



Montana Department of  
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

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April 20, 2006

Dear Reader:

Enclosed for your review and comment is the Draft Environmental Impact Statement (EIS) for an operating permit requested by Plum Creek Timberlands, Inc. (Plum Creek) of Kalispell, MT. Plum Creek applied for an operating permit to quarry and collect rock products on 94 sites on January 24, 2003. The operating permit application has been modified several times since 2003 to address DEQ concerns and to add as many sites as possible so the environmental review process could analyze the potential maximum number of acres of disturbance over the life of the permit. The operating permit application is now complete. This Draft EIS evaluates the potential impacts from the 94 rock products operations. The Montana Department of Environmental Quality (DEQ) must decide whether to approve the permit as proposed, deny the request for an operating permit, or approve the operating permit with modifications.

The Draft EIS addresses issues and concerns raised during public involvement and from agency scoping. The agencies have decided to approve the permit with modifications as the preliminary preferred alternative. This is not a final decision. This conclusion may change based on comments received from the public on this notice of revised application, availability of the Draft EIS, new information, or new analysis that may be needed in preparing the Final EIS.

Copies of this Draft EIS can be obtained by writing or calling the Montana Department of Environmental Quality, c/o Patrick Plantenberg, P. O. Box 200901, Helena, MT 59620, telephone (406) 444-4960; e-mail address [pplantenberg@mt.gov](mailto:pplantenberg@mt.gov). The EA will also be posted on the DEQ web page: [www.deq.mt.gov](http://www.deq.mt.gov).

Public comments concerning the adequacy and accuracy of the Draft EIS will be accepted for 30 days, until June 1, 2006. Written comments may be sent to the Montana Department of Environmental Quality, Environmental Management Bureau, PO Box 200901, Helena, MT 59620-0901, attn: Patrick Plantenberg.

Since the Final EIS may only contain public comments and responses, and a list of changes to the Draft EIS, please keep this Draft EIS for future reference.

Paul L. Pugh for WDM  
Warren D. McCullough, Chief  
Environmental Management Bureau

April 20, 2006  
Date

File pending Plum Creek.70

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# **DRAFT ENVIRONMENTAL IMPACT STATEMENT**

## **I. COMPANY NAME**

**Plum Creek Timberlands, L. P., PO. Box 8990, Kalispell, MT 59904.**

## **II. PROJECT**

**Operating Permit Application for Decorative Rock, Building Stone, Rip-Rap and Crushed Aggregate in N. W. Montana.**

## **III. LOCATION**

**Multiple operations in five counties in western Montana (See Exhibit 1 and Table 1).**

## **IV. COUNTIES**

**Missoula, Lake, Flathead, Sanders and Lincoln. Currently, only four of the counties have sites proposed. No sites are currently proposed in Lake County.**

## **V. PROPERTY OWNERSHIP**

**[ ] Federal [ ] State [x] Private**

## **VI. TYPE AND PURPOSE OF ACTION**

### **A. Background: The General Quarry Permit Process**

**Since the mid-1990's, The Montana Department of Environmental Quality (DEQ) has seen an increase in the number of requests for rock product operations. Most of these operations have obtained Small Miner Exclusion Statements (SMES) because they are small operators that can maintain a maximum disturbed and unreclaimed acreage that does not exceed five acres at any one time. An operator can have two sites under an SMES. Under a SMES, operators are excluded from the permitting, bonding and reclamation requirements of the Metal Mine Reclamation Act (MMRA). As sites become larger, some operators must apply for an operating permit because they can no longer keep their unreclaimed disturbance to less than five acres at any one time. If operators need more than two sites because they have developed markets for multiple rock products, then they must also apply for an operating permit.**

**The potential for environmental impacts is limited on many such sites because they are restricted to dry areas with rock that has no potential for producing water quality impacts. Many operators marketing rock products would like to permit more than**

the maximum of two sites allowed under a SMES, and would not cause the level of environmental impacts that would potentially occur under a metal mining operating permit.

To address the need to regulate these quarries and rock product sites in Montana and the expected demand for many relatively low impact operating permits, a General Quarry Permit permitting process was initiated in 1999. The General Quarry Permit would cover these multiple quarries and rock product sites if the operator could maintain a working disturbance of less than five acres disturbed and unreclaimed during the life of any individual operation. Total disturbance during the life of an individual operation could exceed five acres, but concurrent reclamation would be required to keep the unreclaimed disturbance at any one time to five acres or less.

A Programmatic Environmental Assessment (EA) for General Quarry Permits was prepared by DEQ. The Draft Programmatic EA was published by DEQ under the Montana Environmental Policy Act (MEPA) on October 26, 1999, and a Final Programmatic EA was issued on January 12, 2000, to cover these low impact rock product operations. Few public comments were received during the process and the General Quarry Permit process was approved. A Draft Supplemental Programmatic EA was completed by DEQ on February 1, 2004 and a Final Supplemental Programmatic EA was issued on March 30, 2004, which updated the 2000 EA (See Attachments 1 and 2). Once again, few public comments were received and the updates were also approved.

A General Quarry Permit may be used to permit a quarry or rock product site if the following conditions are met:

- Total unreclaimed disturbed ground at any one time may not exceed five acres. Total disturbance during the life of an individual operation may exceed five acres, but concurrent reclamation would be required to keep the disturbance at any one time to five acres or less. If the total unreclaimed disturbed ground at any one time exceeds five acres, a supplemental EA would be needed.
- There would be no impact to any wetland, surface water or ground water.
- There would be no water impounding structures constructed other than for storm water control.
- There would be no potential to produce any acid or other pollutive drainage from the site.
- There would be no impact to threatened or endangered (T&E) plant and animal species.
- There would be no impact to significant historic or archaeological features.
- Sites may occur on federal, private, or state lands.

If sites do not meet the above listed criteria, an operating permit under the MMRA must be requested and analyzed under MEPA.

## **B History of the Plum Creek Operating Permit Application Process**

Plum Creek Timberlands, L. P. (Plum Creek) has seen an increase in the number of requests for rock product contracts from small and large operators on its lands in western Montana. These contractors intend to remove decorative rock, building stone, riprap, aggregates, and other products produced by typical quarrying and rock-collecting activities. The rock is used for a variety of purposes and is shipped throughout the western US.

Historically, these contractors have obtained a SMES and have not been obliged to post a bond or reclaim the sites under the MMRA. Plum Creek has individual contracts with the operators and holds a performance bond to ensure reclamation. DEQ has been working with Plum Creek since the late 1990s towards permitting these existing and future operations under one operating permit.

Plum Creek would like to obtain the operating permit so all of the current and future sites would be regulated and bonded under the MMRA. DEQ allowed sites to continue operations as long as they complied with General Quarry Permit conditions analyzed in the 1999-2000 Programmatic EA.

After a draft review by DEQ, Plum Creek applied for the operating permit on January 24, 2003. DEQ published legal notices in county newspapers on February 25, 2003 and issued a press release on February 26, 2003 notifying the public of Plum Creek's application. DEQ received some public comments on the application at that time (See Attachment 3 for a list of comments and responses). The operating permit application has been modified several times since 2003 to address DEQ concerns and to add as many sites as possible so the environmental review process could analyze the potential maximum number of acres of disturbance over the life of the permit. The application is now complete.

DEQ decided to complete an environmental impact statement (EIS) to analyze the impacts of the many possible sites that could occur on Plum Creek lands over the proposed 20-year mine life because Plum Creek has such large land holdings.

Another legal notice and press release will be issued with this Draft Environmental Impact Statement (EIS) to serve as formal notice of the revised application. Plum Creek has asked to permit sites over the life of the operating permit on up to 15,000 permit acres and to eventually disturb up to 3,600 acres. Currently, 94 sites are proposed on 14,108 acres of which 3,550 acres could be eventually disturbed over the 20-year permit life (Exhibit 1 and Table 1).

When Plum Creek applied for an operating permit in 2003, DEQ started the review process. The March 2004 Supplemental Programmatic EA allowed DEQ to permit 71 of the proposed 94 sites with no further analysis. Some sites met all the General Quarry Permit requirements except that disturbance could not be kept below the maximum five-acre disturbed and unreclaimed threshold at any one time. As a result, DEQ started a supplemental environmental review process to cover the 23 sites that could not be covered by the 2004 Supplemental Programmatic EA for General Quarry Permits. DEQ was ready to issue a Draft EA in mid-2004 when a legal question arose. The MMRA as written at the time would not allow one company to permit multiple sites over a large area under one operating permit. As a result, the March 2004 Supplemental Programmatic EA would not allow DEQ to permit multiple sites for any operator.

To ensure compliance with current regulation, Plum Creek began to apply for individual permits starting with the larger sites on its lands. DEQ received four individual permit applications on December 10, 2004. DEQ began the operating permit review process again. DEQ published legal notices and issued a press release on the first four individual permit applications on December 15-17, 2004. Several additional comments on the sites from the public were received as a result of the legal notices and press releases (See Attachment 3).

The legislature modified the MMRA with House Bill 147 in early 2005 to allow multiple rock-collecting and small quarries under one operator. DEQ started the review process again for the operating permit as originally proposed and subsequently modified in response to agency concerns. Plum Creek has withdrawn the requests for the four other individual site permits.

### **C. Type and Purpose of Action**

Plum Creek proposes to cover the 94 present and future operations on its 1,300,000 acres in western Montana under one individual operating permit. Plum Creek would be the operating permit holder for the multiple rock product operations on its lands for ease of administration by DEQ. Plum Creek would be liable for the reclamation work for the many operators removing rock from its timberlands, and would post the bond to cover the reclamation costs of each operation. Plum Creek would also bond the individual operators to do the reclamation work as part of the Plum Creek/operator contractual obligations to ensure reclamation after completion of the quarrying activities. In this way, the Plum Creek land disturbance would be bonded by DEQ for the reclamation work needed and Plum Creek would also hold a bond on the disturbance. Plum Creek has a contractual relationship with its independent rock contractors. The Plum Creek contract stipulates financial penalties, performance bond requirements and cancellation of agreement if contract requirements are not performed in a timely manner.

As mentioned above, Plum Creek has proposed 94 sites (Figure 1 and Table 1). Currently, 71 of those sites comply with the General Quarry Permit provisions listed above and are permissible under the General Quarry Permit Supplemental Programmatic EA completed in March 2004. This Draft EIS is intended to disclose DEQ's intent to permit these 71 sites under the General Quarry Permit provisions.

Plum Creek estimates that the remaining 23 rock product operations proposed on Plum Creek lands comply with all of the requirements for the General Quarry Permit except they would exceed the maximum five-acre disturbed and unreclaimed at any one time acreage limits sometime during the life of the operation. These 23 sites therefore require supplemental environmental analysis.

This Draft EIS evaluates the potential impacts from the 23 sites that would exceed the acreage limitations analyzed in the Draft Supplemental Programmatic EA produced for General Quarry Permits completed in March 2004 (See Attachments 1 and 2). Although some of the sites may exceed the five-acre unreclaimed disturbance limit, there would be no impacts other than size of the disturbance area over the impacts analyzed in the 2004 Programmatic EA. If any site proposed by Plum Creek does not comply with the other requirements of the General Quarry Permit, as listed above in Section VI. A, Plum Creek would be required to apply for another individual operating permit and DEQ would complete the application and review process for that site individually.

The 23 sites that would exceed the acreage limitations under the General Quarry Permit provisions are shaded gray in Table 1. Maps, baseline descriptions and wildlife evaluation forms for the 23 sites that this Draft EIS specifically addresses are included in Attachment 4.

DEQ must decide whether to approve the Applicant's Proposed Plan (See Section VII), Deny the Applicant's Proposed Plan (the No-Action Alternative) or approve the Applicant's Proposed Plan with Agency Modifications. This Draft EIS is tiered to the Supplemental Programmatic EA produced for General Quarry Permits in March 2004 (See Attachments 1 and 2).

Plum Creek proposes that this rock product operating permit last 20 years. During the life of the permit, Plum Creek predicts that the sites contracted would total a maximum of 15,000 permitted acres. Within these 15,000 permitted acres, Plum Creek anticipates a maximum of 3,600 acres would be actually disturbed by rock product operations over the life of the permit. With aggressive concurrent reclamation, the maximum unreclaimed disturbance at any one time would be less than 800 acres. Most unreclaimed disturbances within 71 of the individual rock product sites would be held to five acres or less as required by the General Quarry Permit. The 23 remaining sites that exceed the five-acre unreclaimed disturbance limit could be permitted after a Final EIS is completed if approved by DEQ.

**Disturbed acres on sites that exceed the five-acre unreclaimed disturbance limit would be reclaimed as rock product operations end.**

**Exhibit 1 lists the 94 sites proposed to be covered by this operating permit. Table 1 presents a summary of each currently identified site proposed in the operating permit application. Plum Creek feels that the operating permit has identified most possible sites that could be operated on its lands. Additional sites could be added over time as permit amendments or minor revisions, if the sites complied with the General Quarry Permit five-acre unreclaimed disturbance at any one time requirement. If new proposed sites exceed the General Quarry Permit five-acre unreclaimed disturbance at any one time requirement, DEQ would have to complete a supplemental environmental analysis to comply with MEPA. If the number of permitted acres eventually exceeds 15,000 acres, then Plum Creek would have to apply for amendments and revisions to the operating permit.**

**All sites proposed to be added over the life of the permit would be reviewed for the required baseline information to ensure the sites comply with the other General Quarry Permit requirements. For operations that do not comply with any of the other General Quarry Permit requirements, Plum Creek would have to apply for individual operating permits or the individual operators could apply for SMESs.**

**New sites would be inspected by DEQ and would be bonded before being added to the operating permit. A notice of bond release for sites that are reclaimed over the life of the permit and ready for bond release would be published pursuant to MMRA requirements. The operating permit reclamation bond would be reviewed every five years as part of the MMRA-required five-year bond review process.**

**Plum Creek would inspect each site annually to ensure that it continues to comply with the General Quarry Permit requirements. Exhibit 1, Table 1, the Individual Site Maps, the Site Baseline Description pages and the bond for each site would be updated annually in the annual report to DEQ to keep the permit current.**

**Operationally, Plum Creek would contact DEQ when a new operation is proposed for inclusion in the permit. DEQ would inspect the site, complete a site inspection and checklist environmental assessment form (See Attachment 5) and ensure that the site meets the requirements of Plum Creek's operating permit. In each annual report, Plum Creek would provide updated exhibits for the Operating Permit showing how many sites are active, acres that have been disturbed, and acres that have been reclaimed. The annual report would show which sites were added to the permit over the past year as revisions or amendments. The annual report would show which old sites have been reclaimed and are ready to be removed from the permit. Bond release requests would be published to remove bond from disturbed acres that have been reclaimed per MMRA requirements. Bond amounts would be reviewed for each site annually.**

## **VII. PROPOSED PLAN**

### **A. Affected Environment**

#### **1. Land Ownership**

Generally, Plum Creek owns the adjacent property and controls the surface land use rights within one-half mile of most sites within the proposed permit. Plum Creek owns the rights to the rock, sand and gravel on the properties. Site-specific details on surface land ownership are included in the permit application in Appendix K. This appendix was used to develop a mailing list for this Draft EIS. Site-specific land ownership would be updated in the annual report to DEQ. See Attachment 4 for the 23 sites being reviewed in this Draft EIS. The maps in Attachment 4 show the surrounding land ownership.

#### **2. Quarry Baseline Information**

All 94 proposed sites and those to be added by revision or amendment during the life of the permit would be inspected and reviewed for baseline information to ensure the sites comply with the operating permit requirements. The operating permit would be updated with new individual site maps and narrative information in each annual report. Plum Creek would inspect all sites annually. DEQ would inspect as many of the 94 sites as possible annually.

#### **3. Location and Topography**

Access to all sites would be by existing or new access roads. These access roads would remain unreclaimed for future timber management purposes by Plum Creek. The main access route to each site is shown in the permit application on the individual site maps.

Within each site there may be “quarry development roads” to access rock within the disturbance area. The quarry development roads would be recontoured and reclaimed upon completion. The quarry development roads would change over time and would be updated in the annual report. Table 1 summarizes the legal descriptions for the sites and the distance each site is located from the nearest town. Maps for each site in Attachment 4 show the topography for the 23 sites being evaluated in the Draft EIS. The topography is generally moderate to steep on these rocky sites.

#### **4. Present Land Use and Past Quarrying Disturbance**

The primary present land use is for timber production and management. Some sites within the proposed permit area may include livestock grazing and recreational

opportunities for the public. Some sites have been operating under a SMES or have been allowed to operate by DEQ if they complied with the General Quarry Permit requirements and would be expanded pending approval under this operating permit. The sites would be reclaimed to timber production and management, wildlife, livestock grazing and recreation uses.

## **5. Water Wells**

The site-specific maps in the application show if any water wells exist within 1,000 feet of any of the proposed sites. No water would be used at any sites except for dust control or rock drilling, if needed. An on-site examination and a review of the Montana Department of Natural Resources and Conservation (DNRC) water well database would be performed to determine whether water wells are present on proposed rock product sites (<http://nris.state.mt.us/interactive.html>).

## **6. Water Table**

Most sites are located in mountainous areas. The water table would not be intercepted by any quarry or rock-collecting activities.

## **7. Surface Water**

For rock recovery under the operating permit, the rock must be obtained from a dry site. Surface waters would be 100 feet or more from the sites. No riparian areas or wetlands would be disturbed as a result of rock-collecting activities under the operating permit. Fisheries would not be affected and the probability for the occurrence of amphibians would be limited due to the distance from water. On sites close to surface water, Plum Creek would implement forestry best management practices (BMPs) (MSU Extension Service 2001) to limit sediment and erosion impacts to surface water. If needed, Plum Creek would also describe how the site complies with streamside management zone (SMZ) requirements required for forestry under the Montana Streamside Management Act. Plum Creek has committed to implement these SMZ requirements for the rock picking operations on its lands.

## **8. Soil Material**

Most sites are below rock outcrops on talus slopes and on boulder fields. Soil development would be highly variable and is shallow or non-existent over rock. In those areas where soil exists, soil would be salvaged and stockpiled. Long-term soil stockpiles would be revegetated with an interim seed mix to minimize dust, erosion and weed establishment. Soil salvage would be done within the safe and practicable limits of the equipment being used.

## 9. Vegetation

The majority of the lands owned by Plum Creek are forested, have been logged in the past and are managed for timber production. The major forest types include Douglas fir, ponderosa pine, lodgepole pine, western larch, and Engelmann spruce. Other land types include lands dominated by grasses, shrubs, or rocky soils. Noxious weeds are present at most sites, typically invading through roads and skid trails made during past logging activities. Plum Creek works with local counties via cooperative noxious weed management plans to control weed populations. Noxious weed control plans for the counties with current operations were submitted with the operating permit application.

Plum Creek would query the Montana Natural Heritage Program's (MNHP) sensitive plant species database annually to locate federally T&E and globally critically imperiled (G1) and globally imperiled (G2) plant species on company lands. The G1 and G2 species ranking describes plant species that are critically imperiled or imperiled because of extreme rarity or because of some factor(s) of their biology making them especially vulnerable to extinction. A Plum Creek land management computer program called the Sensitive Area Warning System (SAWS) would notify foresters and managers if any of these sensitive species were located in areas planned for rock product activities. If a sensitive species is present in the database and/or is revealed by site inspection, management plans would be developed to protect and maintain the site. More information on these Plum Creek policies and plans is presented in the operating permit application in Appendix F.

The only federally listed T&E plant species in Montana expected to inhabit Plum Creek timberlands is water howellia (*Howellia aquatilis*), an aquatic plant found in the Swan Valley. Potential adverse impacts to water howellia from rock product development are not expected since no rock product sites would be within 100 feet of surface water. Plum Creek's implementation of the SMZ requirements under the Montana Streamside Management Act, BMPs, and other conservation measures in its Native Fish Habitat Conservation Plan (HCP) would also maintain water quality surrounding water howellia sites. The permit application contains more information in Appendix F on streamside BMPs, Plum Creek's Native Fish HCP and Plum Creek's specific management plan for water howellia.

The rock product sites would be inspected to evaluate the presence of any unique habitat features and to describe the general vegetation characteristics. No T&E plant species or State of Montana (G1) and (G2) sensitive plant species have been identified to date at any of the permit rock product sites by inspection and by using the MNHP database.

Reclamation at rock product sites would include recontouring of the disturbed areas including quarry development roads, returning stockpiled soil over non-rock covered areas to facilitate revegetation, and reseeding.

## 10. Wildlife

Various wildlife use Plum Creek land in Montana, which includes a variety of habitat types. Rock-dominated habitats are abundant in northwestern Montana due to the mountainous terrain, geological history, and glaciation. The proposed rock-dominated quarry sites do not represent unique habitat features compared to other surrounding rock features.

Plum Creek would query the MNHP database annually to locate T&E and G1/G2 sensitive wildlife species on company lands. The SAWS Plum Creek land management computer program would notify foresters and managers if any of these species were located in areas planned for rock-collecting activities. If a species is present on the database and/or is revealed by site inspection, management plans would be developed to protect and maintain the site. More information on Plum Creek policies and plans for wildlife species is presented in the permit application in Appendix F.

Currently, federally listed T&E animal species in areas of Plum Creek ownership in Montana include the grizzly bear (*Ursus horribilis*), Canada lynx (*Felis lynx*), gray wolf (*Canis lupus*), bald eagle (*Haliaeetus leucocephalus*) and bull trout (*Salvelinus confluentus*). G1/G2 species include two invertebrates, the carinate mountainsnail (*Oreohelix elrodi*) and the magnum mantleslug (a.k.a. spotted slug, *Magnipelta mycophaga*).

None of the federally listed T&E wildlife species is known to exist at any of the rock product sites. Although some of these species like grizzly bears or Canada lynx may use areas with rock features, none of these federally listed species of concern is known to depend on specific rock habitats or is an obligate user of this habitat type. The carinate mountainsnail has been found at only three sites in Montana, all in the Swan Valley in moist rocky areas and/or riparian areas. Potential rock quarry sites in the Swan Valley would be investigated for the presence of the carinate mountainsnail prior to development.

If a federally listed T&E wildlife species is located at a specific rock product site and would be impacted by the rock product operation and/or development, the General Quarry Permit would no longer apply. Development of the individual site would cease until the operator could apply for an individual operating permit and a supplemental environmental analysis could be completed and mitigation measures developed as needed.

In addition, Plum Creek has committed to developing special management plans at sites where a G1/G2 species is discovered or known to exist, including mitigation measures as needed. A magnum mantleslug was observed at one proposed rock product site. NatureServe (an organization linked to the MNHP) classifies this species as a G2/3 species. Plum Creek has developed a special management plan for the site. No other current rock product sites were found to contain any G1 or G2 species.

Plum Creek would reclaim sites to approximate adjacent similarly functioning rock habitats. In some cases, development of rock product sites may provide some new wildlife benefits by exposing rock habitat that was previously covered by soil, creating interstitial rock cracks and crevices used by wildlife.

Plum Creek has existing environmental policies and management plans that rock product sites would adhere to during development. In addition, several mitigation measures would be implemented during rock product site development that would minimize the effects to wildlife using the area. These include:

- minimizing road building and landings at the rock product site;
- retaining large legacy wildlife trees, snags, and downed logs at the site;
- retaining soil for revegetation purposes during reclamation;
- maintaining some exposed surface rock after reclamation as rocky habitat;
- limiting the total disturbed area by implementing concurrent reclamation of areas no longer needed for site operation.

Plum Creek employs two wildlife biologists and a hydrologist in Montana. These specialists would coordinate with land managers and assess conditions at current and future rock product sites. Plum Creek biologists would visit all rock product sites within the permit area including new areas added over the life of the permit to review potential effects of site development on wildlife.

## 11. Geology

Rock quarried under this plan would consist of various rock types and mineralogies. The rock may be found at or near the surface, such as talus, or in-place such as bedded metasediments, sandstone, schist, shale, limestone, basalt, rhyolite, marble, etc. It may be covered by overburden or exposed as outcrops or scattered rock lying on the earth's surface. The rock or resulting waste has no potential for causing acid rock drainage.

Most of the rock being quarried is from non-acid producing formations of the Belt Supergroup. DEQ geologists have evaluated each site for visible sulfides, iron staining and other effects of chemical weathering on the rocks for the past and present potential for acid generation. If any rock observed appeared to be

potentially problematic, it would be sampled for its potential to produce pollutive drainage. If rock were sampled at any site, the data would be provided in the individual site narrative sheets. Each new site under the plan would be evaluated in a similar fashion.

## **VIII. OPERATING PLAN**

### **A. Soil Material Handling**

Plum Creek commits to have the operators salvage at least six inches of soil from soil covered areas if available and to salvage all soils and overburden from, and at least 10 feet ahead of rock product and waste rock areas.

Plum Creek commits to have the operators handle soil and overburden separately and haul these materials to areas prepared for resoiling or stockpile them separately where they would not be disturbed, contaminated, or lost to erosion. Operators would shape and seed any soil or overburden stockpile that would remain undisturbed for more than one year.

In the case of reclamation to a use that would not require a vegetative cover, operators would concurrently reclaim all soil on site as the alternate reclamation plan is implemented.

### **B. Quarrying**

A new rock product site would be opened or an existing site reopened by removing vegetation, stripping and stockpiling soil for future reclamation use, and removing overburden or waste rock to access the desired rock materials. Generally, the materials to be quarried are rock outcrops and talus slopes. Depending on the product being produced, rock may be removed by various methods from 1) hand picking, 2) drilling and blasting followed by excavation and hauling, 3) ripping with a bulldozer or excavator followed by removal, or 4) drilling and sawing with diamond saws and splitting blocks followed by removal. If blasting would be used, Plum Creek would comply with provisions of the MMRA (Section 82-4-356, MCA) and the Rules and Regulations Implementing the MMRA (ARM 17.24.157-159).

Rock may be sorted, stockpiled, and collected on sites prior to removal. Occasionally, some splitting and/or breaking may be done and rock crushing or tumbling for decorative uses or for producing aggregates may occur. An air quality permit may be required for crushing operations and would be applied for on a site-specific basis. The materials would be accessed by using existing roads or by building new access and quarry development roads with excavators or dozers.

Operators would use a variety of heavy equipment to secure, quarry, sort and load materials. The material would be sorted by size and loaded onto pallets, in bins or in trucks for shipment to staging areas. The materials would be sorted by hand or by using loaders/excavators, or the materials may be sorted through a grizzly or similar device. At the staging areas, the pallets or bins would be loaded onto trucks for shipment. Materials that do not meet the specifications for various rock products would be left in the quarries and used in the reclamation process at closure.

#### **C. Rock-Collecting Sites**

A rock-collecting site would be worked by laborers with hand bars or other hand tools, or with loaders, backhoes, or other similar equipment that would lift rock and stones from the ground surface, or from under thin soil layers, and stockpile or pallet them for removal. These kinds of operations would not generally cause continuous areas of disturbed soil or create open pits or highwalls, and would only disturb the ground the rock had been removed from. In most rock-collecting sites, soil would not be salvaged, because site disturbance would be minimal. Loss of soil by gully erosion of tracks or other careless activities would be monitored and repaired.

Reclamation needs at rock-collecting sites would be evaluated on a site-specific basis. Reclamation may consist primarily of smoothing disrupted ground surfaces, replacing any soil that has been removed and stockpiled, seeding sites where rock has been removed, clearing rock from roads and trails to remain after rock-collecting activities, and grading ruts that may have been caused on roads or fields by equipment.

#### **D. Expected Starting Date of Operations**

If the operating permit were approved, operations under the operating permit would commence in 2006. As mentioned above, DEQ has allowed Plum Creek to begin operations on sites which comply with the General Quarry Permit requirements.

#### **E. Road Construction**

Access and quarry development roads are described in Section VII. 3. Some roads may have the required Mine Health and Safety Administration (MSHA) berms during operations and would be seeded for weed control during operations. The berms may remain as part of the future timber operations at closure. Upon completion of rock product activity, the access roads would remain as a part of the Plum Creek transportation plan for timber management and would comply with forestry BMP standards.

## **F. Water Management and Protection**

The operators would take appropriate measures to protect surface water and groundwater from deterioration of quality and quantity that could be caused by rock collecting and reclamation activities. BMPs for erosion and storm water controls would be utilized, including diversion of runoff water from undisturbed ground away from the rock-collecting site and collection of storm water from within the disturbed areas into ponds without discharge to surface waters. No stormwater would leave the sites.

No water would be used at any site except for dust control, tumbling or rock drilling. All activities on Plum Creek ownership comply with state and federal laws and regulations dealing with water quality and sediment control for storm water runoff. BMPs and Plum Creek's Native Fish HCP requirements would be applied in all cases.

The operators would inspect and maintain all fuel storage tanks parked or set on site to prevent spillage, immediately retrieve and properly dispose of any spilled fuel or contaminated materials, and report any spill that reaches state waters or that is greater than 25 gallons to DEQ. Plum Creek would require all contractors to maintain hazardous material spill kits on site.

Operators would keep all equipment, facilities, and disturbances at least 100 feet from typical high water marks of drainage ways, except at approved crossings.

## **H. Dust Management**

With the exception of crushed aggregate sites, dust is not anticipated to be a problem on the rock product sites. Generally, crushed aggregate projects include, as part of the project, dust control measures including air quality permits if needed. If dust control were needed on the sites, a water truck or other dust suppressant would be used.

## **I. Rock Stockpiles**

The operators would consolidate excess materials into stockpiles in an accessible location near an access point or incorporate them into the reclamation plan.

## **J. Solid Waste Disposal**

The operator would prohibit on site disposal of solid wastes unless an appropriate solid waste management system license is obtained from DEQ.

## **K. Public Safety**

In the majority of cases, access roads to each site are closed to the public by a road closure gate. Recreationists on Plum Creek land can access by walking. Creation of new highwalls at rock quarry sites could create a safety risk. In those cases where a hazardous feature such as a highwall exists, it may be necessary to restrict access to the area above the site. Plum Creek commits to mitigate these potentially hazardous areas during or at closure of operations in consultation with DEQ. Hazardous areas that require these measures would be listed on the individual site maps.

## **L. Socio-economic Information**

Independent contractors accomplish all rock-collecting on Plum Creek lands. The proposed quarrying and rock-collecting activities are distributed across five counties. The rock product sites tend to be concentrated away from population centers and provide jobs near areas experiencing growth. The quarried rock helps satisfy the demand for decorative rock and building stone locally and nationally.

Plum Creek has not imposed any contractual limitations on the individual operators for noise, dust, traffic, or hours of operation that may affect adjacent landowners. Plum Creek would work with the operators to adjust operations to minimize impacts to adjacent landowners if complaints arise.

## **IX. RECLAMATION PLAN**

### **A. Post-quarry Land Use**

When quarrying is complete on a site, the area would revert to timber production and management. In these cases, access roads would remain in place and the quarry development roads and all other disturbed areas would be reclaimed by recontouring the disturbed exposed rock covered areas and covering other areas with salvaged soil and seeding.

### **B. Grading**

Quarries would be reclaimed by scaling back highwalls, if necessary for stability and safety. Rock highwalls would be left as rock faces blending in with the surrounding topography. If quarrying results in upslope raveling of scree or loose rock, that destabilized slope would be revegetated or otherwise stabilized. The quarry floor would be graded, covered with soil and revegetated. All cutslopes and/or highwalls in unconsolidated materials within each permitted site would be graded or sloped to conform to the surrounding or adjacent topography. Other areas disturbed but not

quarried would also be revegetated. Overburden and waste rock, if present, would be graded to conform to natural topography, against the quarry highwall or as a mound or slope. Coarse rock would not be revegetated but would remain as a rubble or scree feature. Overburden that could support vegetation, or rock that could be covered with salvaged soil, would be revegetated. Any quarry that is below the level of the adjacent ground would be sloped to conform to the surrounding or adjacent topography during final site reclamation.

### **C. Ripping, Soil Material Replacement and Revegetation**

The operators would establish a vegetation cover capable of supporting the post-quarrying land use. Any compacted area would be ripped to a depth of 6 to 16 inches, if needed to break up the compacted layer. If available, up to 6 inches of stockpiled soil would be respread to cover the non-rock covered areas and then the area would be seeded. Plum Creek would leave all access roads in place unless otherwise stated in the individual site plan.

Seeding would take place concurrent with resoiling efforts. Straw mulch or other agency-approved mulch(es) may be used and would be considered on a site-specific basis. Resoiled sites would be broadcast seeded with the following seed mix:

Hard Fescue	15%	Napier Orchardgrass	10%
Timothy	15%	Canada Bluegrass	15%
Annual Ryegrass	20%	Oahe Wheatgrass	5%
Regar Bromegrass	5%	Alsike Clover	10%
Ladak Alfalfa	5%		

An application rate of 40 pounds grass seed per acre would be used. After one winter, a follow-up inspection would be made to ensure adequate vegetation establishment has occurred. If necessary, a second application would be made. This grass mixture was developed by Plum Creek to vegetate a wide variety of growing sites. The clover and alfalfa are included in the proposed seed mix because they are nitrogen fixers and they make nitrogen available to the other species. Alternate seed mixtures may be developed if necessary to vegetate dry harsh sites.

### **D. Weed Control**

The operator would ensure that all seed is noxious weed free and would control noxious weeds as specified in the respective county noxious weed district management plan. Plum Creek has approved county noxious weed control plans. These plans cover all the counties in which rock product operations currently occur. Plum Creek commits to develop additional plans in other counties when new rock product sites are proposed. During weed control, spot spraying problem areas would be used. Spot spraying of noxious weeds would limit weed infestations.

## **E. Road Reclamation**

All access roads used for future timber management purposes would remain unreclaimed and meet BMP standards and be left in a self-maintaining condition. Quarry development roads, needed solely for rock removal, would be recontoured and reclaimed upon completion of rock product excavation. Road surfaces would be ripped, resoiled, and seeded.

## **F. Site Protection and Management**

The operator would maintain adequate site protection on seeded areas for two complete growing seasons, or until reclamation is achieved, whichever is longer. Plum Creek commits to weed control, controlling erosion, repairing erosion rills and gullies and reseeding areas as necessary on the rock product sites until DEQ releases the bond.

## **G. Concurrent and Final Reclamation**

The operator would keep reclamation as concurrent with rock product operations as possible. Plum Creek would seed all soil stockpiles and road berms as they are constructed. For those sites that are inactive, the roads would be closed and any disturbed soil would be seeded in the interim period. Plum Creek would grade, resoil, and seed any area no longer needed for rock product related activities within one year of the cessation of such activities on that area. Because of the nature of the many sites in the operating permit, Plum Creek commits to reclaim all disturbances within 2 years of abandonment or completion of quarrying on a site as required by the MMRA. Plum Creek commits to complete final reclamation by the date given above or apply for approval to complete reclamation by a later date.

## **X. OTHER COMMITMENTS**

### **A. Archaeological and Historical Values**

Plum Creek has notified the State Historic Preservation Office (SHPO) and requested a search for cultural sites on all 94 proposed operations. The operator would provide appropriate protection for archaeological and historical resources found in the permit area. If a significant site is found within the rock product area and could be impacted by the specific rock product operations, the General Quarry Permit would no longer apply. Development would cease until an application for an individual site operating permit could be submitted, an environmental analysis could be completed, and mitigations developed if possible. If a site were found, Plum Creek would commit to route operations around a site of discovery, promptly notify SHPO and leave the site undisturbed until proper evaluation is made.

### **B. Personnel Informed**

Plum Creek would inform all necessary on-site personnel, including subcontractors, of the commitments made herein.

**XI. DRAFT ENVIRONMENTAL IMPACT STATEMENT**

**N = Not present or no impact would occur.**

**Y = Impacts may occur and are explained under Potential Impacts.**

**NA = Not Applicable**

<b>IMPACTS ON THE PHYSICAL ENVIRONMENT</b>	
<b>RESOURCE</b>	<b>[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
<p><b>1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?</b></p>	<p><b>[Y]</b> The only geology and soil impact difference for the 23 sites shaded gray in Table 1 from the Supplemental Programmatic EA for the General Quarry Permit (Attachments 1 and 2) is that more than five acres would be disturbed and left unreclaimed on the sites until closure.</p> <p>Based on site inspections, DEQ has determined that the rock proposed for quarrying has no potential for acid rock drainage. If any acid producing rock would be encountered, Plum Creek would have to apply for an individual operating permit for that site.</p> <p>The proposed quarrying activities would disturb rock outcrops, talus slopes and boulder fields on Plum Creek land and remove vegetation including trees on the sites. This would create a disturbance that would result in a visual contrast with adjacent lands by exposing fresh unweathered rock surfaces. Reclamation activities including regrading concurrently and at closure, resoiling areas that had soil before rock product operations started, and revegetating with forbs and grasses on soil-covered areas would minimize the visual contrast with adjacent lands as required by the MMRA and would reduce those impacts to acceptable levels. The reclaimed areas would look disturbed for a long period of time. Some trees and shrubs would reestablish on the rocky sites over time. This disturbed look is an unavoidable impact of rock quarrying activities in rock product locations visible from nearby roads and adjacent higher elevation areas. For more discussion on visual impacts see Section XI. 8 below.</p> <p>Improper rock product activities could create unsafe conditions below rock outcrops and talus slopes. MSHA regulates mine safety issues during operations. DEQ would determine the potential for rock raveling and slumping affecting adjacent properties and those owned by Plum Creek. DEQ would review reclamation plans for each site</p>

## IMPACTS ON THE PHYSICAL ENVIRONMENT

and incorporate some buttressing of slopes at closure to minimize sloughing as needed on a site-by-site basis including Plum Creek lands. Plum Creek has committed to work with DEQ to limit these impacts.

Quarry and rock-collecting activities would remove rocks of varying geology exposed at each site. This is an unavoidable impact of the proposed operations. This is a direct and irreversible impact of the rock products industry.

Up to 3,600 acres of rock covered land could be impacted over the life of the permit. The largest number of acres to be disturbed on any one site would be 135 (See Table 1).

Disturbance of native soils is an unavoidable impact from rock collecting activities. Soil is limited in the rock product sites. Soil, especially in staging areas, would be salvaged where feasible and placed in stockpiles to limit compaction and erosion. Plum Creek has committed to rip compacted areas at closure. The soil would be used to reclaim as much of the quarry and staging area as possible to facilitate future revegetation, timber production and to limit noxious weeds.

DEQ expects minimal offsite impacts to soils from these operations, even with a maximum of 800 acres disturbed and unreclaimed at any one time, because of their size, scattered locations, and rocky nature. The largest single site disturbance expected on any one site over the 20-year life of the permit would be 135 acres as mentioned above. Plum Creek has proposed standard forestry BMPs to limit offsite impacts from stormwater, erosion and sediment. BMPs have been shown to be over 90% effective (DNRC 2004).

*Cumulative Impacts:* DEQ believes that the potential geologic and soil impacts from the 94 sites that could operate unregulated under SMESs could create cumulative impacts greater than the impacts resulting from Plum Creek and DEQ oversight of the independent operators under an operating permit.

Even with the potential for 3,600 acres to be disturbed over the 20-year life, the permit sites would be scattered and not more than 800 acres would be disturbed and unreclaimed at any one time.

Cumulatively, the 3,600 acres that could be disturbed coupled with the population increase and continued

**IMPACTS ON THE PHYSICAL ENVIRONMENT**

development of private lands in western Montana for subdivisions and private businesses would change the looks of many areas over the permit life. These areas would change from historically logged and reforested areas with relatively undisturbed geology and soils. Some additional logging would also occur over 20 years. The area would change to a more suburban looking forested fringe dotted with rock product industry disturbances, fresh road cuts for new housing developments, and new homes and businesses. This is an unavoidable impact of growth in western Montana without zoning to control private land use.

**2. WATER QUALITY, QUANTITY AND DISTRIBUTION:** Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?

[Y] The rock product sites must meet certain parameters to qualify for the General Quarry Permit. There must not be any impact to any wetland, surface water or groundwater resource. All sites must be at least 100 feet from surface water. There must not be any water impounding structures constructed on site other than for storm water control. The only water use on any site would be limited water use for dust control along site roads and for water needed to drill blast holes. The sites must not remove rock products from below the water table. There must not be any potential for the rock to produce any acid or other pollutive drainage from the site. Fortunately, the rock products in the area are weathered Belt formation rocks and have no potential to leach metals and produce acid rock drainage.

Only minimal water quality impacts would result even though 23 of these rocky sites would have more than five acres disturbed and unreclaimed at any one time during operations. Impacts would be the same as analyzed in the Supplemental Programmatic EA for the General Quarry Permit (Attachments 1 and 2). Groundwater impacts would be limited to impacts from nitrates if ammonium nitrate (ANFO) is used as a blasting agent or from fertilizers used to enhance revegetation success, from petroleum products resulting from accidental spills from equipment and vehicle fuel tanks, hydraulic lines, etc., and from the use of herbicides used to control noxious weeds. Surface water impacts could occur from sediment production from traffic on access roads.

All sites are permitted to use blasting as needed to remove rock products from rock outcrops. Blasting used in rock product operations is not the same as blasting used in typical hard rock mining operations. Blasting destroys the

## **IMPACTS ON THE PHYSICAL ENVIRONMENT**

rock integrity and creates multiple fractures if excessive ANFO is used. This type of blasting would render the rock unusable for masonry and other building stone purposes. In the rock products industry, the rock is simply loosened by using minimal blasting. This also limits impacts from noise and overuse of ANFO.

No sites are currently crushing rock products. Some sites may use blasting in the traditional hard rock mining sense to create crushed landscape rock products or aggregates for road and home building needs in the future. In these cases, the impacts from blasting to water quality would be increased. DEQ would review the location of rock product sites that propose the use of traditional blasting techniques to produce rock products for crushing. If the sites are near surface water, wetlands or private residences with water wells, Plum Creek would have to monitor local homeowners' wells for nitrates, install shallow water monitoring wells and sample the wells periodically for nitrates (See Section XII. C, Modification 1).

Currently, wells are located within 1,000 feet of Gunsight Rock Site #8, Redgate Yard Site #61, and Loon Lake Rock Site #68. Blasting could be used at the Gunsight Rock Site #8 and Loon Lake Rock Site #68. No blasting is proposed at Redgate Yard Site #61 since it is a staging and loadout area only. Currently, DEQ does not see the need for any monitoring wells on any proposed Plum Creek site.

In the future, crushing could be proposed and monitoring wells might be needed. If nitrates were observed in any monitoring wells above baseline levels, DEQ and Plum Creek would review blasting operations and propose a solution to the problem. Blasting would cease on the site immediately. Plum Creek would have to apply for an individual permit on the site and a groundwater quality protection plan would have to be reviewed and approved before the site could resume blasting.

Impacts would be limited from fertilizer use if the operators applied fertilizers at recommended rates.

Petroleum product spills are largely avoidable but they do occur whenever equipment use is required and fuel must be delivered to remote areas. Plum Creek would require hazardous materials spill kits as part of its contractual agreements with rock product operators (See Section VIII. F).

## **IMPACTS ON THE PHYSICAL ENVIRONMENT**

**DEQ and Plum Creek would require reporting and cleanup of spilled petroleum based products and contaminated rocky soils.**

**DEQ and Plum Creek inspectors would look for areas on sites where petroleum spills have occurred. After review of the spill on a site-specific basis, the contaminated materials would have to be removed to another disturbed area that could be regularly tilled during quarry operations. This landfarming or tilling helps utilize natural bacteria to destroy the petroleum products over time. If this practice would not be feasible on site, the contaminated materials would have to be hauled to a licensed landfill.**

**If groundwater or a spring were exposed during operations, the quarry would no longer be allowable under the General Quarry Permit. Plum Creek would be obligated to apply for an individual operating permit for the site and supplemental review would be needed to control impacts to groundwater.**

**Bridges and culverts on new access roads would create some sediment impacts during construction and runoff from the subsoil and geologic materials used for road surfacing over time. Stormwater runoff from access roads carrying sediment would be controlled with water quality BMPs (MSU Extension Service 2001). Plum Creek is only proposing 2,000 feet of new access road to develop the proposed 94 sites. Short stretches of new roads would be needed to access the North Banana Rock Site #50 and Locust 6 Site #90. These roads would not cross any stream.**

**Plum Creek must comply with SMZ requirements on any of its roads near streams whether roads are new or preexisting. The United States Fish and Wildlife Service (USFWS) monitors Plum Creek's compliance with Plum Creek's Native Fish HCP. If a road were proposed near a stream, Plum**

**Creek would have to obtain a 310 permit from the local County Conservation District and install a culvert to cross the stream.**

**Quarry development roads to access rock products would have limited sediment production potential because of the rocky soils in the area. These roads would be recontoured and reclaimed at closure.**

## IMPACTS ON THE PHYSICAL ENVIRONMENT

Some sediment production is an unavoidable impact of new road construction and maintenance activities over time. Special considerations to control sediment would be used in drainages with bull trout and westslope cutthroat trout because of Plum Creek's Native Fish HCP.

Plum Creek has committed to noxious weed control on the proposed rock product sites. Herbicides would be used to control noxious weeds on the sites. Plum Creek has approved noxious weed control plans for the counties where sites are currently operating. If herbicides were applied properly and not in areas close to groundwater and surface water, impacts would be limited to acceptable levels. Plum Creek hires licensed weed control services or the contractor hires licensed weed control services for spraying weeds on the rock product sites. Plum Creek is a member of a weed cooperative in Lincoln County with DNRC and the US Forest Service that jointly does weed control along access roads.

Water quantity impacts would be minimal from the proposed operations. No water is proposed for use in the rock product sites except to control dust along roads or for drilling fluids if blasting is used on the sites.

*Cumulative Impacts:* Sediment production would increase in some areas near the proposed rock product sites due increased traffic from the rock product sites and continued subdivision and road building activity on private lands in the five county area over the proposed 20-year permit life. Plum Creek uses sediment reduction practices called BMPs (MSU Extension Service 2001) on its private roads especially near streams that comply with standard forestry BMP requirements. BMPs have been shown to be over 90% effective (DNRC 2004).

Plum Creek has no control of sediment reduction practices on other roads not owned by Plum Creek used to access the sites and haul rock products once the operators leave Plum Creek lands.

Some petroleum-based product spills would occur from both the rock product sites as well as from equipment needed to construct new roads and housing in these areas over the years. The distance the rock product and home sites are from surface water and groundwater would limit impacts.

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**Nitrate impacts from blasting would be limited on most of the proposed rock product sites. Monitoring would be required in surface water or groundwater downgradient from the rock product sites, if DEQ believes there is a potential to contaminate water. If other developments such as subdivisions are also occurring in the drainages where rock product sites occur, such as in the Thompson Chain of Lakes area, then additional impacts to water from septic tank drainfields and lawn fertilizers could occur. In these cases DEQ would recommend that Plum Creek monitor water quality in area wells to document nitrate levels over time and try to identify the source of potential impacts from nitrates. If blasting use is limited, septic tanks are installed and used properly, and lawn fertilizers are used properly, nitrate problems should be limited to acceptable levels.**

**Herbicide use would continue in all lands in western Montana trying to limit the spread of noxious weeds over the 20-year life of the permit. This is an unavoidable impact of trying to control existing and new populations of noxious weeds (See Section XI. 4 below). Impacts from use of herbicides on rock product sites would be limited by their distance from surface and groundwater and the lack of weeds on the rocky portions of the sites. Herbicide use in new subdivisions and along access roads would continue to increase the potential to impact water quality. Plum Creek, the Forest Service and other landowners have started to use biological controls of noxious weeds. Plum Creek has used biological control insects to try and control tansy ragwort and spotted knapweed in specific areas. This is one way to limit the continued use of herbicides year after year in western Montana.**

**Water quantity impacts from the rock sites would be limited to water used in water trucks to control dust on the sites if needed and to provide drilling fluids if blasting is proposed on the sites. Water would be used by local landowners to water their areas around their homes to grow grass and other landscaped areas and provide a firebreak. Some water may be removed from the surrounding lakes to fill pumper trucks during general fire suppression activities in the surrounding forests. Water removal typically occurs using suction hoses from pumper trucks and from buckets used by helicopters. Water removal for fire suppression is considered essential to limit other impacts to the lakes from impacts after fires such as erosion and sediment production.**

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**3. AIR QUALITY:** Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?

**Y]** Minimal changes in overall air quality would result from the many sites on Plum Creek lands. The rocky nature of the sites would limit dust impacts from the sites. Plum Creek has committed to use water trucks to control dust if necessary in the rock product sites. Plum Creek can impose controls for dust if needed along its privately owned roads.

Some sites may have crushing operations in the future to produce crushed rock products. Crushing operations would be required to have individual air quality permits and to control dust to air quality standards in their permits.

The most important dust impacts from most rock product sites would be fugitive dust from traffic on access roads to the sites. This is a common problem with any kind of development in rural Montana along gravel roads. Snow cover along the access roads would be covered with dust along the public roads as is common throughout any area in Montana with gravel roads in the wintertime and especially in the spring as snow begins to melt. Vegetation along gravel roads in the summer also becomes covered with dust. This is an unavoidable impact of traffic on gravel roads.

No dust control is proposed on the public roads outside the sites. Logs could be hauled on the same roads at the same time if logging is occurring in the same general area. It is expected that each rock-product site would have 2-3 pickup trucks per day while the site is used. The sites would be typically operated from May to November. Some times the sites would not be used at all for weeks depending on markets, etc. While the sites are being worked, Plum Creek would expect the contractors to work an average of 8 hours per day, and five days per week unless a major contract needs to be filled. Trucks hauling rock products would be on the roads after they are loaded. Plum Creek predicts up to one truckload of rock products per day per site.

DEQ has little control over dust off the sites once the traffic meets a public road. DEQ has met with local residents and operators in the past to try and get voluntary dust controls in place on public roads. DEQ would be glad to do this if a dust issue results again near a landowner along access roads to the rock product sites. DEQ would work with Plum Creek to develop traffic control plans to reduce speeds and try to encourage stipulations to Plum Creek's contract with operators to control dust using water trucks, etc. near

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residences along Plum Creek owned access roads.

For nuisance dust along access roads not owned by Plum Creek, DEQ and Plum Creek would consult with road owners to try and address dust concerns close to residences, such as speed controls or use of dust suppressants. DEQ and Plum Creek have no control over dust management practices on other publicly owned roads. Plum Creek and its rock product operators have a right to use the public roads just like recreationists, local landowners and managers as long as they follow speed limits and observe seasonal road closures.

*Cumulative Impacts:* Road dust has always been an issue in rural areas across Montana on unpaved roads. Rock product activities would increase traffic and dust over the 20-year life of the permit. As subdivisions, other road building activities and recreation increase in western Montana over the life of the permit, fugitive dust and dust issues would continue to increase. This is an unavoidable impact of growth in western Montana. As traffic, dust, and sediment impacts increase, eventually some rural roads would be paved. This is a typical pattern observed in growth areas in rural areas across the western US.

**4. VEGETATION COVER, QUANTITY AND QUALITY:** Will vegetative communities be significantly impacted? Are any rare plants or cover types present?

[Y] Vegetation on most sites is scattered because of the rock outcrops, talus slopes and boulder fields. Most of the area surrounding the sites has been logged in the past and the sites are regenerating forested stands of vegetation. Some isolated pockets of timber in the rocky areas have not been logged in the past. Some large legacy trees exist on the proposed rock sites. Plant communities are dominated by scattered native tree, shrub, forb, and grass species. Noxious weeds have been documented on most of the sites as a result of past land management activities. Noxious weeds are present along most access roads and are spreading in the areas as in the rest of western Montana.

The limited tree and shrub dominated patches of vegetation on most rock product sites would be destroyed by rock picking activities. Some of the large legacy trees on sites would be preserved for seed trees and wildlife use.

No T&E plant species have been found on any proposed sites. Plum Creek has proposed to voluntarily develop management plans to limit potential impacts to G1/G2 plant

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species found on its property at the sites. Currently, no sites have been identified with G1/G2 plant species. DEQ has no regulatory authority to limit impacts to sensitive plant species on private lands. DEQ encourages operating permit holders to limit impacts to these species if possible on private lands.

The potential exists to impact some US Forest Service sensitive plant species growing in western Montana, such as Idaho goldenweed (*Happlopappus aberrans*), western boneset (*Eupatorium occidentale* or (*Ageratina occidentale*) and spiny green-bush (*Glossopetalon nevadense*) (Plant species names after Hitchcock, C. L. and A. Cronquist. 1973. *Flora of the Pacific Northwest*. University of Washington Press. Seattle, WA. 730 pages.) These species have been listed as threatened by road construction, rock quarry and rock climbing activities in a recent survey conducted to update threats to sensitive species listed by the Montana Natural Heritage Program. The survey was conducted for a Plant Conservation Conference held on February 28 and March 1, 2006 in Helena, MT (M. Mantas. The Nature Conservancy. Personal communication. March 2006). None of these plants are listed as G1 or G2 sensitive plant species (MNHP 2003).

Idaho goldenweed is a member of the aster family and grows in rock crevices. Western boneset is a member of the aster family and grows in rocky uplands. Spiny green-bush is a member of the staff-tree family and is related to more common shrubs such as *Euonymus* and *Pachistima*. It grows on rocky canyon walls.

There is potential for disturbance to these species to occur as the need for landscape and building rock increases. Effects to these species may have already occurred in recreational rock climbing areas as rock is "cleaned" by climbers form better holds or anchor points. There is also the potential that populations of these species have been adversely impacted by past road building. There is a smaller risk of impacts occurring on any new roads as long as such projects are surveyed prior to construction.

DEQ will work with Plum Creek biologists to help them survey for these species and try to avoid impacts to these species.

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Disturbance of native plant communities in these rocky areas is an unavoidable impact of rock quarrying activities. The scattered nature of the sites would limit overall impacts to these vegetation communities. Plum Creek has proposed a grass and forb seed mix that is made up entirely of introduced plant species. The MMRA does not require native plants in the seed mix on private lands. DEQ has encouraged Plum Creek to develop a native seed mix for use on all of its property to limit impacts to native species.

Plum Creek has not proposed reseeding or planting trees in these areas. The small size of most of the rock product areas and the dominance of trees in the surrounding areas would increase the potential for native tree invasion of the sites after closure. Plum Creek is in the timber industry. Plum Creek would reseed trees if the sites had the potential to produce timber in the future.

Noxious weeds would increase on the disturbed sites as in any disturbed area. Plum Creek has committed to control weeds on the sites as part of regular operations. Plum Creek has noxious weed control plans which are approved by the local County Weed Control Districts. DEQ would monitor weed control activities during its inspections of the sites.

Noxious weed control activities also result in loss of native plant species, especially forbs and young trees which are sprayed in the process of killing noxious weeds. On the rock product sites, weed control applicators could spot spray noxious weeds which would limit impacts to native plant species. Along roadsides where weed populations are thickest, most noxious weed control contractors do not spot spray. Loss of native plant species is an unavoidable impact of disturbance and weed control activities.

*Cumulative Impacts:* The rock product industry would remove native vegetation-dominated communities on the rock-collecting sites around rock outcrops and surrounding talus slopes and boulder fields. Noxious weeds would increase. Weed control would limit the spread of noxious weeds but would also remove some native forbs and small shrubs and trees sensitive to the weed control chemicals.

Growth in western Montana around the rock product sites would continue to disturb the native plant dominated vegetation communities. Rural housing developments would open new roads in the process of building new homes on

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surrounding private lands. Reclamation of most road disturbance sites on private land would consist of no seeding at all or use of traditional seed mixes composed of introduced grass and forb species. Introduced tree, shrub forb and grass species would be planted around the new homes. Native plant landscaping could be used on some sites but the use is limited at this time.

Surrounding US Forest Service lands would become more and more important as refuges for native plant species dominated communities. US Forest Service management policies include the increasing use of native plants in its seed mixes for disturbances on National Forest System lands.

**5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?**

[Y] The proposed rock product sites would not impact important habitat for T&E wildlife species. Most of the surrounding areas around the outcrops, boulder fields and talus slopes have been logged in the past. T&E species such as the grizzly bear and gray wolf may occasionally pass through some of the areas. The McGilvary Rock Site #81, 15 miles northeast of Libby, is 1/2 mile from the Barron Creek bald eagle nest. The nest is on US Forest Service land along the shore of Lake Koocanusa. Plum Creek would follow the Montana Bald Eagle Management Guidelines when conducting activities within the Barron Creek bald eagle nest 1/2-mile buffer zone. If the nest is active, quarry activity except hauling along the entry road would be postponed until the young eagles fledge in July and August.

As mentioned earlier, Plum Creek has a Sensitive Area Warning System (SAWS) database that tracks important wildlife areas on Plum Creek lands. A SAWS inquiry was run on all sites proposed by Plum Creek. Some of the areas have limited use by wintering elk, mule and whitetail deer and two sites are used by bighorn sheep. None of the sites are on important winter ranges because of the rocky nature of the sites. Plum Creek has developed a specific management plan for the Jungle Rock, Site #47 and the Johnson Rock Site #94 which are used by bighorn sheep. The Jungle Rock Site #47 is located 15 miles north of Thompson Falls. The Johnson Rock Site #94 is located in the lower Blackfoot drainage two miles northeast of Bonner.

Other important wildlife species that would use the sites or travel through the rock product sites would be displaced

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around the quarrying activities. Wildlife habitat would be fragmented by the many scattered operations and new quarry development roads on Plum Creek lands. Only two short stretches of new access road, totaling 2,000 feet would be developed by Plum Creek to access the 94 sites. These new roads would be needed to access the North Banana Rock Site #50 and the Locust 6 Site #90. Most existing wildlife habitat would be destroyed or modified on the acres disturbed by the rock collecting activities.

Some rock outcrops, boulder fields and talus slopes would remain on the disturbed sites. Regeneration of native trees and shrubs on the sites over time would limit some of the long-term wildlife habitat impacts. Revegetation on acres resoiled after rock collecting activity cease would minimize some of the wildlife habitat impacts over time. Native plant species would be reduced and introduced plant species would be increased because of the disturbance and because of the introduced plant species mix proposed by Plum Creek.

The MMRA does not require the use of native plant species to reclaim these sites. The increase in introduced plant species as a result of the reseeding would favor some wildlife species over others that may have existed on the sites before rock collecting started. The wildlife habitat on the sites would be modified permanently. This is an unavoidable impact of rock collecting activities on the proposed sites and use of introduced plant species in the reclamation plan.

Noxious weeds would increase in the disturbance areas as on and around all disturbed areas in western Montana. Plum Creek has committed to control noxious weeds on the rock product sites. Noxious weed control activities also limit native plant species as described in Section XI. 4 above. Loss of some native plant species in the wildlife habitat on the proposed rock product sites is an unavoidable impact of disturbance of the sites.

There are three sites that would be near streams that contain bull trout, including Jungle Rock, Site #47; Deerhorn 32 Rock, Site # 88; and Thompson 5 Rock, Site # 89. The sites are located about 15 miles north and northwest of Thompson Falls In the Thompson River drainage. These sites are small and would be located more than 100 feet from the stream. Plum Creek must comply with the Montana Streamside Management Zone Act, BMPs for water quality, and its Native Fish HCP for these sites. The Native Fish HCP is an

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agreement between Plum Creek, USFWS, and the National Oceanic and Atmospheric Administration Fisheries division under Section 10 of the Endangered Species Act. The plan helps to conserve native salmonids and their ecosystems. This multi-faceted plan maintains cold and clean stream water, complex habitat, and connected stream systems among spawning, rearing, and migration habitats. Plum Creek's compliance with the Native Fish HCP would be monitored by the USFWS.

*Cumulative Impacts:* Continued development and growth in western Montana would result in more loss of native plant species-dominated and relatively undisturbed blocks of wildlife habitat over the 20-year life of the permit. Subdivision activity around the proposed rock product sites including road and home building also would change wildlife habitat and increase wildlife habitat fragmentation. US Forest Service lands would become more and more important as refuges for native plant dominated wildlife habitats especially for T&E species and sensitive plant species that currently are not regulated by the MMRA for the rock product industry or subdivision laws for new housing developments.

**6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:** Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?

[N] No T&E wildlife or plant species and important habitats used by T&E species have been found in the proposed rock product sites. Plum Creek is a member of the Sustainable Forestry Initiative Program (SFI) which requires measures to conserve critically imperiled species. Plum Creek has voluntarily committed to develop mitigation plans to limit impacts to G1/G2 sensitive wildlife and plant species found on the rock product sites. Plum Creek commits to conduct management activities in accordance with the Montana Streamside Management Zone law and Native Fish HCP guidelines as well as the General Quarry Permit requirement of staying 100 feet away from surface water. If an occupied site is discovered, Plum Creek would consider immediate action on a case-by-case basis to ensure microsite non-disturbance until a company biologist can review the situation and develop a site plan if appropriate.

The magnum mantleslug (a.k.a. spotted slug) was observed on the Rand Creek Rock Site #18 which is 20 miles west of Kalispell. The species is classified as a G2/3 species. Plum Creek has developed a management plan to meet the protection requirements of the SFI Objective 4.1, Indicator 3. The Plum Creek plan addresses the conservation concerns of

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the SFI programmatic management plan for magnum mantleslug sites.

DEQ has no regulatory authority to stop a rock product site from being developed because of a sensitive plant or animal species. Impacts to potential sensitive species are an unavoidable impact of the proposed rock-collecting activities.

If a spring or water table is encountered or a wetland has the potential to be disturbed during quarrying activities, operations would cease and an individual operating permit would have to be obtained before operations could resume on that site.

*Cumulative Impacts:* The growth in western Montana would continue to impact habitats used by T&E and sensitive wildlife and plant species. Lack of land use controls and regulations to limit development because of the presence of these species on private lands would result in impacts. General Quarry Permit provisions limit development of a site with T&E species impacts. Plum Creek could apply for an individual permit to disturb these areas on private lands.

Plum Creek has voluntarily agreed to prepare plans to limit impacts to plants and wildlife classified as G1 and G2 on the proposed sites. Other developers on private land may or may not agree to such plans.

Developments on State of Montana lands would probably require plans to mitigate impacts to these species.

US Forest Service land would become more and more important as refuges for sensitive species. Conservation easements on private lands are one way to limit development of important T&E wildlife and plant habitats.

The US Army Corps of Engineers (Corps) regulates activities that could impact wetlands on private, state and federal lands. The Corps would require wetland mitigation plans to limit impacts to wetlands on other private land developments.

**7. HISTORICAL AND ARCHAEOLOGICAL SITES:**  
Are any historical,

[N] SHPO has been contacted and a search for important sites on all 94 proposed sites has been conducted. No impacts to important historic or archaeological resources

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archaeological or  
paleontological resources  
present?

would occur if the proposed plan were implemented. The historic fire lookout on the Castle Rock Rocks Site # 5 is in the proposed site and would eventually be impacted by rock collecting activities. All that remains of the site are the wires running to the site. DEQ would recommend that Plum Creek do a site investigation and document what is left of the site before it is disturbed. See Section X. A for Plum Creek commitments if an archaeological or historical site is found on a rock product site.

*Cumulative Impacts:* The growth in western Montana would continue to impact archaeological and historical sites. Lack of land use controls and regulations to limit development because of the presence of these sites on private lands would result in impacts. General Quarry Permit provisions limit development of a site with important archaeological and historical site impacts. Plum Creek could apply for an individual permit to disturb these areas on private lands after mitigations have been implemented.

Developments on State of Montana lands would require plans to mitigate impacts to these sites.

US Forest Service land would become more and more important to protect archaeological and historical sites. Conservation easements on private lands would be one way to limit development of important archaeological and historical sites.

8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?

[Y] The proposed rock collecting activities would create aesthetic impacts. DEQ received a public comment about four quarries during scoping. The Castle Rock Rocks Site #5, the Herring 15 Rock Site #9, the Redmond Rock Site #20, and the Twin Creek Rock Site #21 appear to be located in close proximity to the Thompson Chain of Lakes in Flathead County, Montana. The commenter wanted to know where the proposed rock quarries were located in relation to the Thompson Chain of Lakes including McGregor Lake.

The Castle Rock Rocks Site #5 is 17 miles west of Marion and is approximately 11 miles southeast of the Lower Thompson Lake and 4 miles south of McGregor Lake. The site can be seen from McGregor Lake and Highway 2.

The Herring 15 Rock Site #9 is 33 miles west of Kalispell and is approximately 14 miles northeast of the Lower Thompson

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Lake and 11 miles northeast of McGregor Lake. It can not be seen from McGregor Lake.

The Redmond Rock Site #20 is 15 miles southwest of Marion and is approximately 15 miles southeast of the Lower Thompson Lake and 9 miles south of McGregor Lake. It can not be seen from McGregor Lake.

The Twin Creek Rock Site #21 is 42 miles west of Kalispell and is approximately 6 miles northeast of the Lower Thompson Lake and 4 miles northwest of McGregor Lake. It can not be seen from McGregor Lake but part of it is visible from the Twin Creek Road.

Only five Plum Creek sites would be visible from any of the Thompson Chain of Lakes. These sites include the Bar Z 11 Rock Site #1 which is 35 miles west of Kalispell, the Castle Rock Rocks Site #5, the McGregor Peak Rock Site #14 which is located 32 miles west of Kalispell, the Little McGregor Rock Site # 57 which is located 33 miles west of Kalispell and the Loon Lake Rock Site #68 which is located five miles west of Happy's Inn.

The Lakeview Rock Site #72 is visible from Bitterroot and Ashley Lakes.

Sites visible from Highway 2 and other public roads include:

- Bar Z 11 Rock Site #1, 35 miles west of Kalispell is visible from Highway 2;
- Boisverts Rock Site # 4, 15 miles west of Marion is visible from the county road;
- Castle Rock Rocks Site #5, 17 miles southwest of Marion is visible from Highway 2;
- Griffin 13 Rock Site #7, 8 miles north of Marion is visible from the Griffin Creek Road;
- Gunsight Rock Site #8, 30 miles west of Kalispell is visible from the county road;
- Porter Creek Rock Site #17, 19 miles west of Kalispell is visible from the county road;
- Twin Creek Rock Site # 21, 42 miles west of Kalispell can be seen from the Twin Creek Road;
- Fisher 6 Mile Pit Site # 28, 20 miles east of Libby is visible from the Fisher River US Forest Service Road;
- McKillop Section 9 Site #32, 7 miles west of Happy's Inn is visible from the McKillop Road;
- Tevis Landing Site #40, a staging area, 4.5 miles west of Lolo, is visible from Highway 12;

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- Locust Hill Rock Site #48, 3 miles northeast of Plains is visible from Highway 28;
- Power Rock Site # 51, 3 miles northeast of Plains is visible from Highway 28 and is adjacent to another quarry being operated under a SMES on State of Montana land.
- Little McGregor Rock Site #57, 33 miles west of Kalispell is visible from Highway 2 and is adjacent to a site operated by Montana Rockworks from Kalispell;
- Deerhorn 32 Rock Site #88, 15 miles northwest of Thompson Falls is visible from the Deerhorn Road;
- Thompson 5 Rock Site #89, 14 miles northwest of Thompson Falls and is adjacent to the Thompson River county road;
- Raven Creek Rock Site # 92, 27 miles southeast of Libby is visible from Highway 2.

The visual impacts from rock-collecting sites would be typical of activities that remove natural resources. Only 2,000 feet of new access road would be developed to access two of the proposed 94 rock product sites. These new access roads would be left at closure for timber management purposes. All permanent Plum Creek access roads in the area are maintained up to forestry BMP standards.

Quarry development roads would be needed inside the disturbance areas to remove the rock products. Recontouring at closure would reclaim these quarry development roads.

The proposed plan would impact rock outcrops, boulder fields, and talus slopes visible from other lands not owned by Plum Creek. The rock covered talus slopes and boulder fields would be disturbed in the process of sorting and loading rocks. The limited soil resources in the rocky areas would be disturbed. Thicker soils in level staging areas would be salvaged and stockpiled for reclamation. All these disturbances remove portions of the limited trees and other vegetation on the rock product sites. Other rocks not removed for commercial purposes would be disturbed and overturned revealing rock surfaces that have not weathered and are much more noticeable from a distance. As a result, the rock product sites would look disturbed and would be visible from various viewpoints, especially from higher elevations.

The forested environment, natural broken landscape, and scattered locations of the quarries would lessen the impacts from any one area. DEQ has asked Plum Creek to limit

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selection of rock sites that are visible from areas such as McGregor Lake. DEQ cannot prevent Plum Creek from proposing these sites if it wants to develop the rock products there.

Visual impacts are an unavoidable impact of allowing development of the 94 proposed rock collecting operations that qualify under the General Quarry Permit and the 23 sites that would exceed the disturbance limits in the General Quarry Permit and being analyzed in this Draft EIS. Visual impacts are an unavoidable impact of quarrying rock outcrops, talus slopes and boulder fields in mountainous terrain.

Reclamation would limit visual contrast of reclaimed quarries with adjacent lands to acceptable levels as required by the MMRA. Even with recontouring and revegetation of the sites after closure, the sites would look disturbed for a long time. The rocks would weather and surrounding stands of trees would eventually regenerate, limiting visibility of the sites over time.

Development of the sites would create noise, especially from use of heavy equipment handling and driving over solid rock surfaces and traffic along area roads. Most of the sites are away from homes and hours of operation would be limited. No sites would operate 24 hours a day. No sites would be operated in the dark with the aid of artificial lights.

Blasting would be used as needed on the sites (See discussion in Section XI. 1). Plum Creek has committed to contact any landowners within 1,000 feet of the sites if blasting were to be used.

*Cumulative Impacts:* Logging on Plum Creek lands near some of these rock product sites would also be planned. Logging would have a cumulative impact on visual resources in the area. The majority of the surrounding Plum Creek lands, other private lands, and most of the US Forest Service and State of Montana lands have been logged some time in the past. Trees on these areas have regenerated lessening visual impacts. The US Forest Service and State of Montana lands surrounding some of the sites could also be logged in the future increasing the visual impacts until the trees regenerate.

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Other land developments in the area surrounding the sites include new road building to access new residential developments and the individual home sites. This is happening throughout western Montana. All these land developments impact the relatively unspoiled appearance of the forested environment in western Montana.

Logging would also add to noise and light impacts from the increased traffic along area roads. As new rural homes continue to develop in the area around the rock collecting sites, more noise and light impacts would result from traffic and security lights around the homes. Barking dogs are also potential problems adding to noise impacts.

**9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?**

[Y] The proposed project would impact rock resources but rock resources are common in western Montana. The proposed rock product sites would remove geologic rock materials from the sites as discussed above under Section XI. 1. This is an irreversible commitment of the resources. There are many other rock outcrops in the area on other private lands, State of Montana lands, and US Forest Service lands.

*Cumulative Impacts:* Other rock product sites are being developed and proposed on private, State of Montana, Native American and federal lands in western Montana. Most sites are being developed under SMESs and are not regulated under the MMRA. DEQ currently has 56 SMESs on file for rock collecting sites in the five counties that Plum Creek is proposing rock product sites.

DEQ is also currently reviewing a General Quarry Permit application from Montana Rockworks out of Kalispell, MT. They propose to disturb two sites near McGregor Lake in Flathead County. Up to 85 acres in an 180-acre permit boundary would be disturbed over the next 20 years. DEQ will prepare a supplemental environmental analysis because the sites cannot be developed without exceeding the five-acres disturbed and unreclaimed at any one time criterion under the General Quarry Permit.

These other rock product sites would result in additional impacts to the rock resources around rock outcrops, talus slopes, and boulder fields in western Montana.

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	<p>DEQ also regulates the sand and gravel industry in Montana. Currently, DEQ regulates 345 sand and gravel operations in the five county area to be covered by the Plum Creek operating permit. These sand and gravel pits would result in additional disturbances in the surrounding areas.</p>
<p><b>10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:</b> Are there other activities nearby that will affect the project?</p>	<p>[Y] No other activities in this area would affect the rock product operations. Other rock product and/or sand and gravel operations may occur on adjacent lands owned by other private individuals or managed by public agencies as discussed above under Section XI. 9. Plum Creek may have some timber sales over time on adjacent lands, but the rocky sites being quarried have limited timber resources. Other uses of the roads in rock product areas and along access roads such as new housing developments and recreation may produce cumulative impacts from dust, noise, traffic, etc. as discussed above under Section XI. 3. Plum Creek and public land managers can impose dust controls if needed.</p> <p>Rock quarrying and other land development activities in the areas during dry periods could increase the risk of forest fires. Plum Creek can impose limitations on its operators on its lands as do the US Forest Service and other public land management agencies to limit the risk of starting a fire.</p> <p><i>Cumulative Impacts:</i> Cumulatively, over the 20-year permit life there would be more developments in the areas surrounding some of the rock collecting sites that would affect the project. This would be more common on those sites visible from major roads in the area. The spread of the suburban fringe around cities in western Montana has increased the complaints over developments such as gravel pits and metal mines near cities. These complaints include the visual impacts, concerns over water and air pollution, traffic, noise, risks to children at bus stops, etc. The lack of land use controls to limit development on private lands allows land developments for rock collecting activities as well as for housing developments. Conflicts over land uses are an unavoidable impact of land development in growth areas.</p>
<p><b>11. HUMAN HEALTH AND SAFETY:</b> Will this project add to health and safety risks in the area?</p>	<p>[Y] Improper rock quarrying activities could create unsafe conditions below rock outcrops and talus slopes. MSHA regulates mine safety issues during operations. DEQ would inspect and review reclamation plans for each quarry and incorporate some buttressing of slopes at closure to</p>

<b>IMPACTS ON THE PHYSICAL ENVIRONMENT</b>	
	<p>minimize sloughing. Plum Creek has committed to berm or fence any large or dangerous highwalls left by quarrying activities.</p> <p>Traffic on area roads would increase as a result of the rock collecting activities as discussed in Section XI. 3 above.</p> <p><i>Cumulative Impacts:</i> Health and safety risks from increased traffic on area roads would increase from the subdivision growth on adjacent private lands around the proposed rock product sites in western Montana. Traffic accidents are largely unavoidable, but careless and reckless driving would result in additional motor vehicle accidents on area roads over time.</p>
<p>12. <b>INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:</b> Will the project add to or alter these activities?</p>	<p>[Y] The proposed project would supply rock products for the commercial and residential housing markets throughout the western US. This would influence commercial and industrial development. Agriculture would not be affected in western Montana by Plum Creek’s proposed operations. Timber production would not be affected, as the rocky sites do not provide productive timber stands.</p> <p><i>Cumulative Impacts:</i> The rock product industry has grown steadily over the last 10 years as housing, commercial and industrial development have expanded with population increases in the western US. Rock product use would continue to grow as the western US population increases. Agriculture is directly affected by the rock product industry in areas such as around Harlowton, MT. Rock product sites are being developed on and around agricultural operations to supplement farm and ranch incomes in that area. Agriculture is directly affected by the continued growth which is resulting in increased land values and subdivision of agricultural lands at increasing rates throughout western Montana around these growth areas. Impacts to agriculture are unavoidable around growth areas without land use controls to protect prime farmlands.</p>
<p>13. <b>QUANTITY AND DISTRIBUTION OF EMPLOYMENT:</b> Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[Y] The proposed project would produce full time jobs for most of the independent business people developing and promoting these sites. In addition, hundreds of full and part time seasonal jobs would be created in western Montana collecting rock products over the 20-year life of the permit.</p>

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	<p><b>Cumulative Impacts:</b> The rock products industry in Montana currently employs several hundred full and part-time employees throughout the state. These rock collecting jobs create additional jobs for truckers, rock masons, landscapers, etc. who are actively involved with the expanding housing, commercial and industrial growth happening in the western US. This is happening in an area that traditionally had many logging related jobs. Logging is reduced in these areas and many of the rock collecting jobs would provide work for the displaced loggers, equipment operators and truckers.</p>
<p><b>14. LOCAL AND STATE TAX BASE AND TAX REVENUES:</b> Will the project create or eliminate tax revenue?</p>	<p>[Y] The proposed project would produce many full and part time jobs as described in Section XI. 13 above and resultant revenue from income taxes in northwestern Montana. Plum Creek would profit from the rock products removed from its lands.</p> <p><b>Cumulative Impacts:</b> Other rock product sites would create additional jobs, income taxes and profits for landowners and land managers selling the rock products.</p>
<p><b>15. DEMAND FOR GOVERNMENT SERVICES:</b> Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?</p>	<p>[Y] The proposed project would add traffic along some public roads that would increase noise, dust and increase maintenance of those roads. Plum Creek would work with operators to limit impacts from traffic, noise, dust, etc.</p> <p>Use of roads during wet periods and during spring breakup could result in the need for increased road maintenance activities on Plum Creek as well as on county and public roads used for site ingress and egress. The operators have the right to use the roads. Plum Creek can control the use of their private roads during wet and spring breakup times by limiting the season of use. Public land managers can also limit the use of the roads in these times if impacts result.</p> <p>Local fire protection services, police and schools should be able to absorb the people working on the rock product sites as most employees would be locals. Some immigrant workers would be expected to apply for these jobs and would look for housing in the surrounding cities and rural areas.</p> <p><b>Cumulative Impacts:</b> Cumulatively, over the 20-year life of the project, many changes would occur in these areas as growth is projected to increase in all areas of western Montana. Some roads may have to be widened, paved or rehabilitated</p>

<b>IMPACTS ON THE PHYSICAL ENVIRONMENT</b>	
	<p>in other ways around project sites that see increased growth from subdivision, recreation, and other activities.</p> <p>Demand for fire protection services, police, and schools would also change over 20 years in some of these areas. This is an unavoidable impact of continued growth in western Montana.</p>
<p><b>16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:</b> Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?</p>	<p>[Y] Plum Creek operations generally are surrounded by US Forest Service lands and scattered tracts of State of Montana lands or other private lands. The public management agencies have management plans in effect. Plum Creek would coordinate with these agencies if needed to limit impacts to area resources and the human environment.</p> <p>City and county land management plans are less common in the rural areas where most sites are located.</p> <p>Plum Creek has land management plans for its property and those plans include promoting growth of the rock products industry, timber production and real estate sales. Plum Creek currently allows some public recreation on its private lands. Other private landowners in the area have management plans as well.</p> <p><i>Cumulative Impacts:</i> The US Forest Service and other federal and state agencies would see their management plans change over the years as growth increases in western Montana. Land use controls such as road closures and seasonal use restrictions to protect certain wildlife species on federal and state lands would increase as growth continues in western Montana.</p> <p>City and county land management plans would also increase to control growth related impacts in the areas.</p> <p>Areas on Plum Creek lands currently used for recreation by the public could also change as Plum Creek continues to sell lands.</p>
<p><b>17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:</b> Are wilderness or recreational areas nearby or accessed through this tract? Is there</p>	<p>[Y] Access through Plum Creek lands would be controlled by locked gates. Plum Creek allows and controls public recreational use of its property. Most use currently is limited to hiking, fishing, hunting, and berry and mushroom gathering.</p>

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recreational potential within the tract?	<b>Cumulative Impacts:</b> Demand for recreational use on Plum Creek lands would increase over time as recreational limits are placed on use of state and federal lands, and population growth occurs on private lands surrounding Plum Creek lands. Plum Creek could limit recreational use at any time on its lands if needed to limit impacts.
<b>18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:</b> Will the project add to the population and require additional housing?	[Y] The proposed project would supply rock products for the commercial and residential housing markets throughout the western US. Workers on these rock product operations are largely local residents already residing in the area. Some new seasonal housing may be needed to supply the seasonal workers employed in these operations.  <b>Cumulative Impacts:</b> Over the 20-year permit life, growth in western Montana would continue. Some people moving to Montana would add to the growth in these areas and require new housing. This is an unavoidable impact of growth in western Montana.
<b>19. SOCIAL STRUCTURES AND MORES:</b> Is some disruption of native or traditional lifestyles or communities possible?	[N] The traditional lifestyles in the areas surrounding the sites included seasonal logging jobs. The rock products industry would provide some seasonal jobs for workers displaced from the logging industry.  <b>Cumulative Impacts:</b> Over the 20-year permit life, the local communities would change as more and more people from other parts of the country move to Montana. This influx of people and the associated growth would change traditional lifestyles and communities. Many of these people would be retired. Changing community structure is an unavoidable impact of growth in western Montana.
<b>20. CULTURAL UNIQUENESS AND DIVERSITY:</b> Will the action cause a shift in some unique quality of the area?	[N] The permitting of the rock product sites on Plum Creek by itself would not change the cultural uniqueness and diversity of western Montana.  <b>Cumulative Impacts:</b> As discussed in Section XI.19 above as more people move into western Montana to take jobs or retire the unique quality of some of the rural communities would change as a result. This is an unavoidable impact of growth and changing community structure.
<b>21. PRIVATE PROPERTY IMPACTS:</b> Are we regulating the use of private property	[Y] DEQ received comments during scoping about Plum Creek's land management policies. Plum Creek's land management policies are beyond the scope of the Draft EIS.

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<p>under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.</p>	<p>Plum Creek has a right to develop its property just like any other citizen of Montana as long as they comply with existing regulations. The MMRA requires operating permit holders to comply with various requirements that limit the use of private property to minimize impacts to air and water quality.</p> <p>Plum Creek has voluntarily committed to DEQ requests to minimize impacts during the operating permit review process. DEQ has proposed only one restriction to limit potential impacts from blasting on water quality (See Section XII. C).</p>
<p><b>22. PRIVATE PROPERTY IMPACTS:</b> Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required.</p>	<p>[N] DEQ has imposed one modification which would be a restriction that would add to the cost of implementing the proposal (See Section XII. C). The additional costs would be minor.</p>
<p><b>23. PRIVATE PROPERTY IMPACTS:</b> Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.</p>	<p>[N] The modification imposed in Section XII. C is within DEQ's authority under MMRA. No other alternatives or restrictions were proposed that would be needed to achieve the objectives identified in the alternatives. DEQ would work with Plum Creek and other land management agencies to resolve impacts from dust and traffic along public access roads.</p>
<p><b>24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:</b></p>	<p>[Y] DEQ received a comment during scoping about how the proposed rock product sites would affect local land and property values and tourism. These rock product sites are away from view of most of the local residences currently in the area. Most of the proposed sites are rocky sites surrounded by regenerating forested areas. Some of the rock is probably being used to construct the local homes in the region. The presence of the rock sites may influence a particular person's decision to buy or sell property or come to the area to recreate, but the impacts would be minor.</p>

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*Cumulative Impacts:* There is the potential for impacts to individual homes developed in the future to be affected by proximity to the rock product sites. Land and property values would continue to grow as the demand for land in western Montana grows. DEQ does not expect the quarries would influence tourism in the areas. The people that would see the rock product sites the most are recreationists using Plum Creek, adjacent US Forest Service, and State of Montana lands for hiking, hunting, etc.

## XII. ALTERNATIVES CONSIDERED:

### A. NO ACTION, DENY THE APPLICANT'S PROPOSED PLAN

The agencies reviewed Plum Creek's proposed operating and reclamation plans. If the Proposed Action were denied, then many individual operators would operate under a SMES without any regulatory control or reclamation bond held by DEQ. Operations that could not stay within the limits imposed by a SMES could operate under the General Quarry Permit and would be bonded by DEQ. Operators that could not stay within the General Quarry Permit limits would have to apply for individual operating permits. Plum Creek would still obtain a performance bond on all operators on their lands regardless of what operating scenario developed. DEQ believes this mix of operations would lead to inconsistent and inefficient regulation of the large number of rock product sites proposed on Plum Creek lands over the next 20 years and potentially increase impacts. DEQ has concluded that all sites proposed meet the General Quarry Permit requirements except that the amount of land disturbed on 23 sites cannot be limited to less than five acres disturbed and unreclaimed at any one time.

### B. APPROVE THE APPLICANT'S PROPOSED PLAN

Plum Creek has responded to almost all of DEQ's concerns with the original application through the lengthy operating permit review process. Plum Creek has proposed subsequent changes that were used to develop this Draft EIS. Plum Creek is expected to amend the permit with the addition of new sites over a 20-year permit life. Some of these sites would comply with restrictions analyzed in the Supplemental Programmatic EA for the General Quarry Permit completed in March 2004, except for the number of acres disturbed and unreclaimed at any one time. DEQ would review new sites as they are proposed for compliance with General Quarry Permit requirements. DEQ would then publish notice of proposed new sites as amendments or revisions to the operating permit per MMRA requirements. Another environmental analysis would be completed for each site that exceeds General Quarry Permit requirements as it is proposed. Plum Creek has proposed a worst case scenario for permitting purposes to avoid the incremental permitting needed over time if too few acres are proposed. This is another reason why the operating permit review process has taken so long to implement.

### C. APPROVE THE APPLICANTS'S PROPOSED PLAN WITH AGENCY MODIFICATIONS

As mentioned above, Plum Creek has committed to many requests by DEQ during the lengthy operating permit review process. Only one modification to the Applicant's Proposed Plan has

been identified to lessen potential impacts to water quality in the future.

**Modification 1.** Some sites may use blasting in the traditional hard rock mining sense to create crushed landscape rock products or aggregates for road and home building needs. In these cases, the impacts from blasting to water quality would be increased. DEQ would review the location of rock product sites that propose the use of traditional blasting techniques. If the sites are near surface water, wetlands or private residences with water wells, Plum Creek would have to monitor the local homeowner's well for nitrates, install shallow water monitoring wells and sample the wells periodically for nitrates.

If nitrates were observed in any monitoring wells above baseline levels, DEQ and Plum Creek would review blasting operations and propose a solution to the problem. Blasting would cease on the site immediately. Plum Creek would have to apply for an individual permit on the site and a groundwater quality protection plan would have to be reviewed and approved before the site could resume blasting.

### **XIII. PUBLIC INVOLVEMENT**

DEQ published legal notices in the counties where quarries are proposed and issued a press release when the operating permit application was submitted in January 2003. Plum Creek has modified its permit application in response to DEQ concerns as part of the completeness review process. Several comments were received on the original permit application public notices (See Attachment 3). Additional comments were received when Plum Creek applied for individual permits during the review process. Concerns raised in all the comments have been discussed in this Draft EIS. The operating permit application is now complete. DEQ will publish another notice of operating permit application in the county newspapers with this Draft EIS.

This Draft EIS has been distributed to the mailing list developed for the General Quarry Permit, to all landowners adjacent to the proposed sites, and to those who commented on the operating permit application public notices. Extra copies of this Draft EIS can be obtained from DEQ offices in Helena. This Draft EIS will also be posted on the DEQ web page: <http://www.deq.mt.gov/>. For copies of the Draft EIS or to submit comments, write or call the Montana Department of Environmental Quality c/o Patrick Plantenberg, P. O. Box 200901, Helena, MT 59620, telephone (406) 444-4960 or e-mail at [pplantenberg@mt.gov](mailto:pplantenberg@mt.gov). Comments will be accepted for 30 days after the date of the signatures below.

### **XIV. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION**

US Forest Service and State of Montana lands may be crossed for access to the rock product sites. County and State of Montana public roads would be used for access and hauling rock products from the quarries. Operators would have to comply with speed limits and other restrictions placed on use of these public roads across US Forest Service and State of Montana lands. The USFWS monitors Plum Creek's compliance with its Native Fish HCP. County Weed Control Districts regulate noxious weed control activities.

### **XV. MAGNITUDE AND SIGNIFICANCE OF POTENTIAL IMPACTS**

The various impacts have been discussed above in Section XI. 1-24. The major impacts are summarized here. Up to 3,600 acres of rocky areas in the mountains and foothills would be

disturbed by quarrying, road development, and staging areas over the 20-year permit life. Impacts to rock outcrops and talus slopes, soils, vegetation and wildlife habitat as well as impacts to the human environment from dust and noise and to the aesthetics of the area are unavoidable impacts from allowing rock product operations. Reclamation would limit the visual impacts to acceptable levels as required by MMRA, but the sites would look disturbed for a long time.

Socio-economic benefits from the full and many part-time and seasonal jobs created by the proposed operations would result.

Seventy-one of the 94 sites comply with General Quarry Permit requirements listed in Section VI above. The other 23 sites exceed only one General Quarry Permit criterion and that is that the size of the area disturbed and unreclaimed cannot be kept to less than five acres. Plum Creek commits to keep the total area disturbed and unreclaimed at any one time to less than 800 acres.

## **XVI. CUMULATIVE EFFECTS**

As mentioned above, Plum Creek owns 1,300,000 acres in Montana of which Plum Creek proposes to disturb up to 3,600 acres over the life of the operating permit. Physical, biological, visual and human environment impacts would result from these disturbances. The overall environmental impacts of these disturbances would be limited. The socio-economic impacts resulting from the quarries would benefit the economy of northwestern Montana.

The rock products industry is the largest mining related growth industry in Montana next to sand and gravel operations. Other rock quarrying operations on surrounding US Forest Service, State of Montana and private lands would add to the cumulative impacts of this operating permit. Currently, there are 56 operating rock-collecting sites in the five county area affected by this proposed permit.

The only other proposed operating permit that could cumulatively affect Plum Creek's proposed quarries is for Montana Rockworks two proposed sites in Flathead County. The rock product operating permit request is for an 180 acre permit area for two rock product sites near McGregor Lake in Flathead County. The notice of application has been published and DEQ is working on a Draft EA.

In addition, other permit applications are being prepared for rock product operations on private inholdings on the Flathead Indian Reservation.

US Forest Service and other private timber sales on adjacent lands could add to cumulative impacts in the drainages from sediment production, traffic, dust, and loss of native rock, soil and vegetation and increased visual impacts. Continued development of private property for subdivisions on Plum Creek as well as other private land would also add to the cumulative impacts to area resources from these quarries.

## **XVII. RECOMMENDATION FOR FURTHER ENVIRONMENTAL ANALYSIS AND/OR TENTATIVE DECISION**

EIS     More Detailed EA     No Further Analysis.

The agencies have selected the Proposed Plan with Agency Modifications as the preliminary Preferred Alternative. This is not a final decision. This conclusion may change based on comments received from the public on this Draft EIS, new information, or new analysis that may be needed in preparing the Final EIS.

#### **XVIII. PREPARERS AND REVIEWERS**

This Draft EIS was prepared by:

Patrick Plantenberg, DEQ Operating Permit Section Supervisor  
Pete Strazdas, DEQ Small Miner and Exploration Section Supervisor  
Ryan Harris, DEQ Reclamation Supervisor

This Draft EIS was reviewed by:

Warren McCullough, DEQ, Chief, Environmental Management Bureau  
Greg Hallsten, DEQ MEPA Coordinator

#### **XIX. DRAFT EIS APPROVED BY**

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Signature  
Warren D. McCullough, Chief,  
Environmental Management Bureau, DEQ

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Date

#### **XX. REFERENCES CITED**

DNRC 2004. Montana Forestry Best Management Practices Monitoring. 2004 Forestry BMP Audit Report. Montana Department of Natural Resources and Conservation, Forestry Division, Missoula, MT. 42 pages and appendices.

Hitchcock, C. L. and A. Cronquist. 1973. *Flora of the Pacific Northwest*. University of Washington Press. Seattle, WA. 730 pages.

M. Mantas. The Nature Conservancy. Personal communication. March 2006.

Montana Natural Heritage Program. 2003. Plant Species of Concern. Montana State Library, Helena, MT. 34 pages.

MSU Extension Service 2001. Water Quality BMPs For Montana Forests. Montana State University Extension Forestry, Missoula, MT. 58 pages.

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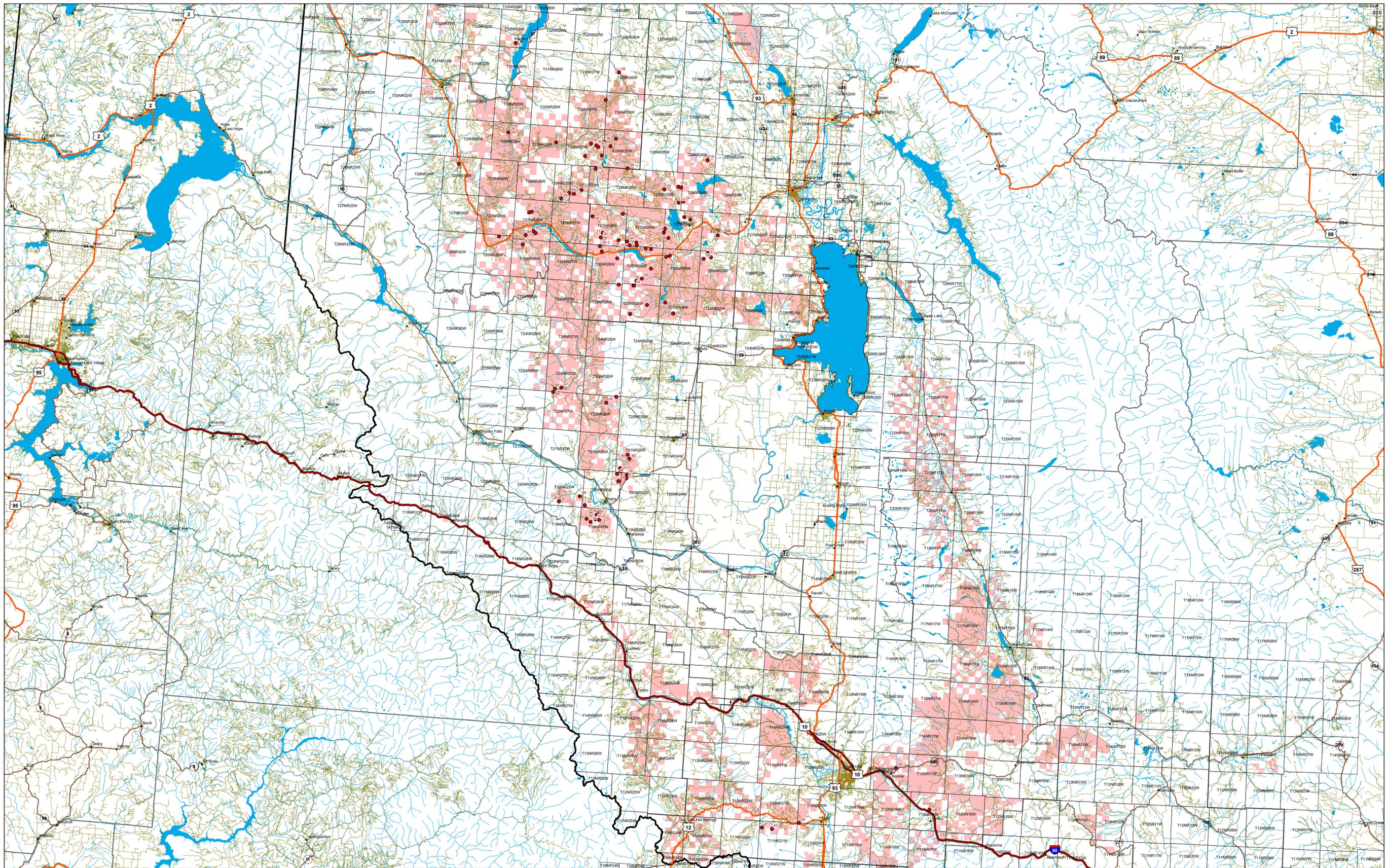
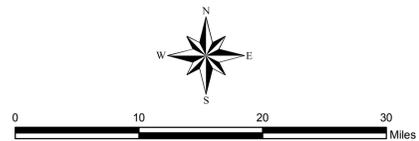


Exhibit 1  
 Plum Creek Ownership  
 Rock Quarry Site Locations



● Rock Sites and Number	<b>Road Classification</b>	— State Highway
■ Plum Creek Property	— Interstate	— Other Roads
	— US Highway	



PLUM CREEK STATEWIDE OPERATING PERMIT

INDIVIDUAL SITE DATA SUMMARY

Sites where the unreclaimed area will exceed five acres over the life of the permit.

TABLE 1

Site No.	Quarry Site Name	Office	Operator	Location				County	Miles	Direction	Nearest Community	1 = YES Past or Present Activity on site	Estimated Permitted Disturbance within 5 years	Estimated Permitted area	Estimated Permitted Disturbance over 20 yrs.
				Subdivision	Section	Twp.	Rge.								
1	Bar Z 11 Rock	KAL	Montana Rockworks	SE1/4SE1/4	11	26N	26W	Flathead	35	West	Kalispell	1	5.00	16.00	16.00
2	Below Dam Rock	KAL	Ron Stanton	SW1/4	17, 18	25N	24W	Flathead	13	South	Marion	1	5.00	80.00	17.00
3	Bitterroot Rock	KAL	Glacier Stone	SW1/4	18,19	27N	24W	Flathead	30	West	Kalispell	1	8.00	124.00	15.00
4	Boisverts Rock	KAL	Glacier Stone	NW1/4	31	27N	25W	Flathead	15	West	Marion	1	10.00	206.60	70.00
5	Castle Rock	KAL	Montana Rockworks	NW1/4SW1/4	33	26N	25W	Flathead	17	SW	Marion	1	25.00	101.00	101.00
6	Gobbler Knob	KAL	Montana Rockworks	SW1/4NE1/4,NW1/4SE1/4	7	27N	26W	Flathead	15	North	Happy's Inn	1	20.00	58.50	58.50
7	Griffin 13 Rock	KAL	Glacier Stone	S1/2S12	13	28N	25W	Flathead	8	North	Marion	1	5.00	46.00	15.00
8	Sunsight Rock	KAL	Montana Rockworks	S1/2NE1/4	30	27N	24W	Flathead	30	West	Kalispell	1	15.00	109.00	25.00
9	Herrig 15 Rock	KAL	Ron Stanton	S1/2S12	15	28N	25W	Flathead	8	West	Marion	1	20.00	133.00	45.00
10	Herrig 25 Rock	KAL	Glacier Stone	SE1/4	25	28N	25W	Flathead	6	North	Marion	1	15.00	411.80	35.00
11	Horseshoe Rock	KAL	no current operator	N1/2NW1/4	11	27N	24W	Flathead	1	North	Marion	1	8.00	25.00	10.00
12	Lower Twin Rock Sites	KAL	no current operator	SE1/4/NW1/4	4,9	26N	26W	Flathead	36	West	Kalispell	1	6.00	48.00	12.00
13	Mary Ann Rock	KAL	Glacier Stone	S1/2SW1/4	3	27N	24W	Flathead	1.5	NW	Marion	1	8.00	64.00	8.00
14	McGregor Peak Rock	KAL	Ron Stanton	NE1/4NW1/4/NW1/4NW1/4	2,3	26N	25W	Flathead	32	West	Kalispell	1	15.00	141.00	35.00
15	Montana Rockworks MCG	KAL	Montana Rockworks	SE1/4NE1/4	32	27N	25W	Flathead	33	West	Kalispell	1	4.00	12.00	8.00
16	Murr Peak Rock	KAL	Jake Andersen Rock Sales	NW1/4	5	25N	25W	Flathead	34	West	Kalispell	1	12.00	107.00	22.00
17	Porter Creek Rock	KAL	Outdoor Stone	W1/2NE1/4	21	27N	23W	Flathead	19	West	Kalispell	1	5.00	20.00	5.00
18	Rand Creek Rock	KAL	no current operator	SE1/4	23	29N	24W	Flathead	20	West	Kalispell	1	3.00	7.60	7.60
19	Red Rock	KAL	Glacier Stone	N1/2	28	25N	24W	Flathead	14	South	Marion	1	22.00	429.40	60.00
20	Redmond Rock	KAL	Ron Stanton	NE 1/4	22,23	25N	25W	Flathead	15	SW	Marion	1	22.00	132.00	80.00
21	Twin Creek Rock	KAL	Schellinger Sand and Gravel		21,22,27, 28	27N	26W	Flathead	42	West	Kalispell	1	65.00	599.00	110.00
22	Skookum Ridge Rock	KAL	Jake Andersen Rock Sales	N1/2	23	26N	25W	Flathead	12	West	Marion	1	9.00	20.00	20.00
23	South Bitterroot Rock	KAL	no current operator	NW1/4	19	27N	24W	Flathead	30	West	Kalispell	1	4.00	17.00	4.00
24	Tear Drop	KAL	Glacier Stone	SE1/4NW1/4	29	28N	24W	Flathead	4	North	Marion	1	15.00	185.15	19.00
25	ACM 58 MILE	LIB	Montana Rockworks		20,21	28N	27W	Lincoln	9	North	Happy's Inn	1	50.00	72.00	72.00
26	ACM Section 35	LIB	Montana Rockworks	E1/2NE1/4	35	28N	27.5W	Lincoln	5	North	Happy's Inn	1	5.00	7.00	7.00
27	Baucus rock	LIB	Rock of Ages	SE1/4NW1/4, E1/2	14	29N	28W	Lincoln	33	E	Libby	1	22.00	101.00	65.00
28	Fisher Six Mile Pit	LIB	Rock of Ages	NE1/4SW1/4, NW1/4SE1/4	9	29N	29W	Lincoln	20	E	Libby	1	13.00	17.50	17.50
29	Kavalla Powerline Rock	LIB	no current operator	W1/2	27	29N	27W	Lincoln	37	E	Libby	1	8.00	80.90	15.00
30	Kavalla Ridge	LIB	Rock of Ages	S1/2	13	29N	27W	Lincoln	35	E	Libby	1	22.00	185.00	100.00
31	Kid Rock	LIB	no current operator		8, 9	29N	26W	Lincoln	18	N	Happy's Inn	1	10.00	82.00	15.00
32	McKillop Sec. 9	LIB	no current operator	W1/2	9	27N	28W	Lincoln	7	W	Happy's Inn	1	5.00	12.00	12.00
33	N 8 ROCKIN	LIB	no current operator		7,12	30N	26W,27W	Lincoln	26	S	Trego	1	11.00	87.41	15.00
34	North Fork Stone	LIB	no current operator		17,28	31N	26W	Lincoln	20	S	Trego	1	8.00	21.00	21.00
35	POKER HILL	LIB	No current operator	NE1/4NW1/4	9	28N	R30W	Lincoln	15	S	Libby	1	5.00	16.00	10.00
36	Rail Road Rock		Glacier Stone		13 / 7, 18	29N	27W/26W	Lincoln	35	SE	Libby	1	12.00	600.30	35.00
37	Rocky Surprise	LIB	Glacier Stone	NE1/4NE1/4	23,24,25	29N	27W	Lincoln	15	NE	Happy's Inn	1	15.00	489.80	65.00
38	Thin Line Rock	LIB	Rock of Ages		14	29N	27W	Lincoln	40	SE	Libby	1	11.00	50.20	50.20
39	W. Twin Rock		no current operator		28,29,33, 4,5	27N	26W, 29W	Flathead	8	East	Happy's Inn	1	6.00	80.40	20.00
40	Tevis Landing	Miss	Blackfoot Slate & Stone	SE1/4SW1/4	31	12N	20W	Missoula	4.5	West	Lolo	1	2.00	2.00	2.00
41	Rock Tevis 7	Miss	no current operator		7	11N	21W	Missoula	9.5	West	Lolo	1	15.00	455.00	50.00
42	Rock Tevis 9	Miss	Blackfoot Slate & Stone		9	11N	21W	Missoula	7.5	West	Lolo	1	15.00	402.94	50.00
43	Baker Rock	KAL	Ron Stanton	E1/2SE1/4	31	21N	25W	Sanders	4	NE	Plains	1	8.00	57.00	25.00
44	Banana Stone	KAL	Block Mtn Slate & Stone	S1/2NE1/4	1,12	20N	26W	Sanders	3	NE	Plains	1	15.00	306.42	85.00
45	Bemish Rock	KAL	Block Mtn Slate & Stone	SE1/4SW1/4	33	20N	27W	Sanders	7	West	Plains	1	5.00	19.20	19.20
46	Blackjack Rock	KAL	No current operator	W1/2NE1/4, E1/2NW1/4	25	20N	27W	Sanders	4	West	Plains	1	10.00	80.00	20.00
47	Jungle Rock	KAL	Block Mtn Slate & Stone	SW1/4NW1/4	28, 33	23N	27W	Sanders	15	N	Thompson Falls	1	10.00	53.00	15.00
48	Locust Hill	KAL	Block Mtn Slate & Stone	SW1/4NE1/4	1	20N	26W	Sanders	3	NE	Plains	1	15.00	446.43	100.00
49	LTR Rock	KAL	Jake Andersen Rock Sales	NE1/4NE1/4W/ NW1/4NW1/4	3,10,11	22N	26W	Sanders	20	South	Plains	1	8.00	94.00	15.00
50	North Banana Rock	KAL	Ron Stanton	W1/2NE1/4	31	21N	25W	Sanders	4	NE	Plains	1	8.00	102.00	18.00
51	Power Rock	KAL	Block Mtn Slate & Stone	SE1/4SE1/4	6	20N	25W	Sanders	3	NE	Plains	1	8.80	8.80	8.80
52	West Combest Rock	KAL	Block Mtn Slate & Stone	SW1/4NE1/4	31	20N	26W	Sanders	3	West	Plains	1	20.00	310.70	105.00
53	Miller 9 Rock		no current operator	S1/2SW1/4	9	19N	26W	Sanders	4	South	Plains	1	5.00	54.20	25.00
54	Miller 817		no current operator	NE1/4SEC17,SW1/4SE1/4SEC8	8,17	19N	26W	Sanders	4	South	Plains	1	5.00	65.10	15.00
55	Miller Combest Rock		no current operator		9,10,15	19N	26W	Sanders	4	South	Plains	1	10.00	50.60	18.00
56	West Combest 58 Rock		no current operator		5,8	19N	26W	Sanders	3	SW	Plains	1	5.00	223.10	95.00

PLUM CREEK STATEWIDE OPERATING PERMIT

INDIVIDUAL SITE DATA SUMMARY

Sites where the un reclaimed area will exceed five acres over the life of the permit.

TABLE 1

Site No.	Quarry Site Name	Office	Operator	Location				County	Miles	Direction	Nearest Community	1 = YES Past or Present Activity on site	Estimated Permitted Disturbance within 5 years	Estimated Permitted area	Estimated Permitted Disturbance over 20 yrs.
				Subdivision	Section	Twp.	Rge.								
57	Little McGregor Rock		no current operator	NE1/4Sec 5,S1/2SE1/4 Sec 32,W1/2 Sec 33	5, 32,33	26N 27N	25W	Flathead	33	West	Kalispell		5.00	479.10	65.00
58	Rail road 1718 Rock		no current operator	E1/2 Sec 18,W1/2 Sec 17	7,8,17,18	29N	26W	Lincoln	29	West	Marion		10.00	182.80	45.00
59	ACM 64 Mile Rock		Glacier Stone	NE1/4Sec 3,NW1/4Sec 2,S1/2 Sec35	2,3 35	28N 29N	27W	Flathead Lincoln	26	West	Marion	1	15.00	203.00	30.00
60	Kavalla 15 Rock		no current operator		15	29N	27W	Lincoln	35	East	Libby		5.00	86.90	30.00
61	Redgate Yard		Ron Stanton	NW1/4 NW1/4	8	26N	24W	Flathead	14	West	Marion		4.00	14.50	14.50
62	Skookum Yard		no current operator	W1/2 NE1/4	7	26N	24W	Flathead	14	West	Marion		4.00	29.20	29.20
63	BN Rock		no current operator		29,30,31,32	28N	27W	Flathead	9	North	Happy's Inn		12.00	336.30	125.00
64	Granger Overlook		no current operator	E1/2	7	26N	23W	Flathead	13	South	Marion		10.00	135.60	100.00
65	C- Branch Rock		no current operator	NE1/4 NE1/4	33	26N	25W	Flathead	17	SW	Marion		5.00	16.60	16.60
66	BN 2530 Rock		Battin Construction		25 30	28N	27.5 W 27W	Flathead	8	North	Happy's Inn	1	6.00	33.50	20.00
67	Mckillop Ridge		no current operator		3,4,9,10	27N	28W	Lincoln	8	West	Happy's Inn		5.00	254.00	60.00
68	Loon Lake Rock		Glacier Stone	NW 1/4	27	27N	28W	Lincoln	5	West	Happy's Inn	1	5.00	108.30	70.00
69	Conliff 335 Rock		Glacier Stone		3 34,35	28N 29N	26W	Lincoln	29	West	Marion	1	25.00	296.80	135.00
70	4 Mile Rock		Jake Andersen Rock Sales	NE1/4 NE1/4	5	25N	25W	Flathead	17	SW	Marion	1	14.00	26.90	26.90
71	Red Lake		no current operator	SE1/4 SW1/4, SW1/4 SE1/4	29	25N	25W	Flathead	20	SW	Marion		5.00	37.50	25.00
72	Lake View Rock		no current operator		13, 17,18	28N	25W,24W	Flathead	10	N	Marion		10.00	403.70	75.00
73	Mule Mech. Rock		no current operator	NE1/4	1	25W	26W	Flathead	20	SW	Marion		8.00	136.70	35.00
74	E. Boisverts Rock		Schellinger Sand and Gravel		30,31,32	27N	25W	Flathead	15	West	Marion	1	8.00	357.90	40.00
75	W. Boisverts Rock		no current operator		25,35	27N	26W	Flathead	15	West	Marion		5.00	239.20	40.00
76	W. Bear Rock		no current operator		1 7	27N	26W,25W	Flathead	15	NW	Marion		6.00	204.70	25.00
77	Haskill Retreat Rock		no current operator		5	26N	23W	Flathead	17	SW	Kalispell		8.00	67.90	25.00
78	Kessler Overlook		no current operator		5	26N	23W	Flathead	17	SW	Kalispell		5.00	36.40	18.00
79	Loon Complex		Glacier Stone		26,27,35	27N	28W	Lincoln	5	West	Happy's Inn		7.00	408.10	100.00
80	Clark 21 Rock		no current operator		20,21,28,29	21N	25W	Sanders	9	NE	Plains		5.00	213.50	35.00
81	McGivary Rock		Rock of Ages	East 1/2	33	32N	29W	Lincoln	15	NE	Libby	1	6.00	227.10	35.00
82	Rock 78		no current operator		7,8	19N	26W	Sanders	3	SW	Plains		5.00	144.20	35.00
83	Rock 43		no current operator		3,4	19N	26W	Sanders	3	SW	Plains		15.00	167.70	50.00
84	Rock 9		no current operator		9	19N	26W	Sanders	3	SW	Plains		8.00	112.20	50.00
85	Baldys Rock		no current operator		17,20	21N	25W	Sanders	9	NE	Plains		8.00	235.10	65.00
86	Billy Fritz Pass Rock		no current operator	NW 1/4	33	27N	28W	Lincoln	4	SW	Happy's Inn		4.00	20.00	5.00
87	McGinnis Rock		no current operator	SE 1/4	5	26N	28W	Lincoln	5	SW	Happy's Inn		5.00	32.70	10.00
88	Deerhorn 32 Rock		no current operator	NE1/4SW1/4, NW1/4SE1/4	32	23N	27W	Sanders	15	NW	Thompson Falls		5.00	18.60	15.00
89	Thompson 5 Rock		no current operator	NW1/4, NW1/4SW1/4	5	22N	27W	Sanders	14	NW	Thompson Falls		5.00	93.60	10.00
90	Locust 6		no current operator	NE1/4, NE1/4NW1/4	6	20N	25W	Sanders	5	NE	Plains		5.00	112.60	25.00
91	Snider 1 Rock		no current operator	E1/2NW1/4, W1/2NE1/4	1	22N	26W	Sanders	17	N	Plains		5.00	66.80	10.00
92	Raven Rock		no current operator		2,3 34,35	26N 27N	29W	Lincoln	27	SE	Libby		5.00	700.41	51.00
93	Dirty Ike Rock		Blackfoot Slate & Stone	W1/2	15	12N	17W	Missoula	2	NW	Clinton	1	10.00	49.00	10.00
94	Johnson Rock		no current operator		14,15	13N	18W	Missoula	2	NE	Bonner		5.00	93.13	10.00
<b>TOTAL # OF SITES: 94</b>											<b>53</b>	<b>976.80</b>	<b>14108.29</b>	<b>3550.00</b>	
<b>* MORE SITES TO BE ADDED AND DELETED OVER THE LIFE OF THE PERMIT</b>															

## **ATTACHMENT 1**

February 1, 2004

**RE: Supplemental EA for General Quarry Permit**

Dear Reader,

Attached is a copy of a supplemental programmatic Environmental Assessment (SEA) for a proposed general quarry permit for standardized plans of operations for small multiple-site quarry and rock collecting operations. The Montana Department of Environmental Quality (department) published a draft and final programmatic Environmental Assessment (EA) for a proposed general quarry permit for standardized plans of operations for small multiple-site quarry and rock collecting operations on October 26, 1999 and January 12, 2000.

The department is herein proposing a revision of the language which refers to allowable disturbance under the general quarry permit, to comport with language found in the Metal Mine Reclamation Act (MMRA) regarding disturbance under the Small Miners Exclusion Statement (SMES). In addition, several changes have been made to improve precision and provide clarification. The draft SEA includes a draft application for operations qualifying for this proposed permit.

The General Quarry Permit was developed to address the need to regulate the expanding number of small quarries and rock collecting sites in Montana. Such sites traditionally have been regulated under a Small Miners Exclusion Statement (SMES). Many operators, however, have more than the maximum of two sites allowed under a SMES, but do not cause the level of environmental impacts appropriate for a full Operating Permit. The proposed language change would allow any individual small quarry to maintain a working disturbance of up to 5 acres. Total disturbance during the life of an individual operation could exceed 5 acres, but concurrent reclamation would be required to keep the disturbance at any one time to 5 acres or less. This language is consistent with that found in the MMRA with regard to mines that operate under the SMES.

The General Quarry Permit plan of operations would be accepted where there is no potential for impact to surface or groundwater, where the geochemical changes resulting from excavation of rock will not result in acid rock drainage, and where no water impounding structures other than for storm water control are constructed. In addition, the plan of operations would be accepted for sites where there are no cultural resources, wetlands, or threatened and endangered plant or animal species. Sites may occur on federal, private, or state lands.

**A new supplemental information form would be used for these operations. This form provides an outline specifying information needed regarding the plan of operations, baseline conditions, the reclamation plan, and the applicants. If the department concludes that an application meets the criteria for this permit, no further Montana Environmental Policy Act analysis would be required.**

**The draft SEA discusses two alternatives: No-Action and the Agency Proposal. The Preferred Alternative in the draft SEA is the Agency Proposal.**

**A 30-day comment period on the draft SEA will begin on February 5, 2004 and end on March 5, 2004. Any comments, suggestions, or questions will be welcome during that period. Written comments may be sent to Patrick Plantenberg, Environmental Management Bureau, Permitting and Compliance Division, DEQ, P.O. Box 200901, Helena, MT 59620-0901. Letters must be postmarked by March 5, 2004. Comments can also be sent by e-mail to [pplantenberg@state.mt.us](mailto:pplantenberg@state.mt.us).**

**For more information on the draft SEA or to request a copy of the draft SEA call Patrick Plantenberg at (406) 444-4960 or Pete Strazdas at (406) 444-4962. The draft SEA is also available on the DEQ web page at <http://www.deq.state.mt.us/ea.htm>.**

**Sincerely,**

**Warren McCullough, Chief  
Environmental Management Bureau**

**Enclosure w/2 appendices**

DEPARTMENT OF ENVIRONMENTAL QUALITY  
PERMITTING AND COMPLIANCE DIVISION

PROGRAMMATIC ANALYSIS  
*FOR*  
*GENERAL QUARRY PERMIT*  
*DRAFT SUPPLEMENTAL ENVIRONMENTAL ANALYSIS*

Environmental Management Bureau - Hard Rock Program

*APPLICATION FOR OPERATING PERMIT*

Introduction

Name of Project: \_\_\_\_\_ General Quarry Permit \_\_\_\_\_

Type of Project: \_\_\_\_\_ Rock \_\_\_\_\_

Location of Project(s): \_\_\_\_\_ Variable \_\_\_\_\_

County: \_\_\_\_\_ Variable \_\_\_\_\_

Description of Project (Summary of Proposed Action)

*The department published draft and final programmatic Environmental Assessments (EAs) for a proposed general quarry permit for standardized plans of operations for small multiple-site quarry and rock collecting operations on October 26, 1999 and January 12, 2000. "Quarry" as used in this SEA may mean either a quarry or a rock collecting site. The department is herein proposing a revision of the language which refers to allowable disturbance under the general quarry permit, to comport with language found in the Metal Mine Reclamation Act (MMRA) regarding disturbance under the Small Miners Exclusion Statement (SMES). In addition, several other changes have been made to improve precision and provide clarification. Additions to the SEA are shown in italics. Deletions are shown as ~~strike outs~~.*

The department is consolidating, in one programmatic review, an analysis of a proposed plan of operations for small multiple-site quarry and rock collecting operations. *The General Quarry Permit was developed to address the need to regulate the expanding number of small quarries and rock collecting sites in Montana. Such sites traditionally have been regulated under a Small Miners Exclusion Statement (SMES). Many operators, however, have more than the maximum of two sites allowed under a SMES, but do not cause the level of environmental impacts appropriate for a full Operating Permit. The proposed language change would allow any individual small quarry to maintain a working disturbance of up to 5 acres. Total disturbance during the life of an individual operation could exceed 5 acres, but concurrent reclamation would be required to keep the disturbance at any one time to 5 acres or less.* The plan of operations would ~~apply only to sites where each individual site would disturb no more than 5 acres, be accepted~~ where there is no potential for impact to surface or groundwaters, where the geochemical changes resulting from excavation of rock ~~do~~ *will* not result in acid rock drainage, and *where* no water impounding structures other than for storm water control are constructed. In addition, the plan of operations would ~~apply only to~~ *be accepted for* sites where there are no

cultural resources, wetlands, or threatened and endangered plant or animal species. ~~Such~~ Sites may occur on federal, private, or state lands.

A new supplemental information form would be used for *in conjunction with* these small quarry and rock collecting operations and is included in Appendix A. This form provides an outline specifying information needed regarding the plan of operations, baseline conditions, the reclamation plan, and information about the applicants. If this programmatic review is approved and the department concludes *that* an application meets the criteria set out below, then no further *Montana Environmental Policy Act (MEPA)* analysis would be required.

Each permit approved through this process may be modified by the department or the applicant in accordance with provisions of *Section 82-4-337(3)*, MCA at any time that the above conditions are not met.

### Purpose and Need

The department has proposed a standardized plan of operations for activities undertaken at certain sites by companies and individuals supplying rock for landscaping and construction. Demand for this type of rock is increasing. Thus, the department's workload in this area is increasing. The department has developed this standardized plan to maximize the efficiency of permitting and the decision-making process for such companies and individuals.

These kinds of disturbances are *have* typically *been* covered under the *SMES Small Miner's Exclusion Statement*; the need *by many applicants* for more than two sites precludes this option. This documentation provides a categorical exclusion from the more detailed, standardized *operating permit* application process and environmental impact analysis currently required *for sites not eligible for a SMES*.

### Public Involvement

The department published a notice to solicit public input in *news*papers across the state. Only two newspapers chose to publish the notice, the Mineral Independent of Superior, and the Meagher County News of White Sulphur Springs, both in April 1999. *The department published the notice for the supplemental environmental analysis in January 2004.*

The department further solicited comments from 117 contractors, quarrymen, public agencies, elected officials, and citizens groups. Letters were mailed on May 10, 1999. The department received letters from two commentors in response. None of the comments were substantive.

### Agency Roles and Responsibilities

The department is responsible for ensuring *that* activities proposed under the *Metal Mine Reclamation Act MMRA* are in compliance with the Act and with air and water regulations. Permits issued pursuant to these regulations do not confer any property rights to a permittee. In preparing the draft EA, the department solicited input from the Department of Natural Resources and Conservation and federal land managing agencies. No comments were received from these agencies. However, each applicant would be responsible for obtaining any special use permits or complying with agency-specific restrictions ~~when~~ *if* the proposed mine *quarry* was *is* located on state or federal lands.

### Alternatives

Alternatives would be developed based on the complexity of the existing process and a desire to tailor the process to meet the specific needs of a group of permittees conducting activities on small areas with minimal impact and no potential for significant impacts. Public comment was solicited to develop additional criteria for consideration as a part of the proposed action and to develop additional alternatives. No additional concerns were identified; therefore, there are no additional alternatives considered in this EA other than the No-Action Alternative required under MEPA.

### No Action *Alternative*

Under the No-Action Alternative, the department would require each potential permittee to apply using the standard operating permit application process. This existing process is minimally standardized because of the large degree of variability between sites proposed for large industrial or even small metal mines. Thus it is difficult for the small operator who has minimal familiarity with, and limited resources to commit to the permitting process *and* to secure an operating permit. Appendix B contains a copy of the existing application form. Supplemental material describing the environmental baseline, the operating plan, and the reclamation plan is typically submitted in three-ring binders. The amount of supplemental information varies with the size and complexity of the site.

### Proposed Plan of Operations *Alternative*

Under this alternative, the department would utilize a standardized, more structured process to work with the individuals and small firms proposing to collect landscaping rock or building stone on a small-scale or intermittent basis. Appendix A contains the proposed form outlining and defining the supplemental information needed regarding the plan of operations, baseline conditions, the reclamation plan, and applicants, and would be appended to the existing Application for Operating Permit form found in Appendix B. The proposed form condenses the information that typically fills three-ring binders under the existing standardized permitting process and would facilitate permitting multiple small quarry and rock collecting operations that meet the criteria described below.

~~This plan would apply to multiple sites that do not meet the criteria for a Small Miner's Exclusion Statement because the same operator would disturb more than two sites. *The General Quarry Permit was developed to address the need to regulate the expanding number of small quarries and rock collecting sites in Montana. Such sites traditionally have been regulated under a Small Miners Exclusion Statement (SMES). Many operators, however, have more than the maximum of two sites allowed under a SMES, but do not cause the level of environmental impacts appropriate for a full Operating Permit. The proposed language change would allow any individual small quarry to maintain a working disturbance of up to 5 acres. Total disturbance during the life of an individual operation could exceed 5 acres, but concurrent reclamation would be required to keep the disturbance at any one time to 5 acres or less. Individually, operators would not be allowed to have more than 5 acres at each site. Access roads would not be counted against the allowable 5 acres under this permit if bonded for reclamation. Access roads would be bonded for reclamation if the landowner did not want the road left for uses after quarrying.*~~ The permitted sites are prohibited from being adjacent to each other so as to create a continuous disturbance or unreclaimed sites greater than 5 acres. This permit would cover two kinds of disturbances: quarry type operations (at new or existing sites) and rock or stone collecting sites.

*Quarry operations.* A new quarry would be opened or an existing site reopened by removing vegetation, stripping and stockpiling soil for future reclamation use, and removing overburden or waste rock to access the desired rock materials. Depending on the product being produced, rock may be removed by drilling and blasting followed by excavation and hauling, ripping with a bulldozer or excavator followed by removal, or by drilling and sawing blocks with diamond saws followed by removal. If blasting were to be used, the operator would comply with provisions of ~~S~~section 82-4-356, MCA, and ARM 17.24.157-159.

Quarries would be reclaimed by scaling back highwalls, if necessary for stability and safety. If quarrying results in upslope raveling of scree or loose rock, that destabilized slope would be revegetated or otherwise stabilized. The quarry floor would be graded, covered with soil material and revegetated. If quarrying results in a pit below the level of adjacent ground, that pit would be backfilled ~~to the level of adjacent ground with the remaining waste rock and/or graded to blend with the surrounding topography and revegetated using the cover material that is available.~~

Other areas disturbed but not mined *quarried* would also be revegetated. Overburden and waste rock, if present, would be graded to conform to natural topography, against the pit highwall or as a mound or slope. Coarse rock would not be revegetated but would remain as a rubble or scree feature. Overburden that could support vegetation, or rock that could be covered with salvaged soil, would be revegetated.

*Rock Collection Sites.* A rock or stone collection site would be worked by workers with hand bars or other hand tools, or with loaders, backhoes, or other similar equipment that would lift rock and stones from the ground surface, or from under thin soil layers, and stockpile or pallet them for removal. These kinds of operations would *generally occur on ridges or across rolling prairie and would* not generally cause continuous areas of disturbed soil nor create open pits or highwalls, but would only disturb the ground *from which* the rock had been removed. In most rock collection sites, soil would not be salvaged, because site disturbance would be minimal, however, loss of soil by gully erosion of tracks or other careless activities would not be permitted.

Reclamation needs at rock collection sites would be evaluated on a site-specific basis. Reclamation may consist primarily of smoothing disrupted ground surfaces, replacing any topsoil that had been removed and stockpiled, seeding sites where rock has been removed, clearing rock from roads and trails to remain after mining, and grading excessive ruts on roads or fields that may have been caused by the operator.

*General Requirements.* There would be no permanent structures on site, unless these structures conformed to the approved ~~post-mine~~ land use *after quarrying*. Temporary camp/office trailers may be used. All equipment and buildings brought onto the site and trash would be removed at ~~mine~~ *quarry* closure.

Access would typically be from established trails or roads. However, if an access road were proposed, it would typically be a relatively low grade, temporary road. The operator would need to have approval from the landowner or a special use permit from a government agency prior to constructing the road and all necessary measures would be taken to control erosion including using standard best management practices (*BMPs*) and revegetating all disturbed areas along the road. Roads would be bonded for reclamation, unless required ~~post-mine~~ by the landowner *after quarry closure*.

Rock may be sorted, stockpiled, and collected on sites, prior to removal. Occasionally, some weed splitting/breaking may be done and rock crushing for decorative uses may occur. An air quality permit may be required for crushing operations and would be applied for on a site-specific basis.

In those instances when substantial site disturbance would be required, soils would be salvaged and stockpiled. Long-term soil stockpiles would be revegetated with an interim seed mix to minimize dust and weed establishment. Best management practices for erosion and storm water controls would be utilized, including diversion of run-on water from undisturbed ground away from the rock collection or quarry site and collection of storm water from within the disturbed areas into ponds without discharge to surface waters.

The proposed ~~post-mining~~ land use *after quarrying* would typically return the site to its *prequarrying* ~~mining~~ use, typically *such as* wildlife habitat, forest, or grazing land. Plant species used for revegetation would be compatible with and appropriate for the ~~post-mining~~ land use *after quarrying*, and approved by the department. Any alternative ~~post-mining~~ land use *after quarrying*

proposed by the operator, such as a building site, may be appropriate if it is feasible, compatible with any local or regional zoning regulations, and consistent with the landowners' long-term plans for the site. Any land use changes outside these parameters would need to be evaluated in a separate EA.

Noxious weed control would be consistent with the County's weed control plan. Liability for weed control or eradication would be based on species identified in a site-specific pre~~quarrying~~-mining weed inventory. Operators would be responsible to eradicate noxious weeds on ground that was free of noxious weeds prior to ~~quarrying~~ mining. Conversely, if the site was infested before operations began, the operator would not be responsible for returning the land to a weed-free state, but would be required to return the land to a condition no worse than what existed prior to operations and similar to that of surrounding lands. Operators may be required to establish competitive vegetation, if appropriate.

Bonding would be determined in accordance with the approved site-specific plan of operations as defined in *Section* 82-4-338 MCA.

#### Affected Environment

The site conditions required for a plan to be approved under this operating permit are described below.

#### Geology

Rock ~~mined~~ *quarried* under this plan would consist of various rock types and mineralogies. The rock may be found at or near the surface, such as talus, or in-place, such as bedded sandstone, shale, limestone, basalt, rhyolite, travertine, or marble. It may be covered by overburden, or exposed as outcrops or scattered rock laying on the earth's surface. The rock or resulting waste would have no potential for causing acid rock drainage. *Sites with a potential for acid rock drainage would not be eligible for permitting under this SEA.*

#### Hydrology

For rock recovery under a general quarry permit, the rock must be obtained from a dry site. Surface waters would *must* be 100 feet or more from the site and the water table would *must* not be intercepted by any surface activities. Similarly, no riparian areas or wetlands would *may* be disturbed as a result of rock quarrying under the general quarry permit.

#### Soils

Soil development may be highly variable but may be expected to be shallow over rock. Extent of soil development would not be a criterion of permit approval.

#### Biological Diversity

Vegetation on quarry sites consists of meadows, rangelands, forests, or agricultural crops, *typically supporting an array* of wildlife species including small and large mammals, reptiles, and birds. Sites supporting threatened *and* endangered ~~or sensitive~~ plant species would not be *permissible* under this general permit. Some sites may contain a high concentration of ~~and~~ noxious weeds ~~plants~~ prior to site disturbances. Due to the *required* distance from water, no fisheries would be present and the probability for the occurrence of any amphibians would be limited.

## Land Use

Existing land uses would include ~~mining~~ **quarrying**, agriculture, recreation, and forestry. If any historic or prehistoric cultural activities are known to have occurred at the proposed site, the site would not be **permissible** under the general quarry permit. The site would not affect any existing transportation or utility corridors, or wilderness lands.

## Social-Economic Conditions

Most rock collecting is done by individuals and small companies. The quarrying and rock collecting activities are distributed statewide. The operators tend to be concentrated near population centers and in areas experiencing growth, to satisfy the demand for decorative rock and building stone.

## Impacts of the Proposed Project

N = Not present or No Impact will occur.

Y = Impacts may occur (explain under Potential Impacts).

Include frequency, duration (long or short term) magnitude and context for any impacts identified. Identify reasonable feasible mitigation measures where appropriate.

**NA= Not applicable**

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	[Y] Removal of rock or building stone would irreversibly remove the material from the site. A pit and/or highwall may result from quarrying. Soils would be salvaged and replaced at sites proposed for substantial surface disturbance. Additional protective measures would be required on steep slopes and erodible soils to minimize erosion.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	[N] The stipulated 100-foot distance from surface waters and prohibition of interception of water tables would prevent impacts to surface and ground waters.
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?	[N] There is some potential for dust created by crushing operations that may need to be covered by an air quality permit.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	[Y] Vegetation could be impacted for the short-term by clearing and soil removal at some sites. This would be mitigated by replacing soil and revegetating the site at closure. The potential exists for increasing the spread of noxious weeds but would be minimized through implementation of a county approved noxious weed control plan <i>and aggressive control measures.</i>
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	[Y] There is a potential for minor impacts to wildlife and birds at sites with greater surface disturbance, and where heavy equipment or blasting would be used. This would be a short term and very local impact, and would be removed <i>cease</i> when <i>quarrying or rock collecting mining</i> ceased <i>ends</i> . Sites with critical habitats for threatened <i>and</i> or endangered species would not be permitted under this process.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or <b>and</b> endangered species or identified habitat present? Any wetlands? Species of special concern?	[N] Sites with these features would not be permitted through this proposed permit process.
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	[N] Sites with these features would not be permitted through this proposed permit process.
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	[Y] Activities at existing quarries or development of new quarries may be visible from populated areas or from recreational sites, but the small size of these operations and site reclamation <b>concurrently and</b> at closure would mitigate any long-term impacts <b>to</b> below the level of significance.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR, OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?	[N]
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other environmental resources that would be affected by the project?	[N]

IMPACTS ON THE HUMAN POPULATION	
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[Y] Creation of <b>new</b> highwalls at quarry sites would create a safety risk. Fencing and posting of highwalls during operations and reclamation after mining would minimize the short- and long-term risks.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[Y] Development of <b>new</b> sites would result in the development of an industrial operation that could be noticeable in areas with few similar activities nearby. Reclamation of the sites after <b>mining quarrying and rock collecting</b> ceases would mitigate this impact. Expansion of existing quarries and sites would have less impact.

IMPACTS ON THE HUMAN POPULATION	
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	[Y] The number of jobs created by these operations is highly variable, from one person per operation, to companies employing several tens of fulltime workers.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	[Y] Addition to tax base would be <del>insignificant</del> <b>substantial in some counties in Montana.</b>
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire, police, schools, etc.) be needed?	[Y] There may be some increase in traffic on roads to some sites, but the increase would not be substantial and would return to <del>premine prequarry</del> levels after the <del>mine quarry</del> closed and the site was reclaimed.
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[Y] Special use permits and agency specific restrictions may be required on federal or state lands.
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[Y] <del>Mining</del> <b>Quarrying</b> could not occur within designated wilderness areas, but development of new, or expansion of existing sites could affect recreational activities on and around the sites. The small size of each site and reclamation of potential sites at <del>mine quarry</del> closure would minimize this potential impact below the level of significance.
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N]
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N]
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]
21. PRIVATE PROPERTY IMPACTS: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property	[Y] This activity is regulated by the <del>MMRA Montana Metal Mine Reclamation Act</del> , <b>Ssection 82-4-301 MCA, et seq.</b> No permit conditions are proposed outside the scope of this statute.

IMPACTS ON THE HUMAN POPULATION	
management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.	
22. PRIVATE PROPERTY IMPACTS: Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required.	[Y] The mitigations described above are necessary to comply with reclamation, water quality, and air quality laws and regulations, and would vary to some degree from site to site, depending on conditions and type of operations.
23. PRIVATE PROPERTY IMPACTS: Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives. The agency must disclose the potential costs of identified restrictions.	[N] The only discretion available to the agency would be in selecting mitigations appropriate for each site that would achieve the desired result of complying with the laws and regulations. The requirements imposed in the plan of operations are the minimum requirements necessary to comply with the <del>Metal Mine Reclamation Act</del> <b>MMRA</b> and rules.
24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N/A]

25. Description of and Impacts of Other Alternatives Considered:

**No-Action:** The No-Action alternative would leave the permitting requirements for small quarrying and rock collection operations unchanged. Those operators who utilize more than the two sites allowable under the SMES would be obliged to submit ~~more~~ rigorous baseline, operating, and reclamation plans. The department would be obliged to conduct public scoping, prepare an environmental assessment, and solicit and respond to public comments for each site.

**Approval with Modification:** No modifications were proposed.

26. **Summary of Magnitude and Significance of Potential Impacts:** Impacts would be minimal. *The General Quarry Permit was developed to address the need to regulate the expanding number of small quarries and rock collecting sites in Montana. Such sites traditionally have been regulated under a Small Miners Exclusion Statement (SMES). Many operators, however, have more than the maximum of two sites allowed under a SMES, but do not cause the level of environmental impacts appropriate for a full Operating Permit. The proposed language change would allow any individual small quarry to maintain a working disturbance of up to 5 acres. Total disturbance during the life of an individual operation could exceed 5 acres, but concurrent reclamation would be required*

**to keep the disturbance at any one time to 5 acres or less.** Each permit would be no larger than 5 acres, which is the scale of disturbance determined in the MMRA to be non-significant. Further, there would be no impact to surface or groundwater, archeological or cultural resources, or **rare threatened** or **and** endangered plant or animal species. Each site would be reclaimed immediately following **mine** closure.

27. Cumulative Effects: Cumulative effects would depend on what other activities are ongoing in each of the quarry/rock collection areas. Operations under the general quarry permit would provide minimal additional disturbance in any area. If cumulative effects from other activities in the area and a quarry or rock-picking site were identified, then this categorical exclusion would not apply.

28. Preferred Alternative: The department's preferred alternative is to adopt the general quarry permit as described in this **supplemental** environmental assessment without modifications.

**29. Recommendation for Further Environmental Analysis:**

EIS     More Detailed EA     No Further Analysis

Rationale for Recommendation: This permitting process for multiple small quarries or rock collection sites would be a more efficient and simpler way for applicants to apply for permits and the agency to review them than the standard process that is currently required for multiple sites due to the small miner's restrictions in the **Montana Metal Mines Reclamation Act MMRA**. There would be minimal or no impacts to the existing environment during operation at sites approved under this general permit and there would be no potential for acid rock drainage. No impacts of any kind would be allowed to affect surface or ground water, wetlands, archeological or cultural resources, or **rare**, threatened, or **and** endangered plant or animal species during operation, because the general quarry permit would not be used in those instances. Soil would be salvaged and/or protected to prevent erosion and facilitate reclamation. Storm water controls would be required **to** preventing erosion and possible sedimentation of nearby streams outside the 100-foot buffer zone. Each site would be reclaimed **concurrently and/or** immediately following **mine** closure.

**30. SEA Checklist Prepared By:**

Pete Strazdas  
Small Miner Program Supervisor

**Patrick Plantenberg**  
**Operating Permit Section Supervisor**

**Approved By:**

\_\_\_\_\_  
McCullough  
Environmental Management Bureau Chief

\_\_\_\_\_  
Date

\_\_\_\_\_  
Warren

## APPENDIX A

## **GENERAL QUARRY PLAN OF OPERATIONS**

**This Plan of Operations application form may be used to permit a rock or stone quarry or collection area if:**

- **Any individual small quarry maintains a working disturbance of up to 5 acres. Total disturbance during the life of an individual operation could exceed 5 acres, but concurrent reclamation would be required to keep the disturbance at any one time to 5 acres or less. Access roads would not be included in the disturbed total, but the operator would submit a reclamation bond for roads that do not have an appropriate use after quarrying. Roads appropriate for the land use after quarrying and access or haulage roads which are required by a local, state, or federal agency having jurisdiction over that road would not have to be bonded;**
- **There would be no impact to any wetland, surface or ground water;**
- **There would be no constructed impoundments or reservoirs used in the operation;**
- **There would be no potential to produce any acid or other pollutive drainage from the pit;**
- **There would be no impact to threatened and endangered species;**  
**and**
- **There would be no impact to significant historic or archeological features.**

**This form offers a simplified way to write a complete plan and must be submitted together with the *Application for Operating Permit* form and \$500 application fee.**

**When using this form: 1) give a complete response to the information requested; 2) provide necessary additional information; and 3) write N/A if the request for information is not applicable.**

**Supplemental information can be found in the Plan of Operations Guidelines and other Operating Permit packet materials. Please contact the department if you need additional information or assistance.**

### **SECTION I - CORPORATE INFORMATION**

**(All information requested in this part must be provided)**

- 1. If the applicant is a corporation or other business entity, list the name and address of officers, directors, owners of 10% or more of any class of**

**voting stock, partners, and the like and its registered agent for service of process:**

- 2. List the names and addresses of the owners of record and any purchasers under contract for deed of the surface of the land within the permit area and the owners of record and any purchasers for deed of all land within one half mile of any part of the permit area:**
- 3. List the names and addresses of the present owners of record and any purchasers under contracts for deed of all minerals in the land within the permit area:**
- 4. Provide the source of the applicant's legal right to quarry the mineral on the land affected by the permit:**
- 5. Certify that the applicant is not currently in violation in this state of any law, rule, or regulation of this state or of the United States pertaining to air quality, water quality, or quarried land reclamation:**

**Or if the applicant is a partnership, corporation, or other business association, certify that any partners, officers, directors, owners of 10% or more of any class of voting stock, and business association members, are not currently in violation in this state of any law, rule, or regulation of this state or of the United States pertaining to air quality, water quality, or quarried land reclamation:**

## **SECTION II - PREQUARRY BASELINE**

- 1. Location and Topography. Provide a map showing the location of the proposed quarry and describe the proposed access route. Include the specific area to be quarried and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of proposed access roads and conceptual spur roads to be built. Provide a general description of how to access the site using the Exhibits:**
- 2. Present Land Use and Past Quarrying Disturbance. Describe the present land use and any past quarrying disturbance within and near the proposed permit area:**
- 3. Water Wells. Give the location, total depth, and use of any water well in and within 1,000' of the permit area:**

**4. Water Table. Give the estimated seasonal high and low table depths for the area to be quarried, and the maximum depth of quarrying. Specify whether quarrying activities will intercept the water table at any time of the year. If the water table is close to the surface, please dig a test pit and document the presence or absence of evidence of seasonally high water tables:**

**5. Surface Water. Show the location on a map and provide a description, and use of any surface water in and within 100 feet of the permit area. Specifically state how far it is from the permit area to surface water. Specifically state whether there is any surface water within 100 feet of the quarry or the new access road. For all sites with surface water close to the site, the operator will describe additional BMP's put in place to prevent impacts to surface water:**

**6. Soil Material. Provide a general description of the soil and overburden types and thickness in the area to be quarried. Provide a general description of the soil in the proposed disturbance areas. Provide an estimate of the total acreage of the disturbed area that will be salvaged and have soil replaced at closure:**

**7. Vegetation. Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:**

**8. Wildlife. Describe any significant seasonal or year round use by wildlife in and within 1,000 feet of the permit area. Does the site have any habitat for threatened and endangered species?**

**9. Geology. Give a geologic description of the site and describe the potential for the rock to produce acid or other pollutive drainage. Specify whether there are any visible sulfides, iron staining or other effects of chemical weathering on the rocks. If so, then provide more information and sample the material and provide the results if necessary:**

**Quarry or Rock Picking Activities: Please provide information for each site on the products being removed from each site. Will the site be used for surface rock picking only? Will the site create a quarry pit that needs to be graded at closure? Will crushing be needed on the site? Will blasting be used on the site?**

**10. Additional Information. Describe any characteristics or circumstances unique to the site:**

### **SECTION III - OPERATING PLAN**

**1. Soil Material Handling. Operator will:**

**a. Salvage at least 6" of soil from level facility areas, if available: (level facility areas include mineral stockpile, processing and staging area, except palleting areas receiving minimal disturbance):**

**b. Salvage all soil and overburden from, and at least 10' ahead of, quarry areas: (quarry areas include areas to be quarried as well as areas for waste rock disposal):**

**c. Handle soil and overburden separately and haul these materials to areas prepared for resoiling or stockpile them separately where they will not be disturbed, contaminated, or lost to erosion:**

**d. Shape and seed any soil or overburden stockpile that will remain undisturbed for more than 1 year:**

**e. In the case of reclamation to a use that will not require a vegetative cover, retain all soil on site in an accessible location until the alternate reclamation is assured:**

**2. Quarrying. Indicate the material to be quarried and describe the quarrying method, showing location of the proposed quarry, stockpiles, roads, and other facilities on a map:**

**3. Rock Collecting Sites. Indicate the material to be collected and describe the collecting method, showing location of the proposed collection area, soil or waste rock stockpiles, roads, and other facilities on a map:**

**4. Expected Starting Date of Operations.**

**5. Road Construction. Describe the types of access and quarry related roads to be built, and specify which if any road is to remain per landowner request after quarrying is completed, their intended use, and the condition in which they will be left:**

**6. Water Management. Describe 1) the source, quantity, use, and discharge of any surface water or groundwater to be used in the quarrying operation, and 2) any sediment control structure, water treatment system, drainage structure, or other water control system to be used:**

7. Water Protection. **Operator will:**

a. **Take appropriate measure to protect surface water and groundwater from deterioration of quality and quantity that could be caused by quarrying and reclamation activities:**

b. **Inspect and maintain all fuel storage tanks parked or set on site to prevent spillage, immediately retrieve and properly dispose of any spilled fuel or contaminated materials, and report any spill that reaches state waters or that is greater than 25 gallons to the Department at 406-444-0379:**

c. **Keep all equipment, facilities, and disturbances at least 100 feet from typical high water marks of drainage ways, except at approved crossings:**

8. Dust Management. **Describe any dust control measures to be used during site preparation, stripping, quarrying, processing, hauling, and reclamation:**

9. Rock Stockpiles. **Operator will consolidate excess rock products into stockpiles in an accessible location near an access point or incorporate them into the reclamation plan:**

10. Waste Disposal. **Operator will prohibit on site disposal of wastes unless an appropriate solid waste management system license is obtained from the Department:**

11. Public Safety. **Describe provisions to secure hazardous features, such as highwalls, from public entry:**

12. Socioeconomics. **Describe the number of employees that the operation would require at least on a seasonal basis. Describe the number or truckloads from the quarry site per week or month:**

#### **SECTION IV - RECLAMATION PLAN**

1. Land Use After Quarrying. **State the land use of the permit area after quarrying. Structures and roads must be removed and reclaimed unless they are appropriate for the land use after quarrying:**

2. Grading. **Describe the backfilling and grading plan, supported by sketch maps and drawings if appropriate, including anticipated highwall, quarry floor, and waste rock dump slopes and contours, and any special reclamation features, water catchments, drainage ways, ponds, and any portion of the quarry to stay open. Describe grading of any quarries that are below the level of adjacent ground. Describe what steps will be taken to insure that the rock face will be stable and will not present a hazard to people or animals:**

**3. Ripping, Soil Material Replacement and Revegetation. Operator will establish a vegetative cover capable of supporting the land use after quarrying:**

**a. Describe the methods and depths of deep ripping road, stockpile, work, and other compacted areas.**

**b. Describe the methods and depths of soil replacement on level facility areas and of overburden and soil replacement on level quarry areas.**

**c. Describe the methods of seedbed preparation, including incorporation of soil amendments and mulch, if any.**

**d. Describe the methods, species and rates, and season of seeding or planting.**

**4. Weed Control. Operator will:**

**a. Ensure that all seed is weed free.**

**b. Control noxious weeds as specified in the respective weed district management plan.**

**c. Describe any planned weed control measures:**

**5. Road Reclamation. After road surface materials have been retrieved and properly handled, operator will downsize or completely reclaim quarry-related roads as follows:**

**a. Roads are to be graded to blend with the natural contour.**

**b. Roads surfaces are to be ripped, resoiled, and seeded.**

**6. Site Protection and Management. Operator will maintain adequate site protection on seeded areas for two complete growing seasons, or until reclamation is achieved, whichever is longer.**

**7. Concurrent and Final Reclamation. Operator will:**

**a. Keep reclamation as concurrent with quarrying operations as possible.**

**b. Grade, resoil, and seed or plant an area no longer needed for quarry-related activities within 1 year of the cessation of such activities on that area.**

**c. Complete final reclamation by the date given below or apply for an amendment to complete reclamation by a later date.**

**d. Give a reasonable estimate of the month and year by which final reclamation will be completed:**

**SECTION V - OTHER**

**1. Archaeological and Historical Values: Operator will:**

**a. Provide appropriate protection for archaeological and historical values found in the permit area.**

**b. Route operations around a site of discovery, promptly notify the State Historic Preservation Office (406-444-7715), and leave the site undisturbed until proper evaluation is made.**

**2. Personnel Informed. Operator will inform all necessary on site personnel, including subcontractors, of the commitments made herein.**

**3. Additional Information. Describe any other conditions that pertain to this permit that would alter the conditions or commitments above.**

**I certify that the statements and information given apply to the \_\_\_\_\_ site, and that this plan will be followed unless modified by revision or amendment as provided for in 82-4-337, MCA.**

---

**Signature**

**Date**

**Revised 02/01/04**

## **APPENDIX B**

## APPLICATION FOR OPERATING PERMIT

State of Montana  
 DEPARTMENT OF ENVIRONMENTAL QUALITY  
Environmental Management Bureau  
 PO Box 200901  
 Helena, Montana 59620-0901  
 Phone: (406) 444-4953

Pursuant to the Montana Metal Mine  
 Reclamation Act  
 (Title 82, Chapter 4, Part 3 MCA)  
 INSTRUCTIONS: See Operating Permit  
 Rules and Regulations and General Quarry Plan of Operations

Following application submittal, the initial completeness review will be done within 60 days. Subsequent reviews will be completed within 30 days. If this application is consistent with the General Quarry Supplemental EA, no further environmental analyses will be performed.

NAME AND ADDRESS OF OPERATOR (Corporation or other business entity: Give names and addresses of principal officers, partners, agents, etc.)  Telephone:	SIZE AND LEGAL DESCRIPTION OF PERMITTED AREA						
	Location:						
	Section	T _ N    Range _ E _ S    _ W	County				
	Miles	Direction From	Nearest Community				
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Minerals to be Mined</td> <td style="width: 25%;">Proposed Acreage to be Permitted</td> <td style="width: 25%;">Proposed Acreage to be Disturbed</td> <td style="width: 25%;">Expected Dates of: Starting                      Completion</td> </tr> </table>				Minerals to be Mined	Proposed Acreage to be Permitted	Proposed Acreage to be Disturbed	Expected Dates of: Starting                      Completion
Minerals to be Mined	Proposed Acreage to be Permitted	Proposed Acreage to be Disturbed	Expected Dates of: Starting                      Completion				
In the following sections, refer to maps and photos. Use attachments if necessary. (Please contact Department on questions concerning application requirements.)							
DESCRIBE ACCESS ROADS TO BE BUILT AND MANNER OF RECLAMATION UPON ABANDONMENT.							
RECLAMATION PLAN FOR ACRES TO BE DISTURBED COVERED BY THIS APPLICATION FOR PERMIT.							
DESCRIBE PLAN OF QUARRYING, PROVIDING FOR COMPLETION OF QUARRYING AND ASSOCIATED LAND DISTURBANCES.							
THIS APPLICATION MUST BE ACCOMPANIED BY:  1. Fee of \$500.00. 2. Map showing: Permit Area; specific area to be quarried; boundaries of land which will be disturbed; topographic detail; location and names of all lakes, streams, roads, railroads, and utility lines on or immediately adjacent to the area;	Signature of Applicant						
	Title						
	Date						
	FEE RECEIVED	PERMIT ISSUED	Application Returned (Statement Attached)				

## **ATTACHMENT 2**

March 30, 2004

Re: Responses to Comments on the Supplemental Programmatic Environmental Assessment and Approval of the Proposed General Quarry Permit

Dear Reader:

On February 1, 2004, the Montana Department of Environmental Quality (DEQ) published the Supplemental Programmatic Environmental Assessment (SEA) for the proposed General Quarry Permit for standardized plans of operations for multiple-site quarry and rock collecting operations. During the 30-day public comment period ending March 1, 2004, DEQ received seven comment letters, phone calls, and e-mails (Appendix C). DEQ's responses to these comments are attached in Appendix D. None of the comments resulted in substantive changes to the SEA. Section V.1 of the General Quarry Plan of Operations in Appendix A of the SEA has been revised to address concerns from the State Historic Preservation Office:

**"The Operator will *contact the State Historic Preservation Office (SHPO) and request a file search for previously recorded archeological sites in the permit area. Attach a copy of the SHPO response.*"**

This letter is being sent to the same people that received the SEA. If you would like another copy of the SEA, or if you have questions on the environmental assessment process, please contact Patrick Plantenberg, Operating Permit Section Supervisor, at DEQ, P. O. Box 200901, Helena, MT 59620, or call (406) 444-4960 or e-mail at [pplantenberg@state.mt.us](mailto:pplantenberg@state.mt.us), and one will be mailed to you.

Based on the analysis of potential environmental impacts and the lack of substantive comments received on the SEA, DEQ has determined that the Proposed Action as described in the SEA will not have any significant impacts on the human environment, and the preparation of an environmental impact statement is not required.

The SEA for the General Quarry Permit, the General Quarry Plan of Operations as modified by the SHPO comment listed above (Appendix A in the SEA), and the Application for Operating Permit form (Appendix B in the SEA) are hereby approved. This permitting process for multiple small quarries or rock collection sites would be more efficient than the standard process that is currently required

for multiple sites due to restrictions placed on small miners in the Montana Metal Mine Reclamation Act (MMRA). There would be minimal impacts to the environment during operation at sites approved under this General Quarry Permit, and there must be no potential for acid rock drainage. No impacts would be allowed to affect surface water or groundwater, wetlands, archeological or cultural resources, or threatened or endangered plant or animal species during operation. Soil would be salvaged and/or protected to prevent erosion and facilitate reclamation. Storm water controls would be required to prevent erosion and possible sedimentation of nearby streams outside the 100-foot buffer zone. Each site would be reclaimed immediately following quarry closure. Any sites that could not meet these criteria would have to be permitted through the standard operating permit application process.

As of the date of this letter applicants may apply for this permit for multiple small quarries or rock collection sites meeting the required criteria summarized above and described in the SEA. Applicants must complete the General Quarry Plan of Operations and Application for Operating Permit form attached to the SEA as Appendices A and B. The forms are available electronically on the DEQ web page as listed below. If you have any questions pertaining to the permitting process, please contact Pete Strazdas at (406) 444-4962, Ryan Harris at (406) 444-4330 or Patrick Plantenberg. The SEA is also available on the DEQ web page at <http://www.deq.state.mt.us/ea.htm>.

Sincerely,

Warren McCullough, Chief  
Environmental Management Bureau

2 Appendices

g:/p&c/mepa/ea/finalquarrysealtr.doc

## **APPENDIX C**

### **COMMENT LETTERS**

**Plantenberg, Pat**

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**From:** Lynne Dickman [ldickman@fs.fed.us]  
**Sent:** Monday, March 01, 2004 4:59 PM  
**To:** pplantenberg@state.mt.us  
**Subject:** General Quarry Permit

I don't have any problem with the format of the supplemental programmatic environmental analysis that you mailed out for comment, but I do have an issue with the fact that it is may be required at all on National Forest System land.

We require all potential quarry operators on the National Forest to submit a plan of operations. An environmental analysis appropriate to the level of activity is completed/or approved by Forest Service specialists. In some cases, a bond is placed. What you are proposing is unnecessary paper work in that it duplicates what we already do.

Lynne Dickman  
Bitterroot N.F.  
407 777 7415

Plantenberg, Pat

---

From: Holt, Martin  
Sent: Tuesday, March 09, 2004 1:11 PM  
To: Plantenberg, Pat  
Subject: small quarrying

Patrick, just a note, I am engaged in various rock picking activities around this area. Mostly I get stone out of 19th Century granite quarries. But also from surface picking. I read the SEA document, and I think it is okay. There are two items I think are questionable. One is the potential impact on MT counties. Most counties would see virtually no impact, and those that might, would experience them more in the sense of a small community seeing a landmark destroyed. This is a very problematic situation because it is highly localized and personal. Still, why should an outsider, or even an insider, be allowed to go into a place and remove features that a neighbor regarded as a totem or shishook of some kind. Many stone miners are oblivious to the beauty of natural formations. Certainly most would grab a stone they wanted without thought to its impact on a neighbor, especially if that neighbor had no veto power over the operation.

So in that cultural area, is where the greatest potential for damage exists. If people will pry petroglyphs from a cliff face, they will dislodge a mossy granite boulder to haul away to decorate a site fifty miles away, knowing that someone out there will pay for it, but they forget that some one next door may have also appreciated the object for the same reason. I honestly do not think that the stones themselves care, but people do and other people are totally insensitive. I do not have an answer for you, to this dilemma, but I would be glad to consider it with you, if you need another vision.

Otherwise, I think the change will meet a growing commercial need. Ultimately you may need an oversight staff who can preview a site to identify landmarks and other special features that should not be disturbed. For example, there is a beautiful Boulder and Juniper that sits out west of town by that antique mall near the Bauxendale Fire House. I have often thought it ought to be protected, a State Park or something. So far, it remains undisturbed even though there is some development happening around it. I assume the locals there recognize its unique beauty. But some merchant contractor could just come in there with an excavator and haul it off on his lorry and set it down in Billings for big bucks and it would hurt us. Yours, Martin

Martin Holt  
Environmental Specialist  
Dept. of Environmental Quality  
(406) 444-0485  
mholt@state.mt.us

Ralph Jackson  
Clearwater Stone  
St. Regis, Montana  
25 February, 2004

Mrs. Pete Strandas,  
Patrick Plantenberg &  
Warren McCullough,  
Montana DEQ

COPY

RECEIVED

FEB 27 2004

DEPT. ENVIRONMENTAL QUALITY

Sirs:

RE: Your supplemental EA for a Quarry Permit and Proposals, I would like to make a few comments. And thank you for the chance. I first got involved in the quarry business back in the '70s when I staked 10 claims that became the Muchwater Quarry. I discovered the sites in the early '70s and staked in 1978 & 1979, initially. As you can see, there has been a great sea-change in the quarry & mining business. I tried to model my operations after the great and highly successful quarry operations in Idaho and Arizona, some of which became patented under the mining laws of 1872 & 1892, and that created the great demand for building stone that we see today. I strove to create such a new industry here in Montana. During the recession of the early 1980s, Sanders county and Mineral County experienced unofficially, 45% and 46% unemployment. It was beginning to look like another depression, which thank God, did not occur. My operation was stymied again and again by my ignorance of how government works, by the restrictions of state & federal government, and the changes in mining law and the introduction of a barrage of environmental legislation. And we can no longer patent stone quarries in order to protect production & sales from outside interests. Whether that was necessary or not is a moot question. My operation was definitely limited and I lost control of the markets I developed in the name of business self interest. Supposedly capitalism works on that self interest. Also in the late '60s, I could see the end of huge stands of giant old growth timber, high ball logging and giant sawmills. The volume just was not going to be there. So rather naively, I thought that the stone industry in Montana would make a great substitute. You see, I did have SOME vision. But it was government restrictions, and the denial that they did it, that discouraged and limited my business, and gave it away to competitors. So please let me comment.

First, a lot of state & federal regulations are redundant. And the restrictions are so great as to severely limit and kill an operation. Well you know that. It is just about impossible to operate legally. Do we really need the MDEQ on federal or private ground in 99% of the sites? Does not government solicit the attentions of the negotiators who don't want anything done anywhere, and probably have it made? Don't federal agencies have a broader overview when it comes to creating jobs and the economy?

Next, because of intense competition, quarryiers need more than one site in order to survive as a business.

You are correct in excluding access roads to quarry sites as part of the 5 acre disturbance. I was forced out of the Muchwater Quarry on the basis of including the main mile long access road as disturbance, that we put in in 1980 & '82. That quarry still retains one of the thinnest, hardest, spectacularly beautiful thin stone in the West. I now see four locks on my gate into that quarry that I used to develop national markets, and especially Western markets, and on which I staked those original mining claims. This site is nearly out of 'site, and unknown to many of the people who resided in that general area for up to twenty years. And the brush grew thick and tall along much of the access road, along with the grasses on the road, making it look like it had been there a hundred years. The last few years the answer was almost always "No" when I asked the government for something in the quarry. It may not be popular, but it made me a great believer in patenting an operation. Maybe we ought to reconsider our options on that.

On reclamation: in many quarries the stone lies right on or at the surface. That's how the merchantable stone was discovered. Because the ground is always tilted and uneven, and contains boulders and especially rock ribs, six inches of soil is too thin to save. Usually two or three feet is too tough. If the ground is steep, two feet of surface cut dirt may only be 14 inches thick, which is too thin and requires too much machine time and effort to separate the dirt from the rock and set it aside. And by the way, it takes years of backbreaking work to capitalize that heavy equipment needed to do reclamation.

Scaling back highwalls may not be very effective either. In my kind of flagstone, the stone is not loose, but rather is bedded in very solidly. Hence scaling back the highwall only creates more possibility for erosion.

Our highwalls are hardly ever over 12 or 14 feet high. It makes a lot more sense to move the waste rock and dirt, if any can be separated on initial quarrying, back up against the high wall and tapered off like a natural contour.

Quarrying this kind of stone is a long, slow moving process. In our really thin material, usually each individual piece must be hand separated, cleaned, split and graded.

Consequently little ground is disturbed even in the long run, so little bonding is required. I quarried in the Muchwater Quarry for about twenty years and disturbed only about 3 acres. There was little soil left or put back on the contoured waste material, but we did our best. When I went into that operation I told the U.S. Forest Service that I wanted to open up 10 to 20 acres so that the rain & freeze/thaw work of Mother Nature could separate the rock for us. We never reached that far because of the artificial restrictions imposed by government agencies.

Remember this: This stone will be quarried for hundreds and probably thousands of years.

On royalties: These are a prepaid tax on the quarry operations. I do not believe that you can really tax a business. Why? Because those taxes must be passed right on to the wholesaler, the contractor and the consumer. So here is a tax that goes up in multiples. A Pre-tax! And that pre-tax also restricts our ability to compete with foreign competitors. Back in the early 90s I began to cut tile from thin slabs of rock from my quarry. It was gorgeous tile. Prettiest on the market then. Not for business I went to the coast and visited with Ann Sachs Tile & Stone. She liked the tile. So eventually I gave her about 500 tiles for samples for all of her high-end tile stores in her national chain. She told me later that she gave them to her help! Instead she imported similar stone tile from India, eventually China and Brazil. Thank you Ann! There went my tile and roof tile business. And thank you Government! "Don't blame you and don't blame me. Blame that fellow over there under that tree" - Huey Long on new taxes. I really believe that taxes have to come out of labor, not capital. And if you tax too much, that reduces money in the bank, for the bank to lend against, which reduces our much needed capital.

Of course you can argue that they need the jobs overseas and that that made the product much cheaper. But I also employed migrant workers as well as local boys desperate for work. Some worked for me up to 10 seasons.

Quarry operations should be treated as private property when it comes to visitors. Why should a competitor pretending to be a recreationist be allowed to peruse my operation and steal my secret methods? Why should a recreationist, who is playing, be allowed to limit or shut down my operation? I put thousands & thousands of hours and dollars into my operation, along with enormous risk. Do I want to close down because of some crackpot who understands little about the role of business in our society and economy? I discovered that there are always people who do not want anything done. It seems to be a form of jealousy. Quarry operators of my type are almost always way out of town and usually out of sight.

So in summary I want to see less government, not more, less duplication, and more protection for the business. Quarry people are among the hardest working in our country. We need protection, if not by mining claim & patent, something very similar. Mining claims have been effective since the Roman times, came to Latin America from Spain, and here from Mexico. Let's protect our assets.

Sincerely,  
Karl A. Acevedo

GENERAL QUIN  
EA

DEPARTMENT OF ENVIRONMENTAL QUALITY

. 821  
Classification  
Comments

Date: 3/1/04 Time: \_\_\_\_\_ a.m. \_\_\_\_\_ p.m.

File No. / Name: \_\_\_\_\_

Contact: RICK SENIOR

Address: VALLEY CO. ROAD DEPT

Phone: \_\_\_\_\_

RESULTS OF CONVERSATION OR DISCUSSION:

TH FEB. 26: RICE CALLED.  
REVIEWED CALL MONDAY:  
WANTED TO KNOW IF THIS EA APPLIED TO  
GRAVEL PITS. EXPLAINED IT DIDN'T  
NO OTHER COMMENTS

FOLLOW-UP ACTION REQUIRED? Yes \_\_\_\_\_ No

Paul Pley 3/1/04  
DEQ Employee Date



## MONTANA HISTORICAL SOCIETY

225 North Roberts ♦ P.O. Box 201201 ♦ Helena, MT 59620-1201  
♦ (406) 444-2694 ♦ FAX (406) 444-2696 ♦ [www.montanahistoricalsociety.org](http://www.montanahistoricalsociety.org) ♦

Wednesday, February 04, 2004

Patrick Plantenberg  
DEQ Permitting and Compliance – Hard Rock  
POB 200901  
Helena MT 59620-0901

**RECEIVED**

FEB 05 2004

DEPT. ENVIRONMENTAL QUALITY

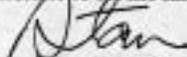
RE: Draft SEA General Quarry Permit

Mr. Plantenberg:

Thank you for requesting our comments on the proposed General Quarry Permit *Draft* SEA. I spoke with our Records Manager Damon Murdo about his experience with the past/present Permit process involving small hard rock quarries and collecting sites. It was his belief that our involvement has been limited to providing information on recorded archaeological sites on state or federal lands. If we have been requested to provide information for DEQ permits on private lands in the past those requests have not been common.

We suggest that a simple modification to **Section V –Other** in the Plan of Operations application on page 7 would comport further with MEPA language and common state agency practice. We suggest wording at **V I.** such as Operator will contact the State Historic Preservation Office and request a file search for previously recorded archaeological/historic sites in the permit area. Attach a copy of the SHPO response.

This simple modification would also facilitate DEQ programmatic assessment of possible impacts and the goals of the General Permit as indicated in section 7 of the Programmatic Analysis (page 9). Please find attached a copy of our standardized file search request form for your information. If you wish further comment or assistance please do not hesitate to let me know.

  
Stan Wilmoth, Ph.D.  
State Archaeologist/Deputy, SHPO

File DEQ Hard Rock



STATE HISTORIC PRESERVATION OFFICE ♦ 1410 8<sup>th</sup> Ave ♦ P.O. Box 201202 ♦ Helena, MT 59620-1202  
♦ (406) 444-7715 ♦ FAX (406) 444-6573

DEPARTMENT OF ENVIRONMENTAL QUALITY

GENERAL  
ENVIRONMENTAL  
PERMITS  
S.S.I.

Date: 2/3/04

Time: \_\_\_\_\_ a.m./ \_\_\_\_\_ p.m.

Ground or land

File No./Name: \_\_\_\_\_

Contact: \_\_\_\_\_

Address: \_\_\_\_\_

Phone No.: \_\_\_\_\_

RESULTS OF CONVERSATION OR DISCUSSION:

Anonymous call on  
Quarry EA wants to see a  
big bond set on these  
to protect environment.

12:10pm

2/3/04

Taken by Craig Jones

FOLLOW-UP ACTION REQUIRED? YES  NO

DEQ Employee

Radzicek

Date

2/3/04

**Plantenberg, Pat**

---

**From:** Steve Perrone [Steve.Perrone@plumcreek.com]  
**Sent:** Thursday, February 05, 2004 7:00 AM  
**To:** Henning Stabins  
**Cc:** pplantenberg@state.mt.us; ryharris@state.mt.us  
**Subject:** Re: rock quarry draft SEA comment

Thanks for your critique, I will pass it along. Perhaps the word "sensitive" could be removed.

>>> Henning Stabins 2/4/2004 10:46:41 AM >>>

Steve:

I had the chance to look over the Draft SEA you sent. Looks good. However, I found one possible edit:

The term "sensitive" is used in the Biological Diversity sections when discussing plants (see below). Everywhere else in the document, only threatened and endangered plants are referred to. Perhaps this is an oversight by the DSQ?

Draft SEA:

bottom of page 6:

\*Biological Diversity

Vegetation on quarry sites consists of meadows, rangelands, forests, or agricultural crops, supporting a typically array of wildlife species including small and large mammals, reptiles, and birds. Sites supporting threatened, endangered or sensitive plant species would not be permitted under this general permit."

Call me if you have any questions.

HCS

## **APPENDIX D**

### **RESPONSES TO COMMENTS ON THE PROGRAMMATIC SEA FOR THE GENERAL QUARRY PERMIT**

#### **RESPONSE TO LYNNE DICKMAN'S COMMENT REGARDING THE DUPLICATIVE NATURE OF THIS PERMIT ON FEDERAL LANDS:**

Under Montana law all small miners are required to apply for a Small Miners Exclusion Statement (SMES). Under the SMES they are limited to two sites of not more than 5 acres disturbed and unreclaimed at each site at any one time. The sites must be at least one mile apart. All hardrock mining operations that do not qualify for a SMES must have an operating permit. The law pertains to all operations on private and public (state, federal, or county) lands. Typically when operations occur on federal lands, a joint environmental assessment is conducted and the decision-makers make joint or separate decisions. For a proposed SMES operation, the state is not required to prepare a MEPA document because the SMES is not a state action. The federal agency requires a plan of operations and prepares the environmental assessment (EA).

Sites that would qualify under the General Quarry Permit would be evaluated by the state using the information supplied in the General Quarry Plan of Operations and Application for Operating Permit form included in the appendices of the SEA. Without the General Quarry Permit, the operators of proposed multiple small sites would be forced to go through the lengthy permitting process for a standard operating permit and incur greater costs and time delays in obtaining a permit. There is nothing in the new permit or supplemental information form that would preclude a federal agency from requiring a plan of operations and preparing an EA as is typically done for state-excluded small miners' operations. In other words, the General Quarry Permit removes one layer of regulation for operations that would qualify. DEQ would review and approve operations that qualify under the General Quarry Permit contingent on approval from the federal agency. Finally, DEQ believes that General Quarry Permit is not duplicative as joint reviews are done now for all operations on federal lands that exceed the SMES limits.

In addition, the MMRA does not require regulation of common use pits and quarries on federal land in those instances when the responsible federal agency manages a pit or quarry for continuing occasional sales.

**RESPONSE TO MARTIN HOLT'S COMMENTS ON IMPACTS OF ROCK PICKING ON MONTANA COUNTIES AND THE POTENTIAL FOR CULTURAL/AESTHETIC IMPACTS:**

DEQ is aware of the varying level of impacts to various Montana counties from rock collecting activities across the state. For this reason, DEQ copied the County Commissioners in all 56 counties with a copy of the SEA. If rock picking continues to increase to the point that impacts became problematic in a particular county, and DEQ received many complaints, DEQ could reopen the analysis for a new operating permit application under cumulative impacts under MEPA and prepare a supplemental environmental assessment.

DEQ is also aware of the cultural/aesthetic impacts associated with quarrying and rock picking activities. A lot of decorative rock is being recovered in these operations and relocated to many parts of Montana as well as other states. The MMRA does not give DEQ authority to impose restrictions on a cultural or aesthetic basis. Impacts to significant Native American or historically significant sites on federal land would be mitigated under federal laws and regulations. DEQ does not have authority to require mitigations on private land, but would facilitate a compromise between the operator and SHPO. Based on a comment received from SHPO, DEQ has revised Section V.1 of the General Quarry Plan of Operations listed in Appendix A of the SEA to read:

**“The Operator will *contact the State Historic Preservation Office (SHPO) and request a file search for previously recorded archeological sites in the permit area. Attach a copy of the SHPO response.*”**

This will help address the cultural issue.

## **RESPONSE TO RALPH JACKSON'S COMMENTS ABOUT GOVERNMENTAL REGULATIONS AND THE IMPACTS ON QUARRYING IN MONTANA:**

The Metal Mine Reclamation Act was passed in 1971 and has regulated mining on state, federal and private lands since that time. DEQ agrees that state and federal regulations and environmental laws are sometimes redundant. DEQ and the federal agencies have Memoranda of Understanding to limit the redundancy. The purpose of the General Quarry Permit is not to create more government, paperwork and redundancy. On the contrary, the purpose is to allow operations that meet the requirements listed in the General Quarry Permit Application to proceed without lengthy permitting and environmental review periods currently required. On federal lands, if the operation meets the requirements of the General Quarry Permit, DEQ would approve it contingent on approval from the federal agency.

The second purpose of the General Quarry Permit is to allow multiple sites, which is not presently allowed under the small miner's exclusion statement.

DEQ considers soil salvage an important part of a quarry operation especially on the flat staging areas. DEQ does not agree that soil salvage is too expensive. In fact, DEQ contends that soil must be removed as part of the overburden in any event. DEQ does not require salvage on the rock ribs. DEQ does not require soil to be separated from the rock as it is being quarried.

Scaling back highwalls would not be required on all sites. In an area as you described in your letter, DEQ would not require scaling back. However, DEQ cannot predetermine requirements on Forest Service lands. Your description of pushing the waste rock and dirt up against the highwall is what DEQ would require in almost all operations with a highwall.

Bonding will be required based on the estimated cost to the state to complete the reclamation. Bonds are based on construction estimates and include indirect costs such as mobilization, contract administration, etc.

DEQ does not get involved with royalties.

DEQ would require fencing quarry operations only if there is a public safety hazard. On private lands, the landowner or the quarry operator, as part of his lease agreement could control access. On federal lands, access and restrictions to public use would be controlled by the federal land management agency based on public safety issues. If the operator on federal lands wanted to control access for confidentiality issues, that would have to be worked out with the federal agency.

**RESPONSE TO COMMENT FROM VALLEY COUNTY ROAD DEPARTMENT ABOUT APPLICABILITY OF SEA TO GRAVEL PITS:**

The General Quarry Permit does not apply to gravel pits; the Open Cut Mining Act regulates them.

**RESPONSE TO STATE HISTORIC PRESERVATION OFFICE COMMENT ON REWORDING SECTION V1. OF THE SEA ABOUT ARCHEOLOGICAL/HISTORIC SITES:**

DEQ has revised the section V 1. of the General Quarry Plan of Operations in Appendix A of the SEA to say “The Operator will *contact the State Historic Preservation Office (SHPO) and request a file search for previously recorded archeological sites in the permit area. Attach a copy of the SHPO response.*”

**RESPONSE TO ANONYMOUS CALL ON SEA ABOUT BONDING:**

DEQ uses construction estimation techniques to calculate bonds on all operating permits and includes indirect costs to cover expenses such as mobilization and contract management. DEQ would use the same bonding method for these sites as it does for all operating permits in Montana.

**RESPONSE TO PLUM CREEK COMMENT ON SENSITIVE PLANT SPECIES:**

DEQ struck out the word sensitive in the SEA. That is one change made in the SEA from the 1999 Draft and 2000 Final Programmatic EA.

**ATTACHMENT 3**

Comments on the Proposed Action  
and Agency Responses

1) Bobbi Stanton, Columbia Falls

Requested to be put on mailing List.

*Response: Done. Will send copy of environmental analysis when completed.*

2) Bob Lee, USFWS

USFWS in charge of monitoring Plum Creek's compliance with Plum Creek's Habitat Conservation Plan. Plum Creek must obtain a 310 permit from the local County Conservation District office and install culverts at stream crossings. Would like copy of Programmatic EA and to be placed on the mailing list.

*Response: Thank you for your comment. DEQ is aware that Plum Creek needs a 310 permit for stream crossings. Sent copy of EA and put on mailing list. Will send copy of supplemental environmental analysis when completed.*

3) Marge Larson, Marion, MT

In favor of Plum Creek using its land as it sees fit.

*Response: Thank you for your comment. Sent copy of environmental analysis and put on mailing list. Will send copy of supplemental environmental analysis when completed.*

4) Orrin Webber, Kalispell

Weed control is major issue on these properties.

*Response: DEQ agrees. Weeds have been documented on the majority of the sites as a result of past land management activities as well as subsequent spread of weeds across all of western Montana. Plum Creek has completed Weed Control Plans which are approved by the local County Weed District. Plum Creek has committed to controlling weeds as part of these operations. DEQ will monitor weed control activities during its inspections of the sites. He was placed on mailing list. Will send him a copy of environmental analysis when completed. See the Vegetation Section of the environmental analysis for more discussion of noxious weeds.*

5) David Nold, Nold & Associates, PLLC, Bellevue WA

He lives on McGregor Lake and thinks the impacts will be immense and irreversible. Mining of rock will leave the area barren which will affect the surrounding area. Plum Creek will create a market for the rock. Plum Creek will do whatever it can to create revenue rather than manage its resources. They should not be trusted and should not be given the permit they seek.

*Response: Thank you for your comment. He has been placed on the mailing list and will be sent a copy of the environmental analysis when completed. DEQ will address concerns with the size of impacts and irreversibility of impacts in the environmental analysis. The environmental analysis will discuss impacts to the McGregor Lake area.*

*Plum Creek's land management policies are beyond the scope of the environmental analysis. Plum Creek has a right to develop its property just like any other citizen of Montana, including yourself, as long as they comply with existing regulations.*

6) Jim Redman, Marion, MT

What roads are being used to access the quarries off Highway 2? Dust control is a big issue around McGregor Lake.

*Response: Plum Creek uses its own road, the Skookum Creek Road that ties into the North Fork of Murr Creek road farther up and away from most homes in the McGregor Lake area to access the Castle Rock Rocks Site #5. There is only one home along that road that could be affected by noise, dust, etc. The Skookum Creek Road is generally used every year for log hauling. Plum Creek would not be hauling by McGregor Lake at all. There has been occasional blasting on the Castle Rock Rocks Site #5.*

*The road to the Herrig 15 Rock Site #9 is the Griffin Creek Road which is a US Forest Service road. This is a cost share road. That is, both the US Forest Service and Plum Creek have mutual easements on the road. No blasting has occurred on the Herrig 15 Rock Site #9.*

*The road to the Redmond Rock Site #20 is a Plum Creek road. No blasting has occurred on the Redmond Rock Site #20*

*The road to the Twin Creek Rock Site #21 is the Twin Creek Road which is a US Forest Service road. This is a cost share road. No blasting has occurred on the Twin Creek Rock Site #21*

*No dust control is proposed on the public roads outside the sites. Logs are being hauled on the same roads at the same time. It is expected that each site will*

*have 2-3 pickups per day while the site is used. The sites are typically operated from May to November. Some times the sites are not used at all for weeks depending on markets, etc. While the sites are being worked, expect the Plum Creek contractors to work an average of 8 hours per day, and five days per week unless a major contract needs to be filled. Of course, trucks hauling rock products also would be on the roads after they are loaded. There could be as much as one truckload per day per site.*

*Plum Creek has committed to dust control on the rock product sites in the operating permit application. DEQ has little control over dust off the sites once the traffic meets a public road. DEQ has met with local residents and operators in the past to try and get voluntary dust controls in place on public roads. DEQ would be glad to do this if a dust issue results again near a landowner along the roads.*

*He has been placed on the mailing list and will be sent a copy of the environmental analysis when completed.*

7) Raymond Bergroos, Kalispell

The four quarries, Castle Rock Rocks Site #5, Herrig 15 Rock Site #9, Redmond Rock Site #20, and Twin Creek Rock Site # 21 appear to be located in close proximity to the Thompson Chain of Lakes in Flathead County, Montana, in an area of unsurpassed, (and so far, unspoiled) natural beauty. Where are the proposed rock quarries located in relation to the Thompson Chain of Lakes including McGregor Lake?

*Response: The Castle Rock Rocks Site #5 is 17 miles west of Marion and is approximately 11 miles southeast of the Lower Thompson Lake and 4 miles south of McGregor Lake.*

*The Herrig 15 Rock Site #9 is 33 miles west of Kalispell and is approximately 14 miles northeast of the Lower Thompson Lake and 11 miles northeast of McGregor Lake.*

*The Redmond Rock Site #20 is 15 miles southwest of Marion and is approximately 15 miles southeast of the Lower Thompson Lake and 9 miles south of McGregor Lake.*

*The Twin Creek Rock Site #21 is 42 miles west of Kalispell and is approximately 6 miles northeast of the Lower Thompson Lake and 4 miles northwest of McGregor Lake.*

Will the sites be visible from Highway 2?

*Response: The Castle Rock Rocks Site #5 will be visible from McGregor Lake and Highway 2*

How will air quality and visual quality in the area be affected by the operation of these quarries? Will snow cover be visually affected by wind blown dust and debris from these quarries? Will the quarries create a visual eyesore to the region?

*Response: There will be no air quality problems from the activity except for dust associated with increased traffic on the roads. Plum Creek has committed to and DEQ can control dust during operations on the sites but DEQ has no authority to control dust along the public access roads. This is a common problem with any development whether it be the rock product industry or subdivisions in rural Montana along gravel roads. The rocky nature of the sites will limit dust impacts from the sites. Snow cover along the access roads will be covered with dust along the public roads as is common throughout any area in Montana with gravel roads in the wintertime and especially in the spring. Vegetation along gravel roads in the summer also becomes covered with dust. This is an unavoidable impact of gravel roads in rural areas being used by vehicles.*

*Part of the Twin Creek Rock Site #21 can be seen from the Twin Creek Road. The visual impacts will be typical of activities that remove natural resources. No new access roads are needed to access these four sites. Quarry development roads will be needed inside the disturbance area to remove the rock products. The rock covered talus slopes and boulder fields will be disturbed in the process of sorting and loading rocks. The limited soil resources in the rocky areas will be disturbed. Deeper soils in level staging areas will be salvaged and stockpiled for reclamation. All these disturbances remove portions of the limited vegetation on the rock product sites. Other rocks not removed for commercial purposes will be disturbed and overturned revealing rock surfaces that have not weathered and are much more noticeable from a distance. As a result, the rock product sites will look disturbed and be visible from various viewpoints, especially from higher elevations and other rocky peaks.*

*Reclamation of the sites will lessen the visual contrast to surrounding areas to acceptable levels. It will take a long time for trees to regrow in the areas. In summary, the sites will look disturbed for a long time. This is an unavoidable impact of disturbing these rock product sites. The forested environment, natural broken landscape, and scattered locations of the quarries will lessen the impacts from any one area. DEQ has asked Plum Creek to limit selection of rock sites that are visible from areas such as McGregor Lake. DEQ cannot prevent Plum Creek from proposing these sites if it wants to develop the rock products off the site.*

*Logging on Plum Creek lands near some of these rock product sites is also proposed in these areas. This would have a cumulative impact on visual resources in the area. The majority of the surrounding Plum Creek lands, other private lands, and most of the US Forest Service and Montana Department of Natural Resources and Conservation (DNRC) managed State of Montana lands have been logged some time in the past. These areas would regenerate. Eventually, the visual impacts would be reduced.*

Will new roads need to be constructed?

*Response: As mentioned above, no new access roads are needed to access these four sites. Quarry development roads will be needed inside the disturbance area to remove the rock products. These quarry development roads will be reclaimed by recontouring at closure. All permanent Plum Creek roads in the area are maintained up to forestry best management practices (BMPs) standards (MSU Extension Service 2001).*

Will any water be extracted from any of the chain of lakes, including McGregor Lake in order to operate or otherwise service these quarries? If water extraction does occur, what negative effects will occur?

*Response: No water is proposed for use in the rock product sites except to control dust along roads in the sites if needed. Some water may be removed from the lakes to fill pumpers during general fire suppression activities in the surrounding forests. Water removal for fire suppression is considered essential to limit other impacts to the lakes from post-fire impacts such as erosion and sediment production. Water removal typically occurs using suction hoses to pumper trucks and from buckets used by helicopters.*

Will other groundwater or surface water resources be indirectly affected? How so?

*Response: The rock product sites must meet certain parameters to qualify for the General Quarry Permit. There must not be any impact to any wetland, surface water or groundwater resource. All sites must be at least 100 feet from surface water. There must not be any water impounding structures constructed on site other than for storm water control. The only water use on any site would be limited water use for dust control along site roads and for drilling if blasting is used on the sites. The sites must not remove rock products from below the water table. There must not be any potential for the rock to produce any acid or other pollutive drainage from the site. Fortunately, the rock products in the area are weathered Belt formation rocks and have no potential to leach metals and produce acid mine drainage.*

What negative effect will these quarries have on future and current land values in this region? Will they adversely affect tourism or land values in the region?

*Response: These rock product sites are away from view of most of the local residences currently in the area and are largely within forested areas. Some of the rock is probably being used to construct the local homes in the region. There is the potential for impacts to individual homes developed in the future to be affected by proximity to the rock product sites. DEQ does not expect the quarries will influence tourism in the areas. The people that would see the rock product sites the most are recreationists using US Forest Service, State of Montana and Plum Creek lands for hiking, hunting, etc.*

Has DEQ contacted the Thompson Chain of Lakes Homeowner's Association, local realtors and the local Chamber of Commerce?

*Response: These organizations and individuals have not commented on the rock product sites to date. DEQ contacted Mr. Bergroos. He supplied an address for the Homeowner's Association. Mr. Bergroos and the Homeowner's Association have been placed on the mailing list and will be sent copies of the environmental analysis when completed.*

How long will the quarries be in operation?

*Response: Plum Creek has asked for a permit that could last up to 20 years. Each site would have a limited life span. Some sites would be completed in less than 20 years. Plum Creek can request expansions in the future on any particular site. DEQ would have to review the proposed expansions and complete additional environmental analyses at that time.*

Will the quarries be similar to open pit mines?

*Response: No. The majority of the sites are talus slopes and boulder fields and the rock would be removed without blasting. The deepest expected depth of excavation is 20 feet. These sites would be best described as sidehill cuts rather than open pits.*

Will any chemical substances be used?

*Response: No. The only products of concern would be the fluids used in the vehicles and equipment on the site. Spills would occur over the life of the sites. Plum Creek has agreements with the operators about spill cleanup response. DEQ has addressed this issue in the Water Section of the environmental analysis.*

Will reclamation of the quarries be required following any cessation of mining activities (e.g. two continuous months or longer)?

*Response: Plum Creek has not proposed and DEQ does not see the need for reclamation of sites after each episode of removing rock products. The sites are rocky in nature and have limited potential for erosion and sediment production. Plum Creek has committed to weed control at the sites. Disturbing the rock to reclaim the site after removal for one rock product contract would destroy some of the rock's value. Reclamation would be required as a portion of the rock product site is completed. Concurrent reclamation is required to keep the disturbance down to predicted disturbance levels. If Plum Creek exceeds the proposed disturbance limit for each site as listed in Table 1 of the environmental analysis, it would be liable for posting more bond and could be issued a notice of violation for not complying with operating permit requirements and would have to pay a fine.*

Will land tax rates be affected in Flathead County?

*Response: No.*

Other parties commenting and placed on the mailing list for the environmental analysis include: The *Daily Interlake* in Kalispell, Stanton Stone Supply Corporation of Columbia Falls, and the Stimson Lumber Company.

## **ATTACHMENT 4**

## Site Base-Line Description

**Site Name:**     **ACM 58 MILE Site # 25**  
                  **S ½ Section 20, SW ¼ Section 21, T28N, R27W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The area is also used for livestock grazing. The recreation potential is limited but may be utilized by sportsmen.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The Pleasant Valley Fisher River flows westerly, approximately 200 feet from the permit area for the ACM 58 Mile quarry site. It is approximately 10'-20' in elevation below the permit area and is roughly 30'-40' in elevation below the actual quarry site. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[Within 1000' of the permit area is the Pleasant Valley Fisher River, which flows westerly, approximately 200 feet from the permit area. There is also an intermittent stream. This stream is dry for much of the year but does flow for approximately one month in the spring. Streamside Management Zone ribbon has been flagged at a minimum distance of 100' from the ordinary high water mark of this intermittent stream, this protection zone is out of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is comprised of shallow \(2-4"\) gravelly loam, low productive soils. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The quarry site is a mixed Douglas Fir, Ponderosa pine/Lodgepole pine forest type. These trees are sparsely distributed throughout the quarry area along with scattered Snowberry. Noxious weeds \(Spotted Knapweed and Canadian Thistle\) exist on the access roads leading to the permit area and within the permit area.](#)

## Site Base-Line Description

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species is known to exist or frequent the quarry site. For additional information, when completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form will be attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

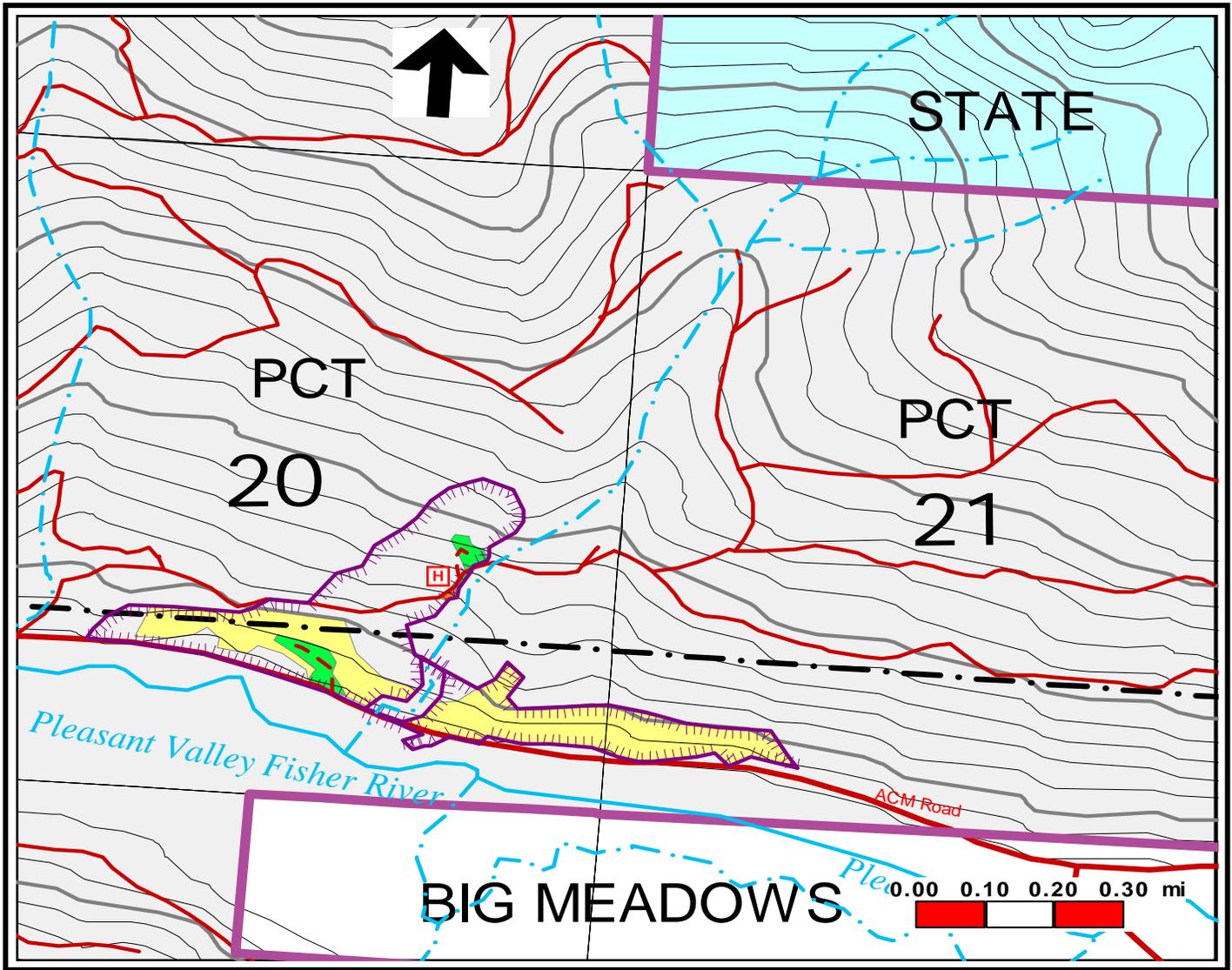
Decorative rock used for landscaping and masonry. Rip-rap, gravel and pit run may be used for road BMP upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The on-going plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed according to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site.



Unit	Acres
Unreclaimed Quarry Area	3.6
Reclaimed Quarry Area	35.7
Staging Area	0.2
Permit Boundary	72.0

Non-colored acres within permit boundary are currently inactive. Boundary of Permit Area was GPS measured. Permit Boundary is NOT within 100' of water.

	Intermittent Creek		Access Road
	Perennial Stream		Unreclaimed Quarry Area
	Quarry Development Roads		Reclaimed Area
	Permit Boundary		Staging Area
	Powerlines		

**Helispot Location :** Long: 115:02:49  
 Lat: 48:10:23

Original Map Scale : 1: 15840  
 Map Type : Rock  
 Prepared by : rhendrix

**PlumCreek**

Map Creation Date : 12/17/2002

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name:** ACM 58 Mile, Site #25

**Date:** 28 Jul 03

**Obs:**

H. Stabins

**T-R-S:** 28-27-20,21  
5

*Pictures:* roll 54311642, #4,

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Site is along a mid-ridge slope. Site is surrounded by a young DF/PP forest stand. Grass understory. Dry site. Regenerating-selectively harvested stand.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Rock is subsurface at site and is being exposed to the surface through quarry operation.

Rock outcrops are present throughout the drainage.

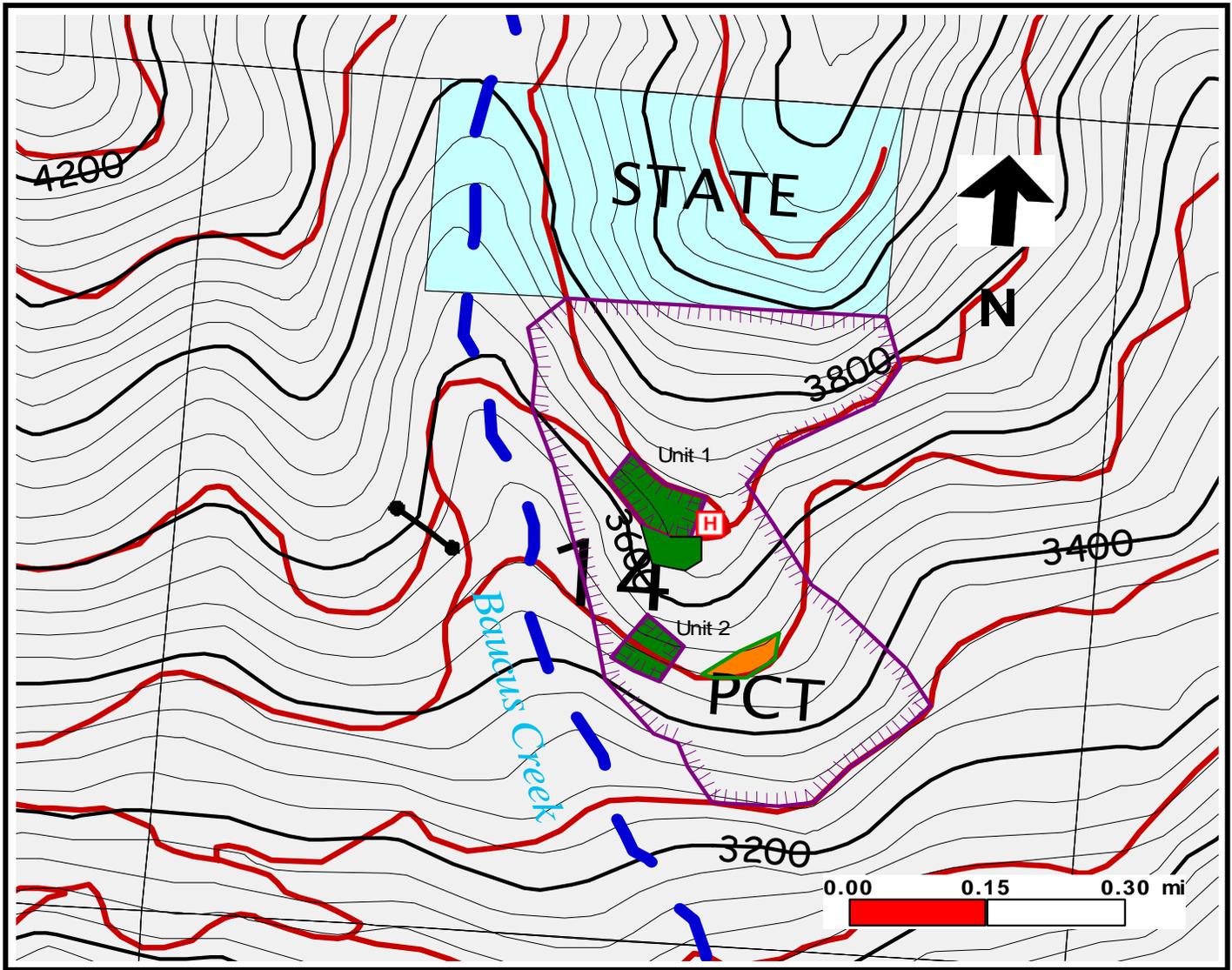
*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.





<u>Unit</u>	<u>Acres</u>
Unit 1	2.89
Unit 2	1
Staging Area	0.5
Permit Area	101

Note: Non-colored areas within Permit Area are inactive.

Quarry development roads and staging area need prior approval before starting any quarry activity. Stay at least 100' from stream

	Baucus Creek		Active Quarry Areas
	Permit Area		Staging Area
	Gate		

**Helispot Location :** -115:08:15,  
48:16:33  
Lon.Lat(d:m:s).

 Original Map Scale : 1: 12000  
Map Type : Rock  
Prepared by : Jamie Brebner

 **Plum Creek**

Map Creation Date : 1/22/2003

## SITE BASE-LINE DESCRIPTION

**Site Name: Backus Rock  
Section 14 T29N-R28W**

### **1. Location and Topography..**

The attached map provides the required detail of the quarry site. See also other regional maps for general access information

**2. Present Land Use and Past Mining Disturbance.** The primary land use for the area adjacent to the quarry site is timber management. The quarry site itself is situated within a talus area that is not well suited for timber activities. This quarry site has not been active in the past 3-4 years. The area has seasonal livestock grazing. The recreational use in the surrounding area is primarily hunting.

**3. Water Wells.** There are no known or identified water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells (<http://nris.state.mt.us/interactive.html>)

**4. Water table.** Give the estimated seasonal high and low water table depths for the quarry area and the maximum depth of quarrying.

I would estimate water table to be 100's of feet deep. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table. Quarry site is dry and water is hard to find.

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area. Backus Creek is outside the quarry site area but it is within 1000'. There is little to no surface water present in the permit area.

### **6. Geology.**

The general rock type is dense glacial till. The parent material is Belt Rock. There is no evidence of sulfides in the rock. This land type consists of low relief, concave mountain slopes on south aspects. Drainages are widely spaced and moderately entrenched. The underlying bedrock & rock fragments are derived from argillites, siltites & quartzites, of the Precambrian Belt Supergroup.

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:

The quarry site is comprised of shallow (2-6") very gravelly very fine sandy loam to silty soils occur adjacent to the quarry site and are moderately productive soils. Any soil found on site to be mined during the quarry activity will be stockpiled and used for future reclamation as required by permit.

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:

The area adjacent to the quarry site is a mixed Douglas fir, Ponderosa pine/Lodgepole pine forest type. Younger stands of a coniferous mix surrounding the quarry are being managed for future timber. There is little vegetation on the quarry site. Typical vegetation one could expect on this site would be pine grass and Oregon grape, dwarf huckleberry, ninebark, kinnikinnick etc. Noxious weeds (spotted knapweed and orange hockweed) exist on the access roads leading to the permit area and within the permit area. These were present prior to any quarry activity.

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, when completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form will be attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left un-reclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Baucus, Site # 27** Date: 25 Jun 03      Obs: H. Stabins, M. Aston

**T-R-S:** 29-28-14

*Pictures:* roll 52260185, #6

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Proposed site at higher elevation. Ridge top site with rolling topography. Surrounding stand is a thinned PP/DF regenerating stand with patchy shrub component.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Scattered rock outcrops are present at the site with shrubs and young trees in between. Rock outcrops are present all through drainage.

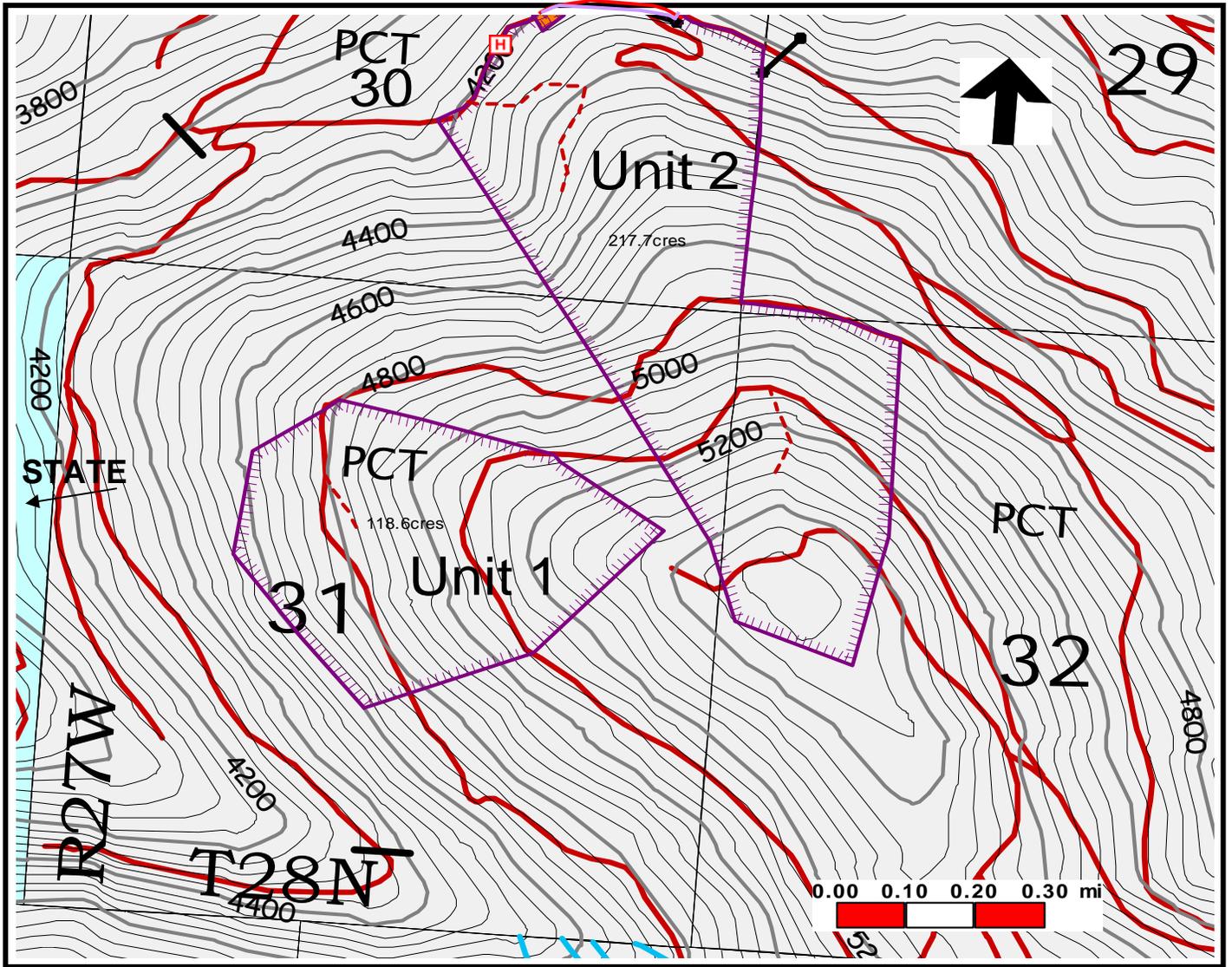
*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.





<u>Unit</u>	<u>Acres</u>
1	118.6
2	217.7
Total	336.3

	Quarry Development Rds.		Owner - Plum Creek
	Permit Boundary		Owner - STATE
	Gate		
	Barrier		
	Access Roads		

**Helispot Location :** -115:04:16.6851,  
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 Lon.Lat(d:m:s).

Original Map Scale : 1: 15840  
 Map Type : Rock  
 Prepared by : sperrone

**Plum Creek**

Map Creation Date : 10/5/2004

## SITE BASE-LINE DESCRIPTION

**Site Name: BN Rock, Site # 63**  
**Sections 29,30,31,32, T28N,27W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities. The area is not well suited for livestock grazing and the recreation potential is limited. .](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The seasonal high water table depth would range from 10' to 20' in depth. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with some surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-8' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area within the quarry site is a mixed Douglas fir, Western Larch, Alpine Fir and Lodgepole pine forest type with Beargrass and Alder. Noxious weeds \(spotted knapweed \) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

In summer and fall there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, when completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form will be attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The access road to the quarry site is closed yearlong.

Site Number & Name:  
September 8, 2005

## Site # 63, BN Rock

Date:

T-R-S: 28-27-29,30,31,32 At time of visit: Undeveloped  
Reclaimed

Active

Photo #s: 05Sep0027, 0031

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Midslope to ridgetop site at ~ 4200' to 5400 ft elevation. West to north aspects. Previously harvested. Douglas-fir/western larch type. Multilayer, intermediate size structure with grassy openings/shelterwood in lower Unit 2. An older unharvested stem exclusion stage/mature forest in upper Unit 2. Area is grazed by cattle.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Surface rock, outcrops, and larger boulder fields (Unit 2).

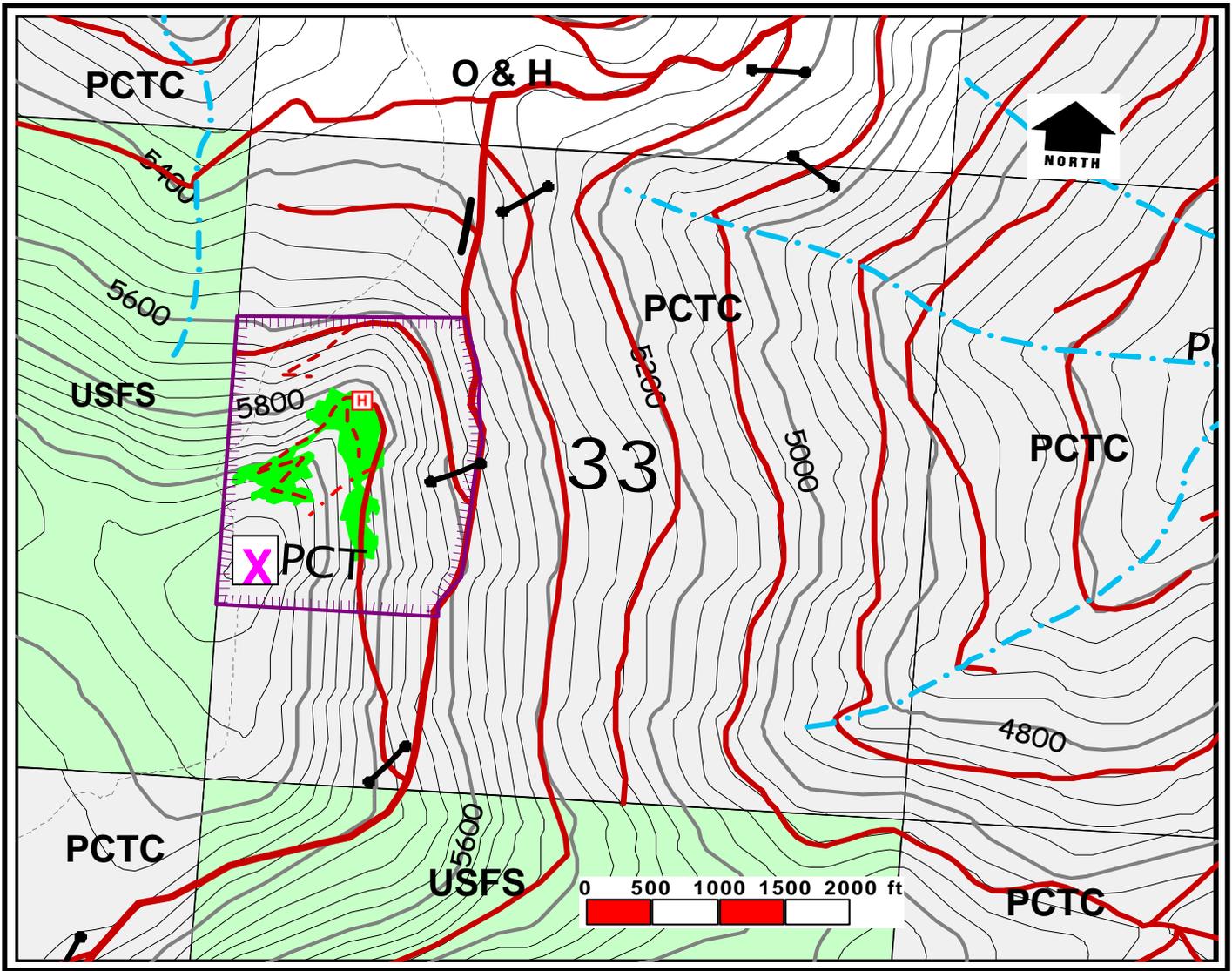
*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

Intermittant dry draw outside of permit site as mapped.

*Description of unique habitat features at site, if any:*

None observed.





Unit	Acres
Quarry Area	7.4
Staging Area	0.5
Permit Area	101

X= Location of old look-out

	Hydrology - Intermittent		Staging Area
	Gate		Quarry Area
	Permit Boundary		Owner - Plum Creek
	Quarry Development Road		Owner - Private
	Access Road		Owner - US Forest

Helispot Location : -114:49:55.3483,  
47:58:14.7592. 0  
Lon.Lat(d:m:s).



Original Map Scale : 1: 15840

Map Type : Rock

Prepared by : sperrone



**PlumCreek**

Map Creation Date : 6/25/2004

## SITE BASE-LINE DESCRIPTION

**Site Name: Castle Rock Site # 5**  
**W1/2 Section 33, T25N R25W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen quarrying activity in recent years. The area is not suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The only sign of water is from snow melt in the spring. There are no visible signs of the water table. The quarry depth is planned to be approximately 20' in depth, depending on the available rock. Plum Creek commits to stay out of the water table per operating permit requirements.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Belt, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(2-4"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. Any soil to be disturbed during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Western Larch forest type. There is little vegetation on the quarry site with the exception of an occasional Rocky Mountain Maple and Alder. Noxious weeds \(spotted knapweed\) exist on the access roads leading to the permit area and was existing prior to the quarry activity. Plum Creek commits to control noxious weeds along the roads and in the quarry area.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, bobcats, lynx and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. Additional information completed by Plum Creek's Wildlife Biologist on the Plum Creek Rock Quarry Wildlife Evaluation Form is attached to this Baseline Data Sheet.

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road BMP upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible, as described in the general plan of operations. All access roads, which are needed for future timber management, would be left un-reclaimed and maintained to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

At the SW corner of the permit area there are remnants of an old USFS Lookout. The access road is gated at the edge of the permit area.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Castle Rock, Site # 5**    **Date:** 26 Sept 03    **Obs:** H. Stabins

**T-R-S:** 26-25-33

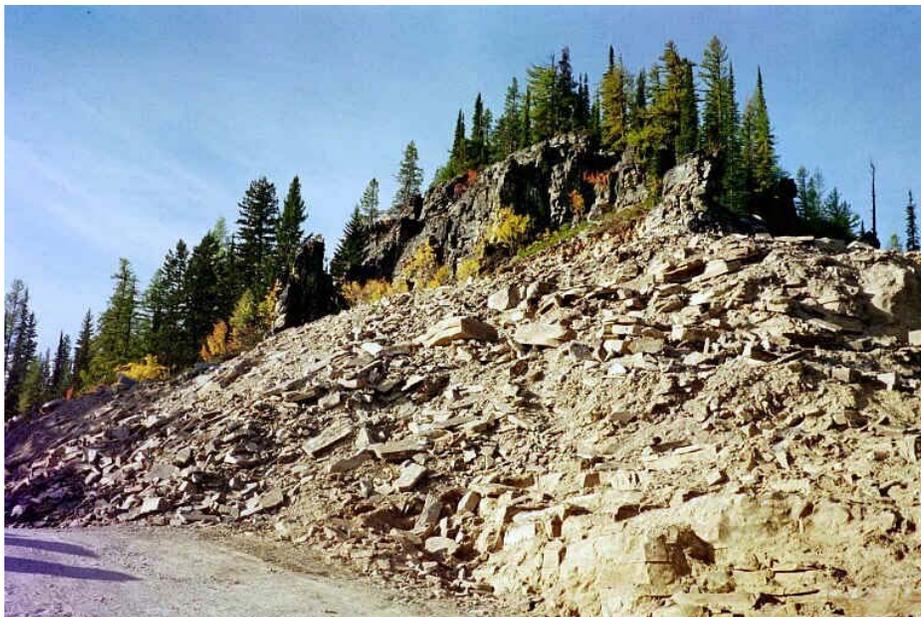
*Pictures:* roll 54181243, #10

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Ridge top site. ~5800 ft elevation. WL/DF/LPP/SAF stand type. Managed forest types. E/NE aspect. Trees and shrubs interspersed in rock outcrops. Several larger WL decadent condition trees in area.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*  
Rock outcrops with talus slopes.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*  
None observed.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*  
None observed.



# Rock Quarry Wildlife Evaluations

Site Number & Name:  
September 8, 2005

**Site # 69, Coniff 335**

Date:

**T-R-S:** 28-26-3, 29-26-34,35 **At time of visit:** Undeveloped  
Reclaimed

**Active**

**Photo #s:** 05Sep0035, 0036

*General site description (vegetation types, topography, elevation, aspect, etc.):*

Ridgetop site at ~ 4800 ft elevation, all aspects. Ponderosa pine/Douglas-fir/western larch type with an intermediate, multistory structure. Previously harvested. Scattered larger ponderosa pine.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Surface rock and small to larger outcrops. Rock throughout area.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of unique habitat features at site, if any:*

None observed.



## SITE BASE-LINE DESCRIPTION

**Site Name: Coniff 335 Site # 69**  
**Section 34,35, T29N,26W & Section 3,T28N,R26W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus slope and a rock outcrops that is not well suited for timber activities. There has been no quarry disturbance on this site.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the permit area. The State web site for water wells has been checked. \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The area is a very dry, well drained Douglas Fir/ Ponderosa Pine hillside with no water, except from spring snowmelt. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There are no streams within 1000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Metamorphic and Glaciated Belt. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[Some of the quarry site is a talus slope and outcrops with no surface soil and some of the area is a series of rock ridges covered with a shallow layer of soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-8' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area within the quarry site is a mixed Douglas fir and Ponderosa pine forest type. There is Bunch grass, Ninebark and Snowberry vegetation on the quarry site. Noxious weeds \(spotted knapweed\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, when completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form will be attached to this Baseline Data Sheet.

### **Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

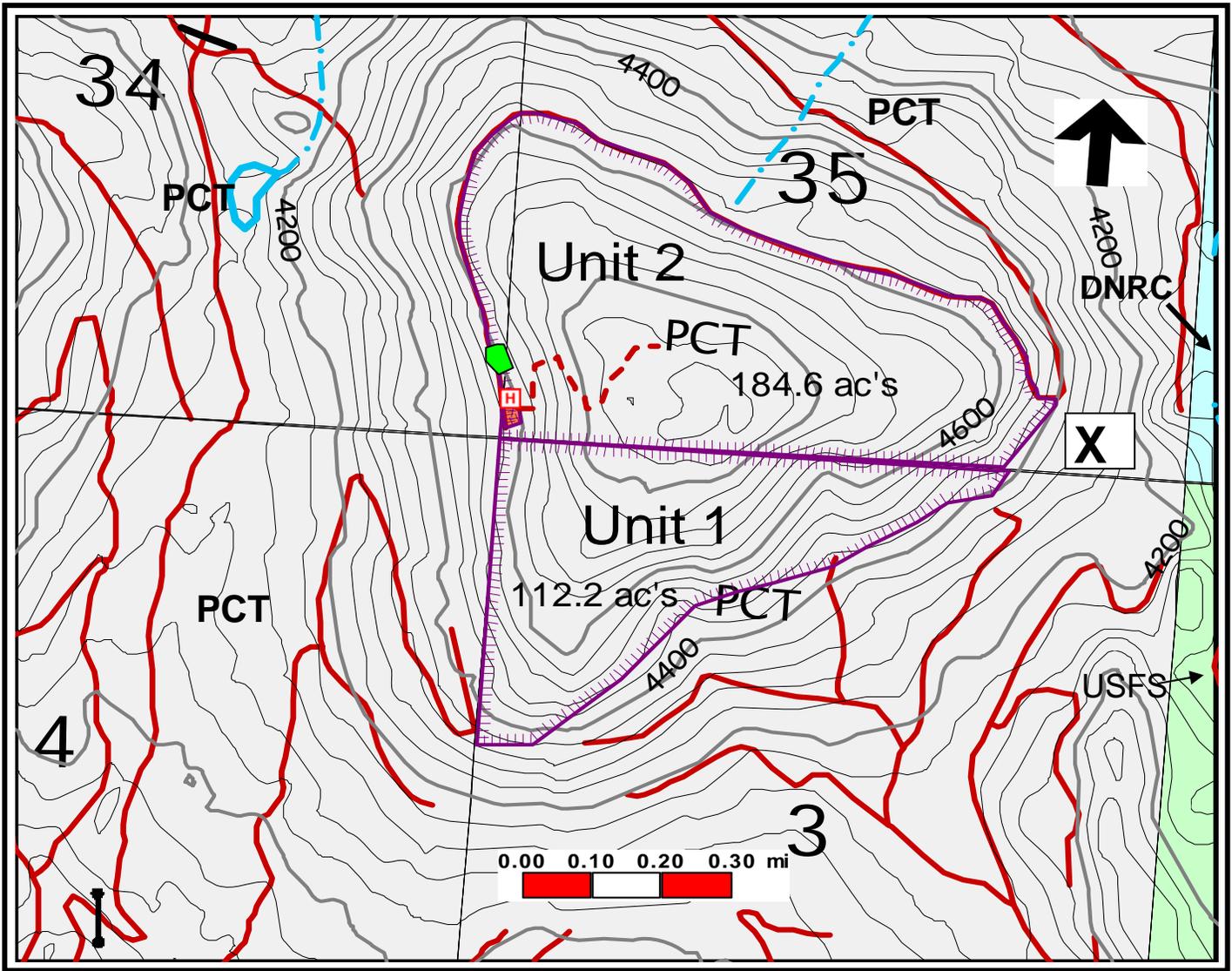
The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The site is gated year round.

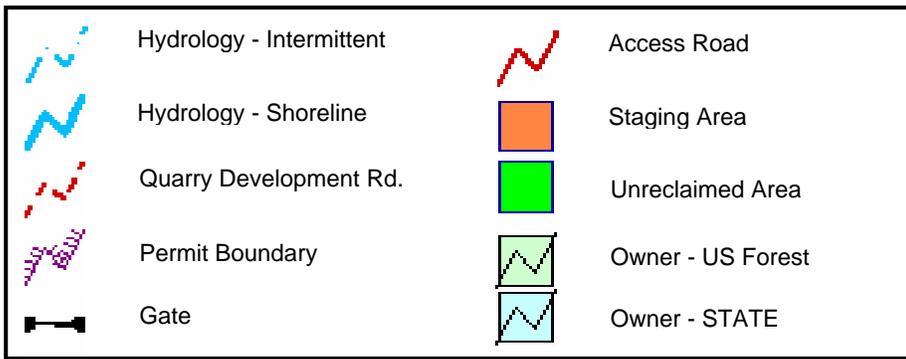
# Coniff 335 Rock, Site #69

Sections 34,35,T29N,R26W/ Section 3,T28N,R26W



<u>Unit</u>	<u>Acres</u>
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Permit Area	296.8
Staging Area	0.4
Unreclaimed Area	0.3



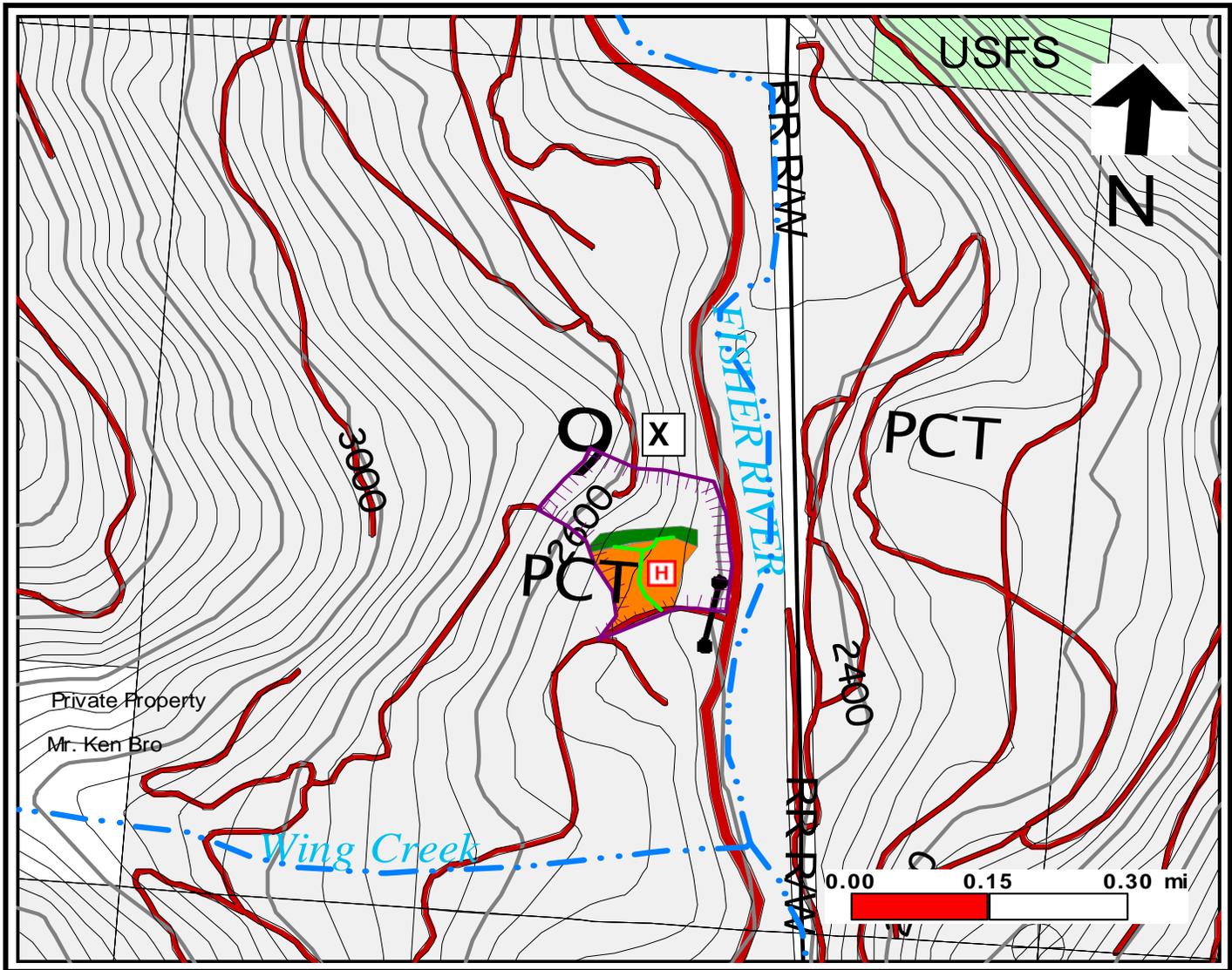
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Lon.Lat(d:m:s).  
15840

Original Map Scale : 1:  
Map Type : Rock  
Prepared by : sperrone

**Plum Creek**

Map Creation Date : 8/24/2004

**FISHER 6 MILE PIT, Site # 28**  
 SEC. 9 T29N R29W



<u>UNIT</u>	<u>ACRES</u>
PERMIT AREA	17.5
STAGING AREA	4.8
ACTIVE AREA	2

NOTE: Non-colored area within the permit area is currently non-active.

	Gate		PERMIT BOUNDARY
	RailRoad		STAGING AREA
	Roads - Woods Road		Owner - Plum Creek
	Active Area		Owner - RR
	Osprey Nest		Owner - US Forest

**Helispot Location :** -115:18:38.3843,  
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 Lon.Lat(d:m:s).  
  
 Original Map Scale : 1: 12000  
 Map Type : Rock  
 Prepared by : maston  
  
 Map Creation Date : 7/11/2003

## SITE BASE-LINE DESCRIPTION

**Site Name:** Fisher 6 Mile Pit Site # 28  
SE ¼ NW ¼, SW ¼ NE ¼, NE ¼ SW ¼, NW ¼ SE ¼, SECTION 9 T29N R29W

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The Fisher River flows northerly, approximately 500 from the staging area. It is approximately 50' in elevation below the staging area site. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area other than the Fisher River, which is described above. The paved Fisher River Forest Hwy is between the Fisher River and the Permit Site.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-8' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Ponderosa Pine forest type. There is little vegetation on the quarry site with the exception of an occasional Rocky Mountain Maple and Snowberry. Noxious weeds \(spotted knapweed and Canada thistle\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas by deer, elk, black bear, moose and Ospreys. The quarry site does not contain any unique habitat features. There is an active Osprey Nest during the spring of the year, 350' from the perimeter of the quarry area. For additional information see the Plum Creek Wildlife Rock Quarry Evaluation Form.

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The site is gated year round and not open to the public.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Fisher 6 Mile Pit, Site #28**

**Date:** 25 Jun 03

**Obs:** H. Stabins, M. Aston

**T-R-S:** 29-29-9

No picture available

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Existing, developed pit. Surrounding stand is a DF dominated young to mid-seral type with scattered WL and PP. Site has SE aspect.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Site is a ~250 ft vertical rock face with broken talus below and scattered vegetation (PP, DF, Aspen). No sheer faces. Many rock outcrops are located along the Fisher River and surrounding drainages.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

Low elevation site situated about 500 feet from the Fisher River. The paved Fisher highway is between the site and Fisher River. No water features observed at the developed site.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.

## SITE BASE-LINE DESCRIPTION

**Site Name: Gobbler Knob Site # 6**  
**Section 7 T27N R26W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The nearest perennial stream to the quarry area lies to the Northwest approximately 1 mile. The elevation of this un-named stream is roughly 4700' in elevation. The actual quarry site is about 5500' in elevation. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Belt, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(2-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 2-15' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Alpine Fir, Western Larch and Lodgepole pine forest type. There is little vegetation on the quarry site with the exception of an occasional Dwarf Huckleberry and Beargrass plants. Noxious weeds \(spotted knapweed \) exist on the access roads leading to the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

During summer and fall there is intermittent use in adjacent areas by deer, elk, blackbear and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, when completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form will be attached to this Baseline Data Sheet.

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

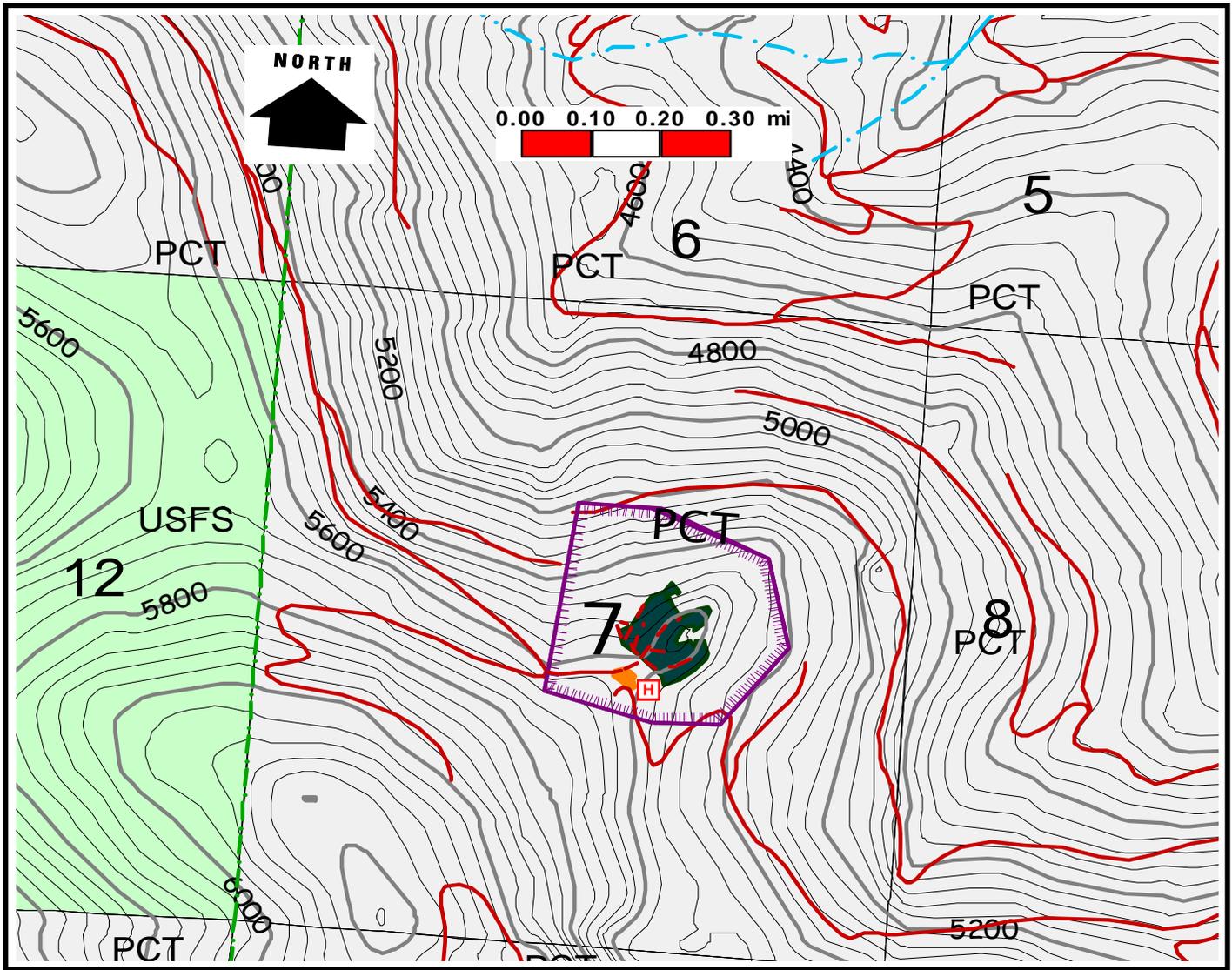
The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The access road to this site is gated yearlong.

# GOBBLERS KNOB, Site # 6

Sec 7 T27N R26W



Unit	Acres
Unreclaimed quarry area	6.6
Staging area	0.4
Permit boundary	58.5

Note: Non-colored area within the permit boundary is currently inactive

	Access Roads
	Quarry_Development Rds
	Permit_Boundary
	Staging Area
	Unreclaimed quarry area

**Helispot Location :** -114:59:52.  
48:06:38.  
Lon.Lat(d:m:s).

Original Map Scale : 1: 15840  
Map Type : Rock  
Prepared by : Denny Heuscher

Map Creation Date : 8/20/2003

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Gobbler Rock, Site # 6**      **Date:** 15 Oct 03      **Obs:**  
H. Stabins

**T-R-S:** 27-26-7

*Pictures:* roll 54157009, #12 & 13

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
High elevation (~5,600') open aspect knob surrounded by young regenerating WL saplings and WL seed trees.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Site is a rock knob with talus fields on all sides. Other rock in the vicinity.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

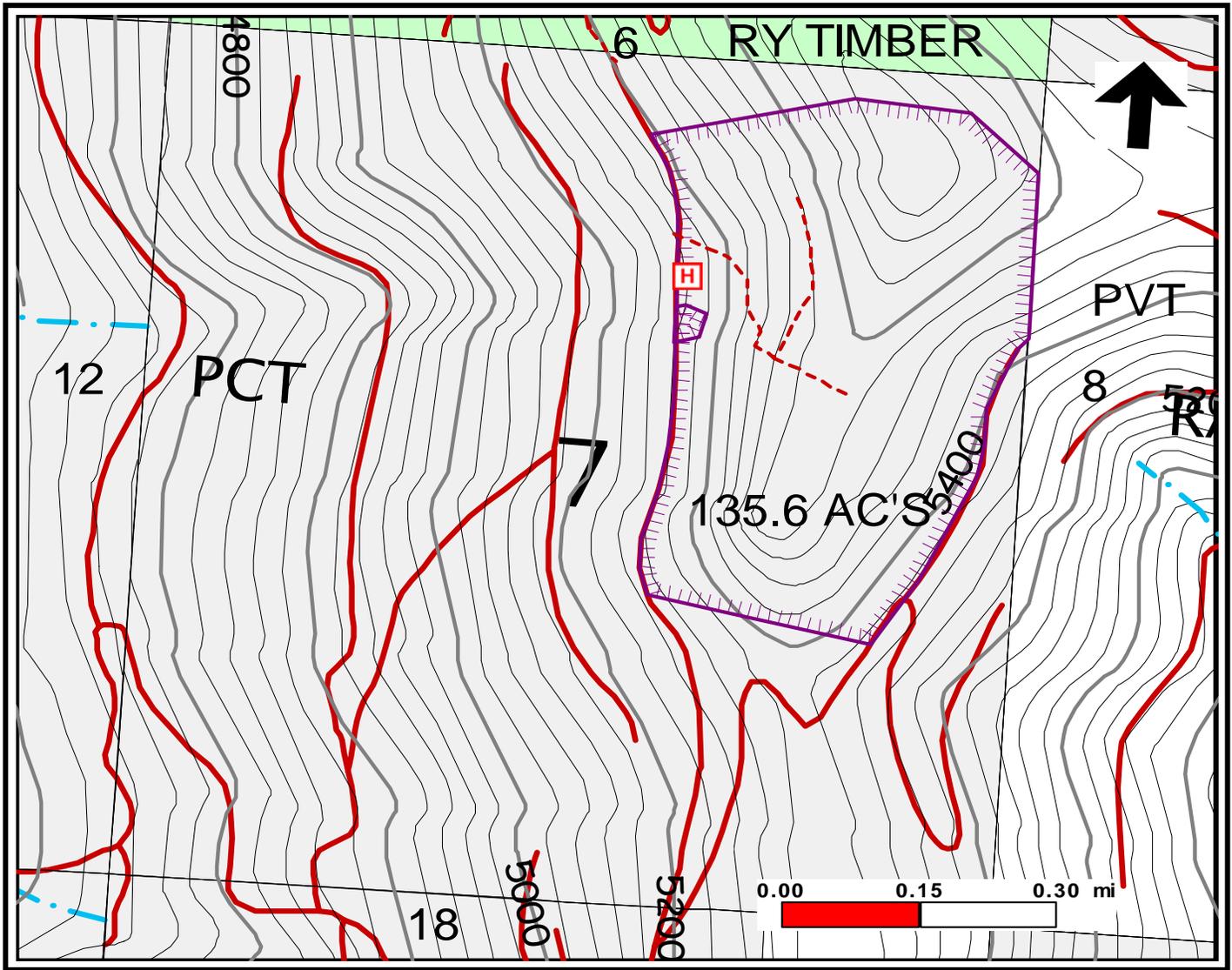
*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.



# Granger Overlook, Site # 64

Section 7, T26N, R23W



<u>Unit</u>	<u>Acres</u>
Permit area	135.6

	Quarry Development Rds.		Private
	Hydrology - Intermittent		RY Timber Company
	Permit Boundary		Plum Creek Timber
	Access Roads		Staging Area
	Owner - Plum Creek		

**Helispot Location :** -114:36:28.3138,  
48:01:50.8358. 0  
Lon.Lat(d:m:s).

Original Map Scale : 1: 12000  
Map Type : Rock  
Prepared by : sperrone

**Plum Creek**

Map Creation Date : 10/4/2004

## SITE BASE-LINE DESCRIPTION

**Site Name: Granger Overlook Site # 64  
Section 7, T26N R23W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities. The area is not well suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[There are no visible signs of a water table. The quarry depth is planned to be 20' depending on the rock source. Plum Creek commits to stay out of the water table per operating permit requirements.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Belt, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with outcrops and no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-8' of Talus boulders. Any soil disturbed during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent and within to the quarry site is a mixed Douglas fir, Western Larch forest type. There is also Rocky Mountain Maple, Pinegrass and Snowberry vegetation throughout the area. Noxious weeds \(spotted knapweed\) exist on the access roads leading to the permit area. Plum Creek commits to control noxious weeds along the roads and in the quarry area.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. Additional information completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form is attached to this Baseline Data Sheet.

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left un-reclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

No unique features to this site have been observed. The permit area is behind a year round locked gate.

## Rock Quarry Wildlife Evaluations

Site Number & Name: **Site # 64, Granger Overlook**

Date: August 30, 2005

T-R-S: 26-23-07  
Reclaimed

At time of visit:

Active

Photo #s: **05Aug0133, 0134**

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Ridgetop site at ~ 5600 ft elevation. Previously harvested. Open canopy cover shelterwood stand type with Douglas-fir and western larch. Multistoried with a grass understory.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Scattered larger rock outcrops along ridge. Rock throughout vicinity.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of unique habitat features at site, if any:*

None observed.



## SITE BASE-LINE DESCRIPTION

**Site Name: Gunsight Rock, Site # 8**  
**Section 30 T27N R24W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing. There is a limited opportunity for big game hunting in the fall.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are several water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\). See attached water well information.](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[There is a small pothole lake \(approximately 30 acres\) that lies about 1 mile from the staging area. It is approximately 80' in elevation below the staging area and roughly 120' in elevation below the quarry area. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-12' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Western Larch, Ponderosa pine/ Lodgepole pine forest type. There is little vegetation on the quarry site with the exception of an occasional Rocky Mountain Maple and pine grass. Noxious weeds \(spotted knapweed and Mullan\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, when completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form will be attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

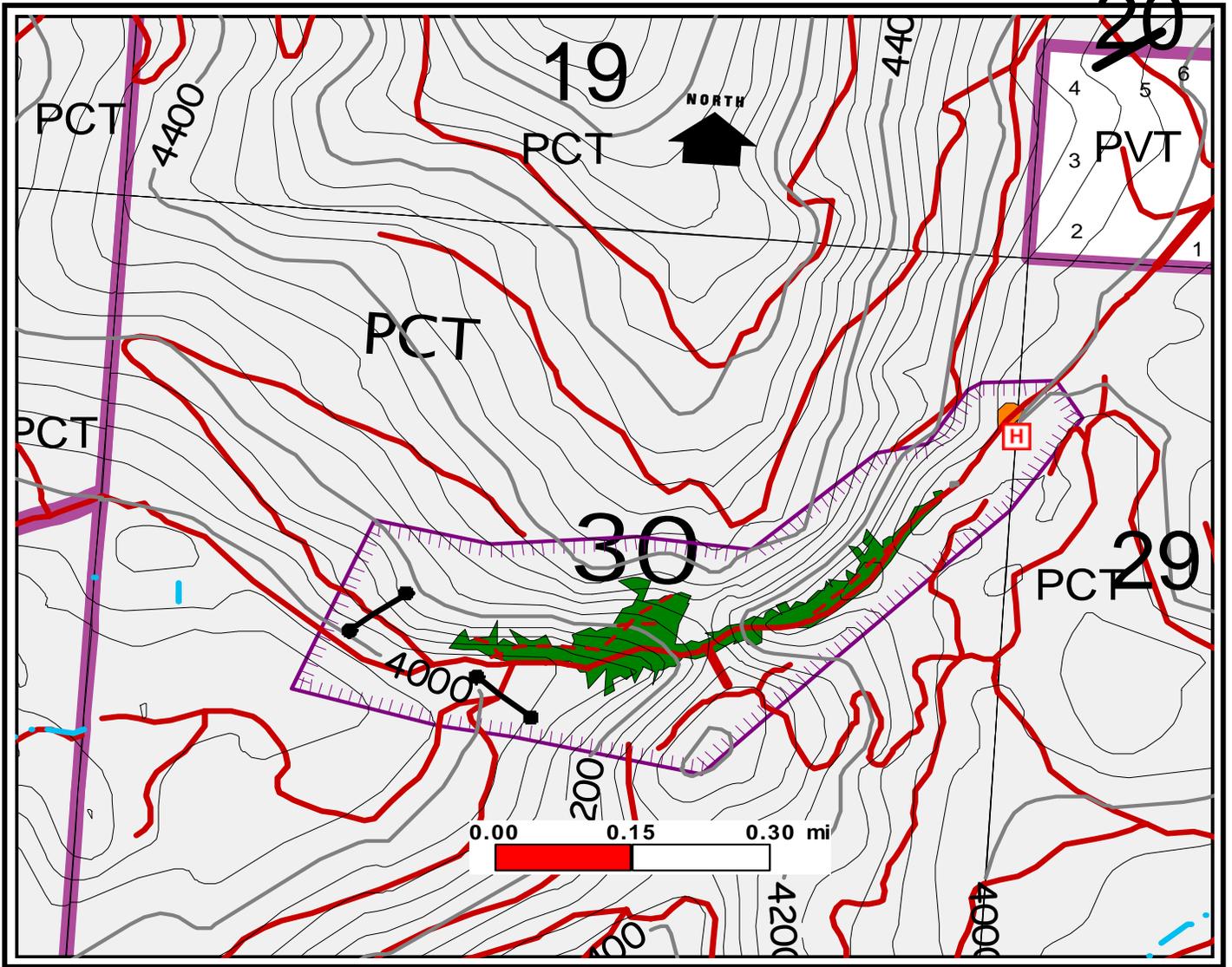
The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left un-reclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. Access to the permit area is open.

# Gunsight Rock, Site # 8

Sec 29,30 T27N R24W



Unit	Acres	Private Owners	
Unreclaimed quarry area	12.9	1 Sheila Kavalski	4 Ryan Matthew Norwood
Staging Area	0.4	2 Sarah Markiewicz	5 Robert & Laura Snipes
Permit Boundary	109	3 Gerald & Sabrina Reynolds	6 John H. Trebas

Note: Non-colored area within the permit boundary is currently inactive

	Quarry Development Roads		Permit Boundary
	Gate		
	Access Roads		
	Unreclaimed Quarry Area		
	Staging Area		

**Helispot Location :** -114:43:42.  
48:04:28.  
Lon.Lat(d:m:s).

Original Map Scale : 1: 12000  
Map Type : Rock  
Prepared by : Denny Heuscher

**Plum Creek**

Map Creation Date : 8/28/2003

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Gunsight Rock, Site # 8** Date: 18 Sept 03 Obs: H.  
Stabins

**T-R-S:** 27-24-30  
#21

*Pictures:* roll 54154138, #20 and #21

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Pass area between two ridges. Thinned DF/WL/PP young forest with scattered larger PP at top of cliff. South aspect. County road runs through the site.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Broken, vertical cliff face, 50 to 300 ft in height with talus/boulder fields below. Rock outcrops scattered throughout area.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

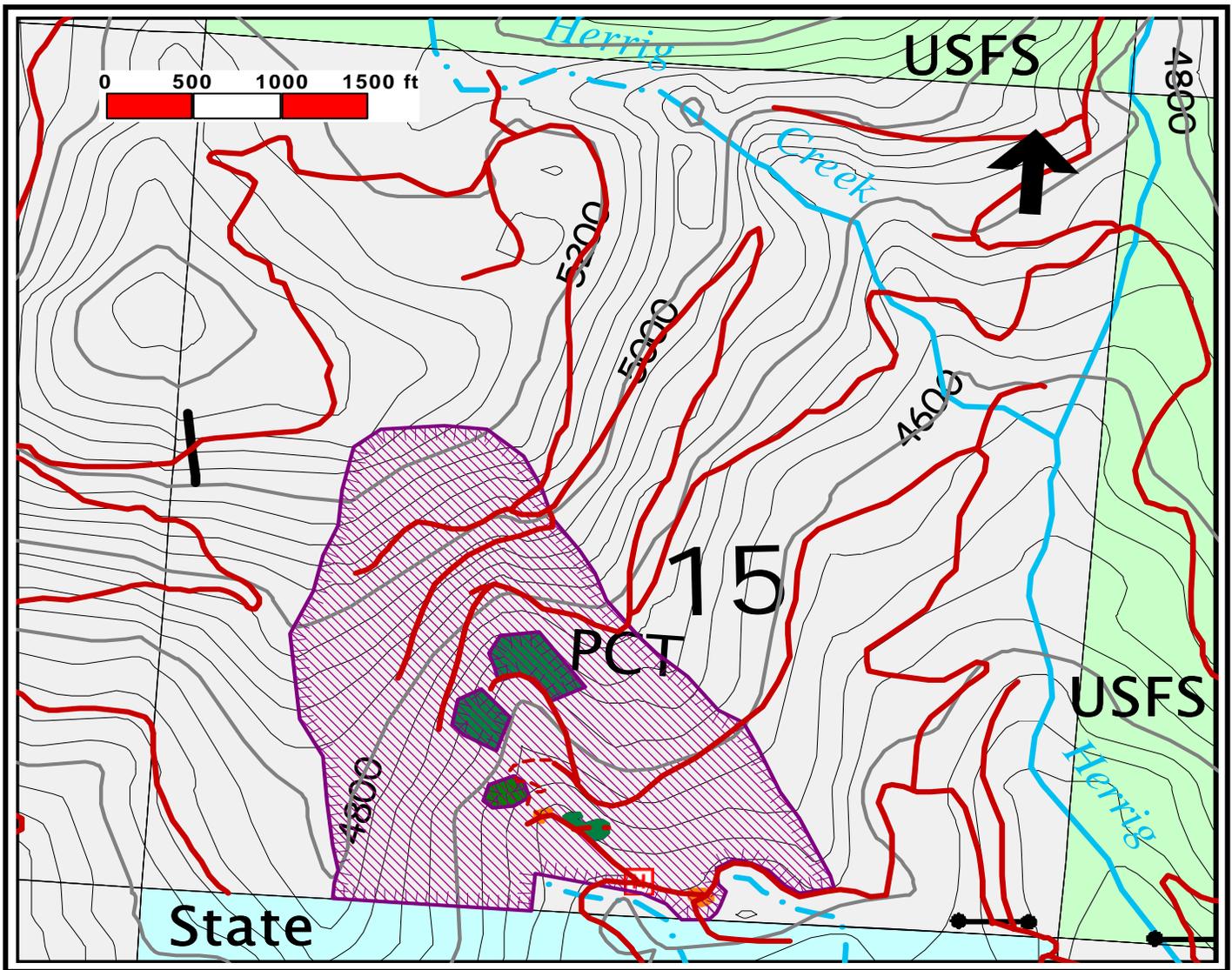
*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.



# Herrig 15 Rock, Site # 9

Sec. 15 T28N R25W



Unit	Acres
Permit	133
Quarry area	6.1
Reclaimed	1
Staging	0.3

	Permit_Boundary		Perennial Stream
	Gate		Quarry Area
	Barrier		Staging Area
	Access Road		Quarry Development Road
	Intermittent Creek		

**Helispot Location :** -114:45:03.2090,  
48:10:59.5176. 0  
Lon.Lat(d:m:s).

Original Map Scale : 1: 12000  
Map Type : Rock  
Prepared by : sperrone

**PlumCreek**

Map Creation Date : 8/7/2002

## SITE BASE-LINE DESCRIPTION

**Site Name: Herrig 15 Rock Site # 9**  
**S1/2 Section 15 T28N R25W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen limited quarrying activity in the last two years. The area is not well suited for livestock grazing and the recreation potential is limited. Hunting does occur in the fall in the permit area.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nr.is.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[Herrig Creek flows southeasterly, approximately 2,500 feet from the staging area. It is approximately 160' in elevation below the staging area site and is roughly 200' in elevation below the actual quarry site. Two intermittent streams are east and west of the staging area and are 25' in elevation below the staging area. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Plum Creek commits to stay out of the water table per operating permit requirements.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till; the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-10' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[A Douglas fir forest type with some Larch and Lodgepole pine trees dominates the area adjacent to the quarry site. Pine grass is also present. There is little vegetation on the quarry site with the exception of an occasional Rocky Mountain Maple and Snowberry. Noxious weeds \(spotted knapweed\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity. Plum Creek commits to control noxious weeds along the roads and in the quarry area.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. Additional information completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form is attached to this Baseline Data Sheet.

### **Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The access road is gated approximately ½ mile from the staging area.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Herrig 15 Rock, Site # 15**    **Date:** 11 Sept 03    **Obs:**  
H. Stabins

**T-R-S:** 28-25-15

*Pictures:* roll 54154138, #16

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Young DF/WL pole timber type stand with scattered larger DF and WL around site. Rolling topography. Approximately 4400 ft in elevation. Western aspect.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Rock outcrops all through area, stepped outcrops and contoured surface rock. Trees growing in outcrops.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed. Dry drainage at bottom of site.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.



## SITE BASE-LINE DESCRIPTION

**Site Name:**     **Herrig 25 Rock, Site # 10**  
                      **E1/2E1/2 Section 25, T28N, R25W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site has been timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen limited quarrying activity in the last four years. The area is not well suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nr.is.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[Herrig Creek flows southerly, approximately 3/4 of a mile west of the staging area. An unnamed tributary of Herrig Creek flows intermittently within 400' of the quarry site and staging area. It is approximately 10' in elevation below the staging area site and is roughly 120' in elevation below the actual quarry site. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is up to 25' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Ponderosa pine and Larch forest type. Pine Grass is also abundant. There is little vegetation on the quarry site. with the exception of an occasional Rocky Mountain Maple and Snowberry. Noxious weeds \(generally spotted knapweed\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, and black bear. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, when completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form will be attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

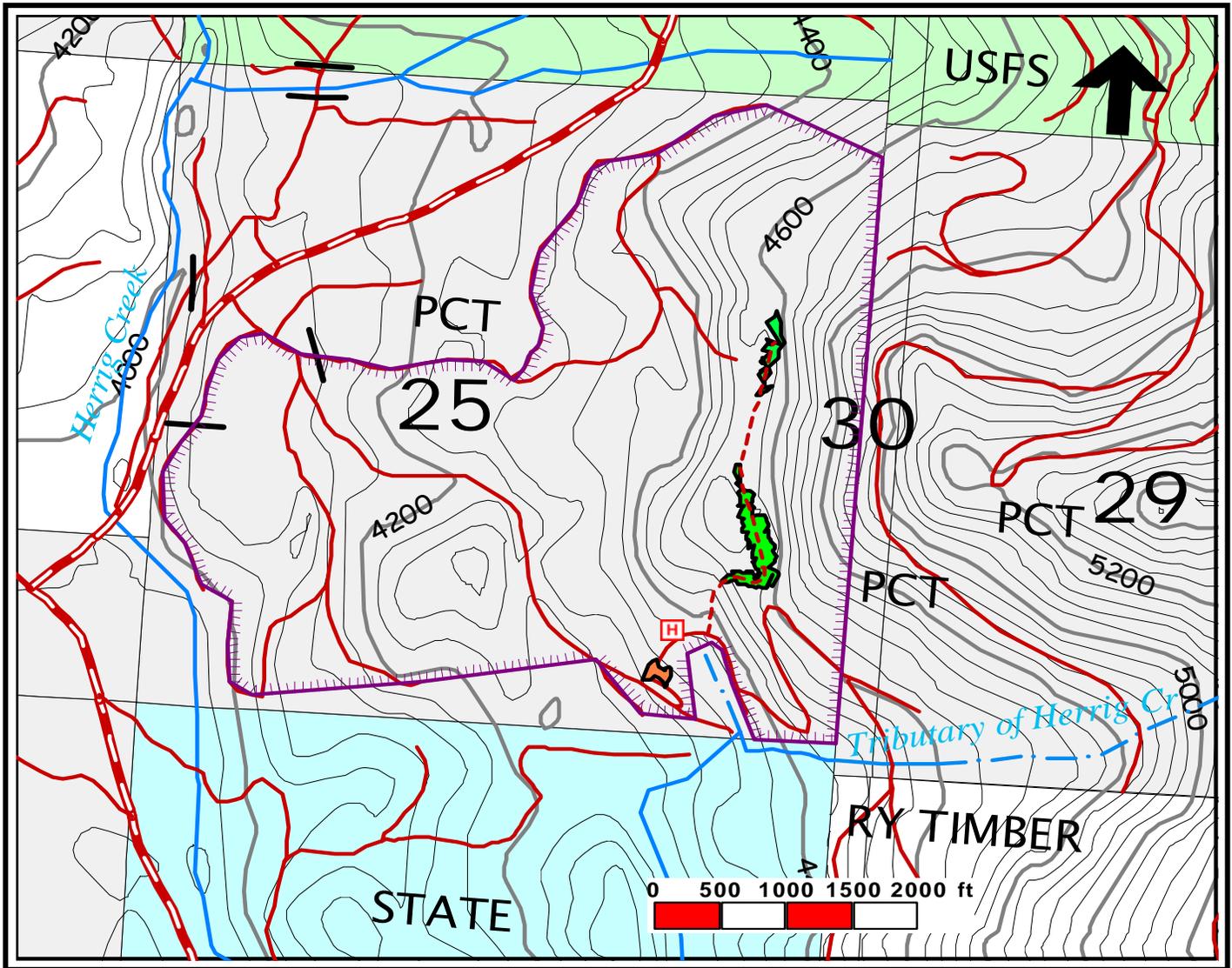
**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards. Some reclamation has occurred (a minor amount then markets changed and reclamation was stopped so we could further quarry the site).

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site.

**Herrig 25 Rock, Site # 10**  
Section 25, T28N,R25W



Unit	Acres
Permit Boundary	411.8
Unreclaimed area:	5.0
Staging area	0.9

	Permit Boundary		Access Roads
	Quarry Development Rds.		Hydrology Perennial Stream
	Staging Area		Owner - STATE
	Active Sites		Owner - US Forest
	Barrier		Owner - RY Timber

**Helispot Location :** -114:42:10.0499,  
48:09:21.9014. 0  
Lon.Lat(d:m:s).

Original Map Scale : 1: 15840  
Map Type : Rock  
Prepared by : sperrone

**PlumCreek**

Map Creation Date : 8/9/1999

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Herrig 25 Rock, Site # 10**    **Date:** 11 Sept 03    **Obs:**  
H. Stabins

**T-R-S:** 28-25-25

*Pictures:* roll 54154138, #15

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Young intermediate age three layer structured stand dominated by DF, with PP and WL present. Dry site, sparse understory. Ridge top site.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Quarry is “pass” area between two rocky outcrop ridges. Other rock is in the vicinity.

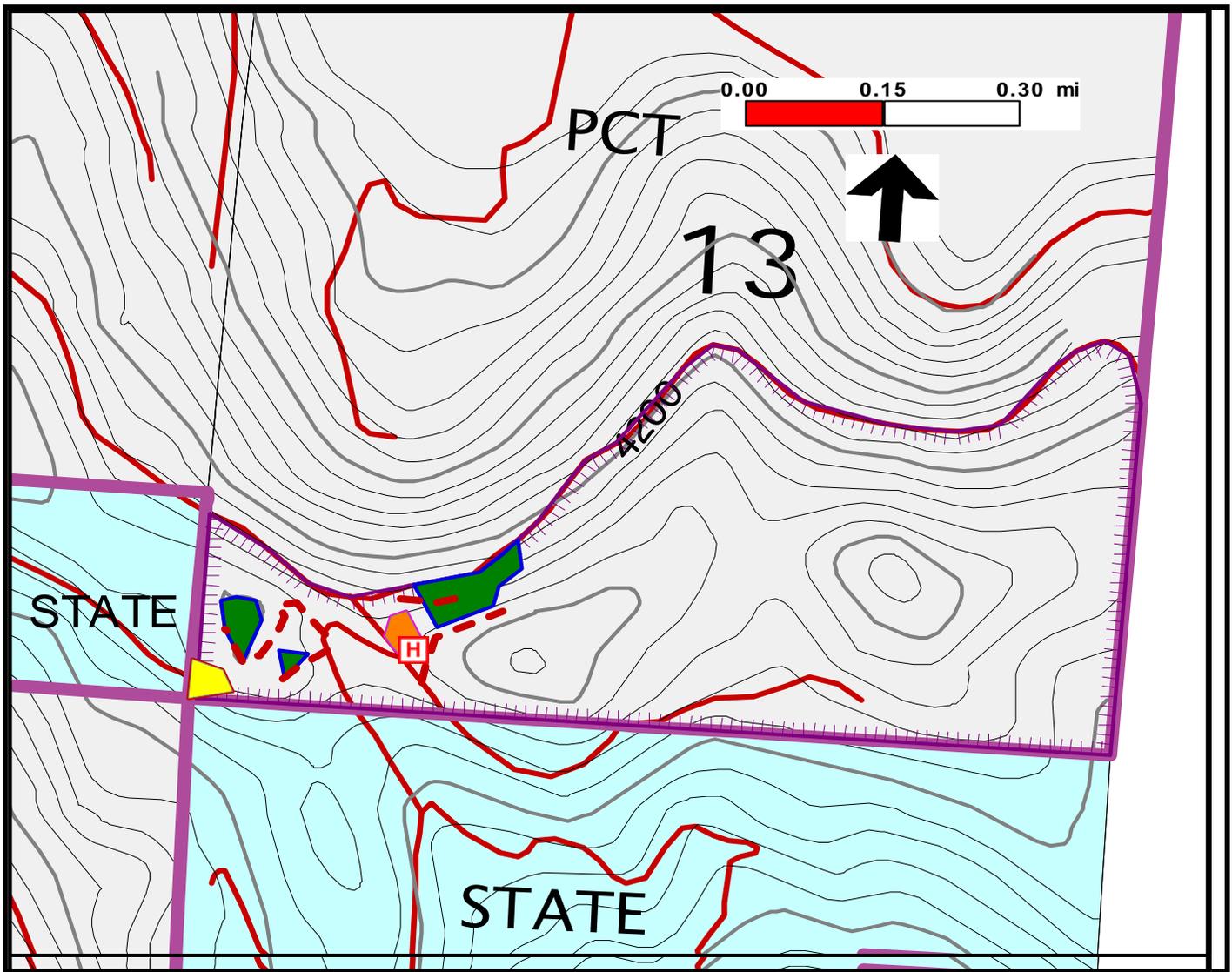
*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.





	Unit	Acres
Permit Area		185
Unreclaimed quarry	1	2
Unreclaimed quarry	2	1
Reclaimed quarry	3	1
Unreclaimed quarry	4	0.5

	STAGING AREA		Permit Area
	QUARRY ACCESS ROAD		AccessRoads
	RECLAIMED QUARRY AREA		
	UNRECLAIMED QUARRY AREA		

**Helispot Location : -114:59:38.8345,**  
**48:16:14.2715. 0**  
**Lon.Lat(d:m:s).**



Original Map Scale : 12000  
 Map Type : Rock  
 Prepared by : dfriedma

 **PlumCreek**

Map Creation Date : 2/12/2004

## SITE BASE-LINE DESCRIPTION

**Site Name: Kavalla Ridge Site # 30  
Section 13 T29N R27W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within bed rock formation that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The quarry is on a ridge top that drains on one side to Kavalla Creek and on the other to Little Wolf Creek. Both streams are over a mile away. No evidence of water on or near the quarry is evident. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a bedrock formation with little to no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to quarry and are low productive soils. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Ponderosa pine/ Lodgepole pine forest type. There is little vegetation on the quarry site. Noxious weeds \(spotted knapweed and Tansy Ragwort\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity. The roads are sprayed annually to insure that weeds are not spread from the site](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, when completed by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form will be attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The area in and adjacent to the quarry is gated year round.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Kavalla Ridge, Site # 30**      **Date:** 25 Jun 03      **Obs:**  
H. Stabins, M. Aston

**T-R-S:** 29-27-13

*Pictures:* roll 52260185, #13,14,15

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Ridge top site. Active, developed site. At present, the site has two working areas and a landing area. Rolling topography site surrounded by thinned DF/PP/WL stand of young trees and grassy openings. Contractor will retain ~30 inch WL legacy tree at site.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Rock is under the surface at the site and through the quarry operation is being exposed to the surface. Rock outcrops are present all through drainage.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.



## SITE BASE-LINE DESCRIPTION

**Site Name:** Rail Road Rock, Site # 36  
Section 13, T29N R27W  
Sections 7,18, T29N, R26W

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within bed rock formation that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The quarry is in a bedrock out-cropping in a road cut that drains into Little Wolf Creek. Little Wolf Creek is over a mile away. No evidence of water on or near the quarry is evident. A dry draw exists below quarry and is not to be obstructed. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a bedrock formation with little to no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to quarry and are low productive soils. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Ponderosa pine/ Lodgepole pine forest type. There is little vegetation on the quarry site. Noxious weeds \(spotted knapweed and Tansy Ragwort\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity. The roads are sprayed annually to insure that weeds are not spread from the site](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, refer to the Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

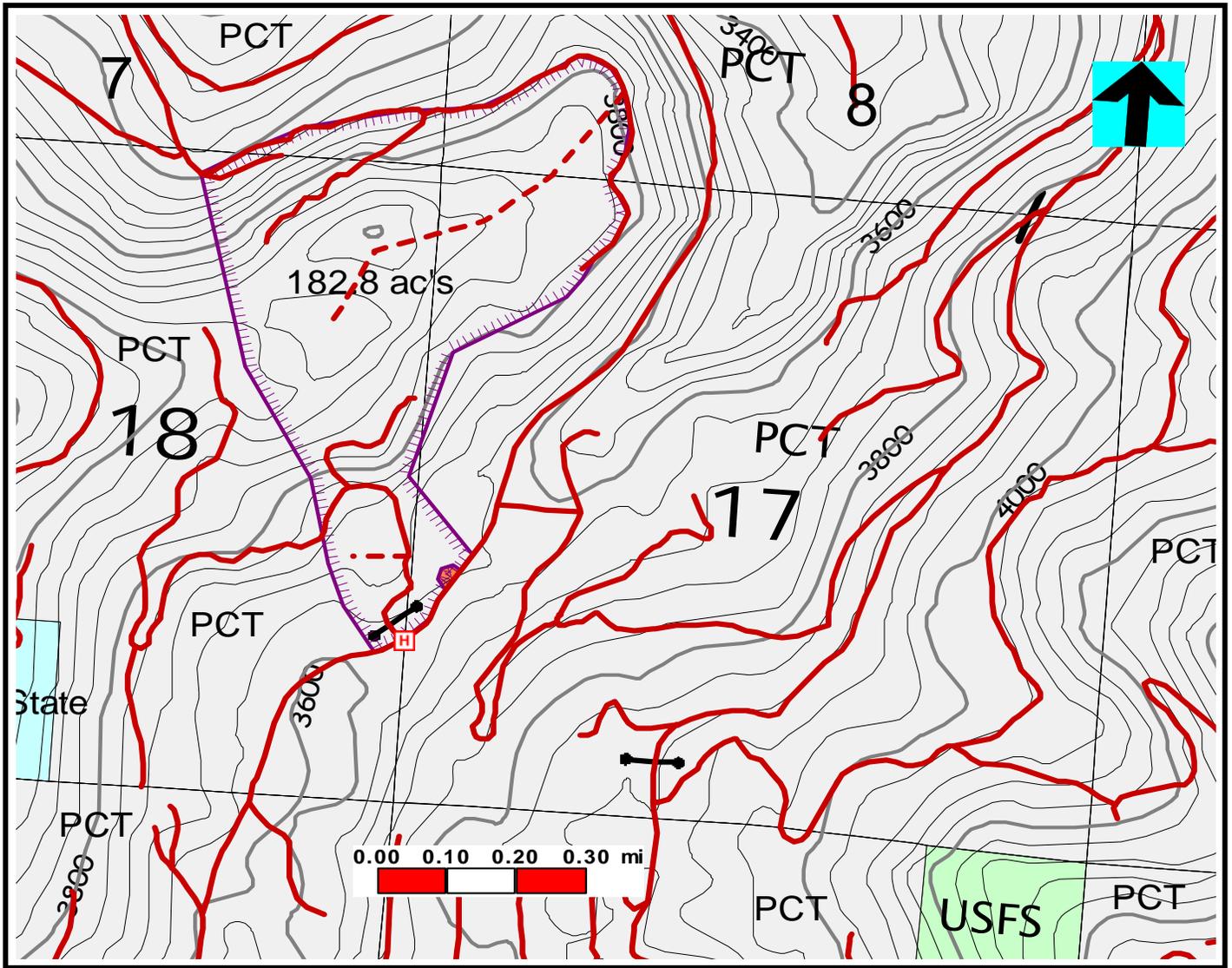
**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The area in and adjacent to the quarry is gated year round.

**Railroad 1718, Site # 58**  
 Sections 7,8,17,18,T29N,R26W



Unit	Acres
Staging Area	0.4 within permit area
Permit area	182.8

	Quarry Development Rds.		Staging Area
	Access Roads		Owner - Plum Creek
	Permit Boundary		Owner - STATE
	Gate		Owner - US Forest
	Barrier		

**Helispot Location :** -114:57:20.9937,  
 48:16:23.8199. 0  
 Lon.Lat(d:m:s).

Original Map Scale : 1: 15840  
 Map Type : Rock  
 Prepared by : sperrone

**Plum Creek**

Map Creation Date : 5/20/2004

## Rock Quarry Wildlife Evaluations

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**Site Number & Name:** **Site # 36, Rail Road Rock** **Date:** August 10, 2005

**T-R-S:** 29-27-13, 29-26-7,18 **At time of visit:** Undeveloped  Active   
Reclaimed

**Photo #s:** **05Aug0008, 0010**

*General site description (vegetation types, topography, elevation, aspect, etc.):*

Unit 1 – Midslope, largely north aspect

Unit 2 – Ridge top

Both are previously harvested, western larch/Douglas-fir multi-storied young forests with a component of ponderosa pine.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Subsurface outcrops along roads, small outcrops. Rock throughout area.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed. Dry draws.

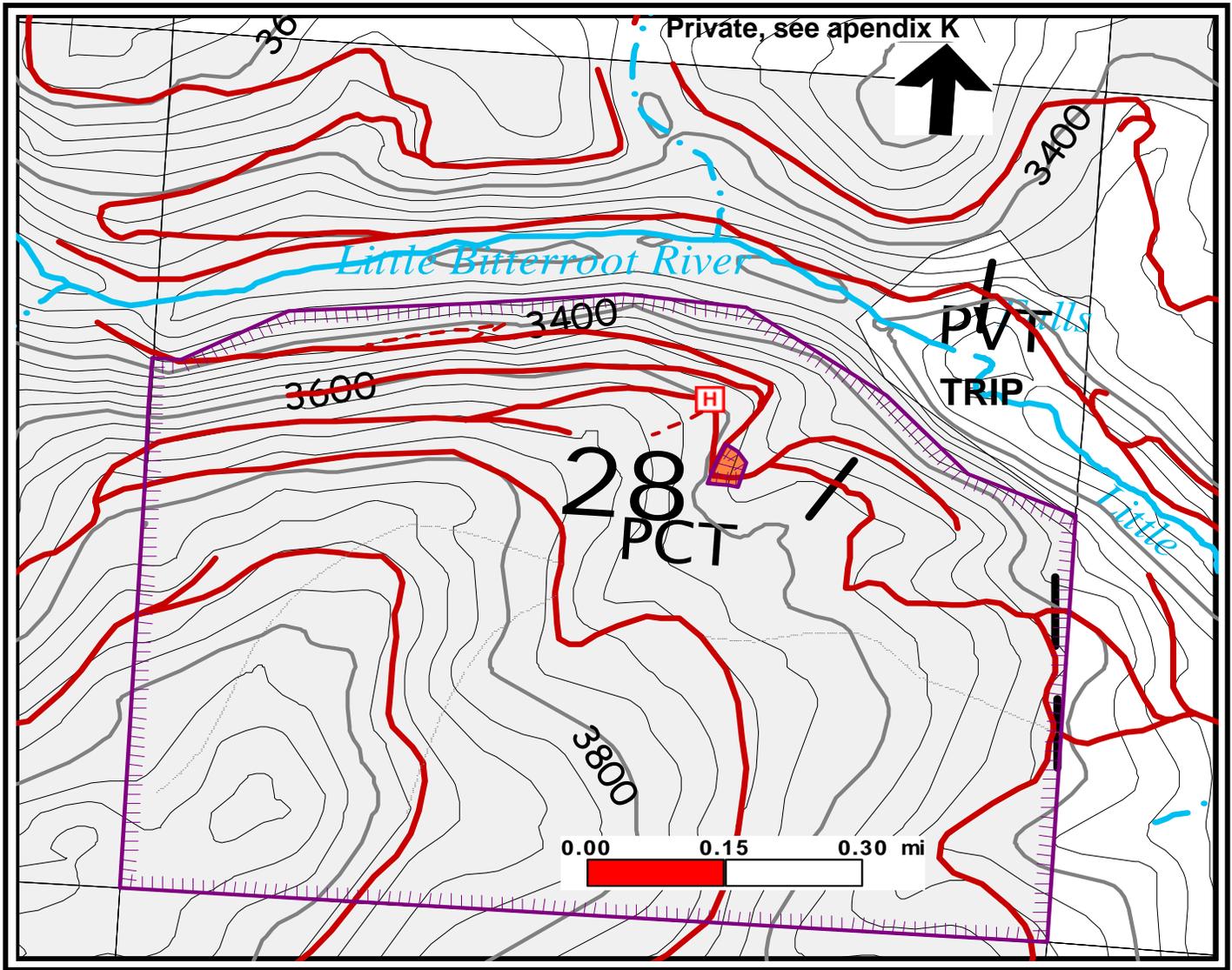
*Description of unique habitat features at site, if any:*

None observed.



# Red Rock, Site # 19

Section 28, T25N,R24W



Unit	Acres
Permit area	429.4
Staging area	0.65

	Permit Boundary		Quarry Development Rds.
	Access Roads		Staging area
	Hydrology - Intermittent		Owner - Plum Creek
	Hydrology- Perennial		Owner - Private
	Barrier		

**Helispot Location :** -114:41:38.7517,  
47:53:54.4072. 0  
Lon.Lat(d:m:s).

Original Map Scale : 1: 12000  
Map Type : Rock  
Prepared by : sperrone

Map Creation Date : 10/11/2005

## SITE BASE-LINE DESCRIPTION

**Site Name: Red Rock Site #19**  
**N1/2 Section 28 T25N R24W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The quarry site is located within a talus area and a rock outcrop that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited to hunting in the Fall.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The Little Bitterroot River flows Easterly and to the South of the permit area. The permit area is at a minimum 100' in distance and 25' in elevation from the permit area. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[The Little Bitterroot River is 100' from the bottom of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The talus slope has no surface soil. Shallow \(2-4"\) Gravelly Loam soils occur above the rock outcrop as it goes into the hillside and are low productive soils. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The permit area is a mixed Douglas fir, Ponderosa pine, Western Larch forest type. There is little vegetation on the talus site with the exception of an occasional Rocky Mountain Maple and Snowberry. The rock outcrop area is to be quarried into a hillside that has DF and pine grass on it at this time. Noxious weeds \(spotted knapweed and Canada thistle\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity. .](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, gray wolf, mountain lion and moose. The quarry site does not contain any unique habitat features. For additional information, refer to the Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

No unique features to this site have been observed. The quarry site is gated year round.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name:** **Red Rock, Site # 19**    **Date:** 23 Sept 03    **Obs:** H. Stabins

**T-R-S:** 25-24-28

*Pictures:* roll 54181243, #6

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Bottom 1/3<sup>rd</sup> of slope above the L. Bitterroot River. Thinned DF/WL surrounding stand type. Recently harvested. Northeast aspect. Scattered old larger decadent WL in area.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

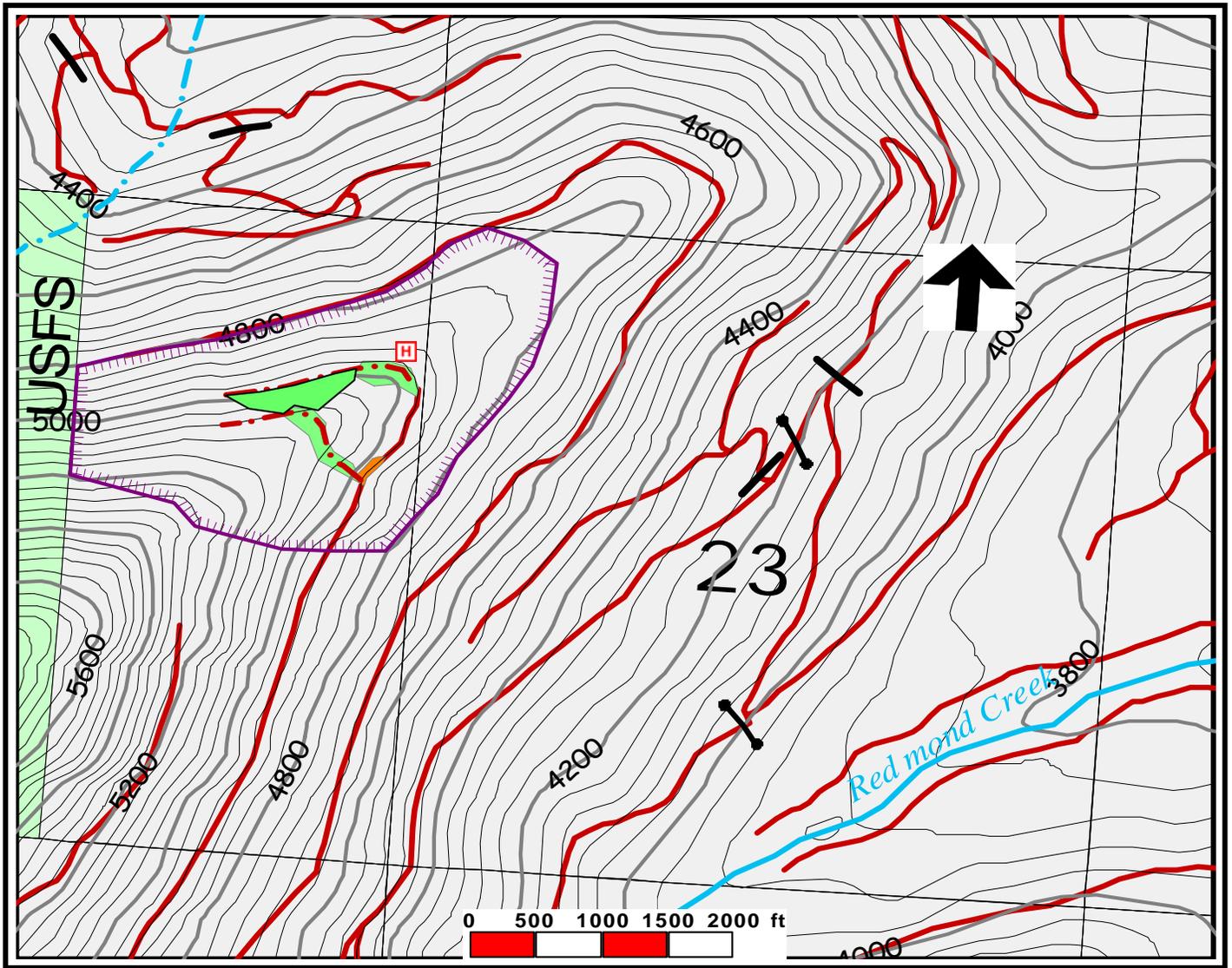
Site is steep talus/boulder field. In rocky gorge area below the Hubbard Dam. Lots of rocky areas in vicinity.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed. L. Bitterroot River is 200+ ft to North.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:* None observed.





Unit	Acres
Unreclaimed Quarry Area	7.1
Staging Area	0.3
Permit Area	132.0

Note: non-colored acres within the permit boundary are currently inactive

	Quarry Development Roads		Staging Area
	Permit Boundary		Access Roads
	Gate		Owner - US Forest
	Barrier		Quarry Area

**Helispot Location :** -114:47:37,  
 47:54:56  
**Lon.Lat(d:m:s).**

Original Map Scale : 1: 15840  
 Map Type : Rock  
 Prepared by : Vic Andersen

**Plum Creek**

Map Creation Date : 6/12/2001

## SITE BASE-LINE DESCRIPTION

**Site Name:** Redmond Rock Site # 20  
NE1/4 Section 22, NW1/4 Section 23 T25N R25W

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. The attached map provides the required detail of the quarry site. See also other regional maps for general access information.

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen quarry activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells (<http://nris.state.mt.us/interactive.html>).

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
There are no visible signs of a water table. The quarry depth is planned to be 20' depending on the rock source. Plum Creek commits to stay out of the water table per operating permit requirements.

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
There is no surface water in the permit area and within 1,000' of the permit area.

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
The general rock type is Belt, the parent material is Belt Rock. There is no evidence of sulfides in the rock.

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
The quarry site is a talus slope with no surface soil. Shallow (4-6") Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-8' of Talus boulders. Any soil disturbed during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
The area adjacent to the quarry site is a mixed Douglas fir, Western Larch forest type. There is little vegetation on the quarry site with the exception of an occasional Rocky Mountain Maple and Alder. Noxious weeds (spotted knapweed ) exist on the access roads leading to the permit area. Plum Creek commits to control noxious weeds along the roads and in the quarry area.

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:  
Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. Additional information by Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form is attached to this Baseline Data Sheet.

## SITE BASE-LINE DESCRIPTION

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

No unique features to this site have been observed.

Permit area is approximately three miles behind a year round locked gate.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name:** Redmond Rock, Site # 20    **Date:** 22 Sept 03    **Obs:**  
H. Stabins

**T-R-S:** 25-25-14,22,23

*Pictures:* roll 54181243, #5

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Ridge top, high elevation site, East aspect, thinned DF/WL forest type. Several larger WL snags and decadent trees in area.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Forested rock outcrops with 200 ft by 200 ft talus area. Other rock outcrops in area.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed. Ridge top.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.



## SITE BASE-LINE DESCRIPTION

**Site Name: Rock 43 Site # 83**  
**Sections 3,4, T19N,R26W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus slope and a rock ridge area that is not well suited for timber activities. The area has a current grazing lease and the recreation potential is limited to hunting. There has been no quarry disturbance on this site.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The area is a very dry, well drained Douglas Fir/ Ponderosa Pine, Ninebark, Pinegrass hillside with no water, except from spring snowmelt. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water within 1000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Alluvial , the parent material is Coarse Hard Sediments There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[Some of the quarry site is a talus slope with no surface soil and some is a series of rock ridges covered with a shallow layer of soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-8' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir and Ponderosa pine forest type. There is Bunch grass and Bitter Brush vegetation on the quarry site. Noxious weeds \(spotted knapweed and Canada thistle\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, refer to Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.

### **Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The access road to the permit area is gated year round.

## Rock Quarry Wildlife Evaluations

Site Number & Name:  
August 12, 2005

**Site # 83, Rock 43**

Date:

T-R-S: 19-26-04,03  
Reclaimed

At time of visit:

Active

Photo #s: 05Aug0017, 0019

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Dry ridge top with patchy and scattered young to intermediate ponderosa pine with grassy openings on south ridge side. Douglas-fir dominated on north slope side. Previously harvested.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Scattered surface rock and outcrops. Rock throughout surroundings.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of unique habitat features at site, if any:*

None observed.



## SITE BASE-LINE DESCRIPTION

**Site Name: Rock 9 Site # 84  
Section 9, T19N,R26W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus slope and a rock ridge area that is not well suited for timber activities. The area has a current grazing lease and the recreation potential is limited to hunting. There has been no quarry disturbance on this site.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The area is a very dry, well drained Douglas Fir/ Ponderosa Pine, Ninebark, Pinegrass hillside with no water, except from spring snowmelt. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water within 1000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Alluvial , the parent material is Coarse Hard Sediments There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[Some of the quarry site is a talus slope with no surface soil and some is a series of rock ridges covered with a shallow layer of soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-8' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir and Ponderosa pine forest type. There is Bunch grass and Bitter Brush vegetation on the quarry site. Noxious weeds \(spotted knapweed and Canada thistle\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, refer to Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.

### **Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left un-reclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The access road to the permit area is gated year round.

## Rock Quarry Wildlife Evaluations

**Site Number & Name:**  
August 12, 2005

**Site # 84, Rock 9**

**Date:**

**T-R-S:** 19-26-09  
Reclaimed

**At time of visit:**

Active

**Photo #s:** 05Aug0013, 0015

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
South-facing, dry, upper slope. Previously harvested with open canopy cover. Ponderosa pine site with scattered Douglas-fir. Two-storied stand dominated by 30-40 ft ponderosa pine with grassy openings and scattered conifer regeneration.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Small outcrops and likely subsurface rock. Scattered surface rock. Rock throughout area.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

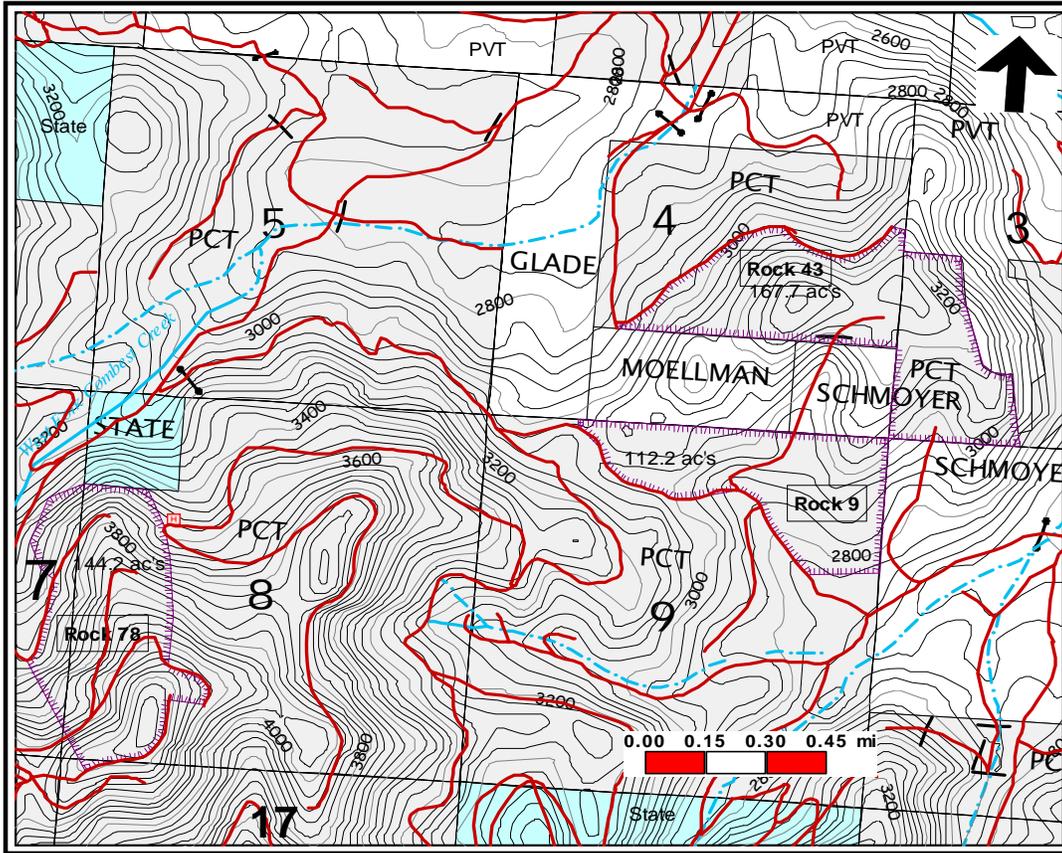
None observed.

*Description of unique habitat features at site, if any:*

None observed.



**Rock 78, Site # 82, 43, Site # 83, 9, Site #84**  
 Sections 4,7,8,9,17,T19N,R26W



Site # 82

Unit	Acres
Rock 43	167.7
Rock 9	112.2
Rock 78	144.2

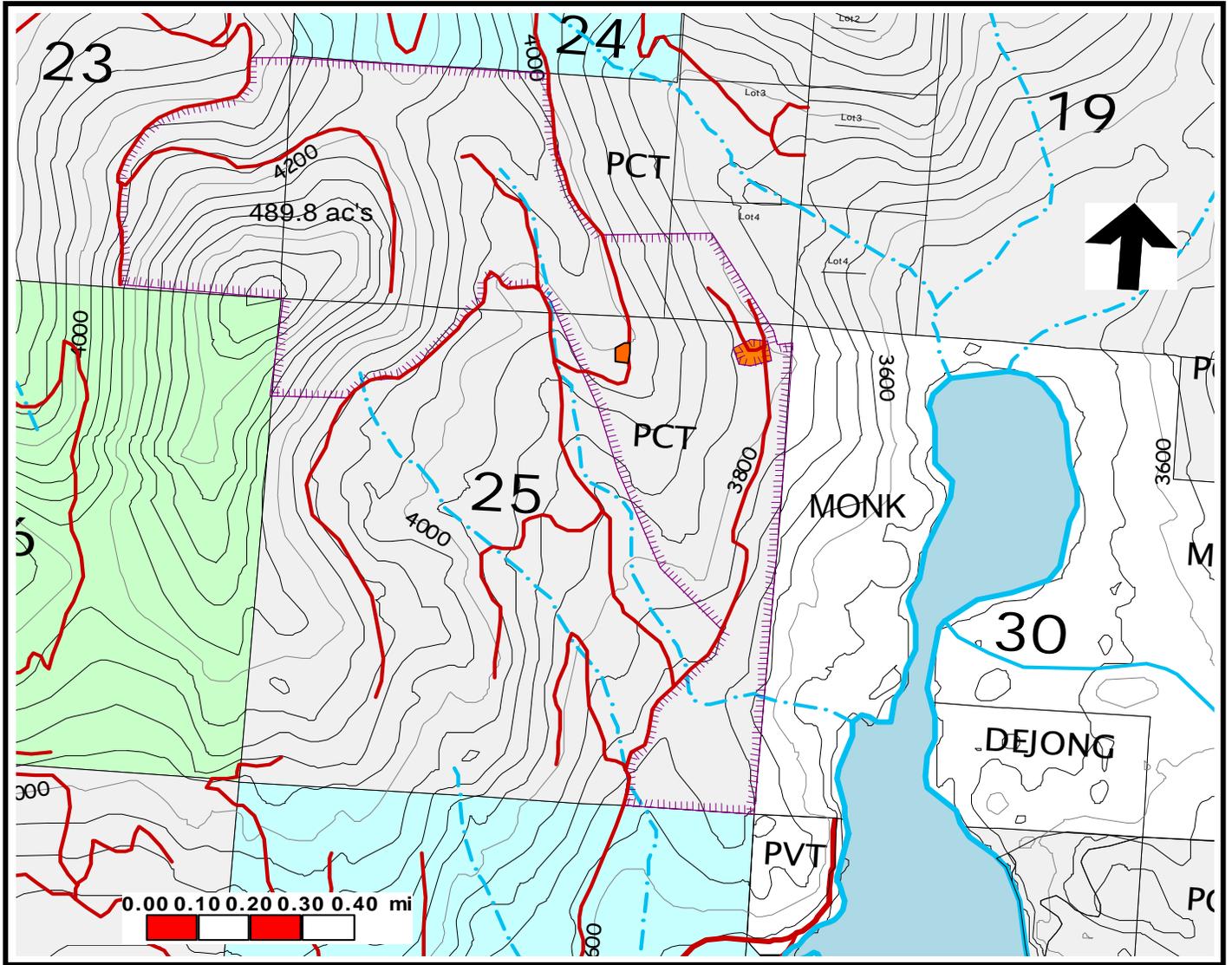
	Access Road		Owner - GLADE
	Permit Boundary		Owner - MOELLMAN
	Gate		Owner - SCHMOYER
	Barrier		Owner - STATE
	Owner - Private		

Helispot Location : -114:56:36.4045,  
 47:25:22.3551, 0  
 Lon,Lat(d:m:s),

Original Map Scale : 1: 24000  
 Map Type : Rock  
 Prepared by : sperrone

Plum Creek

Map Creation Date : 4/5/2005



<u>Unit</u>	<u>Acres</u>
Permit area	489.8
Active quarry & staging area	2.65

	Permit Boundary		Active quarry area
	Quarry Development Rds.		Owner - MONK
	Hydrology - Intermittent		Owner - STATE
	Gate		Owner - US Forest
	Access Roads		

**Helispot Location :** -114:58:43.1566,  
48:15:17.1698. 0  
Lon.Lat(d:m:s).

Original Map Scale : 1: 21120  
Map Type : Rock  
Prepared by : sperrone

Map Creation Date : 4/13/2005

## SITE BASE-LINE DESCRIPTION

**Site Name:** Rocky Surprise, Site # 37  
Section 25 T29N R27W

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within bedrock formation that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The quarry is in a bedrock formation that drains towards Island Lake and into the Pleasant Valley Fisher River drainage. The quarry site is .5 miles from Island Lake. No evidence of water on or near the quarry in evident. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a bedrock formation with little to no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to quarry and are low productive soils. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Ponderosa pine/ Lodgepole pine forest type. There is little vegetation on the quarry site. Noxious weeds \(spotted knapweed and Tansy Ragwort\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity. The roads are sprayed annually to insure that weeds are not spread from the site](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, refer to the Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The area in and adjacent to the quarry is gated year round.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Rocky Surprise, Site # 37**    **Date:** 28 Jul 03    **Obs:** H. Stabins

**T-R-S:** 29-27-23,24,25

*Pictures:* roll 54311642, #3

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Site is along a ridge top in a forested setting. Thick regenerating DF with mixed intermediates. WL and LP present in stand. Active cattle grazing in area.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Rock is subsurface at site and is being exposed to the surface through quarry operation.

Rock outcrops are present throughout the drainage.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

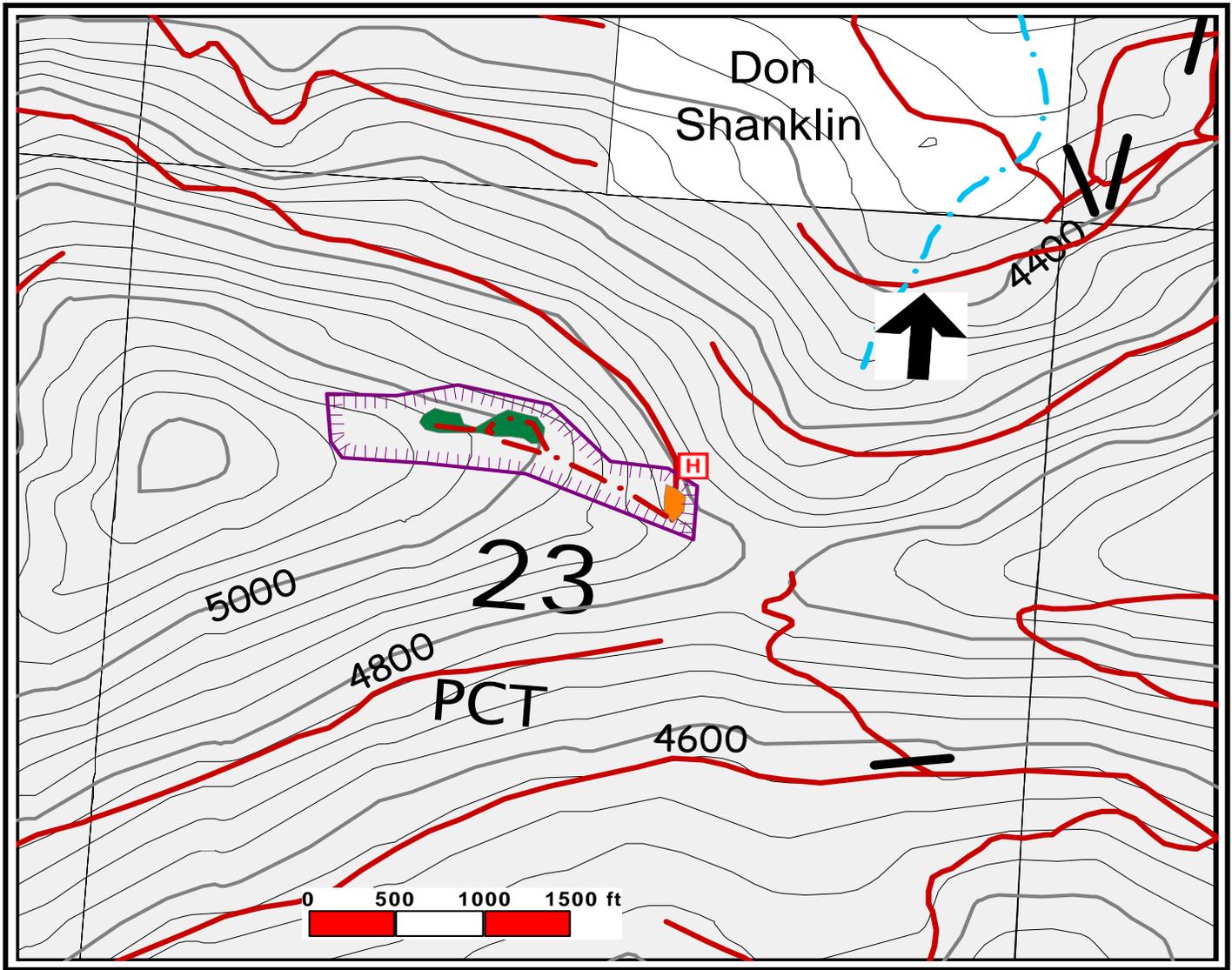
*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.



# Skookum Ridge Rock, Site # 22

Section 23 T26N R25W



Unit	Acres
Unreclaimed Quarry Area	2.1
Staging Area	0.5
Permit Area	20.0

Note: non-colored acres within the permit boundary are currently inactive

	Hydrology - Intermittent		Unreclaimed Quarry Area
	Quarry Development Roads		Access Roads
	Permit Boundary		Private: Don Shanklin
	Barrier		
	Staging Area		

**Helispot Location :** -114:46:45,  
48:00:03  
Lon.Lat(d:m:s).

Original Map Scale : 1: 12000  
Map Type : Rock  
Prepared by : Vic Andersen

Map Creation Date : 12/4/2002

## SITE BASE-LINE DESCRIPTION

**Site Name: Skookum Ridge Rock Site # 22  
Section 23, T26N R25W**

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has had quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\)](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. The water table estimated to be greater than 300' deep.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and no water within 1000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. Any soil disturbed during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas Fir, Western Larch forest type. There is little vegetation on the quarry site with the exception of an occasional Alder Bush.](#)

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:  
[Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, refer to the Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.](#)

## SITE BASE-LINE DESCRIPTION

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

No unique features to this site have been observed. The quarry site is gated year round.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Skookum Ridge Rock, Site # 22** Date: 26 Sept 03 Obs:  
H. Stabins

**T-R-S:** 26-25-23

*Pictures:* roll 54181243, #12

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
5000 ft elevation ridge top. WL/DF thinned stand types surrounding. 360 degrees aspect. Scattered larger decadent WL and DF at the site.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Rock outcrops (~50 ft height) with scattered talus fields. Rock throughout the area.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed. Ridge top.

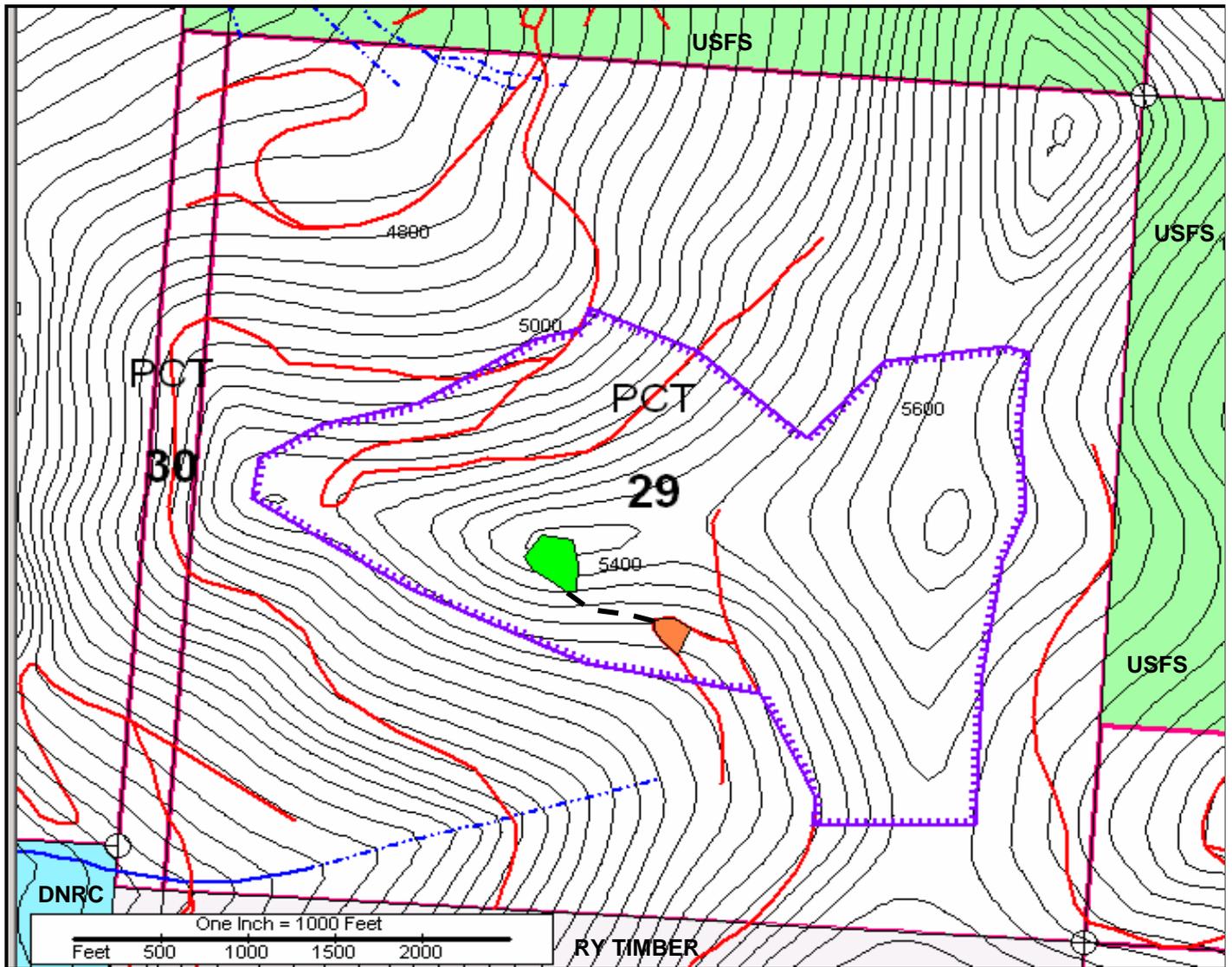
*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.



# Tear Drop, Site # 24

Section 29, T28N, R24W



Unit	Acres
Permit Boundary	185.15
Unreclaimed Quarry Area	1.75
Staging Area	0.65



	Quarry Development Roads		Hydrology - Intermittant
	Access Roads		Hydrology - Perennial
	Permit Boundary		Owner - US Forest
	Unreclaimed Quarry Area		Owner - State DNRC
	Staging Area		Owner - Other Small Private
			Owner - Plum Creek

	Helispot Location in	Lon -114.6853	Prepared By: SCP	Map Type: Rock
	Decimal Degrees	Lat +48.1582		



## SITE BASE-LINE DESCRIPTION

**Site Name:** Tear Drop Rock, Site # 24  
Section 29 T28N R24W

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen limited quarrying activity in the last year. The area is not well suited for livestock grazing and the recreation potential is limited except for hunting in the area.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nr.is.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[A tributary to Herrig Creek is approximately 1500' south west of the quarry and staging areas. It is approximately 360' in elevation below the staging area site and is roughly 440' in elevation below the actual quarry site. An unnamed intermittent stream is approximately 2000' north of the staging area and is about 240' below the staging area. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area and within 1,000' of the permit area.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Belt; the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-20' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Lodgepole pine, and Alpine Fir forest types. Pine grass and bear grass are also present. There is little vegetation on the quarry site with the exception of an occasional Rocky Mountain Maple and Snowberry. Noxious weeds \(spotted knapweed and Canada thistle\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, refer to the Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left unreclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. A gate closes the access road seasonally.

## Rock Quarry Wildlife Evaluations

Site Number & Name: **Tear Drop Site # 24**  
2005

Date: June 1,

T-R-S: 28-24-29  
Reclaimed

At time of visit:

Active

Photo #s: 05Jun0001, 05Jun0002

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
High elevation site - ~5200'. North facing and steep. Mix of stand ages: <10 year old lodgepole pine and western larch and intermediate age LP/WL surrounding the site. High density shrub layer in area (mostly alder).

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Steep boulder and talus slope. Rock present throughout area.

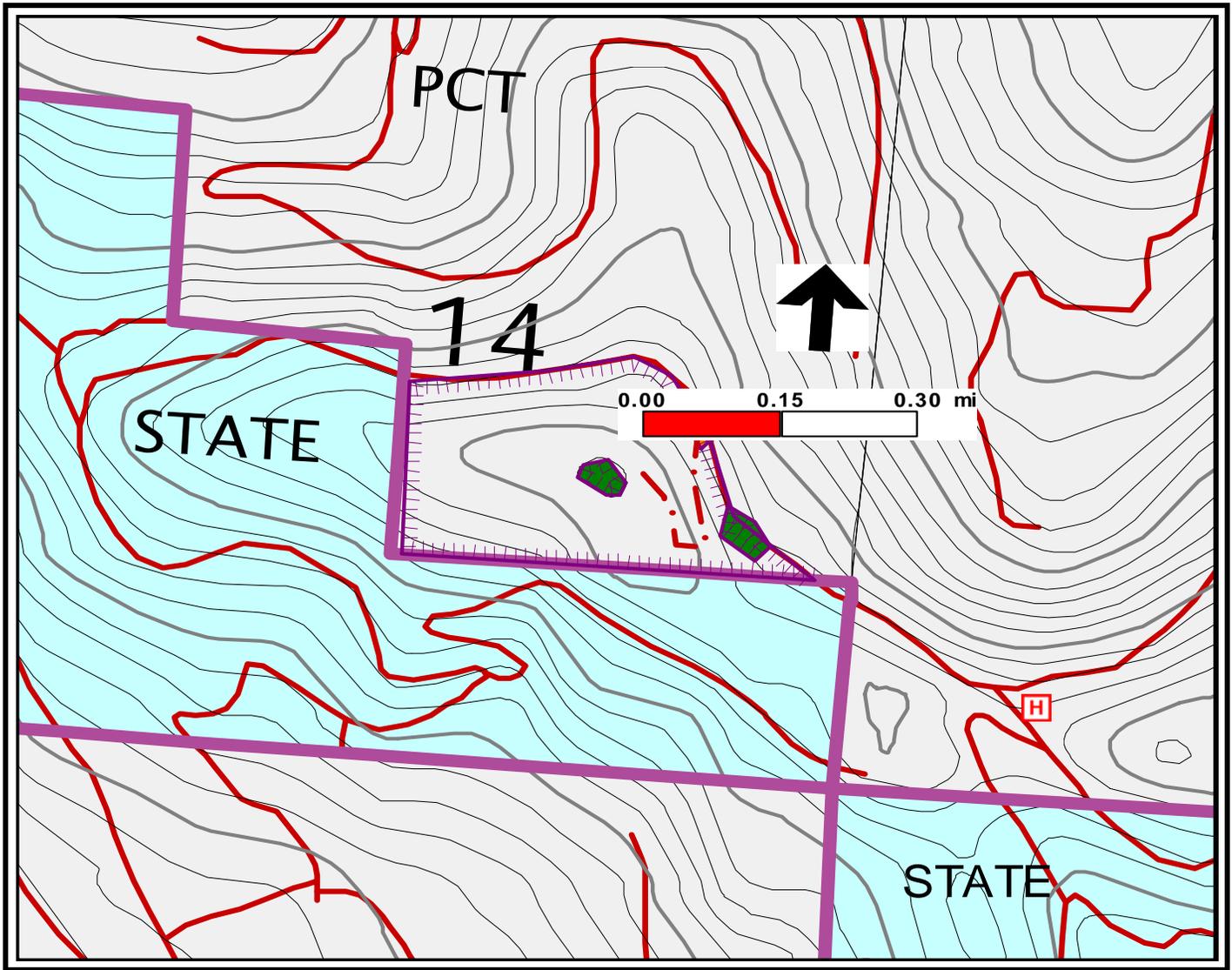
*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of unique habitat features at site, if any:*

None observed.





Unit		Acres
Unreclaimed quarry	1	0.9
Unreclaimed quarry	2	1.2
Permit Boundary		50.2
Staging area		0.3

	Quarry Roads		Access Roads
	Permit Boundary		
	Unreclaimed Quarry Area		
	Staging Area		

**Helispot Location :** -114:59:40.8924,  
48:16:16.1951. 0  
Lon.Lat(d:m:s).

 Original Map Scale : 12000  
Map Type : Rock  
Prepared by : dfriedma

 **PlumCreek**

Map Creation Date : 2/12/2004

## SITE BASE-LINE DESCRIPTION

**Site Name:** Thin Line Rock, Site # 38  
Sec14 T29N R27W

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. The attached map provides the required detail of the quarry site. See also other regional maps for general access information.

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a bedrock formation that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells (<http://nris.state.mt.us/interactive.html>).

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
The quarry is on a ridge top that drains on one side to Kavalla Creek and on the other to Little Wolf Creek. Both streams are over a mile away. No evidence of water on or near the quarry is evident. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
There is no surface water in the permit area and within 1,000' of the permit area

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
The quarry site is a bedrock formation with little to no surface soil. Shallow (4-6") Gravelly Loam soils occur adjacent to quarry and are low productive soils. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
The area adjacent to the quarry site is a mixed Douglas fir, Ponderosa pine/ Lodgepole pine forest type. There is little vegetation on the quarry site. Noxious weeds (spotted knapweed and Tansy Ragwort) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity. The roads are sprayed annually to insure that weeds are not spread from the site.

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, refer to the Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left un-reclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The area in and adjacent to the quarry is gated year round.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name: Thin Line Rock, Site # 38**

**Date:** 28 Jul 03

**Obs:** H. Stabins

**T-R-S:** 29-27-14

*Pictures:* roll 53682358, #26,27

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
Site is along a ridge top. Grass dominated site interspersed with young DF and DF saplings.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Rock is subsurface at site and is being exposed to the surface through quarry operation.

Rock outcrops are present throughout the drainage.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

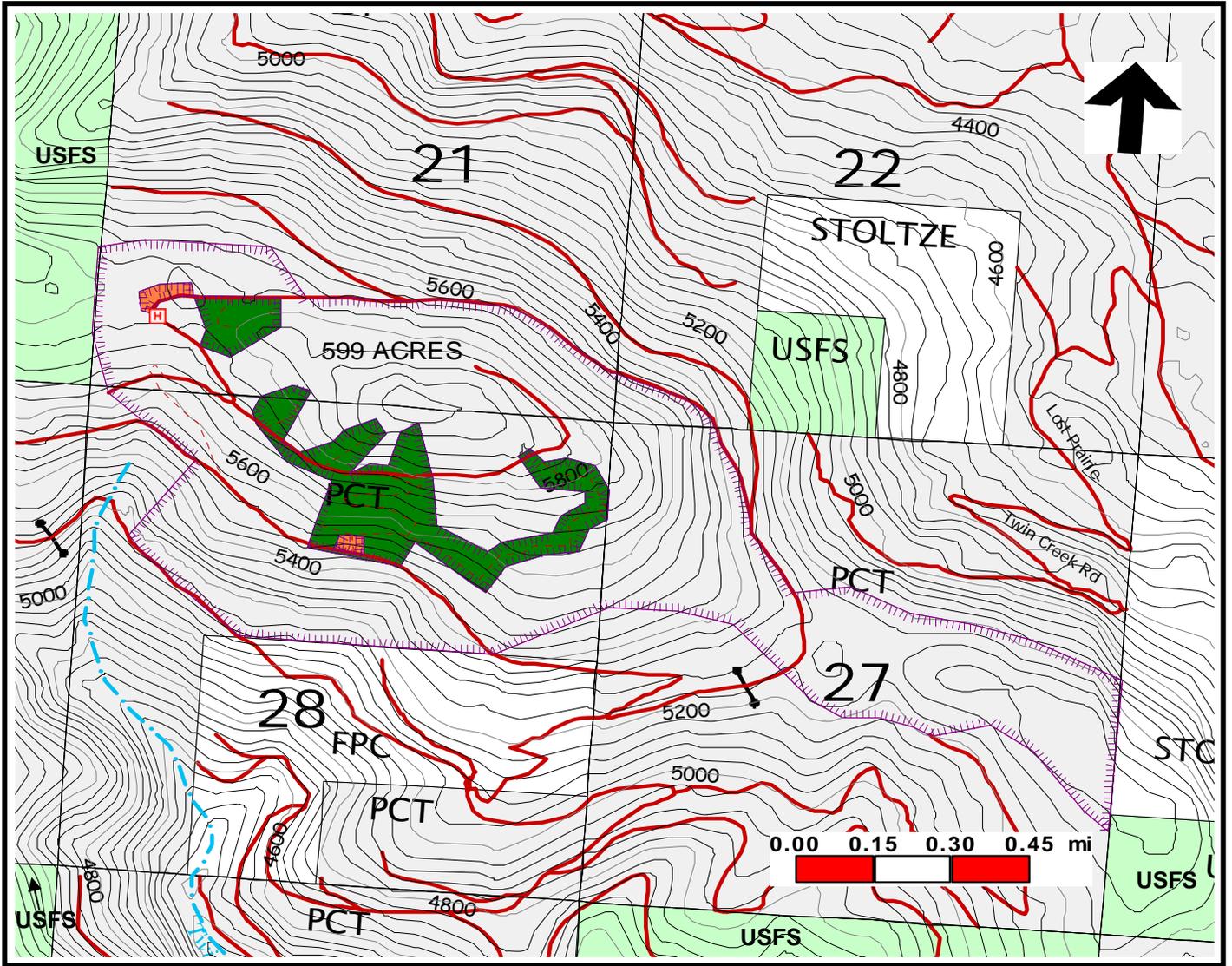
None observed.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.



**Twin Cr Rock, Site # 21**  
 Sections 21,22,27,28,T27N,R26W



<u>Unit</u>	<u>Acres</u>
Permit Boundary	599.0
Unreclaimed area	34
Staging area	3

	Permit Boundary		Staging Areas
	Quarry Development Rds.		Active quarry area
	Intermittent Stream		
	Access Roads		
	Gate		

**Helispot Location :** -114:57:56.7173,  
 48:04:39.9817. 0  
 Lon.Lat(d:m:s).

 Original Map Scale : 1: 21120  
 Map Type : Rock  
 Prepared by : sperrone

 **Plum Creek**

Map Creation Date : 9/16/2005

## SITE BASE-LINE DESCRIPTION

**Site Name:** Twin Creek Rock Site # 21  
Sections 21,22,27,28, T27N R26W

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. The attached map provides the required detail of the quarry site. See also other regional maps for general access information.

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
The primary land use for the area adjacent to the quarry site is timber management. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen quarrying activity in recent years. The area is not well suited for livestock grazing and the recreation potential is limited.

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells (<http://nris.state.mt.us/interactive.html>)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
An unnamed tributary of Twin Creek flows southeasterly, approximately ½ mile from the staging area and quarry areas. It is approximately 80' in elevation below the staging and quarry areas. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Plum Creek commits to stay out of the water table per operating permit requirements.

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
There is no surface water in the permit area and within 1,000' of the permit area.

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
The general rock type is Belt; the parent material is Belt Rock. There is no evidence of sulfides in the rock.

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
The quarry site is a talus slope with no surface soil. Shallow (4-6") Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-20' of Talus boulders. Any soil identified during the quarry activity will be stockpiled and set aside for future reclamation, as described in the general plan of operations.

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
The area adjacent to the quarry site is a mixed Douglas fir, Lodgepole pine, Larch, and Alpine Fir forest type. There is also pine grass and bear grass. Noxious weeds (spotted knapweed) exist on the access roads leading to the permit area and within the permit area. Plum Creek commits to control noxious weeds along the roads and in the quarry area.

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

In the summer and fall there is use in adjacent timbered areas by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. Additional information completed by Plum Creek's Wildlife Biologist on the Plum Creek Rock Quarry Evaluation Form is attached to this Baseline Data Sheet.

### 10. Quarry Activities.

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left un-reclaimed and maintained up to forestry BMP standards.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The access roads are gated closed.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name:** **Twin Ck Rock, Site # 21**      **Date:** 1 Oct 03      **Obs:**  
H. Stabins

**T-R-S:** 27-26-21,22,27,28  
#17, 18

*Pictures:* roll 54181243,

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
High elevation (5,400' -5800'), surrounded by DF/WL forest stand with scattered aspen.

Unit 4/5 – S aspect, surrounded by thinned forest. Unit 1/2/3 – N aspect, surrounded by thinned forest with component of subalpine fir and mountain hemlock. Some larger scattered DF/WL on talus slopes.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Open talus/boulder fields. Other rock in area (see picture 18). Ridge top site.

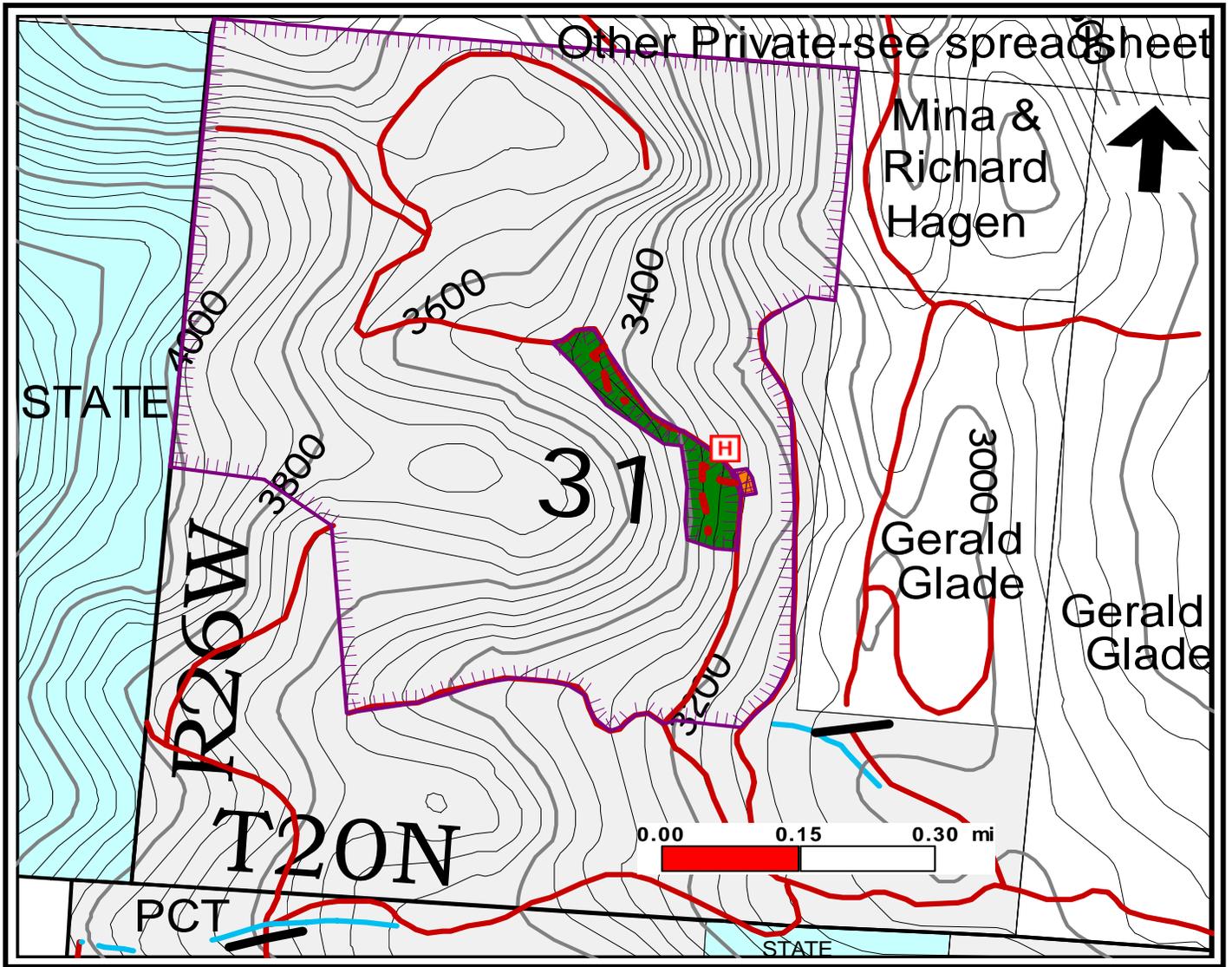
*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.





Unit	Acres
Active quarry	7.4
Staging area	0.3
Permit Boundary	310.7

	Quarry Development Roads		Active Quarry Area
	Permit Boundary		Staging Area
	Barrier		Owner - Plum Creek
	Access Roads		Owner - STATE

**Helispot Location :** -114:57:16.0396,  
47:26:56.3524. 0  
Lon.Lat(d:m:s).

Original Map Scale : 1: 12000  
Map Type : Rock  
Prepared by : sperrone

Map Creation Date : 1/28/2004

## SITE BASE-LINE DESCRIPTION

**Site Name:** West Combest Rock, Site # 52  
Section 31, T20N, R26W

**1. Location and Topography.** Provide a map showing the location of the proposed quarry, the specific area to be mined and the boundaries of land that will be disturbed, sufficient topographic detail to show the topography of the site, the location and names of streams, roads, railroads, and utility lines on or immediately adjacent to the area, and the location of the proposed quarry development roads to be built. [The attached map provides the required detail of the quarry site. See also other regional maps for general access information.](#)

**2. Present Land Use and Past Mining Disturbance.** Describe the present land use and any past quarrying disturbance within and near the proposed permit area:  
[The primary land use for the area adjacent to the quarry site is timber management and has been for the last 60 years. The actual quarry site is located within a talus area that is not well suited for timber activities and has seen limited quarrying activity in recent years. The area is not well suited for livestock grazing. The recreation potential is limited to hunting. The quarry site has had recent activity.](#)

**3. Water Wells.** Give the location, total depth, and use of any water well in and within 1,000' of the permit area:  
[There are no water wells within 1,000 feet of the quarry site. The State web site for water wells has been checked for potential water wells \(<http://nris.state.mt.us/interactive.html>\).](#)

**4. Water Table.** Give the estimated seasonal high and low water table depths for the quarry area, and the maximum depth of quarrying:  
[The estimated seasonal high water table depth is from surface run off during snow melt and spring rain. During the rest of the year the water table depth is well below the surface due to the dry, well drained soils. There is no visible water or evidence of standing water within the permit area and there is no wetland vegetation present. Quarrying activities will go into the hillside and will not encroach on the water table.](#)

**5. Surface Water.** Provide a description, and use of any surface water in and within 1,000' of the permit area:  
[There is no surface water in the permit area or any where within 1500'.](#)

**6. Geology.** Provide a general description of the rock type in the quarry area (from query on G.I.S.):  
[The general rock type is Glaciated Belt Till, the parent material is Belt Rock. There is no evidence of sulfides in the rock.](#)

**7. Soil Material.** Provide a general description of the soil and overburden types and thickness in the area to be quarried:  
[The quarry site is a talus slope with no surface soil. Shallow \(4-6"\) Gravelly Loam soils occur adjacent to the talus areas and are low productive soils. The overburden is 4-8' of Talus boulders. Any soil identified during the quarry activity was stockpiled and set aside for reclamation, as described in the general plan of operations.](#)

**8. Vegetation.** Describe the dominant vegetation within the permit area and note the occurrence of any noxious weeds:  
[The area adjacent to the quarry site is a mixed Douglas fir, Ponderosa pine forest type. There is little vegetation on the quarry site with the exception of an occasional Rocky Mountain Maple and Snowberry. Noxious weeds \(spotted knapweed and Canada thistle\) exist on the access roads leading to the permit area and within the permit area and were there prior to the quarry activity.](#)

## SITE BASE-LINE DESCRIPTION

**9. Wildlife.** Describe any significant seasonal or year round use by wildlife in and within 1,000' of the permit area:

Throughout the year, there is intermittent use in adjacent timbered areas, by deer, elk, black bear, and moose. The quarry site does not contain any unique habitat features. No federally listed wildlife species or globally imperiled species are known to exist or frequent the quarry site. For additional information, refer to the Plum Creek's Wildlife Biologist, the Plum Creek Rock Quarry Evaluation Form attached to this Baseline Data Sheet.

### **10. Quarry Activities.**

**10a. Product:** Describe the type of product that will be removed from the site:

Decorative rock used for landscaping, retaining wall and masonry. Rip-rap, pit run and gravel may be used for road bmp upgrade and maintenance. Rock tumblers, splitters, crushers and blasting may be used on the quarry site to help create the desired products.

**10b. Reclamation:** Describe reclamation plan for site:

The plan would be to reclaim all quarry development roads and all areas where the quarrying activity was completed. The re-claiming would include activities such as re-contouring slopes where needed, grass seeding, weed spraying, re-shaping high-walls and pit areas where possible as described in the general plan of operations. All access roads, which are needed for future timber management, would be left un-reclaimed and maintained up to forestry BMP standards. Currently the site is active.

**11. Additional Information.** Describe any characteristics or circumstances unique to the site:

There are no unique features to this site. The quarry site is gated year round.

## Plum Creek Rock Quarry Wildlife Evaluations

Objective: A biologist will field visit all rock quarry sites within the permit to review individual site characteristics with regard to important wildlife species.

**Site Name:** W. Combest Rock, Site # 52 **Date:** 10 Oct 03 **Obs:**  
H. Stabins

**T-R-S:** 20-26-31  
54157009, #3

*Pictures:* roll 54181243, #26; roll  
54157009, #3

*General site description (vegetation types, topography, elevation, aspect, etc.):*  
E aspect. Young DF/PP forest, dry site, few larger trees in area.

*Description of rock outcrops present at site, if any. Are others present in general vicinity?:*

Site is a talus field below small rock outcrops. Ridge top site. Other rock in vicinity.

*Description of water features present at site, if any (wetlands, streams, potholes, etc.):*

None observed.

*Description of wildlife habitat features at site critical for use by federal threatened and endangered species, if any:*

None observed.

