MINERALS

Key Points

- An Environmental Impact Statement (EIS) is ongoing for the 32 federal hardrock prospecting permits.
- Eleven operating plans for hardrock mineral exploration were submitted in 2008.
- Approximately 53 monitoring field visits showed good compliance with the operating plans; the few issues that developed were quickly resolved.
- The Forest collected $393,948 on three mineral material contracts and other small sales.

A. MONITORING AND EVALUATION

Forest Plan Direction

This monitoring was conducted to address Forest Plan Standards and Guidelines which apply to federal and non-federal minerals outside and inside the BWCAW and Mining Protection Area. The Standards and Guidelines address permitting (S-MN-1 through S-MN-11, Forest Plan pp. 2-9 to 2-10), mitigation to protect surface resources (S-MN-12 and 13, Forest Plan p. 2-10), and reclamation (G-MN-1, Forest Plan p. 2-10).

Monitoring Conducted

Federal Hardrock Minerals
The Bureau of Land Management (BLM) is the responsible agency for permitting and administering federal hardrock leasable minerals. The Superior National Forest (SNF) completes the necessary environmental analysis and assists them in administering and monitoring the operating plans and notifies the BLM when there are compliance issues.

One exploration operating plan amendment was submitted and analyzed under the National Environmental Policy Act (NEPA) and was approved.

There were no new prospecting permit applications in 2008. There are currently 32 prospecting permit applications that the SNF and BLM are processing. These require environmental analysis. The SNF is leading, with the BLM cooperating on, an Environmental Impact Statement (EIS) to address these applications. Scoping for this EIS was completed in 2009.

There were seven drill holes temporarily abandoned and none were permanently abandoned. No road miles were permanently reclaimed and approximately one mile of temporary access road was constructed with one acre of surface disturbance.

10.2 Minerals

The following federal hardrock mineral lease and prospecting permit activity occurred in 2008:

- No new prospecting permit applications
- 32 pending prospecting permit applications
- No prospecting permits issued
- Four (4,426 ac) active prospecting permits
- No expired prospecting permits
- No relinquished prospecting permits
- Two (4,865 ac) active leases
- One operating plan received
- One operating plan approved

Private Minerals

The SNF received 11 operating plans for exploration on private minerals and federal surface. Six were for geophysics and five were for drilling. Five geophysics plans were approved and two drilling plans were approved and monitored of which some were not implemented in 2008. Three were monitored for compliance with approved project descriptions and negotiated mitigation and reclamation requirements. Approximately one and three tenths acres of new disturbance was permitted that included three-fourths of one mile of new temporary road construction.

Hard Rock Mineral Development/Mining

There is no active hardrock mining on the SNF at this time. In addition, no mines were permitted in 2007. However, a large open pit copper/nickel/platinum group metals mine has been proposed on National Forest System land by PolyMet Mining Incorporated. A land exchange is currently underway addressing this proposal. The subsurface minerals are privately owned. The SNF is cooperating with the Minnesota Department of Natural Resources (MN DNR) and the U.S. Army Corps of Engineers in an EIS analysis.

Minerals Materials Production

There are three large mineral material contracts on the SNF. Two contracts are for granite and one contract is for sand and gravel. Monitoring of mineral material production was on-going throughout the year when the operations were active. Monitoring focused on contract and Forest Plan compliance. In all three contracts, operators were willing to comply with requests or requirements and only rarely was there a noncompliance issue. Approximately 15 monitoring site visits were completed. Results of these monitoring visits are referenced in the Project Monitoring File.

Granite

Two granite quarries were in production under mineral material contracts with Cold Spring Granite Company, Babbitt Black and Lake Superior Green. The Black quarry operating plan was approved for 240 acres and currently the disturbed area is approximately 18 acres. The Green quarry operating plan was approved for 400 acres and currently the disturbed area is approximately nine acres. The Babbitt Black Quarry produced 101,237 cubic feet for $88,814, while the Lake Superior Green Quarry

produced 15,042 cubic feet $14,686. This lead to a combined total of 9,100 tons produced for a total of $85,707.

Sand and Gravel

The SNF continues to sell and provide sand and gravel to the general public and various companies. An operating plan for Seppi Brothers Concrete Products Corporation was approved for 69 acres and currently the disturbed area is approximately 31 acres. Free use of these the sand and gravel was given to the counties and other non-profit entities as requested while small material sales were issued to the public. The SNF has an inventory of 397 gravel pits which are used for road maintenance, construction, timber sales, and other project administration. A total of 147 mineral material permits were issued for sand and gravel. Production and sales include the following:

- Seppi Brothers contract: 80,238 cubic yards for $76,226
- SNF administrative use: 22,645 tons equating $15,150
- Private sales: 66,369 tons for $34,496
- Free use: 256 tons equating $179
- Total mineral material sales: $393,948

Evaluation and Conclusions

Various approved hardrock and mineral material operating/management plans were monitored for compliance at 53 sites in 2008. Overall, monitoring of mineral activities on the SNF showed compliance for the various activities except for a few issues that were quickly resolved once they were identified. It was beneficial to have the geologist who permitted the projects complete the monitoring. This allowed for consistency, knowledge of what was permitted and provided essential experience for future job assignments.

Sound Monitoring

Noise was an issue that was brought up by some of the general public during permitting. Mitigation measures were included during project approval that included sound baffles surrounding the drill rigs and vertical exhaust extensions. Monitoring was conducted to determine the effectiveness of the mitigation measures. Seven attempts were made to monitor sound during active drilling. Only two session attempts were successful due to high winds preventing accurate readings. Three noise samples were taken per session at approximately one mile from the drill rig and during the night time hours. Results showed the drilling operations noise was reduced to ambient levels that averaged 38 decibels. Ambient sound levels in a forest environment generally range from 35-40 decibels. Sound levels at twenty feet from a drill rig can average 84 decibels. Therefore, it was concluded that the mitigation measures were effective at reducing noise impacts.

Road Management Monitoring

Monitoring showed that closures were effective on all roads that were visited (Figure 10.1). Further information on exploration road closures is referenced in the Project Monitoring File.

One compliance issue was identified during a field review was that the access road had been unreasonably rutted, drainage was disrupted, and mud was moving off the road. The access road issue was resolved when the SNF contacted the permittee who appropriately graded and graveled the road surface and installed proper drainage in a timely manner (Figures 10.2 and 10.3).

Water Quality Monitoring

A monitoring focus in 2008 was to observe the effectiveness of the drill sumps and at protecting water quality. Monitoring showed that sumps used for re-circulating water during core drilling were functioning as designed. The sumps were observed to adequately contain the water and drill cuttings.

Two compliance issues were identified during a field review: 1) the main fuel containment system did not meet state standards, and 2) a small gasoline container was found along the edge of the road above a creek where a pump was operating. These issues were resolved when the SNF contacted the permittee who appropriately installed a proper containment system for the fuel tank and removed the small gasoline container that was close to a creek in a timely manner.

Figure 10.1. Reclaimed access road with an effective vehicle use closure on the Superior National Forest.

Figure 10.2. Rutting of an access road during a minerals exploration project on the Superior National Forest.

Figure 10.3. Access road repaired by grading and graveling after a minerals exploration project (see Figure 10.2) on the Superior National Forest.