

**CONSTRUCTION COMPLETION REPORT
FOR THE
McLAREN TAILINGS ABANDONED MINE SITE
PUMPING WELL INSTALLATION, DEVELOPMENT, AND TESTING
DEQ CONTRACT NO. 410006**

Prepared for:

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1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

The purpose of the pumping well installation, development, and testing work performed under DEQ Contract No. 410006 was to provide dewatering wells that will adequately dewater the McLaren Tailings Abandoned Mine Site. The original scope of work for this project included the installation, development, and testing of 18 pumping wells, and included alternate well locations to be utilized for boreholes which did not produce the desired yield. The actual work performed included site preparation, drilling, development, and testing of 17 pumping wells, and drilling and abandonment of 4 unproductive boreholes.

The pumping well installation, development, and testing commenced on September 10, 2009 and was completed on October 27, 2009. This Construction Completion Report (CCR) documents the activities required to implement this project.

1.2 LOCATION AND ACCESS

The project site is owned by the Montana Board of Environmental Review and the Department of Environmental Quality (DEQ). The site is located in Park County in Section 25 of Township 9 South, Range 14 East of the Montana Principal Meridian at an elevation of approximately 7,650 feet above mean sea level (amsl) and is accessed by traveling approximately 1 quarter of a mile east of Cooke City, Montana, along Montana Highway 212 and turning south onto a dirt road that exits the highway. The site is located less than 500 feet south of the highway and encompasses an area of approximately 20 acres (Figure 1).

1.3 SITE HISTORY

An Expanded Engineering Evaluation/Cost Analysis (EEE/CA) was completed in 2002. Results of environmental and engineering investigations performed prior to 2002 are summarized in the Draft Final Engineering Evaluation/Cost Analysis for the McLaren Tailings Site Cooke City, Montana (DEQ/MWCB-Pioneer, 2002). The preferred reclamation alternative was Alternative 5b: On-Site Disposal in an Un-Lined Repository with a Multi-Layered Cap. All mine waste materials currently located at the site (tailings impoundment and dam, waste rock dump, and materials within the old stream channel) were to be excavated and disposed of in an on-site repository constructed on the elevated bench located southwest of the current location of the tailings impoundment. The multi-layered cap installed on the repository was to consist of an impermeable liner, a drainage layer, and the vegetated cover component of the cap, which will be a minimum of two feet thick.

Field investigations to support the site reclamation design were conducted in September 2008. The work included the installation of eleven 1-inch piezometers and one 4-inch pumping well, soil, groundwater, and surface water sampling, and aquifer testing. The 2008 investigation results and the conceptual design for the reclamation were summarized in the *Final Design Report for the McLaren Tailings Abandoned Mine Site, Cooke City, Montana* (DEQ/MWCB-Pioneer, 2009).

The DEQ initiated the development of a final reclamation design and construction bid package for the site in 2009. During the final design phase it was determined that it would be advantageous to install the pumping wells during the fall of 2009 to expedite construction activities in 2010. Under DEQ Contract No. 410006, the pumping wells were installed, developed, and tested. This CCR summarizes the construction activities associated with pumping well installation, development, and testing.

1.4 PROJECT OBJECTIVES

The objective this project was to install pumping wells to be utilized for dewatering the McLaren Tailings. The designed dewatering system consisted of pumping wells that would be utilized to intercept groundwater flows from entering the site and groundwater from within the tailings impoundment itself. Based on pumping test data it was determined that the tailings could be dewatered by dewatering the underlying alluvium and by intercepting the adjacent groundwater inflows. To intercept adjacent groundwater inflows the dewatering design consisted of pumping wells located on the south (C1-1, C1-2, C1-3, and C1-4) and pumping wells located on the north and east boundaries (C3-1, C3-2, C3-3, C3-4, C3-5, C3-6, C3-7, C3-8, and C3-10) of the site as shown on Figure 2. In addition to the pumping wells along the north, south, and east boundaries of the site, three pumping wells (C2-1, C2-2, and C2-3) were installed in the central portion of the tailings impoundment as shown on Figure 2. Based on groundwater modeling results, the perimeter wells located on the north and south boundaries were designed with a flow rate of 30 to 60 gallons per minutes (gpm). The pumping wells within the tailings (C2-1, C2-2, and C2-3) and the one pumping well (C3-9) located on the east end of the site were designed with flow rates of 100 to 150 gpm. Therefore, it was imperative to install pumping wells that would meet or exceed the design flow rates to effectively dewater the site during construction. As part of the installation effort, each well was developed for increased productivity and pumped to determine actual productivity. Three hour step-drawdown was performed to determine the appropriate pump size for each well, and measure the response of the surrounding aquifer to pumping. Groundwater samples were collected from each well to characterize water quality.

2.0 **RESPONSIBLE PARTIES**

2.1 DEQ COORDINATION

The DEQ Project Manager, Mr. Tom Henderson, was responsible for bidding the project, as well as for providing technical and regulatory review during the design process.

Mr. Tom Henderson
Montana Department of Environmental Quality
Mine Waste Cleanup Bureau
P.O. Box 200901
Helena, Montana 59620
Telephone: 1-406-841-5052

2.2 CONTRACTOR

The Contractor for the project was O'Keefe Drilling Company (O'Keefe). The Contractor's address and telephone number are as follows:

O'Keefe Drilling Co.
2000 Four Mile Vue Rd.
Butte, Montana 59701
Telephone: (406) 494-3310

Mr. Dan O'Keefe served as the O'Keefe Project Manager, Mr. Larry Gagnon served as O'Keefe's on-site supervisor for drilling and well development, and Mr. Ed Cosens served as O'Keefe's on-site supervisor for test pumping.

2.3 RECLAMATION AND ENGINEERING PLANNING

Under contract with the DEQ, Pioneer was responsible for planning and providing documentation necessary to facilitate the installation of pumping wells with the appropriate decision-making tools necessary for proper completion and testing. Pioneer was also responsible for preparing the final design and engineering specifications for the project. Under contract with the DEQ, Pioneer was responsible for construction oversight. The engineer's address and telephone number are as follows:

Pioneer Technical Services, Inc.
P.O. Box 3445
63 ½ West Broadway
Butte, Montana 59702
Telephone: (406) 782-5177

2.4 QUALITY ASSURANCE INSPECTION

Pioneer performed the quality assurance (QA) inspection for the project. Mr. Will Goldberg and Mr. Mike Borduin were the full-time on-site inspectors. Mr. Joe McElroy and Mr. Mike Borduin were the design engineers, and Mr. Joe McElroy was the Project Manager.

3.0 **CHRONOLOGICAL LISTING OF EVENTS**

3.1 PRE-BID CONFERENCE

A non-mandatory Pre-Bid Conference was held at the project site on August 14, 2009 at 1:00 pm. Prospective bidders convened at the Super 8 Motel parking lot and then proceeded to the site. Two prospective bidders attended the Pre-Bid Conference. A copy of the Pre-Bid Conference meeting minutes are included in Appendix A.

3.2 BID DATE

The bid package was advertised on August 11, 2009 and posted on the DEQ website, located at <http://svc.mt.gov/gsd/onestop/SolicitationList.aspx?AgencyID=4>. In addition to the bid opening posted on the internet, approximately nine drilling companies were contacted directly by DEQ to ensure that they were aware of the bid package.

3.3 BID OPENING

Bid opening occurred on August 25, 2009. One qualified bidder (O'Keefe) responded with a bid of \$333,475.00. This bid was revised by O'Keefe on August 26 to \$303,435. The reduction in the bid price was based on the use of a drilling support truck instead of the drilling rig to develop the pumping wells, and reduced costs associated with site preparation work. The bid price was further reduced to \$282,310, based on the modification to the pumping well construction specifications agreed to by the DEQ during the Pre-Award Conference. The Engineers estimate for the project was \$282,171. These costs are summarized in Table 3-1.

3.4 CONTRACT AWARD

The Contract was awarded to O'Keefe, the lowest bidder for the project, and a Pre-Award Conference was held on August 27, 2009. The O'Keefe bid was discussed, along with their ability to complete the project on time. O'Keefe confirmed that they could complete the project for the amount bid, in the time frame specified (60 working days), and with the equipment listed.

O'Keefe, at this time, proposed an alternate scope of work, which changed the construction method for each well. O'Keefe proposed the use of a telescoping stainless steel screen as opposed to the specific PVC construction that required the installation of a filter pack material. The use of the stainless steel screen required the use of the existing alluvium materials as a filter pack material. After review of available photos of the alluvium materials, it was determined the use of the alluvium soil as a filter material would be suitable. Also the use of the stainless steel screen allowed for a more vigorous method for developing the pumping wells. There was a concern that the proposed PVC screen would potentially break during developing methods. The alternate well construction proposed by O'Keefe was comparable to that proposed, easier to install and develop, and had a cost advantage. After review of O'Keefe's alternate construction method, it was determined by DEQ and the Engineer to be equivalent, and therefore approved for use at the site. The alternative pumping well construction method is detailed in Section 4.1 and in Sheets GWD-1AB and GWD-2AB in Appendix E.

Other items discussed included project organization; site conditions and constraints; site access and preparation; submittals (Section 18 of Special Provisions); sequencing; and equipment.

The Notice of Award was sent to O'Keefe by the DEQ on August 27, 2009 and a modified notice of award was issued on September 4, 2009, which had the final contract price of \$282,310. The contract was signed by O'Keefe on September 8, 2009. A copy of the Pre-Award Meeting Minutes is included in Appendix A.

3.5 CONTRACT AGREEMENT

The Contract agreement with O'Keefe was signed on September 8, 2009. The Notice to Proceed was issued on September 9, 2009, with an immediate start date. O'Keefe was to complete all work within 60 calendar days for an anticipated completion date of November 7, 2009.

3.6 CONSTRUCTION START-UP

A Pre-Construction meeting was held at Pioneer's Butte office on September 3, 2009. A copy of the Pre-Construction Meeting Minutes is included in Appendix A. The proposed O'Keefe construction schedule and sequencing was discussed. Other items discussed included screen and casing delivery, storm water control, and site access. Brief weekly progress meetings were to be held at the end of each week at the project site. O'Keefe stated that their work schedule would consist of ten 12-hour days on-site and 4 days off.

O'Keefe mobilized equipment to the site on September 9, 2009.

3.7 CONSTRUCTION OVERVIEW

O'Keefe started work on September 10, 2009 and completed all construction activities except snow post installation by September 27, 2009. On September 28, 2009, O'Keefe demobilized from the site, and on October 27, 2009, O'Keefe's subcontractor completed installation of the snow posts at the required locations. All required work was completed on October 27, 2009, for a total contract time of 47 days.

3.8 REQUESTS FOR PAYMENT

O'Keefe issued one Request for Payment for the project. A copy of the Request for Payment is included in Appendix B.

Pay Request #1 was for total amount of \$262,757.50. This pay request included the work completed from project start-up through October 27, 2009.

3.9 CHANGE ORDERS

One change order was issued during the project. Change Order # 1 was for restocking 20 linear feet of stainless steel screen that was not utilized on the project and the reduced quantities that resulted from only installing 17 pumping wells at the site. Change Order # 1 reduced the contract amount from \$282,310.00 to \$262,757.50. Change Order # 1 is provided in Appendix B.

4.0 **CONSTRUCTION**

4.1 SUMMARY OF FIELD WORK

The original scope of work consisted of installing, developing, and test pumping 18 pumping wells. Due to 4 unproductive boreholes drilled along the southern boundary of the site, 17 pumping wells were installed, and 4 boreholes were abandoned with bentonite (Figure 2).

Prior to the construction of the drilling pads and drilling of pumping wells C3-4, C3-5, C3-6, C3-7, the Contractor was required to install 365 linear feet of silt fence to mitigate the potential of waste rock, drilling cuttings, and drilling fluids from being released to Soda Butte Creek. The location of the installed silt fence can be found on Figure 2. Photos of the silt fence installation can be found in Appendix C-2 and Appendix H.

Installation of the pumping wells consisted of utilizing an air rotary drill rig to advance 8-inch inside diameter (ID) steel casing down the borehole as it was being drilled. The steel casing and borehole were drilled to a depth approved by the Engineer. The productivity of the well was estimated by blowing air down the drill rod to the bottom of the borehole and casing utilizing the drill rig's air compressor for several minutes. After determining that the well productivity was adequate, the Johnson Screen Stainless Steel Vee-Wire[®] screen was installed in the bottom of the well and the steel casing retracted the appropriate distance to fully expose the screen, leaving a K-packer located at the top of the screen within the steel casing. Depending on the pumping well productivity, one of two lengths of Johnson screens were installed. Pumping wells C1-1, C1-2, C1-3, C1-4, C3-1, C3-2, C3-3, C3-4, C3-5, C3-6, C3-7, C3-8, and C3-10 were low productivity wells (30 to 60 gpm) and were installed utilizing a 20-foot length of screen as shown on Sheet GWD-1AB in Appendix E. The total length of the screen for the low productivity wells was 22.67 feet with an 8-inch bottom cap, 20 feet of 0.025 slot screen, and 2-feet of tightwind screen located at the top. There were four high pumping wells designated as high productivity wells. The high productivity pumping wells were C2-1, C2-2, C2-3, and C3-9 as shown on Figure 2. These wells were installed utilizing a 40-foot Johnson screen that consisted of a forty feet of 0.025 slot screen, 2-feet of tightwind screen at the top, and an 8-inch bottom cap. The high productivity pumping wells were installed as shown in Sheet GWD-2AB in Appendix E.

To seal the outer well casing from infiltrating surface water, bentonite crumbles were mounded against the casing as it was driven downwards.

A summary of well construction details is provided in Table 4-1.

If, after drilling the soil boring, there was no water or the productivity was a fraction of the design pumping rate the soil boring was abandoned and the pumping well moved to an alternate location. The soil borings for these unproductive wells were abandoned utilizing 3/8-inch Kwik-Plug (bentonite). All the rod and casing was removed from the soil borings and filled with the Kwik-Plug (bentonite) materials. The soil boring locations that were abandoned can be found on Figure 2. The soil boring logs can be found in Appendix F.

Development of each pumping well consisted of utilizing a portable air compressor, a pump truck, and the combination of surge-block and pressurized air, as described in the Pre-Construction Meeting Minutes (Appendix A). The surging mechanism was equipped with pressurized air to facilitate aggressive well development with simultaneous well surging, delivery of compressed air to the well screen, and extraction of suspended sediment. Specific

development techniques varied from well to well depending on the quantity of sediment in the wells; however, the general development technique involved alternating between the following:

1. Surging the full length of saturated screen while blowing through the surging mechanism with compressed air and extracting suspended sediment;
2. Use of the surging mechanism without the application of compressed air; or
3. Blowing through the stationary surging mechanism with compressed air.

Each well was determined to be developed when the water from the well was reduced to a turbidity of 5 nephelometric units (NTUs) or the well had been developed for a minimum of four hours.

Test pumping of each well consisted of a three hour step-drawdown test conducted at three different pumping rates, if appropriate. The objectives of the step-drawdown tests were to determine the appropriate pump size for each well, determine the response of the surrounding aquifer to the test pumping, and to collect field parameters and groundwater samples from each well.

For any given pumping well, pumping rates for the step-drawdown tests were determined in the following manner. The initial (first hour) pumping rate was determined based on the estimated productivity of the well from the initial well development utilizing air lift techniques performed by the well driller (this consisted of blowing air down the drill rod to the bottom of the borehole and casing utilizing the drill rig's air compressor for several minutes to obtain an estimated flow rate). If, after pumping for one hour at the estimated flow rate, the drawdown in the well was at or near the pump, the pumping rate was either decreased or held at the same rate for the remainder of the three hour step-drawdown test. If, after pumping at the estimated flow rate for one hour, the drawdown distance in the well was a small fraction of the remaining water column height above the pump, the pumping rate was doubled. If, after pumping for two hours, the drawdown in the well was at or near the pump, the pumping rate was either decreased or held at the same rate for the remainder of the three hour step-drawdown test. If, after pumping for two hours at the increased flow rate, the remaining water column height above the pump was several feet or more above the pump intake, the pumping rate was again doubled. In most pumping wells, the height of the water column above the pump was greater than ten feet. However, at pumping well C3-6 the height of the water column above the pump was approximately 3 feet. When pumping this well at the initial pumping rate of 11 gpm, the water level in the well was drawn down to a level close to the intake of the pump. For this reason, the pumping rate in this well was held steady for the duration of the three hour step-drawdown test. The maximum pumping rates and draw downs can be found in Table 4-1.

While conducting the three hour step-drawdown it was necessary to control the release of sediment and contaminated water from the pumping wells. To control the release of sediment and contaminated water the Contractor was required to discharge the pumped water from pumping wells to the location shown on Figure 2. This area was located within the tailings impoundment on the south side of the site. The produced water from the pumping wells was pumped to the designated area and allowed to infiltrate. At no time was produced water allowed to enter Soda Butte Creek.

Prior to the completion of the three hour step-drawdown test on each pumping well, water quality samples were collected for filed parameters and laboratory analysis. Unfiltered water samples were collected from the pumping well discharged and analyzed for the following field parameters: pH; temperature; specific conductance; dissolved oxygen; and turbidity. In addition, water quality samples were collected and sent to Energy Laboratories, Inc. located in Helena, Montana for analysis. The water quality samples were analyzed for the following parameters and total metals: pH; Conductivity; Total Dissolved Solids; Total Alkalinity; Aluminum; Cadmium; Copper; Iron; Manganese; and Zinc. A summary of well development, test pumping, field parameters, and water chemistry is provided in Table 4-2.

4.2 MAJOR EQUIPMENT LIST

Table 4-3 lists the major pieces of equipment used on this project.

4.3 CONTRACTOR EMPLOYEES

The Contractor utilized from one to four employees on the project site, the majority of the labor involved one drill rig or pump truck operator, with the remaining personnel performing general labor tasks and operating equipment as necessary. In addition to the Contractor's employees, Bear Claw Construction Company was subcontracted to assist the Contractor with site access, drill pad construction, loading and unloading of well materials, and the installation of silt fence and snow posts.

4.4 CONSTRUCTION ACTIVITIES

The following paragraphs summarize the construction events in chronological order for the McLaren Tailings Abandoned Mine Site Pumping Well Installation. The daily field notes and daily construction logs with photographs are provided in Appendix C, laboratory data are included in Appendix D, As-Built drawings are provided in Appendix E, well logs and abandoned borehole logs are located in Appendix F, Pumping Test Results are in Appendix G and a photo log of the construction activities are in Appendix H.

September 9, 2009 (Day 2 of Contract) - O'Keefe mobilized equipment to the site.

September 10, 2009 (Day 3 of Contract) - A tailgate safety meeting was conducted with all on-site personnel, consisting of O'Keefe, Bob Smith of Bear Claw Construction, and Will Goldberg of Pioneer. O'Keefe drilled boreholes C1-5, C1-4, C1-3 and C1-1, and due to absence of water, plugged and abandoned all 4 boreholes. The total depth drilled and abandoned was 91.5 feet. Pioneer collected grab samples of drill cuttings for visual examination and photographs. Bear Claw Construction provided support services including preparing drill pads by leveling area as necessary, removing trees, and unloading steel casing and well screen. O'Keefe brought four 20-foot pieces of v-wire stainless steel well screen. Northwest Pipe delivered six 21-foot lengths of 8-inch inside diameter (ID) steel casing at 8:00 am. Trucking company delivered 30 lengths of 20-foot 8-inch ID steel casing at 2:00 p.m.

September 11, 2009 (Day 4 of Contract) - O'Keefe drilled and completed pumping wells A-1 and C3-10, and drilled to a depth of 26 feet in C1-2. O'Keefe developed well A-1 for 4 hours by utilizing the surging mechanism and compressed air. Pioneer collected grab samples of drill cuttings for visual examination and photographs. An electrical short caused 45 minutes of drill rig down time. Bear Claw Construction continued to provide support. At 2:00 p.m., O'Keefe delivered six 20-foot pieces of v-wire stainless steel well screen and one 40-foot screen.

September 12, 2009 (Day 5 of Contract) - O'Keefe drilled and completed pumping wells C1-2, A-2, and A-3. Pioneer collected grab samples of drill cuttings for visual examination and photographs. O'Keefe developed wells C3-10 and C1-2 for 4 hours by utilizing the surging mechanism and compressed air. Field turbidity measurements were taken after approximately 4 hours of development. The results of the field turbidity measurements were 11.2 NTU at C3-10 and 1.07 NTU at C1-2. Bear Claw Construction continued to provide support services.

September 13, 2009 (Day 4 of Contract) - O'Keefe drilled and completed pumping wells C3-8, C3-7 and drilled C3-6 to a depth of 43 feet. Pioneer collected grab samples of drill cuttings for visual examination and photographs. In addition, O'Keefe developed pumping wells A-3 and A-2 for 4 hours utilizing the surging mechanism.

Ivan Tyson, National Park Service Road Maintenance Supervisor for highway from Silver Gate Entrance to top of the pass stopped to visit with Bob Smith and Will Goldberg. Mr. Tyson was given a short tour of the drilling operation.

Asplund Construction mobilized a Deere excavator onto the site for trenching the buried power line for the water treatment building.

September 14, 2009 (Day 6 of Contract) - O'Keefe drilled and completed pumping wells C3-6, C3-5, and C3-4 and drilled to a depth of 19 feet in C3-9. Pioneer collected grab samples of drill cuttings for visual examination and photographs. In addition, O'Keefe developed wells C3-8 and C3-6 for 4 hours and moved to C3-7 and began developing. Bear Claw Construction continued to provide support services. Mike Borduin arrived on-site at 12:30 p.m., Tom Henderson of DEQ arrived on-site at approximately 3:00 p.m., and Marty Bennett of Pioneer arrived on-site at approximately 5:00 p.m.

September 15, 2009 (Day 7 of Contract) - O'Keefe completed pumping wells C3-9, C3-2 and C3-3. Pioneer collected grab samples of drill cuttings for visual examination and photographs. In addition, O'Keefe completed development of pumping wells C3-6 and C3-5, and began development of C3-4 for 1.5 hours. Bear Claw Construction continued to provide support services. Both Tom Henderson of DEQ and Marty Bennett of Pioneer remained on-site for the entire day.

September 16, 2009 (Day 8 of Contract) - O'Keefe drilled and completed pumping wells C3-1 and C3-3 and re-installed the screen at pumping well C3-3. Upon completing development of pumping well C3-3, the operator pulled the development apparatus out of the borehole and lifted the 20-foot section of screen from the borehole. The screen could not be pushed back down as the borehole had caved from 37 to 57 feet below ground surface (bgs). The dual air rotary rig

was required to set up on the borehole to drill and set the screen. Due to the slightly different completion, the screen was set at 56 feet 4 inches instead of 57 feet. Total delay was approximately ½ hour for pump truck and 4 hours for dual air rotary rig.

Pioneer collected grab samples of drill cuttings for visual examination and photographs. O'Keefe completed development of pumping well C3-4 and C3-2. Bear Claw Construction continued to provide support services.

In addition to drilling activities, Bear Claw Construction installed 365 linear feet of silt fence adjacent to Soda Butte Creek as shown on Figure 2. Photos of the silt fence installation can be found in Appendix C-2 and in Appendix H.

September 17, 2009 (Day 9 of Contract) - O'Keefe completed pumping wells C3-9, C2-2, and C2-3. Pioneer collected grab samples of drill cuttings for visual examination and photographs. O'Keefe completed development of pumping wells C3-3 and C3-1 for 4 hours and began development of pumping well C3-9. Bear Claw Construction continued to provide support services. Ed Cosens of Chamberlain Pump arrived on-site in the late afternoon to deliver a trailer containing the larger generator and pumps, as well as discuss the pump testing scope of work for the following week.

Significant delays were caused on this day with the Dual Auger Rig. Upon pulling back steel casing on pumping well C2-2, the top weld broke. This weld was located approximately 2 feet bgs, and the drillers were able to re-connect and complete the well. While setting the screen on pumping well C2-3, the borehole heaved and pushed the screen and four sections of 4-inch diameter drill rod up approximately 21.5 feet. The drillers were not actively holding the screen in place, instead were relying on the weight of the drill rod to hold the screen down. In an attempt to extract the screen, re-drill the borehole, and re-set the screen, O'Keefe made several attempts to remove the screen. After several failed attempts were made in 2 hours, O'Keefe was directed by Pioneer to complete the well by further withdrawing the casing while pushing down on the screen. This resulted in exposing approximately 18.5 feet of the screen. Total delay was approximately 4 hours for dual air rotary rig and a loss of 21.5 feet in total depth at C2-1.

At the end of the day, O'Keefe packed up all of the equipment and made arrangements with Bear Claw Contracting to remove the waste portions of the remaining steel casing.

September 18, 2009 (Day 10 of Contract) - O'Keefe mobilized equipment back to Butte, with the exception of the trailer delivered by Chamberlain Pump. Pioneer returned to Butte.

September 21, 2009 (Day 13 of Contract) - Chamberlain Pump mobilized equipment to site.

September 22, 2009 (Day 14 of Contract) - Pioneer mobilized to site to meet Chamberlain Pump. At the direction of Pioneer, Chamberlain Pump completed test pumping on pumping well C1-2 (formerly A-3) and C1-4 (formerly A-1). Pioneer collected manual static water levels and also deployed four pressure transducers to record the response of the surrounding aquifer to the test pumping. Chamberlain Pump completed development of pumping well C3-9 and began development of pumping well C2-1.

September 23, 2009 (Day 15 of Contract) - Chamberlain Pump completed test pumping on pumping well C1-3 (formerly A-2) and pumping well C1-1 (formerly C1-2). Pioneer collected manual static water levels and also deployed four pressure transducers to record the response of the surrounding aquifer to the test pumping. Chamberlain Pump completed development of pumping well C2-1 and set up to develop of pumping well C2-2. Will Goldberg of Pioneer arrived on-site to provide oversight of Asplundh and Rocky Mountain Construction. Ed Cosens mobilized to Butte.

September 24, 2009 (Day 16 of Contract) - Chamberlain Pump completed partial test pumping on pumping wells C3-10, C3-1, and C3-7. Pioneer collected manual static water levels and also deployed four pressure transducers to record the response of the surrounding aquifer to the test pumping. Chamberlain Pump completed development of pumping well C2-2. Will Goldberg of Pioneer continued oversight of Asplundh and Rocky Mountain Construction. A second pumping truck returned to site with Steve Malkovich of O'Keefe.

September 25, 2009 (Day 17 of Contract) - Chamberlain Pump completed the partial test pumping on pumping well C3-10, and completed test pumping on pumping wells C3-5 and C3-3. Pioneer collected manual static water levels and also deployed four pressure transducers to record the response of the surrounding aquifer to the test pumping. Chamberlain Pump set up to develop pumping well C2-3. Will Goldberg of Pioneer continued oversight of Asplundh and Rocky Mountain Construction and returned to Butte.

September 26, 2009 (Day 18 of Contract) - Chamberlain Pump completed test pumping on pumping wells C3-4, C3-9, C3-2, and C2-2. Pioneer collected manual static water levels and also deployed four pressure transducers to record the response of the surrounding aquifer to the test pumping. Chamberlain Pump completed partial development of pumping well C2-3.

During the test pumping and development of pumping well C2-3, the water produced by the activities could not be contained within the existing impoundments. Because pumped water was not infiltrating into the existing channel below the culvert sufficiently, operations were temporarily suspended. At this point work was stopped, and alternatives were considered, which included constructing a larger impoundment or piping water to the existing settling pond. Upon further evaluation, it was determined that the equipment and/or piping were unavailable to construct a larger impoundment or pipe water to the existing sediment pond.

Pioneer provided direction to Bear Claw Construction on the locations to install snow posts.

September 27, 2009 (Day 19 of Contract) - Chamberlain Pump completed test pumping on pumping wells C2-1 and C2-3 for one hour each. Pioneer collected manual static water levels and also deployed four pressure transducers to record the response of the surrounding aquifer to the test pumping. Chamberlain Pump completed the four hours of development for well C2-3. Chamberlain Pump packed up the remainder of all on-site construction equipment and trash for transport back to Butte.

September 28, 2009 (Day 20 of Contract) - Chamberlain Pump mobilized back to Butte.

October 27, 2009 (Day 47 of Contract) - Bear Claw Construction completed the installation of 17 snow posts at the locations specified by Pioneer oversight.

5.0 QUANTITIES USED

5.1 PROJECT SUMMARY

The project was completed in 20 working days and 47 calendar days, for a total cost of \$262,757.50. The pay request in Appendix B summarizes the final quantities and costs associated with each bid item.

6.0 TOTAL PROJECT COSTS

The total construction cost for the McLaren Tailings Abandoned Mine Site Pumping Well Installation was \$262,757.50. O'Keefe's original bid was \$282,310 and one change order was issued for the restocking of 20 linear feet of vee-wire stainless steel screen and the reduction in quantities that resulted from installing 17 pumping wells versus 18 pumping wells.

The total engineering costs for the project, including preparation of the bid package and oversight was \$37,541.68. Costs for engineering design and bid specification preparation (DEQ/MWCB-Pioneer, 2002) were \$3,259.35. Construction inspection and management costs were \$34,282.33. The total project cost was \$300,299.18. Table 6-1 summarizes engineering and construction costs for the project.

7.0 POST CONSTRUCTION

7.1 SITE CONDITIONS AFTER COMPLETION

The McLaren Tailings Abandoned Mine Site Pumping Well Installation Project is 100% complete and ready for use in the McLaren Tailings Abandoned Mine Site Reclamation Project. All of the pumping wells have been installed, developed, and test pumped.

7.2 AS-BUILT DRAWINGS

Pioneer prepared the As-Built Drawings (Appendix E) based on changes in the well construction and productivity of the wells. The As-Built Drawings found in Appendix E represent the site conditions after completion of construction activities.

7.3 WELL LOGS

Pioneer prepared soil boring and well completion logs as the pumping wells were completed. A soil boring and well completion log for each pumping well and abandoned well can be found in Appendix F.

7.4 PUMPING TESTING RESULTS

During the testing of the pumping wells, transducers were placed in the pumping well and nearby wells to determine what effects the pumping rates had on the aquifer. The transducer data from the each pumping well tests have been placed in spreadsheets and provided in Appendix G for future analysis.

8.0 **PHOTOGRAPHS**

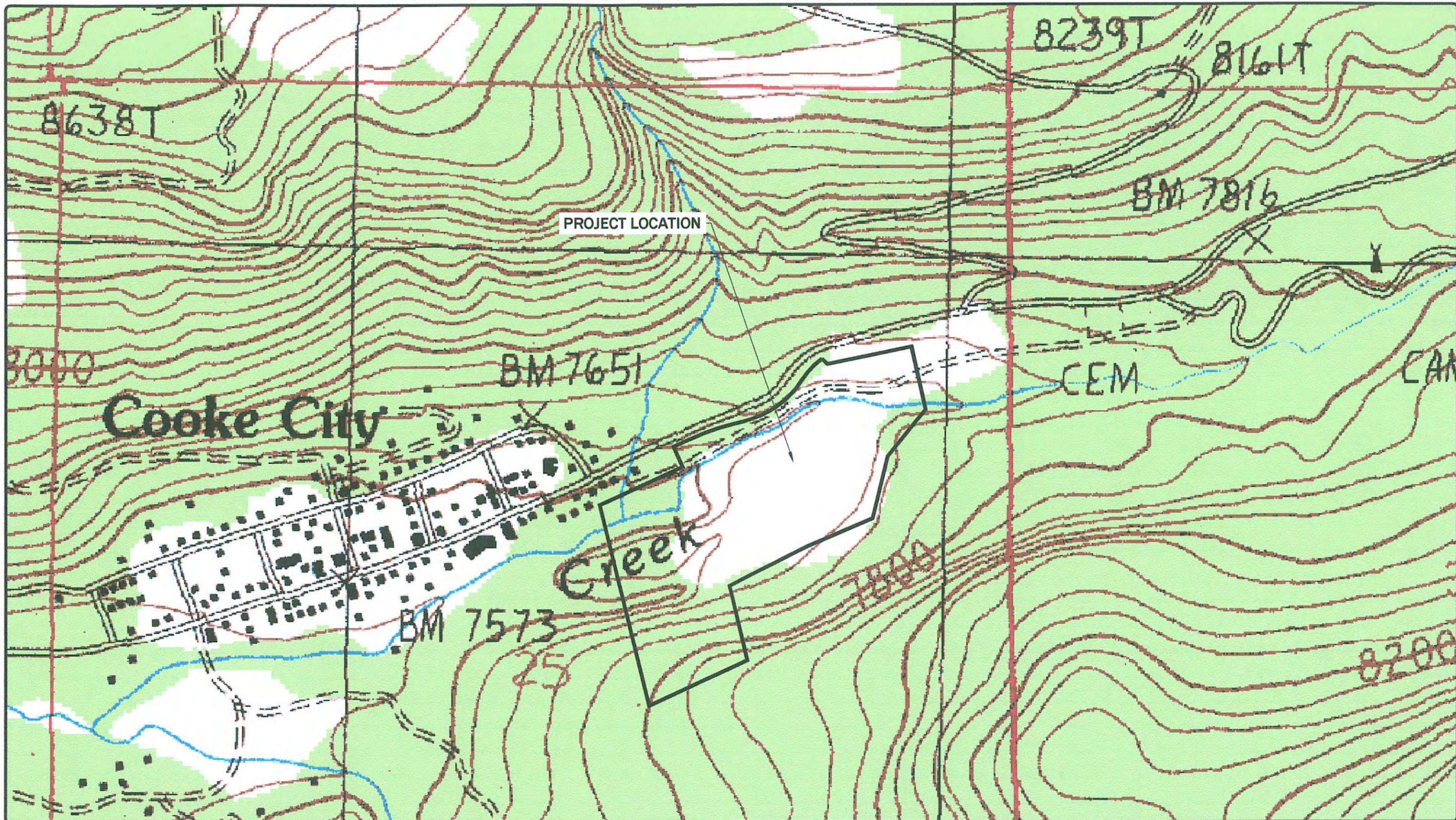
The construction photographs of the McLaren Tailings Abandoned Mine Site Pumping Well Installation Project are included in Appendix H.

9.0 REFERENCES

DEQ/MWCB-Pioneer, 2002. Draft Final Engineering Evaluation/Cost Analysis (EEE/CA) for the McLaren Tailings Site Cooke City, Montana

DEQ/MWCB-Pioneer, 2009. Final Design Report for the McLaren Tailings Abandoned Mine Site, Cooke City, Montana.

FIGURES



PROJECT LOCATION

Cooke City

Creek

CEM

BM 7651

BM 7573

8239T

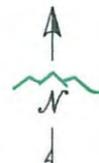
8161T

8638T

BM 7816

3000

8200



DISPLAYED AS:
 COORD SYS/ZONE: MSP
 DATUM: NAD83
 UNITS: FEET
 SOURCE: 7.5 MIN USGS

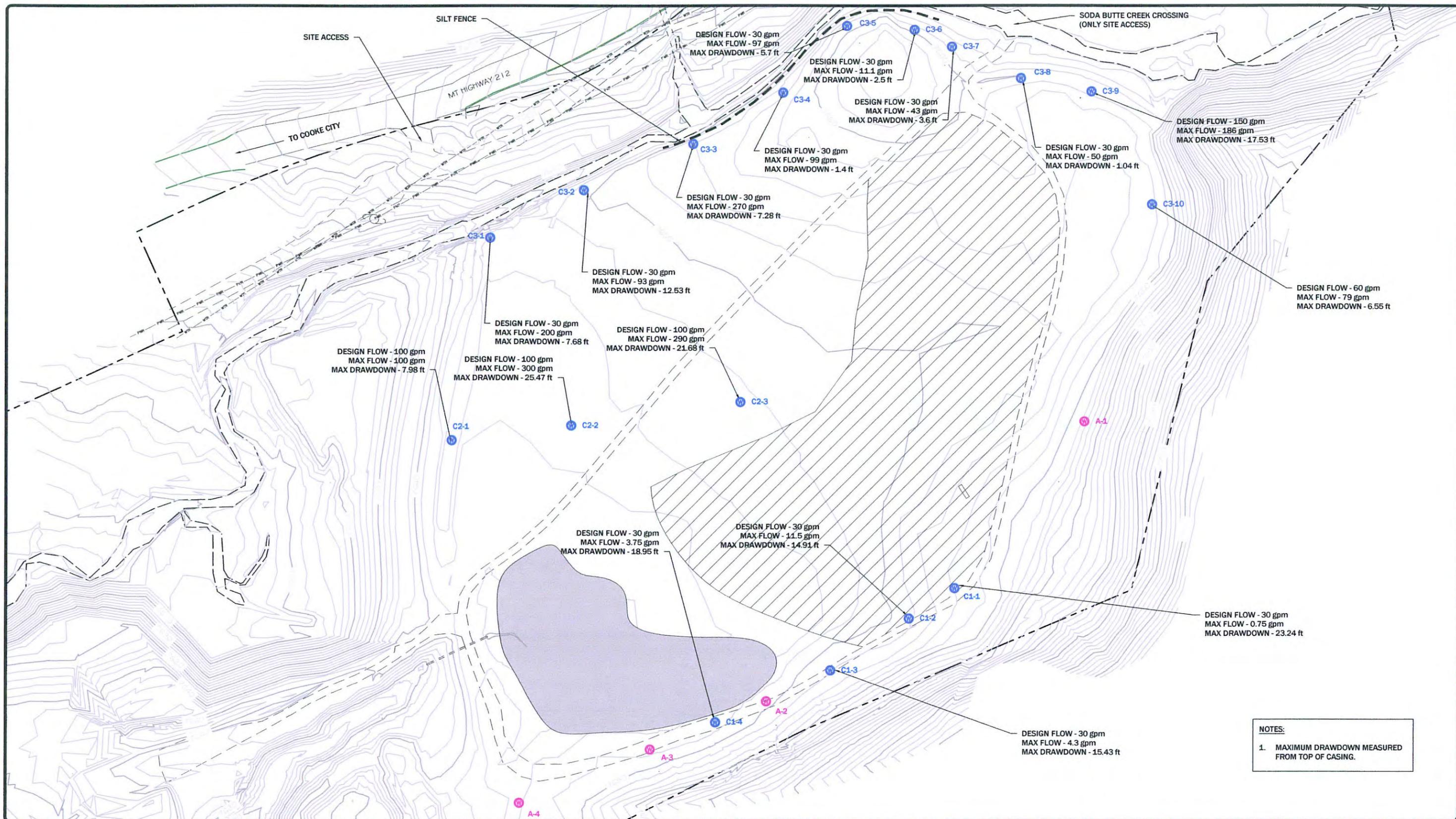
SCALE IN FEET
 0 250 500

FIGURE 1



SITE VICINITY MAP

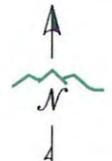
DATE 12/18/09



NOTES:
1. MAXIMUM DRAWDOWN MEASURED FROM TOP OF CASING.

LEGEND

- APPROVED GROUNDWATER DISCHARGE AREA AND DECONTAMINATION AREA
- WET AREA
- PUMPING WELL
- ABANDONED BOREHOLE



DISPLAYED AS: _____
 COORD SYS/ZONE: NAD83
 DATUM: MSP
 UNITS: FEET
 SOURCE: PIONEER

SCALE IN FEET
 0 50 100

FIGURE 2

PIONEER
 TECHNICAL SERVICES, INC.
 63-1/2 WEST BROADWAY
 BUTTE, MONTANA 59701
 (406) 782-5177

PUMPING WELLS AND ABANDONED BOREHOLE LOCATIONS

DATE: 12/18/09

TABLES

Table 3-1: Comparison of Bid Costs for McLaren Pumping Well Drilling, Development, and Testing

Contract 410006
Pumping Well Drilling, Development, and Testing
Limited Construction Contract
Bid Costs

Bid Opening August 25, 2009
One bid received: O'Keefe Drilling: \$333,475.00
Engineer's Estimate: \$281,500

Date	O'Keefe Bid	Comment
8/25/2009	\$333,475.00	Original bid for Contract
8/26/2009	\$303,435.00	Following phone call with DEQ, reduced site access costs, well development rate, and pumping test rate
9/3/2009	\$282,310.00	Following DEQ/Pioneer meeting. No sand pack - stainless steel wells

Table 4-1: Summary Table of Pumping Well Installation

Location	Depth Below Ground Surface (ft) for:						Casing Stickup (ft)	T.D. from M.P. (ft)	Screen Length (ft)	Screen Length Exposed to Aquifer (ft)	Design Flow Rate (gpm)	Max Flow (gpm)	Max Drawdown (ft)
	T.D.	Top of Screen	Bottom of Screen	Bottom of Steel Casing	Top of Bedrock	Top of Alluvial Sands and Gravels							
Completed Wells													
C1-1	32.0	12.0	32.0	12.0	16.0	0.0	1.8	30.0	20	20	30	0.75	23.24
C1-2	33.2	12.0	32.0	12.0	19.0	0.0	1.9	30.8	20	20	30	11.5	14.91
C1-3	38.0	18.0	38.0	18.0	32.0	0.0	1.6	36.9	20	20	30	4.3	15.43
C1-4	33.0	11.0	31.0	32.5	20.0	0.0	1.9	29.5	20	20	30	3.75	18.95
C2-1	73.0	32.5	72.5	32.5	63.0	0.0	1.9	70.4	40	40	100	100	7.98
C2-2	70.3	30.3	70.3	30.3	62.0	32.0	1.9	71.2	40	40	100	300	25.47
C2-3	80.0	18.5	58.5	42.5	79.0	20.0	1.9	58.2	40	18.5	100	290	21.68
C3-1	57.0	34.3	54.3	34.3	N/A	0.0	2.2	57.9	20	20	30	200	7.68
C3-2	57.3	37.3	57.3	37.3	N/A	0.0	2.0	58.1	20	20	30	93	12.53
C3-3	57.0	36.3	56.3	36.3	N/A	0.0	1.9	56.5	20	20	30	270	7.28
C3-4	55.0	31.0	51.0	31.0	N/A	0.0	1.9	50.8	20	20	30	99	1.4
C3-5	50.0	30.0	50.0	30.0	N/A	0.0	1.7	50.4	20	20	30	97	5.7
C3-6	43.0	22.0	42.0	22.0	N/A	0.0	1.6	39.6	20	20	30	11.1	2.5
C3-7	47.0	27.0	47.0	27.0	N/A	0.0	2.0	41.3	20	20	30	43	3.6
C3-8	39.0	17.5	37.5	17.5	N/A	0.0	1.7	37.7	20	20	30	50	1.04
C3-9	59.0	19.0	59.0	19.0	51.0	0.0	2.0	60.3	20	20	150	186	17.53
C3-10	32.0	11.1	31.1	11.1	25.0	0.0	1.9		20	20	30	79	6.55
Abandoned Boreholes													
A-1	21.0	N/A	N/A	N/A	14.0	0.0	N/A		N/A	N/A	30		N/A
A-2	25.0	N/A	N/A	N/A	22.0	0.0	N/A		N/A	N/A	30		N/A
A-3	19.0	N/A	N/A	N/A	14.5	0.0	N/A		N/A	N/A	30		N/A
A-4	26.5	N/A	N/A	N/A	14.0	0.0	N/A		N/A	N/A	30		N/A

Table 4-2: Summary Table of Pumping Well Development, and Test Pumping

Location	Design Flow Rate (gpm)	Max Flow (gpm)	Max Drawdown (ft)	Pump or Well Limited?	p.H (s.u.)	Temp (deg. C)	S.C. μ S/cm	D.O. mg/L	Turbidity (NTU)	Lab Sample Time	Lab Sample I.D.	p.H (s.u.)	Conductivity (μ hos/cm)	TDS (mg/L)	Alkalinity, Total (mg/L)	Al (mg/L)	Cd (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Zn (mg/L)	
Completed Wells																						
C1-1	30	0.75	23.24	Well	7.50	15.2	419	6.36	4.21	1545	C1-1-20090923	7.9	428	250	200	0.6	0.001	0.02	0.58	0.03	0.01	
C1-2	30	11.5	14.91	Well	7.88	6.9	323	8.41	1.47	1840	C1-2-20090922	8	314	180	150	0.3	0.001	0.06	0.3	0.01	0.02	
C1-3	30	4.3	15.43	Well	8.02		287.8	8.3	55.3	1110	C1-3-20090923	8.2	282	169	120	5	0.001	0.06	4.62	0.16	0.03	
C1-4	30	3.75	18.95	Well	7.88	9.7	332	6.27	17.0	1420	C1-4-20090922	8.2	348	203	170	2.4	0.001	0.06	2.34	0.06	0.05	
C2-1	100	100	7.98	Pump	7.82	6	552	5.31	199	945	C2-1-20090927	7.6	548	352	160	4.1	0.001	0.41	29.4	0.17	0.07	
C2-2	100	300	25.47	Pump	7.31	7.7	870	7.06	9.72	1855	C2-2-20090927	7.6	888	620	180	0.2	0.001	0.01	1.83	0.43	0.02	
C2-3	100	290	21.68	Pump	6.73	7.2	1901	2.67	161	1310	C2-3-20090927	6.3	1670	1570	38	3.3	0.001	0.02	163	1.68	0.03	
C3-1	30	200	7.68	Pump	7.69	7.6	392	5.72	4.18	1340	C3-1-20090925	8	376	242	150	0.1	0.001	0.01	0.2	0.01	0.01	
C3-2	30	93	12.53	Pump	7.41	10.0	520	4.48	47.3	1615	C3-2-20090926	7.8	542	342	170	2	0.001	0.01	2.1	0.13	0.01	
C3-3	30	270	7.28	Pump	7.65	5.2	374	6.45	3.37	2015	C3-3-20090925	7.9	356	220	150	0.1	0.001	0.01	0.13	0.02	0.02	
C3-4	30	99	1.4	Pump	7.83	7.6	326	6.55	0.93	1130	C3-4-20090926	7.9	327	190	140	0.1	0.001	0.02	0.03	0.01	0.01	
C3-5	30	97	5.7	Pump	7.62	6.8	340	5.46	112	1450	C3-5-20090925	7.9	331	198	150	6.1	0.001	0.08	6.89	0.32	0.04	
C3-6	30	11.1	2.5	Well	7.65	8.9	310	7.44	69.7	1955	C3-6-20090925	7.9	303	179	140	1.1	0.001	0.03	1.56	0.1	0.02	
C3-7	30	43	3.6	Pump	7.69	6.2	294.4	5.25	411	2050	C3-7-20090924	7.8	287	168	140	11.6	0.001	0.09	14.5	0.73	0.06	
C3-8	30	50	1.04	Pump	7.72		285.9	5.16	5.57	2020	C3-8-20090923	8	286	165	130	0.1	0.001	0.01	0.17	0.01	0.01	
C3-9	150	186	17.53	Well	7.86	7.6	298.6	7.71	6.13	1345	C3-9-20090926	7.9	297	166	130	0.1	0.001	0.01	0.14	0.01	0.01	
C3-10	30	79	6.55	Pump	7.78	7.2	269.4	9.39	1.11	950	C3-10-20090925	8	265	150	130	0.1	0.001	0.01	0.03	0.01	0.01	

McLaren Tailings Water Chemistry
 Specific Conductivity (μ S/cm)
 pH
 Dissolved Oxygen (mg/L)
 Specific Conductivity vs. p.H.
 Dissolved Oxygen vs. p.H.

**TABLE 4-3
EQUIPMENT USED AT THE MCLAREN TAILINGS ABANDONED MINE SITE
PUMPING WELL INSTALLATION**

TYPE	MAKE/MODEL	FUNCTION
Drill Rig	Foremost DR-24HD	Well installation, initial development
Water Truck	Western Star	Carried water, drill steel and casing
Pickup	I Ton Dodge	Personnel transport
Skid steer loader with forks and bucket	Cat 287	Loading/unloading drill steel and screen
Excavator	John Deere 35D	Control development water, construct storm water controls
Pump truck 1 with generator	Chevy 1-ton	Development, test pumping
Pump truck 2	Chevy 1-ton	Development
Compressor	Cat 185 cfm	Well development

**TABLE 6-1
ENGINEERING AND CONSTRUCTION COSTS SUMMARY**

SITE CHARACTERIZATION AND ENGINEERING SERVICES	AMOUNT (\$)
Engineering Design and Bid Specification Preparation	\$3,259.35
Construction Inspection and Management	\$34,282.33
Total Engineering Costs	\$37,541.68
CONSTRUCTION SERVICES	
O'Keefe Billed Services	\$261,477.50
CHANGE ORDER	\$1,280.00
Total Construction Costs	\$262,757.50
TOTAL PROJECT COST (Engineering and Construction)	
	\$300,299.18

APPENDIX A
MEETING MINUTES

APPENDIX A-1

PRE-BID CONFERENCE MINUTES



McLaren Tailings Abandoned Mine Site Pumping Well Bid Package August 27, 2009 Pre-Award Meeting Minutes

Attendees:

DEQ: Tom Henderson
O'Keefe: Danny O'Keefe, Larry Gagnon
Pioneer: Joe McElroy, Mike Borduin

Meeting Topics:

1. Well construction:
 - a. O'Keefe would utilize a Barber Dual Core rotary rig for the well installation;
 - b. O'Keefe proposes substituting a stainless steel screen for the PVC screen and completing the well with the existing formation. The main benefit of this change would be a reduced project cost and also a reduced construction window. This proposal was taken under consideration by DEQ.
 - c. If the above method were not approved, O'Keefe proposed utilizing a #6-8 silica sand instead of a #10-20 silica sand to increase the settling velocities and reduce the construction time of each well.
 - d. Because of the high elevation, O'Keefe proposed utilizing a drill foam to supplement the compressed air (lose 3 to 4% per 1,000 feet elevation). This foam is flammable, but also vaporizes quickly (within four hours to one day). DEQ did not commit to approving the drill foam, but indicated to send this in as a submittal, and include the MSDS.
2. Site preparation:
 - a. O'Keefe was provided with the names and numbers of two local contractors in Cooke City.

Route to: Page 1/3Montana Department Of Environmental Quality
Remediation Division

ACTIVITY REPORT

Report by: Tom Henderson Date: 8/14/09 Time: 2:30Contacted/Contacted by: IFB 410006 Pre-bid conference

Phone: _____ Fax: _____

Address: McLaren Tailings Abandoned Mine Site
Cooke City, MTSubject: IFB 410006 Pre-bid conference,
Cooke City, MT

Summary of Activity:

- 1145 Tom Henderson, DEQ onsite. Walk through staked locations of pumping wells. All 18 pumping well locations located, stakes in good shape.
- 1300 Wait at front of Super 8 Hotel in Cooke City for potential bidders. Riley Malone, Trapper Peak Construction onsite. Malone indicates that he is not going to bid the drilling work, but is interested in subsequent site reclamation work. Brett Douglas, Douglas Drilling and Troy Hauser, Red Tiger Drilling Inc. onsite. Wait in front of Super 8 until 1315
- 1320 Onsite at McLaren Tailings. Neither Douglas or Hauser indicate that site access appears to require work. Access issues include sharp turn onto access road from

Route to: Page 2/3Montana Department Of Environmental Quality
Remediation Division

ACTIVITY REPORT

Report by: Tom Henderson Date: 8/14/09 Time: 2:30

Contacted/Contacted by: _____

Phone: _____ Fax: _____

Address: McLaren TailingsSubject: IFB 410066 Pre-bid Conference

Summary of Activity:

Hwy 212, and unimproved Soda Butte Creek crossing.
1330 Walk through all 18 marked well locations, starting at C3-1. Brett and Troy indicate concern about proximity of C3-1 and C3-3 to steep bank of Soda Butte Creek. I tell them that I will check and see if these locations can be moved several feet to the south. I emphasize that run off & sediment control measures must be implemented to prevent discharges to Soda Butte Creek. I indicate that the preferred order of drilling is to drill perimeter wells first, and drill central wells in the tailings last to minimize decontamination requirements. Troy asks if wells will require sand pack. I tell him that sand pack will be placed in

Route to: Page 3/3Montana Department Of Environmental Quality
Remediation Division

ACTIVITY REPORT

Report by: Tom Henderson Date: 8/14/09 Time: 2:30

Contacted/Contacted by: _____

Phone: _____ Fax: _____

Address: McLaren TailingsSubject: IFB 410006 Pre-bid conference

Summary of Activity:

screened interval. Troy asks if OSHA training will be required. I tell him that 40 hour and current 8 hour refresher is required for all onsite workers. Troy indicates his officers have had OSHA training, but the 8-hour refresher is not current. He'll see if it is available.

1430 Walk through completed. I'll contact Pioneer Technical Services to discuss concerns with locations C3-1 + C3-3 adjacent to Soda Butte Creek. Access gate locked.

McLaren Tailings Reclamation Project
Cooke City, Park County, MT
DEQ Bid # 410006
Pumping Well Drilling, Development, and Testing
August 14, 2009 Pre-bid Meeting

Name	Company	Mailing Address	Phone #	Email address
Riley Malone	Frappier Peak Const.	306 Broadway Willow Creek MT 59760	599- 0500	Riley8555 @msn.com
Troy Hauser	Red Tiger Drilling Inc.	P.O. Box 59 Manhattan MT 59741	406-284 6916 580-2005	Troy@redtigerdrilling .com
Brett Douglas	Douglas DRILLING	P.O. Box 263 ROBERTS MT 59070	406 445- 2152	Brett Douglas DouglasDrilling @aol.com



at Pre-bid 8/14/09

Troy Hauser
Owner, 406-580-2005
Gerald Hauser
Owner, 406-439 4335
Russ Woodland
Driller, 406-580-3421

Residential • Irrigation • Municipal • Monitor Drilling
Submersible & Line Shaft Turbine Pumps
Pure Water Sanitizer & Filtration Systems

Office: 406-284-5916 ; Fax: 406-284-4060
110 Two Dog Road, Three Forks, Montana 59752

TRAPPER PEAK CONSTRUCTION INC

At
pre-bid
8/14/09

Riley Malone
President

306 Broadway St. • P.O. Box 184
Willow Creek, Montana 59760
Phone & Fax: 406.283.4614 • Cell: 406.599.0500

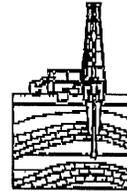
Brett Douglas
Owner / Operator

Pre-bid 8/14/09

DOUGLAS DRILLING

INSTALL THE BEST AND REPAIR THE REST

P.O. Box 263
Roberts, MT 59070
406-445-2152
mldouglasdrill@aol.com



APPENDIX A-2

PRE-AWARD CONFERENCE AGENDA



McLaren Tailings Abandoned Mine Site Pumping Well Bid Package August 27, 2009 Pre-Award Meeting Minutes

Attendees:

DEQ: Tom Henderson
O'Keefe: Danny O'Keefe, Larry Gagnon
Pioneer: Joe McElroy, Mike Borduin

Meeting Topics:

1. Well construction:
 - a. O'Keefe would utilize a Barber Dual Core rotary rig for the well installation;
 - b. O'Keefe proposes substituting a stainless steel screen for the PVC screen and completing the well with the existing formation. The main benefit of this change would be a reduced project cost and also a reduced construction window. This proposal was taken under consideration by DEQ.
 - c. If the above method were not approved, O'Keefe proposed utilizing a #6-8 silica sand instead of a #10-20 silica sand to increase the settling velocities and reduce the construction time of each well.
 - d. Because of the high elevation, O'Keefe proposed utilizing a drill foam to supplement the compressed air (lose 3 to 4% per 1,000 feet elevation). This foam is flammable, but also vaporizes quickly (within four hours to one day). DEQ did not commit to approving the drill foam, but indicated to send this in as a submittal, and include the MSDS.
2. Site preparation:
 - a. O'Keefe was provided with the names and numbers of two local contractors in Cooke City.

APPENDIX A-3

PRE-CONSTRUCTION MEETING MINUTES



McLaren Tailings Abandoned Mine Site Pumping Well Bid Package September 3, 2009 Pre-Construction Meeting Minutes

Attendees:

DEQ: Tom Henderson
O'Keefe: Danny O'Keefe, Larry Gagnon, Jaci Giop
Pioneer: Joe McElroy, Will Goldberg, Mike Borduin

Meeting Topics:

1. Well development:
 - a. O'Keefe proposes utilizing reverse circulation piping and 5/8" rubber circle to simultaneously jet and surge the well (see attached photos).
2. Screen:
 - a. Will be here on Tuesday or Wed. (September 8 or 9), delivered to Butte from Illinois, and will be transported by O'Keefe to the Site.
3. Schedule
 - a. O'Keefe proposes MOBing on September 9th, start on the 10th, potentially done by September 18.
4. Work hours
 - a. 5 days at 12 hours per day, be prepared for 10 days in a row;
 - b. 2 pump trucks, one would arrive with the drill crew and be utilized for well development, one would show up on site on September 11;
5. Dirt contractor
 - a. O'Keefe was provided the names for two local contractors in Cooke City
6. HASP
 - a. O'Keefe will provide as a submittal to Pioneer.
7. Bond
 - a. O'Keefe will provide to DEQ.
8. Contract
 - a. DEQ (Tom Henderson) will modify and run through
9. Progress meetings
 - a. Agreed to be a quick conversation at the end of each week;
10. Approvals
 - a. Will be completed by Pioneer (Mike Borduin).
11. Bentonite crumbles
 - a. O'Keefe proposes substituting these for the casing seal. DEQ and Pioneer indicated this was a good idea.
12. Abandonment
 - a. O'Keefe will still utilize 3/4" bentonite chips for home abandonment.
13. Storm water controls
 - a. Sump at each well, grade a ditch from each well toward the center of the site
14. Casing



- a. Delivered by September 8th
- 15. Pay requests to Joe McElroy at the end of the job, utilize Davis Bacon wages, Joe will e-mail the appropriate pay request form.

Route to: Page 1/3Montana Department Of Environmental Quality
Remediation Division

ACTIVITY REPORT

Report by: Tom Henderson Date: 8/14/09 Time: 2:30Contacted/Contacted by: IFB 410006 Pre-bid conference

Phone: _____ Fax: _____

Address: McLaren Tailings Abandoned Mine Site
Cooke City, MTSubject: IFB 410006 Pre-bid conference,
Cooke City, MT

Summary of Activity:

- 1145 Tom Henderson, DEQ onsite. Walk through staked locations of pumping wells. All 18 pumping well locations located, stakes in good shape.
- 1300 Wait at front of Super 8 Hotel in Cooke City for potential bidders. Riley Malone, Trapper Peak Construction onsite. Malone indicates that he is not going to bid the drilling work, but is interested in subsequent site reclamation work. Brett Douglas, Douglas Drilling and Troy Hauser, Red Tiger Drilling Inc. onsite. Wait in front of Super 8 until 1315
- 1320 Onsite at McLaren Tailings. Neither Douglas or Hauser indicate that site access appears to require work. Access issues include sharp turn onto access road from

Route to: Page 2/3Montana Department Of Environmental Quality
Remediation Division

ACTIVITY REPORT

Report by: Tom Henderson Date: 8/14/09 Time: 2:30

Contacted/Contacted by: _____

Phone: _____ Fax: _____

Address: McLaren TailingsSubject: IFB 410066 Pre-bid Conference

Summary of Activity:

Hwy 212, and unimproved Soda Butte Creek crossing.
1330 Walk through all 18 marked well locations, starting at C3-1. Brett and Troy indicate concern about proximity of C3-1 and C3-3 to steep bank of Soda Butte Creek. I tell them that I will check and see if these locations can be moved several feet to the south. I emphasize that run off & sediment control measures must be implemented to prevent discharges to Soda Butte Creek. I indicate that the preferred order of drilling is to drill perimeter wells first, and drill central wells in the tailings last to minimize decontamination requirements. Troy asks if wells will require sand pack. I tell him that sand pack will be placed in

Route to: Page 3/3Montana Department Of Environmental Quality
Remediation Division

ACTIVITY REPORT

Report by: Tom Henderson Date: 8/14/09 Time: 2:30

Contacted/Contacted by: _____

Phone: _____ Fax: _____

Address: McLaren TailingsSubject: IFB 410006 Pre-bid conference

Summary of Activity:

screened interval. Troy asks if OSHA training will be required. I tell him that 40 hour and current 8 hour refresher is required for all onsite workers. Troy indicates his officers have had OSHA training, but the 8-hour refresher is not current. He'll see if it is available.

1430 Walk through completed. I'll contact Pioneer Technical Services to discuss concerns with locations C3-1 + C3-3 adjacent to Soda Butte Creek. Access gate locked.

McLaren Tailings Reclamation Project
Cooke City, Park County, MT
DEQ Bid # 410006
Pumping Well Drilling, Development, and Testing
August 14, 2009 Pre-bid Meeting

Name	Company	Mailing Address	Phone #	Email address
Riley Malone	Frappier Peak Const.	306 Broadway Willows Creek MT 59765	599- 0500	Riley8555 @msn.com
Troy Hauser	Red Tiger Drilling Inc.	P.O. Box 59 Manhattan MT 59741	406-284 6916 580-2005	Troy@redtigerdrilling .com
Brett Douglas	Douglas DRILLING	P.O. Box 263 ROBERTS MT 59070	406 445- 2152	Brett Douglas DouglasDrilling @aol.com



at Pre-bid 8/14/09

Troy Hauser
Owner, 406-580-2005
Gerald Hauser
Owner, 406-439 4335
Russ Woodland
Driller, 406-580-3421

Residential • Irrigation • Municipal • Monitor Drilling
Submersible & Line Shaft Turbine Pumps
Pure Water Sanitizer & Filtration Systems

Office: 406-284-5916 | Fax: 406-284-4060
110 Two Dog Road, Three Forks, Montana 59752

TRAPPER PEAK CONSTRUCTION INC

At
pre-bid
8/14/09

Riley Malone
President

306 Broadway St. • P.O. Box 184
Willow Creek, Montana 59760
Phone & Fax: 406.283.4614 • Cell: 406.599.0500

Brett Douglas
Owner / Operator

Pre-bid 8/14/09

DOUGLAS DRILLING

INSTALL THE BEST AND REPAIR THE REST

P.O. Box 263
Roberts, MT 59070
406-445-2152
mldouglasdrill@aol.com

