GOOD NEIGHBOR AGREEMENT

BETWEEN

STILLWATER MINING COMPANY

AND

NORTHERN PLAINS RESOURCE COUNCIL
COTTONWOOD RESOURCE COUNCIL
STILLWATER PROTECTIVE ASSOCIATION

ORIGINALLY SIGNED
MAY 8, 2000

AMENDED
AUGUST 3, 2004

REVISED AND AMENDED
AUGUST 23, 2005

AMENDED
November 11, 2009

AMENDED
May 31, 2014

AMENDED
December 8, 2014

AMENDED
October 19, 2016

AMENDED
October 3, 2023

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APPENDICES

GOOD NEIGHBOR AGREEMENT

(August 23, 2005)

This Good Neighbor Agreement (the "Agreement") is effective May 8, 2000 (the "Effective Date"), by and among Stillwater Mining Company, a Delaware corporation ("SMC"), Northern Plains Resource Council, a Montana not-for-profit corporation ("NPRC"), Cottonwood Resource Council, a Montana not-for-profit corporation ("CRC"), and Stillwater Protective Association, a Montana not-for-profit corporation ("SPA") (NPRC, CRC and SPA are collectively referred to as the "Councils").

PARTIES

A. Stillwater Mining Company. SMC is a Delaware corporation engaged in the exploration, development, extraction, processing and refining of platinum group metals (PGMs). SMC presently operates mines near Nye, Montana (the "Stillwater Mine"), and southeast of Big Timber, Montana, near the East Boulder River (the "East Boulder Mine"). SMC also owns and operates a metallurgical complex at Columbus, Montana. SMC shall include SMC successors, partners, subsidiaries, affiliates, and assigns.

B. Northern Plains Resource Council. NPRC is a grassroots organization dedicated to the stewardship of Montana's air, land, and water and to the preservation of a sustainable system of family agriculture and the rural communities that depend on it. NPRC is a registered nonprofit corporation under Section 501(c)(3) of the Internal Revenue Code of 1986. NPRC was founded in 1972 by ranchers, farmers, and conservationists concerned with proposals for coal and energy development in eastern Montana. Through the years NPRC has worked on a variety of issues including coal and energy development, hard rock mining, air quality, water quality, and responsible management of hazardous wastes.

C. Stillwater Protective Association. SPA is an affiliate of NPRC and registered nonprofit corporation under Section 501(c)(3) of the Internal Revenue Code of 1986. SPA is a local grassroots organization that has been working to protect the quality of life in Stillwater County since 1975. SPA has focused on ensuring that SMC operates the Stillwater Mine without harming the natural environment or human community.

D. Cottonwood Resource Council. CRC is an affiliate of NPRC and registered nonprofit corporation under Section 501(c)(3) of the Internal Revenue Code of 1986. CRC was founded in 1988 by citizens concerned about the impacts of proposed hard-rock mining and other large-scale developments in Sweet Grass County. The CRC mission is to safeguard for future generations the high quality of life in Sweet Grass County, clean air and water, abundant wildlife, and a heritage of cooperation among neighbors. CRC has been actively involved in all phases of the state and federal permitting processes for the East Boulder Mine.

E. Third Party Beneficiaries. Nothing in this Agreement shall be construed to make any other person or entity not executing this Agreement a third-party beneficiary to this Agreement.

RECITALS

The Parties agree as follows:

A. SMC holds the rights to claims covering substantially all the presently identified PGM mineralized zone of the J-M Reef. SMC from time to time might desire to modify its mining plans, mining or processing methods and production rates of palladium and platinum. Any such changes to SMC operations might have impacts on the local communities, economies, and Environment.

B. SMC conducts Mining Operations subject to federal, state, and local laws and regulations and permits issued pursuant to these governing laws and regulations. SMC may desire to provide for the amendment of its existing permits, licenses, and authorities to facilitate changes in Mining Operations and related business activities. SMC desires to provide for obtaining input from the Councils in connection with proposed permit applications or amendments or changes in Mining Operations or business activities. In furtherance of its Mining Operations and business activities, SMC further desires to place certain restrictions upon lands owned by SMC.

C. The Councils desire to participate in SMC planning processes that might affect the local communities or the Environment, to provide comments and input with respect to present and future SMC Mining Operations and to provide a means for communicating with respect to Issues of Concern that may arise out of or relate to SMC Mining Operations.

Stillwater Mine Expansion

D. In April of 1996, SMC proposed Amendment #010 to the Stillwater Mine Operating Permit. The purpose of this amendment was to expand Mining Operations at the Stillwater Mine including: the removal of the 2,000 tons-per-day (TPD) production cap, the construction of a new Tailings Impoundment and Waste Rock disposal areas, the construction of additional Water Management Facilities and disposal facilities, and the construction of a Pipeline to these new facilities.

E. The Custer National Forest (CNF) and Montana Department of Environmental Quality (MDEQ) released the draft Environmental Impact Statement (EIS) for the Stillwater Mine Revised Waste Management Plan and Hertzler Tailings Impoundment in March 1998. NPRC and SPA members testified at public hearings and submitted written comments on the draft EIS.

F. On November 12, 1998, the CNF and MDEQ issued the record of decision approving the expansion of Mining Operations at the Stillwater Mine. On February 10, 1999, SPA and NPRC commenced litigation in the First Judicial District Court of Montana, (Lewis and Clark County), NPRC and SPA v. MDEQ, Cause No. 9900103 (the "Pending Litigation"). The lawsuit challenges the MDEQ record of decision approving the proposed expansion under the Montana Environmental Policy Act (MEPA), Metal

Mine Reclamation Act (MMRA), and Montana Constitution Article II, Section 2 and Article IX, Sections 1 and 2.

East Boulder Mine Development

G. In 1988, a predecessor to SMC obtained the East Boulder MPDES Permit to discharge wastewater from East Boulder Mine exploration activities into ground waters adjacent to the East Boulder River.

H. In 1993, the Gallatin National Forest (GNF) and Montana Department of State Lands (MDSL) issued the record of decision approving the East Boulder Mine Operating Permit.

I. In 1991, a predecessor to SMC submitted a petition with the Board of Health and Environmental Sciences (BHES) for the modification of the quality of ambient waters adjacent to the East Boulder Mine. CRC and NPRC opposed the petition throughout the administrative process.

J. In 1992, the BHES approved the petition and CRC and NPRC commenced litigation in the First Judicial District Court of Montana (Lewis and Clark County), NPRC et al. v. State of Montana, Cause No. ADV-92-1148. In September of 1995, the parties agreed to dismiss the case without prejudice. The SMC predecessor postponed its plans to develop the East Boulder Mine.

K. In November of 1997, SMC announced plans to proceed with the development of the East Boulder Mine, submitted an application to renew the East Boulder MPDES Permit, and submitted its proposed Water Management Plan, which required an expansion of the permit area. CRC and NPRC requested that the MDEQ and GNF prepare a supplemental EIS for the proposed expansion of the permit area. On May 20, 1999, the MDEQ approved the expansion of the permit area.

L. On January 28, 1999, the MDEQ released the draft East Boulder MPDES Permit. CRC and NPRC members testified at the public hearing and submitted written comments on the draft East Boulder MPDES Permit.

M. In May 1999, the Councils and SMC entered into negotiations in an attempt to resolve certain issues regarding the expansion of the Stillwater Mine and the development of the East Boulder Mine.

The Good Neighbor Agreement

N. The Parties signed the GNA on May 8, 2000 (hereinafter "2000 GNA"). Prior to the Good Neighbor Agreement, SMC worked diligently with local units of government to mitigate socio-economic impacts within the local communities surrounding its mining operations. Additionally, SMC had received environmental awards and public recognition for its exemplary compliance record and had a reputation for being proactive and environmentally responsible in the management of its operations.

Under the GNA, SMC has gone well beyond the standards of performance required by federal and state laws. Since signing the GNA, the Councils and SMC have worked cooperatively to address issues of concern. While we have not always been in agreement, the GNA has worked to maintain open lines of communication by which problems and concerns could be resolved. The Parties have truly become good neighbors.

O. Many of the projects required by the 2000 GNA have been completed. SMC has contributed staff and resources to ensure the GNA and its stringent objectives are achieved. The following projects are either completed or ongoing:

1. The Stillwater Mine environmental audit;
2. Baseline water quality reviews for both mine sites;
3. Donation of conservation easements;
4. Traffic reduction plans at both mine sites;
5. Supplemental biological monitoring for both rivers;
6. Baseline fisheries study of the East Boulder River;
7. A workable approach to maintaining existing water quality in the Stillwater and East Boulder watersheds;
8. The formation of the Boulder River Watershed Association;
9. An independent review of the East Boulder Mine reclamation plan and performance bond;
10. The East Boulder and Stillwater Mine Water Optimization and Prioritization Management Plans; and
11. The initial stages of the feasibility of new waste rock and tailings disposal management technologies.

P. The purpose of the 2005 amendments are to update the GNA to reflect the significant accomplishments the Parties have made in the implementation of the Agreement, to update several provisions to reflect current practice, and to provide a framework for the ongoing implementation of the GNA.

Q. The purpose of the 2009 amendments are to update the GNA to reflect changes made to Appendix F (East Boulder Mine Comprehensive Busing and Traffic Reduction Plan), Appendix G (Stillwater Mine Traffic Reduction Plan) and Appendix K (Tailings and Waste Rock Project) by the Stillwater and East Boulder Oversight Committees. Revised sections provided herein.

R. The GNA was amended on May 31st, 2014 in response to elevated nitrogen levels in groundwater at the East Boulder Mine. The amendment includes a groundwater monitoring and response plan for East Boulder Mine as described in Appendix L Section 13. The amendment establishes a framework for the East Boulder Oversight Committee (EBOC) to evaluate groundwater quality changes. The amendment provides a process to monitor and respond to groundwater impacts with appropriate mitigations in a proactive and precautionary manner to ensure protection of groundwater and surface water consistent with the objectives of the GNA.

S. The Blitz/Benbow Mitigation Plan was jointly developed by the Councils and Stillwater Mining Company. The Plan was completed on December 8, 2014, and adopted by the Stillwater Oversight Committee on December 8, 2014 as part of the Good Neighbor Agreement.

T. Appendix K, Tailings and Waste Rock Project, was jointly updated by the Councils and Stillwater Mining Company, and adopted by the East Boulder Oversight Committee on October 19, 2016 as part of the Good Neighbor Agreement. The amendment provides a framework for the Parties to complete the development, review and comments related to the East Boulder Mine and Stillwater Mine Tailings and Waste Rock Expansion Projects, including incorporation of a Failure Modes Effects Analysis and Multiple Accounts Analysis into the process.

U. The GNA Section 13.7 and the Comprehensive Surface Water, Ground Water, And Aquatic Resources Protection Program, Appendix L, was jointly amended by the Councils and SMC in response to elevated nitrogen levels downgradient of mine discharge waters at the East Boulder and Stillwater Mines. This amendment includes incorporation of the Water Resources Adaptive Management Plan (dated June 2020) for each mine, which were adopted into the GNA on December 1, 2021 by the East Boulder Oversight Committee. This amendment removed Appendix L Section 13 and 14, the Groundwater Monitoring and Response Plan for East Boulder Mine and Stillwater Mine, respectively.

CONTRACT

NOW THEREFORE, in consideration of the above background, the covenants, commitments, and conditions contained in this Agreement, and for other good and valuable consideration, the receipt and legal sufficiency of which are acknowledged by the Parties hereto, the Parties hereby agree to be bound by this contract as follows:

SECTION 1. OBJECTIVES

1.0 The objectives of this Agreement shall include the following:

(a) To minimize any potential adverse impacts caused by SMC Mining Operations on the local communities, economies, and Environment.

(b) To establish and maintain a mechanism of open lines of communication between the Parties to address Issues of Concern raised by Councils and the residents of the region impacted by SMC Mining Operations.

(c) To provide Councils with the opportunity to Participate in SMC decisions that may impact the local communities, economies, or Environment. For the purposes of this Agreement, "Participate" means that SMC shall provide Councils with access to Information and notice of proposals and meetings before final decisions are made. The purpose of this access and notice is to provide Councils with the opportunity to provide meaningful input and advice to SMC decision-makers before final decisions are made. For Arbitrable Issues, this right to Participate includes a vote in the decision-making process, subject to the limitations set forth in Section 9.4 and Appendix D (Arbitration).

(d) To bind SMC and SMC successors, partners, subsidiaries, affiliates, and assigns to this Agreement for the life of Mining Operations.

(e) To minimize future litigation between Councils and SMC by utilizing the processes and mechanisms established by this Agreement to resolve disputes.

SECTION 2. DEFINITIONS

2.0 In addition to the definitions of the capitalized terms stated in other sections of this Agreement, the capitalized terms when used in this Agreement and Appendices shall have the definitions found in Appendix A (Definitions).

SECTION 3. ACCESS TO INFORMATION AND CONFIDENTIAL INFORMATION

3.0 Definition of Information. "Information" means "all data, sampling results, studies, reports, evaluations, plans, projects, audits, transcripts, and other Documents derived from or collected under this Agreement." All Information shall be part of the public domain and shall not be subject to any requirement of confidentiality or non-disclosure, unless such Information is Confidential Information. The Information designated in Appendix B shall not be considered Confidential Information under any circumstances.

3.1 Disclosure. Upon receipt of Information, SMC shall immediately disclose all Information to the Designated Councils Representatives including any Information in SMC's judgment to be Confidential Information. "Designated Councils Representatives" means Councils Oversight and Technology Committee Representatives and Designated Councils Staff and Consultants designated in Appendix C. Councils shall designate such staff and consultants within 30 days of the Effective Date. Councils may amend the list of Designated Councils Staff and Consultants (Appendix C) by providing SMC with Notice of any changes.

3.1.1 Limitation. Nothing in this Section shall be construed to compel SMC to disclose Information if the disclosure to Councils would violate any applicable federal or state law or regulation. Upon receipt of such Information, SMC shall notify Councils designated legal representative of the general nature of such information.

3.2 Additional Disclosure. Upon receipt of such Information, SMC shall disclose to the Designated Councils Representatives all information required to be disclosed by Federal and State Environmental Laws and Regulations. SMC shall disclose such information as soon as possible but no later than when such information is required to be disclosed by law or regulation.

3.3 Additional Requests. SMC shall, upon reasonable written requests made by the Designated Council Representatives, provide additional non-Confidential Information within 30 days of such requests.

3.4 Confidential Information. "Confidential Information" shall be limited to "Trade Secrets" and "Confidential Business Information", which shall be defined as follows:

3.4.1 "Trade Secrets" means a commercially valuable plan, formula, process, or device that is used for making, preparing, compounding, or processing of trade commodities and that can be said to be the end product of either innovation or substantial effort. The Parties intend the definition of Trade Secrets to be identical to the definition of Trade Secrets under the Freedom of Information Act, 5 USC 552 *et seq.* (1988).

3.4.2 "Confidential Business Information" (CBI) means commercial and financial information obtained from a person and privileged or confidential the disclosure of which is likely to cause substantial harm to the competitive position of SMC. The Parties intend the definition of CBI to be identical to the definition of CBI under the Freedom of Information Act, 5 USC 552 *et seq.* (1988).

3.5 Process. SMC shall clearly label and mark any portions of such Information which in SMC's judgment are Confidential Information. When disclosing Confidential Information to Designated Councils Representatives, SMC shall:

3.5.1 Submit Confidential Information separately from other Information; and

3.5.2 Substantiate the claim of confidentiality by providing a written statement stating:

(a) The rationale supporting SMC's judgment that such information is either a Trade Secret or Confidential Business Information based on the above definitions;

(b) That SMC has not disclosed the Confidential Information to any other person who is not bound by a confidentiality agreement;

(c) That SMC has taken reasonable measures to protect the confidentiality of the Confidential Information and intends to continue to take such measures;

(d) That the Confidential Information is not required to be disclosed, or otherwise made available, to the public under any applicable federal, state, or local law or regulation; and

(e) Disclosure of the Confidential Information to the public is likely to cause substantial harm to SMC's competitive position.

3.6 Use of Confidential Information. Designated Councils Representatives shall:

3.6.1 Keep the Confidential Information confidential;

3.6.2 Not disclose the Confidential Information to any entity or person except for disclosures permitted by Section 3.7 below; and

3.6.3 Use Confidential Information solely for the purposes of implementing this Agreement and for no other purposes.

3.7 Permitted Disclosure. The Designated Councils Representatives may disclose Confidential Information to other Councils officers, staff, and consultants in addition to those prescribed in Section 3.1, if such disclosure is necessary for Councils to satisfy its

performance obligations under this Agreement or to implement the objectives of this Agreement.

3.7.1 Process. The Designated Councils Representatives shall provide SMC with at least 10 (ten) days Notice before making any such disclosure. Such Councils officers, staff, and consultants shall agree in writing supplied to SMC to be likewise bound by the provisions of Section 3.6 above.

3.7.2 Limitation. Disclosure shall be limited to the following Councils officers, staff, and consultants:

(a) The chair of SPA, CRC, and NPRC; and

(b) Other Councils staff and consultants who have a need to access and review the Confidential Information to complete work that would qualify for SMC reimbursement under Section 4.3.

3.8 Exclusions. Nothing in this Section shall prohibit Councils from disclosing Confidential Information if:

3.8.1 Such information has been published or has become part of the public domain other than by a violation of this Section;

3.8.2 Such information is available through public sources;

3.8.3 Such information is required to be disclosed by applicable federal, state or local law or regulation;

3.8.4 Such information is required to be disclosed in a judicial, administrative, or governmental proceeding pursuant to a valid subpoena or other applicable order; provided, however, Councils shall give SMC Notice before making such disclosure. SMC expressly reserves the right to interpose all objections it may have as to the disclosure of the Confidential Information; or

3.8.5 Specifically authorized by SMC in writing.

3.9 Disputes. If the Designated Councils Representatives disagree with SMC's judgment as to the confidentiality of Information, or if Councils designated legal representative disagrees with SMC's judgment as to whether the disclosure of Information would result in a violation of federal or state law or regulation, the Designated Councils Representatives shall provide SMC with Notice of such disagreement. If the Parties cannot resolve the dispute within 30 days of SMC's receipt of such Notice, SMC or Councils may commence an action in district court for a declaratory judgment, pursuant with the Uniform Declaratory Judgments Act, MCA 27-8-101 *et seq*. and 25-20-Rule 57, as to whether such Information is Confidential Information under this Section or whether the disclosure of such Information would violate applicable federal or state laws or regulations.

3.10 Enforcement. Councils shall be responsible for enforcing the confidentiality obligations of its members, officers, staff, and consultants under this Section.

3.11 Liquidated Damages. If a court of competent jurisdiction determines that Councils have violated Section 3.6, Councils shall:

3.11.1 Immediately terminate the person's participation in the Agreement; and

3.11.2 Pay to SMC a fine of $1000 for the first violation, $2500 for the second violation, and $5000 for every violation thereafter; or

3.11.3 Pay to SMC a fine of $10,000 if the violation is determined to be willful.

3.12 Other Remedies. Nothing in this Section shall preclude SMC from seeking any civil remedy under federal or state law for Councils violation of this Section. SMC is entitled to seek any remedy at law or in equity, including an injunction, specific performance, or other forms of equitable relief or money damages or any combination thereof if this Section is breached or if there is a threatened breach.

3.13 Grace Period. If Information shows that SMC is not in compliance with this Agreement and SMC meets the requirements set forth in Section.3.13.2 below, Councils shall not disclose such Information to the public for 60 days from the receipt of such Information (the "Grace Period'). At the end of the 60-day Grace Period, Councils may disclose such Information to the public but any such disclosure shall include a statement summarizing the corrective and preventative measures taken by SMC.

3.13.1 Inapplicable. This Grace Period does not apply:

(a) To issues of non-compliance that are the same or closely-related to issues of non-compliance that have occurred previously under this Agreement; or

(b) To Information that shows a violation of any Federal and State Environmental Law or Regulation.

3.13.2 SMC Obligations. This 60-day Grace Period applies if:

(a) SMC develops a written compliance schedule that explicitly identifies the corrective measures to be taken by SMC and the preventative measures to be taken by SMC to prevent the recurrence of the non-compliance;

(b) The relevant Oversight Committee approves the written compliance schedule within 15 days of the receipt of such Information; and

(c) SMC demonstrates to the satisfaction of the relevant Oversight Committee within the 60-day Grace Period that the corrective measures have resolved the issue of noncompliance.

3.14 Copies. SMC shall provide Councils with 3 (three) copies of all Information required to be disclosed to Councils under this Section. SMC shall provide Councils with an electronic format of such Information if available.

3.15 Return of Confidential Information. Upon the termination of this Agreement under Section 15, Councils shall make best efforts to return to SMC all Confidential Information or, upon direction of SMC destroy the Confidential Information and all Documents containing such Confidential Information. Upon a person's termination under Section 3.11.1, Councils shall ensure the Confidential Information in such person's possession is returned or destroyed.

SECTION 4. FUNDING OBLIGATIONS

4.0 Funding Obligation. SMC shall fund the development and maintenance of any programs, studies, plans, audits, or committees required by this Agreement.

4.1 Third Parties. SMC shall pay directly all the expenses incurred by a Third Party completing the projects, reports, studies, or audits required by this Agreement including, but not limited to, the following:

4.1.1 The Environmental Audits required by Section 13.3 up to $30,000 per audit year.

4.1.2 Emergency Environmental Audits required by various sections of this Agreement.

4.1.3 The Reclamation Plan and Bond Evaluation required by Section 13.4 up to $12,000 per evaluation.

4.1.4 Tailings and Waste Rock Project required by Section 13.5.

4.1.5 The long term fisheries population monitoring program required by Section 13.7.9 up to $20,000 per sampling year.

4.1.6 The supplemental Ground Water Studies required by Section 13.7.8 up to $200,000.

4.1.7 The relevant Oversight Committee may reallocate any of the above funds and make appropriate adjustments to expenditure limits to complete other Third Party projects, reports, studies, or audits contemplated under this Section 4 or to similarly complete any other projects, reports, studies, or audits required by this Agreement for which the actual Third Party or other costs incurred by SMC exceed those amounts for which SMC's Funding Obligation is expressly limited

under the Agreement. The relevant Oversight Committee may reallocate any of the above funds to complete Special Projects being conducted by Councils consultants pursuant to the Parties' agreement.

4.2 Response and Remedial Actions. Notwithstanding any other funding obligations under this Agreement, SMC shall be responsible for all the costs necessary to complete the response and remedial actions and implement the recommendations of the Emergency Environmental Audits required by Sections 13.7.12, 13.7.13, and Section 10.0 of Appendix L (Response and Remedial Actions).

4.3 Reimbursement Obligation. SMC shall reimburse Councils for Qualifying Expenses for the term of this Agreement. For the first 2 (two) years of this Agreement, SMC reimbursements shall be limited to an annual (12 month) amount of up to $135,000. Subsequent the first two 2 (two) years of this Agreement, the Parties shall annually negotiate and approve an annual budget setting forth SMC's obligation for reimbursing Qualifying Expenses of up to $135,000 annually.

4.3.1 Objectives. The objectives of the SMC reimbursements are to:

(a) Allow Councils to effectively Participate in the implementation and enforcement of this Agreement;

(b) Ensure Councils have available the technical and scientific expertise necessary to Participate in the implementation of this Agreement and to satisfy their performance obligations under this Agreement;

(c) Offset the costs of conducting Citizen Sampling;

(d) Offset the Administrative Expenses of participating in this Agreement; and

(e) Offset the Out-of-Pocket expenses of Councils members serving on the Oversight and Technology Committees.

4.3.2 Qualifying Expenses. "Qualifying Expenses" shall include the following expenses incurred by Councils in participating and implementing this Agreement:

(a) "Administrative Expenses" shall include the costs of telephone calls, conference calls, photocopying services, and postage. Administrative Expenses shall be limited to reasonable compensation and overhead costs of NPRC employees or agents engaged in the direct implementation of actions contemplated in the Agreement. However, allocations of Council's general corporate overhead expenses or employee compensation incurred in the normal course of NPRC business, including but not limited to recruitment, routine organizational activities or general planning and coordination with affiliate organizations, shall not be considered Qualifying Expenses for purposes of this Agreement.

(b) "Out-of Pocket Expenses" shall include the travel, food, and lodging expenses incurred by Council's members serving on the Oversight and Technology Committees and Councils Staff designated in Appendix C.

(c) "Scientific and Technical Consultant Fees and Costs" shall include reasonable compensation rates for professional services, travel, food, and lodging expenses incurred by Councils consultants for purposes of this Agreement.

(d) "Citizen Sampling" shall include the costs of collecting, preserving, and analyzing any samples of the Environment taken during Citizen Sampling under Section 3.1 of Appendix L.

(e) The costs of maintaining and managing the Escrow Fund established by Section 4.4.1.

4.4 Reimbursement Process. SMC shall make reimbursements to Councils as prescribed in this Section.

4.4.1 Escrow Fund. SMC shall establish an Escrow Fund and deposit $50,000 in such fund within 15 (fifteen) days of the Effective Date. SMC shall maintain this fund for the term of this Agreement.

4.4.2 Escrow Agent. Councils shall select a certified public accountant licensed to practice in the State of Montana or other qualified entity to serve as the Escrow Agent. The Escrow Agent shall be an agent of Councils and shall be responsible for managing the Escrow Fund. The Escrow Agent shall receive Councils receipts and invoices, receive SMC reimbursement payments, and make reimbursement payments to Councils.

4.4.3 Receipts and Invoices. Councils shall submit a written copy of all receipts and invoices for Qualifying Expenses to the designated Escrow Agent and to the designated SMC representative.

4.4.4 Reimbursements. SMC shall be solely accountable for reimbursements made by the Escrow Agent for Qualifying Expenses, or other allowable expenses expressly agreed to by the Parties and authorized by Councils, the receipts, authorized expenses, and invoices for which are submitted concurrently to SMC and the Escrow Agent. Unless SMC provides Notice to the Escrow Agent and Councils within 10 (ten) working days of the receipt of receipts or invoices, the Escrow Agent shall immediately reimburse Councils by bank draft, cash, or immediately available funds.

4.4.5 Dispute. Any dispute between the Parties under this Section shall be resolved by the relevant Oversight Committee or arbitration under Section 9.4 if necessary.

4.4.6 Liability. If the relevant Oversight Committee or an arbitration panel finds that Councils have used SMC reimbursements for other than Qualifying Expenses or other allowable expenses expressly agreed to by the Parties, Councils shall reimburse the escrow account and cause the Council's Escrow Agent to post a credit to the account of SMC for such disputed amount.

4.4.7 Accounting Records. Councils shall establish and maintain accounting records in accordance with generally accepted accounting principles related to Qualifying Expenses incurred and funds expended in implementing this Agreement. Councils shall keep accounting records for at least 3 (three) years following the close of the fiscal year to which such records relate.

4.4.8 Audit. Upon the written request of SMC, Councils shall provide the Escrow Agent with accounting records related to Qualifying Expenses. The Parties acknowledge that this audit shall be limited to an evaluation of Councils compliance with the reimbursement Sections of this Agreement.

4.5 Inflation Adjustments. Any Fixed Amount Funding Obligation of SMC shall be adjusted each year after the year of the Effective Date. The adjusted Fixed Amount Funding Obligation for any year is the product of the Fixed Amount Funding Obligation multiplied by the change in the Consumer Price Index for all urban consumers (CPI-U) between the year of the Effective Date and the prior calendar year. For purposes of this Agreement, "Fixed Amount Funding Obligation" means any funding obligation of SMC that is prescribed herein as a stated dollar amount.

SECTION 5. THIRD PARTY

5.0 Selection. Whenever this Agreement requires a Third Party to complete a study, project, report, audit, or plan, Councils and SMC (through the relevant Oversight Committee) shall mutually select the Third Party. The Parties shall approve the final budget before the Third Party commences work.

5.1 Dispute. If the selection process of Section 5.0 is unsuccessful in appointing the Third Party, Councils shall nominate three competent Third Parties, and SMC shall nominate three competent Third Parties. Councils may strike not more than two of the Third Parties nominated by SMC. SMC may strike not more than two of the Third Parties nominated by Councils. The Third Party shall be selected by random drawing from the remaining pool.

5.2 Competency Standards. All Third Parties shall meet minimum professional competency standards. The Parties shall establish these standards as necessary.

5.3 Disclosure. All Third Parties shall make a written disclosure before their selection by the Parties. The written disclosure shall include the following: any bias, any direct or indirect financial or personal interest with the Parties or their representatives, any past, present, or reasonably foreseeable direct or indirect financial dependence on the Parties or their representatives, or any other past, present, or reasonably foreseeable relationship with

the Parties or their representatives. The purpose of this disclosure is to ensure the Parties know of any circumstances that could potentially affect Third Party impartiality.

5.4 Relationship. The Third Party shall sign a contract with the Parties and shall owe their professional obligations and duties to the Parties. The Third Party shall have access to any Information necessary for them to complete the studies, projects, reports, or audits. The Third Party shall sign a separate confidentiality agreement with SMC to protect any Confidential Information.

5.5 Framework. To ensure that Councils have the opportunity to Participate in all aspects of the audits, plans, studies, projects, reports, and sampling required to be completed by Third Parties under this Agreement, Third Parties shall use the following framework:

5.5.1 Evaluation. The Third Party shall review all information, tour the mine site and related facilities, and meet with relevant SMC personnel and consultants and relevant administrative agency personnel to discuss the issue.

5.5.2 Draft Report. The Third Party shall prepare a draft report based on the above evaluation. The draft report shall include, as appropriate, findings of fact, recommendations, and conclusions.

5.5.3 Review. Each Party shall review the draft report and shall submit written comments and recommendations regarding the draft report. After receipt of the writing of each Party, the relevant Oversight Committee or Technology Committee shall meet and review the draft report with the Third Party.

5.5.4 Final Report. The Third Party shall prepare a final report. The final report shall include mutually agreed to recommendations, SMC recommendations, and Councils recommendations.

5.5.5 Approval. The relevant Oversight Committee shall approve the final report before implementation.

5.5.6 Implementation. SMC shall implement any mutually agreed to recommendations of the final report.

5.6 Participation. Councils shall have the right to Participate in all aspects of the audits, reports, studies, projects, plans, and sampling completed by Third Parties. Such participation shall include but is not limited to the following rights:

5.6.1 The right to participate in all site inspections and visits conducted by the Third Party;

5.6.2 The right to participate in all interviews of relevant SMC employees, consultants, and administrative agency personnel conducted by the Third Party; and

5.6.3 The right to access all SMC reports and documents relevant to Third Party work, subject to the limitations set forth in Section 3.0.

5.7 Exception for Special Projects. The requirements of Section 5.0 do not apply to Special Projects. The relevant Oversight Committee shall designate and give prior approval to all Special Projects. "Special Projects" are those projects or studies that Councils Consultants will complete instead of a Third Party.

SECTION 6. ECONOMIC FEASIBILITY

6.0 Economic Feasibility Study and Report. Whenever this Agreement requires a determination as to whether the development or implementation of a technology or practice is Economically Feasible, the Parties shall use the following process to make such determination.

6.1 Feasibility Study. SMC shall conduct an Economic Feasibility study and prepare an Economic Feasibility report. SMC shall provide Councils with the opportunity to Participate in all aspects of the Economic Feasibility study. The objective of the Economic Feasibility study and report shall be to determine whether it is Economically Feasible for SMC to develop or implement the technology or practice or take the action required under this Agreement.

6.2 Definition. "Economically Feasible" means that, after an analysis of how beneficial and practical the implementation of a technology or practice will be to SMC, the local community, and to the Environment, the benefits are demonstrated to outweigh the costs.

6.2.1 Analysis. In making this analysis, SMC shall:

(a) Consider the direct and indirect costs of implementing the technology or practice.

(b) Consider the benefits to the local community and Environment of implementing the technology or practice and shall quantify those benefits to the maximum extent possible.

(c) Estimate the potential return to the company of implementing the technology or practice by weighing the costs against savings and the benefits to the local community and Environment.

6.2.2 Process. To make this analysis SMC, with the participation of Councils, shall conduct a multiple accounts analysis (MAA) or equivalent process to assess the risks, value and the impacts of implementing the technology or practice. SMC shall use the MAA to calculate the value of existing Technologies and/or Practices at SMC Mining Operations and compare them to the proposed alternatives. SMC shall calculate the direct and indirect costs and savings of the proposed technology or practice using the same time period applied in the MAA

and then perform a cost/benefit analysis to calculate the return on the investment to implement the proposed technology.

6.3 Framework. To ensure that Councils have the opportunity to Participate in all aspects of Economic Feasibility studies, the Parties shall use the following framework:

6.3.1 Evaluation. The Parties shall review and evaluate all information relevant to the Economic Feasibility study.

6.3.2 Draft Report. SMC shall prepare a draft report based on the above evaluation. The draft report shall include, as appropriate, findings of fact, recommendations, and conclusions.

6.3.3 Review. Councils shall review the draft report and shall submit written comments and recommendations. The relevant Oversight Committee or Technology Committee shall meet and review the draft report and Councils written comments and recommendations.

6.3.4 Final Report. SMC shall prepare a final report. The final report shall include mutually agreed to recommendations, SMC recommendations, and Councils recommendations.

6.4 Implementation. If SMC determines that it is Economically Feasible to develop or implement the technology or practice or to take the action, SMC shall develop or implement the technology or practice or take the action as soon as possible.

6.5 Arbitration. If there is a Dispute as to the Economic Feasibility of SMC developing or implementing the technology or practice, Councils may initiate arbitration pursuant with Section 9.4 and Appendix D of this Agreement. The Arbitration Panel shall use the analysis and process described in Section 6.2 in making its decision.

SECTION 7. OVERSIGHT COMMITTEES

7.0 Establishment. The Parties shall establish and SMC shall fund the following Oversight Committees for the Stillwater and East Boulder Mines. Each Oversight Committee shall be comprised of the following voting members:

7.0.1 For the East Boulder Oversight Committee (the "EBOC"`), two individuals appointed by SMC and two individuals appointed collectively by CRC and NPRC.

7.0.2 For the Stillwater Oversight Committee (the "SOC"), two individuals appointed by SMC and two individuals appointed collectively by SPA and NPRC.

7.1 Appointment and Removal. The Parties shall appoint the initial individuals within 30 days of the Effective Date. The Parties may replace their representatives on the

Oversight Committees but shall provide Notice of such replacements within 10 days of their appointment.

7.2 Rules and Procedures. The Oversight Committees have established standing agenda items as necessary. The Parties determined that no additional rules or procedures were necessary.

7.3 Decision-making Process. The Oversight Committees shall make decisions, make recommendations, and take actions on issues arising under this Agreement by majority vote. Any Dispute may be resolved pursuant with Section 9.4 and Appendix D (Arbitration).

7.4 Meetings. The Oversight Committees shall meet at least twice a year, or more frequently as requested by either Party, to implement the terms of this Agreement and to address new Issues of Concern related to SMC Mining Operations.

7.5 Scope. The objectives of the Oversight Committees are:

7.5.1 To oversee and implement the terms of this Agreement and to monitor SMC compliance with the terms of this Agreement.

7.5.2 To address Issues of Concern related to SMC Mining Operations.

7.5.3 To provide a mechanism for maintaining open lines of communication between Councils, the affected local communities, and SMC.

7.5.4 To oversee the development and implementation of all audits, plans, programs, studies, and monitoring required by this Agreement.

7.5.5 To serve as the decision-making body on all issues delegated to the Oversight Committees under this Agreement.

7.5.6 To resolve Disputes arising under this Agreement, including those originating in the Responsible Mining Practices and Technology Committee.

7.6 Rights. The rights of the Councils Oversight Committee representatives shall include, but are not limited to, the following:

7.6.1 The right to establish standing agenda items and the right to raise new agenda items when necessary.

7.6.2 The right to access all Information, subject to the limitations set forth in Section 3.

7.6.3 The right to conduct Citizen Sampling and observe all scheduled SMC Sampling and Monitoring Events.

7.6.4 The right to call emergency meetings of the Oversight Committee with 72 hours Notice to each relevant Oversight Committee member.

7.6.5 The right, with the consent of the majority of Oversight Committee members, to invite other representatives of the local community and/or state or federal administrative agencies to Oversight Committee meetings and to provide them an opportunity to be heard.

7.6.6 The right to enter mine premises and inspect mine facilities consistent with Section 10.

7.7 Minutes. There shall be a stenographic record of all Oversight Committee meetings and this record shall constitute the official minutes of such meetings, unless both Parties agree to waive this requirement prior to the meeting. The official minutes shall be available to the public, subject to prior approval by the respective Oversight Committee and the express limitations of Section 3. The Parties also prepare a summary of each Oversight Committee meeting that is available to the public after its approval by the respective Oversight Committee.

SECTION 8. RESPONSIBLE MINING PRACTICES AND TECHNOLOGY COMMITTEE

8.0 Technology Committee. The parties shall establish and SMC shall fund a Responsible Mining Practices and Technology Committee (the "Technology Committee").

8.1 Structure. The structure of the Technology Committee shall consist of three SMC representatives and three Councils representatives: one SPA representative, one CRC representative, and one NPRC representative.

8.2 Appointment and Removal. The Parties shall appoint the initial representatives within 30 days of the Effective Date. The Parties may replace their representatives on the Technology Committee but shall provide Notice of such replacements within 10 days of their appointment.

8.3 Rules and Procedures. The Technology Committee has established standing agenda items and determined that additional rules and procedures were not necessary to accomplish its objectives.

8.4 Decision-making Process. The Technology Committee shall make decisions, make recommendations, and take actions on issues arising under this Agreement by majority vote. Any "Dispute" in the Technology Committee shall be referred to the relevant Oversight Committee.

8.5 Objectives. The objectives of the Technology Committee shall be:

8.5.1 To identify new Technologies and/or Practices to eliminate and/or minimize potential adverse impacts on the Environment caused by SMC Mining

Operations, to minimize the production of wastes created by SMC Mining Operations, and to eliminate and/or minimize potential safety risks associated with the disposal of wastes from SMC Mining Operations.

8.5.2 To provide an opportunity for Councils to Participate in and assist SMC in maintaining and improving a program for the research, development, and implementation of Economically Feasible Technologies and/or Practices identified under objective 8.5.1.

8.5.3 To oversee the implementation of any new Technologies and/or Practices contemplated in Section 8.5.1.

8.6 New Technologies Team. SMC shall designate a team of SMC employees and/or consultants with responsibilities for the identification, research, development, and implementation of New Technologies and/or Practices. SMC shall make the new technologies team available to consult with the Technology Committee.

8.7 Progress Review Meetings. The Technology Committee shall meet as frequently as necessary, but not less than annually, to review SMC progress regarding the research, development, and implementation of New Technologies and/or Practices.

8.8 Technology Review Meetings. The Technology Committee shall meet at least once annually to review relevant literature and consider recommendations for research to identify New Technologies and/or Practices and refinements to Technologies and/or Practices with potential application to SMC Mining Operations.

8.9 Rights. The rights of the Councils representatives on the Technology Committee shall include but are not limited to the following:

8.9.1 The right to establish standing agenda items and the right to raise new agenda items for the committee to consider.

8.9.2 The right to access all Information, subject to the limitations set forth in Section 3.

8.9.3 The right to participate in "Citizen Sampling" and observe scheduled SMC Sampling and Monitoring Events.

8.9.4 The right to enter mine premises and to inspect mine facilities pursuant with Section 10.

8.10 Time Frames. The Technology Committee shall have authority to set targets and time frames for research projects, pilot projects, and implementation projects and to monitor the progress of such projects.

8.11 Process. SMC shall consult with Councils in the design of the studies and projects. A draft report shall be prepared for all studies and projects and provided simultaneously to

both Parties. The Technology Committee shall meet and discuss proposed changes to such draft reports. The final report shall include mutually agreed to recommendations, SMC recommendations, and the Councils' recommendations. The Technology Committee shall approve the final report and forward it to the relevant Oversight Committee(s). The relevant Oversight Committee(s) must approve the report prior to implementation. SMC shall implement any mutually agreed to recommendations of the final report. The purpose of this process is:

(a) To ensure that Councils have the opportunity to Participate in all aspects of studies and projects related to Technologies and Practices; and

(b) To ensure the Councils have the opportunity to make recommendations before final decisions are made by SMC regarding the research, development, and implementation of technologies and practices.

8.12 Permit Amendments. If a new Technology and/or Practice is implemented, SMC shall use best efforts to amend any permits required by Federal and State Environmental Laws and Regulations to incorporate the Technology and/or Practice during the next renewal process. The Councils agree not to appeal any permit decision that results from the requirements of this section or any regulatory decision required for the implementation of new technologies at currently permitted facilities of SMC.

8.13 Minutes. There shall be minutes taken of all Technology Committee meetings to document material recommendations, action items, targets, time frames and decisions established by the Committee. The Technology Committee from time to time shall appoint one representative of either SMC or Councils to record and timely distribute to the Parties the minutes of each Technology Committee meeting.

SECTION 9. DISPUTE RESOLUTION AND ENFORCEMENT

9.0 Definition of Dispute. For the purposes of this Section, a "Dispute" means the inability of the relevant Oversight Committee to obtain a majority vote on an issue arising under this Agreement within 120 days of its first recording in the official minutes of an Oversight Committee meeting.

9.1 Good Faith Efforts. The Parties shall negotiate in good faith to resolve all Disputes before attempting to resolve the Dispute through court enforcement or arbitration.

9.2 Cumulative Remedies. The remedies provided in this Agreement shall be cumulative, and not exclusive, of any and all rights, powers, and remedies existing at law or in equity. The assertion by Councils or SMC of any right or remedy shall not preclude the assertion by such party of any other rights or the seeking of any other remedies.

9.3 Court Enforcement. Councils or SMC may enforce this Agreement by commencing a civil action in district court. Disputes regarding issues of substantive

arbitrability and Disputes involving an alleged failure of Councils or SMC to perform a non-discretionary obligation or duty under this Agreement, shall be resolved through a civil action.

9.3.1 Venue. Venue for the civil action shall be Sweet Grass County, Stillwater County, or Yellowstone County, Montana.

9.3.2 Relief. Councils or SMC may seek any relief within the jurisdiction of the court including, but not limited to, a temporary restraining order, temporary or permanent injunction, declaratory judgment, specific performance, or any other legally cognizable relief at law or equity or any combination thereof shall be available.

9.3.3 Right to Specific and Preventative Relief. Councils or SMC may seek specific performance to enforce this Agreement because monetary damages may not provide adequate relief.

9.4 Arbitration. Disputes may be resolved by arbitration administered under Appendix D, which shall be binding on the Parties and judgment on the award rendered by the Arbitration Panel may be entered in any court having jurisdiction thereof. There is no limit on the number of arbitrations per year, except for the limit of Section 9.4.1(g).

9.4.1 Limitation. Any award, remedy, or relief granted by the Arbitration Panel against SMC (the "Arbitration Award") shall be binding on SMC up to the amounts specified in this Section. The amount or portion of an Arbitration Award that exceeds these amounts is not binding on SMC.

(a) Reimbursement Payments. For Disputes arising under Section 4.4.5 (SMC reimbursement payments to Councils), the Arbitration Award shall be binding on SMC up to an aggregate amount of $135,000 per year.

(b) Technologies or Practices. For Disputes arising under Section 6.5 or other Disputes related to the development or implementation of Economically Feasible Technologies and/or Practices, the Arbitration Award shall be binding on SMC up to an aggregate amount of $1,000,000 per year.

(c) Water Quality and Aquatic Resource Monitoring. For Disputes arising under the following Sections of this Agreement or other Disputes related to water quality or aquatic resources monitoring, the Arbitration Award shall be binding on SMC up to an aggregate amount of $100,000 annually per mine site:

1. Section 13.7.7 and Section 6 of Appendix L (Supplemental Monitoring Programs for the East Boulder and Stillwater Mines) and Appendix N (East Boulder Supplemental Monitoring Program).

(d) Fisheries Studies. For Disputes arising under Section 8 of Appendix L, the Arbitration Award shall be binding on SMC up to an aggregate amount of $20,000 per sampling year.

(e) Environmental Audit. For Disputes arising under Section 13.3 and Appendix I, the Arbitration Award shall be binding on SMC up to an aggregate amount of $30,000 per audit year, unless the Arbitration award is substantially related to the development or implementation of new Technologies and/or Practices or is substantially related to water quality or aquatic resources monitoring, whereby the limits of (b) and (c) of this Section shall apply respectively.

(f) Ground Water Studies. For Disputes arising under Section 13.7.8 and Section 7 of Appendix L, the Arbitration Award shall be binding on SMC up to an aggregate amount of $200,000.

(g) Other Disputes. For other Disputes, the Arbitration Award shall be binding on SMC up to an aggregate amount of $100,000 per year. Councils are entitled to no more than 2 (two) such arbitrations per year.

9.4.2 Presentation. If an amount or portion of the Arbitration Award exceeds the amounts specified in Section 9.4.1, SMC shall ensure the Councils have an opportunity to make a presentation to the SMC Board of Directors.

SECTION 10. INSPECTIONS

10.0 Inspections. Councils shall have the right to enter mine premises and to inspect mine facilities. Councils shall have the right to conduct Citizen Sampling, take photographs, and meet with relevant SMC employees during all such inspections. Councils shall commence and complete each inspection within a reasonable period of time.

10.1 Council Obligations. Councils shall provide SMC with Notice of inspections. Councils shall provide SMC with reasonable notice, usually not to be less than 24 hours, and shall include a list of Council members and representatives that will be participating in the inspection, a list of relevant SMC employees Councils would like to meet with during the inspection, and a request, if any, to inspect underground facilities. Councils shall comply with all applicable federal and state laws and regulations pertaining to occupational safety and health during such inspections.

10.1.1 Limitation. Councils shall limit the number of persons for any inspection of underground facilities to 4 (four) persons unless SMC authorizes an additional number.

10.2 Samples. If Councils collect any samples of the Environment, prior to leaving the premises, Councils shall give SMC a receipt describing the sample taken and a portion of each such sample.

10.3 SMC Obligations. Any Council inspection of underground facilities shall require the consent of SMC, but SMC shall not unreasonably withhold such consent. SMC shall use best efforts to make relevant employees available during such inspections.

SECTION 11. CONSERVATION EASEMENTS

11.0 Conservation Easement. Parties acknowledge that SMC has created and donated to the Montana Land Reliance certain conservation easements required by Section 11 and Appendix E of the Agreement as amended effective August 3, 2004. The Agreement was amended pursuant to Section 16.16, which allows the amendments by mutual written agreement of the Councils and SMC. The 2004 Amendment reads as follows:

> THIS AMENDMENT TO GOOD NEIGHBOR AGREEMENT ("Amendment") is agreed and entered into by and between NORTHERN PLAINS RESOURCE COUNCIL, INC., a Montana nonprofit corporation, COTTONWOOD RESOURCE COUNCIL, a Montana nonprofit corporation, STILLWATER PROTECTIVE ASSOCIATION, a Montana nonprofit corporation (collectively referred to herein as "Councils"), and STILLWATER MINING COMPANY, a Delaware corporation, (herein referred to as "SMC"). For valuable consideration contained in the terms of this Amendment, Councils and SMC (collectively referred to hereinafter as "the Parties") hereby agree to amend their Good Neighbor Agreement (hereafter referred to as "the Agreement"). This amendment shall become effective August 3, 2004.
>
> WHEREAS, the Parties entered into the Agreement effective as of May 8, 2000, a true and correct copy of which is attached as Exhibit A hereto, establishing certain covenants, commitments, and conditions of agreement between the Parties; and,
> WHEREAS, SMC and Councils desire to amend the Agreement and therefore have agreed and entered into this Amendment for purposes of providing clarification of ambiguities in APPENDIX E [LEGAL DESCRIPTION OF SMC PROPERTIES] as to the description of certain properties for which, prior to the date of this Amendment, conservation easements have been created, consented to by Councils, and donated by SMC to The Montana Land Reliance, as established under SECTION 11 [CONSERVATION EASEMENTS]; to provide for the creation and donation by SMC of conservation easements on the Magpie Ranch Property and Ekwortzel Property; to delete reference to the Hertzler Ranch Property and Stillwater Valley Ranch Property; and for other purposes expressly described herein.
> NOW THEREFORE, the Parties agree to amend the Agreement as follows:
>
> 1. All references as to the Hertzler Ranch Property and Stillwater Valley Ranch Property in SECTION 11 and APPENDIX E of the Agreement are hereby deleted in their entirety. SMC and Councils shall execute such instruments necessary to release, waive and terminate any record, statement, reference, exception or notice of the SMC's prior intent to create and donate to The Montana Land Reliance or

other qualified donee conservation easements on the Hertzler Ranch Property and Stillwater Ranch Property.

2. APPENDIX E of the Agreement, as to the Beartooth Ranch Property, Stratton Ranch Property, Boe Ranch Property, and Yates Property respectively, is amended as set forth on Exhibit B attached hereto ["APPENDIX E-AMENDED"], for the purpose of accurately describing those properties on which the requirements of SECTION 11 of the Agreement had been satisfied by the creation and grant of conservation easements to The Montana Land Reliance prior to the date of this Amendment.

3. APPENDIX E of the Agreement is amended, as indicated on Exhibit B, attached hereto, to include the Magpie Ranch Property and Ekwortzel Property (collectively hereinafter the "Pending Easements") under the terms and conditions of SECTION 11 of the Agreement. Provided; however, that for purposes of the Pending Easements, the first sentence of section 11.0 of the Agreement shall be revised by striking the phrase "but no later than 1 (one) year from the Effective Date."

4. SMC and Councils concur that the legal descriptions of the properties provided in AMENDED EXHIBIT B are true and correct to the best of their knowledge and belief.

5. For purposes of the Magpie Ranch Property only, SMC shall be allowed to: grant, sell, divide, subdivide, exchange, devise, gift, or otherwise convey or transfer all of, or any portion of, their right to the title, estate, and interest in the Property in two (2) tracts or parcels; and construct one (1) new residence and one (1) associated garage/storage building to be used only for non-commercial purposes in conjunction with the permitted residence. These uses and practices shall not be considered to be a violation of Section 11 of the Agreement.

6. SMC shall create and donate the Pending Easements to The Montana Land Reliance, or another qualified grantee consented to by Councils, as soon as possible from the date of this Amendment, but in no event shall the Pending Easements be created or donated prior to the date of recording of that certain Mortgage, Assignment of Production, Security Agreement, Financing Statement and Fixture Filing dated as of the date hereof, by Company, as mortgagor, in favor of Toronto Dominion (Texas), Inc., as mortgagee. SMC shall use its best efforts to obtain any required consent by third parties holding mortgage or other valid interests in the Magpie Ranch

Property and Ekwortzel Property as contemplated under section 11.4 of the Agreement.

7. This Amendment to the Agreement shall apply to, and be binding upon the heirs, assigns and successors in interest to each of the Parties. The Parties shall fully inform any and all respective heir, assign, and successor as to the existence of the Agreement and this Amendment by providing same with a true and correct copy of the instruments.

8. SMC shall, until such time as the Pending Easements are granted and recorded, continue to manage its activities, the activities of its contractors, and the activities of its lessees on the subject properties as though all terms, conditions and limitations expressed in the Pending Easements are in effect, such that the conservation values existing at the time of this Amendment are preserved.

The Parties hereto agree that unless expressly provided herein, no provision of this Amendment shall be construed as to expand or diminish any right or obligation of the Parties under the Agreement, including the remedies set forth in section 9.3 of the Agreement. All other terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS THEREOF, the Parties have caused this "AMENDMENT TO GOOD NEIGHBOR AGREEMENT" to be executed on the dates set forth below.

-END-

11.1 Subdivision Prohibition. SMC shall create and donate to a party consented to by Councils a conservation easement that prohibits major subdivisions for residential development on all properties acquired by SMC in Sweet Grass or Stillwater counties after the Effective Date. With the consent of the relevant Oversight Committee, this requirement may be satisfied by appropriate reservation, covenant or other burden on SMC's title to the subject property.

11.2 Condition. SMC's obligation to grant a conservation easement or otherwise burden title to such properties is conditioned upon the receipt by SMC of the consent of third parties, presently, or at the date of grant, then holding mortgage or other interests in such properties. SMC shall use best efforts to obtain such consents and may agree to subordinate the conservation easement or burden on title to the interests of the third party in order to obtain such consent.

SECTION 12. MINE-SPONSORED HOUSING

12.0 Sweet Grass County. SMC shall confine all Mine-Sponsored Housing in Sweet Grass County to the city limits of Big Timber, Montana as extended by annexation or to SMC properties subject to the exceptions provided in Section 12.2.

12.1 Stillwater County. SMC shall confine all Mine-Sponsored Housing in Stillwater County to within the city limits of Absarokee and Columbus, Montana, as extended by annexation or to SMC properties subject to the exceptions provided in Section 12.2.

12.1.1 SMC shall prohibit Mine Sponsored Housing at the Hertzler Ranch Property.

12.2 Exceptions. Subject to the provisions of Section 11.1 or the express limitations of the conservation easements described in Appendix E of the Agreement as amended effective August 3, 2004, routine occupancy for security or maintenance of permanent dwellings on non-industrial properties owned by SMC at the date of the Agreement is allowed under this Agreement.

12.3 Review of Future Proposals. SMC shall provide Councils with Notice regarding, and an opportunity to review and comment on, all future Mine-Sponsored Housing proposals. SMC shall provide such Notice prior to the commencement of construction of or, in the case of existing structures, occupancy of, additional Mine-Sponsored Housing.

SECTION 13. ADDITIONAL SMC COVENANTS

13.0 East Boulder Mine Busing and Traffic Plan. SMC shall develop, implement, and fund a comprehensive busing and traffic reduction plan for the duration of SMC Mining Operations, as described in Appendix F.

13.1 Stillwater Mine Busing and Traffic Plan. SMC shall develop, implement, and fund a comprehensive busing and traffic reduction plan for the duration of SMC Mining Operations, as described in Appendix G.

13.2 Commercial Traffic Reduction Plan. SMC shall develop, implement, and fund a comprehensive commercial traffic reduction plan for the duration of SMC Mining Operations, as described in Appendix H.

13.3 Audits. SMC shall establish, implement, maintain, and fund an environmental audit program, in an amount not to exceed $30,000 per audit year, for the duration of SMC Mining Operations for the East Boulder and Stillwater Mines as described in Appendix I. A Third Party selected by the Parties or the Councils' Consultants shall perform such audits.

13.4 Reclamation Plan Revision and Performance Bond Evaluation. SMC shall participate in and fund, in an amount not to exceed $12,000 per evaluation for the Councils' Consultants to evaluate the Reclamation Plan and Performance Bond for the East Boulder and Stillwater Mines as described in Appendix J. The reviews shall be

conducted to coincide with the State of Montana's 5-year review of such plans and bonds. After each review is conducted, SMC shall revise the interim reclamation plan for the East Boulder or Stillwater Mine as necessary.

13.5 Tailings and Waste Rock Project. SMC shall participate in and fund the Tailings and Waste Rock Project (the "Project") to be completed by a Third Party as described in Appendix K.

13.6 Disclosure. SMC shall disclose and provide Councils with an opportunity to review and comment on all future Amendments and Revisions to the East Boulder Mine Operating Permit, Stillwater Mine Operating Permit, East Boulder MPDES Permit, and Stillwater MPDES Permit as soon as possible but no later than 3 (three) months prior to the Commencement of the Permitting Process.

13.7 Water Program. SMC shall design, implement, maintain, and fund the Comprehensive Surface Water, Ground Water, and Aquatic Resources Protection Program (the "Water Program") as described in Appendix L. SMC shall provide Councils with the opportunity to Participate in the design, implementation, and oversight of the Water Program.

13.7.1 Meeting and Inspections. SMC shall give Councils reasonable notice of all scheduled compliance meetings and inspections with the MDEQ, GNF, CNF, or other administrative agencies related to surface water, ground water, or aquatic resource issues. Councils shall have the right to attend such meetings, inspections, and events unless Councils attendance is prohibited by Federal and State Environmental Laws and Regulations.

13.7.2 Sampling and Monitoring Events. SMC shall give Councils at least 72 hours Notice of all scheduled Sampling and Monitoring Events. Councils have the right to attend and observe all such events and shall have the right to enter SMC premises for these purposes.

13.7.3 Citizen Sampling. SMC shall provide Councils with the opportunity to conduct Citizen Sampling as described in Section 3.1 of Appendix L.

13.7.4 Reporting Program. SMC shall design, implement, and maintain the expanded reporting program as described in Section 3.2 of Appendix L.

13.7.5 Database. SMC shall design, implement, and maintain an electronic database of data related to surface water, ground water, and aquatic resources as described in Section 4.0 of Appendix L.

13.7.6 Water Quality Report. SMC shall fund, in an amount not to exceed $30,000, a Third Party review and Water Quality Report for the East Boulder and Stillwater Mines as described in Section 5.0 of Appendix L. The final Water Quality Report shall be incorporated by reference into Appendix M. The water quality reviews and reports were completed by Councils' consultants. The Final

Baseline Water Quality Review for the East Boulder Mine was completed and approved by the Oversight Committee on January 25, 2002. The Final Baseline Water Quality Review for the Stillwater Mine was completed and approved by the Oversight Committee on November 15, 2002.

13.7.7 Supplemental Monitoring Programs. SMC shall develop, implement, maintain, and fund the East Boulder Mine Supplemental Monitoring Program as described in Section 6.0 of Appendix L and Appendix N and the Stillwater Mine Supplemental Monitoring Program as described in Section 6.0 of Appendix L and Appendix O. SMC shall fund the East Boulder Mine and Stillwater Mining Supplemental Monitoring Programs up to an aggregate amount of $100,000 annually per mine site.

13.7.8 Ground Water Studies. SMC shall participate in and fund, in an amount not to exceed $200,000, supplemental Ground Water Studies as described in Section 7.0 of Appendix L.

13.7.9 Long-Term Fisheries Study. SMC shall fund a long-term fisheries population study as described in Section 8.0 of Appendix L. SMC's obligation shall not exceed $20,000 per sampling year. The EBOC may expand the fisheries program if conditions warrant. SMC shall fund a similar fisheries study of the Stillwater Watershed upon approval of the SOC.

13.7.10 Tiered Trigger Level Framework. SMC shall design, implement, maintain, and fund the Tiered Trigger Level Framework and any necessary programs described in Section 9.0 of Appendix L for the East Boulder and Stillwater Mines. The Tiered Trigger Level Framework for the Stillwater and East Boulder Mines have been finalized as part of the final Baseline Water Quality Reviews. Implementation of the programs is ongoing.

13.7.11 Response and Remedial Actions. SMC shall design, implement, maintain, and fund any programs necessary to implement the response and remedial actions described in Section 10.0 of Appendix L for the East Boulder and Stillwater Mines. SMC is responsible for the costs of conducting any required response and remedial actions.

13.7.12 Tier 2 and 3 Exceedance Response and Remedial Actions.

(a) Tier 2 Exceedance Nutrients. Upon a Tier 2 Exceedance SMC shall implement the degree of treatment technologies and practices necessary to restore levels to below Tier 2 Trigger Levels at a cost not to exceed $500,000 per year. Upon implementation of such treatment technologies or practices, the relevant Oversight Committee shall use the best available science and data to establish a time frame in which water quality levels will return to below Tier 2 Trigger Levels.

(1) Additional Related Tier 2 Exceedances within Time Frame. If water quality monitoring indicates additional Tier 2 Exceedances from the same event triggering the original exceedance during the time frame approved by the relevant Oversight Committee pursuant to Section 13.7.12(a), the Committee shall give SMC credit for initial operational and capital expenditures incurred in implementing treatment technologies and practices in determining the additional technologies and practices to be implemented.

(2) Additional Related Tier 2 Exceedances outside Time Frame. If water quality monitoring indicates additional Tier 2 Exceedances from the same event triggering the original exceedance beyond the time frame approved by the relevant Oversight Committee, the Committee shall consider the following factors in determining additional technologies and practices required to be implemented: the context and magnitude of the exceedance, trends in ground water and surface water quality, and previous SMC operational and capital expenditures.

(b) Tier 3 Exceedance for Other Parameters. Upon a Tier 3 Exceedance for any parameter SMC shall implement the degree of treatment technologies and practices necessary to restore levels to below Tier 2 Trigger Levels.

13.7.13 Water Management Prioritization and Optimization Plan. SMC shall develop, implement, maintain, and fund a Water Management Prioritization and Optimization Plan for the Stillwater and East Boulder Mines as described in Section 11.0 of Appendix L. The final Stillwater and East Boulder Mine Water Management Prioritization and Optimization Plans are incorporated by reference as Appendices Q and R, respectively.

13.8 Contribution to Boulder River Watershed Association. On July 15, 2005, SMC entered into a memorandum of agreement with the Boulder River Watershed Association (BRWA) that provides for the contribution and accounting of funds to be provided by SMC for the general administration of BRWA and for the maintenance of an appropriate operational fund to supplement the grant application and matching practices of BRWA.

13.9 Hertzler Ranch Property and Pipeline Mitigation Plan. SMC shall develop, implement, and fund the Mitigation Plan described in Appendix P. The SOC approved the final Hertzler Ranch Property and Pipeline Mitigation Plan on May 14, 2002. The final plan is incorporated by reference as Appendix P. The language of Section 7.0 of the said Plan shall be considered final upon the effective date of the 2005 Amendment.

13.10 Future Tailings and Waste Rock Disposal Locations

13.10.1. Disclosure of Future Plans. SMC shall consult with Councils before purchasing or otherwise acquiring properties for future tailings or Waste Rock disposal.

13.10.2 Locations. SMC shall not construct future Tailings Impoundments within visual view of the Boulder River Watershed and East Boulder River Watershed below the Gallatin National Forest boundary.

SECTION 14. ADDITIONAL COVENANTS OF COUNCILS

14.0 Termination of Pending Litigation. SPA and NPRC shall file a motion to dismiss, with prejudice, NPRC and SPA v. MDEQ, Cause No. DV 9900103, within 30 days of the Effective Date. This litigation was dismissed with prejudice within 30 days of the Effective Date.

14.1 Best Efforts. As a condition to the filing of an administrative appeal, the filing of a citizen suit, or the commencement of litigation, Councils shall use best efforts to resolve all issues raised in such appeal, suit, or litigation with SMC. Best efforts shall include good faith negotiations in the relevant Oversight Committee and mediation with a mediator selected by SMC.

SECTION 15. TERM, TERMINATION, SURVIVAL

15.0 Term. Unless unilaterally terminated as provided by this Section, this Agreement shall continue in full force and effect until all the following conditions are satisfied:

15.0.1 The permanent cessation of all SMC Mining Operations;

15.0.2 The completion of all closure and final reclamation required by any Operating Permit or Federal and State Environmental Laws and Regulations;

15.0.3 The release of all SMC performance bonds required by MCA 82-4-338 (1997); and

15.0.4 The water quality of all discharges from SMC Mining Operations has returned to Baseline Water Quality.

15.1 Councils Rights. Nothing in this Section shall be construed or interpreted to allow SMC to unilaterally terminate this Agreement if Councils commence a civil action to enforce this Agreement under Section 3.9 or Section 9.3 or if Councils participate in any public process provided by applicable federal and state laws and regulations regarding the East Boulder or Stillwater Mines including the filing of written comments, testifying at public hearings, and meeting with administrative agencies.

15.2 Unilateral Termination by SMC.

15.2.1 Termination of the Entire Agreement. SMC may unilaterally terminate this Agreement by Notice to Councils upon the occurrence of any one or more of the following conditions:

(a) Amendment 001 of the East Boulder Mine Operating Permit. The filing by CRC, SPA, NPRC, or any of NPRC's affiliates of any administrative appeal or the commencement of litigation challenging the validity of the East Boulder Mine Operating Permit effective May 20, 1999 (MDEQ Approval of Amendment 001 to Operating Permit 00149, Water Management Plan and Facilities for the East Boulder Mine).

(b) Breach. The failure of Councils to perform the obligations required to be performed by them under this Agreement unless such failure shall have been cured to the satisfaction of SMC on or before the 30th day following the delivery of the termination Notice by SMC.

(c) Assertion. The assertion by Councils in a court of competent jurisdiction that the provisions of Section 15.2 are void, invalid, or otherwise unenforceable.

15.2.2 Termination of Sections of the Agreement. SMC may unilaterally terminate Sections of this Agreement by Notice to Councils upon the occurrence of any one or more of the following conditions:

(a) Future Litigation of Stillwater Mine Operating Permit. If SPA, CRC, NPRC, or any of NPRC's affiliates files an administrative appeal or commences litigation challenging the validity of, or any terms or conditions of, any Amendment or Revision to the Stillwater Mine Operating Permit, SMC may terminate the Sections of this Agreement related to the Stillwater Mine, subject to exception below and the limitations of Section 15.3.

Exception. SMC is precluded from terminating this Agreement or any section thereof, if SPA, CRC, NPRC, or any of its affiliates files an administrative appeal or commences litigation challenging the validity of or any terms or conditions of, any Amendment or Revision to, the Stillwater Mine Operating Permit concerning the construction of additional Tailings Impoundments at the Hertzler Ranch Property not approved in the Stillwater Mine Operating Permit effective November 12, 1998.

(b) Future Litigation of East Boulder Mine Operating Permit. If CRC, SPA, NPRC, or any of NPRC's affiliates files an administrative appeal or commences litigation challenging the validity of or any terms or conditions of, any Amendment or Revision to, the East Boulder Mine Operating Permit, SMC may terminate the Sections of this Agreement related to the East Boulder Mine, subject to the limitations of Section 15.3.

(c) Future Litigation of the Stillwater MPDES Permit. If SPA, CRC, NPRC, or any of NPRC's affiliates files an administrative appeal or commences litigation challenging the validity of or any terms or conditions of the Stillwater MPDES Permit during subsequent renewal processes, SMC may terminate Section 13.7 and related Appendices (Water Program), Section 10.0 (Inspections), and Section 4.3 (Reimbursement Obligations) related to the Stillwater Mine, subject to the limitations of Section 15.3.

(d) Future Litigation of the East Boulder MPDES Permit. If CRC, SPA, NPRC, or any of NPRC's affiliates files an administrative appeal or commences litigation challenging the validity of or any terms or conditions of the East Boulder MPDES Permit during subsequent renewal processes, SMC may terminate Section 13.7 and related Appendices (Water Program), Section 10.0 (Inspections), and Section 4.3 (Reimbursement Obligations) related to the East Boulder Mine, subject to the limitations of Section 15.3.

(e) Other Permits. If Councils, collectively or individually, file an administrative appeal or commence litigation challenging the validity of or terms or conditions of any SMC permit, SMC may terminate the sections of this Agreement related to the appeal or litigation, subject to the limitations of Section 15.3.

15.3 Limitation on SMC Termination. If SMC shall be entitled to terminate this Agreement or Sections thereof under Section 15.2.2, SMC shall, as a condition to termination, suspend in whole or in part, by Notice to the Councils, performance of this Agreement or Sections of this Agreement for a period of at least 18 calendar months from the date of the Notice (the "Suspension Period").

15.3.1 Ongoing Obligations. SMC shall complete all projects, studies, programs, audits, reports, or other performance obligations commenced prior to Councils commencement of litigation triggering the Suspension Period.

15.3.2 Future Obligations. The times for performance not commenced before Councils commencement of litigation shall be tolled during the Suspension Period. Unless the Parties agree otherwise, SMC shall not be obligated to perform, at the end of the Suspension Period or otherwise, any term or obligation under this Agreement if the time for such performance shall have occurred or expired during the Suspension Period.

15.3.3 Best Efforts. SMC shall use best efforts to resolve all issues raised in such litigation. Best efforts shall include good faith negotiations in the relevant Oversight Committee and mediation with Councils and the relevant administrative agencies using a mediator selected by Councils.

15.3.4 Termination. Unless the litigation allowing SMC termination under Section 15.2.2 shall have been dismissed with prejudice or otherwise been fully and finally resolved by the Parties, including appeals by any Party, this

Agreement or the Sections thereof shall terminate on the last day of the Suspension Period without further action or Notice by SMC.

15.4 Unilateral Termination by Councils. This Agreement may be terminated by the Councils upon Notice to SMC upon occurrence of any one or more of the following:

15.4.1 The sale, assignment or transfer of all or substantially all of SMC assets outside of the ordinary course of business (other than assignments or transfer by operation of law pursuant to a merger or similar reorganization transaction).

15.4.2 The failure of SMC to perform the obligations required to be performed by it under this Agreement unless such failure shall have been cured to the satisfaction of the Councils on or before the 30th day following the delivery of the termination notice by the Councils.

15.5 Effect. Upon termination as provided in this Section, the Parties shall be relieved of each and every obligation hereunder and this Agreement shall be null and void and of no further force or effect, subject to the exception in Section 15.6.

15.6 Survival. The following Sections of this Agreement shall survive termination of this Agreement for any reason and shall remain in effect until all the conditions of Section 15.0 have been satisfied.

15.6.1 The East Boulder and Stillwater Mine Traffic Reduction and Busing Plans required by Sections 13.0 and 13.1 and described in Appendices F and G respectively.

15.6.2 Section 12.0 (Mine-Sponsored Housing).

SECTION 16. MISCELLANEOUS PROVISIONS

16.0 Representations. Each Party represents and warrants that (i) it is duly organized, validly existing, and, as of the Effective Date is in compliance with all registration, reporting, and other requirements under the laws of the state of its organization, (ii) it has the right and authority to enter into this Agreement and its amendment and all proceedings required to be taken by or on behalf of such party to authorize it to execute and deliver this Agreement have been satisfied, (iii) this Agreement upon delivery is a valid, legal and binding obligation of such party, (iv) the execution and delivery of this Agreement will not violate the organizational documents of such party, violate, conflict with or constitute a default under any agreement which such party is a party to or by which any of its properties are bound, or violate any applicable law by which such party is bound, and (v) it has not assigned any of its rights to make the agreements contained herein.

16.1 Successors and Assigns. This Agreement shall bind and inure to the benefit of each of the Parties hereto and its respective successors and assigns. The Parties acknowledge that one of the express purposes of this Agreement is to bind SMC

successors, partners, subsidiaries, affiliates, and assigns to this Agreement. SMC shall record an abstract of this Agreement with the clerk and recorder office of any county in which real property that is affected by the Agreement is located. The purpose of this recording is to give notice of this Agreement to and to bind any successors, partners, subsidiaries, affiliates, and assigns of SMC.

16.2 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original and all of which taken together shall constitute one and the same document.

16.3 Notice. Whenever Notice is required under this Agreement, such Notice shall be in writing and delivered by overnight courier or by U.S. certified mail, return receipt requested, to the following designated Parties and addressed to such Parties at the addresses set forth below:

To NPRC, SPA, or CRC:

Attention: Good Neighbor Agreement Manager

Northern Plains Resource Council

220 South 27th St Suite A

Billings, MT 59101

To SMC: Attention: Vice President, General Counsel

Stillwater Mining Company

P. O. Box 1330

Columbus, MT 59019

The Parties may hereafter designate by Notice a different address or person to whom Notice must be given.

16.4 Joint Drafting Terms. It is hereby expressly understood and agreed that this Agreement was jointly drafted by Councils and SMC. Accordingly, the Parties hereby agree that any rule of construction to the effect that ambiguity is construed against the drafting Party shall be inapplicable to any Dispute concerning the terms, meaning, or interpretation of this Agreement.

16.5 Controlling Law. This Agreement shall be interpreted under the laws of the State of Montana, except as specified in Appendix D (Arbitration).

16.6 Further Assurances. At any time, and from time to time, after the Effective Date, each Party will execute such additional instruments and take such actions as may be reasonably requested by the other Parties to confirm or perfect or otherwise to carry out the intent and purpose of this Agreement.

16.7 Waiver. Any failure on the part of any Party hereto to comply with any of its obligations, agreements or conditions thereunder may be waived by any other Party to whom such compliance is owed. To be effective, the waiver shall be in writing and signed by the chairs of Councils or the President of SMC. No waiver of any provision of this Agreement will be deemed, or will constitute, a waiver of any other provision, whether or not similar, nor will any waiver constitute a continuing waiver.

16.8 Headings. The section and other headings in this Agreement are inserted solely as matter of convenience and for reference, and are not a part of this Agreement.

16.9 Appendices and Schedules. All attached and reserved Appendices and Schedules are incorporated by reference into this Agreement and are to be construed as an integral part of this Agreement. The Parties shall fill in all blanks, if any, in the attached Appendices and complete all reserved Appendices as required by this Agreement in order to consummate the transactions contemplated with this Agreement.

16.10 Severability. If any provision of this Agreement is invalid or unenforceable in any jurisdiction, such provision shall be fully severable from this Agreement and the other provisions thereof shall remain in full force and effect in such jurisdiction and the remaining provisions hereof shall be liberally construed to carry out the provisions and intent thereof. The invalidity or unenforceability of any provision of this Agreement in any jurisdiction shall not affect the validity or unenforceability of any such provision in any other jurisdiction

16.11 Liability Limitation. For the purposes of determining liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), this Agreement does not convey or transfer to Councils any possessory rights or interests in any real property owned by, licensed to, or leased by SMC. In addition, this Agreement does not convey to, transfer to, or create in Councils any day-to-day management duties, decision-making abilities or responsibilities, or the authority to control day-to-day operations at the East Boulder or Stillwater Mines.

16.12 Time Requirements. This Agreement contains various provisions that are to be performed by a time deadline. Central to this Agreement is the timely performance of these provisions, thus time is of the essence of this Agreement.

16.13 Breach of time deadline. Whenever any Party believes that another Party is in breach of any part of this Agreement that requires compliance with a time deadline, the notifying Party must give proper and timely notice of the breach and allow for curing of the breach prior to the notifying Party having a cause of action to enforce such breach of any deadline provision, as described below:

16.13.1 A description of the substance of the breach, including at least the conduct, or lack of conduct, causing the alleged breach;

16.13.2 The section of the Agreement believed breached;

16.13.3 The time that the breach occurred;

16.13.4 Whom, including the person's mailing address, any response to the Notice, or attempted remedy of the alleged breach should be mailed to;

16.13.5 To be proper notice, the Notice must be sent certified mail, return receipt requested, to the Parties at the addresses set forth in Section 16.3.

16.13.6 Prior to bringing a proceeding for breach of the Agreement relating to a missed deadline, the notifying Party must wait at least ten (10) days after the receipt date of the Notice of Breach by the notified Party. The date of the receipt of the notice is the date indicating delivery as shown on the Domestic Return Receipt.

16.14 Approval of Administrative Agencies. The Parties acknowledge that the approval of administrative agencies under Federal and State Environmental Laws and Regulations may be a condition of some SMC covenants under this Agreement. SMC shall use best efforts to obtain all necessary approvals.

16.15 Modification. The Parties may modify this Agreement by mutual agreement in writing signed by Councils and SMC.

16.16 Entire Agreement. This Agreement is the entire, final and complete agreement of the Parties with respect to the understandings between the Parties regarding the subject matter hereof, and supersedes and replaces all prior written and oral agreements between the Parties or their representatives with respect to such matters.

16.17 Statement. The Parties have read this contract and agree to be bound by its terms.

SIGNATURES

STILLWATER PROTECTIVE ASSOCIATION,

a Montana nonprofit corporation,

By: Tom Heyneman Date: October 3, 2023

Tom Heyneman, as its Chair

COTTONWOOD RESOURCE COUNCIL

a Montana nonprofit corporation,

By: Teri Schlabach Date: October 3, 2023

Teri Schlabach, as its Chair

NORTHERN PLAINS RESOURCE COUNCIL,

a Montana nonprofit corporation,

By: Joanie Kresich Date: October 2, 2023

Joanie Kresich, as its Chair

STILLWATER MINING COMPANY,

a Delaware corporation,

By: _____ Date: October 2, 2023

Heather McDowell, as its Vice President of Legal, Environmental, and Governmental Affairs

APPENDIX A. DEFINITIONS

Definitions. In addition to the definitions of capitalized terms stated in other Sections of this Agreement, the capitalized terms when used in this Agreement and Appendices shall be defined as follows:

1.0 "Amendment or Revision" shall have the same meaning as such terms have under the Montana Metal Mine Reclamation Act, MCA 2-4-201 *et seq.* (1999), and the Montana Water Quality Act, MCA 75-5-101 *et seq.* (1999), and implementing administrative rules.

1.1 "Citizen Sampling" means sampling authorized by Section 3.1 of Appendix L of this Agreement, including the right to enter SMC premises for these purposes.

1.2 "Claimant" means the Party initiating arbitration under Section 9.4 of this Agreement by providing a written demand for arbitration to the Respondent.

1.3 "Commencement of the Permitting Process" means the date that SMC submits a proposed amendment, revision, proposal, or application to the MDEQ, CNF, GNF, or other relevant regulatory agencies.

1.4 "Dispute" means the inability of the relevant Oversight Committee or Technology Committee to obtain a majority vote on an issue arising under this Agreement within 120 days of its first recording in the official minutes of a Committee meeting.

1.5 "Documents" means any writing, letter, memorandum, computer records or files, statements, data, reports, studies, and other writings.

1.6 "East Boulder Mine" means SMC Mining Operations described in the East Boulder Operating Permit as amended from time to time.

1.7 "East Boulder Oversight Committee" (EBOC) means the Oversight Committee established by Section 7.0 of this Agreement.

1.8 "Effective Date" means the Effective Date of this Agreement, May 8, 2000.

1.9 "Emergency Environmental Audit" means an assessment, evaluation, review, or investigation of SMC Mining Operations conducted by a Third Party. Such audits are limited to the scope of the problem triggering the audit.

1.10 "Environment" means all surface waters, ground water, drinking water, land surfaces, subsurface strata, ambient air, and biological resources.

1.11 "Federal and State Environmental Laws and Regulations" shall include but is not limited to the following laws and regulations and any permits or plans required by these laws and regulations:

1.11.1 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9601 et seq. (1988) and implementing regulations.

1.11.2 Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 et seq. (1988) and implementing regulations.

1.11.3 Emergency Planning and Community Right-to-Know Act (EPCRA), 42 U.S.C. Section 11001 et seq. (1988) and implementing regulations.

1.11.4 Federal Water Pollution Control Act (FWPCA), 42 U.S.C. Section 1251 et seq. (1988) and implementing regulations.

1.11.5 Clean Air Act (CAA), 42 U.S.C. Section 7401 et seq. (1988) and implementing regulations.

1.11.6 National Environmental Policy Act, 42 U.S.C. 4321 et seq. (1988) and implementing regulations.

1.11.7 National Forest Management Act, 42 U.S.C. Section 1600 et seq. (1988) and implementing regulations.

1.11.8 Forest Service Locatable Minerals Regulations, 40 CFR 228.

1.11.9 Montana Water Quality Act, MCA 75-5-101 et seq. (1999) and implementing rules.

1.11.10 Montana Clean Air Act, MCA 75-2-101 et seq. (1999) and implementing rules.

1.11.11 Montana Metal Mine Reclamation Act, MCA 82-4-301 et seq. (1999) and implementing rules.

1.11.12 Montana Environmental Policy Act, MCA 75-1-101 et seq. (1999) and implementing rules.

1.11.13 The terms, conditions, stipulations, and mitigation measures required by any Record of Decision issued by the MDEQ, CNF, or GNF for the East Boulder Mine, Stillwater Mine or other SMC Mining Operations.

1.12 "Issues of Concern" shall include but are not limited to the following:

a. Schools, local services, and infrastructure.
b. Roads and transportation issues.
c. Surface and groundwater resources, and associated aquatic life.
d. Air quality issues.
e. Wildlife and fisheries.

f. Recreational, aesthetic, and visual impacts.
g. Land use issues.
h. Health and safety issues.
i. Reclamation and other mine closure issues.
j. Other unforeseeable impacts on the local Environment and community.

1.13 "J-M Reef" means the PGM rich zone of the Stillwater Complex.

1.14 "Mining Operations" means all SMC exploration, development, extraction, processing, and refining of platinum group metals and other minerals and related activities in Montana, including but not limited to the East Boulder and Stillwater Mines.

1.15 "Mine-Sponsored Housing" means any Housing owned by, leased by or sub-leased by, operated by, or managed by or for the benefit of SMC.

1.15.1 "Housing" means any structure, facility, or other dwelling unit that is used or occupied as a temporary or permanent home, residence, or sleeping space by any SMC employee, contractor, or subcontractor. Such housing also includes, but is not limited to, work camps, man camps, camping spaces, trailer parking spaces, and mobile, modular, or permanent barracks and structures.

1.16 "MPDES Permit" means the Montana Pollution Discharge Elimination System (MPDES) permit required by the Montana Water Quality Act, MCA 75-5-101 *et seq.(*1999) and ARM Title 17, Chapter 30, Subchapters 5, 6, 7, and 13.

1.16.1 "East Boulder MPDES Permit" means Permit # MT-0026808, as amended or renewed from time to time.

1.16.2 "Stillwater MPDES Permit" means Permit # MT-0024716, as amended or renewed from time to time.

1.17 "NPRC" means Northern Plains Resource Council and any of its affiliates.

1.18 "Operating Permit" means the operating permit required by the Montana Metal Mine Reclamation Act, MCA 82-4-301 *et seq.* (1999).

1.18.1 "Stillwater Mine Operating Permit" means Permit No. 00118, effective November 12, 1998, as amended or renewed from time to time.

1.18.2 "East Boulder Mine Operating Permit" means Permit No. 00149, effective May 20, 1999, as amended or renewed from time to time.

1.19 "Operational Emergency" means an Act of God, fire, or other unforeseeable event Notice of which is given to the Councils.

1.19.1 <u>48-hour written notice</u>. SMC shall provide Councils with Notice of all Operational Emergencies within 48 hours of their occurrence.

1.19.2 Effect. SMC is prohibited from using an operational emergency as a defense if such written notice is not given to Councils.

1.20 "Parties" means SMC and Councils.

1.21 "Party" means SMC, NPRC, CRC, or SPA.

1.22 "Pipeline" means all tailings slurry, adit water, tailings water, mill process water, and other Effluent pipelines identified in the Stillwater Mine Operating Permit effective November 12, 1998.

1.23 "Release from Pipeline" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, escaping, dumping, or otherwise disposing into the environment excluding any Federal or State permitted releases.

1.24 "Respondent" refers to the party (ies) who receive a written demand for arbitration.

1.25 "SMC" means Stillwater Mining Company (publicly traded under the symbol SWC), and all SMC successors and assigns, direct and indirect majority-owned subsidiaries, and affiliates.

1.26 "Stillwater Mine" means SMC Mining Operations described in the Stillwater Mine Operating Permit as amended from time to time.

1.27 "Stillwater Oversight Committee" (SOC) means the Oversight Committee established by Section 7.0 of this Agreement.

1.28 "Technologies and/or Practices" may also be referred to as best available technology, state-of-the-art, or developing technology. New technology is the latest in technological achievement that has undergone critical evaluation in order to determine its efficacy, and typically employs recently proven technologies. Developing technology is typically innovative technology in the process of undergoing design, development, feasibility and implementation processes, and may include technology in trial or demonstration stage. Technology and practices includes traditional pollution prevention and treatment technologies, in-process changes, recycling, and changes in input materials. The Parties recognize that new technologies and practices are an evolving concept.

1.29 "Third Party or Third Parties" means a party mutually selected by Councils and SMC pursuant with Section 5 to complete a plan, report, project, audit, study, or sampling.

APPENDIX B. INFORMATION

- All information required to be disclosed by Federal and State Environmental Laws and Regulations or other applicable federal, state, or local laws and regulations.

- Data generated or derived from the East Boulder Mine and Stillwater Mine Supplemental Monitoring Programs.

- Data generated or derived from Citizen Sampling conducted pursuant with Section 3.1 of Appendix L and Inspections conducted pursuant with Section 10.

- Information acquired during meeting, inspections, and other significant events with the MDEQ, CNF, GNF, and other relevant regulatory agencies.

- Data and information generated and derived from Third Party studies and reports.

- Any final Arbitration Award.

APPENDIX C. DESIGNATED COUNCILS STAFF AND CONSULTANTS

The following two people have signed confidentiality agreements:

James R. Kuipers

Sarah Zuzulock

APPENDIX D. ARBITRATION

1.0 Trigger. To resolve a Dispute under Section 9.0, Councils or SMC may initiate arbitration, and the dispute shall be arbitrated in the manner set forth in this Appendix.

1.1 Written Demand. The Claimant shall provide all Respondents with a written demand for arbitration by certified mail within 30 days of the expiration of the 120-day period specified in Section 9.0. The written demand for arbitration shall include a brief statement of the matter in Dispute, the section of the Agreement giving rise to the Dispute, and the remedies sought.

1.2 Negotiation Period. The receipt of the written demand for arbitration by the respondent initiates a 30-day negotiation period during which time the Parties shall negotiate in good faith to resolve the dispute. If the Dispute is not resolved within the 30-day negotiation period, the arbitration shall proceed.

1.3 Arbitration Panel. The Arbitration Panel shall decide all Disputes. The Arbitration Panel shall be comprised of one arbitrator selected by the Councils, one arbitrator selected by SMC, and one neutral arbitrator selected by the arbitrators so selected.

1.4 Selection of Councils and SMC Arbitrators. Councils and SMC shall select their respective arbitrators within 15 days of the end of the 30-day negotiation period. If the Councils or SMC fail to appoint an arbitrator within the time period, the American Arbitration Association (AAA) shall appoint such arbitrator within 10 (ten) days of being notified by either party of the need for such appointment.

1.5 Selection of neutral arbitrator. The arbitrator selected by Councils and the arbitrator selected by SMC shall, within 10 days of their appointment, select a third neutral arbitrator. In the event that they are unable to make such selection, the AAA shall appoint the third neutral arbitrator within 10 days of being notified by either Party of the need for such appointment.

1.6 Neutral arbitrator disclosure. Prior to the commencement of the arbitration hearing, the third neutral arbitrator shall provide an oath or undertaking of impartiality. To insure the complete independence of the neutral arbitrator, the neutral arbitrator shall disclose to the parties any circumstances that may affect impartiality. These circumstances include but are not limited to any bias, any direct or indirect financial or personal interest in the dispute, any past, present, or reasonably foreseeable direct or indirect financial dependence on the parties, and any other past, present, or reasonably foreseeable relationship with the parties or their representatives. Either Claimant or Respondent may object to the appointment of the neutral arbitrator based upon this disclosure Upon objection of a party to the continued service of the neutral arbitrator, the AAA shall determine whether the arbitrator should be disqualified and shall inform the parties of its decision, which shall be conclusive.

1.7 Location. The arbitrators shall select Columbus, Big Timber, or Billings, Montana, as the place for arbitration.

1.8 Governing Law. The Parties acknowledge that this Agreement evidences a transaction involving interstate commerce and is subject to arbitration as provided in Title 5 of the U.S. Code, the United States Arbitration Act.

1.9 Guidelines. Unless otherwise agreed to by the Parties or provided in this Appendix, the American Arbitration Association (AAA) Environmental Arbitration Guidelines as in effect from time to time shall apply.

1.10 Injunctive Relief. Either respondent or claimant may apply to the Arbitration Panel seeking injunctive relief until the arbitration award is rendered or the dispute is otherwise resolved. Either Claimant or Respondent also may, without waiving any remedy under this Agreement, seek from any court having jurisdiction any interim or provisional relief that is necessary to protect the rights or property of that Party, pending the Arbitration Panel's determination of the merits of the dispute.

1.11 Consolidation of Multiple Arbitrations. The Councils and SMC are bound each to each other, by this arbitration clause. If more than one arbitration is begun under this Agreement and one of the Parties contends that two or more arbitrations are substantially related and that the issues should be heard in one proceeding, the Arbitration Panel selected in the first-filed of such proceedings shall determine whether, in the interests of justice and efficiency, the proceedings should be consolidated before that Arbitration Panel.

1.12 Discovery. Consistent with the expedited nature of arbitration, Claimants and Respondents will, upon written request of the other Party, promptly provide the other with copies of documents relevant to the issues raised by any claim or counterclaim. The scope of discovery shall be governed by MCA 25-20-rules 26-37. Any dispute regarding discovery, or the relevance or scope thereof, shall be determined by the Arbitration Panel whose determination of such dispute shall be conclusive. All discovery shall be completed within 60 days following the appointment of the Arbitration Panel unless the Arbitration Panel determines that the discovery period must be extended because of a dispute over discovery.

1.13 Depositions. At the request of the Claimant or Respondent, the Arbitration Panel shall have the discretion to order examination by deposition of witnesses to the extent the Arbitration Panel deems such additional discovery relevant and appropriate. Depositions shall be limited to 3 (three) per Party and shall be held within 30 days of the making of a request.

1.14 Time of Arbitration hearing. The Arbitration Panel shall set the date, time, and place of the hearing and shall provide each Party with at least 30 days written notice of the hearing date.

1.15 Briefs. Each Party shall file a pre-hearing and post-hearing brief. The Arbitration Panel shall establish the required content and length of such briefs.

1.16 Stenographic record. There shall be a stenographic record of all arbitration proceedings and hearings and such record shall be the official record of such proceedings.

1.17 Award Time Line. The final award shall be made within 180 days of the Respondent's receipt of the written demand for arbitration. All the arbitrators shall agree to comply with this schedule before accepting appointment. The Parties, by written agreement, may extend this time limit.

1.18 Statute of Limitations. The requirements of filing a notice of claim with respect to the Dispute submitted to the Oversight Committee or to arbitration shall be suspended until the Arbitration Panel award.

1.19 Award. All decisions of the Arbitration Panel and the final award shall be by a majority vote of the Arbitration Panel. The final award shall be in writing and include findings of fact, a statement regarding the reasons for the disposition of the dispute, and any remedy awarded. All Arbitration Panel awards, decisions on questions of law, and findings of fact are final and binding on the Parties. The Arbitration Panel shall decide issues of procedural arbitrability.

1.20 Remedies. The Arbitration Panel may grant any remedy or relief that the panel deems is just and equitable and within the scope of the agreement of the Parties.

1.21 Arbitration costs and fees. The Arbitration Panel shall award to the prevailing Claimant or Respondent, if any, as determined by the Arbitration Panel, all of its "Arbitration Costs and Fees". "Arbitration Costs and Fees" mean all reasonable pre-award expenses, including the arbitrators' fees and expenses, administrative fees, stenographer costs, travel expenses, and out-of-pocket expenses such as copying and telephone costs.

> 1.21.1 Limitation. "Arbitration Costs and Fees" shall not include any attorney or witness fees incurred by a Claimant or Respondent. The Parties acknowledge that the Claimant and Respondent are responsible for their own attorney and witness fees.

1.22 Public information. A summary of the arbitration hearing and the final arbitration award shall be part of the public domain and may be disclosed by Councils or SMC, except for Confidential Information.

APPENDIX E. LEGAL DESCRIPTION OF SMC PROPERTIES AS AMENDED IN 2004 AMENDMENT

Ekwortzel Property

Township 4 South, Range 15 East, M.P.M., Stillwater County, Montana

Section 25: E ½ E ½.

SUBJECT TO all third party rights of record existing at the time of conveyance of this Easement and not subordinated to this Easement.

Magpie Property

Township 4 South, Range 16 East, P.M.M., Stillwater County, Montana

Section 27: NW¼, N½SW ¼, NW¼SE¼, SW¼SW¼,

Section 27: Tract located in the SW¼SE¼ and SE¼SW¼ described as Area of Relocation "B" on Certificate of Survey No. 312620,

Section 33: NE¼NE¼,

Section 34: NW¼.

All more particularly described as "Tract A" of Certificate of Survey No. 318979 filed August 18, 2004, at 3:19 p.m., records of Stillwater County, Montana.

SUBJECT TO all third party rights of record existing at the time of conveyance of this Easement and not subordinated to this Easement.

Yates Property

Township 3 South, Range 13 East, M.P.M., Sweet Grass County, Montana

Section 21: A tract of land in the NW¼ more particularly described as Tract "C" of Certificate of Survey No. 119451 filed January 7, 1992, at 2:05 p.m., records of Sweet Grass County, Montana.

SUBJECT TO all third party rights of record existing at the time of conveyance of this Easement and not subordinated to this Easement.

Boe Property

Township 3 South, Range 13 East, M.P.M., Sweet Grass County, Montana

Section 9: All,

Section 10: W½W½,

Section 17: All,

Section 19: NE¼,

Section 20: Lots 3, 4, 5, 6, 10, 11 and 14, and a tract of land situated in the NE¼ more particularly described as Tract A of Certificate of Survey No. 129221 filed August 18, 1999, at 2:40 p.m., in the office of the Clerk and Recorder, Sweet Grass County, Montana.

SUBJECT TO all third party rights of record existing at the time of conveyance of this Easement and not subordinated to this Easement.

Beartooth Property

Township 5 South, Range 15 East, M.P.M., Stillwater County, Montana

Section 28: W½SW¼,

Section 32: NE¼NE¼,

Section 33: NW¼NW¼.

SUBJECT TO all third party rights of record existing at the time of conveyance of this Easement and not subordinated to this Easement.

Stratton Ranch Property

Township 5 South, Range 15 East, M.P.M., Stillwater County, Montana

Section 10: S ½ SW ¼,

Section 15: N ½ NW ¼.

SUBJECT TO all third party rights of record existing at the time of conveyance of this Easement and not subordinated to this Easement.

APPENDIX F. EAST BOULDER MINE COMPREHENSIVE BUSING AND TRAFFIC REDUCTION PLAN
(Amended August 2009)

1.0 Traffic and Busing Plan. SMC shall develop, implement, and fund a comprehensive busing and traffic reduction plan (the "East Boulder Traffic Plan") for the duration of SMC Mining Operations.

1.1 Implementation. SMC shall implement the East Boulder Traffic Plan to minimize all mine-related traffic on all mine-access roads, including but not limited to Federal Aid Secondary road 298 (Main Boulder River Road), Sweet Grass County road 31 (East Boulder River Road), Forest Service road 205, Sweet Grass County road 30, and Park County road 29 (Swingely Road), to the maximum extent possible.

1.2 Objective. The objective of the East Boulder Traffic Plan is to minimize and/or eliminate the adverse impacts of all mine-related traffic on road safety and maintenance, Boulder River valley residents, wildlife, surface waters and aquatic resources, and other resources.

1.3 Vehicle Permit System. SMC shall establish, maintain, and enforce a Vehicle Permit System for the East Boulder Mine. Except for persons displaying a valid vehicle permit, SMC shall prohibit employees, visitors, contractors, subcontractors, and vendors from entering or leaving the mine site by private vehicle. SMC shall provide bus transportation to and from the mine site for all unpermitted employees, visitors, contractors, subcontractors, and vendors. SMC shall prohibit unpermitted vehicles from entering the mine site.

1.3.1 Permitted Vehicles are defined as:

1.3.1.1 SMC Vehicles. Vans, pickups, & SUV's that are used on a daily basis for salary staff transportation.

1.3.1.2 Contractor Vehicles. Contractors that perform regular work at the mine and require a vehicle to access the site, and miscellaneous business-related visitors (vendors, prospective contractors, consultants, etc).

1.4 Permit Limitations. Up to a maximum of 35 vehicle permits may be assigned by SMC at their discretion to employees, visitors, subcontractors, vendors, or contractors. Each permit allows one round-trip to the mine site per day. The holders of such permits may enter or leave the mine site by private vehicle, and may park a private vehicle at the mine site.

1.4.1 Exclusions.

1.4.1.1.1 Non-routine visitors and SMC employees with multiple site responsibilities that require travel between the East Boulder Mine and Boe Ranch Property are exempted from the vehicle permit system.

1.4.1.1.2 Site vehicles are exempt from the permitted vehicle system and are defined as SMC vehicles that are typically parked at the mine site and do not travel the East Boulder and Main Boulder roads on a regular basis. In general, Site Vehicles are tools (or pieces of equipment) used to complete work at the mine site. From time to time, a Site Vehicle is needed for off-site use related to minor medical incidents (to transport an employee to the BT medical clinic) and for operational emergencies (to transport an employee home if that employee missed his carpool because he/she was required to work beyond his/her standard shift due to an unforeseen operational need; e.g. An electrician who is required to stay late to deal with a power outage). Site Vehicles require a permit signed by a Manager or Supervisor before leaving the mine site. Such signed permits will be available to the Councils upon request.

1.4.1.1.3 Government vehicles (MSHA, USFS, DEQ, etc)

1.4.1.1.4 Visitors (non business related: GNA, educational tours, etc)

1.4.1.1.5 SMC vehicles that have responsibilities at other sites (Corporate Management, Mine Manager, Environmental Manager, or an occasional visit from a Stillwater Mine, Smelter/BMR, or Columbus office technical staff member).

1.5 Car Pooling. SMC shall require all holders of vehicle permits to car pool to the maximum extent possible. SMC shall maintain a car pooling objective of at least 3.0 riders per permitted vehicle (measured as a daily mean).

1.6 Monitoring Program. SMC shall establish and maintain a daily traffic monitoring program to verify its compliance with this provision. At a minimum, such program shall monitor and record the following data measured at the mine site check-in gate: daily number of SMC and contractor permitted vehicles, average number of riders in each permitted vehicle, daily number of commercial deliveries, site vehicles, buses, and visitors. This monitoring program shall also verify SMC's compliance with the Commercial Traffic Reduction Plan (Subsection 7.25-7.31). SMC shall provide a

monthly report to the CRC/NPRC representatives on the Oversight Committee that includes all data required above.

1.7 Inspections. NPRC/CRC shall have the right to conduct unannounced inspections to evaluate SMC's compliance with the East Boulder Traffic Plan, and may request more frequent monitoring reports if conditions warrant.

1.8 Incorporation. In addition to being a condition of this Agreement, the East Boulder Traffic Plan must be incorporated into the Plan of Operations for the East Boulder Mine.

1.9 Limits On Staging Area. The nearest bus stop from the East Boulder Mine site would be no closer than within the city limits of Big Timber. The EBOC may approve other bus stops when necessary.

1.10 Mitigation Measures. The Oversight Committee shall develop and implement additional mitigation measures necessary to address the issues regarding SMC employees, contractors, and subcontractors with residences in the Boulder River valley south of Big Timber. The Oversight Committee shall develop and SMC shall implement these mitigation measures within 90 days of the effective date of this Agreement. The Oversight Committee shall review this issue periodically to address any material changes in circumstances.

1.11 Busing. SMC shall require all SMC employees, subcontractors, and contractors with permanent residences south of Big Timber and within a three mile radius of the Big Timber city limits to ride the bus.

APPENDIX G. STILLWATER MINE TRAFFIC REDUCTION PLAN
(Amended May, 2009)

1.0 Traffic Plan. SMC shall develop, implement, and fund a comprehensive traffic reduction plan (hereinafter Stillwater Traffic Plan) for the duration of Mining Operations.

1.1 Implementation. SMC shall implement the Stillwater Traffic Plan to minimize all mine-related traffic on all mine-access roads to the maximum extent possible.

1.2 Objective. The objective of the Stillwater Traffic Plan is to minimize or eliminate the adverse impacts of all mine-related traffic on road safety and maintenance, Stillwater River valley residents, wildlife, surface waters and aquatic resources, and other resources.

1.3 Limit on Vehicle Trips. SMC shall limit the number of round-trip vehicle trips to the Stillwater Mine by employees, contractors, and subcontractors to a monthly average of 110 trips per day.

1.3.1 Measurement. SMC shall monitor traffic to the Stillwater Mine and record the number of vehicles entering mine premises over each 24-hour period.

1.3.2 Exemptions. The following persons are exempt from the limit on vehicle trips noted in Section 1.3.

(a) Persons with residences within the following Townships in Stillwater County: T4 and 5S, R 15E, T4 and 5S, R 16E, and T3 and 4S, R 17E. SMC shall use best efforts to provide incentives to encourage these persons to carpool or take bus transportation.

(b) SMC employees, contractors, or subcontractors with multiple site or on-call responsibilities.

(c) SMC employees driving SMC-owned vehicles.

(d) Contractors employed during construction pulses for a period of less than or equal to 30 days that drive commercial vehicles.

1.3.3 Change in Circumstances. If there is a material change in circumstances, such as the development of a subdivision in the above Townships, that significantly changes the number of persons with residences in designated areas, the SOC shall address the issue.

1.4 Car Pooling. SMC shall require all persons driving private vehicles, including those exempted above, to car pool to the maximum extent possible.

1.5 Busing Program. SMC is providing bus transportation to and from the mine site for all employees, contractors, and subcontractors. The Parties acknowledge that a

busing program is the most effective means of reducing traffic and ensuring safety. SMC shall provide bus transportation as long as it is affordable.

1.5.1 Conditions of Suspension. Before suspending the busing program, SMC shall:

(a) Prepare a report explaining why providing bus transportation is no longer affordable and provide an opportunity for NPRC/SPA to review the report.

(b) Discuss the report at the next scheduled SOC meeting.

(c) Develop and implement a carpooling program or other program to meet the limit on vehicle trips noted in Section 1.3.

1.5.2 Re-Establish. SMC shall re-establish the busing program if changes in circumstances make providing bus transportation affordable.

1.6 Condition of Employment. SMC shall require, as a condition of employment, busing and/or carpooling for all employees, contractors, and subcontractors.

1.7 Monitoring Program. SMC shall establish and maintain a daily traffic monitoring program to verify its compliance with this provision. At a minimum, such program shall monitor and record the number of riders in each permitted vehicle measured at the mine-site check-in gate, the number of unpermitted vehicles in the parking lot during each shift, and the disposition of each such vehicles. This monitoring program shall also verify SMC's compliance with the Commercial Traffic Reduction Plan (Appendix H) and shall monitor and record the number of commercial vehicles making deliveries to the mine site per day measured at the mine-site check-in gate. SMC shall provide a report at each regular SOC meeting.

1.8 Inspections. SPA/NPRC shall have the right to conduct unannounced inspections to evaluate SMC's compliance with the Stillwater Traffic Plan and may request more frequent monitoring reports if conditions warrant.

1.9 Staging Areas. SMC shall provide staging areas to maximize access to busing and carpooling for employees, contractors, and subcontractors; to meet the performance requirements of this Plan; and to meet the needs of its expanding work force. SMC shall locate staging areas in Billings, Columbus, Absarokee, Red Lodge and any other areas if necessary.

1.9.1 Prohibition. SMC shall prohibit staging areas closer to the Stillwater Mine than Absarokee, except for staging areas in Dean and Fishtail established for the purpose of providing bus transportation to employees, contractors, and subcontractors with residences within a 10-mile radius of Dean and Fishtail.

1.10 Mitigation Measures. The Oversight Committee shall develop additional mitigation measures to address mine-related traffic issues as they arise and review all shift change proposals, speed limit issues, and construction-related traffic issues.

1.11 Training Sessions. SMC shall provide orientation and training sessions for employees emphasizing the importance of safe and courteous driving on local roads with the objective of reducing risks to persons or property, noise, excessive speed, and other negative impacts on the roads. This subject will be covered during new hire training and safety annual refresher training. SPA/NPRC representatives have the right to attend the safety meetings and may suggest traffic related topics for discussion at these training sessions. SMC shall provide Oversight Committee with an overview of this training program at least annually.

APPENDIX H. COMMERCIAL TRAFFIC REDUCTION PLAN

1.0 Objective. The objective of the Commercial Traffic Reduction Plan is to minimize commercial traffic to both the Stillwater and East Boulder Mine sites to the maximum extent possible. For the purposes of this agreement, "Commercial Traffic" means all truck, delivery, and other service traffic to and from the mine site, except for SMC-sponsored busing required by this section.

1.1 Staging Areas. SMC shall minimize commercial traffic to the East Boulder Mine and Stillwater Mine sites by establishing central staging areas and/or warehouses in Columbus and Big Timber, Montana.

1.2 Shipments. SMC shall consolidate all shipments and require all contractors, subcontractors, and vendors, as a condition of service, to consolidate all shipments to both mine sites to the maximum extent possible.

1.3 Monitoring. SMC shall implement and maintain a program to monitor the total number of commercial vehicles traveling to both mine sites per day. SMC shall provide a quarterly report to the relevant Oversight Committee.

1.4 Limits. SMC shall limit all commercial traffic to 10 vehicles per day per mine (measured as a daily mean) to the maximum extent possible.

1.5 Deliveries. SMC shall use busses, vans, and other permitted vehicles to make deliveries to both mine sites to the maximum extent possible.

1.6 Hours. SMC shall restrict all commercial traffic to deliveries of supplies and equipment to the East Boulder Mine to daylight hours or to between the hours of 7 A.M. and 6 P.M., whichever is more restrictive, except during operational emergencies.

1.7 Construction Pulses. SMC may request exceptions for construction pulses. The EBOC and SOC shall approve all such exceptions.

APPENDIX I. ENVIRONMENTAL AUDIT PROGRAM FOR THE EAST BOULDER AND STILLWATER MINES

1.0 Objectives. The objectives of the environmental audits are:

1.0.1 To evaluate SMC compliance with Federal and State Environmental Laws and Regulations.

1.0.2 To evaluate SMC compliance with its internal environmental management policies and procedures.

1.0.3 To evaluate SMC compliance with the terms, conditions, and performance objectives of this Agreement.

1.0.4 To evaluate SMC waste control, minimization and reduction practices.

1.1 Frequency. The initial audit of the Stillwater Mine was completed on July 29, 2002. The final audit report is available to the public. A mini-audit of the East Boulder Mine was completed on February 10, 2003 to ensure policies were consistent with the Nye operations. Subsequent audits may be called by the Councils and shall be refined to address specific issues as determined by the relevant oversight Committee and shall occur no more than once every five years. Subsequent audits shall not include water-quality related issues unless a compliance issue has been raised by the appropriate federal or state agency or SMC has exceeded a Tier 2 or Tier 3 trigger level during the five years preceding the audit.

1.2 Limitation. The evaluation of SMC compliance with record keeping and reporting requirements under objective 1.0.1 shall be limited to Repeat Non-Compliances. "Repeat Non-Compliances" means a pattern of the same or closely related non-compliances of record keeping or reporting requirements that have occurred within the past 3 (three) years.

1.3 Criteria. Councils' Consultants shall complete the environmental audits. The Parties shall establish the criteria, protocols, methods, and procedures and shall determine the focus and scope of the environmental audits consistent with the objectives of Section 1.0.

1.4 Participation. Councils shall have the right to Participate in all aspects of the environmental audits. Such participation shall include but is not limited to the following rights:

1.4.1 The right to participate in all site inspections and visits conducted by the Councils' consultants.

1.4.2 The right to participate in all interviews of relevant SMC employees, consultants, and regulatory agency personnel conducted by the Councils' consultants.

1.4.3 The right to access all Information relevant to the environmental audit, subject to the limitations set forth in Section 3.0.

1.4.4 The right to take photographs and take samples of the Environment during such audits.

1.5 Draft Audit Report. The Councils' consultants shall prepare a draft audit report to be reviewed by the EBOC or SOC. The Parties shall submit written comments and suggestions on the draft report within 45 days of receipt of the draft report.

1.6 Final Audit Report. The Councils' consultants shall prepare a Final Audit Report addressing the comments and suggestions made by the Parties within 45 days of receipt of such comments and/or suggestions. The Final Audit Report shall summarize the results of the audit, make recommendations and conclusions, and identify corrective measures necessary to address any issues of SMC compliance with the objectives of Section 1.0 of this Appendix.

1.7 Implementation. SMC shall implement the recommendations and corrective measures identified in the Final Audit Report consistent with the following:

1.7.1 In the event the recommendations and corrective measures are related to objective 1.0.1, SMC shall immediately implement the recommendations and corrective measures.

1.7.2 In the event the recommendations or corrective measures are related to objectives 1.0.2-4, the EBOC or SOC shall decide what recommendations or corrective measures SMC will be required to implement.

1.8 Progress Reports. SMC shall prepare quarterly reports and an annual report summarizing the implementation of any recommendations or corrective measures. The EBOC and SOC shall review such reports.

1.9 Information. The Final Audit Report shall be available to the public.

1.9.1 Confidential Information. In the event that SMC asserts that there is Confidential Information within the scope of the information and activities affected by these environmental audits, the Parties shall address the issues pursuant with Section 3.0.

1.10 Not Applicable. This section is not applicable to any Emergency Environmental Audit triggered by another section of this Agreement.

APPENDIX J. RECLAMATION PLAN AND PERFORMANCE BOND EVALUATION

1.0 Evaluations. The Responsible Mining Practices and Technology Committee shall conduct an evaluation of the SMC Reclamation Plan, Performance Bond, and interim reclamation plan for the Stillwater Mine and East Boulder Mine to coincide with every State of Montana review of such plans and bonds. Councils' consultants shall complete the evaluation, and SMC shall fund the evaluation up to $12,000 per evaluation.

1.1 Definitions. For the purposes of this Agreement,

1.1.1 "Performance Bond" means a surety bond or similar bond required to be provided by SMC under state or federal law with respect to reclamation obligations, including but not limited to, the bond required by MCA § 82-4-338 (1999) (performance bond).

1.1.2 "Reclamation" means the return of lands disturbed by mining or mining-related activities to an approved post-mining land use which has the stability and utility comparable to that of the pre-mining landscape to the extent Economically Feasible. Reclamation shall be performed consistent with applicable Federal and State Environmental Laws and Regulations.

1.1.3 "Reclamation Plan" means a plan as defined by MCA § 82-4-303(14) (definition of reclamation plan) and § 82-4-336 (reclamation plan and specific reclamation requirements), and applicable administrative rules.

1.2 Timeline. These evaluations shall be completed concurrent with State of Montana bond reviews or at a maximum once every 5 years.

1.3 Objectives. The objectives of these evaluations shall include but are not limited to the following:

1.3.1 To evaluate the SMC Reclamation Plan and Performance Bond for compliance with applicable Federal and State Environmental Laws and Regulations.

1.3.2 To evaluate the SMC Reclamation Plan and Performance Bond for adequacy with respect to sound engineering and environmental practices.

1.3.3 To make recommendations to improve the Reclamation Plan and Performance Bond.

1.3.4 To make recommendations to improve interim reclamation practices consistent with the objectives of Section 1.6 of this Appendix.

1.4 Participation. Councils shall have the right to Participate in all aspects of the Reclamation Plan and Performance Bond Evaluation. Such participation shall include but is not limited to the following rights:

1.4.1 The right to participate in all site inspections and visits conducted by the Third Party.

1.4.2 The right to participate in all interviews of relevant SMC employees, consultants, and regulatory agency personnel conducted by the Third Party.

1.4.3 The right to access all Information relevant to the Reclamation Plan and Performance Bond Evaluation, subject to the limitations set forth in Section 3.

1.5 Interim Reclamation Plan Revision. SMC shall revise the interim reclamation plan for the East Boulder Mine and Stillwater Mine if required by Agency decision or the decision of the relevant Oversight Committee after the review and approval of the final report.

1.6 Interim Reclamation Objectives. The objectives of the interim reclamation plan shall include but are not limited to the following:

1.6.1 The Plan shall incorporate the recommendations of the final report approved by the relevant Oversight Committee.

1.6.2 The Plan shall minimize the number of disturbed acres at the mine site and shall incorporate the concept of concurrent reclamation.

1.6.3 The Plan shall minimize and/or eliminate the invasion of noxious weeds on all SMC properties.

1.6.4 The Plan shall maximize the re-vegetation of disturbed areas to restore the nutrient balance of the soils to maximize the success rate of restoring all disturbed areas to a stable and productive pre-mining condition.

1.6.5 The Plan shall minimize and/or eliminate erosion and sediment runoff from disturbed areas.

1.6.6 The Plan shall be designed to ensure all areas are readily accessible for ongoing weed control efforts.

1.6.7 The Plan shall minimize the aesthetic and visual impacts to the surrounding environment.

APPENDIX K. TAILINGS AND WASTE ROCK PROJECT
(Amended November, 2009 and October, 2016)

1.0 Obligation and Objectives. SMC shall establish, maintain, and fund a Tailings and Waste Rock Project (the "Project").

1.1 Project Objectives. The objectives of the Project shall include but are not limited to the following:

1.1.1 To minimize and/or eliminate the need for additional traditional Tailings Impoundments and Waste Rock disposal areas in the Boulder River and Stillwater River Watersheds.

1.1.2 To minimize the production of tailings and Waste Rock at the East Boulder and Stillwater Mines to the extent Economically Feasible.

1.1.3 To identify and quantify future tailings and Waste Rock production and disposal requirements at the East Boulder and Stillwater Mines.

1.1.4 To identify, research, develop, and implement Economically Feasible new Technologies and/or Practices or modify existing Technologies and Practices to:

(a) Minimize the production of tailings and Waste Rock;
(b) Maximize the life expectancy and capacity of all existing impoundments and Waste Rock disposal areas;
(c) Eliminate and/or minimize the environmental impacts associated with the disposal of tailings and Waste Rock; and
(d) Eliminate and/or minimize the need for the surface disposal of tailings and Waste Rock.

1.1.5 To evaluate existing Tailings Impoundments and Waste Rock disposal plans and to make recommendations to improve their design to more adequately protect the Environment and more adequately address safety concerns.

1.1.6 To continue to recognize that best available technology and practices are an evolving concept.

1.2 Definitions. For the purposes of this Agreement,

1.2.1 "Tailings Impoundment" means any structure used to store or contain processed ore tailings (left over material) from a flotation or similar mineral process plant. Tailings Impoundment types may include cross valley, side hill, ring dike and valley bottom dams constructed by either upstream, downstream, or centerline methods. A Tailings Impoundment typically consists of an embankment that confines mill tailing in the form of a slurry and is engineered to provide for long-term geologic containment, control contaminant migration, and groundwater

protection and related issues. Tailings Impoundments may also be referred to as a tailings repository when used for de-watered or dry tailings storage.

1.2.2 "Waste Rock" means mined material that is classified and segregated as Waste Rock because it does not contain economic value.

1.3 Participation. Councils shall have the right to Participate in all aspects of the Project. Such participation shall include but is not limited to the following rights:

1.3.1 The right to participate in all site inspections and visits conducted by the Third Party.

1.3.2 The right to participate in all interviews of relevant SMC employees, consultants, and regulatory agency personnel conducted by the Third Party.

1.3.3 The right to access all Information relevant to the Project, subject to the limitations set forth in Section 3.0.

Phases. This Project shall consist of the following four phases:

1.4 Phase I: Evaluation Phase. Phase I was completed in April of 2002, except for objective 1.4.1(c) below.

1.4.1 Objectives. The objectives of Phase I shall include but are not limited to the following:

(a) To evaluate existing tailings and Waste Rock disposal plans;
(b) To determine their adequacy with respect to sound engineering and environmental practices;
(c) To identify, evaluate, and recommend alternative locations for future tailings and Waste Rock disposal areas in the event such disposal options prove necessary; and
(d) To make recommendations and conclusions for Phase II of this Project.

1.4.2 Locations. In evaluating the suitability of locations for future tailings and Waste Rock disposal areas, SMC shall:

(a) Continue to give preference to locations outside the 100-Year Floodplain. The 100-year floodplain shall be determined by information published by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study or similar information which contains discharges and water-surface elevations for 100-year floods, which have annual exceedance probabilities of 1%. The 100-year flood plain shall be defined as the area inundated by water-surface elevations during a 100-year

storm event. The relevant Oversight Committee shall establish the 100-year plain for both the East Boulder Mine and Stillwater Mine within 1 year of the Effective Date.

(b) Not consider locations within visual view of the Boulder River Watershed and East Boulder River Watershed below the Gallatin National Forest boundary.

(c) Give preference for locations within existing permit boundaries as of November 2009.

1.4.3 Framework. The Parties shall use the following framework to complete Phase I:

(a) The Third Party shall review all SMC Tailings Impoundment and Waste Rock disposal plans, studies, and reports.

(b) The Third Party shall meet with SMC and discuss this information and discuss future production and/or expansion plans.

(c) The Parties shall review literature and other information on traditional and innovative, emerging tailings and Waste Rock disposal techniques (i.e., paste).

(d) The Third Party shall tour and review SMC tailings backfill operations and other relevant tailings and Waste Rock disposal facilities and discuss research and development plans. The Parties may tour other relevant mining facilities if appropriate.

(e) The Technology Committee shall critically evaluate SMC existing and proposed tailings facilities, Waste Rock disposal studies and plans, and paste tailings evaluations with other existing and proposed mining operations.

(f) The Technology Committee shall prepare draft reports with a discussion of information derived from above tasks, including conclusions and recommendations.

(g) The Parties shall review the draft report separately, followed by review by the Technology Committee, and report out to the Oversight Committee.

(h) The Technology Committee shall draft a final report with each Party reserving the right to include a minority report.

(i) The Oversight Committees shall review and approve the final report and decide which recommendations and conclusions should be used in Phase II.

1.5 Phase II: Pre-feasibility Phase. SMC shall use the recommendations and conclusions of the Phase I Final Report to establish its research and development (R&D) expenditures in the areas of Tailings and Waste Rock disposal. The Phase II pre-feasibility study was completed in November 2006 and identified environmental, technical and economic factors that limit the feasibility of implementation at the Stillwater and East Boulder Mines given the current state of technologies.

1.6 Phase III: Feasibility Phase. The need for completion of the Phase III Feasibility Study will be evaluated by the Responsible Mining Practices & Technology Committee on an annual basis. The Phase III Feasibility Study may include recommendations as to environmental and technical feasibility, as well as economic feasibility. The following conditions would lead to completion of the Phase III Feasibility Study:

(a) Significant advances in paste tailings technology, or alternative new technologies in tailings deposition or disposal science, that may improve environmental and/or economic feasibility.
(b) Significant changes in mine operations (i.e. increased production rate) that require the new permitted expansion of an existing tailings impoundment or the construction of a new tailings disposal facility.

1.7 In 2015 SMC identified the need to begin planning and permitting for an expansion of tailings disposal and waste rock facilities. The Parties shall use the following framework to complete the East Boulder Mine and Stillwater Mine Tailings and Waste Rock Expansion Projects:

(a) SMC will inform the Councils when tailings and waste rock alternative planning is initiated and seek Councils input into the development of alternatives to be evaluated. SMC will provide the Councils the studies in draft form for review and comment prior to finalization of the reports by SMC.
(b) SMC will provide the Councils baseline environmental analysis reports in draft form for review and comment prior to submittal to the regulatory agencies.
(c) SMC will conduct a Failure Modes Effects Analysis (FMEA) to assist in selection of the preferred alternative or alternatives and to identify critical design issues. The FMEA will be conducted as a multi-stakeholder process with Council participation.
(d) SMC with the Councils participation will conduct a Multiple Accounts Analysis (MAA) to evaluate viable tailings and waste rock expansion alternatives according to their environmental, technical, financial, and socio-economic merits.
(e) SMC will provide the Councils with the draft Operating Permit Amendment for the expansion projects for review and comment prior to submittal to the regulatory agencies. SMC will provide the Councils with agency comments and SMC responses for review and comment prior to their being submitted to the regulatory agencies.
(f) Conversely, the Councils will provide SMC with a draft of their comments for review and comment prior to submittal to the regulatory agencies.

(g) The Parties will use the framework provided by Addendum A as the template for establishing project timelines for current and future mine expansion projects. Project specific timelines will be approved by the respective Oversight Committees.

1.8 Phase IV: Implementation of Successfully Piloted or Tested Technologies and Practices. If Economically Feasible Technologies and/or Practices are identified by Phase III of this Project, SMC shall incorporate the Technologies and/or Practices in additional tailings and Waste Rock disposal plans. SMC shall implement paste tailings or alternative technologies in existing impoundments and Waste Rock disposal areas if such implementation is determined to be Economically Feasible.

1.9 Projections. This Project shall evaluate future tailings and Waste Rock disposal requirements from all SMC operations based upon the projected production rate for the East Boulder and Stillwater Mines. This Project shall incorporate any changes in SMC projected production rates.

APPENDIX L. COMPREHENSIVE SURFACE WATER, GROUND WATER, AND AQUATIC RESOURCES PROTECTION PROGRAM
(Amended December 2021)

SECTION 1.0 OBJECTIVES

1.0 Objectives. The objectives (the "Objectives") of the Comprehensive Surface Water, Ground Water, and Aquatic Resources Protection Program (the "Water Program") shall include the following:

1.0.1 To provide an opportunity for the Councils to Participate in the development and oversight of SMC Water Management Plans.

1.0.2 To identify and address potential issues of concern related to water quality at the earliest possible time.

1.0.3 To adopt a proactive precautionary approach for the Water Management Plans at the East Boulder and Stillwater Mines.

1.0.4 To maintain the Baseline Water Quality, Biological Integrity, and Beneficial Uses of the East Boulder and Stillwater Rivers and ground waters that may be impacted by SMC Mining Operations.

1.0.5 To minimize and if Economically Feasible eliminate surface water mixing zones from the East Boulder and Stillwater MPDES Permits.

1.0.6 To minimize and if Economically Feasible eliminate ground water mixing zones from the East Boulder and Stillwater MPDES.

1.0.7 To minimize and if Economically Feasible eliminate a Direct Discharge of Effluent from the East Boulder and Stillwater MPDES Permits.

1.0.8 To minimize and if Economically Feasible eliminate the Direct Discharge and Indirect Discharge of Pollutants from SMC Mining Operations to surface and ground waters.

1.0.9 To make the East Boulder and Stillwater Mines Zero Discharge Facilities if Economically and technically Feasible.

1.0.10 To identify new Technologies and/or Practices and modifications of present Technologies and/or Practices to meet the above Objectives.

SECTION 2.0 DEFINITIONS

2.0 Definitions. In addition to the definitions of capitalized terms in other Sections of this Agreement and Appendices, the following capitalized terms when used in this Agreement and Appendices shall be defined as follows:

2.1 "Baseline Water Quality, Biological Integrity, and Beneficial Uses" means the quality of the receiving water and biological integrity and natural variations immediately prior to the commencement of Mining Operations or, if available, the quality of the receiving water and natural variations that can be adequately documented to have existed on or after July 1, 1971.

2.2 "Biological Integrity" means the ability of an aquatic ecosystem to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitats within a region.

2.3 "Boulder River Watershed" shall include the Boulder River (Montana Waterbody # MT43BJ001-2), the East Boulder River (Montana Waterbody # MT43BJ001-2), West Boulder River, and all tributaries.

2.4 "Discharge of Pollutants" means the addition of any pollutant to surface or ground waters from any point source.

2.4.1 "Direct Discharge(s)" means a Discharge of Pollutants from Outfall 001 in the East Boulder and Stillwater MPDES Permits.

2.4.2 "Indirect Discharge(s)" means a Discharge of Pollutants from all other Outfalls in the East Boulder and Stillwater MPDES Permits and discharges from LAD and snowmaking operations.

2.5 "Exceedance" The conditions causing the exceedance of a Trigger Level established by this Agreement are established in the final Tiered Trigger Level Frameworks approved by the relevant Oversight Committees in the Final Baseline Water Quality Reviews for the Stillwater and East Boulder Mines pursuant to Section 9.0 of this Appendix.

2.6 "Land Application Disposal (LAD)" The application of treated Effluent by irrigation spraying or similar methods to vegetated land for the purpose of exploiting the agronomic uptake of nutrients and water into plant matter.

2.7 "Lowest Applicable Water Quality Standard" means the most stringent water quality standard for the parameter established under the Clean Water Act and implementing regulations or the Montana Water Quality Act and implementing administrative rules.

2.8 “Monitored-Parameters” means any physical, chemical, or biological parameter for which SMC is required to monitor under this Agreement, as described in Section 12.0 of this Appendix or by Federal and State Environmental Laws and Regulations.

2.9 “Nutrients” means total inorganic nitrogen and total phosphorus.

2.10 “Sampling and Monitoring Events” means all sampling events required by this Agreement or Federal and State Environmental Laws and Regulations.

2.11 “Sampling and Monitoring Sites” shall include but are not limited to Effluent sites, instream surface water sites, and ground water monitoring sites established by this Agreement or required by Federal or State Environmental Laws and Regulations.

2.12 “Stillwater River Watershed” includes the Stillwater River (Montana Waterbody # MT43C001) and all tributaries.

2.13 “Treatment Systems” shall include but are not limited to clarification and filtration systems, LAD operations, biological denitrification systems, and snowmaking operations.

2.14 “Trigger Level(s)” means a specified concentration and/or load of a parameter, the exceedance of which triggers specific response and remedial actions under this Agreement and shall include all Trigger Levels of the final Tiered Trigger Level Frameworks most recently approved by the relevant Oversight Committees in the Water Resources Adaptive Management Plans for the Stillwater and East Boulder Mines pursuant to Section 9.0 of this Appendix.

2.15 “Effluent” means all adit and mill process water from SMC Mining Operations, except for Unaltered Ground Water.

2.15.1 “Unaltered Ground Water” means ground water intercepted during Mining Operations. Ground water shall be considered unaltered only if SMC can show through sampling of the ground water that:

(a) There has been no change in the Baseline Water Quality of the ground water after its interception and the intercepted ground water has not been mixed with Effluent; and

(b) The Baseline Water Quality (chemistry) of the intercepted ground water is the same or better than the Baseline Water Quality of the receiving surface or ground waters.

2.16 “Water Management Plan or Water Management Facility(ies)” means SMC water collection, storage, treatment, and disposal plans or facilities for the East Boulder and Stillwater Mines.

2.17 "Zero Discharge Facility(ies)" means no Discharge of Pollutants into surface or ground water from any pipe, percolation pond, LAD operations, or snowmaking operations. To become a Zero Discharge Facility, SMC shall:

2.17.1 Eliminate Direct and Indirect Discharges of Effluent and Unaltered Ground water from SMC Mining Operations;

2.17.2 Operate LAD systems so that the following conditions are satisfied:

(a) The actual, measured, application rate of Nutrients and water is less than or equal to the actual, measured agronomic uptake rate of the site-specific vegetation (habitat type) for each LAD area;

(b) The actual, measured application rate of Nutrients and water is less than or equal to the calculated water uptake rate of the site-specific soil type for each LAD area;

(c) The actual, measured application rate of Nutrients is less than or equal to the measured denitrification capacity of the soils and subsurface formations, or a combination of (a) through (c);

(d) Discharges to LAD areas occur only during the established growing season for the specific LAD area and only during daylight hours or the actual, measured daily agronomic uptake period; and

(e) Levels of all pollutants have been minimized by maximizing and prioritizing the use of Treatment Systems prior to disposal.

2.17.3 Continue to study and monitor the performance of all LAD systems and prepare periodic written reports that evaluate the performance of the LAD systems;

2.17.4 Show through monitoring data that LAD systems will not result in a measurable water quality change in surface waters or in ground waters to the extent practical; and

2.17.5 Show through monitoring data that snowmaking operations will not result in a measurable water quality change in surface waters or in ground waters to the extent practical.

SECTION 3.0 GENERAL REQUIREMENTS

3.0 Participation in SMC Sampling. The Parties acknowledge that SMC employees and consultants shall be responsible for the collection of most of the data under the Water Program. The Designated Councils Representatives shall have the right to observe all scheduled Sampling

and Monitoring Events. Designated Councils Representatives shall have the right to enter SMC premises for these purposes.

3.0.1 Sampling Schedule**.** SMC shall provide the EBOC and SOC with a written plan of all scheduled Sampling and Monitoring Events tentatively planned for the next calendar quarter at each Oversight Committee meeting.

3.0.2 Additional Samples**.** During all Sampling and Monitoring Events, Councils have the right to collect, or have SMC employees and/or consultants collect a reasonable number of duplicate samples.

3.1 Citizen Sampling. The Councils shall have the right to conduct Citizen Sampling of the Environment for any physical, chemical, or biological parameter. Designated Councils Representatives shall have the right to enter SMC premises for these purposes.

3.1.1 Limitations. Councils right to conduct Citizen Sampling is subject to the following limitations:

(a) The Councils shall give SMC reasonable, which generally means at least 24 hours, notice before sampling on SMC premises. The Notice shall include a list of Council members and representatives that will be participating in the sampling;

(b) The Councils shall be accompanied by SMC employees and/or consultants when sampling on SMC premises;

(c) Councils shall comply with all applicable Federal and State laws and regulations pertaining to occupational safety and health during such sampling;

(d) For all samples of the Environment collected by Councils, prior to leaving the premises, Councils shall give SMC a receipt describing the sample taken and a portion of each such sample;

(e) The quality assurance/quality control (QA/QC) measures of all the Councils sampling shall be consistent with the recommendations of Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. Rapid Bio-assessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish. Second Edition. EPA/841-B-99-002. U.S. EPA, Office of Water, Washington, D.C. and the QA/QC of the SMC monitoring program.

3.2 Reporting Program**.** SMC shall design, implement, and maintain an expanded reporting program. SMC shall coordinate this reporting program with the reporting requirements of the Federal and State Environmental Laws and Regulations to the maximum extent possible. SMC and the Councils have implemented the expanded reporting program for both the East Boulder and Stillwater mines.

3.2.1 Reports**.** SMC or Councils shall prepare at least quarterly reports that summarize all water and aquatic resource monitoring data from the preceding months and identify any trends in water quality for Monitored-Parameters. These reports shall summarize the status of each Monitored-Parameter in relation to the Trigger Framework established by Section 9.0 of this Appendix. SMC or Councils shall summarize the most recent data at the relevant Oversight Committee meetings and incorporate the data into the Database established by Section 4.0 of this Appendix.

3.2.2 Annual Report. SMC or the Councils shall prepare an annual report that summarizes the data from the previous year and identifies spatial or temporal trends for Monitored-Parameters. This annual report will also summarize TTLF exceedances from the previous year and the status of Response Framework action steps.

3.2.3 Review. The relevant Oversight Committees shall review the reports.

3.2.4 Adaptive Management Plan Updates. The Water Resources Adaptive Management Plans for both the Stillwater and East Boulder Mines will be updated and approved by the relevant Oversight Committee on a triennial basis (initial Oversight Committee approval June 2020). If the Oversight Committees are not in agreement with any updates or recommended changes to the Water Resources Adaptive Management Plan, then the most recent approved version of the Water Resources Adaptive Management Plans for each mine shall remain in full effect and enforceable per the terms of this Agreement. If agreement is not reached in the relevant Oversight Committee meeting the parties can begin the dispute resolution process described in Section 9 of this Agreement.

SECTION 4.0 DATABASE

4.0 Establishment of Database**.** SMC shall establish and maintain an electronic database (the "Database") of all historic baseline data and all data derived from SMC Sampling and Monitoring Events. SMC has established and maintains this Database for both the Stillwater and East Boulder Mines.

4.1 Requirements

i. The Councils shall have access to this Database.

ii. SMC shall incorporate all data collected or derived from the Water Program and the monitoring programs required by Federal or State Environmental Laws and Regulations into this Database. SMC shall incorporate this data on a quarterly basis.

iii. The Oversight Committees shall use this Database to monitor trends in water quality, to develop and implement the programs established by the Water Program, and to evaluate SMC compliance with the Water Program.

SECTION 5.0 WATER QUALITY REVIEW AND REPORT

5.0 Initial Review. As soon as the Database is operational, Councils shall review the Baseline Water Quality data used by SMC and the MDEQ in the most recent MPDES renewal process for the East Boulder MPDES Permit and Stillwater MPDES Permit. SMC shall provide Councils with any other Information necessary to complete this review. The EBOC and SOC shall address any concerns raised by Councils during this review. This initial review has been completed as part of the development of the Final Baseline Water Quality Reviews for the Stillwater and East Boulder Mines.

SECTION 6.0 EAST BOULDER AND STILLWATER MINE SUPPLEMENTAL MONITORING PROGRAMS FOR SURFACE WATER, GROUND WATER, AND BIOLOGICAL RESOURCES

6.0 General Requirements for the East Boulder Mine and Stillwater Mine Supplemental Monitoring Programs

6.0.1 SMC Obligation**.** SMC shall develop, implement, maintain, and fund a supplemental monitoring program for the East Boulder and Stillwater Mines. SMC shall design these supplemental monitoring programs to supplement the monitoring programs required by Federal and State Environmental Laws and Regulations to the maximum extent possible.

6.0.2 Components. These supplemental monitoring programs shall consist of a minimum of three coordinated components:

i. Surface and ground water resources.
ii. Biological resources.
iii. Effluent and Unaltered Ground Water.

6.0.3 Objectives**.** In addition to the Objectives, the objectives of the supplemental monitoring programs for the East Boulder and Stillwater Mines shall be to monitor and evaluate SMC compliance with:

(a) The Trigger Framework and other Objectives of the Water Program; and
(b) The requirements, limitations, conditions, and stipulations of all Federal and State Environmental Laws and Regulations.

6.0.4 Minimum Required Monitored-Parameters**.** SMC shall use the best available science and technology to monitor for the parameters referenced in Section 12.0 of this Appendix. SMC shall monitor for such parameters at all monitoring site locations

designated in the East Boulder Mine Water Resources Adaptive Management Plan and the Stillwater Mine Water Resources Adaptive Management Plan.

6.0.5 Coordination**.** To the maximum extent possible, SMC shall coordinate the collection and analysis of all physical, chemical, and biological monitoring data and ensure the simultaneous collection of data necessary for statistical comparisons.

6.0.6 QA/QC. The quality assurance/quality control (QA/QC) measures of the supplemental monitoring programs shall be consistent with generally accepted practices.

6.1 East Boulder Mine Supplemental Monitoring Program

6.1.1 Timeline. SMC implemented the East Boulder Mine Supplemental Monitoring Program as described in Appendix N.

6.2 Stillwater Mine Supplemental Monitoring Program

6.2.1 Timeline**.** The Stillwater Mine Supplemental Monitoring Program has been approved and is incorporated into this Agreement as Appendix O.

SECTION 7.0 SUPPLEMENTAL HYDRO-GEOLOGIC AND GROUND WATER RESOURCES STUDIES

7.0 Objectives: The objectives of the Ground Water Studies shall include but are not limited to the following:

7.0.1 To complete additional baseline studies to adequately define and characterize the geologic, hydrologic, and ground water flow conditions at the East Boulder Mine and/or the Boe Ranch Property.

7.0.2 To adequately characterize variations in the hydrological conductivity of the various aquifers, to characterize the nature of any heterogeneities, and to identify potential high hydraulic conductivity zones at the East Boulder Mine and/or the Boe Ranch Property.

7.0.3 To adequately characterize and quantify the hydrological connection between the East Boulder River and various aquifers and to identify all potential alluvial aquifer discharge points into the East Boulder River at the East Boulder Mine and/or the Boe Ranch Property.

7.0.4 To develop a more complete hydro-geological conceptual model for the East Boulder Mine or alternatively the Boe Ranch Property based on the results of these studies.

7.0.5 To utilize real-time measurement in combination with hydro-geological modeling to optimize Effluent and Unaltered Ground Water discharges to meet the Objectives of the Water Program.

7.0.6 To develop and implement the Trigger Framework of Section 9.0 of Appendix L at the East Boulder Mine and/or the Boe Ranch Property.

7.1 Potential Components. The Third Party shall determine the necessary components of the Ground Water Studies. The components may include:

(a) A Resistivity Imaging Geophysical Study.

(b) Additional pumping tests for each ground water monitoring well and the placement of pressure transducers/data loggers in each monitoring well to monitor water levels over time. The purpose of these tests is to characterize the variations in hydraulic conductivity along the river and along the flow path of the proposed mixing zone.

(c) Multiple-well aquifer tests at several sites along the river to characterize the hydraulic connection between the alluvial aquifers and the river.

(d) A more complete hydro-geological conceptual model for the site based on the results of this geophysical study, water level monitoring, monitoring well pumping tests, and multiple-well aquifer tests.

(e) Installation of real-time well, surface water and Effluent instrumentation to measure flow and concentration of Monitored-Parameters utilizing a computerized control and response system.

7.2 Conditions. The Parties shall select a Third Party to complete the Ground Water Studies if:

(a) Regulatory monitoring, supplemental monitoring or citizen monitoring show that the compliance monitoring sites are incorrectly located in order to detect, qualify and quantify potential water quality impacts to the Stillwater or East Boulder rivers; or

(b) SMC is required to initiate response and remedial actions under Section 10.0 of Appendix L because of a Tier 2 or Tier 3 Exceedance of Instream Trigger Levels; or

(c) It is reasonably foreseeable that Indirect Discharges may result in a Tier 2 or Tier 3 Exceedance of Instream Trigger Levels; or

(d) The Boe Ranch Property is proposed by SMC for other than operation as a Zero Discharge Facility; and

(e) SMC does not demonstrate a proactive plan to establish new monitoring locations and appropriately modify monitoring plans and protocols.

There is no need for additional Ground Water Studies within the current permit boundaries of the East Boulder and Stillwater Mine sites.

7.3 Timeline. The Third Party shall initiate the Ground Water Studies as soon as possible but no later than 90 days, and complete the studies no later than 180 days, from the occurrence of any of the triggering conditions established pursuant to Section 7.2(a) through (e), unless otherwise agreed upon by the relevant oversight committee.

7.4 Actions. Based upon the recommendations and conclusions of the final report and the models developed from the Ground Water Resources Studies, the EBOC shall:

(a) Establish and/or modify, if necessary, the Trigger Levels for Indirect Discharges established by this Agreement in the relevant Baseline Water Quality Review;

(b) Modify, if necessary, the Trigger Levels for Direct Discharges established by this Agreement in the relevant Baseline Water Quality Review; and

(c) Modify and expand, if necessary, the location and number of instream surface water monitoring sites and ground water monitoring wells to maximize the potential to detect potential contamination from SMC Mining Operations.

SECTION 8.0 FISHERIES STUDY AND MONITORING PLAN

8.1 Long-term Fisheries Monitoring Plan. The baseline fisheries study has been modified. SMC and Councils have determined that the long-term fisheries monitoring program shall consist of populations surveys completed once every 5 years to coincide with the next 5-year renewal of SMC's East Boulder MPDES Permit. The next population study will be conducted in 2008.

8.2 Objectives: The objectives of this study shall include but are not limited to the following:

(a) To attempt to determine fish distribution, species composition, and population estimates for fish populations in the East Boulder River Watershed.

(b) To collect baseline data that can be used to develop a long-term monitoring plan of fish populations in the East Boulder River, and to monitor potential impacts from SMC Mining Operations at the East Boulder Mine.

8.3 Fisheries Monitoring Plan. A fish population census study will be conducted on the East Boulder River within the boundaries designated by the EBOC once every 5 years. SMC shall fund the approved fisheries monitoring plan up to $20,000 per sampling year.

8.4 Stillwater Mine. The SOC shall decide if a baseline fisheries study or fisheries monitoring plan is necessary for the Stillwater River Watershed.

SECTION 9.0 TIERED TRIGGER LEVEL FRAMEWORK FOR THE EAST BOULDER AND STILLWATER MINES

9.0 Required Components. The Tiered Trigger Level Framework (the "Trigger Framework") is defined for the East Boulder Mine and Stillwater Mine facilities in the respective Water Resources Adaptive Management Plans. The Trigger Framework shall include nutrients, metals, and physical parameters as defined in the most recently approved Stillwater Mine and East Boulder Mine Water Resources Adaptive Management Plans. The Trigger Framework shall be comprised of Groundwater and Surface Water Trigger Levels. Groundwater Trigger Levels are adopted at three different locations and include operational, intermediate and downgradient locations as described in the most recently approved Water Resources Adaptive Management Plans. Each type of Trigger Level shall have three tiers unless the relevant Oversight Committee decides otherwise.

9.1 Tiered Trigger Level Framework. The Tiered Trigger Level Framework for both the East Boulder and Stillwater Mines have been approved by the relevant oversight committees. The Trigger Frameworks were incorporated into the East Boulder Mine Water Resources Adaptive Management Plan as described in Section 6.2 for groundwater and Section 6.3 for surface water; and the Stillwater Mine Water Resources Adaptive Management Plan as described in Section 6.2 for groundwater and Section 6.3 for surface water. The Adaptive Management Plan Trigger Framework supersedes the Trigger Frameworks originally incorporated into the Baseline Water Quality Reviews. The EBOC approved the original East Boulder Mine Adaptive Management Plan, including an updated Tiered Trigger Level Framework, for the East Boulder Mine on July 8, 2020. The SOC approved the original Stillwater Mine Adaptive Management Plan, including the Tiered Trigger Level Framework, for the Stillwater Mine on October 7, 2020.

SECTION 10.0 RESPONSE AND REMEDIAL ACTIONS

10.0 Objectives. The objectives of the response and remedial actions for the East Boulder and Stillwater Mines are:

1. To implement the Objectives of the Water Program; and
2. To implement the Trigger Framework established by Section 9.0 of this Appendix as described in the East Boulder Mine Water Resources Adaptive Management Plan and the Stillwater Mine Water Resources Adaptive Management Plan.

10.1 Schedule. The SOC and EBOC approved corrective schedules for all Tier 1, Tier 2, or Tier 3 Exceedances as part of the East Boulder Mine Water Resources Adaptive Management Plan and the Stillwater Mine Water Resources Adaptive Management Plan, which includes the establishment of the Tiered Trigger Level Framework (TTLF) for each mine. The Adaptive Management Plan TTLF supersedes the Trigger Framework and corrective schedule originally incorporated into the Baseline Water Quality Reviews.

10.1.1 Objectives. The objectives of the corrective schedules are:

(a) To return levels of the parameter to Baseline Water Quality; and
(b) To significantly reduce and/or eliminate the potential for future Exceedances.

10.2 Tier I Response and Remedial Actions. The SOC and EBOC approved the required response and remedial actions for all Tier 1 Exceedances as described in the Response Framework in Table 7.1, Table 7.2, Section 7.1.2 and Section 7.2 of the East Boulder Mine Water Resources Adaptive Management Plan, and in Table 7.1, Table 7.2, Section 7.1.2 and Section 7.2 of the Stillwater Mine Water Resources Adaptive Management Plan. Councils' Consultants, in cooperation with SMC, prepare reports for each oversight committee meeting. The reports indicate whether there has been a Tier 1 Exceedance for any parameter in the downgradient groundwater wells and/or surface water.

10.2.1 Implementation. SMC shall implement all corrective measures approved by the Oversight Committee unless the immediate corrective action implemented by SMC has restored the parameter to existing Baseline Water Quality.

10.3 Tier 2 Response and Remedial Actions. The SOC and EBOC approved the required response and remedial actions for all Tier 2 Exceedances as described in the Response Framework in Table 7.1, Table 7.2, Section 7.1.3 and Section 7.2 of the East Boulder Mine Water Resources Adaptive Management Plan, and in Table 7.1, Table 7.2, Section 7.1.3, and Section 7.2 of the Stillwater Mine Water Resources Adaptive Management Plan. Councils' Consultants, in cooperation with SMC, prepare reports for each oversight committee meeting. The reports indicate whether there has been a Tier 2 Exceedance for any parameter in the intermediate groundwater wells, the downgradient groundwater wells and/or surface water. The Oversight Committee shall address any Tier 2 Exceedance.

10.3.1 Implementation. SMC will immediately initiate implementation of corrective measures, not to exceed $500,000 per year, recommended in the Third Party Evaluation and subject to Oversight Committee approval.

10.4 Tier 3 Response and Remedial Actions. The SOC and EBOC approved the required response and remedial actions for all Tier 3 Exceedances as described in the Response Framework in Table 7.1, Table 7.2, Section 7.1.4, and Section 7.2 of the East Boulder Mine Water Resources Adaptive Management Plan, and in Table 7.1, Table 7.2, Section 7.1.4, and Section 7.2 of the Stillwater Mine Water Resources Adaptive Management Plan. Councils' Consultants, in cooperation with SMC, prepare reports for each oversight committee meeting. The reports indicate whether there has been a Tier 3 Exceedance for any parameter in the downgradient groundwater wells and/or surface water. The Oversight Committee shall address any Tier 3 Exceedance.

10.4.1 Implementation. SMC will immediately initiate implementation of recommended corrective measures within 30 days of the final Third Party Evaluation report, not to exceed $500,000 per year as defined in the GNA (Section 4.5, Section 13.7.12).

SECTION 11.0 WATER MANAGEMENT PRIORITIZATION AND OPTIMIZATION PLAN FOR THE EAST BOULDER AND STILLWATER MINES

11.0 Objectives. The objectives of the Water Management Prioritization and Optimization Plans (the "Optimization Plans") for the East Boulder and Stillwater Mines are:

1. To implement the Objectives of the Water Program; and
2. To implement the Trigger Framework established by Section 9.0 of this Appendix.

11.1. The final East Boulder and Stillwater Mine Optimization Plans were approved as part of the 2005 Amendment of the GNA and are incorporated by reference at Appendices Q and R, respectively.

11.2. The approved Optimization Plans show that SMC removes greater than 90 percent of the pollutants from its effluent prior to discharge to ground waters on an annual average. SMC's level of performance exceeds the requirements of federal and state water pollution control laws by an order of magnitude. SMC achieves this level of pollution reduction by minimizing sources of nitrogen and other underground sources of contamination, utilizing advanced biological treatment technologies, and by operating such technologies efficiently and effectively. In approving the Optimization Plans, SMC has committed to maintaining this level of performance based on an annual average. The Parties recognize that there may be extenuating circumstances that affect this level of performance.

SMC has also committed to making good faith efforts to improve its performance by investigating and implementing new treatment technologies.

SECTION 12.0 MINIMUM REQUIRED MONITORED-PARAMETERS

12.0 Modification. The relevant Oversight Committees may modify the list of parameters for which SMC is required to sample if there is a material change in circumstances.

12.1 Monitored Parameters for Discharge and Operational Water.

East Boulder Mine: SMC shall monitor effluent/discharge waters according to the East Boulder Mine Water Resources Adaptive Management Plan. SMC shall complete effluent monitoring for the locations, frequencies, parameters, and detection limits detailed in Table 3-1 and Table 3-2 in this plan.

Stillwater Mine: SMC shall monitor effluent/discharge waters according to the Stillwater Mine Water Resources Adaptive Management Plan. SMC shall complete effluent monitoring for the locations, frequencies, parameters, and detection limits detailed in Table 3-1 and Table 3-4 for Stillwater Mine, Table 3-2 and Table 3-5 for Hertzler Ranch and Table 3-3 and Table 3-6 for Benbow Portal in this plan.

12.2 Monitored Parameters for Surface Water.

East Boulder Mine: SMC shall monitor effluent/discharge waters according to the East Boulder Mine Water Resources Adaptive Management Plan. SMC shall complete effluent monitoring for the locations, frequencies, parameters, and detection limits detailed in Table 3-1 and Table 3-2 in this plan.

Stillwater Mine: SMC shall monitor effluent/discharge waters according to the Stillwater Mine Water Resources Adaptive Management Plan. SMC shall complete effluent monitoring for the locations, frequencies, parameters, and detection limits detailed in Table 3-1 and Table 3-4 for Stillwater Mine, Table 3-2 and Table 3-5 for Hertzler Ranch and Table 3-3 and Table 3-6 for Benbow Portal in this plan.

12.3 Monitored Parameters for Ground Water.

East Boulder Mine: SMC shall monitor effluent/discharge waters according to the East Boulder Mine Water Resources Adaptive Management Plan. SMC shall complete effluent monitoring for the locations, frequencies, parameters, and detection limits detailed in Table 3-1 and Table 3-2 in this plan.

Stillwater Mine: SMC shall monitor effluent/discharge waters according to the Stillwater Mine Water Resources Adaptive Management Plan. SMC shall complete effluent monitoring for the locations, frequencies, parameters, and detection limits detailed in Table 3-1 and Table 3-4 for Stillwater Mine, Table 3-2 and Table 3-5 for Hertzler Ranch and Table 3-3 and Table 3-6 for Benbow Portal in this plan.

APPENDIX M. FINAL STILLWATER AND EAST BOULDER WATER QUALITY REVIEWS

The Final Baseline Water Quality Review for the East Boulder Mine was prepared by the Center for Science in Public Participation, completed and approved by the East Boulder Oversight Committee on January 25, 2002, and is incorporated by reference into this Appendix by Section 13.7.6 of the Good Neighbor Agreement.

The Final Baseline Waster Quality Review for the Stillwater Mine was prepared by the Center for Science in Public Participation, completed and approved by the Stillwater Oversight Committee on November 15, 2002, and is incorporated by reference into this Appendix by Section 13.7.6 of the Good Neighbor Agreement.

APPENDIX N. EAST BOULDER MINE SUPPLEMENTAL MONITORING PROGRAM

Supplemental instream surface water and biological resources monitoring plan.

1.0 Objectives. In addition to the objectives of Section 1.0 of Appendix L, this supplemental monitoring program is designed to determine the efficacy of developing a site- specific standard for total inorganic nitrogen and total phosphorus in the East Boulder River while taking into account natural variation. This program shall be continued as necessary to meet these objectives. To date, the Parties have not yet reached agreement on development of a site-specific standard for total inorganic nitrogen and total phosphorus.

1.1 Required sampling. SMC shall conduct biological (periphyton, chlorophyll and macroinvertebrate) sampling and water chemistry sampling at each monitoring site location designated in Section 1.2 of this Appendix, subject to the exceptions set forth in this section. Biological monitoring frequencies established in Section 1.5 and 1.8 for periphyton and macroinvertebrates shall be modified to once annually if any one of the following circumstances occur:

- A Tiered Trigger Level Exceedance
- A Direct Discharge of adit water to the East Boulder River (MPDES)
- A direct discharge of Stormwater from the permit area (MPDES)
- An accidental spill or discharge to the East Boulder River resulting from SMC operations, licensed contractor, vendor or vendors agent

Should instream water quality parameters return to baseline conditions and annual biological monitoring establish no impairment as a result of the triggering event, monitoring frequencies will return to those established below.

1.1.1 Boe Ranch. SMC shall also conduct chemical and biological monitoring (chlorophyll A, periphyton, macroinvertebrates) at monitoring sites EBR-005, EBR-007, EBR-008 and EC-01 (chemical only) annually for three years. After the three year period, the sampling frequency shall be pursuant to Section 1.1 of this Appendix. Such sampling shall begin when SMC commits to construction of the facilities at the Boe Ranch property.

1.2 Monitoring Site Locations. This supplemental monitoring program shall include the following monitoring site locations on the East Boulder River (listed from upstream to downstream). The EBOC has the authority to change the precise location of such monitoring sites based on site-specific conditions.

Monitoring Site Locations

EBR-001. EBR approximately 650 feet upstream of Dry Fork Creek.
EBR-002. EBR approximately 100 yards downstream of Dry Fork Creek.
DF-01. Dry Fork Creek upstream of the confluence with the EBR.
EBR-003. EBR approximately 1.0 miles downstream of Dry Fork Creek, sample location at the bridge.
EBR-004. EBR approximately 1.8 miles downstream of Dry Fork Creek, below East Boulder mine facilities.
EBR-005. EBR adjacent to the USFS campground.
EBR-007. EBR approximately 500 feet upstream of Elk Creek, near the bridge over the EBR.
EC-01. Elk Creek upstream of the confluence with the EBR.
EBR-008. EBR approximately 1.5 miles below Elk Creek confluence, 0.75 miles above MBR confluence.

Periphyton/Chlorophyll A Sampling

1.3 Chlorophyll A Sampling. Chlorophyll A sampling shall be conducted once annually during the low flow/peak algae growth season (August- September) at sites EBR-002, EBR-003 and EBR-004. The EBOC shall determine the precise dates for such sampling.

1.4 Random Sampling. Chlorophyll A sampling shall incorporate stratified random sampling and shall be consistent with the currently approved methodology.

1.5 Periphyton Sampling**.** Periphyton Sampling shall be conducted once every three years, beginning in fall 2006 at sites EBR-002, EBR-003 and EBR-004. Three (3) replicate periphyton samples shall be collected and analyzed at each monitoring site location. Substrates for periphyton sampling shall be selected in a random manner to the degree practical. Each replicate shall be a composite of several (no less than three) quantitative collections from natural substrates to minimize variation from microhabitat differences.

1.6 Sample Criteria. Periphyton samples shall be analyzed and quantified for soft algae composition and diatom community composition using a Palmer Cell and conduct a diatom proportional count on a sub-sample of each of the three replicate periphyton samples.

1.7 Chlorophyll A Sampling. A minimum of ten (10) replicate chlorophyll *a* samples shall be collected and analyzed at each sample location.

Macroinvertebrate Sampling

1.8 Macroinvertebrate Sampling. Macroinvertebrate monitoring shall be conducted once every three years to correspond with the periphyton sampling**,** beginning in fall 2006 at sites EBR-002, EBR-003, and EBR-004 during the summer low flow event.

1.9 Sample Areas. Benthic macroinvertebrate samples shall be collected from riffle and run areas characteristic of the East Boulder River. Three (3) replicate samples shall be collected at each monitoring location. Each sample shall be analyzed for species identification, enumeration, and biomonitoring assessment with current protocols, or modified protocols as agreed upon by the EBOC.

Chemical and Physical Sampling

1.10 Water Chemistry Sampling. Water chemistry sampling shall be conducted at all monitoring site locations designated in Section 1.2 of this Appendix.

1.11 Monitored parameters. Water chemistry sampling must conform with the minimum required monitored parameters in Section 12.0 of Appendix L.

1.12 Sampling frequency. The East Boulder Oversight Committee shall determine the frequency of chemical and physical monitoring at each site location. Currently, sites EBR-001, EBR-002, DF-01 are monitored quarterly. Currently, sites EBR-003 and EBR-004 are monitored monthly. Currently, site EBR-005 is monitored in the first and third quarters of each year. At the time SMC commits to construction of the Boe Ranch facilities, chemical and physical monitoring at sites EBR-005, EBR-007, EC-01 and EBR-008 shall resume quarterly frequency.

Supplemental Deposited Sediment Monitoring Plan.

1.13 Objectives. The objectives of Deposited Sediment Monitoring Plan shall include but are not limited to the following:

(a) To ensure that SMC's best management practices are being implemented effectively to control sediment loading to the East Boulder River watershed and to determine whether additional measures are necessary to control sediment loading.

(b) To monitor additional sediment loading to the Boulder River watershed caused by activities related to the East Boulder Mine project and to measure these increases against predictions made in the FEIS.

(c) To measure the impact of such sediment loading on the biological integrity of the watershed including the cumulative impacts associated with other activities and development in the watershed.

1.14 Requirements. SMC shall develop and implement a deposited sediment monitoring plan immediately on the Effective Date that is consistent with the terms of this Section. The deposited

sediment monitoring plan was approved by the EBOC, under which monitoring occurs once every three years, in the same year as the periphyton and macroinvertebrate sampling.

1.15 Effect. Deposited sediment monitoring did not show any increase in sediment loading to the East Boulder River during the construction phase.

1.16 Sampling Methodology. Parameters measured include discharge (cfs) using USGS pygmy and price AA meters with a Swoffer digital revs/secs counter, suspended sediment (DH 48 wading sampler, DH 59 bridge sampler at site EBR-003 during high flows), bedload sediment (Helly-Smith 3" sampler), and turbidity with a HACH 2100A turbidity meter. Standard sample collection techniques associated with each equipment type are used in the field. Sampling methodology shall remain the same unless otherwise approved by the EBOC in the event of sampling technique or equipment changes.

1.17 Sampling Area. Sediment sampling must concentrate in riffle/run areas as specified in the approved sediment monitoring plan.

1.18 Sampling Frequency. Suspended and bedload sediment sampling must be conducted once every 3 years at all monitoring site locations designated in this Section 1.19 of this Appendix at the same time of year.

1.19 Monitoring Site Locations. Deposited sediment sampling shall be conducted at the following sites:

1.19.1 Potential disturbances. Immediately above and below any potential mine related disturbance or construction activities that may affect instream fine sediment to a detectable degree, as determined by the EBOC. SMC shall notify the EBOC of all activities and events that may cause disturbances during the next regularly scheduled Committee meeting.

1.19.2 Permanent Sampling Sites.

EBR-003. EBR approximately 1.0 miles downstream of Dry Fork Creek, sample location at the bridge.
EBR-004. EBR approximately 1.8 miles downstream of Dry Fork Creek, below East Boulder mine facilities.

1.19.3 Sampling Sites for Potential Disturbances.

The following sites shall commence sediment monitoring at such time SMC commits to construction of Boe Ranch facilities:

EBR-005. EBR adjacent to the USFS campground.
EBR-006. EBR approximately 2.4 miles downstream of the USFS campground.
EBR-007. EBR approximately 500 feet upstream of Elk Creek, near the bridge over the EBR.

Additional sampling sites and frequencies shall be determined by the East Boulder Oversight Committee.

Miscellaneous Requirements

1.20 Water Flow Monitoring. SMC shall conduct instream water flow monitoring concurrent with water chemistry and biological monitoring at all locations designated in this Agreement.

1.21 Water Flow Data. In the event SMC proposes direct discharge to the East Boulder River, SMC shall collect continuous water flow data at EBR-003 and include such results in the quarterly and annual reports required by Section 3.2 of Appendix L.

APPENDIX O. STILLWATER MINE SUPPLEMENTAL MONITORING PROGRAM

1.0 Objectives. In addition to the objectives of Section 1.0 of Appendix L, this supplemental monitoring program is designed to determine the efficacy of developing a site-specific standard for total inorganic nitrogen and total phosphorus in the Stillwater River while taking into account natural variation. This program shall be continued as necessary to meet those objectives. To date, the parties have not reached agreement on development of a site-specific standard for total inorganic nitrogen and total phosphorus.

1.1 Required Sampling. SMC shall conduct biological (periphyton, chlorophyll *a*, and macroinvertebrate) sampling and water chemistry sampling at each monitoring site location designated in Section 1.2 of this Appendix. Biological monitoring frequencies established in Section 1.5 and 1.8 for periphyton and macroinvertebrates shall be modified to once annually if any one of the following circumstances occur:

- A Tiered Trigger Level Exceedance
- A Direct Discharge of adit water to the Stillwater River (MPDES)
- A direct discharge of Stormwater from the permit area (MPDES)
- An accidental spill or discharge to the Stillwater River resulting from SMC operations, licensed contractor, vendor or vendors agent

Should instream water quality parameters return to baseline conditions and annual biological monitoring establish no impairment as a result of the triggering event, monitoring frequencies will return to those established below.

1.2 Monitoring Site Locations. The supplemental monitoring program shall include the following monitoring site locations on the Stillwater River (listed from upstream to downstream). The SOC has the authority to change the precise location of such monitoring sites based on site-specific conditions.

Monitoring Site Locations

SMC-J. Stillwater River upstream of mine. Biological monitoring only.
SMC-1A. Stillwater River upstream of mine. Chemical monitoring only.
SMC-2. Stillwater River in the vicinity of the mine site facilities. Biological monitoring only.
SMC-11. Stillwater River downstream of mine site facilities at Old Nye Fishing Access.
SMC-12. Stillwater River downstream of mine site facilities at Buffalo Jump Fishing Access. Chemical monitoring only.
WFSC. Stillwater River downstream of West Fork of Stillwater River confluence and upstream of Hertzler facilities at Ekwortzel Ranch.
SMC-13. Stillwater River downstream of Hertzler facilities at Moraine Fishing Access.

Periphyton/Chlorophyll *a* Sampling

1.3 Chlorophyll *a* Sampling. Chlorophyll *a* sampling shall be conducted once annually during the low flow/peak algae growth season (August – September). The SOC shall determine precise dates for such sampling.

1.4 Random Sampling. Chlorophyll *a* sampling shall incorporate stratified random sampling and shall be consistent with the currently approved methodology.

1.5 Periphyton Sampling. Periphyton sampling shall be conducted once every three years, beginning in fall 2005. Three (3) replicate periphyton samples shall be collected and analyzed at each monitoring location. Substrates for periphyton sampling shall be selected in a random manner to the degree practical. Each replicate sample shall be a composite of several (no less than three) quantitative collections from natural substrates to minimize variations from microhabitat differences.

1.6 Sample Criteria. Periphyton samples shall be analyzed and quantified for soft algae composition and diatom community composition using a Palmer Cell and conduct a diatom proportional count on a sub-sample of each of the three replicate periphyton samples.

1.7 Chlorophyll *a* Sampling. A minimum of ten (10) replicate chlorophyll *a* samples shall be collected and analyzed at each sample location.

Macroinvertebrate Sampling

1.8 Macroinvertebrate Sampling. Macroinvertebrate monitoring shall be conducted once every three years to correspond with periphyton sampling during the summer low flow event, beginning in fall 2005. The Oversight Committee shall determine the precise dates for such sampling.

1.9 Sample Areas. Benthic macroinvertebrate samples shall be collected from riffle and run areas characteristic of the Stillwater River. Three (3) replicate samples shall be collected at each monitoring location. Each sample shall be analyzed for species identification, enumeration and biomonitoring assessment with current protocols, or modified protocols as agreed upon by the SOC.

Chemical and Physical Sampling

1.10 Water Chemistry Sampling. Water chemistry sampling shall be conducted at all monitoring site locations designated in Section 1.2 of this Appendix.

1.11 Monitoring Parameters. Water chemistry sampling must conform with the minimum required monitoring parameters in Section 12.0 of Appendix L.

1.12 Sampling Frequency. The Stillwater Oversight Committee shall determine the frequency of chemical and physical monitoring at each site location.

Supplemental Deposited Sediment Monitoring Plan

1.13. Requirements. The SOC shall implement a supplemental deposited sediment monitoring plan upon a proposal by SMC to direct discharge to the Stillwater River.

Miscellaneous Requirements

1.14 Water Flow Monitoring. SMC shall conduct instream water flow monitoring concurrent with water chemistry and biological monitoring at all locations designated in this Agreement.

APPENDIX P. HERTZLER RANCH PROPERTY AND PIPELINE MITIGATION PLAN

The SOC approved the final Hertzler Ranch Property and Pipeline Mitigation Plan. The final Plan is incorporated by reference herein as Appendix P.

Hertzler Ranch Mitigation Plan

by
Stillwater Protective Association,
Northern Plains Resource Council
and
Stillwater Mining Company

As part of the
Good Neighbor Agreement

May 14, 2002

1.0 Purpose

This Hertzler Ranch Mitigation Plan has been developed in accordance with Section 13.11 and Appendix R of the Good Neighbor Agreement (GNA) by Stillwater Mining Company and Stillwater Protective Association, et al. (See Addendum A for relevant sections of GNA).

Mitigations for the Hertzler Ranch site are intended to: protect local residents from excessive noise, traffic, dust and nighttime illumination; preserve current use of the site by wildlife; reduce the likelihood of the spread of noxious weeds; maintain the predevelopment visual character of the site; and protect water and air quality from adverse impacts resulting from the construction, operation, and support of waste disposal facilities at the site, including the impoundment, pipelines, and land application disposal (LAD) systems.

The provisions are separate from and additional to mitigations required by SMC permits.

2.0 Provisions

Implementation of the Mitigation Plan is to take place by May 1st of 2001. In accordance with the GNA the parties agreed to address the following issues of concern in the Mitigation Plan:

1. Noise Pollution
2. Air Pollution
3. Water Pollution
4. Light Pollution
5. Traffic Congestion
6. Visual Impacts
7. Noxious Weed Impacts
8. Wildlife Impacts

The primary purpose of the Mitigation Plan is to:

Minimize/manage the impacts associated with construction and operation of the Hertzler Ranch waste disposal facilities by implementing Best Management Practices (BMPs) and technologies to ensure that existing local resources are not unduly impacted by the facilities using every reasonable means possible.

3.0 Minimum Components

In accordance with the GNA the parties agreed to the following minimum components in the Mitigation Plan:

1. Establish the baseline conditions.
2. Establish specific, measurable performance objectives that are acceptable to NPRC/SPA and SMC. Oversight committee will resolve in case of dispute.
3. Establish trigger levels that indicate an exceedance of a performance objective.

4. Establish remedial actions that SMC must implement when a trigger level is exceeded that will return conditions to acceptable levels.
5. Establish criteria, including timeframes, for SMC to return conditions to acceptable levels.

4.0 Methods

The following general methods will be used to develop and carry out the mitigation plan:

4.1 Baseline Conditions. Baseline measurements or other suitable information will be established for each issue of concern to establish pre-development levels.

a. The purpose of baseline information is to establish a reference against which to measure and compare to baseline.
b. Baseline data must represent the site in its pre-operational state.
c. Baseline data must adequately characterize the site.
d. Existing information (such as from the EIS, Plan of Operations, Monitoring Data or other published source) may be used to determine baseline.
e. If sufficient baseline information is not available a "control" site will be established to allow a comparison of impacts with unimpacted or comparable areas.
f. Historical information from communities and individuals shall be considered.
g. All baseline information must be maintained in records accessible to the public.
h. If established procedures for collection and quality assurance/quality control of baseline data exist they shall be used.

4.2 Acceptable Level of Impact. Establish a level of impact above baseline pre-development conditions that is acceptable to the preservation of natural resources and potentially affected persons.

a. Establish air quality and water quality degradation limitations.
b. Survey potentially affected persons (Nye and Fishtail postal area) to establish their perceptions of values and acceptable/unacceptable impacts. SMC and Councils to jointly draft survey.
c. Identify and assess local land uses and resource values potentially impacted by issues of concern.
d. Conduct research from published sources on impact acceptance/unacceptance.

4.3 Establish BMPs. Research and determine reasonable Best Management Practices (BMPs) and technologies that might be used to address concerns.

a. Conduct research to establish potential BMPs and technologies relevant to issues of concern.
b. Establish those BMPs and technologies that are reasonable and should be included in initial Hertzler Ranch waste disposal site operations to address impacts in this plan.
c. Investigate and if reasonable implement those BMPs and technologies that might be used if necessary to better address issues of concern.

4.4 Action Triggers. Establish acceptable level and trigger actions to reduce impacts.

a. Establish action triggers at levels of unacceptable impact in order to prevent such occurrence.
b. Where reasonable include continuous monitoring and automated response to detect and minimize and/or correct exceedances of acceptable levels.
c. Provide a process where individuals can express to SMC management concerns and perceptions.

4.5 Action Implementation. Define those actions to be taken to address exceedances of acceptable levels and initiate a return to acceptable levels.

a. Establish audit procedure to be initiated when acceptable levels are exceeded.
b. Use qualified experts to review issues of concern, nature of exceedance, available BMPs and technologies, and make recommendations for mitigations.
c. Upon measurement or notification of exceedances, immediately return to acceptable levels or implement BMPs or technologies to return to acceptable levels. If immediate correction is not possible, establish and implement BMPs and technologies in the most expedient timeframe practically possible.
d. Provide short-term mitigations or relief where required in the plan.

4.6 Public Participation. Provide processes for potentially affected persons or parties to know about and participate in the implementation of the Hertzler Ranch Mitigation Plan by identifying issues of concern, and providing a means for public input directly to SMC management in order to voice issues and concerns.

5.0 Noise Pollution

Background Condition	Action Trigger	Action	Implementation
• 40.0 – 108.6 dB (range at all monitoring sites from 30 October 2001 to 31 January 2002) • During those three months the weighted 24-hour average noise level was 65.9 – 82.2 dB • The 1998 EIS noted that noise was not measured on the Hertzler Ranch, but anticipated background noise of less than 50 dB which is consistent with undeveloped, rural sites. • These measurements are meant to provide points of reference, not to preclude or trigger action.	• Any noise related complaint • Complaint SMC related	• SMC initiates investigation to address source of noise pollution • If immediate solution exists • If no immediate solution exists	• Conduct noise investigation to ensure noise complaint is related to SMC activities, monitor if necessary, notify oversight committee of complaint and action. • Terminate cause within 24 hours if practical or apply mitigation to reduce noise • Contact Oversight members immediately, conduct internal investigation with SPA involvement, develop plan with timeframes for addressing cause of noise, report on implementation status at next scheduled meeting
	• Repeated noise related complaints after implementation of identified solution	• Contact Oversight members, terminate or reduce cause of noise – or identify phase-two solution	• Implement new solution or begin third-party audit plan within 30 days to make recommendations on the recommendation of the oversight committee members
	• Future planned noise	• If planned noise greater than baseline	• Defer to GNA oversight committee to develop mitigation plan including implementation of BMPs

- A baseline monitoring plan (see Addendum B – Baseline Data, Noise) to monitor noise levels was developed to collect data on background noise and potential noise pollution from the operation and construction of the tailings impoundment facilities. Data on noise levels was collected on and around the Hertzler Ranch area and other comparison sites. Results of baseline monitoring for all sites are provided in Addendum B – Baseline Data, Noise.

- SMC shall implement BMPs during construction and operational activities to minimize noise pollution. Engineering noise reduction practices which may be implemented include: operating procedures such as proper maintenance of mechanical equipment, relocation of machine control systems, and use of noise barriers; administrative controls such as limiting hours of activity, and procurement of reduced-noise equipment; machine treatments such as vibration control, shields, enclosures, and silencers; room treatments to control reflected sound; and future best management practices.
- "A Best Practice is a process, technique, or innovative use of resources that has a *proven* record of success in providing significant improvement in cost, schedule, quality, performance, safety, environment, or other measurable factors which impact the health of an organization." (Source: BMP Center of Excellence, http://www.bmpcoe.org/faq/index.html)

6.0 Air Pollution

Baseline Condition	Action Trigger	Action	Implementation
20% or less opacity	>20% opacity	Implement BMP's	»within 30 days
• PM 10 baseline[1] • no nuisance dust	• >20% opacity –Chronic exceedance – unaddressed exceedance for greater 30 days	• Implement additional BMP's and Install PM10 monitoring	»install PM10 within 30 days

	• >25% of PM10 Baseline	• address source of air pollution
		  • if immediate solution exists
		  • if no immediate solution exists
		  • if pollution continues beyond 30 days
			»terminate cause or apply other mitigation within 24 hours
			»conduct internal investigation, report and make corrections within 30 days
			»third-party audit to make recommendations within 30 days, implement mitigation within 30 more days

	>50% of PM10 Baseline	Terminate cause of air pollution or dust	»terminate cause or apply other mitigation within 24 hours »conduct third-party audit to make recommendations within 30 days, implement mitigation within 30 more days
	future air pollution above baseline	If planned air pollution greater than baseline	»defer to GNA oversight committee to develop mitigation plan

- A mitigation plan will be developed for future construction activities to ensure they do not result in unacceptable air pollution and nuisance dust impacts.
- SMC will conduct an investigation to substantiate and address nuisance dust reported by affected parties.
- Any new point source emissions from the Hertzler Ranch site will be addressed in the GNA.

[1] Section 3.4 Air Quality, Hertzler Tailings Impoundment FEIS (see Addendum B – Baseline Data, Air).

- PM10 monitoring may be suspended at the discretion of SMC after a review of quarterly monitoring results documents a return to baseline conditions during any monitoring quarter.

7.0 Water Pollution

Provisional language – to be replaced by Nye Project Baseline Water Quality Review report trigger level framework language approved by Oversight Committee or other modifications will be proposed and agreed upon.

Baseline Condition	Action Trigger	Action	Implementation
Ambient surface water and groundwater quality values from EIS[2]	• >15% of ambient surface water confirmed by groundwater monitoring (> 2ppm Nitrate+Nitrite), • any water pollution determined to cause negative impacts to fisheries or wildlife	• Address source of water pollution • inform SPA • if immediate solution exists • if no immediate solution exists	»immediately »terminate cause or apply other mitigation »conduct internal investigation, and report within 15 days and implement corrections
	>50% of ambient surface water or groundwater values	• inform SPA • emergency meeting and audit	»within 24 hours »third-party audit to make recommendations within 15 days
	>Montana WQB-7 Aquatic and Human Health Water Quality Standards	• inform SPA • emergency meeting and audit	»within 24 hours »third-party audit to make recommendations within 10 days
	future water pollution above baseline	If planned water pollution greater than baseline	»defer to GNA oversight committee to develop mitigation plan

- Water pollution provisions are also covered by Montana Water Quality Act, US Clean Water Act, MPDES permit and other requirements.
- The water pollution provisions of the Hertzler Ranch Mitigation Plan shall be consistent with the water program provisions of the Good Neighbor Agreement.

[2] Section 3.1.2 Surface Water Quality, Section 3.1.3 Groundwater, Hertzler Tailings Impoundment FEIS (see Addendum B – Baseline Data, Water).

- An electronic database will be established and maintained of all historic baseline data and all data derived from SMC sampling and monitoring events. This will contain all baseline and operational water quality data for the Hertzler Ranch site. Councils will review the baseline water quality data. The review will examine the existing data and the baseline water quality conclusions in the EIS.

8.0 Light Pollution

Baseline Condition	Action Trigger	Action	Implementation
No nuisance lighting	Any verifiable report of nuisance light which is persistent and for which normal BMPs have not been implemented or have proven ineffective	• address source of light pollution • if BMPs exist • if no immediate solution exists	»terminate cause or apply other mitigation within 24 hours »conduct internal investigation, report and make corrections within 30 days
	Repeated incidence of nuisance light (12 or more in any quarter) where normal BMP's have proven ineffective.	Conduct investigation	»third-party audit to make recommendations and implement mitigation within 30 days.
	future light pollution above acceptable levels	if planned light pollution greater than baseline	»defer to GNA oversight committee to develop mitigation plan

- Current practices by SMC include the use of shielded lighting to minimize lighting impacts.
- Work in other areas where light is necessary will be provided by vehicles or temporary portable floodlights. Attempts will be made to minimize the impact of any/all lighting with the use of motion or time activated lights, operational controls and low-impact lighting.
- Actions will be taken to address any substantiated reports of nuisance lighting reported by affected parties.

9.0 Traffic

Baseline Condition	Action Trigger	Action	Implementation
Existing traffic with mine related activities as measured at locations adjacent to the entrance to the Hertzler Ranch.	Operational traffic exceeding 10% of monthly average traffic along 420.	Implement Car-pooling, load consolidation or other applicable BMP's to reduce traffic	Within one week.
	Operational traffic exceeding 10% of quarterly peak traffic along 420.	Immediate action enforces car-pooling or other BMPs to reduce traffic.	Within one week.
	Construction traffic exceeding 15% of monthly average traffic along 420 during any month, or Construction traffic exceeding 15% of monthly peak traffic along 420 more than twice during any month.	• Immediate action enforces car-pooling or other action to reduce traffic • Defer to GNA oversight committee to develop mitigation plan	Within one week Within 30 days

- Existing traffic at the Hertzler Ranch is monitored with a Diamond Inductive Loop (TT-21) Traffic Counter. These counters are located on county road 420, and at the Hertzler Ranch access road. See Addendum B – Baseline Data, Traffic.

10.0 Visual Impacts

Baseline Condition	Action Trigger	Action	Implementation
• no significant new visual impacts as viewed from valley floor or public travelways and roads. • maintain rural landscape as it applies to the Partial Retention Objective	Planned construction that is not currently permitted and is not required to implement plans or mitigate impacts.	Notify SPA	defer to GNA oversight committee to develop mitigation plan
	New visual impacts identified by SPA which have not been previously approved under Plan of Operation or permit and is not required to implement plans or mitigate impacts.	Notify SMC	defer to GNA oversight committee to develop mitigation plan
	Future aesthetic impacts including those presently permitted/planned where interim reclamation and/or standard BMP's are not sufficient to mitigate visual impacts.	Notify SPA or SMC	defer to GNA oversight committee to develop mitigation plan

- The visual impact provisions of the Hertzler Ranch Mitigation Plan shall be consistent with the paste technology development and reclamation and closure plan provisions of the Good Neighbor Agreement.
- According to the EIS[3], the Visual Quality Objective (VQO) for nearby forest lands to Hertzler Ranch area is Partial Retention. Partial Retention means man-made alterations already exist in the area, but the natural appearance of the landscape is the dominant factor. Under the Partial Retention objective, management activities may introduce new form, line, color, or texture, but the changes should strive, to the degree reasonable, to blend into the existing landscape.
- An interim reclamation plan will be developed for future tailing impoundment reclamation and construction activities to ensure that the disturbed area be concurrently reclaimed and otherwise managed to minimize visual impacts.

[3] Section 3.7.1 Visual Resources, Hertzler Tailings Impoundment FEIS (see Addendum B – Baseline Data, Visual).

11.0 Noxious Weed Impacts

Baseline Condition	Action Trigger	Action	Implementation
Some noxious weeds present, including spotted knapweed, houndstongue, black henbane, leafy spurge, Canadian thistle, and field bindweed[4]	• Verifiable increase in noxious weeds.	• Annual survey and control application. • Management methods should include grazing, use of biological methods and spraying if necessary.	Develop plan to accelerate and increase combination of control methods and/or initiate alternative BMPs. Annually conduct chemical application if warranted.
	Verifiable increase in noxious weeds where over a three year period standard BMPs and chemical applications have proven ineffective.	Annual survey and control application. Consult with state, local, federal and private weed experts. Evaluate new methods. Management methods may include spraying, grazing with sheep, use of biological pests.	Accelerate applications of control methods and chemical and/or initiate alternative BMPs.
	• Cessation of pivot operations	• Maintain and/or establish vegetation consistent with post closure use	Monitor for weeds and evaluation of preferred growth for at least five years.

- The noxious weed impacts provisions of the Hertzler Ranch Mitigation Plan shall be consistent with the reclamation and closure plan provisions of the Good Neighbor Agreement and with SMC's County Weed Plan.
- All heavy equipment (earthmoving) brought from the mine or from elsewhere must be washed before entering the Hertzler site to prevent infestation, and only certified weed free seed can be used. All contractors will be informed as to the need to conduct weed control procedures and receive information (see Addendum B – Baseline Data, Noxious Weeds).

[4] Section 3.9.2 Vegetation, Hertzler Tailings Impoundment FEIS. Additional baseline vegetation data is contained in Western Technology and Engineering Inc. 1996. Baseline Vegetation Inventory: Stillwater Mining Company Hertzler Tailings Facility and Tailings Line – 1996. Helena, MT (see Addendum B – Baseline Data, Noxious Weeds; also see Baseline Hertzler Weed Map (1992 and 2001 data)).

12.0 Wildlife Impacts

Baseline Condition	Action Trigger	Action	Implementation
No project related wildlife impacts resulting from the operation of site facilities or equipment.	Any demonstrable negative impact to wildlife or wildlife mortality resulting from the operation of site facilities or equipment.	Address source of wildlife impact or mortality.	» terminate cause or apply other mitigation within 24 hours
	Repeated demonstrable negative impact to wildlife or wildlife mortality resulting from the operation of site facilities or equipment.	Correct action, or terminate cause of wildlife impact or mortality.	» either within 30 days.
	Excessive demonstrable negative impact to wildlife or wildlife mortality (more than 12 times in any quarter) resulting from the operation of site facilities or equipment.	Consultation with SPA and MFW&P and/or US FWS.	» within 30 days.

- According to the EIS[5], two high-interest species occur at the Hertzler Ranch, bighorn sheep and mule deer. No sightings of bighorn sheep have been recorded at the Hertzler Ranch area. For the purposes of this plan, the existing information used in the EIS will serve as baseline population information. SMC will notify NPRC/SPA of any demonstrable wildlife impacts or mortality within 72 hours.

[5] Section 3.2 Wildlife, Hertzler Tailings Impoundment FEIS. Additional baseline wildlife data is contained in Western Technology and Engineering Inc. 1996. Terrestrial Wildlife Reconnaisance: Stillwater Mining Company Hertzler Tailings Facility and Tailings Line – 1996. Helena, MT (see Addendum B – Baseline Data, Wildlife).

13.0 Public Participation Plan

- Historical information from communities and individuals shall also be considered..
- All baseline information must be maintained in records accessible to NPRC and SPA.
- Survey potentially affected persons (Nye and Fishtail postal area) to establish their perceptions of values and acceptable/unacceptable impacts.
- SMC to provide for contact number and procedure for registering/responding to public questions or notice of issues.

Addendum A

Section of GNA relevant to Hertzler Ranch Mitigation Plan

13.11 Hertzler Ranch Property and Pipeline Mitigation Plan. SMC shall develop, implement, and fund the Mitigation Plan described in Appendix R.

APPENDIX R. HERTZLER RANCH PROPERTY AND PIPELINE MITIGATION PLAN

Hertzler Ranch Mitigation Plan

2.0 Interim Reclamation Plan. SMC shall develop and implement an interim reclamation plan for the Hertzler Ranch Property within 90 days of the release of the final report required by Section 13.4 and Appendix J of this Agreement. Such plan shall be consistent with the objectives of Section 1.6 of Appendix J. and any recommendations and conclusions of the final report required by Section 13.4.

2.1 Site Plan. SMC shall provide SPA/NPRC with a site plan identifying all structures and support facilities at the Hertzler Ranch Property approved by the Stillwater Mine Operating Permit effective November 12, 1998. The site plan shall include the location and design specifications of all such structures and support facilities. The SOC shall review all SMC proposals to revise or modify this site plan if there is a material change in circumstances such as the development or implementation of new Technology and/or Practice with environmental or other benefits that justify additional uses of the property.

2.2 Schedule of Activities. SMC shall provide a report of all scheduled construction and other significant activities at the Hertzler Ranch Property at each quarterly SOC meeting. Such report shall describe the scheduled activities for the following quarter. SMC shall also provide a process for adjacent landowners and residents to notify SMC of any issues of concern.

2.3 Mitigation Plan. SMC shall use best efforts to mitigate the impacts associated with the construction and operation of the Tailings Impoundment and other facilities at the Hertzler Ranch Property on existing recreational, residential, and agricultural land uses on the adjacent properties.

2.3.1 Objectives. The objectives of this Mitigation Plan are:

(a) To protect local residents and adjacent landowners from unreasonable noise, traffic, dust, and nighttime illumination;

(b) To minimize the invasion of noxious weeds on the property;

(c) To preserve the visual character of the sites to the maximum extent possible;

(d) To preserve present wildlife use of the property to the maximum extent possible; and

(e) To minimize adverse impacts on water and air quality.

2.3.2 Plan. SMC shall develop and the SOC shall approve a Mitigation Plan for the Hertzler Ranch Property. SMC shall develop this Mitigation Plan in consultation with NPRC/SPA and shall obtain input from adjacent landowners and residents. SMC shall implement this Mitigation Plan within 150 days of the Effective Date.

(a) Issues of Concern. SMC shall address the following issues of concern in the Mitigation Plan: noise pollution, air pollution, light pollution (nighttime illumination), visual impacts, and noxious weeds.

(b) Minimum Components. For each issue of concern, the Mitigation Plan shall:

1. Establish the baseline conditions.
2. Establish specific, measurable performance objectives that are acceptable to NPRC/SPA.
3. Establish trigger levels that indicate a performance objective is being violated.
4. Establish remedial actions that SMC must implement when a trigger level is exceeded that will return conditions to acceptable levels.
5. Establish a timeframe for SMC to return conditions to acceptable levels.

Noise

STILLWATER MINING COMPANY
STILLWATER MINE
HERTZLER TAILINGS IMPOUNDMENT
NOISE MONITORING PROPOSAL

15 November 2001

1.0 OVERVIEW

In conjunction with the Good Neighbor Agreement, Stillwater Mining Company (SMC) and the Stillwater Protective Association (SPA) are participating in the drafting and implementation of a Hertzler Mitigation Plan. As part of this Plan, SMC is proposing to conduct an ambient baseline noise study in the proximity of the Hertzler Tailings Impoundment.

2.0 EQUIPMENT

To conduct the study, SMC plans to use QUEST Noise Dosimeters (Model Number M-15). The Q-100 Noise Dosimeter is a Type 2 General Purpose monitoring device, which is plus or minus 2 decibels. These instruments have typically been used for both environmental and ambient mixed noise dosimetry studies to measure a wide range of decibel levels. The QUEST Noise Dosimeters can provide instantaneous decibel (dB) readings along with maximum and averaged levels across an identified monitoring period. To ensure proper measurement and data collection, the individual dosimeters will be calibrated to a known decibel level before each use. The dosimeters will then be taken to the appropriate monitoring locations, turned on, and retrieved following an identified monitoring period. Each dosimeter will be placed in a box, to protect from adverse weather conditions, with the microphone placed outside the box to monitor for ambient readings. Data stored in each dosimeter's memory can then be retrieved and recorded in a spreadsheet or database format.

3.0 APPROACH

SMC proposes to conduct the study over a three-month (3) period (October through December) with a monitoring frequency of two (2) times per week (Tuesday and Thursday). Each monitoring day, noise levels will be measured over a twenty-four hour (24) duration. Collected data will consist of the average and maximum decibel levels measured over that twenty-four hour period. At this time, SMC expects the daily monitoring to begin at 8:00 a.m., with each dosimeter operating remotely over the twenty-four hours. Data collected by the dosimeters will be

downloaded at SMC's offices and updated in a working spreadsheet or database for analysis, comparison, and tracking.

The Q-100 Noise Dosimeter has a calibration sound pressure level of 114.0 decibels (dB) stored in its memory, which must match that of the Acoustic Calibrator used to calibrate the instrument. The Q-100 Noise Dosimeter will be calibrated before each monitoring period with the following method:

- Turn the Q-100 on;
- Turn the calibrator (1000 Hz) on, and listen for a tone;
- Insert the microphone and adapter into the calibrator;
- Start the calibration by simultaneously pressing the two "CAL" keys on the label;
- When the calibration is completed, one of the following will occur:
    - "FAIL" Check the system and perform the calibration again.
    - A calibrator dB level will appear on the display. This must be within +/- 0.1 dB of the computer entered calibrator level before operation. If not, check the system and recalibrate.
- The Q-100 will be operating in the SPL mode after a successful calibration.

The Q-100 will maintain its accuracy for many months of use. However, it is recommended that the unit be returned once a year to a Quest Authorized Service Station for a complete checkout and recalibration. Accurate calibration standards are maintained and used by Quest. They are traceable to the National Institute of Standards and Technology (NIST).

4.0 MONITORING LOCATIONS

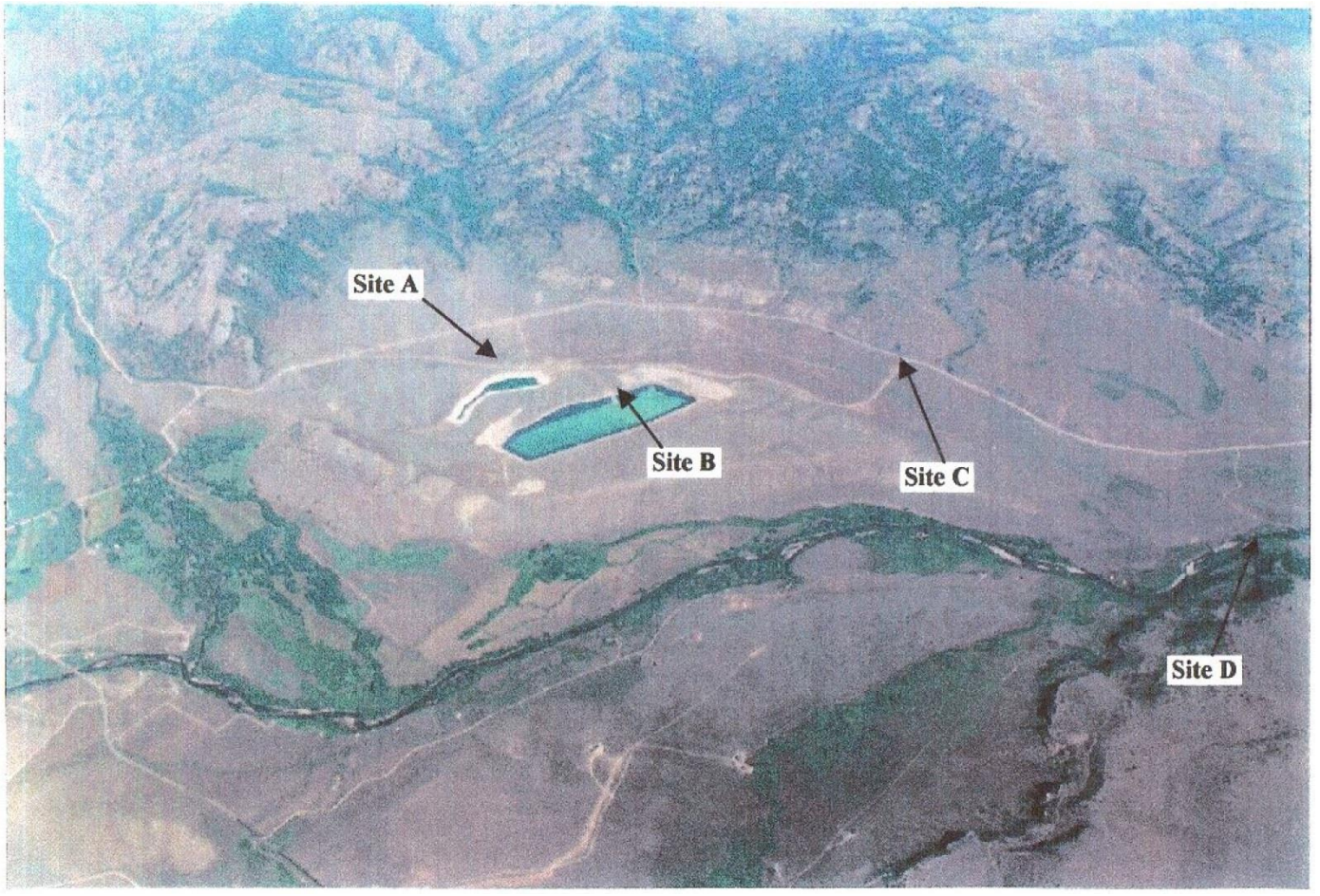
SMC proposes to use five (5) QUEST Noise Dosimeters throughout the study. Each dosimeter will be designated for this study by serial number and will operate remotely and independently of one another. The dosimeters will be placed at specific locations near the Hertzler Tailings Impoundment to establish ambient noise levels prior to impoundment operations. Dosimeter placement will be located as follows:

1. Crest of Nye Tailings Impoundment
2. Intersection of 420 and Hertzler access road
3. Crest of Hertzler Tailings Impoundment
4. Interior of LAD area
5. Moraine Fishing Access

5.0 CONCLUSIONS

Data generated as a result of this study should provide a representative baseline of ambient noise levels in the vicinity of the Hertzler Tailings Impoundment.

Hertzler Noise Monitoring Program- Dosimeter Placement



SlUrA-LAD Area; between Pivot No.2 and Pivot No.3
Site B-Top of Hertzler Impoundment
Site C -Comer of Access Road and County Road
Site D – Moraine Fishing Access adjacent to Stillwater River
Site E -Top of Stillwater Impoundment adjacent to Haul Road

Hertzler Noise Monitoring- Data Summary			
Site	Average(dBA)	Maximum(dBA)	Monitoring Period
A	82.2	108.5	Oct. 30 through Jan.
B	81.9	108.6	Oct. 30 through Jan. 30
C	81.7	108.2	<kt. 30 through Jan. 30
D	70.0	103.8	Oct. 30 through Jan. 30
E	65.9	107.1	Oct. 30 through Jan. 30

Hertzler Baseline Noise Monitoring Study

Location: LAD Pivot Site (Site A)

Start Date	LEQ (dB)	Maximum (dB)	Minimum (dB)
10/30/2001	78.6	104.1	40.0
11/1/2001	79.8	104.0	40.0
11/6/2001	70.2	99.7	40.0
11/8/2001	88.3	108.5	40.0
11/13/2001	86.8	108.3	40.0
11/15/2001	82.2	103.2	40.0
11/20/2001	87.6	105.5	40.0
11/22/2001	72.0	97.0	40.0
11/27/2001*	43.9	87.4	40.0
11/29/2001	78.8	99.5	40.0
12/4/2001	81.2	105.2	40.0
12/6/2001	76.7	104.4	40.0
12/11/2001	75.3	98.5	40.0
12/13/2001	94.2	108.0	42.2
12/18/2001	84.0	106.6	40.0
12/20/2001	76.4	103.1	40.0
12/27/2001	90.4	107.6	40.0
1/3/2002	81.3	103.3	40.0
1/8/2002	78.2	103.8	40.0
1/10/2002	88.2	107.1	40.0
1/15/2002	77.6	102.8	40.0
1/17/2002*	54.6	77.1	40.0
1/22/2002	84.6	104.6	40.0
1/24/2002	95.0	108.0	46.4
1/29/2002	83.5	103.3	40.0

Average	82.2
Maximum	108.5
Minimum	40.0
Sample #	23

Location: Hertzler Impoundment (Site B)

Start Date	LEQ (dB)	Maximum (dB)	Minimum (dB)
10/30/2001	77.0	104.3	40.0
11/1/2001	78.6	100.0	40.0
11/6/2001	71.2	94.6	40.0
11/8/2001	87.6	103.2	46.6
11/13/2001	84.9	104.6	40.0
11/15/2001	82.3	101.0	40.0
11/20/2001	83.3	103.3	40.0
11/22/2001	69.9	95.1	40.0
11/27/2001*	61.5	92.1	40.0
11/29/2001	75.8	97.8	40.0
12/4/2001	80.8	102.6	40.0
12/6/2001	75.6	99.5	40.0
12/11/2001	67.0	92.8	40.0
12/13/2001	99.1	108.6	51.4
12/18/2001	83.7	103.0	40.0
12/20/2001	77.0	101.6	40.0
12/27/2001	89.6	104.7	40.0
1/3/2002	81.2	98.0	40.0
1/8/2002	78.4	100.0	40.0
1/10/2002	89.8	104.9	40.0
1/15/2002	78.8	100.5	40.0
1/17/2002*	67.5	89.8	40.0
1/22/2002	84.7	102.1	40.0
1/24/2002	92.0	105.5	45.8
1/29/2002	83.1	100.7	40.0
1/31/2002	93.2	107.4	41.3

Average	81.9
Maximum	108.6
Minimum	40.0
Sample #	24

Location: Access Road (Site C)

Start Date	LEQ (dB)	Maximum (dB)	Minimum (dB)
10/30/2001	81.3	104.1	40.0
11/1/2001	78.7	99.6	40.0
11/6/2001	62.0	94.4	40.0
11/8/2001	88.0	104.4	41.7
11/13/2001	89.1	105.4	40.0
11/15/2001	83.8	100.6	40.0
11/20/2001	85.2	103.2	40.0
11/22/2001	67.0	93.0	40.0
11/27/2001*	43.7	71.8	40.0
11/29/2001	79.7	98.5	40.0
12/4/2001	83.8	103.6	40.0
12/6/2001	76.9	99.4	40.0
12/11/2001	70.1	94.0	40.0
12/13/2001	95.2	106.7	50.8
12/18/2001	85.3	104.2	40.0
12/20/2001	73.7	98.8	40.0
12/27/2001	91.0	106.4	40.0
1/3/2002	83.3	99.9	40.0
1/8/2002	74.0	98.7	40.0
1/10/2002	89.7	103.2	40.0
1/15/2002	71.9	96.6	40.0
1/17/2002	69.7	93.8	40.0
1/22/2002	86.3	104.0	40.0
1/24/2002	98.3	108.2	52.7
1/29/2002	83.5	100.3	40.0
1/31/2002	96.1	107.2	48.1

Average	81.7
Maximum	108.2
Minimum	40.0
Sample #	25

Notes: LEQ = True equivalent sound level averaged over the run time dB = decibels

*For run times less than 24 hours, the resulting data was not used in the overall average calculation.

Location: Moraine Fishing Access (Site D)

Start Date	LEQ (dB)	Maximum (dB)	Minimum (dB)
10/30/2001	70.2	95.5	46.1
11/1/2001	67.3	89.3	47.0
11/6/2001	53.3	82.1	46.0
11/8/2001	77.7	99.1	45.9
11/13/2001	76.8	102.2	46.9
11/15/2001	72.7	91.6	45.8
11/20/2001	74.6	95.3	45.9
11/22/2001	58.5	85.1	44.9
11/27/2001*	47.1	64.4	44.0
11/29/2001	64.5	86.2	45.8
12/4/2001	75.4	95.3	45.8
12/6/2001	64.1	86.3	45.7
12/11/2001	51.4	78.8	44.9
12/13/2001	83.4	101.0	54.9
12/18/2001	69.6	89.5	41.0
12/20/2001	61.0	87.6	42.4
12/27/2001	77.6	98.9	41.1
1/3/2002	70.7	90.9	40.6
1/8/2002	63.2	91.3	45.6
1/10/2002	75.3	95.5	45.0
1/15/2002	61.5	83.0	41.0
1/17/2002*	58.6	83.3	44.3
1/22/2002	73.2	94.6	40.0
1/24/2002	87.4	103.8	54.7
1/29/2002	65.6	85.3	40.0
1/31/2002	84.4	97.1	48.4

Average	70.0
Maximum	103.8
Minimum	40.0
Sample #	24

Location: Stillwater Impoundment (Site E)

Start Date	LEQ (dB)	Maximum (dB)	Minimum (dB)
10/30/2001	70.9	95.7	40.0
11/1/2001	64.2	90.3	40.0
11/6/2001	58.4	86.2	40.0
11/8/2001	69.5	96.9	40.0
11/13/2001	73.1	99.3	40.0
11/15/2001	63.8	95.2	40.0
11/20/2001	75.6	99.0	41.4
11/22/2001	55.4	83.7	40.0
11/27/2001	68.8	97.8	40.0
11/29/2001	62.6	91.4	40.0
12/4/2001	70.7	98.1	40.0
12/6/2001	57.7	85.0	40.1
12/11/2001	60.4	90.8	40.2
12/13/2001	76.8	101.1	43.6
12/18/2001	70.0	94.6	41.8
12/20/2001	58.8	90.5	40.7
1/3/2002	60.3	87.5	40.0
1/8/2002	64.8	93.2	40.0
1/10/2002*	70.7	92.2	42.3
1/15/2002	59.6	93.4	40.0
1/17/2002	56.9	82.3	40.2
1/22/2002	62.0	89.8	40.0
1/24/2002	86.2	107.1	48.8
1/29/2002	61.0	86.6	40.0
1/31/2002	74.4	97.7	40.9

Average	65.9
	107.1
	40.0
	24

Air

3.4 Air Quality

Air quality in the project area remains good. Particulates less than 10 microns in diameter (PM_{10}) are well below established federal and Montana ambient air quality standards. Therefore, the area is rated as in attainment status for air quality. Concentrations for sulfate and lead are also low. The entire area surrounding the project area, including the Absaroka-Beartooth Wilderness, is classified as a Prevention of Significant Deterioration (PSO) Class II airshed. The closest Class I PSD airshed is Yellowstone National Park, located about 20 miles southwest of the mine. Class I areas are pristine national parks and wilderness areas where very little degradation in air quality is allowed. Class II areas (all areas other than Class I) are areas where well-managed industrial growth can occur without significant degradation of air quality.

SMC presently operates the underground mine and mill under Air Quality Permit Number 2459-07 issued by DEQ's Air and Waste Management Bureau (AWMB). This air quality permit covers a maximum production of 730,000 tons of ore per year (tpy) at an average production rate of 2,000 tpd and a maximum rate of 3,500 tpd. However, the AWMB is reviewing SMC's application to revise the permit to cover a maximum rate of 5,000 tpd (see Appendix E for the preliminary determination on this permit application).

SMC has been monitoring particulates since 1981. SMC also monitored PM_{10} at Hertzler Ranch from February 1996 through March 1997, specifically for this analysis. The latest PM_{10} data (Table H), measured at upwind and downwind locations within the permit boundary, show ambient air concentrations of particulates at the Stillwater Mine are well below the federal and State of Montana National Ambient Air Quality Standards (NAAQS) established for PM_{10}. The measured values at the mine indicate present activities result in ambient levels that are 25 percent or less of the established NAAQS.

Particulates (total suspended particulates [TSP], of which PM_{10} generally constitutes less than 50 percent) were sampled at Hertzler Ranch from August 1980 through July 1981 (COM 1981). During the fall, winter, spring, and summer, average TSP concentrations were 14, 6, 11, and 25 $\mu g/m^3$, respectively.

Using the general relationship between TSP and PM_{10}, one can assume concentrations of PM_{10} were less than half of the TSP values.

Lead and sulfates also were monitored at the Hertzler Ranch from August 1980 through July 1981 (COM 1981). Concentrations of lead and sulfate were found to be quite low. The maximum concentration of lead was 0.008 $\mu g/m^3$ and concentrations of sulfate did not exceed 6 $\mu g/m^3$ during the 12 months of monitoring.

Table 3-8 Stillwater Mine and Hertzler Ranch PM_{10} Data [1]

PM_{10} Monitor Site and Year	Annual Average NAAQS	Annual Data (Percent of NAAQS)	Annuai24-HourNAAQS	Highest 24-HourData (Percent of NAAQS)	Second Highest 24-Hour Data (Percent of NAAQS)
Stillwater Mine					
Site 1, 1995		7 (14.0)		26 (17.3)	22 (14.7)
Site 2, 1995		9 (18.0)		28 (18.7)	26 (17.3)
Hertzler Ranch					
Feb 1996 to Mar 1997		9 (18.0)		38 (25.3)	32 (21.3)

Notes:
1. Values are in micrograms per cubic meter (J.tglm3).
2. 24-Hour average not to be exceeded more than once per year.
3. Annual average is arithmetic average of quarterly averages.

Source: Gelhaus 1997

Addendum B – Baseline Data

Water

Table 3-2 Acid-Base Evaluation Waste: Rock and Tailings (March 22, 1996)

	SMC Waste Rock Composite	SMC Tailings Composite
Location	96-0-112	96-0-113
Sample Number	96-21286	96-21287
Lime as $CaC0_3$ (percent)	5.1	7.7
Neutralization Potential, T/1000 Tons[1]	51	77
Acid Potential, T/1000 Tons[1]	0	I
Acid-Base Potential, T/1000 Tons[1]	51	76
Non-Sulfate Sulfur (percent)	<0.01	0.04

Notes:
1. T CaCO,IIOOO Tons Soil

An acid-base potential equal to or greater than zero indicates that the material sampled has no potential to form acid. A result less than zero indicates the potential to form acid.
Source: SMC 1997e

3.1.2.2 Stratton Ranch

SMC's monitoring of surface water resources along the Stillwater River is summarized in its recent monitoring report on Stratton Ranch (SMC 1997d). Monitoring occurs upstream at surface water site SMC-11 near the permit boundary and downstream at Redman's Bridge at surface water site SMC-15. The water is a soft, slightly basic calcium bicarbonate liquid of low dissolved solids. Concentrations of nitrate plus nitrite ranged from 0.06 to *0.55* mg/L between 1993 and 1997 (Hydrometries 1997) at SMC-11 and 0.14-0.24 mg/L at SMC-15 for sampling done in 1996. Metal concentrations were low.

Surface water monitoring site SW-11 is located in the vicinity of Stratton Ranch on the Stillwater River and is a calcium bicarbonate water of low hardness, slightly alkaline character. This site is approximately one-half a mile below the mine site. TDS has ranged from 25 to 77 mg/L (data collected from September 12, 1992 through December 13, 1996) (Hydrometries 1996a). Sulfate concentrations range from *5* to 13 mg/L, nitrate plus nitrite levels have ranged from 0.06 through *0.55* mg/L and phosphate values have ranged from <0.00 through 0.14 mg/L. Concentrations of aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, nickel, silver and zinc are all below Montana human health standards.

3.1.2.3 Hertzler Ranch

Surrounding surface water sites include SMC-14 located upstream on the West Fork of the Stillwater River, SMC-12, located upstream on the Stillwater River and SMC-13, located downstream on the Stillwater River. All waters were

monitored in 1996 and exhibited soft to moderately hard, neutral to slightly basic pH, calcium bicarbonate characteristics with low dissolved solids. Nutrient and metals concentrations were low or below laboratory detection limits (SMC 1997c).

The quality of water in the West Fork of the Stillwater River is generally good. This water is a calcium-carbonate type with low average total dissolved solids (60 mg/L) and a low average alkalinity of 29 mg/L of $CaC0_3$ (Botz 1976). The presence of sensitive aquatic invertebrates in the West Fork of the Stillwater River also suggests the quality of water in the river is good. The DNRC identifies water uses of domestic stock watering, and irrigation within the west fork of the Stillwater River water rights.

Baseline water quality data in the three small, poorly-developed drainages, Robinson Draw, Stanley Coulee, and Tandy Coulee were collected monthly from June 1980 through June 1981 (COM 1981). Four samples from Tandy Coulee exceed human health drinking water quality standards for fecal coliform. Additionally, runoff from Tandy Coulee always exceeded the federal secondary domestic standards and Montana human health standard for iron. Single sampling events in February 1981 in Stanley and Tandy Coulees exhibited 0.02 gm/1 cadmium, which exceeds the human health standard of O.Ol mg/L. The bedrock (Eagle Formation) underneath these drainages contains sulfide metal complexes that slightly acidify runoff waters and probably are the reason for the elevated cadmium and iron values. Even human consumption, they are of acceptable quality for irrigation and stock watering, their primary uses.

3.1.3 Groundwater

3.1.3.1 Stillwater Mine Site

Groundwater is contained in bedrock of the Stillwater Complex within the area of the mine site, landslide deposits, colluvium (sheetwash deposits), and unconsolidated alluvium (stream deposits) landslide deposits.

The bedrock aquifers may be found in zones of secondary permeability associated with either the Precambrian ultrabasic rocks of the Stillwater Complex, metamorphic or meta-igneous units of gneiss, schist or hornfels, or quartz monzonite intrusives (COM 1981). These are located in the southern part of the study area. To the north are Paleozoic to Mesozoic sedimentary formations consisting of the Madison limestone, the

Colorado Group shale, and the Montana Group sandstone, siltstone, shale and rbonaceous
bedrock aquifers are recharged mainly by snowmelt water at higher elevations. Water is stored in fractures, faults, joints and other breaks in the bedrock, which
essentially has zero effective matrix permeability and porosity. Because the

or potential springs. All of the sites are either upgradient of proposed LAD sites or receive recharge from an upgradient source. Four springs are on the Stratton Ranch itself: SRSSP; SRUSSP; SRNSP; and an unnamed spring near the highway south of the Stratton Ranch area. SRSSP has a reported flow of
100 gpm and SRNSP has a reported flow of 58 gpm. There is no flow information available for the unnamed spring south of Stratton Ranch and SRUSSP has a reported flow of 8 gpm. The remaining springs are located in the landslide deposits associated with Cathedral Mountain or on other upland areas within the study area. Flows range from unreported to 53 gpm, but typically are less than 5 gpm. Water rights have been filed for twelve of the springs and the owners are summarized in the Hydrometries (1996b) report.

Ten wells were noted in the study area (Hydrometries 1996c). Three are located directly on the Stratton Ranch site: (1) SREW, (2) SRWW; and (3) the old Stratton Ranch well. The first two are 59 feet deep and yield 1 00 gpm. The old Stratton Ranch well, which is not in use, is 200 feet deep and reportedly yields
5 gpm. Seven wells are downgradient of the site on the west side of the river and range in depth from 6.5 to 60 feet for those sites for which data have been reported. Reported yields range from 25 to 35 gpm. Water rights have been
filed on six of the sites and ownership is summarized in Hydrometries' (1996c)
report.

3.1.3.3 Hertzler Ranch

Groundwater in the Hertzler Valley is primarily found in two distinct geologic units: sedimentary bedrock and unconsolidated surficial deposits. The majority of the Hertzler Valley is underlain by sedimentary shale and sandstone. The bedrock is mantled with almost two hundred feet of unconsolidated glacial and alluvial deposits. Surficial materials in the Hertzler Valley are predominantly alluvial fan deposits, but glacial drift deposits are found on the north and south sides ofthe Valley (COM 1981). Poorly-sorted colluvial deposits also are present to the north and west. As a consequence, unconsolidated groundwater resources are variable. Groundwater is available in the sedimentary units, but generally is not used where more reliable near-surface water in alluvial unconsolidated deposits exists.

Groundwater in the sedimentary rocks of the Hertzler Valley generally flows toward the valley bottom, roughly following the relief of the landscape, and then trends eastward towards the Stillwater River. Much of

the lower elevations are underlain by bedrock composed of Colorado shale, which is roughly 1,000 times Jess permeable than the overlying sand and gravel. The shale's low permeability does not facilitate migration of groundwater, severely limiting the amount of vertical leakage from the overlying surficial deposits. A pumping test of alluvial wells dropped water levels slightly in observation wells completed in the shale. This suggests that the upper portion of the shale bedrock is, to a small degree,

hydrologically connected with the overlying saturated unconsolidated material and that some exchange of groundwater between the two units is possible.

The depth of unconsolidated material within the Hertzler Valley varies. The thickest accumulation occurs along the central east-west axis of the valley where it is approximately 137 feet thick (COM 1981). These materials range in depth from 55 feet to 171 feet. The material is composed primarily of a mixture of alluvial fan and glacial outwash deposits. Most of the groundwater in the alluvium moves in an unconfined state.

During most of the year, these unconsolidated deposits are saturated at depths ranging from 76 feet at the western end of the valley to 42 feet at the eastern end where the Hertzler Valley joins the Stillwater River. Water levels vary with the season. The water table is highest during the late spring and summer and lowest during winter and early spring. It rises as much as 20 feet between low to high periods (COM 1981).

Testing of hydraulic conductivities below the Hertzler tailings impoundment site range from 1 x 10^{-3} to 8 x 10^{-1} cm/sec (Wahler 1981). Flexible wall permeability analyses conducted by Knight Piesold (1996) yielded permeabilities ranging from 4.3 x 10^{-} cm/sec to 1.4 x 10^{-8} cm/sec, depending on confining pressures. Other portions of the Hertzler Valley exhibited high transmissivities. Groundwater can be extracted from the unconsolidated deposits of the Hertzler Valley at high rates. Pumping and recovery tests of glacial outwash materials in the Hertzler Valley indicate transmissivities ranging from 150,000 to 800,000 gpd/ft (COM 1981). Recovery tests in the overlying alluvial materials indicate transmissivities of 656 to 11,165 gpd/ft. Several observation wells were capable of producing more than 200 gpm, sufficient for sprinkler irrigation of hayfields. Recharge is derived from precipitation, losses from stream channels, and contributions from bedrock aquifers. Infiltration of irrigation water also is a major source of recharge for the valley system. Over half of the irrigation water brought in from the West Fork of the Stillwater River is lost to infiltration. An irrigation ditch runs most of the length of the Hertzler Valley and is used to flood irrigate hayfields.

Five wells produce water from alluvial deposits in the Hertzler Valley study area (Hydrometries 1996c). Two are upgradient of proposed operations (RW-2 and Hart/Evans). The MDFWP's well is located one mile east of all proposed disturbance in the Stillwater alluvium. The two DeGroat wells are upstream of the intersection of the Hertzler Valley and the Stillwater River, 0.9 miles east of the proposed tailings impoundment location. There are also three springs north of the Hertzler Valley in the Stanley and Tandy Coulees. The springs have reported flows ranging from 12.5 to 40 gpm. Water rights have been filed on the springs. The old Hertzler Homestead Spring is located near the southeast toe of Bush Mountain. There are no water rights filing on the spring and no flow

information. It is downgradient of an irrigation ditch derived from the West Fork of the Stillwater River, which could serve as a source of recharge.

Two wells, the Nye Firehouse well and the Hart/Evans domestic well, produce water from sedimentary units in the area. Completion reports are not available, but it is surmised that water is derived from sandstones in the Colorado Group. The Madison limestone is the source of several springs, the largest, Madison Spring (MD-5), discharging 45 gpm. The Eagle sandstone is the source of the Tandy Coal Spring (TC-5), which flows less than 10 gpm throughout the year. CDM's (1981) baseline survey noted five springs discharging from sedimentary deposits.

All six observation wells drilled in the Hertzler Valley in the unconsolidated deposits tapped groundwater of quality suitable for use in irrigation or stock watering, the water's current primary use. The calcium bicarbonate water is moderately hard with a slightly basic pH and low to moderate TDS concentrations. Valley groundwater was found to consistently exceed Montana's human health water quality standard for iron. Sampling information on lead is inconsistent. Three of six observation wells also had lead values above the recommended limit for human health (four to 15 times the standard) during the collection ofbaseline data in 1981. Lead levels were below the human health standard and at the detection limit in quarterly monitoring performed in 1996 (SMC 1997c). Manganese was above the human health water quality standard of0.05 mg!L for four of six wells in the valley. Nitrate plus nitrite concentrations ranged from 0.24 to 1.47 mg/L in the monitoring of seven wells in 1996 and do not pose a risk to human health. Phosphorus levels ranged from <0.001 to 0.56 mg/L (SMC 1997c). In general, alluvial groundwater under most of the Hertzler Valley would not be desirable for domestic water supplies due to elevated concentrations of iron and manganese. The standards for these metals are based on aesthetics and are federal secondary drinking water standards to prevent staining. The origin of the constituents that make the water undesirable for drinking water is unknown, but probably is the poor quality water seeping upward from the underlying bedrock and from infiltration of surface irrigation water (CDM 1981 and SMC 1997c).

Water quality samples taken from two observation wells completed in the bedrock that underlies most of the valley (Colorado Shale Group) exceeded the drinking water limits for the following constituents: total dissolved solids, arsenic, cadmium, chromium, iron, lead, manganese, selenium, silver, and sulfate. The poor quality of the water in the Colorado Group rocks, coupled with the very small amount that could be pumped from the units, makes the Colorado Shale an undesirable source for beneficial use.

Addendum B – Baseline Data

Traffic

Diamond Inductive Loop (TT-21) Traffic Counter

The Diamond Inductive Loop (TT-21) Traffic Counter was purchased by SMC to monitor traffic at the Hertzler Ranch site. This instrument is manufactured and serviced by Diamond Traffic Products. The TT-21 is an inductive loop detector counter for use with loops buried under the roadway. This type of counter is used in rural areas, and is buried 8 to 12 inches under the road surface to prevent damage form rocks and gravel.

The TT-21 projects an electric/magnetic current 3 to 4 feet above the roadway surface. When a vehicle passes by it breaks the current, and a count is recorded. The system resets in 0.1 seconds, and is available for the next passing vehicle.

Addendum B – Baseline Data

Visual

3.7-Aesthetics

3.7.1 Visual Resources

Previous environmental analyses prepared for the Stillwater Mine used the Forest Service's Visual Management System (VMS) to evaluate visual resources in the project area. This system applies specifically to National Forest System lands. Although neither the State nor the Forest Service have enforcement authority over private lands, the Forest Service's VMS was applied to private lands for comparative purposes. Consequently, Visual Quality Objectives (VQOs), Existing Visual Conditions (EVCs), and the Visual Absorption Capabilities (VACs) have been established for public and private lands in the project area.

The VQO for lands in the CNF's Management Area E include Retention, Partial Retention, and Modification (Forest Service 1986a). The CNF's Forest Plan also states, "Short-term degradation will likely occur during mineral development that will not meet the assigned VQO of the area. Emphasis will be on rehabilitation immediately after the development phase and at the completion of production."

The existing visual condition (EVC) is the present state of visual alteration measured in degrees of deviation of the natural landscape. The EVCs for the Hertzler Ranch and the Stratton Ranch sites are classified as EVC 2 and EVC 3, respectively. EVC 2 is defined as Unnoticed: changes in the landscape are not visually evident to the average person, unless pointed out. This includes low visual roads. EVC 3 is defined as Minor Disturbance: changes in the landscape are noticed by the average person, but they do not attract attention. The natural appearance of the landscape still remains dominant. This includes pastures and roads.

The Visual Absorption Capability (VAC) is the inherent ability of the landscape to absorb alterations. The VAC of the project area in the Stillwater Valley, including the analysis areas, is high due to the vegetative regenerative capacity and relatively gentle slopes.

3.7.1.1 Stillwater Mine Site

The area surrounding this site falls within the Yellowstone Rockies Character Type. In the project area, this type has been subdivided into the foothill and mountainous subtypes (COM 1981). The foothill subtype, located in the valleys of the study area, is composed of gently rolling, grass-covered hills with irrigated pastures. As seen from a distance, the valley presents a landscape of uniform brown or green, depending upon the season, and rolling land contrasted against the darker backdrop of rugged mountains. The dominant foreground feature is the Stillwater River and the associated cottonwood, aspen, and willow riparian vegetation.

Within the foothill subcharacter type, most of the man-caused alterations to the landscape are the result of past and present mining activities, ranching and agricultural activities, roads, and subdivisions. These alterations include fence lines, farm support structures, houses, irrigation ditches, haystacks, and farming equipment. Most of the ranching activities do not adversely affect scenic quality. The predominant visual alterations are second home/condominium developments. The ability of the valley bottom lands to absorb visual changes is greater than the upper portions of the valley due to gentler slopes.

The mountainous subcharacter type, located around the Stillwater Mine, consists of steeply-elevated, angular landforms that rise sharply from the Stillwater River Valley floor. Although most of the mountainous subcharacter type is free of visual impact, mine access roads and past and current mine development at the Stillwater Mine and in the Nye Creek, Verdigris Creek, and Mountain View Creek areas affect scenic quality. The visual impact is most evident where roads cut across steep slopes and where mine facilities have been constructed.

The Stillwater Mine has placed numerous yard lights around the buildings at the mine to provide safety and security, but lights are not placed where personnel do not work. In response to neighbor's concerns, SMC shrouded all outdoor
lighting so light only goes down, which minimizes lights shining off the property. Additionally, SMC operates very little heavy equipment on the surface during night time hours. All construction and heavy equipment operation on the surface are conducted during daylight hours, or when necessary after dark, by means of the vehicles' own lights only.

3.7.1.2 Stratton Ranch

Stratton Ranch is located on SMC-owned lands in the relatively flat benches of the Stillwater valley on the west side of the river. The site is within the viewshed of several residences in the Cathedral Mountain Estates subdivision that overlook the site. Currently, considerable disturbance exists at the site where vegetation has been removed, resulting in a large area of exposed, light-

colored soils. Surrounding public lands have the VQOs of Retention, Partial Retention, and Modification assigned to them.

3.7.1.3 Hertzler Ranch

Hertzler Ranch (like the Stratton Ranch) is within the foothill character subtype. Evidence of farming and ranching activities occur here and some residences are also nearby. Most residences in the surrounding area are located in the valley near the community of Nye, and along the Stillwater River. Nearby Forest lands have been given the VQO of Partial Retention because there are man-made alterations already existing in these areas, but the natural appearance of the landscape is the dominant factor. Under the Partial Retention objective, management activities may introduce new form, line, color, or texture, but the changes must remain subordinate to the characteristic landscape.

3.7.2 Noise

Discussions of environmental n01se do not focus on pure tones. commonly-heard sounds have complex frequency and pressure characteristics. Accordingly, sound measurement equipment has been designed to account for the sensitivity of human hearing to different frequencies. Correction factors for adjusting actual sound pressure levels to correspond with human hearing have been determined experimentally. For measuring noise in ordinary environments, A-Weighted correction factors are employed. The filter de-emphasizes the very low and very high frequencies of sound in a manner similar to the response of the human ear. Therefore, the A-weighted decibel (dBA) is a good correlation to a human's subjective reaction to noise.

The following discussion sets a basis of familiarity with known and common noise levels. A quiet whisper at five feet is 20 dBA; a residential area at night is 40 dBA; a residential area during the day is SO dBA; a large and busy department store is 60 dBA; SO feet from a vehicle traveling 6S mph is 7S dBA; a typical construction site is 80 dBA; a subway train at 20 feet is 90 dBA; and a jet takeoff at 200 feet is 120 dBA.

3.7.2.1 Stillwater Mine Site

Site-specific noise studies have not been conducted in the vicinity of the Stillwater mine. However, the noise levels associated with the site are likely to be typical of those associated with underground mining. Typical sound levels at underground mine sites are presented below:

> warehouse/shops-45 dBA at 100 feet.

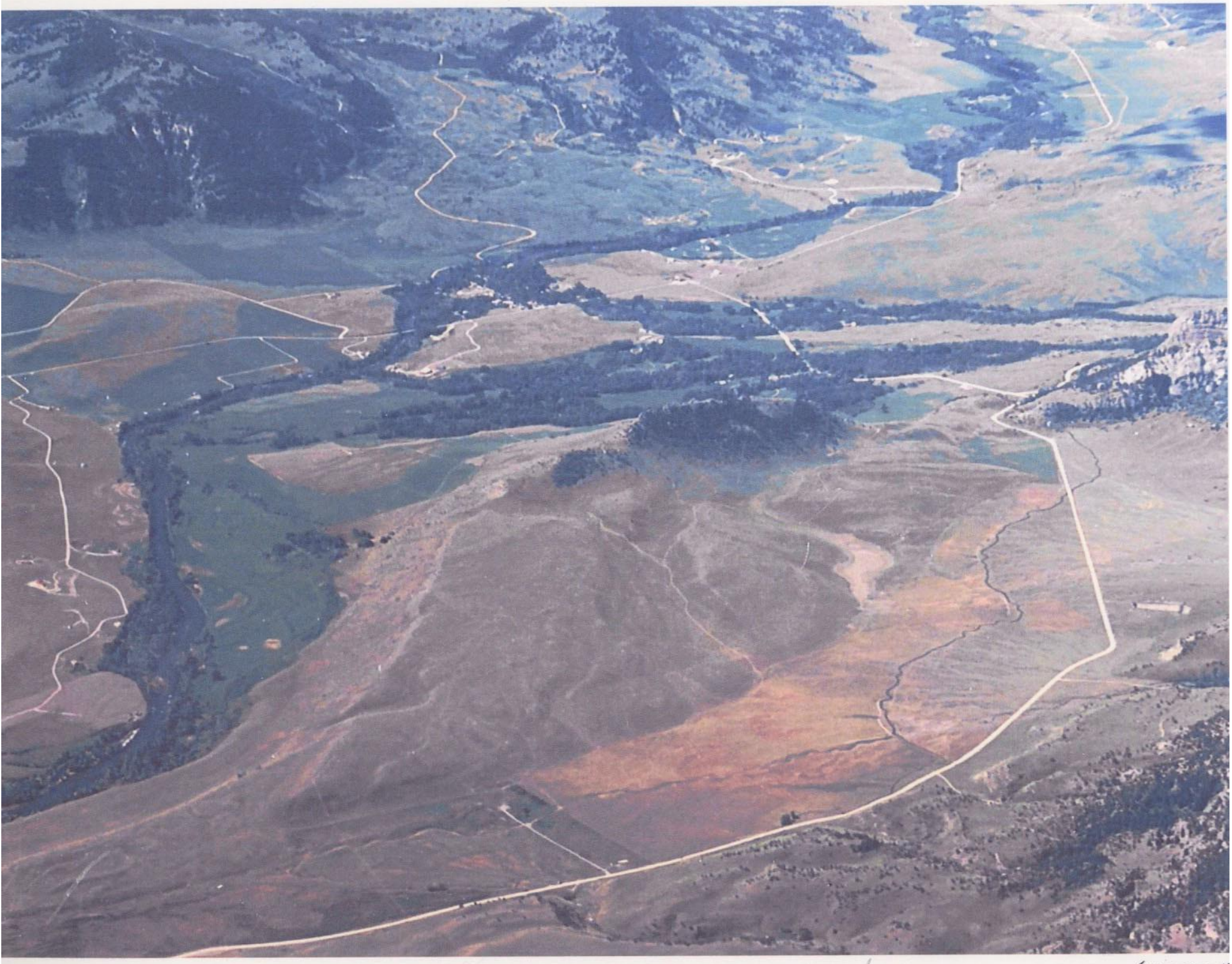
Noise levels from the existing operations are not obvious to travelers on County Road 419 or recreationists on National Forest lands (DSL and Forest Service 1989). Local residents living within 0.5 mile of the mine site stated in responses to the draft EIS that noise from beepers on vehicles, the mill, and other equipment operating at the mine is noticeable at their residences. In response to comments provided in the past, SMC has fitted some surface vehicles with mass-sensitive backup alarms that only sound when objects are present behind the vehicle. Thus, although SMC uses backup alarms at the mine, the frequency of their use is minimized.

Excluding the mine site activity, background noise levels in the Stillwater Valley can be expected to range from approximately 52 to 61 dBA. The major background sound sources are the Stillwater River and persistent winds (DSL and Forest Service 1985).

3.7.2.2 Hertzler Ranch

Specific noise surveys have not been conducted in the vicinity of the Hertzler Ranch. However, because the area is undeveloped and rural in character, existing sound levels are probably low. Rural areas are generally recognized as having day-night average sound levels (Ldn) of less than 50 dBA.

Ambient sound levels measured at a rural farm averaged about 40 dBA (Eldred 1974). Sound levels in the East Boulder Creek Valley were measured at 52 to 61 dBA, with the largest sound source being the East Boulder River (DSL and Forest Service 1985). It is likely that background sound levels can be expected to be similar or somewhat less than those measured in the East Boulder River
Valley. The Stillwater River would contribute less to the sound levels due to the Stillwater Valley's more open topography, but a slightly greater effect would be expected from local traffic on County Roads 419 and 420.



Noxious Weeds

3.9.2 Vegetation

Vegetation present at the Stillwater Mine area, at Hertzler Ranch, and along the pipeline route, has been extensively described in previous environmental documents. Four basic categories of vegetation have been identified and further refined into 13 vegetation types. These types are listed in Table 3-lS. For more detailed discussions ofthe vegetation types, readers may review the 1981 baseline reports (COM 1981) and the Final EIS for the Stillwater Mine's original development (DSL and Forest Service 1985).

Table 3-15 Vegetation Categories and Types in the Stillwater Mine Project Area

Category	Types
Low Elevation Grass and Shrubland	1 Stoney Grassland
	2 Sagebrush shrubland
	3 Skunkbush shrubland
Low/Middle Elevation Riparian and Ravine Types with High Soil Moisture	4 Drainage bottom land
	5 Riparian woodland
	6 Ravine aspen-chokecherry
Forested Types	7 Open forest-meadow understory
	8 Open forest-rocky understory
	9 Lodgepole pine forest
	10 Douglas fir forest
Disturbed Areas	11 Revegetated chrome tailings
	12 Cultivated hayland
	13 Other disturbed

3.9.2.1 Noxious Weeds

Noxious weeds are species of plants that undermine the quality of wildlife habitats, grazing and agricultural lands, and biodiversity. Efforts to control the spread of noxious weeds are overseen by both state and county agencies (Noxious Weed Act, County Weed Control Act 7-22-2101 (5), MCA). In Stillwater County, these efforts are focused primarily on leafy spurge *(Euphorbia esula),* spotted knapweed *(Centaurea maculosa),* and, to a lesser extent, on Canada thistle *(Cirsium arvense),* field morning glory *(Convulvulus arvensis),* mullein *(Verbascum thaspus)* and houndstongue *(Cynoglossum officina/e).* Except for field morning glory, which affects agricultural productivity, these species have been designated as noxious due to their effects to rangeland.

Within the project area, these six species occur as isolated populations and as scattered individuals. Spotted knapweed is present on disturbed areas and an inventory of the Hertzler Ranch area conducted in 1996 noted the presence of leafy spurge, spotted knapweed, field morning glory and Canada thistle (Western Technology and Engineering, Inc. 1996a). Although new individual plants continue to appear in the area, efforts by Stillwater County to manage weeds have prevented the expansion of noxious weeds in the area. SMC's weed management practices are directed and implemented in cooperation with county weed managers and are focused primarily on the eradication of spotted knapweed. This species is especially problematic because it may be transported on site by machinery and become established on disturbed areas. Despite the constant potential for invasion, eradication of noxious weeds at the Stillwater mine is generally viewed as successful (Pearson 1998, pers. comm).

Stillwater County's weed management program is integrated, using biological, chemical and mechanical controls. To eradicate new infestations, herbicides (TORDON, ESCORT, and 2,4-D) are the single most effective tools and, as such, these chemical controls are the primary techniques used at the Stillwater Mine to control weeds. Stillwater County uses all three controls to contain the spread of well-established populations. Considered to be most effective on mature populations, biological controls used in the county focus primarily on leafy spurge and spotted knapweed. Although mechanical controls, such as grazing, are typically not viable due to toxic or unpalatable nature of most noxious weeds, Stillwater County has used sheep and goats to graze on mature populations of leafy spurge (Pearson 1998, pers. comm.).

3.9.2.2 Stillwater Mine Site

Vegetation types within the portion of the Stillwater Mine's current permit boundary east of the Stillwater River are a mixture of open forests with either a meadow or rocky understory, an open forest-rocky understory, ravine aspen-chokecherry, lodgepole pine, rocky grassland and disturbed. Within the 80-acre footprint of the proposed east side waste storage site, about one third (20 acres) is Rocky grassland. The rest (60 acres) is revegetated chrome tailings.

3.9.2.3 Hertzler Ranch

The 1,112 acres of rolling landscape comprising the Hertzler Ranch site are dominated by the Stony grassland vegetation type (65 percent). This vegetation type has been replaced by a band of Cultivated hayland in the northern portion of the ranch, which stretches from east to west. The hayland is flood-irrigated by a historic ditch that travels along the northern permit boundary. Cultivated hayland accounts for 26 percent of the total area encompassed by the Hertzler Ranch site.

Several vegetation types account for the remaining nine percent of the area. Sagebrush shrubland and Skunkbrush shrubland vegetation types account for 5 percent and 2 percent, respectively, and are restricted to northwestern and southeastern aspects defined by slope shoulders, toes of slopes and swales. About six acres (1 percent) of Drainage bottom lands are present and only three acres of open forest-meadow understory (less than I percent) are present. Disturbed areas other than the Cultivated haylands account for I percent of the Hertzler Ranch site's total acreage.

3.9.2.4 Pipeline Route

Most of the lands crossed by the proposed pipeline route presently support the rocky grassland vegetation type. However, several small segments also cross riparian woodland (at the Stillwater River crossing), cultivated hayland, drainage bottomland, skunkbrush shrubland, ravine aspen-chokecherry, and open forest with meadow understory.

3.4 NOXIOUS WEEDS

The county noxious weed list designates noxious weeds for Montana under the County Weed Control Act 7-22-2101(5), MCA. Four taxa on this list were identified in the Hertzler study area during the 1996 inventory: *Cirsium arvense* (Canada thistle), *Convolvulus arvensis* (field morning-glory), *Centaurea maculosa* (spotted knapweed) and *Euphorbia esula* (leafy spurge). In general, these species are confined to areas of recent and historic disturbance, e.g., roadsides, abandoned roads and homesteads, and drainage bottoms affected by fluvial events and livestock impacts.

Cirsium arvense is occasionally abundant on wet or mesic sites (both natural and artificial), primarily on the Drainage Bottomland and Ravine Aspen - Chokecherry types, and also present in the Riparian Woodland type and along irrigation ditches. *Convolvulus arvensis* is mostly limited to portions of the Cultivated Hayland type and nearby roadsides or homesteads.

Centaurea maculosa is generally associated with various roadside locations and scattered grazing - induced disturbed sites in the Stony Grassland, Sagebrush, and Skunkbush Shrubland vegetation types. *Centaurea maculosa* is also frequently associated with the margins of wetland sites in the study area. *Euphorbia esula* is limited to a few small sites on mesic swales in the southern portion of the Hertzler tailings corridor.

FAX to Sandy

September 26, 2001

Mikol Hjelvik
Stillwater Spraying
6734 Hesper Rd. Billings,
MT 59106

Stillwater Mining Company
Attn: Mr. Tom Kircher
HC 54 Box 365
Nye, MT 59061

Dear Tom,

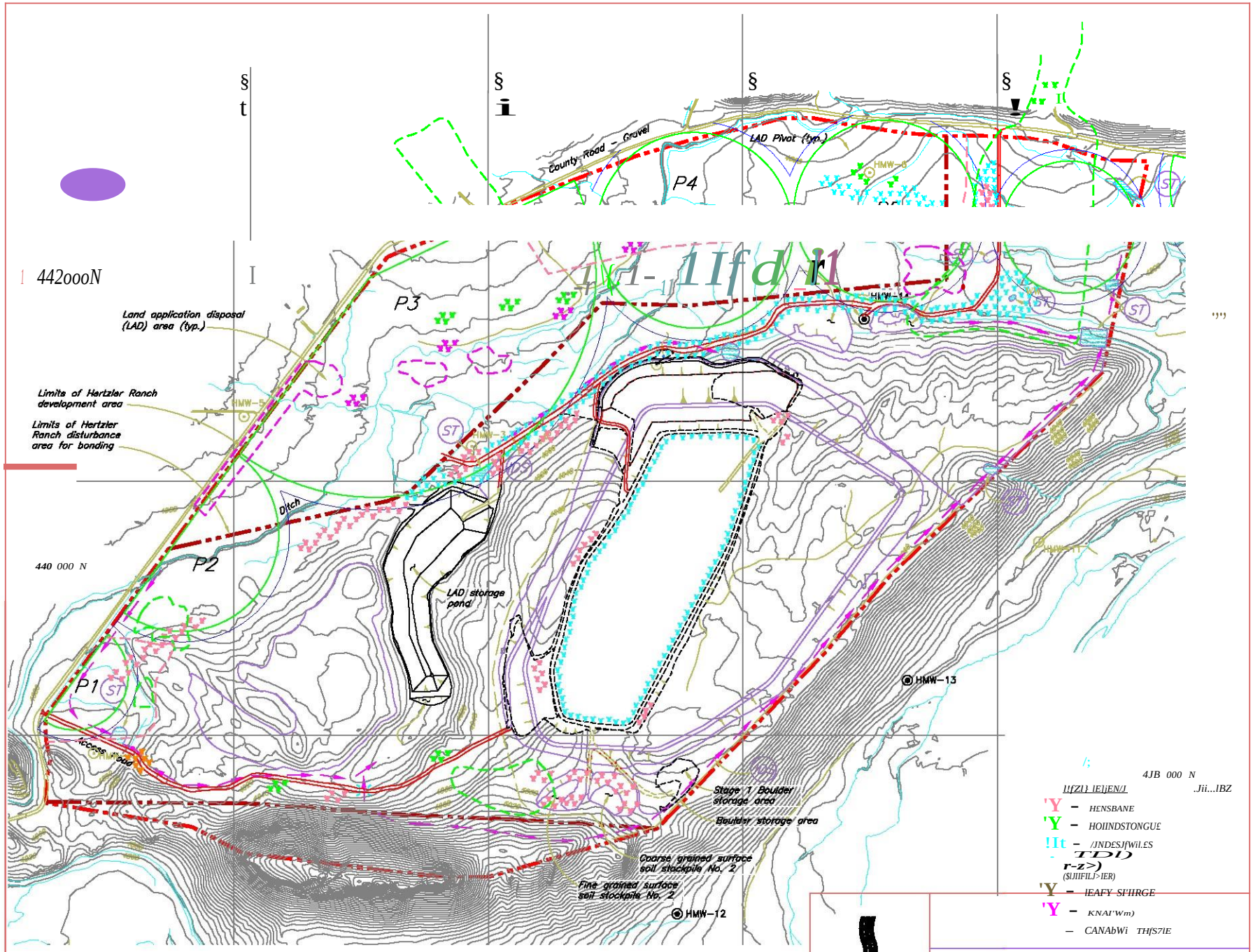
I am writing in response to your request of an evaluation of the weed status at the Hertzler ranch. Enclosed is a map with weed types and locations on the property. Below is a list of weeds on the Hertzler ranch and my recommendations for control as well as an overview of the weed status over the last ten years.

Leafy Spurge - Eradicated, still necessary to monitor for reoccurrence.
Spotted knapweed - controlled and very sparse, yearly spot spraying necessary.
Hensbane - Substantial patches mainly along newly disturbed areas. Most patches were new growth (small rosette stage), early spring spraying would be desirable.
Houndstongue - Controlled and sparse, yearly spot spraying in early spring necessary.
Undesirable Weeds - Include ragweed, lambsquarter, pigweed, fanweed, and sunflowers. Substantial patches in newly disturbed areas. Majority of these undesirable weeds were sprayed this summer. Competition from new seeding grasses should thin out most of these weeds, some spot spraying may be necessary.

The weed outlook today compared to ten years ago is very positive. The noxious weeds especially houndstongue and spotted knapweed have a small fraction of the population now as compared to 1992. The patches of Hensbane have been reduced significantly, although some new areas need attention in recently excavated areas.

Yearly chemical control will be needed to keep the weeds in check, but most of the spraying will be spot spraying isolated small patches. A small area along recently excavated ground may have to be broadcast sprayed for larger patches of hensbane. Overall the weed situation at the Hertzler place is very much under control.

Mikol Hjelvik
Commercial Applicator


442000N
440 000 N
Land application disposal (LAD) area (typ.)
Limits of Hertzler Ranch development area
Limits of Hertzler Ranch disturbance area for bonding
Ditch
LAD storage pond
Access road
County Road - Gravel
LAD Pivot (typ.)
P1
P2
P3
P4
HMW-5
HMW-12
HMW-13
Stage 1 Boulder storage area
Boulder storage area
Coarse grained surface soil stockpile No. 2
Fine grained surface soil stockpile No. 2
2000 Feet
NOT FOR CONSTRUCTION
STILLWATER MINING COMPANY
0 26FEB2000 ISSUED FOR REPORT JW JW TK TK
REV. DATE DESCRIPTION DESIGN DRAWN CHK'D APP'D
REVISIONS
CHECKED TKIRCHER
DRAWN JWALTON
APPROVED TKIRKER
SCALE 1"=400'
REVISION 0
DRAWING NO. HERTZLERWEEDMAP

Wildlife

3.2 Wildlife

The project area and its wildlife resources have been extensively reviewed and discussed in previous documents, including the 1981 baseline reports (COM 198 I) and 1985 final EIS for the Stillwater Mine (DSL and Forest Service 1985). A reconnaissance conducted during 1996 determined large-scale changes have not occurred in the areal extent of habitats available for wildlife in the area or their distribution since the 1980 studies (Western Technology and Engineering, Inc. 1996c). However, small-scale changes have occurred. They include the development of the Stillwater Mine, an increase in the number of homes and cabins along the Stillwater River and West Fork Stillwater River, and improvements at public recreation sites along the Stillwater River. The increase in the number of homes and cabins (many of which appeared to be recreational or second homes) does not appear to be limited to the project area, but appears to have occurred downstream of the project area and in other drainages (Western Technology and Engineering, Inc. 1996c). These changes were predicted in the final EIS for the Stillwater Mine (DSL and Forest Service 1985).

Because no major changes have occurred in the project area, the wildlife habitats remain relatively unchanged. Consequently, this discussion does not repeat information documented in the 1985, 1992, and 1996 final EISs and the 1989 Environmental Assessment (see Appendix A for additional descriptions of these documents) that has not changed. Instead, it focuses on those issues developed through scoping anci the species and groups of species affected by the changes that have occurred since the previous documents were prepared.

3.2.1 High-Interest Species

3.2.1.1 Stillwater Mine Site

3.2.1.1.1 Bighorn Sheep

A small, native herd of about 20 to 25 bighorn sheep resides in the Stillwater VaHey around the Stillwater Mine. The herd has been monitored since the early 1970s, more than 10 years before the Stillwater Mine was developed. This monitoring suggests the trend for this population of bighorn sheep has been downward since the 1980s. In order for the population to recover, lambs must survive for several years into reproductive age and losses of adult ewes must decrease (recently, annual mortality of adult ewes exceeded 20 percent for two consecutive years and reached 47 percent during the winter of 1996-97). Also, the population needs to expand its current home range or reoccupy historic home range.

The traditional primary winter concentration area for these sheep lies along the west side ofthe Stillwater River between the Stillwater Mine and Woodbine Campground. However, monitoring of the population conducted since the mid-

1980s (Fanner and Stewart 1986, 1987, 1988; Fanner, Stewart, and Richter 1990, 1991, 1992, 1993, 1996) suggests part of the population spends at least part of the winter on the West Fork Stillwater River about 3 miles west of the 1980 baseline study area. Although some sheep have been using the West Fork Stillwater River as winter range recently, most still appear to winter close to the Stillwater Mine (Western Technology and Engineering, Inc. 1996c).

A review of sightings of bighorn sheep mapped since the mid-1980s indicates very few sightings occurred where the new facilities would be constructed (Western Technology and Engineering, Inc. 1996c). In particular, no sightings have been recorded downstream from near Stratton Ranch or at the Hertzler Ranch area. Consequently, the occurrence of bighorn sheep is unlikely where most of the new facilities are proposed.

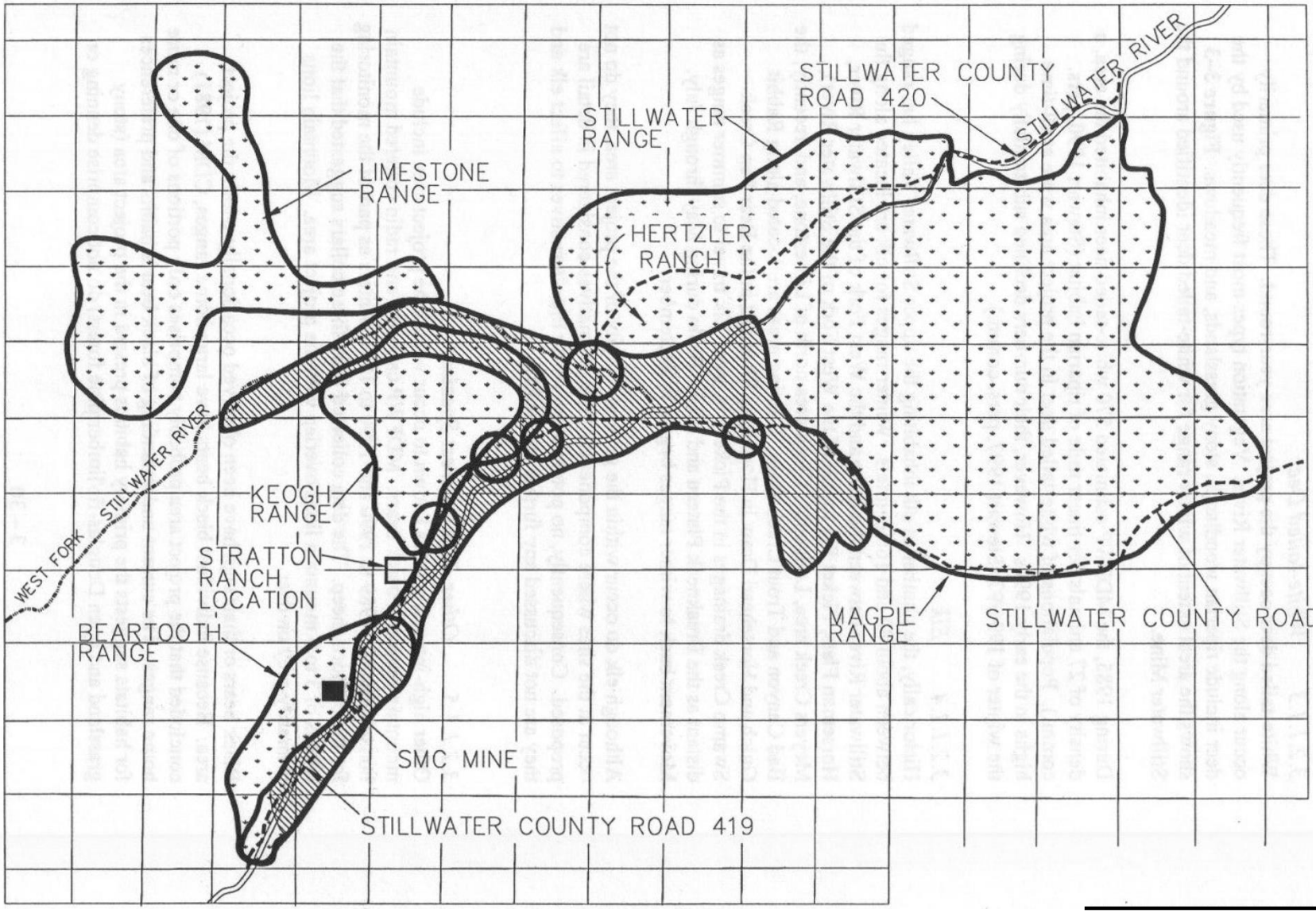
3.2.1.1.2 Mule Deer

Mule deer are the principal big game species found in the project area. Although present year-round, they are most abundant during the winter when they concentrate on winter range. Four distinct mule deer winter ranges exist in a complex that covers about 130 square miles. Generally, this complex extends from Woodbine Campground north to Beehive, Montana, and from Sweetgrass County east across Horseman Flats to Twin Butte. Figure 3-3 shows the portion of this range present within the project area.

Previous aerial and ground surveys conducted within the project area detennined mule deer use a variety of habitats within their local winter ranges. Use of stoney grasslands and hay meadows was highest. However, they also use open Douglas-fir forest, limber pine forest, steep aspects, and south slopes (Western Technology and Engineering, Inc. 1996c).

During peak occupancy of their winter range (January to April), observations of 100 mule deer between the Stratton Ranch and Woodbine Campground are common. In 1989, about 200 deer occupied the range immediately adjoining the mine and between 400 and 600 deer occupied the Horseman Flats portion of winter range (Stewart 1989, pers. comm.). However, mule deer populations are at their lowest in recent history (Stewart 1997, pers. comm.). The reasons for the decline are not clear, but may be related to naturally-occurring fluctuations, mortality that occurred during the winters of 1995-96 and 1996-97, and changes originating from increased human presence and activity in the Stillwater Valley. Additionally, fawn recruitment over the past two years has averaged about 18 per 100 adults (Stewart 1997, pers. comm.).

Mule deer using the winter ranges from the Stillwater Mine to Woodbine Campground do not spend their summers in the upper Stillwater Valley. Instead, they migrate to Yellowstone National Park for the summer.


STILLWATER COUNTY
ROAD 420
STILLWATER RIVER
STILLWATER
RANGE
LIMESTONE
RANGE
HERTZLER
RANCH
WEST FORK STILLWATER RIVER
KEOGH
RANGE
STRATTON
RANCH
LOCATION
BEARTOOTH
RANGE
MAGPIE
RANGE
STILLWATER COUNTY ROAD
SMC MINE
STILLWATER COUNTY ROAD 419

3.2.1.1.3 White-tailed Deer

White-tailed deer occupy the project area year-round. These deer primarily occur along the Stillwater River. Vegetation types most frequently used by the deer include riparian woodlands, stony grasslands, and meadows. Figure 3-3 shows the areal extent of winter range for white-tailed deer identified around the Stillwater Mine.

During 1985, the MDFWP estimated 570 white-tailed deer inhabited the area, a density of27 animals per linear mile of riparian habitat (Stewart 1990, pers. comm.). Populations of white-tailed deer in the project area were at all-time highs in the early 1990s. However, their numbers declined substantially during the winter of 1996/97 (Stewart 1997, pers. comm.).

3.2.1.1.4 Elk

Historically, the number of elk inhabiting the upper Stillwater Valley has ranged between about 80 and 160 animals. Winter ranges for elk are located along the Stillwater River between the mine and the West Fork of the Stillwater River, Horseman Flats, Picket Pin (north of the West Fork of the Stillwater River), Meyers Creek area, Lodgepole Creek area north of Limestone, and, recently, the Bad Canyon and Trout Creek areas. Calving areas are located along Rabbit Gulch and Horsehead Draw in Horseman Flats and in the Bear Pen Creek-Swamp Creek drainages in the Picket Pin area. Elk travel to summer ranges as distant as the Breakneck Plateau and Placer Basin during May through July. Movement back to winter ranges begins in September.

Although elk do occur within the general vicinity of the project area, they do not occur at the sites where components of the alternatives considered in detail are proposed. Consequently, no potential exists for the alternatives to affect elk and they are not discussed any further in this EIS.

3.2.1.1.5 Other High-Interest Species

Other high-interest species known to occur within the project area include mountain lions and black bears. MDFWP captured and radio collared mountain lions during the 1989 to 1990 and 1990 to 1991 winters as part ofthe monitoring for the bighorn sheep. The data collected from these collars suggested that the ranges of 3 to 5 mountain lions overlap with the project area. Mountain lions primarily prey on deer.

Black bears or their sign have been observed occasionally within the project area. Because individual black bears have large home ranges, COM (1981) concluded that the project area probably comprises only portions of one or more home ranges. The current understanding of black bear's habits and preferences for habitats suggests the primary habitats present in the project area (stony grassland and open Douglas-fir/limber pine forest) do not comprise denning or

other critical habitats for black bear (Western Technology and Engineering, Inc. 1996c).

Although mountain lions and black bears do occur within the general vicinity of the project area, they do not occur specifically at the sites where components of the alternatives considered in detail are proposed. Consequently, little potential exists for the alternatives to affect mountain lions or black bears and they are not discussed any further in this EIS.

3.2.1.2 Stratton Ranch

Although bighorn sheep and elk do not occur at the Stratton Ranch, the other high-interest species (mule deer and white-tailed deer) occur on the ranch during the winter. Like the situation at the mine, mule deer using the winter ranges around the Stratton Ranch do not spend their summers in the upper Stillwater Valley. They also migrate to Yellowstone National Park for the summer. Furthermore, most of the ranch's winter range has been disturbed by the aggregate mining and previous construction and occupation of employee housing.

Within the upper Stillwater Valley, five sites have been identified as major road crossings for white-tailed deer. These sites are located between Nye, Montana, and the Stratton Ranch along Stillwater County roads 419 and 420 (Figure 3-3). All sites are along or near the route SMC proposed for the pipelines and they are within delineated winter range.

3.2.1.3 Hertzler Ranch

Two high-interest species occur at the Hertzler Ranch. They are the mule deer and white-tailed deer.

3.2.1.3.1 Mule Deer

As with the Stillwater Mine site, the mule deer is the most abundant large mammal in the area. Although present in the general area year-round, they are most common during the winter when they concentrate on winter range (Figure 3-3). In particular, one group of migratory deer (200 to 300 animals) occupies the Hertzler Ranch site (Stewart 1990, pers. comm.) and migrates to Lodgepole Creek and the divide above the Dry Fork of East Boulder Creek for the summer. However, unlike the mule deer occupying the winter ranges around the mine and Stratton Ranch, none of these deer migrate into Yellowstone National Park. Like most mountain populations of mule deer, recruitment in this herd is generally low (13 young per 100 adults during 1996-97).

3.2.1.3.2 *White-tailed Deer*

White-tailed deer also occupy the Hertzler Ranch area year-round. The deer primarily occur along the Stillwater k.iver and major tributaries, such as Little Rocky Creek. As discussed previously, vegetation types most frequently used by the deer include riparian woodlands, stony grasslands, and meadows. In 1985, the MDFWP estimated 570 deer inhabited the upper Stillwater Valley (Stewart 1990, pers. comm.), a density of about 27 animals per linear mile ofriparian habitat.

3.2.2 Threatened, Endangered, and Sensitive Species

The USFWS identified four species listed as threatened or endangered that may occur in the project area (McMaster 1997, pers. comm.). All four are species of wildlife. They are the bald eagle, peregrine falcon, grizzly bear, and black-footed ferret. For the present analysis, the USFWS did not identify any species of plants for consideration.

3.2.2.1 Bald Eagle (Threatened Designation)

Two general habits of bald eagles are of primary concern with this species: nesting and wintering. Breeding bald eagles typically build stick nests in the tops of coniferous or deciduous trees along streams, rivers or lakes. They also may select cliffs or ledges as nest substrates (Call 1978). Selection of nest trees appears to depend, in part, on the availability of food early in the nesting season (Swenson et al. 1986).

Primary wintering areas are typically associated with concentrations of food sources along major rivers that remain unfrozen where fish and waterfowl are available and near ungulate winter ranges (Montana Bald Eagle Working Group 1990). Wintering bald eagles are known to roost near concentrations of domestic sheep and big game in forests with large, open conifers and snags often protected from winds by ridges (Anderson and Paterson 1988).

Bald eagles occur along the Stillwater River as fall (October to December) and spring (February to March) migrants. However, sporadic winter occurrence has also been recorded (Flath 1989). This pattern of occurrence coincides with general trends observed in other mountain valleys of Montana. Although habitats appropriate for concentration areas occur along the length of the Stillwater River, no concentration areas have been identified (DSL and Forest Service 1989). Finally, although suitable habitats are present in the area, only a single occurrence of bald eagles nesting in the Stillwater River drainage has been documented. This nest is well outside the project area.

3.2.2.2 Peregrine Falcon (Threatened Designation)

Nesting habitats of the peregrine falcon usually involve cliff faces 200 to 300 feet high, but cliffs as high as 2,100 feet have been used. Most known nest sites are below 9,500 feet in elevation, but nests located as high as 10,500 feet have been documented (USFWS 1984). An available prey base of shorebirds, waterfowl or small- to medium-sized terrestrial birds usually occurs within ten miles of a nest site. Wetlands and riparian zones, as well as open meadows, parklands, croplands, lakes and gorges are potential habitats in which prey bird species are found and easily hunted by peregrines. Nesting peregrines may, however, hunt up to 17 miles from their nest to locate prey (USFWS 1984).

Bird populations on the project area appear to be sufficiently abundant and diverse to support peregrines and some of the cliffs located in the central and southern portions of the Stillwater Valley are high enough to provide suitable nesting habitats. In spite of the presence of what appears to be suitable habitats, no recent observations of peregrines in or near the project area have been documented. However, a historic nest site occurs in the valley near Nye, Montana. This site is on a cliff complex overlooking the West Fork of the Stillwater River and provides excellent foraging habitats. The last confirmed occupancy ofthis nest occurred in 1976.

3.2.2.3 Black-footed Ferret (Endangered Designation)

Prairie dog colonies are essential habitat for the black-footed ferret, which depends on prairie dogs for food and uses the prairie dogs' burrows for shelter and raising their young (Hillman and Clark 1980, Fagerstone 1987). Because ferrets are nocturnal and spend much of their time underground, their presence in an area is difficult to ascertain, but their original distribution in North America closely corresponded to the distribution of the prairie dog (Hall and Kelson 1959, Fagerstone 1987).

Although prairie dog colonies are present in the Stillwater River valley (McMaster 1989), many of the individual towns by themselves may be too small to support black-footed ferrets. Furthermore, no known colonies exist near any of the proposed facilities. Therefore, the black-footed ferret is unlikely to be present within or near the project area and is not considered any further in this analysis.

3.2.2.4 Grizzly Bear (Threatened Designation)

The grizzly bear is present in the Absaroka-Beartooth Mountains and may enter the project area on occasion. Wildlife monitoring activities conducted for the Stillwater Mine have not produced or located any confirmed reports of grizzlies

in the project area. However, this was not unexpected. Also, the project area does not contain any denning habitats or other sites that might be considered critical to grizzly bears (Western Technology and Engineering, Inc. 1996c). Thus, any grizzly bears that might occur within the project area would be transitory.

Although grizzly bears occasionally may occur within the general environs of the project area, they do not inhabit the sites where components of the alternatives considered in detail are proposed. Consequently, little potential exists for the alternatives to affect grizzly bears and they are not discussed any further in this EIS.

3.2.2.5 Sensitive Species

The previous MEPA/NEPA documents prepared for the Stillwater Mine included discussions of various species of wildlife identified as sensitive by the Forest Service (e.g., the documents identified in Appendix A). These documents and species were reviewed during this analysis. The sensitive species list was compared with the current USFS Northern Region sensitive species list (Risburdt C., June 10, 1994 pers. comm.). The review determined the affected environment involving these species was still valid for the alternatives under consideration here. The high-gradient streams in the area do not provide suitable habitat for *Gentianopsis simplex,* which requires boggy areas (Pierson and Reid 1998, pers. comm.).

3.3 Fisheries

3.3.1 Stillwater Mine Site, Stratton and Hertzler Ranches

The Stillwater River is a torrential-type stream, flowing large amounts of clear, cold, high-quality water. The aquatic habitats, including the riparian zones, at all stations on the Stillwater River and the West Fork of the Stillwater River are in stable condition and provide an excellent wild trout fishery with an abundant food supply. Habitat conditions were considered suitable for aquatic insect production and ideal for game fish spawning and rearing. Characteristics contributing to this situation include a stable gravelly substrate, shallow side channels, and favorable stream gradient, flow regimes and water quality. For a more detailed description of the Stillwater River's physical habitat refer to the Water Quality and Quantity Section.

The MDFWP has instream flow reservations on the Stillwater River and West Fork of the Stillwater River to help maintain minimum flows in the system to protect the fishery.

Appendix A. Birds potentially found in the vicinity of the Stillwater Mine.

Species	Recorded 1980-1995b	Recorded 1996 recon
Gaviifonnes		
Common loon (*Gavia immer)*		
Podicipedifonnes		
Pied-billed grebe *(Podilymbus podiceps)*	X	
Homed grebe *(Podiceps auritus)*	X	
Eared grebe *(Podiceps nigrico/lis)*	X	
Western grebe *(Aechmophorus occidentalis)*		
Pelecanifonnes		
American white pelican *(Pelecanus erythrorhynchos)*		
Double-crested cormorant *(Phalacrocorax auritus)*		
Ciconiifonnes		
American bittern *(Botaurus lentiginosus)*		
Least bittern *(Ixobrychus exilis)*		
Great blue heron *(Ardea herodias)*	X	
Cattle egret *(Bubulcus ibis)*		
Green heron *(Butorides virescens)*		
Black-crowned night heron *(Nycticorax nycticorax)*		
White-faced ibis *(Plegadis chihi)*		
Anserifonnes		
Tundra swan *(Cygnus columbianus)*	X	
Trumpeter swan *(Cygnus buccinator)*		
Snow goose *(Chen caerulescens)*		
Ross' goose *(Chen rossii)*		
Canada goose *(Branta canadensis)*	X	
Wood duck *(Aix sponsa)*		
Green-winged teal *(Anas crecca)*	X	
Mallard *(Anas platyrhynchos)*	X	
Northern pintail *(Anas acuta)*	X	
Blue-winged teal *(Anas discors)*	X	
Cinnamon teal *(Anas cyanoptera)*		
Northern shoveler(Anas *clypeata)*	X	
Gadwall *(Anas strepera)*	X	
Eurasian wigeon *(Anas penelope)*		
American wigeon *(Anas americana)*	X	

Appendix A (continued).

Species	Recorded 1980-1995b	Recorded 1996 recon
Canvasback *(Aythya valisneria)*	X	
Redhead *(Aythya americana)*	X	
Ring-necked duck *(Aythya col/aris)*	X	
Greater scaup *(Aythya scaup)*		
Lesser scaup *(Aythya a./finis)*	X	
Harlequin duck *(Histrionicus histrionicus)*		
Oldsquaw (*Clangula hyemalis)*		
Black scoter *(Melanitta nigra)*		
Surf scoter *(Melanitta perspicillata)*		
White-winged scoter *(Melanitta fusca)*		
Common goldeneye *(Bucephala clangula)*		
Barrow's goldeneye *(Bucephala islandica)*		
Bufflehead *(Bucephala albeola)*	X	
Common merganser *(Mergus merganser)*	X	X
Red-breasted merganser *(Mergus se"ator)*	X	
Ruddy duck (*Oxyura jamaicensis)*		
Falconifonnes		
Turkey vulture *(Cathartes aura)*	X	
Osprey *(Pandion haliaetus)*	X	
Bald eagle *(Haliaeetus leucocephalus)*	X	
Northern harrier *(Circus cyaneus)*		
Sharp-shinned hawk *(Accipiter striatus)*	X	
Cooper's hawk *(Accipiter cooperii)*	X	
Northern goshawk *(Accipiter gentilis)*	X	
Broad-winged hawk *(Buteo platypterus)*	X	
Swainson's hawk *(Buteo swainsoni)*		
Red-tailed hawk *(Buteo jamaicensis)*		
Ferruginous hawk *(Buteo regalis)*		
Rough-legged hawk *(Buteo lagopus)*	X	
Golden eagle *(Aquila chrysaetos)*	X	X
American kestrel *(Falco sparverius)*	X	X
Merlin *(Falco columbarius)*		
Peregrine falcon *(Falco peregrinus)*	X	
Prairie falcon *(Falco mexicanus)*	X	
Gallifonnes		
Gray partridge *(Perdix perdix)*		

Appendix A (continued)

	Recorded 1980-1995b	Recorded 1996 recon
Ring-necked pheasant *(Phasianus colchicus)*		
Blue grouse *(Dendragapus obscurus)*	X	X
Ruffed grouse *(Bonasa umbel/us)*	X	X
Sage grouse (*Centrocercus urophasianus)*		
Sharp-tailed grouse *(Tympanuchus phasianellus)*		
Wild turkey *(Meleagris gallopavo)*		
Gruifonnes		
Virginia rail *(Rallus /imicola)*		
Sora *(Porzana carolina)*		
American coot *(Fulica americana)*	X	
Sandhill crane *(Grus canadensis)*	X	
Charadriifonnes		
Black-bellied plover *(Piuvialis squatarola)*		
American golden-plover *(Pluvialis dominicus)*		
Semipalmated plover *(Charadrius semipalmatus)*		
Killdeer *(Charadrius vociferus)*		
Black-necked stilt *(Himantopus mexicanus)*		
American avocet *(Recurvirostra americana)*	X	
Greater yellowlegs *(Tringa melano/euca)*		
Lesser yellowlegs (*Tringa jlavipes)*		
Solitary sandpiper *(Tringa so/itaria)*		
Willet (*Catoptrophorus semipa/matus)*		
Spotted sandpiper *(Actitis macularia)*		X
Upland sandpiper *(Bartramia /ongicauda)*		X
Long-billed curlew *(Numenius americanus)*		
Marbled godwit *(Limosafedoa)*		
Semipalmated sandpiper (*Ca/idris pusilia)*		
Western sandpiper (*Calidris mauri)*		
Least sandpiper (*Calidris minuti /Ia)*		
Baird's sandpiper *(Calidris bairdii)*		
Pectoral sandpiper *(Ca/idris melanotos)*		
Dunlin (*Calidris alpina)*		
Long-billed dowitcher *(Limnodromus scolopaceus)*		
Common snipe (*Gal/inago gallinago)*	X	
Wilson's phalarope *(Phalaropus tricolor)*	X	
Red-necked phalarope *(Phalaropus lobatus)*		

Appendix A (continued).

Species	Recorded 1980-1995b	Recorded 1996 recon
Pomarine jaeger *(Stercorarius pomarinus)*		
Franklin's gull *(Larus pipixcan)*	X	
Bonaparte's gull *(Larus philadelphia)*		
Ring-billed gull *(Larus delawarensis)*	X	
California gull *(Larus californicus)*	X	
Herring gull *(Larus argentatus)*		
Sabine's gull *(Xema sabini)*		
Caspian tern *(Sterna caspia)*		
Common tern *(Sterna hirundo)*		
Forster's tern *(Sternaforsteri)*		
Black tern *(Chlidonias niger)*		
Columbiformes		
Rock dove *(Columba Iivia)*	X	X
Mourning dove *(Zenaida macroura)*	X	X
Cuculiformes		
Black-billed cuckoo *(Coccyzus erythropthalmus)*	X	
Strigiformes		
Great homed owl *(Bubo virginianus)*	X	
Snowy owl *(Nyctea scandiaca)*		
Northern pygmy-owl *(Giaucidium gnoma)*		
Burrowing owl *(Speotyto cunicularia)*		
Great gray owl *(Strix nebulosa)*		
Long-eared owl *(Asio otus)*		
Short-eared owl *(Asio flammeus)*		
Northern saw-whet owl *(Aegolius acadicus)*	X	
Caprimulgiformes		
Common nighthawk (*Chordei/es minor)*	X	
Common poorwill *(Phalaenoptilus nuttallii)*		
Apodiformes		
White-throated swift *(Aeronatus saxatalis)*	X	
Black-chinned hummingbird *(Archi/ochus alexandri)*		
Calliope hummingbird *(Stellula calliope)*		
Rufous hummingbird *(Selasphorus rufus)*		

Appendix A (continued).

	Recorded 1980-1995b	Recorded 1996 recon
Coraciiformes		
Belted kingfisher (*Ceryle alcyon)*		X
Piciformes		
Lewis' woodpecker *(Melanerpes lewis)*		
Red-headed woodpecker *(Melanerpes erythrocephalus)*		
Red-naped sapsucker *(Sphyrapicus nucha/is)*	X	
Downy woodpecker *(Picoides pubescens)*	X	X
Hairy woodpecker *(Picoides villosus)*	X	X
Three-toed woodpecker *(Picoides tridacty/us)*		
Northern flicker *(Co/aptes auratus)*		X
Passeriformes		
Olive-sided flycatcher *(Contopus borealis)*		
Western wood-pewee *(Contopus sordidulus)*	X	
Willow flycatcher *(Empidonax traillii)*		
Least flycatcher *(Empidonax minimus)*	X	X
Hammond's flycatcher *(Empidonax hammondii)*		
Dusky flycatcher *(Empidonax oberho/seri)*	X	X
Cordilleran flycatcher *(Empidonax occidentalis)*	X	
Say's phoebe *(Sayornis saya)*	X	
Western kingbird *(Tyrannus verticalis)*	X	
Eastern kingbird *(Tyrannus tyrannus)*	X	
Scissor-tailed flycatcher *(Tyrannus forjicatus)*		
Homed lark *(Eremophila alpestris)*	X	X
Tree swallow *(Tachycineta bico/or)*	X	X
Violet-green swallow *(Tachycineta thalassina)*	X	
Northern rough-winged swallow *(Stelgidopterys serripennis)*	X	
Bank swallow *(Riparia riparia)*	.	
Cliff swallow *(Hirundo pyrrhonota)*	X	X
Bam swallow *(Hirundo rustica)*	X	X
Gray jay *(Perisoreus canadensis)*	X	
Steller's jay *(Cyanocitta stelleri)*	X	X
Blue jay *(Cyanocitta cristata)*		
Pinyon jay *(Gymnorhinus cyanocepha/us)*	X	
Clark's nutcracker *(Nucifraga columbiana)*	X	X
Black-billed magpie *(Pica pica)*	X	X
American crow *(Corvus brachyrhynchos)*	X	X

Appendix A (continued).

Species	Recorded 1980-1995b	Recorded 1996 recon
Common raven *(Corvus corax)*	X	X
Black-capped chickadee *(Parus atricapillus)*	X	
Mountain chickadee *(Parus gambeli)*	X	X
Red-breasted nuthatch *(Sitta canadensis)*	X	X
White-breasted nuthatch *(Sitta carolinensis)*	X	X
Pygmy nuthatch *(Sitta pygmaea)*		
Brown creeper (*Certhia americana)*	X	
Rock wren *(Salpinctes obsoletus)*	X	X
Canyon wren (*Catherpes mexicanus)*	X	
House wren *(Troglodytes aedon)*	X	X
Sedge wren *(Cistothorus platensis)*	X	
Marsh wren *(Cistothorus palustris)*		
American dipper *(Cine/us mexicanus)*		X
Golden-crowned kinglet *(Regulus satrapa)*	X	X
Ruby-crowned kinglet *(Regulus calendula)*	X	X
Mountain bluebird *(Sialia currucoides)*	X	X
Townsend's solitaire *(Myadestes townsendi)*	X	
Veery (*Catharus fuscescens)*	X	
Swainson's thrush *(Catharus ustulatus)*	X	X
Hermit thrush *(Catharus guttatus)*	X	
American robin *(Turdus migratorius)*	X	X
Gray catbird *(Dumetel/a caro/inensis)*	X	
Northern mockingbird *(Mimus polyglottos)*		
Sage thrasher *(Oreoscoptes montanus)*		
Brown thrasher *(Toxostoma rufum)*		
American pipit *(Anthus rubescens)*		
Sprague's pipit *(Anthus spragueii)*		
Bohemian waxwing *(Bombycil/a garrulus)*	X	
Cedar waxwing *(Bombycilla cedrorum)*	X	
Northern shrike *(Lanius excubitor)*	X	
Loggerhead shrike *(Lanius ludovicianus)*	X	
European starling *(Sturnus vulgaris)*	X	X
Solitary vireo *(Vireo solitarius)*		X
Warbling vireo *(Vireo gilvus)*	X	
Red-eyed vireo *(Vireo olivaceus)*	X	
Orange-crowned warbler *(Vennivora celata)*	X	
Nashville warbler *(Vennivora ruficapilla)*		
Yellow warbler *(Dendroica petechia)*		X

APPENDIX Q. FINAL EAST BOULDER WATER MANAGEMENT OPTIMIZATION AND PRIORITIZATION PLAN

The Final East Boulder Mine Water Management Optimization and Prioritization Plan was prepared by Kuipers and Associates, LLC, completed on June 16, 2005, approved as part of the 2005 amendment of the Good Neighbor Agreement, and is incorporated by reference into this Appendix by Appendix L, Sections 11.1 and 11.2.

Stillwater Mining Company – East Boulder Mine Water Management Optimization and Prioritization Plan

Prepared for:

Cottonwood Resource Council
Northern Plains Resource Council and
Stillwater Mining Company

as part of the **Good Neighbor Agreement**

June 16, 2005

Executive Summary

This report describes and calculates the mass balance of nitrogen at the East Boulder Mine as the nitrogen travels through a complex water management system from source to fate. A series of mass balance calculations are used to examine existing conditions and evaluate the estimated effect of additional planned and potential treatment alternatives. The numbers, percentages, and impact representations utilized in this plan are based upon a simplified mass balance approach for the purpose of comparing treatment efficiencies and are not intended to represent actual performance by SMC. SMC has an exemplary compliance record and a reputation for being proactive in the environmental management of its operations. Although SMC is permitted to direct discharge to the East Boulder River, the Mine has never utilized the direct discharge option and has opted instead to implement treatment technologies and discharge options which minimize the potential impact to surface waters. This report presents recommendations to further optimize performance of SMC's water management system. The evaluation has shown the following:

- The mass balance calculations demonstrate that the existing water management and water treatment systems are achieving approximately 92% efficiency in nitrogen removal. Current nitrogen removal rates are achieved through a combination of nitrogen removal in the biological denitrification plant, recycle of over 80% of the water flow, and use of LAD and snowmaking as secondary nitrogen treatment methods. Following biological denitrification, 2% of the annual average flow is routed through LAD or snowmaking and approximately 98% of water is discharged directly to the percolation pond. A series of calculations were generated as part of the mass balance exercise that show theoretical increased nitrogen concentrations in the East Boulder River ranging from 0.2 to 0.5 mg/l seasonally. These calculations were based on a simplified and conservative approach, which does not account for groundwater dilution or natural conditions which may reduce or attenuate nitrogen before it reaches surface water. It is important to understand that no detectable increase in nitrogen has been measured in the East Boulder River to date. In general, average nitrogen loads are similar to those predicted in the 1991 Environmental Impact Statement (EIS), although water flows are lower and nitrogen concentrations are higher.

- Several planned and potential operational improvements have been evaluated by SMC to improve water management and discharge options at the East Boulder Mine. The mass balance calculations in this report show that implementation of these improvements have the potential to increase nitrogen removal efficiencies up to 98%. Improvements in LAD and snowmaking availability, additional demonstration of snowmaking treatment efficiency, and improvements in biological treatment efficiency are the contemplated areas of improvement potential. Overall these improvements could further increase overall nitrogen removal efficiencies to 93 - 98% or more.

In terms of the GNA objectives, implementation of the recommended improvements would affect zero discharge to surface waters to the extent technically feasible, provide advanced treatment to prevent degradation of surface water, and prevent detectable increases of nitrogen levels in the East Boulder River.

SMC has demonstrated at the Stillwater and East Boulder Mines that it can progressively improve its wastewater treatment.

This evaluation recommends that SMC complete planned improvements for increased LAD and snowmaking operational availability in the short-term. SMC should minimize, to the degree practical, the volume of water sent to percolation and maximize the volume sent to LAD and snowmaking operations. Such efforts would reduce the likelihood of exceedances of trigger levels established by the Good Neighbor Agreement. Following three full years of LAD system operation at the increased rates, measures to further improve the performance of the water management system should be evaluated from a cost and benefit standpoint and prioritized in terms of implementation. However, because treatment efficiencies associated with soil denitrification and attenuation processes vary with temperature, moisture and application rates and since groundwater regimes are continually in flux, optimization and modification of the water management plan to enhance treatment efficiencies may actually require 3-5 years to fine tune.

This evaluation has not directly considered possible situations where SMC's nitrogen discharges increase resulting in higher discharge rates and concentrations than those experienced at present. This evaluation does not include or address nitrogen loading at present or in the future from waste rock or tailings impoundment sources. This analysis only addresses nitrogen - no other contaminants of concern have been identified for the East Boulder Mine to date. Should circumstances change with respect to increased nitrogen output or other contaminants then this evaluation should be repeated taking into account new information.

1.0 Introduction

This Water Management Prioritization and Optimization Plan for the East Boulder Mine was prepared as part of the Good Neighbor Agreement (GNA) for Cottonwood Resource Council, Northern Plains Resource Council, and Stillwater Mining Company. As contained in the GNA Appendix L Section 11.0, the objective of this plan is to implement the objectives of the GNA Water Program (Appendix L).

The GNA supports and encourages a comprehensive surface water, groundwater, and aquatic resources protection program as a proactive preventative approach to water management. The Water Program includes the following objectives:

- To provide an opportunity for the Cottonwood Resource Council and Northern Plains Resource Council (the Councils) to participate in the development and oversight of Stillwater Mining Company (SMC) water management plans.

- To identify and address potential issues of concern related to water quality at the earliest possible time.

- To adopt a proactive precautionary approach for the water management plan.

- To maintain the baseline water quality, biological integrity, and beneficial uses of the East Boulder River and ground waters that may be impacted by SMC mining operations.

- To minimize and if economically feasible eliminate a direct discharge of effluent and the indirect discharge of pollutants to the East Boulder River and surrounding groundwater.

- To make the East Boulder Mine a zero discharge facility if economically feasible.

- To identify new technologies and/or practices and modifications of present technologies and practices to meet the aforementioned objectives.

Project History

The East Boulder Mine is an underground palladium and platinum mining and milling facility located south of McLeod, Montana near the headwaters of the East Boulder River. Mine site facilities include underground workings, a tailings impoundment, a water treatment plant, percolation ponds, land application discharge and/or snowmaking areas, a mill/concentrator building, and other support facilities. The mine has been operated by SMC since September 2000 and is currently producing approximately 1,350 tons per day, with plans to increase production to 1,650 tons per day by the end of 2006.

The mining, milling, tailings disposal and discharge operations have the potential to impact water resources in the project area. The most likely impacts are to groundwater in the project area and surface water in the East Boulder River. Since commencement of production activities, SMC has treated all adit water for nitrogen reduction before discharging. Mine water is primarily discharged through percolation to groundwater; but may also be discharged through land application disposal

(LAD), evaporation, and direct discharge to the East Boulder River. In addition, SMC has been piloting snowmaking as a means of disposal. The East Boulder Mine has not utilized direct discharge to date, and relies primarily on percolation for water disposal.

Since commencement of production activities at the East Boulder Mine total inorganic nitrogen discharge rates have steadily declined from approximately 25 pounds per day to approximately 10 pounds per day, which has been observed since March 2003. The East Boulder Mine has averaged less than 10 pounds per day and has never exceeded the MPDES permitted discharge limit of 30 pounds per day for total inorganic nitrogen.

Report Contents

This report uses a simplified mass balance to evaluate design conditions, existing conditions and potential operational scenarios to manage and treat contaminated mine water. The five scenarios contemplated in this report are:

Case 1 – Original design conditions from 1992 EIS Case 2 – Existing conditions

Case 3 – Existing conditions with additional LAD and snowmaking

Case 4 – Existing conditions with additional water treatment

Case 5 – Existing conditions with Boe Ranch LAD

These scenarios were evaluated to represent a range of possibilities in terms of water management at the East Boulder Mine. They are not intended to address all the possibilities, but should be used as a tool to indicate to what extent different water management approaches may be effective at meeting the goals of the GNA.

2.0 Water and Nitrogen Mass Balance

Mass balances show the total inputs and outputs from a system or process, in this case the East Boulder Mine operations. A mass balance of water and nitrogen from the mine is used to examine existing operational conditions and various planned and potential improvements to optimize and prioritize performance of the water management system at the East Boulder Mine.

The mass balance prepared for this evaluation is simplified in that it does not take into account evaporation, precipitation, the potential for nitrogen reductions in soil (denitrification), groundwater dilution, or groundwater travel time from the mine site to surface water. Although these parameters could affect the results predicted in this mass balance, they would be similar for the various cases examined and should not affect the results from a relative comparison standpoint.

This mass balance examines only total inorganic nitrogen and water. Nitrogen is the only contaminant of concern that has been identified since commencement of operations in September 2000 at the East Boulder Mine, and more than twenty years of operating history at the Stillwater Mine. The mass balance identifies and evaluates all potential sources of nitrogen contaminated mine water to the East Boulder River from mine operations, with the exception of infiltration from waste rock.

The flowsheet presented in Figure 1 depicts existing conditions at the East Boulder Mine. The subsequent mass balance scenarios are presented in tables, with Table 1 representing the base case, and Tables 2, 3, 4, and 5 illustrating different water management scenarios as described in the introduction of this report. Numeric values presented in the mass balance calculations are based on average flow rates, nitrogen concentrations of mine water effluent, and other information provided by SMC. Closed loop systems, such as the mill and tailings impoundment, are not represented in the mass balance calculations for simplicity, and their low potential to contribute nitrogen to groundwater or surface water during mine operations. The following sections describe the general flow paths of water and nitrogen available at the East Boulder Mine, as represented in Figure 1.

2.1 Flowsheet

Figure 1 illustrates three different flow path types currently available for use at the East Boulder Mine. The primary flow path represents the principal, or preferred, flow path currently used by SMC to manage water and nitrogen. Secondary flow paths represent those flow paths available for water management that are not currently used at the East Boulder Mine. Indirect discharge flow paths are identified from LAD areas, snowmaking areas, and the percolation pond.

Sources of Nitrogen

The source of nitrogen to mine water is derived from explosives used in the mining process to recover ore from the mine. The majority of nitrogen contained in explosives is consumed during detonation; however, residual amounts of nitrogen remain in ore, waste rock, and mine water.

SMC has undertaken a program to reduce the use of nitrogen containing explosives and seeks continuous improvement in that area; however this report does not address those activities but rather

the water that is pumped from underground as a result of mine dewatering and mining activities. Water is used in the process of drilling a round of holes which are filled with explosives containing nitrogen. Following detonation SMC intentionally washes down all muck piles, ore and waste, to drive a majority of the residual nitrogen into solution and accordingly into the mine water and treatment.

Nitrogen residuals within the ore stream are sent to the mill/concentrator where they are solubilized in the beneficiation process. These nitrogen residues are ultimately sent to the tailings impoundment with the tailings underflow after the ore concentration process is complete. Since the mill and tailings circuit is a closed system, no discharge of water or nitrogen occurs in the process, and is therefore not depicted numerically in the mass balance.

Waste rock material either remains underground or is transported to the surface for use in construction of the embankments of the tailings impoundment. Nitrogen residuals on the waste rock are ultimately solubilized upon contact with water and may end up in mine wastewater when left underground, or may infiltrate to groundwater from the constructed tailings impoundment embankments. The potential loss of nitrogen from waste rock is minimized through placement of compacted lifts during tailings impoundment embankment construction, lining of the interior slopes of the impoundment, as well as through soil placement and revegetation during interim and final reclamation. Some natural attenuation mechanisms may exist, such as denitrification in the soil column, however waste rock is a potential source of nitrogen to surrounding groundwater and the East Boulder River that is not addressed in this evaluation.

Flowsheet Description

Mine water from the adit is discharged to a surge pond, then to the clarifier (1) where suspended solids are removed. Clarifier underflow is sent to the tailings impoundment. Clarified mine water then flows to the biological treatment plant (2), where nitrate-nitrogen concentrations are reduced. After biological treatment, the treated mine water is sent to the LAD feed pond. From the LAD feed pond, treated mine water can be diverted for numerous uses. A portion of treated mine water, approximately half, is sent back underground (3) for mine support. If needed, treated mine water is sent from the LAD feed pond to the tailings impoundment (4) for mill support.

There are several secondary treatment and/or discharge options available after biological treatment for water management from the LAD feed pond. One primary flowpath identified for discharge is mine site LAD (5), utilized from approximately May through September, where a portion of water and nitrogen are consumed (6) and the remaining amounts of water and nitrogen report to groundwater (7). From approximately December through February treated mine water can be sent to snowmaking (8) where a portion of water and nitrogen are consumed (9), and the remaining water and nitrogen infiltrate to groundwater (10). Water is sent from the LAD feed pond to the percolation pond (11) during months when LAD and snowmaking are not feasible discharge options – March, April, October, and November. The sum of all indirect discharges to groundwater from LAD, snowmaking, and percolation are totaled in equation 12.

Under projected scenarios water is diverted from the mine site LAD feed pond to the Boe Ranch LAD feed pond (13). The Boe Ranch LAD feed pond is assumed to have a small amount of indirect discharge (14) through seepage to groundwater. Water from the Boe Ranch LAD feed pond is then sent to Boe Ranch LAD (15), where a portion of nitrogen and water are consumed (16) and the portion not consumed reports to groundwater and ultimately surface water (17).

The final discharge option available, shown as a secondary flow path, for the East Boulder Mine is direct discharge to the East Boulder River which is not depicted numerically. This option is viewed as a last resort for SMC, and has not been contemplated for use at the East Boulder Mine.

Average flow rates and nitrogen concentrations for the East Boulder River are represented as (18) for the upstream monitoring location EBR-003 and (19) for the downstream monitoring location EBR-004. An additional monitoring location (EBR-008) in the East Boulder River (20) is shown below the indirect discharges from the Boe Ranch facilities.

2.2 Mass Balance

A mass balance for mine water and total inorganic nitrogen was developed for the purpose of evaluating SMC's current water management practices, and to aide in the determination of means to minimize or eliminate nitrogen discharges to groundwater and ultimately the East Boulder River. Mass balances show the total inputs and outputs of water and nitrogen from the mine and can be used as part of an examination of various means to optimize and prioritize performance of the water management system at the East Boulder Mine. Together with experience and logic, the mass balance can be useful as a tool to the engineer and operator in determining how to best operate a system to achieve a goal – in this case to minimize or eliminate discharges of nitrogen.

Five scenarios have been developed for the purpose of first assessing SMC's current operation of water management facilities; and second for the purpose of assessing prioritization and optimization of water management facilities under current and foreseeable future conditions.
Scenarios depicted in the mass balance worksheets (Cases 1 – 5) were altered to affect minimization or elimination of water and nitrogen discharges as described in the following sections. This is intended to determine how to best operate or modify the design of the water management facilities at the East Boulder Mine under various conditions to achieve the goals of the GNA. The following sections describe those conditions and the results from the mass balance scenarios.

2.2.1 Case 1 – Original design conditions from 1992 EIS

Using information provided by SMC, the flowsheet (Figure 1) described above was used to calculate a mass balance for mine water and total nitrogen at the East Boulder Mine as shown in Table 1. This scenario represents the original design conditions discussed in the 1992 EIS for the East Boulder Mine, which are based on conditions observed at the Stillwater Mine.

Mine Adit Water

Adit water is discharged to the surge pond (1), then the clarifier, at an average rate of 737 gallons per minute (gpm) and a concentration of 12.9 milligrams per liter (mg/L) total inorganic nitrogen resulting in an average load of 114.3 pounds per day (lb/d). The mine adit water flows into a surge pond and then into the clarifier (1). Volumes of the surge pond and clarifier are assumed to be steady state (i.e. mass in equals mass out).

Clarified mine water then flows to the biological treatment plant to reduce the amount of nitrate nitrogen through an anoxic biological treatment process. The biological treatment plant achieves an average treatment efficiency for total inorganic nitrogen of 77% from March to October, and decreases to 74% during the winter months of November through February. As a result, biological treatment plant effluent (2) is sent to the LAD feed pond at a rate of 737 gpm with reduced total inorganic nitrogen concentrations of 3.0 mg/L in the warmer months and 3.4 mg/L in the cooler winter months. Volumes in the LAD feed pond are assumed to be steady state.

This scenario does not include recycle of treated mine water (3) for support of underground activities. Ten (10) gpm is sent to the tailings impoundment (4) as mill make-up water.

Discharge Water

Treated mine water not used for mill support is sent from the LAD feed pond either to LAD or percolation under this scenario. Mine site LAD (5) is used to discharge treated mine water from May 1 to September 30 at average daily rates ranging from 286 to 571 gpm. This is based on operating the LAD at a maximum capacity of 500 gpm with an operational availability of 57% (four days per week, or 96 hours out of 168 hours per week). The mine site LAD is assumed to operate at an efficiency rate of 80% consumption of nitrogen and water (6) with the remaining 20% of nitrogen and water reporting to groundwater (7) and ultimately the East Boulder River.

East Boulder River

The calculated input of total inorganic nitrogen in the East Boulder River is based on the total of all potential inputs to surface water from indirect discharges. The total includes inputs from mine site LAD and the percolation pond.

2.2.2 Case 2 – Existing conditions

This scenario represents existing conditions and is based on average adit discharge flow rates and nitrogen concentrations provided in discussions with SMC. In this case application rates for either mine site LAD or snowmaking are based on set percentages of 50% in summer and 5% in winter, respectively, of total effluent flows according to information from SMC. From October 2006 through September 2007 additional water is sent to the tailings impoundment for planned construction needs.

Mine Adit Water

Adit water is discharged to the surge pond (1), then the clarifier, at an average rate of 250 gpm and a concentration of 46.1 mg/L total inorganic nitrogen resulting in an average load of 138.5 lb/d.

Volumes in the surge pond and the clarifier are assumed to be steady state where mass in equals mass out. Clarified mine water then flows to the biological treatment plant to reduce the amount of nitrate nitrogen through an anoxic biological treatment process. The biological treatment plant achieves an average treatment efficiency for total inorganic nitrogen of 60% from March to October, and decreases to 55% during the winter months of November through February. As a result, biological treatment plant effluent (2) is sent to an LAD feed pond at a rate of 250 gpm with reduced total inorganic nitrogen concentrations of 18.4 mg/L in the warmer months and 20.7 mg/L in the cooler winter months. Volumes in the LAD feed pond are assumed to be steady state. Approximately 80% by volume, or 200 gpm, of treated mine water sent to the LAD feed pond is piped back underground as recycle water (3) for support of underground activities. Another 10 gpm is sent to the tailings impoundment (4) as mill make-up water. From October 2006 through September 2007 additional water is expected to be sent to the tailings impoundment to meet operational needs at a rate of 40 gpm, which totals approximately 20 Mg over the year.

Discharge Water

Treated mine water not recycled underground or used for mill support is sent from the LAD feed pond either to LAD, snowmaking, or percolation under this scenario. Mine site LAD (5) is used to discharge treated mine water from May 1 to September 30 at an average daily rate of 25% of the effluent flow rate. The mine site LAD is assumed to operate at an efficiency rate of 80% consumption of nitrogen and water (6) with the remaining 20% of nitrogen and water reporting to groundwater (7) and ultimately the East Boulder River. During November, December, January, February and March snowmaking (8) is used to discharge 5% of treated mine water. Snowmaking is operated at an efficiency rate of 85% consumption of nitrogen and 30% consumption of water (9) (SMC et al. 2004), with the remaining water and nitrogen discharging to groundwater (10) and ultimately surface water. The percolation pond (11) is used for indirect discharge of treated mine water as overflow from the LAD and snowmaking systems, and as the primary discharge option in October and April. In the summer months 75% of treated mine water is sent to percolation, while 95% of treated mine water is sent to percolation in the winter months.

East Boulder River

The calculated input of total inorganic nitrogen in the East Boulder River is based on the total of all potential inputs to surface water from indirect discharges. The total includes inputs from mine site LAD, snowmaking, and the percolation pond.

2.2.3 Case 3 – Existing conditions with Additional LAD and Snowmaking

SMC has indicated that additional LAD areas could be utilized and snowmaking capacity could be increased. This scenario describes the improvements in performance that would result from additional LAD and snowmaking capacity.

Mine Adit Water

Under this scenario Mine Adit Water handling and treatment is the same as for Case 2.

Discharge Water

Mine site LAD (5) is used to discharge treated mine water from May 1 to September 30 at an average daily rate of 90% of the effluent flow rate. The mine site LAD is assumed to operate at an efficiency rate of 80% consumption of nitrogen and water (6) with the remaining 20% of nitrogen and water reporting to groundwater (7) and ultimately the East Boulder River. At current effluent flow rates, during November, December, January, February and March snowmaking (8) is used to discharge 50% of treated mine water. Snowmaking is operated at an efficiency rate of 85% consumption of nitrogen and 30% consumption of water (9) (SMC et al. 2004), with the remaining water and nitrogen discharging to groundwater (10) and ultimately surface water. The percolation pond (11) is used for indirect discharge of treated mine water as overflow from the LAD and snowmaking systems, and as the primary discharge option in October and April. In the summer months 10% of treated mine water is sent to percolation, while 50% of treated mine water is sent to percolation in the winter months.

East Boulder River

The calculated input of total inorganic nitrogen in the East Boulder River is based on the total of all potential inputs to surface water from indirect discharges. The total includes inputs from mine site LAD, snowmaking, and the percolation pond.

2.2.4 Case 4 – Existing Conditions with Additional Water Treatment

SMC has indicated that additional water treatment could be utilized for treatment of ammonia based nitrogen that is presently not treated effectively by the existing water treatment plant. This scenario describes the improvements in performance that would result from additional water treatment. Although in practice this improvement could be made at the same time as improvements in LAD and snowmaking, the case is evaluated for additional water treatment only in order to provide comparison of the relative benefits over existing conditions.

Mine Adit Water

Under this scenario Mine Adit Water is the same as for Case 2. The biological treatment plant efficiency is increased to 90% year-round to represent the utilization of advanced treatment for ammonia nitrogen removal.

Discharge Water

Under this scenario mine adit water discharges are the same as for Case 2.

East Boulder River

The calculated input of total inorganic nitrogen in the East Boulder River is based on the total of all potential inputs to surface water from indirect discharges. The total includes inputs from mine site LAD, snowmaking, and the percolation pond.

2.2.5 Case 5 – Existing Conditions with Boe Ranch LAD

This scenario represents existing conditions, however in this case all treated mine water is sent to the proposed Boe Ranch facilities for storage and discharge through LAD. Mine site discharge options are not utilized.

Mine Adit Water

Under this scenario mine adit water discharges and treatment are the same as those described in Case 2.

Mine Site Discharge Water

Under this scenario mine site LAD, snowmaking, and percolation are not utilized which results in no discharge of nitrogen and water from the mine site facilities.

Boe Ranch Discharge Water

This scenario prescribes Boe Ranch LAD operations consistent with those conducted at SMC's Hertzler Ranch LAD area. An indirect discharge of 0.14 gpm to groundwater is attributed to Boe Ranch LAD feed pond leakage (14). LAD (15) is used to discharge treated mine water from May 1 to September 30 at average daily rates ranging from 571 to 857 gpm. This is based on operating the LAD at a maximum capacity of 1,000 gpm during the months of May and June; and at 1,500 gpm during the months of July, August, and September with an operational availability of 57% (four days per week, or 96 hours out of 168 hours). Due to low flows a maximum of 2.0 MG was allowed to discharge to LAD during the months of May and September and a maximum of 4.0 MG during the months of June, July and August. The Boe Ranch LAD is assumed to operate at an efficiency rate of 80% consumption of nitrogen and water (16) with the remaining 20% of nitrogen and water reporting to groundwater (17) and ultimately the East Boulder River.

East Boulder River

The calculated input of total inorganic nitrogen in the East Boulder River is based on the total of all potential inputs to surface water from indirect discharges. The total includes inputs from the Boe Ranch LAD feed pond and the Boe Ranch LAD discharge.

3.0 Discussion

The results from the various cases analyzed are summarized in Table 6 below and discussed in the following sections. The discussion for each scenario focuses on the different results from the perspective of discharges to the East Boulder River.

The approach taken in the evaluation is a simplified and conservative approach as it does not account for groundwater dilution or natural conditions which may reduce or attenuate nitrogen before it reaches surface water. This report addresses the practices of water management, treatment, snowmaking, and land application discharge as well as the employment of effective mitigations such as liners in the tailings impoundments and LAD storage ponds.

Table 6 – Summary of Results East Boulder Mine Water and Nitrogen Mass Balance

Case	1 EIS Predicted Conditions	2 Existing Conditions	3 Existing Conditions with Additional LAD and Snowmaking	4 Existing Conditions with Additional Water Treatment	5 Existing Conditions with Boe Ranch LAD
Mine Water Produced, gpm	737	250	250	250	250
Daily Total Inorganic Nitrogen Concentration, mg/L	12.9	46.1	46.1	46.1	46.1
Daily Total Inorganic Nitrogen Load Produced, lbs	114.3	138.5	138.5	138.5	138.5
Average Daily Indirect Discharge from Mine Site LAD, gpm	38	1	3	0.7	0
Average Indirect Discharge of N from Mine Site LAD, lb/d	1.4	0.2	0.6	0.0	0.0
Average Daily Indirect Discharge from Mine Site Snowmaking, gpm	0.0	0.5	5.0	0.5	0.0
Indirect Discharge of N from Mine Site Snowmaking, lb/d	0.00	0.03	0.24	0.01	0.00
Average Daily Indirect Discharge from Mine Site Percolation, gpm	537	30	14	30	0
Indirect Discharge of N from Mine Site Percolation, lb/d	20.3	6.9	3.4	1.6	0.0
Indirect Discharge of N from Mine Site Facilities, % of Daily Total N	18.9%	5.1%	3.1%	1.2%	0.0%
Indirect Discharge from Boe Ranch LAD feed pond leakage, gpm	0	0	0	0	0.14
Indirect Discharge of N from Boe Ranch LAD feed pond leakage, lbs	0.0	0.0	0.0	0.0	0.03
Indirect Discharge of N from LAD feed pond leakage, % of Daily Total N	0.0%	0.0%	0.0%	0.0%	0.02%
Indirect Discharge from Boe Ranch LAD, gpm	0	0	0	0	8
Indirect Discharge of N from Boe Ranch LAD, lb/d	0.0	0.0	0.0	0.0	1.8
Indirect Discharge of N from Boe Ranch LAD, % of Daily Total N	0.0%	0.0%	0.0%	0.0%	1.3%
Total Indirect Discharge to East Boulder River, gpm	575	31	22	31	8
Total Indirect Discharge of N to East Boulder River, lbs	21.6	7.1	4.3	1.7	1.8
Total Removal Efficiency, average	81.1%	92.1%	95.1%	98.7%	98.0%
Increased Total N, Average in East Boulder River, mg/L	0.56	0.17	0.11	0.04	0.02
Increased Total N, Maximum in East Boulder River, mg/L	1.58	0.52	0.35	0.13	0.11

Note: Mine water produced in Case 2, 3, 4 and 5 includes recycle water.

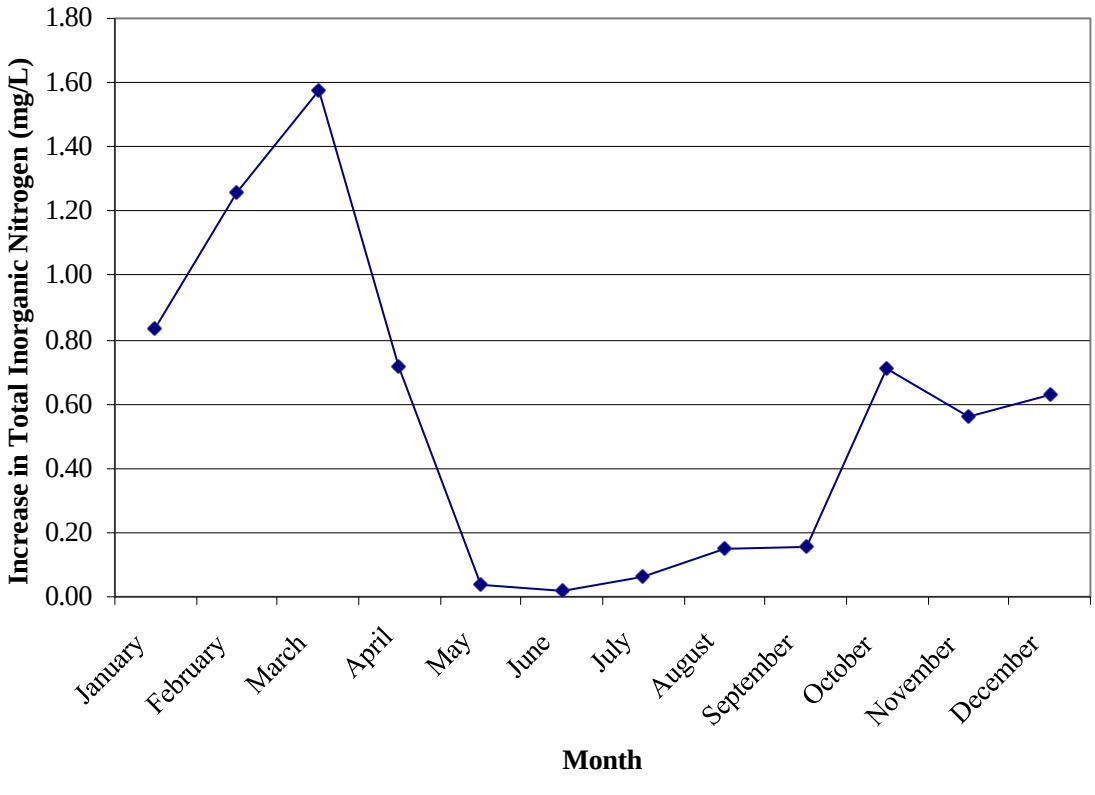
3.1 Case 1 – Original design conditions from 1992 EIS

The original design conditions would be expected to result in an average discharge of 737 gpm containing 114.3 lbs/day total nitrogen from the East Boulder Mine.

An average of 38 gpm containing 1.4 lbs/day total nitrogen would be discharged from the mine site LAD operations. An additional 537 gpm containing 20.3 lbs/day of total nitrogen would be discharged via percolation. In sum, 575 gpm containing 21.6 lbs/day, or 18.9% of the total nitrogen produced, would be discharged to groundwater.

Under this scenario SMC would on average remove 81.1% of the total nitrogen. The calculated input to the East Boulder River under this scenario, based on the calculated total of all potential inputs to surface water from indirect discharges, ranges from 9.6 to 29.3 lbs/day total nitrogen, with an average of 21.6 lbs/day total nitrogen. This would result in an average calculated increase in total nitrogen of 0.56 mg/l and a maximum increase of 1.58 mg/l in the East Boulder River. This fluctuates on a seasonal basis with the highest concentrations of nitrogen during the low-flow winter months of February and March as depicted in Figure 1. Flow conditions are based on average monthly flow rates from 1990 to present.

Figure 1
East Boulder Mine Indirect Discharge to Surface Water



3.2 Case 2 – Existing conditions

The actual mine discharge from SMC operations is significantly changed from the conditions projected in the EIS and depicted in Case 1. At present 250 gpm of water is produced with 80% of that returned underground for re-use and 10 gpm being used as make-up water for the mill. The concentration of total nitrogen is significantly higher at 46.1 mg/l resulting in the lower volume discharge containing a greater amount of nitrogen at 138.5 lbs/day.

An average of 1 gpm containing 0.2 lbs/day total nitrogen is discharged from the mine site LAD operations. Less than an average of 0.5 gpm containing less than 0.1 lbs/day total nitrogen is discharged from the mine site snowmaking operations. An additional 30 gpm containing 6.9 lbs/day of total nitrogen is discharged via percolation. In sum, 31 gpm containing 7.1 lbs/day, or 5.1% of the total nitrogen produced, would be discharged to groundwater.

Under this scenario SMC removes 92.1% of the total nitrogen. The calculated input in the East Boulder River under this scenario, based on the calculated total of all potential inputs to surface water from indirect discharges, ranges from 1.8 to 9.6 lbs/day total nitrogen, with an average of 7.1 lbs/day total nitrogen. This would result in an average calculated increase in total nitrogen of 0.17 mg/l and a maximum increase of 0.52 mg/l in the East Boulder River. This fluctuates on a seasonal basis with the highest concentrations of nitrogen during the winter months of February and March due to low river flows.

3.3 Case 3 – Existing conditions with Additional LAD and Snowmaking

The average mine water flow of 250 gpm containing 138.5 lbs/day of nitrogen from the East Boulder mine is unchanged in this scenario. LAD availability is increased to 90% during the summer months, and snowmaking is increased to 50% during the winter months.

An average of 3 gpm containing 0.6 lbs/day total nitrogen is discharged from the mine site LAD operations. An average of 5.0 gpm containing 0.2 lbs/day total nitrogen is discharged from the mine site snowmaking operations. An additional 14 gpm containing 3.4 lbs/day of total nitrogen is discharged via percolation. In sum, 22 gpm containing 4.3 lbs/day, or 3.1% of the total nitrogen produced, would be discharged to groundwater.

Under this scenario SMC removes 95.1% of the total nitrogen. The calculated input in the East Boulder River under this scenario, based on the calculated total of all potential inputs to surface water from indirect discharges, ranges from 0.7 to 10.0 lbs/day total nitrogen, with an average of 4.3 lbs/day total nitrogen. This would result in an average increase in total nitrogen of 0.11 mg/l and a maximum increase of 0.35 mg/l in the East Boulder River. This fluctuates on a seasonal basis with the highest concentrations of nitrogen during the low-flow winter months of February and March.

3.4 Case 4 – Existing Conditions with Additional Water Treatment

The average mine water flow of 250 gpm containing 138.5 lbs/day of nitrogen from the East Boulder mine is unchanged in this scenario. Water treatment efficiency is increased to 90% year-round to reflect the addition of advanced treatment. At current discharge flows, LAD availability is 50% in the summer months, and snowmaking availability is 5% during the winter months.

An average of 0.7 gpm containing 0.04 lbs/day total nitrogen is discharged from the mine site LAD operations. An average of less than 0.5 gpm containing less than 0.1 lbs/day total nitrogen is discharged from the mine site snowmaking operations. An additional 30 gpm containing 1.6 lbs/day of total nitrogen is discharged via percolation. In sum, 31 gpm containing 1.7 lbs/day, or 1.2% of the total nitrogen produced, would be discharged to groundwater.

Under this scenario SMC removes 98.7% of the total nitrogen. The calculated input in the East Boulder River under this scenario, based on the calculated total of all potential inputs to surface water from indirect discharges, ranges from 0.4 to 2.2 lbs/day total nitrogen, with an average of 1.7 lbs/day total nitrogen. This would result in an average calculated increase in total nitrogen of 0.04 mg/l and a maximum increase of 0.13 mg/l in the East Boulder River. This fluctuates on a seasonal basis with the highest concentrations of nitrogen during the low-flow winter months of February and March.

3.5 Case 5 – Existing Conditions with Boe Ranch LAD

The average mine water flow of 250 gpm containing 138.5 lbs/day of nitrogen from the East Boulder mine is unchanged in this scenario. No water is discharged at the mine site with all water being discharged at the Boe Ranch site.

An average of 0.14 gpm containing 0.03 lbs/day total nitrogen is discharged from the Boe Ranch LAD feed pond in the form of leakage. An average of 8 gpm containing 1.8 lbs/day total nitrogen is discharged to groundwater from the LAD operations. In sum, 8 gpm containing 1.8 lbs/day, or 1.3% of the total nitrogen produced, would be discharged to groundwater.

Under this scenario SMC removes 98.0% of the total nitrogen. The calculated input in the East Boulder River under this scenario, based on the calculated total of all potential inputs to surface water from indirect discharges, ranges from 0.03 to 6.9 lbs/day total nitrogen, with an average of 1.8 lbs/day total nitrogen. This would result in an average calculated increase in total nitrogen of 0.02 mg/l and a maximum increase of 0.11 mg/l in the East Boulder River. This fluctuates on a seasonal basis with the highest concentrations of nitrogen during the winter months of February and March due to low river flows.

4.0 Conclusions and Recommendations

Based on this evaluation the following conclusions are drawn and recommendations made consistent with the requirements of the GNA:

- SMC continues to lead the mining industry with the implementation of treatment technologies for nitrogen removal and has demonstrated a willingness to go well beyond regulatory and statutory requirements.

- The inflow of water into the underground mine workings at the East Boulder Mine is significantly less, so far, than predicted in the EIS. At the same time, the concentration of nitrogen is significantly higher, in particular with respect to ammonia nitrogen that is not effectively treated by the existing biological treatment plant. As a result, current operations result in a discharge of approximately 7.1 lbs/day of nitrogen on average to groundwater and potentially to the East Boulder River, or an amount nearly equal to that predicted in the EIS at much higher flows. Theoretically, total nitrogen concentrations in the East Boulder River would increase on average by 0.2 mg/l, with maximum increases of 0.5 mg/l. It is important to understand that no detectable increase in nitrogen has been measured in the East Boulder River to date.

- Several planned and potential operational improvements have been evaluated by SMC to further decrease nitrogen inputs to the East Boulder River under current discharge levels. Improvements in LAD operating efficiency can increase capacity so that at current discharge flow rates, 90% of the discharge can be sent to LAD during summer months. Improvements in snowmaking can be made so that at current discharge flow rates, 50% of the discharge can be sent to snowmaking during winter months. The expansion of LAD and snowmaking capacity could reduce the likelihood of SMC's discharges causing exceedances of the trigger levels established by the GNA.

- In addition, advanced water treatment for removal of ammonia nitrogen could be utilized. The trigger level and response and remedial action framework established by the GNA serves as a proactive approach to protecting surface water quality. In the event of an exceedance of nitrogen trigger levels in the East Boulder, advanced treatment would be one alternative available to SMC. Another alternative available to SMC in such a situation would be to construct the Boe Ranch LAD facilities. Advanced treatment would most likely be a more cost effective alternative than Boe Ranch unless discharge volumes increased dramatically above present levels.

- The mass balance calculations show that the nitrogen removal efficiency under the existing water management system is approximately 92%. Overall, implementation of the recommended improvements could further increase overall nitrogen removal efficiencies to 93 – 98% or higher. If these techniques were utilized the calculated theoretical increase in nitrogen could improve from a maximum of 0.5 mg/l to less than 0.1 mg/l.

- SMC should provide a LAD Operations Plan for the 2006 season prior to the beginning of LAD operations which describes operational practices that will be employed to institute standard practices and measure performance. This should include specific plans for LAD operation sequencing, rates, and durations. It should also include plans for monitoring to measure performance of the system. Various changes in operational parameters should be attempted in an experimental manner that allows for determination of changes in performance.

- SMC should provide an East Boulder Mine Effluent Discharge Operations Plan for the 2006 season prior to the end of 2005 which describes operational practices that will be employed to institute standard practices and measure performance. Various changes in operational parameters should be attempted in an experimental manner that allows for determination of changes in performance. Increasing LAD and snowmaking capacity should be a high priority for SMC in 2005-2006 to reduce the likelihood of a nitrogen trigger level exceedance in the East Boulder River.

- SMC should provide a regular synopsis of LAD operations at East Boulder Oversight Committee Meetings together with an annual report on LAD operations informing the Councils as to the throughput and estimated efficiency for the previous year's water management, treatment and discharge operations in a manner consistent with the information contained in this report. The Councils agree to have their consultants conduct the report, which would consist of the equivalent of one case study from this report and a follow-up to its recommendations, if SMC will provide the necessary data. SMC and the Councils will review the report to examine and, if necessary, incorporate new technologies or practices that could move SMC closer to achieving 100% nitrogen removal efficiency.

- Successful implementation of all measures would affect zero discharge to surface waters and prevent detectable impact on surface water to the extent technically feasible.

5.0 Prioritization and Implementation

Based on this evaluation the following prioritization of discharges from SMC's operations should be agreed on to minimize potential impacts to water quality under current conditions:

1. Maximize amount of water biologically treated and efficiency of biological treatment, and water discharged to the East Boulder Mine LAD facility.
2. Minimize amount of water discharged to the percolation pond and limit to unaltered groundwater only if possible.
3. Only utilize direct discharge to East Boulder River as a measure of last resort, and if necessary manage and discharge only high quality (unaltered groundwater) water.

The following measures should be considered by SMC and the Councils for implementation:

1. Address measures to ensure design operating results are achieved.
2. Address operational improvements in 2006 and beyond.
3. Revisit the progress and results (after two years) and re-evaluate activities and feasibility of improvements.

6.0 Future Unforeseen Circumstances

This evaluation has focused on past and existing baseline water quality and operational conditions including discharge water quality and quantity. As such, it addresses only nitrogen as a contaminant of concern and is intended to prioritize and optimize plans to address that contaminant solely.

In the event of future unforeseen circumstances it is anticipated that this plan would undergo re-examination to address potential situations such as the production of greater quantities of mine water and/or greater loadings of nitrogen; the determination of the waste rock pile as a source of nitrogen to surface water, and future identification of contaminants of concern such as sulfate or toxic metals or metalloids.

7.0 References

Montana Department of State Lands, US Forest Service, Department of Health and Environmental Sciences. May 1992. *East Boulder Mine Project Final Environmental Impact Statement*.

Stillwater Mining Company, HKM Engineering Inc., Knight Piésold Ltd. 2 January 2004. *Stillwater Mining Company East Boulder Mine Review of Snowmaker Water Treatment Efficiency*. Revision 1. 23 pages

APPENDIX R. FINAL STILLWATER MINE WATER MANAGEMENT OPTIMIZATION AND PRIORITIZATION PLAN

The Final Stillwater Mine Water Management Optimization and Prioritization Plan was prepared by Kuipers and Associates, LLC, completed on June 16, 2005, approved as a part of the 2005 amendment of the Good Neighbor Agreement, and is incorporated by reference into this Appendix by Appendix L, Sections 11.1 and 11.2.

Stillwater Mining Company - Stillwater Mine Water Management Optimization and Prioritization Plan

Prepared for:

Stillwater Protective Association
Northern Plains Resource Council and
Stillwater Mining Company

as part of the **Good Neighbor Agreement**

June 16, 2005

Executive Summary

This report uses mass balances to show the total inputs and outputs of water and nitrogen from the Stillwater Mine. This mass balanced approach is being used to compare treatment efficiencies and in no way are the numbers, percentages, and impact representation included herein intended to represent actual compliance performance by SMC. SMC has an exemplary compliance record and reputation for being proactive in the environmental management of its operations. Although SMC is permitted to direct discharge to the Stillwater River, the Mine has never utilized the direct discharge option and has opted instead to implement treatment technologies and discharge options which minimize the potential impact to surface waters. The comparisons in this report are used to examine existing conditions and identify various means to optimize and prioritize performance of SMC's water management system. The evaluation has shown the following:

- Past operational and water quality data indicate SMC has indirectly discharged nitrogen to the Stillwater River using percolation and land application resulting in increased concentrations of nitrogen ranging from 0.01 to 0.30 mg/l (mean value) seasonally. This represents an overall yearly average operational efficiency range of from 25-75% (in terms of nitrogen treatment or removal) during the period of approximately 1990 to 2001. During this period Stillwater took additional proactive measures to further reduce nitrogen in its discharges going from predominately percolation of excess water to using land application discharge (LAD) and installing biological treatment to reduce nitrogen concentrations. Continued reliance on percolation to avoid direct discharges resulted in detectable increases in nitrogen in the Stillwater River primarily during low-flow (August – October) periods.

- The Hertzler LAD facility was first operated in 2001. The facility was designed to achieve reductions in nitrogen concentrations of 95% - 100%. (No longer relevant; conditions have been repaired.)

- In 2004, SMC enlarged the LAD Pond to a working capacity of 115 million gallons and installed a HPDE synthetic liner throughout. This reduction of leakage to 10 gpm combined with an increase in the LAD feed pond capacity should result in achieving design specifications and result in overall nitrogen removal efficiencies to approximately 95% - 100%. The potential risk of any significant increased concentrations in nitrogen in the Stillwater River resulting from these activities will have been decreased, and calculated nitrogen additions to river would be expected to range of from 0.01 to 0.02 mg/l seasonally. An increase of 0.02 mg/l or less would not be expected to be statistically detectable in the Stillwater River.

- Several operational improvements are possible that involve minimal expenditures to SMC. Improvements in LAD treatment efficiency and operational availability are examples, in addition to improvements in biological treatment efficiency.

With site specific experience and fine tuning of these treatment processes all of these improvements may be achievable. Overall these improvements could further increase overall nitrogen removal efficiencies to approximately 96% or more.

- Implementation of the design operational specifications and other improvements would affect zero discharge to the extent technically feasible and provide advanced treatment to reduce degradation of surface water to below detectable levels.

This evaluation has not directly considered possible situations where SMC's nitrogen discharges increase as a result of operational modifications, such as more mining activity on the East side, or other activities resulting in higher discharge rates and concentrations than those experienced at present. This evaluation does not include or address potential nitrogen loading at present or in the future from the East Waste Rock Pile. This analysis only addresses nitrogen - no other contaminants of concern have been identified for the Stillwater Mine to date. Should circumstances change with respect to increased nitrogen output or other contaminants then it is recommended that this evaluation be repeated taking into account new information.

SMC has progressively improved its wastewater treatment and discharge practices at the Stillwater Mine and together with the mine's unique site-specific characteristics has achieved an exceptional level of industry leading environmental achievement with respect to water management. The company's efforts extend far beyond the regulatory requirements (which would allow 100 lbs of nitrogen per day to be directly discharged to the Stillwater River) and instead are expected to achieve a reduction on the order of 95% or greater nitrogen removal – resulting in a discharge that is well below the regulatory requirements. With the recent completion of the LAD feed pond expansion that addressed leakage from that pond, the largest and most efficient part of the feasible changes recommended in this report have already been committed to by the company. If the system performs as expected and SMC continues percolation of only uncontaminated groundwater (all other water going to LAD) it is likely that increases in nitrogen in the Stillwater River will be less than can be statistically detected.

In terms of prioritization this evaluation recommends that SMC begin optimization of the Hertzler facilities from an operational standpoint. However, because treatment efficiencies associated with soil denitrification and attenuation processes vary with temperature, moisture and application rates and since groundwater regimes are continually in flux, optimization and modification of the water management plan to enhance treatment efficiencies may actually require 5-10 years to fine tune. Therefore, at least three full years of operations are recommended to allow for the development of site-specific protocols, operator re-education and testing to determine utilization potential. After this initial reassessment the system should be re-evaluated and the processes and protocols modified if necessary to optimize treatment efficiencies on a 3-5 year schedule.

1.0 Introduction

This Water Management Prioritization and Optimization Plan for the Stillwater Mine was prepared as part of the Good Neighbor Agreement (GNA) for Stillwater Protective Association, Northern Plains Resource Council, and Stillwater Mining Company. As contained in the GNA Appendix L Section 11.0, the objective of this plan is to implement the objectives of the GNA Water Program (Appendix L).

The GNA supports and encourages a comprehensive surface water, groundwater, and aquatic resources protection program as a proactive preventative approach to water management. The Water Program includes the following objectives:

- To provide an opportunity for the Stillwater Protective Association and Northern Plains Resource Council (the Councils) to participate in the development and oversight of Stillwater Mining Company (SMC) water management plans.

- To identify and address potential issues of concern related to water quality at the earliest possible time.

- To adopt a proactive precautionary approach for the water management plan.

- To maintain the baseline water quality, biological integrity, and beneficial uses of the Stillwater River and ground waters that may be impacted by SMC mining operations.

- To minimize and if economically feasible eliminate a direct discharge of effluent and the indirect discharge of pollutants to the Stillwater River and surrounding groundwater.

- To make the Stillwater Mine a zero discharge facility if economically feasible.

- To identify new technologies and/or practices and modifications of present technologies and practices to meet the aforementioned objectives.

Project History

The Stillwater Mine is a palladium and platinum mine located near Nye, Montana in Stillwater County. The Stillwater Mine consists of an underground mine, milling facilities, two separate tailings impoundment facilities, mine effluent treatment and land application discharge facilities. Although SMC has obtained an MPDES permit from the Montana Department of Environmental Quality that would allow the direct discharge of mine wastewater to the Stillwater River containing up to 100 lbs of total nitrogen per day, the company has been pro-active in addressing discharge issues. They have consistently released less than the permitted load of nitrogen per day and instead of direct discharge to the Stillwater River have used indirect discharge of wastewater through percolation, biological treatment and land application disposal. The mine has been operating continuously since 1986 and is currently operating at a production rate of approximately 2,500 tons per day (tpd).

Report Contents

This report uses a simplified mass balance to evaluate design conditions, previously existing conditions and potential future operational scenarios to manage and treat mine wastewater. This process does not attempt to develop and quantify compliance loadings or impacts to groundwater and surface water and does not represent actual compliance performance by SMC. Instead, this report is being used for comparative purposes only in order to analyze and rank the efficiency of the operational scenarios. The purpose and intent of this report is to provide a tool by which SMC may further improve their water management operations and attain zero discharge to the extent practically feasible.

The two (2) scenarios considered for this report are:

(no longer applicable)
Case 1 - Original design conditions with increased Hertzler LAD feed pond capacity (assuming 57% LAD availability and 80% efficiency)

Case 2 - Original design conditions with increased Hertzler LAD feed pond capacity and increased LAD efficiency (assuming 71% LAD availability and 90% efficiency)

These scenarios were evaluated to represent a range of possibilities in terms of water management at the Stillwater Mine. They are not intended to address all the possibilities, but rather should be used as a tool to indicate to what extent different types of approaches might be effective towards meeting the goals of the GNA.

2.0 Water and Nitrogen Mass Balance

Mass balances show the total inputs and outputs from a system or process. In this particular case a mass balance of water and nitrogen from the mine is used to examine existing conditions and various means to optimize and prioritize performance of SMC's water management system.

The mass balance prepared for this evaluation is simplified in that it does not take into account evaporation and precipitation or groundwater dilution. Although those parameters could affect the results predicted in the mass balance, they would be similar for the various cases examined and should not affect the results from a relative comparison standpoint.

This mass balance only examines water and nitrogen. Nitrogen is the only contaminant of concern that has been identified during the more than 18 year operating history of the Stillwater Mine. The mass balance identifies and evaluates all potential sources of nitrogen to the Stillwater River from mine operations with the exception of the East Waste Rock Pile.

The flowsheet presented in Figure 1 depicts the Stillwater Mine existing conditions. The subsequent mass balance scenarios are presented in tables, with Table 1 representing the base case and Tables 2, 3 and 4 showing different water management scenarios as described in the previous section. Numeric assumptions in the mass balances are based on average flow rates, concentrations of mine water effluent, and other information provided by SMC. The following sections describe the general flow paths of water and nitrogen available at the Stillwater Mine, as represented in Figure 1.

2.1 Flowsheet

Figure 1 illustrates three different flow path types available for use by SMC. The primary flow path represents the principal, or preferred, flow paths currently used by SMC to manage water and nitrogen. Secondary flow paths represent those flow paths available for water management that are not currently used by SMC. Indirect discharge flow paths are identified from percolation ponds (including leakage from the Hertzler LAD Feed Pond) and the Hertzler land application discharge (LAD) area.

2.1.1 Mine and Mill

The source of nitrogen to mine water is derived from explosives used to recover ore from the mine. The majority of nitrogen contained in explosives is consumed as they are used, but minor residual amounts end up mixing with the mine material (both ore and waste) and mine water. SMC has undertaken a program to reduce the use of nitrogen containing explosives and seeks continuous improvement in that area, however this report does not address those activities but rather the water that is pumped from underground as a result of mine dewatering and mining activities. Water is used in the process of drilling a round of holes which are filled with explosives containing nitrogen. Following detonation SMC intentionally washes down all muck piles, ore and waste, to drive a majority of the residual nitrogen into solution and accordingly into the mine water and treatment.

Nitrogen residues within the ore stream are sent to the mill where they are solubilized in the beneficiation process. These nitrogen residues are ultimately sent to a tailings impoundment with the tailings underflow. At present, all tailings are directed to Stillwater's Hertzler Impoundment for permanent placement. However, tailings can also be placed in the Stillwater Impoundment for a short period of time should the need arise. Reclaim water from the Hertzler Impoundment is pumped back to the Stillwater Impoundment, which then feeds the mill. Since the milling and tailings circuit is designed as a closed system, no discharge of water or nitrogen is intended to occur in this process.

This evaluation does not include or address potential nitrogen loading at present or in the future from the East Waste Rock Pile. Waste rock material either remains underground or is transported to the waste rock pile east of the Stillwater River. In either case, all waste rock is initially washed down underground to solubilize and flush residual nitrogen into the mine water system and to reduce volatile ammonia concentrations. Any remaining, residual nitrogen contained on waste rock is further denitrified biologically within the stockpile or ultimately solubilized over time where it may potentially reach and mix with ground and surface water. The timing of this potential mixing and the extent to which it may or may not impact ground or surface water is unknown and unquantifiable given the environmental variability's of climate, soils, site morphology, dump design, and mixing dynamics of the groundwater aquifer and the Stillwater River System.

Further, SMC has taken additional measures to decrease the amount of nitrogen from waste rock and water infiltration through placement of compacted lifts on the surface and some natural attenuation mechanisms may exist. Nevertheless, the waste rock pile is a potential source of nitrogen to the Stillwater River that is not addressed in this evaluation because it is not part of the present water management system and the quantity of water and nitrogen that is infiltrating from the waste rock pile is uncertain.

2.1.2 East Adit Water

Mine water from the east adit is discharged (1) to the east clarifier where suspended sediments/solids are removed. Mine water then flows from the east clarifier to either the series of four east percolation ponds (2) or into the four Stillwater Valley Ranch (SVR) percolation ponds (3). The SVR percolation ponds are only used when the Hertzler LAD Pond runs out of storage capacity. Both the east percolation ponds and the SVR percolation ponds are a source of indirect discharge (4) to groundwater, and potentially surface water. (With expansion of the East Side Waste Dump, the No. 2 pivot must be relocated. No longer a viable option.) Indirect discharge from the east and SVR percolation ponds goes to groundwater and potentially surface water (4).

2.1.3 West Adit Water

The west adit discharges mine water (5) to the west clarifier where suspended sediments/solids are removed. Clarified mine water then flows to west storage ponds 1 & 2. West clarifier effluent may also be sent to the Stillwater Impoundment as a secondary flow path. A portion of mine water, approximately half, from the west storage ponds is recycled back to the underground workings (6), and the remainder flows, together with any tailings water to be treated (7), to the anoxic biological treatment plant (8). After mine water is biologically treated for the reduction of nitrate-nitrogen it flows to the lined west storage pond 3 (9). From west storage pond 3 mine water is piped to the Stillwater Impoundment for storage (10) or to the lined Hertzler LAD feed pond (11). . Water from the Hertzler LAD feed pond is directed to the Hertzler LAD area (13) where water and nitrogen are consumed (14). Indirect discharge from this LAD area can potentially be routed through groundwater to surface water (15).

2.2 Mass Balance

A mass balance for mine water and nitrogen was developed for the purpose of evaluating SMC's current water management practices, and to aide in the determination of means to minimize nitrogen discharges. Mass balances show the total inputs and outputs of water and nitrogen from the mine and can be used to show those characteristics as part of an examination of various means to optimize and prioritize performance of SMC's water management system. Together with experience and logic the mass balance can be useful as a tool to the engineer and operator in determining how best to operate a system to achieve a goal or purpose.

Two scenarios have been developed for the purpose of first assessing SMC's current operation of water management facilities; and second for the purpose of assessing prioritization and optimization of water management facilities under current and foreseeable future conditions. Scenarios depicted in the mass balances (Cases 1 & 2) were altered to affect minimization of water and nitrogen discharges as described in the following sections. This is intended to determine how best to operate or alter the design of the water management facilities at the Stillwater Mine under various conditions to achieve the goals of the Good Neighbor Agreement. The following sections describe those conditions and the results from the mass balance scenarios. (Base cases 1 and 2 are no longer valid options; remediation activities complete)

2.2.3 Case 3 - Original design conditions with increased Hertzler LAD feed pond capacity

In 2004 SMC relined the pond with a synthetic liner to achieve design specifications of leakage on the order of 1 gpm or less, and increased the pond working capacity to 115 million gallons from the existing 80 million gallon capacity as a result of engineering recommendations including preliminary results from this evaluation and to accommodate design optimization driven in part by lining criteria. The results are shown in Table 3.

East Adit Water

Under this scenario East Adit Water discharges are the same as for the base case (1.0 lb nitrogen/day). (Will need to update with base case numbers here)

West Adit Water

The process for the west side under this scenario is consistent with that of the base case. (Will need to update with base case numbers here) This scenario assumes that the leakage from the LAD feed pond is reduced to levels consistent with the project Environmental Impact Statement (EIS), or approximately 10 gpm. The LAD feed pond capacity is increased to reduce the accumulation of treated water in the tailings impoundments as is otherwise indicated to be necessary if additional LAD storage capacity is not provided or increased LAD availability is not achieved.

Stillwater River

The load to the Stillwater River is determined the same as for the base case with the calculated input of nitrogen in the Stillwater River based on the calculated total of all potential inputs to surface water from indirect discharges.

2.2.4 Case 4 - Original design conditions with increased Hertzler LAD feed pond capacity and increased LAD efficiency

This scenario represents operational improvements to LAD efficiency (increasing it to 90% uptake of water and nitrogen) and availability (increasing it to 71% - operating five of seven days). SMC has indicated that through a combination of efforts to achieve agronomic uptake in LAD operations (with potential for 100% uptake) and availability (by operating for longer seasons or increased days) and or other means such as increased biotreatment effectiveness that higher efficiencies utilizing current systems without significant capital expenditure should be possible. The results are shown in Table 4.

East Adit Water

Under this scenario East Adit Water discharges are the same as for the base case (1.0 lb nitrogen/day).

West Adit Water

The process for the west side under this scenario is consistent with that of the increased LAD pond capacity case up to the point of LAD. Under this scenario From May 1 to October 1 water from the Hertzler LAD feed pond is discharged to the Hertzler LAD area (13) at average daily rates between 358 to 1,071 gpm. This is based on operating at 1,000 gpm during the months of May and June and at 1,500 gpm during the months of July, August and September and four days

per week (71% availability) operations. The Hertzler LAD area is assumed to operate at 90% consumption of water and nitrogen (14) with groundwater loading of the remaining 10% of water and nitrogen and connection to the Stillwater River.

Stillwater River

The load to the Stillwater River is determined the same as for the base case with the calculated input of nitrogen based on the calculated total of all potential inputs to surface water from indirect discharges.

3.0 Discussion

The results from the various cases analyzed are summarized in Table 5.0 and discussed in the following sections. In all cases the produced water from the east side and west side mining operations are the same, resulting in 117 pounds of nitrogen being produced in the form of mine wastewater discharges per day. The discussion for each scenario focuses on the different results from the perspective of discharges to the Stillwater River and water stored in tailings impoundments.

The approach taken in the evaluation is a simplified and conservative approach as it does not account for groundwater dilution or natural conditions which may reduce or attenuate nitrogen before it reaches surface water. This report addresses the practices of water management, treatment, and land application discharge as well as the employment of effective mitigations

Table 5 - Summary of Results
Stillwater Mine Water and Nitrogen Mass Balance

Case			3	4
			Increase LAD Capacity	Increase Efficiency
East Side Mine Water Produced, gpm			136	136
East Side Daily Total Produced N, lbs			1.0	1.0
West Side Mine Water Produced, gpm			358	358
West Side Daily Total Produced N, lbs			116.6	116.6
Total Mine Water Produced, gpm			494	494
Daily Total Produced N, lbs			117.60	117.60
Indirect Discharge from East Side, gpm			136	136
Indirect Discharge of N from East Side, lbs			1.0	1.0
Indirect Discharge of N from East Side, % of Daily Total N			0.8%	0.8%
Indirect Discharge from LAD feed pond leakage, gpm			9	9
Indirect Discharge of N from LAD feed pond leakage, lbs			0.7	0.7
Indirect Discharge of N from LAD feed pond leakage, % of Daily Total N			0.6%	0.6%
Indirect Discharge from LAD infiltration, gpm			62	35
Indirect Discharge of N from LAD infiltration, lbs			4.6	2.6
Indirect Discharge of N from LAD infiltration, % of Daily Total N			3.9%	2.2%
Total Indirect Discharge to Stillwater River, gpm			207	180
Total Indirect Discharge of N from Stillwater River, lbs			6.3	4.3
Total Removal Efficiency, average			94.6%	96.3%
Increased Total N, Average in Stillwater River			0.006	0.005
Increased Total N, Maximum in Stillwater River			0.016	0.007
Accumulated water (5 years) in Tailings, M gallons			123	0

3.3 Case 3 - Original design conditions with increased Hertzler LAD feed pond capacity

The average discharge of 136 gpm containing 1.0 pounds of nitrogen per day from the east side mine would be unchanged. The nearly unaltered groundwater is not treated and discharged via percolation. The discharge under this scenario on average contains approximately 0.8% of the total nitrogen produced by SMC's operations and is about 16% of the total nitrogen discharged.

Indirect discharge from pond leakage under original design conditions would be expected to result in an average of 9 gpm being infiltrated to groundwater containing 0.7 pounds of nitrogen per day. The leakage amounts to 0.6% of the total nitrogen produced by SMC's operations and is about 11% of the total nitrogen discharged. Indirect discharge from infiltration of wastewater applied to the Hertzler LAD area are estimated at an average of 62 gpm containing 4.6 pounds of nitrogen per day. The infiltration amounts to 3.9% of the total nitrogen produced by SMC's operations and is about 73% of the total nitrogen discharged.

Under this scenario SMC would remove 94.6% of the produced nitrogen and discharges 5.4%. The calculated input of nitrogen in the Stillwater River under this scenario, based on the calculated total of all potential inputs to surface water from indirect discharges, ranges from 1.7 to 14.6 lbs/day, with an average of 6.3 lbs/day. This would result in an average increased in total nitrogen of 0.006 mg/l and a maximum increase of 0.016 mg/l in the Stillwater River. This fluctuates on a seasonal basis with greater amounts of nitrogen being discharged in the summer months when LAD operations are most active and resulting in the highest concentrations due to low river flow.

3.4 Case 4 - Original design conditions with increased Hertzler LAD feed pond capacity and increased LAD efficiency

The average discharge of 136 gpm containing 1.0 pounds of nitrogen per day from the east side mine would be unchanged. The nearly unaltered groundwater is not treated and discharged via percolation. The discharge under this scenario on average contains approximately 0.8% of the total nitrogen produced by SMC's operations and is about 23% of the total nitrogen discharged.

Indirect discharge from pond leakage under original design conditions resulting in an average of 9 gpm being infiltrated to groundwater containing 0.7 pounds of nitrogen per day. The leakage amounts to 0.6% of the total nitrogen produced by SMC's operations and is about 16% of the total nitrogen discharged. Indirect discharge from infiltration of wastewater applied to the Hertzler LAD is estimated at an average of 35 gpm containing 2.6 pounds of nitrogen per day. The infiltration amounts to 2.2% of the total nitrogen produced by SMC's operations and is about 61% of the total nitrogen discharged.

Under this scenario SMC would remove 96.3% of the produced nitrogen and discharge 3.7%. The calculated input of nitrogen in the Stillwater River under this scenario, based on the calculated total of all potential inputs to surface water from indirect discharges, ranges from 1.7

to 9.8 lbs/day, with an average of 4.3 lbs/day. This would result in an average increased in total nitrogen of 0.005 mg/l and a maximum increase of 0.007 mg/l in the Stillwater River. This fluctuates on a seasonal basis with greater amounts of nitrogen being discharged in the summer months when LAD operations are most active and resulting in the highest concentrations due to low river flow.

4.0 Conclusions and Recommendations

Based on this evaluation the following conclusions are drawn and recommendations made consistent with the requirements of the GNA:

- SMC continues to lead the mining industry with the implementation of cutting edge treatment technologies for nitrogen removal and has demonstrated a willingness to go well beyond regulatory and statutory requirements.

- The Hertzler LAD facility was first operated in 2001 and most likely resulted in overall removal efficiencies for nitrogen of approximately 85% which over time might result in a maximum increase in nitrogen of 0.07 mg/l in the Stillwater River. With the repair of the LAD feed pond liner it is expected that design operational efficiencies of 95% - 100 % can be achieved by 2005 without any additional significant changes to planned operations or facilities improvements. In addition, SMC will be filling their Hertzler Stage II Tailings Impoundment with additional water during the next one to two years resulting in discharge rates of approximately 150 gpm total, or about half the current discharge rate. The calculated maximum increased concentrations in nitrogen, if design operating specifications were achieved, would be less than 0.02 mg/l in the Stillwater River.

- Several operational improvements are possible that involve minimal expenditures to SMC. Improvements in LAD treatment efficiency and operational availability are examples, in addition to improvements in biological treatment efficiency, as well as SMC's work on optimizing denitrification in the soil profile. As SMC becomes more experienced in their operations all these improvements may become possible and could be considered reasonably probable. Overall these improvements could further increase overall nitrogen removal efficiencies to 96% or higher. In this event the calculated maximum increase in nitrogen would be 0.01 mg/l in the Stillwater River, or less than is considered analytically or statistically discernible.

- SMC should provide a Hertzler LAD Operations Plan for the 2005 season prior to the beginning of LAD operations which describes operational practices that will be employed to institute standard practices and measure performance. This should include plans for pivot operation including sequencing, rates, and durations (i.e. which pivots to be operated, at what throughput, and during which period each day and week). It should also include plans for measurement of lysimeters and soil moisture probes as well as groundwater monitoring to measure performance of the system. Various changes in operational parameters should be attempted in an experimental manner that allows for determination of changes in performance.

- SMC should provide a regular synopsis of LAD operations at Stillwater Oversight Committee Meetings together with an annual report on LAD operations informing the Councils as to the throughput and estimated efficiency for the previous year's water management, treatment and discharge operations in a manner consistent with the information contained in this report. The Councils agree to have their consultants

conduct the report, which would consist of the equivalent of one case study from this report and a follow-up to its recommendations, if SMC will provide the necessary data. SMC and the Councils will review the report to examine and, if necessary, incorporate new technologies or practices.

- Successful implementation of this plan may result in SMC operations having no detectable impact on surface water to the extent technically feasible.

5.0 Prioritization and Implementation

Based on this evaluation the following prioritization of discharges from SMC's operations should be agreed on to minimize potential impacts to water quality under current conditions:

1. Maximize flows and primary treatment efficiency through the biological treatment system while maximizing secondary treatment through the Hertzler LAD system.
2. Minimize amount of water discharged to East Percolation Ponds and limit to unaltered groundwater only if possible.
3. Only utilize direct discharge to Stillwater River as a measure of last resort (such as if emergency upset conditions dictate), and if possible manage and discharge only high quality (unaltered groundwater) water.

The following measures should be considered by SMC and the Councils for implementation:

1. Address measures to ensure design operating results of 90% or greater continue to be achieved.
2. Address operational plans and monitoring schedule for 2005 and beyond.
3. Revisit the progress and results annually and re-evaluate activities and feasibility of improvements.

6.0 Future Unforeseen Circumstances

This evaluation has focused on past and existing baseline water quality and operational conditions including discharge water quality and quantity. The results of this analysis are based upon a simple mass balance equation and as such addresses only nitrogen as a contaminant of concern and is not intended to represent actual or anticipated compliance performance by SMC.

In the event of future unforeseen circumstances it is anticipated that this plan would undergo re-examination to address potential situations such as the production of greater quantities of mine water and/or greater loadings of nitrogen; the determination of the waste rock pile as a source of nitrogen to surface water, and future identification of contaminants of concern such as sulfate or toxic metals or metalloids.

7.0 References

Draft Application Summary for the Stillwater Nye MPDES Permit Renewal, Ver. 2, September, 2002.

Montana Department of Environmental Quality and U.S.D.A Forest Service. Final Environmental Impact Statement Stillwater Mine Revised Waste Management Plan and Hertzler Tailings Impoundment. October 1998.

APPENDIX S. BLITZ/BENBOW MITIGATION PLAN

The Blitz/Benbow Mitigation Plan was jointly developed by the Councils and Stillwater Mining Company. The Plan was completed on December 8, 2014, and adopted by the Stillwater Oversight Committee on December 8, 2014 as part of the Good Neighbor Agreement.

Blitz/Benbow Mitigation Plan

By

Stillwater Protective Association,

Northern Plains Resource Council

and

Stillwater Mining Company

as part of the

Good Neighbor Agreement

December 8, 2014

1. Introduction

On June 12, 2013, the Stillwater Oversight Committee (SOC) approved the following motion:

> *To adopt the Benbow Mitigation Plan June 11, 2013 topics and concepts for inclusion in the Benbow Mitigation Plan which is intended to address both community concerns and environmental impacts associated with the Benbow Exploration Portal proposed for development by SMC. The Benbow Mitigation Plan will be developed by the Stillwater Oversight Committee and appended to the Good Neighbor Agreement.*

At the October 8, 2013, SOC meeting, SMC indicated they planned to reevaluate their development strategy for the Benbow Exploration Portal. At that time SMC requested that the SOC postpone development of the Benbow Mitigation Plan until after completion of the reassessment. The Benbow Strategic Reassessment was completed by SMC in early 2014, which concluded that SMC should move forward with its originally developed Plan of Operations. Discussion continued at the February 12, 2014 SOC meeting where both involved parties agreed to complete the Benbow Mitigation Plan by December 31, 2014.

Development of the Benbow Exploration Portal is separated into three phases for the purposes of the Benbow Mitigation Plan (Plan), which are described below. The timeline projected has been developed for the use of the SOC as part of the GNA, and is subject to change given a variety of factors including permitting review and completion, advancement of the Tunnel Boring Machine (TBM), development of the Benbow Portal, etc. The estimated timeline will be discussed at subsequent SOC meetings and updated as necessary.

- **Surface Construction Phase**. This phase began in 2011 (Year 0) with site characterization and project permitting, and is scheduled to continue through the completion of surface construction (road, portal pad, water treatment facilities, waste rock pad, etc.). Surface construction is anticipated to start in the fall of 2015 and be completed in early 2016 (Year 5).
- **Exploration Phase**. This phase is expected to begin in the spring of 2016 (Year 5) and conclude in 2018 (Year 7). The Exploration Phase begins when the Benbow Portal decline is initiated through the time that water and waste rock can be managed through underground conveyance to existing facilities at the Stillwater Mine. SMC anticipates ongoing operations and maintenance of water and waste management facilities, other surface facilities and man access throughout this phase.
- **Operations Phase**. This phase is anticipated from the end of 2018 (Year 7) through closure of the Stillwater Mine (Year 2035+). Activities anticipated during the Operations Phase include surface reclamation and removal of facilities in Years 8 and 9, then ongoing monitoring of the portal pad and reclaimed facilities. Limited man access[6] through the portal to support underground operations, mine ventilation, and potential emergency mine egress is anticipated during this phase.

[6] Man Access to support underground operations includes limited resupply of supplies such as ground support (split sets, bolts, etc.) and explosives, as well as, access for safety training exercises.

2. Future expansion

The Benbow Mitigation Plan does not allow for the future proposal and development of any major surface facilities within the black boundary shown on Figure 1 below associated with the Benbow Exploration Portal. Major surface facilities include:

- Mill facilities
- Tailings impoundments
- Additional waste rock storage
- Additional water management and treatment facilities except as needed to comply with regulatory standards and permit requirements.

Development of any surface disturbance[7] in addition to those approved in the Benbow Exploration Portal Record of Decision (anticipated 2015) requires Stillwater Oversight Committee consultation prior to initiation of the minor revision process unless required by permit or to comply with safety and health initiatives driven by regulation.

[7] A Surface Disturbance may include a small building to house equipment needed to meet mine health and safety requirements or a vent raise.

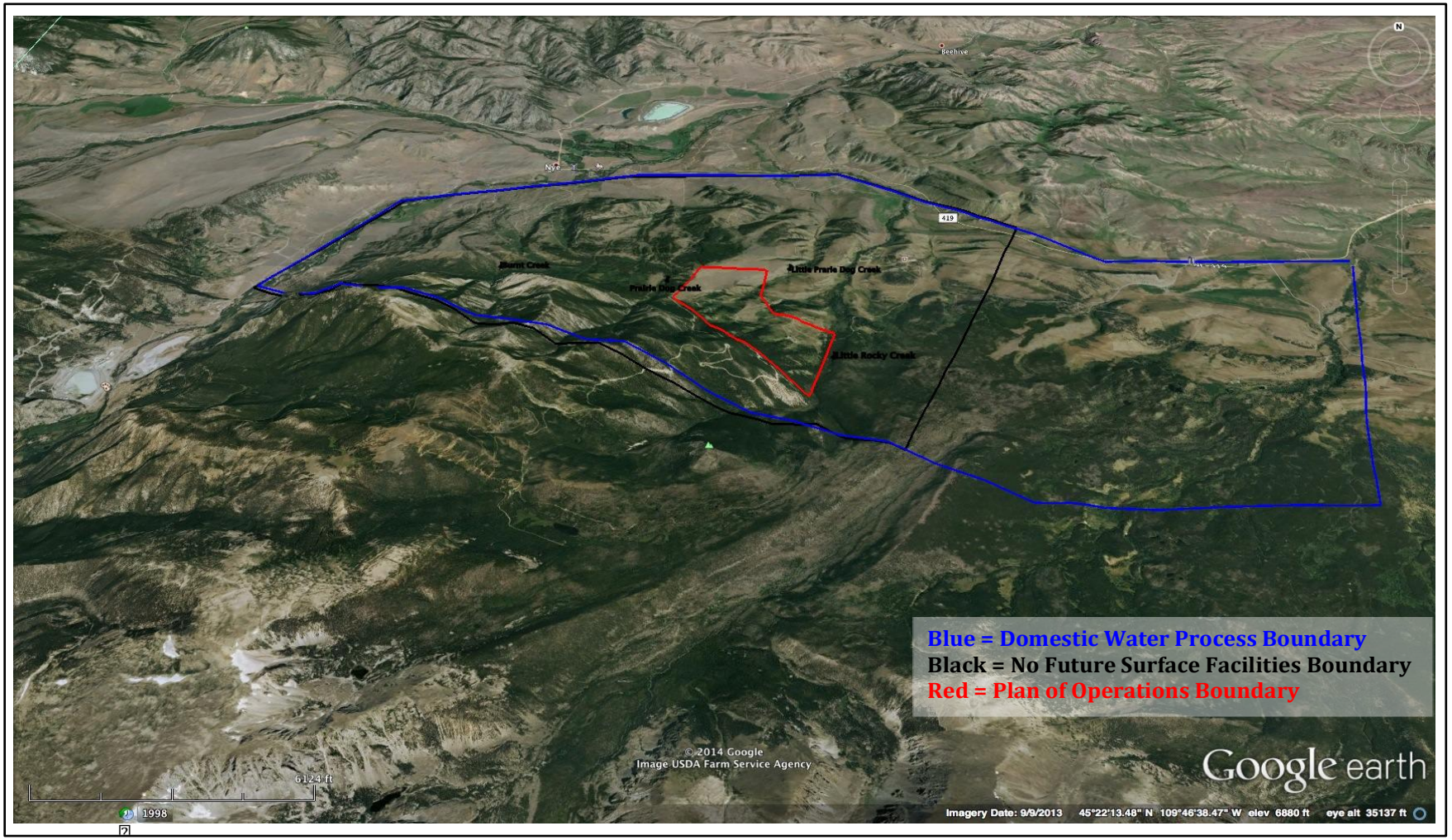


Figure 1. Benbow Mitigation Plan boundaries for the Plan of Operations, Future Expansion and the Domestic Water Process.

1 Portal Access

The Benbow Exploration portal will be used for ventilation and as a secondary escape way during the Operations Phase of development, with limited and periodic man access associated with exploration, resupply, training, maintenance, and other operations. Use of the Benbow Exploration Portal from the surface must be consistent with traffic allowances and comply with the traffic reduction program described in Section 5 herein.

Ore (excluding exploration drill core or bulk samples) will not be removed from the Benbow Portal during any phase of development.

The portal pad will be reduced to approximately four (4) acres of usable area once the Operations Phase has been initiated.

2 Waste Rock Management, Disposal and Beneficial Use

Waste rock generated from development of the Benbow Portal will be managed to the greatest extent possible through beneficial use projects. SMC's goal is to beneficially utilize all waste rock mined from the Benbow Exploration Portal development and 5600 FWL driving east to west, thus avoiding any permanent disposal in the proposed waste rock disposal facility.

Potential beneficial use projects for the waste rock include but are not limited to capping the chrome tails below the Old Mill Site adjacent to Little Rocky Creek (USFS), improving the Chrome Lake jeep trail parking lot (USFS), Benbow Road Upgrades, use on the West Rosebud Road with Stillwater County, and others. A Beneficial Use Plan is included as Appendix A that will be reviewed and updated by the SOC at each meeting until such time the waste rock has all been utilized, or reclamation of the waste rock disposal facility is complete.

3 Traffic Reduction Program

SMC shall mitigate increased traffic impacts from the Benbow Portal Development on access roads, including but not limited to National Forest Development Road 2414 (Benbow Road). The objective of the Benbow Traffic Reduction Program is to minimize the adverse impacts of mine-related traffic on road safety and maintenance, Benbow area residents, wildlife, surface waters and aquatic resources, and other resources.

Vehicle and Traffic Limitations

SMC shall establish, maintain, and enforce a vehicle tracking system for all traffic associated with the Benbow Exploration Portal. Except for persons displaying a valid vehicle permit, SMC shall prohibit employees, visitors, contractors, subcontractors, and vendors from entering or leaving the project area by private vehicle. SMC shall provide transportation to and from the project area for all unpermitted employees, visitors, contractors, subcontractors, and vendors. No employee personal vehicles will be allowed on-site.

Permitted Vehicles include SMC vehicles (vans, pickups, & SUV's) that are used on a daily basis for employee transportation and operational oversight, vehicles driven by contractors that perform regular work at the portal site and require a vehicle to access the site, and miscellaneous business-related visitors including but not limited to vendors, prospective contractors, consultants, and the like.

Vehicle permits may be assigned by SMC at their discretion to employees, visitors, subcontractors, vendors, or contractors. Each permit allows one round-trip to the project area per day. The holders of such permits may enter or leave the project area by permitted vehicle, and may park a permitted vehicle at a staging area designated by SMC. The SOC will review any temporary variance requests from SMC for projects such as mobilization and demobilization of equipment and waste rock beneficial use projects. All variances will require approval of the SOC. Without a variance the following maximum vehicle permits will apply:

- Construction Phase: 15 vehicle permits per day
- Exploration Phase: 20 vehicle permits per day
- Operations Phase: 5 permits per day

The following vehicles do not count toward the maximum daily limit: Government vehicles (MSHA, USFS, DEQ, etc.), visitors (non-business related: GNA, educational tours, etc.), and SMC vehicles that have responsibilities at other sites (Corporate Management, Mine Manager, Environmental Manager).

Monitoring and Reporting

SMC shall establish and maintain a traffic monitoring and reporting program to verify its compliance with this provision. At a minimum, such program shall monitor and record the following data measured at the project area check-in: daily number of SMC and contractor

permitted vehicles, daily number of commercial deliveries, and visitors. This monitoring program shall also verify SMC's compliance with the Commercial Traffic Reduction Plan (GNA Subsection 7.25-7.31). SMC shall provide a monthly accounting of Benbow traffic that includes all data required above as a component of the existing Stillwater Mine monthly traffic report to the SPA/Northern Plains representatives on the Oversight Committee. A monthly report template is provided as Attachment 2.

Northern Plains/SPA shall have the right to conduct unannounced inspections to evaluate SMC's compliance with the Benbow Traffic Plan, and may request more frequent monitoring reports if conditions warrant.

SMC shall make every effort to stage traffic from the Stillwater Mine or where most efficient depending on the origination point. The nearest staging area would be no closer than the intersection of Benbow Road and Highway 419. The SOC may approve additional staging areas if necessary.

Additional Provisions

Speed Control. SMC shall, as necessary, conduct periodic speed-control monitoring events to ensure compliance with posted speed limits on Benbow Road.

Compression Braking. SMC shall not allow the use of engine compression or "Jake" brakes by any truck traveling for mine-related purposes on Benbow Road.

Compliance with Good Neighbor Agreement Traffic Plans. All traffic monitored by this plan shall also maintain compliance with the Stillwater Mine Traffic Reduction Plan (Appendix G) and the Commercial Traffic Reduction Plan (Appendix H) while traveling on all other roads used to access the Stillwater Mine.

Road Maintenance. It is recognized by the SOC that road improvements, maintenance and dust abatement programs proposed and conducted by SMC will in large part improve and mitigate adverse impacts to the access road.

4 Reclamation and Closure

Closure and removal of water management and surface facilities, other than an emergency egress building, shall be completed within two construction seasons[8] of the Benbow Exploration Portal being first connected to the 5600E FWL and then the 5000E TBM drive that allows for management of water and disposal of waste rock at the Stillwater Mine. Connection of the Benbow Portal to the 5000E TBM drive will be completed with best efforts, and is currently estimated to be complete within 3 years from the start of portal development.

Reclamation shall commence immediately for the Benbow waste rock disposal facility.

Water treatment, the clarifier and moving bed biofilm reactor system (MBBR), is anticipated to operate for a period of 6 months from when the Operations Phase is initiated; however, water treatment will continue to operate until the waste rock pile is reclaimed and no significant leachate (< 10gpm on average) is present from the liner collection system.

Upon cessation of water treatment, water management facilities (LAD Pond and pivots or injection well) will be decommissioned and reclaimed within the next construction season.

5 Domestic Water Quality and Quantity Impacts

SMC and the Councils recognize that groundwater quantity and quality impacts associated with development of the Benbow Exploration Portal, Blitz Ridge exploration drilling, and future underground mine development are a significant concern for community members living near the mine, and in particular those residents close to the Benbow Portal and recent exploration drilling activities. The following process has been developed and adopted as part of this mitigation plan to ensure a community member's concerns with their water sources are evaluated, and mitigated if necessary.

SOC representatives, including SPA and Northern Plains members and staff, have committed to serve as an advocate and will help any concerned community member work through this process and communicate with SMC as desired. Northern Plains, SPA and their employees, however, do not assume responsibility or liability with any decision or outcome that results from this process.

Should SMC or an SOC member be contacted with any concerns related to groundwater quantity and/or quality within the blue boundary defined in Figure 1, the following process will be initiated to determine if mine related impacts are the cause or a contributing factor to said concern. Examples include domestic wells, stock water wells and springs.

Process to Address Water Concerns

[8] This requirement may be modified with SOC approval should water treatment duration need to be extended to meet water quality requirements.

1. All concerns related to groundwater quantity and quality shall be directed to Stillwater's Corporate Environmental Manager immediately. Any phone discussions should be immediately followed with an email that includes Stillwater's Corporate Environmental Manager, the GNA Manager and GNA Senior Technical Consultant summarizing the water concern.
2. Within 24 hours of notification or the following business day, SMC shall contact the community member and as a Good Neighbor offer to provide replacement potable water until an evaluation is completed that determines if the cause is mine related or non-mine related.
3. Within 24 hours of notification, or the following business day, SMC will measure well static water level, spring flows and, if possible, collect a water quality sample.
4. Within 7 days of notification, SMC will fund a third party consultant mutually agreed upon by SMC and the landowner, and initiate an assessment and evaluation of the groundwater impact(s) and potential cause(s). This assessment and evaluation will be based on existing, available data, regional and local conditions, geologic mapping and modeling, and knowledge of the hydrogeologic environment. The assessment will include a comparison of current water quality and quantity conditions with historic data collected at this location and others in the region.
5. If the cause is mine related, a plan and schedule for replacing the domestic well will be developed to the satisfaction of the landowner. The domestic well will be replaced within four (4) months of the initial concern being reported. Potable water will continue to be provided until a suitable replacement source has been identified and developed. A sample of the new well will be collected once the new well is online to document the new well is providing water of sufficient quality and quantity.
6. If the cause is not mine related, then SMC will inform the landowner of the results, and will discontinue providing potable water.

6 Off-Site Impacts

The SOC recognizes that there may be off-site impacts associated with the Benbow Portal development and operation including nuisance noise, nuisance lighting, wildlife impacts, air quality impacts and the spread of noxious weeds. These impacts can directly affect our neighbors living near the portal development, and the SOC wants to ensure that any concerns brought to our attention are appropriately reviewed and mitigated, if necessary. The following general process has been developed and adopted as part of this mitigation plan to ensure a community member's concerns with off-site impacts are addressed.

SMC will conduct all activities associated with the Benbow Exploration Portal using Best Management Practices (BMP) to reduce and mitigate project related impacts. "A Best Practice is a process, technique, or innovative use of resources that has a *proven* record of success in providing significant improvement in cost, schedule, quality, performance, safety, environment, or other measurable factors which impact the health of an organization."[9]

[9] BMP Center of Excellence at http://www.bmpcoe.org/faq/index.html

Process to Address Off-Site Impacts

1. All concerns related to nuisance noise, nuisance light, wildlife, air quality and noxious weeds shall be directed to Stillwater's Corporate Environmental Manager. Any concern should be immediately followed with an email to Stillwater's Corporate Environmental Manager. Stillwater's Corporate Environmental Manager will then notify the GNA Manager and GNA Senior Technical Consultant within 24 hours via email.
2. The parties will work together to evaluate the complaint, develop mitigations including the additional engineering practices listed below, and respond to the community within three (3) business days, or sooner where possible. SMC shall then contact the community member, and as a Good Neighbor discuss potential mitigations that could reduce or eliminate the impacts.
3. Mitigation measures shall be implemented within 14 days, or sooner when possible, and reviewed periodically to verify mitigation is effective and working properly.
4. If the stated concern continues to be an issue after mitigations are implemented then the issue will be brought to next SOC meeting for further discussion and development of an action plan. Additionally, the community member will be encouraged to contact the Forest Service and the Montana Department of Environmental Quality to address their concerns.

SOC representatives, including SPA and Northern Plains members and staff, have committed to serve as an advocate and will help any concerned community member work through this process and communicate with SMC as desired. Northern Plains, SPA and their employees, however, do not assume responsibility or liability with any decision or outcome that results from this process.

6.1 Nuisance Noise

Baseline noise data has not been collected for the Benbow Portal development. This is a non-developed area occasionally used by recreational vehicles.

SMC has committed to implement BMPs during construction and operational activities to minimize nuisance noise pollution including:

- Installation of "white noise" backup alarms on surface equipment,
- Relocation of ventilation fans underground once the decline is of sufficient distance,
- Waste rock haulage will be limited to daylight hours only, and
- Placement of stationary equipment within enclosures as necessary and feasible.

Additional engineering noise reduction practices, which may be implemented to address a community concern include:

- Operating procedures such as proper maintenance of mechanical equipment,
- Relocation of machine control systems,
- Use of noise barriers,

- Administrative controls such as limiting hours of activity, and procurement of reduced-noise equipment,
- Machine treatments such as vibration control, shields, enclosures, and silencers, and
- Room treatments to control reflected sound.

6.2 Nuisance Light

Baseline light data has not been collected for the Benbow Portal development.

SMC has committed to implement BMPs during construction and operational activities to minimize nuisance light impacts including:

- Installation of direction and shielded lighting fixtures,
- Efforts to ensure that lights are not directed to the north-side of the Portal Pad,
- Limitations of waste haulage to daylight hours only, and
- Installation of lighting with sufficient lumens **(**light-candles**)** necessary for safety and security.

Additional engineering practices that may be implemented to address a community concern with nuisance lighting include:

- Directional light provided by vehicles or temporary portable lights,
- Use of motion or time activated lights,
- Operational controls such as limiting hours or the duration of work requiring light, and
- Use of low-impact lighting.

6.3 Wildlife

SMC completed a fish and wildlife inventory as part of the environmental characterization conducted prior to development of the Benbow Portal. This report indicated that there were ten (10) Custer National Forest "habitat indicator species" and "key wildlife species" to include the following: Yellowstone cutthroat trout, fringed myotis, long-eared myotis, long-legged myotis, uinta chipmunk, grizzly bear, wolverine, canada lynx, gray wolf, bald eagle, northern goshawk, and the peregrine falcon.[10]

SMC and the Councils acknowledge that activities related to the Benbow Exploration Portal and Blitz Exploration Drilling have the potential to affect wildlife in the area. At this time, no project related wildlife impact has been recorded. Should any demonstrable negative impacts to wildlife or wildlife mortality resulting from the operations occur, the SOC shall address the impact. Wildlife impacts may be addressed with mitigations developed in consultation with third party experts and/or Montana Fish, Wildlife and Parks.

[10] Benbow Plan of Operations, Appendix G, Fish and Wildlife Inventory, completed by WESTECH Environmental Services, Inc., September 2012.

SMC has committed to implement BMPs during construction and operation of the Benbow Portal to reduce overall off-site impacts associated with traffic, noise, light, etc. as described herein which should in turn minimize impacts to wildlife.

6.4 Air Quality, Dust Control

Baseline air quality data has not been collected for the Benbow Portal development.

SMC has committed to implement BMPs during construction and operational activities to minimize impacts to air quality from fugitive dust including:

- Use of a water truck to reduce fugitive emissions onsite and from roads and stockpiles,
- Concurrent reclamation of inactive areas of disturbance,
- Maintain waste rock at a high moisture content to limit emissions during transfer, and
- Compaction and armoring of long-term waste rock storage areas.

Additional engineering practices that can be considered for implementation to address an air quality or fugitive dust community concern include:

- Use of chemical dust suppressants, such as magnesium chloride or lignin sulfates, to minimize dust associated with operational traffic.

6.5 Noxious Weeds

SMC completed a sensitive plant species inventory as part of the environmental characterization conducted prior to development of the Benbow Portal. This report indicated that grassland within areas proposed to be disturbed are grazed by cattle and have been invaded by exotic species including timothy, smooth brome, Canada thistle, and common hounds tongue, compromising the native composition in some areas.[11]

SMC has committed to adopt and implement practices related to noxious weed control for the Benbow Mitigation Plan that are consistent with the reclamation and closure plan provisions of the Good Neighbor Agreement and with SMC's County Weed Plan. SMC will implement BMPs during construction and operational activities to minimize impacts from noxious weeds including:

- Washing of all heavy equipment (earthmoving) brought from the mine or from elsewhere before entering the Benbow site to prevent infestation,
- Use of certified weed free seed only,
- Requirements for contractors to conduct weed control procedures,

[11] Benbow Plan of Operations, Appendix H, Plant Inventory, completed by WESTECH Environmental Services, Inc., August 2012.

- Treatment (chemical or hand pulling) of noxious weeds at least annually, or more often if necessary, within disturbance areas and along roadways. Chemicals used will be selected based on targeted species and used in concentrations recommended by the manufacturer, and
- Noxious weed management and reclamation monitoring will continue for a minimum of 3 years following reclamation activities.

Additional practices that may be implemented to address a community concern related to noxious weeds include:

- Implementation of integrated pest management.

Appendix A

Benbow Exploration Portal Waste Rock

Beneficial Use Plan

Introduction

This beneficial use plan has been developed by the Stillwater Oversight Committee (SOC) to encourage the beneficial use of up to 500,000 tons of waste rock associated with the Benbow Exploration Portal development which is currently planned for permanent surface disposal near the portal.

This plan strives to ensure that waste rock generated from development of the Benbow Portal will be managed to the greatest extent possible through beneficial use in order to limit the size and impact of the permitted Benbow waste rock disposal site. The collective goal is to beneficially utilize all waste rock mined from the Benbow Exploration Portal development and 5600 footwall lateral (FWL) driving east to west.

SMC is evaluating the use of a mechanical road header to develop approximately 4,000 feet of the portal as an alternative to traditional drill and blast mining. Given the lack of residual nitrogen contained in waste rock generated from the road header, this rock has the potential to be used near surface water resources. As such, a possible use of road-header waste rock is the capping of historic chrome tailings near Little Rocky Creek.

The Benbow waste rock dump includes capacity for the disposal of up to 500,000 tons of waste rock; however, any volume of waste rock used beneficially will permanently reduce the total volume of waste rock disposal at this location.

Criteria for Beneficial Use

Beneficial use projects will be evaluated by the SOC on a case-by-case basis to ensure risks to human health and the environment are not increased by utilization of waste rock outside of the Plan of Operations boundary. The SOC plans to take an adaptive management planning approach and develop project-specific guidelines and limitations to minimize off-site impacts. The following guidelines will be considered as part of the SOC evaluation to develop requirements and/or limitations for each project approved.

- Waste rock eligible for a beneficial use project must be net neutralizing and unlikely to leach metals.[12]
- Waste rock that has been developed through conventional mining techniques and has the potential to leach nutrients shall not be placed within 100 feet of any surface water resource, or in areas of shallow groundwater (i.e. <15 feet in depth).
- Projects that require waste rock storage or fill to be placed at any height greater than 5 feet into a single location must be placed in compacted 5-foot lifts to minimize infiltration.
- Projects may require identification of an area on the plan of operations site to stockpile waste rock until sufficient quantities are available to economically crush and/or transport these materials.

[12] A review of preliminary waste rock samples collected from the Benbow exploration borehole was conducted by Enviromin, Inc. (Attachment 1). Their report concludes that waste to be produced during mining of the Benbow Decline are strongly net neutralizing and are unlikely to produce acidic drainage.

Potential Projects and Schedule

SMC has been approached by various entities including Stillwater County, the United States Forest Service (USFS), and the Beartooth Christian Ranch regarding beneficial use of the waste rock from the Benbow Portal. The projects currently being considered include road surfacing; capping historic tailings; construction of parking areas; and long-term stockpiles for road maintenance. SMC will work with the SOC and GNA Responsible Mining Practices and Technology Committee to review potential projects and determine if they meet the criteria described above.

Within 30 days of approval of the Plan of Operations, SMC shall provide the SOC with a summary of potential projects for discussion at each subsequent SOC meeting until the waste rock has been utilized beneficially, or disposed of permanently at the Benbow waste rock disposal facility. The summary should include information related to each potential project including location, volume of rock needed, timeframe and project sequencing (e.g. the need to stockpile waste rock), plans for transportation, and requests to use the incentive fund.

Incentive Program

SMC will fund a $100,000 incentive program to help offset certain costs associated with beneficial use of waste rock from the Benbow exploration portal, such as assistance with crushing and/or hauling expenses. Requests to use the incentive fund will be reviewed by the SOC on a project-specific basis, and decisions made through the SOC voting process.