

DECISION MEMORANDUM

Proposed Hydrologic and Geotechnical Exploration in the Rosemont Valley

**USDA Forest Service
Coronado National Forest
Nogales Ranger District
Santa Cruz County, Arizona**

**Sections 20, 28, 29, 30, 31, 32 and 33, Township 18 South, Range 16 East,
and Sections 5 and 6, Township 19 South, Range 16 East,
Gila and Salt River Base and Meridian**

BACKGROUND

On February 13, 2008, the Coronado National Forest (CNF), Minerals and Geology Program, received a Plan of Operations (PoO) from Rosemont Copper Company (Company) that describes a proposal to conduct hydrologic and geotechnical exploration in the Rosemont Valley. The PoO, dated February 8, 2008, proposes drilling fifteen geotechnical boreholes to verify earlier seismic geotechnical analyses, and where conditions are favorable, to collect groundwater data. The PoO also proposes the drilling of 11 wells specifically for groundwater characterization.

The proposed activity would take place on unpatented mining claims in the Santa Rita Mountains, Pima County, Arizona. The project area is approximately thirty miles southeast of Tucson, Arizona, on the Nogales Ranger District (see Figure 1). The specific locations of the proposed drill holes are shown in Figure 2.

Drilling activity and temporary road construction would take place over a period of seven months. Monitoring of groundwater at hydrogeologic wells would be a non-intrusive activity that would last up to one year. The total area of land that would be disturbed on the Forest would be less than 1.25 acres.

PROPOSED ACTION

The Forest Service's proposed action is to approve the activity proposed in the PoO. Before approval is granted, the potential impacts of the Company's proposed actions, which are described below, are being considered.

Geotechnical Borehole Drilling and Sampling

The Company proposes to drill fourteen 100- to 200-foot deep boreholes and one 2500-foot deep borehole (Borehole C-1) to collect soil and rock samples for geotechnical analysis. Of the 15 geotechnical boreholes, 13 would be located on, or immediately

adjacent to, existing roads. At each location where drilling fluid is required, an 8-foot x 5-foot x 5-foot deep excavated sump or a 500-gallon self-contained tank would be used for water storage and circulation. The general layout of each borehole site is shown in Figure 3.

Boreholes C-1 and C-2 would be constructed away from existing roads and would each require short access road construction and drill pads. Borehole C-1 would require the construction of 300 feet of a 12-foot-wide temporary access road and temporary disturbance of an 8500-square-foot area to accommodate the drill pad; fill slopes; sump (mud-pit) or a 500-gallon self-contained tank; a trailer, driveways where necessary; parking for the drill rig; support and water trucks; and a portable toilet (see Figure 3). Borehole C-2 would require the construction of 500 feet of a 12-foot-wide access road and a 600-square-foot drill pad area.

Boreholes C-4 and C-6 would also require temporary drill pad construction to accommodate a sump for permeability testing. The maximum area of the drill pad disturbance at each site would be 600 square feet.

Drill pads at Boreholes C-1, C-2, C-4 and C-6 would be leveled and prepared using a John Deere D9R bulldozer, and sumps would be constructed using a John Deere 410SE backhoe or a John Deere 200C track hoe.

Two CME 75HT drill rigs mounted on a 1998 Kodiak 4 x 4 (one rig mounted on a truck and one track-mounted) would be in operation concurrently for borehole drilling. Five people, including a driller, three helpers and a geologist, would be onsite during drilling. Using rotary drilling, 14 boreholes would be completed to a maximum depth of 200 feet. Borehole C-1 would have a maximum proposed depth of 2500 ft. Unconsolidated material near the top of each borehole would be collected and logged by a geologist, then sent to an off-site laboratory to measure grain size and moisture content and other parameters.

Drilling methods would change to accommodate bedrock as it is encountered. At this point, bentonite clay or similar drilling polymers may be added to the drilling fluid to facilitate retrieval of rock cuttings from the borehole. After core (cuttings) is logged by the geologist, select samples would be boxed and sent for laboratory analysis to further determine rock competency.

Borehole drilling would be conducted in ten-hour shifts during daylight hours, seven days a week. Drilling of the boreholes would be completed in approximately six weeks.

Hydrogeologic Well Drilling (Groundwater Characterization)

Geologic and hydrologic data to be obtained from hydrogeologic characterization wells include depth to groundwater level, type of bedrock, and characteristics of aquifers and groundwater.

The PoO proposes the drilling of 11 hydrogeologic wells in five “nested”¹ locations. Wells would be drilled to a depth of 50 feet to 1000 feet on five 8250-square-foot drill pads (see Figure 1 for pad and well locations). Each drill pad would consist of the drill pad itself; fill slopes; two sumps or 500-gallon self-contained tank; a drilling storage area; driveways where necessary; parking for the drill rig; support and water trucks; a storage shed; a 500- to 1000-gallon drill cuttings bin; and a portable toilet (see Figure 4 for generalized drill pad layout).

All wells will be permitted, drilled, and constructed in accordance with Arizona Department of Water Resources standards. Hydrogeologic well drilling would be conducted in ten-hour shifts, seven days a week, 24-hours a day. Drilling of all wells would be completed in a maximum of seven months. Four people, including the driller, two helpers, and a hydrogeologist, would be present at each well site during the drilling.

Two 2005 Speedstar Model 50 K drill rigs would be used concurrently. Well construction would involve percussion and/ or rotary drilling methods with air, water, bentonite clay or similar drilling polymer for circulation. Generally, the wells would be drilled using a bit with a maximum diameter of nine inches and would be completed using a four-inch PVC well-casing and screen. Wells HC-2B and HC-4B would be completed with a four-inch diameter steel casing. All wells would be completed with a surface seal consisting of 20 feet of steel pipe cemented in place. Each well would have either a 3-foot x 3-foot concrete pad poured around the wellhead or a subsurface steel security vault around the casing approximately two feet below the ground surface.

Following well completion, pumping or other testing would be conducted at each site, to characterize the ground water and subsurface geology of the wells. Water pumped from the wells would be discharged according to Arizona Department of Environmental Quality standards. Wells would be monitored monthly by Rosemont Copper Company personnel and company consultants, for a period of less than one year.

Other Project Activities

The PoO calls for grading and other maintenance work on 1600 feet of existing access roads to accommodate equipment for the operation (see Figure 2 for the location of road segments to be maintained). Road maintenance would be done with a John Deere 230 track hoe with a hammer hoe attachment, a John Deere 230, a John Deere 772 road grader, a John Deere 862B scraper, and a John Deere 850J bulldozer.

No hazardous waste would be generated by the proposed activities. Water for the operation, including that necessary for drilling circulation and for dust abatement, would be obtained from the Rosemont Tank located on private land owned by the Company (near Rosemont Ranch, as noted on Figure 2 as Water Tank). Water would be transported to the project area twice daily in a 2000-gallon water truck. If a drill site is

¹ The well sites would be “nested”; that is, more than one well would be installed on one drill pad.

inaccessible by water truck, an aboveground, three-inch rubber house would be laid from the water source to the drill site.

Upon completion of drilling, well sites would be fenced as needed with 6-foot-high chain-link fence panels for site security during monitoring. All fencing would be removed at well monitoring completion.

All completed drill holes (including the geotechnical boreholes and the groundwater characterization wells) would be plugged and abandoned in accordance with Forest Service requirements and Arizona Department of Water Resources regulations. Non-hazardous waste, including drill cuttings, drilling mud and water, may be returned to the drill holes prior to plugging. Any excess would be left in the sump, dried and buried prior to site reclamation. The drill sites and the temporary access road segments would be reclaimed by scarification and seeding, and temporary access roads would be closed to vehicular traffic.

Before the operation is authorized to begin, the Company must post a reclamation bond with the Forest Service in the amount of \$19,000. This amount was determined by the Forest Service to be sufficient to ensure that, upon completion of the drilling, all drill holes would be capped and secured, disturbed areas stabilized and revegetated, and all equipment removed from Forest lands. Prior to final approval by the Forest Service of the proposed drilling, the company must obtain any necessary environmental and operating permits and present them to the Forest Geologist for review and approval.

DECISION AND RATIONALE

It is my decision to approve implementation of the proposed road construction and drilling in accordance with the PoO dated February 8, 2008, and received February 13, 2008, conditional upon the application of specific mitigation measures recommended by Forest resource specialists (see Project Record) to avoid or minimize impacts natural resources.

I have determined that this proposal may be excluded from National Environmental Policy Act (NEPA) review and that further documentation in an environmental assessment or an environmental impact statement is not necessary because the action meets the criteria in Forest Service Handbook (FSH) 1909.15, Chapter 31.2, Category 8, *“Short-term mineral, energy, or geophysical investigations and their incidental activities that may require cross-country travel by vehicles and equipment, construction of less than one mile of low standard road, or use and repair of existing roads.”*

Extraordinary circumstances that I considered in making my decision include the potential for extraordinary circumstances to result in individual and cumulative adverse effects to resources identified in FSH 1909.15, Chapter 30.3, #2. Forest resource specialists have advised me (see Project Record, Items 2, 3, 4 and 10) that the implementation of the proposed action would have no adverse effects on steep slopes and erosive soils; threatened and endangered species and their critical habitat; Forest Service sensitive species; floodplains, wetlands, and municipal watersheds; congressionally

designated areas; inventoried roadless areas; research natural areas; and Native American religious or cultural sites, archaeological sites and historical properties or areas. Therefore, I conclude that there are no extraordinary circumstances associated with the proposed action that would invalidate the use of this categorical exclusion.

PUBLIC INVOLVEMENT

The public will be advised of this proposed action on the CNF website² in the next quarterly update on April 1, 2008. I determined that no further public involvement was necessary relative to this proposal because of the limited nature of activities and the immediate need for information and data that the project has been designed to procure.

FINDINGS REQUIRED BY OTHER LAWS

National Forest Management Act. This proposed action is consistent with direction provided in the Coronado National Forest Land and Resource Management Plan (1986, as amended). The proposed action conforms to Forest Plan standards and incorporates appropriate Forest Plan guidelines for the management of minerals activity and protection of other resources (pages 5 and 65)

Endangered Species Act. The Nogales District Wildlife Biologist determined that the proposed action would have no effect on Federally listed or proposed species and designated critical habitat (Project Record, Item 2).

National Historic Preservation Act. A heritage resource survey was completed by the Forest Archaeologist, who concluded that drilling and sampling would have “no adverse effect” on heritage resources at any of the proposed well locations (Project Record, Item 4.).

ADMINISTRATIVE REVIEW AND ELIGIBILITY TO APPEAL

In accordance with Forest Service regulations at 36 CFR 215.4 (a), this decision is not subject to legal notice and opportunity to comment. It is also not subject to appeal, in accordance with 36 CFR 215.12 (f).

IMPLEMENTATION DATE

The proposed action may be implemented immediately upon the date of my signature below, contingent upon the Company’s written concurrence with the amendments to the PoO (see Project Records) and its posting of a reclamation bond.

² www.fs.fed.us/r3/coronado

CONTACT

Information about this project is available from me at the Nogales Ranger District Office and/or from Forest Geologist, Ms. Beverley Everson, Coronado National Forest, 300 West Congress Street, Tucson, Arizona, 85701; telephone, (520) 388-8428, and email, beverson@fs.fed.us.

//s *Keith L. Graves* _____

___ *March 3, 2008* _____

KEITH L. GRAVES
DISTRICT RANGER
NOGALES RANGER DISTRICT

DATE