitude	Longitude	Geomethod	Datum
45.647	-108.9062	NAV-GPS	NAD83

Ground Surface Altitude	Ground Surface Method	Datum	Date
3473			6/13/2005

Addition	Block	Lot

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method:
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: N/A

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.
There are no casing strings assigned to this well.
There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 85
Static Water Level:
Water Temperature:

** 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

211TPCK - TELEGRAPH CREEK FORMATION (OF MONTANA GROUP)

Lithology Data

There are no lithologic details assigned to this well.

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:	
Company:	
License No: -	
Date Completed:	

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (7/8/2021 9:40:12 AM)

Site Name: MOORE, FRANK AND ROBIN
GWIC Id: 315171

Section 1: Well Owner(s)

1) MOORE, FRANK AND ROBIN (MAIL)
PO BOX 502
COLUMBUS MT 59019 [04/07/2021]
2) MOORE, FRANK AND ROBIN (WELL)
23 RAPELJE RD
N/A N/A N/A [04/07/2021]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	20E	17	SE¼ NE¼

County: STILLWATER
Geocode:

Latitude	Longitude	Geomethod	Datum
45.661666666667	-109.275555555556	NAV-GPS	WGS84

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: Wednesday, April 7, 2021

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	27	14
27	260	7.875

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	27	8	0.25		WELDED	STEEL
12	260	5				PVC-SDR 21

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
100	260	5		1/4X4	SAW SLOTS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	27	BENTONITE	
80	80	RUBBER FORMED PACKER	
100	100	RUBBER FORMED PACKER	

Section 7: Well Test Data

Total Depth: 260
Static Water Level: 100
Water Temperature:

Air Test *

1 gpm with drill stem set at 259 feet for 1 hours.
Time of recovery 24 hours.
Recovery water level 100 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	2	TOPSOIL
2	20	FRACTURED BROWN SANDROCKS AND CLAY
20	105	LIGHT BROWN SHALE, HARD
105	160	SHALE WITH SMALL SAND STRINGER
160	260	HARD SHALE

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: RUSSELL SCHELLE
Company: AMERICAN DRILLING & SUPPLY
License No: WWC-659
Date Completed: 4/7/2021

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

Go to GWIC website
Plot this site in State Library Digital Atlas
Plot this site in Google Maps
View scanned well log (5/16/2006 10:28:57 AM)

Site Name: BAKER MIKE
GWIC Id: 224997

Section 1: Well Owner(s)

1) BAKER, MIKE (MAIL)
54A BAKER DR.
PARK CITY MT 59063 [05/26/2005]

Section 2: Location

Township	Range	Section	Quarter Sections
02S	23E	28	SW¼ NW¼ NW¼

County
STILLWATER

Geocode

Latitude	Longitude	Geomethod	Datum
45.6392	-108.9083	NAV-GPS	NAD27

Ground Surface Altitude **Ground Surface Method** **Datum** **Date**

Addition **Block** **Lot**

Section 3: Proposed Use of Water

DOMESTIC (1)
STOCKWATER (2)
IRRIGATION (3)

Section 4: Type of Work

Drilling Method: ROTARY
Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Thursday, May 26, 2005

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	29	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	28	6	0.250		WELDED	STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
0	287	6			OPEN HOLE

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	287	BENTONITE	Y

Section 7: Well Test Data

Total Depth: 287
Static Water Level: 16.8
Water Temperature:

Pump Test *

Depth pump set for test 28 feet.
34 gpm pump rate with 7 feet of drawdown after 8 hours of pumping.
Time of recovery 0.25 hours.
Recovery water level 16.8 feet.
Pumping water level 0 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
110ALVM - ALLUVIUM (QUATERNARY)

From	To	Description
0	1	TOPSOIL
1	15	DRY SAND GRAVEL
15	28	WET SAND GRAVEL
28	287	SHALE, CLAY

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: PRO PUMP & EQUIPMENT INC
License No: MWC-508
Date Completed: 5/26/2005

Appendix B

Columbus 1

Site Alternative Engineer's Opinion of Probable Cost

STILLWATER COUNTY INDUSTRIAL / BUSINESS PARK FEASIBILITY STUDY

October 26, 2023

ITEM	ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
	Schedule 1 - Water, Sewer and Storm Drain Improvements				
101	Mobilization, Taxes, Bonds and Insurance	1	LS	$ 257,000.00	$257,000
102	Type 2 Pipe Bedding	2,000	CY	$ 45.00	$90,000
103	Imported Trench Backfill	2,000	CY	$ 30.00	$60,000
104	Connect to Existing Water Main	6	EA	$ 7,000.00	$42,000
105	8" Water Main	14,300	LF	$ 60.00	$858,000
106	Water Main Coupling	9	EA	$ 900.00	$8,100
107	Water Main Cross	2	EA	$ 900.00	$1,800
108	Water Main Tee	29	EA	$ 900.00	$26,100
109	Water Main Elbow	16	EA	$ 800.00	$12,800
110	Water Main Cap	2	EA	$ 800.00	$1,600
111	8" Gate Valve	30	EA	$ 2,500.00	$75,000
112	6" Gate Valve	4	EA	$ 2,200.00	$8,800
113	4" Gate Valve	1	EA	$ 2,000.00	$2,000
114	Fire Hydrant Assembly	16	EA	$ 7,500.00	$120,000
115	1" Water Service and Curb Stop	16	EA	$ 2,100.00	$33,600
116	1 1/2" Water Service and Curb Stop	8	EA	$ 2,500.00	$20,000
117	2" Water Service and Curb Stop	9	EA	$ 2,800.00	$25,200
118	6" Fire services & gate valve	33	EA	$ 4,600.00	$151,800
119	Sanitary Sewer Lift Station	1	LS	$ 300,000.00	$300,000
120	6" Sanitary Froce Main	2,270	LF	$ 55.00	$124,850
121	48" Sanitary Sewer Manhole	21	EA	$ 3,500.00	$73,500
122	48" Sanitary Sewer Manhole Additional Depth	170	VF	$ 120.00	$20,400
123	8" Sanitary Sewer Main	7,000	LF	$ 65.00	$455,000
124	6" Sanitary Sewer Service	33	EA	$ 2,500.00	$82,500
125	48" Storm Drain Manhole	10	EA	$ 3,500.00	$35,000
126	60" Storm Drain Manhole	8	EA	$ 4,500.00	$36,000
127	2'x3' Storm Drain Inlet	30	EA	$ 3,900.00	$117,000
128	Storm Drain Discharge Control Structure	1	LS	$ 10,500.00	$10,500
129	30" Dia. Storm Drain Pipe	2,400	LF	$ 110.00	$264,000
130	24" Dia. Storm Drain Pipe	800	LF	$ 85.00	$68,000
131	18" Dia. Storm Drain Pipe	1,700	LF	$ 80.00	$136,000
132	15" Dia. Storm Drain Pipe	1,200	LF	$ 75.00	$90,000
133	12" Dia. Storm Drain Pipe	800	LF	$ 70.00	$56,000
134	18" Dia. CSP FES	1	EA	$ 500.00	$500
135	24" Dia. CSP FES	4	EA	$ 600.00	$2,400
136	30" Dia. CSP FES	1	EA	$ 800.00	$800
137	Riprap	250	SY	$ 60.00	$15,000
				Schedule 1 Subtotal	$3,681,000

Schedule 2 - Grading and Street Improvements					
201	Mobilization, Taxes, Bonds and Insurance	1	LS	$ 337,000.00	$337,000
202	Stormwater Management and Erosion Control	1	LS	$ 40,000.00	$40,000
203	Seeding	30	Acre	$ 750.00	$22,500
204	Stripping Top Soil	21,000	CY	$ 16.00	$336,000
205	Excavation Above Subgrade	25,000	CY	$ 15.00	$375,000
206	6 ounce Non-Woven Geotextile Fabric	48,000	SY	$ 2.00	$96,000
207	Tensar BX1200 Geogrid	4,800	SY	$ 3.00	$14,400
208	3" Minus Subbase Course	2,400	CY	$ 35.00	$84,000
209	1 1/2" Minus Crushed Base Course	16,000	CY	$ 45.00	$720,000
210	4" Asphalt Pavement (Streets)	45,000	SY	$ 30.00	$1,350,000
211	Standard Concrete Curb and Gutter	19,000	LF	$ 25.00	$475,000
212	6' Wide Concrete Valley Gutter	700	SF	$ 12.00	$8,400
213	Curb Turn Fillets	600	SF	$ 25.00	$15,000
214	Concrete Sidewalk	95,000	SF	$ 9.00	$855,000
215	Concrete Pedestrian Ramp	2,600	SF	$ 12.00	$31,200
216	Detectable Warning Panel	264	SF	$ 55.00	$14,520
217	Centerline Monument Box	29	EA	$ 600.00	$17,400
218	Pavement Marking and Signage	1	LS	$ 40,000.00	$40,000
				Schedule 2 Subtotal	$4,831,000
				Subtotal Opinion of Probable Cost	$8,512,000
				Contingency (15%)	$1,277,000
				Engineering, Construction Administration, Legal (15%)	$1,277,000
				Total Opinion of Cost	**$11,066,000**

	Notes:
1	Opinion of Probable Cost is based on bid tabulations for other similiair work and may not refelect actual bid prices at the time of construction.
2	Opinion of Probable Cost is based on a concept layout for the site and many assumption regarding the ability of existing City of Columbus infrastructure to provide water and sanitary sewer services to the site as well as other assumptions related to on-site soils, proposed land uses, and no need for off-site access improvements.
3	Opinion of Probable Cost is for civil improvements only and excludes landscaping, gas, electrical and telecomunication services.

Appendix C

Columbus Zoning Overview Map