

The following is in response to application review comments received from MGS concerning the Redington Wind Farm (RWF) application presently before LURC staff. Response comments are in italics after the agency question.

- 1) Road construction – chemistry of materials. A map included in the section on soils identifies several shale pits and gravel pits that I assume will be the source of some material used for construction and surfacing of new roads and resurfacing of existing roads. The “Road Reference Photo Collection” includes some images of shale pits, but I was unable with their numbering system to successfully identify the locations of the images on the maps supplied in that section. Some of the images suggest that the rocks develop rusty surfaces when exposed to weathering. The rusty-weathering characteristic of rocks is often an indication of higher sulfide mineral content of the rocks compared to non-rusty weathering rocks. Sulfide weathering can release sulfuric acid into the environment. While it is certainly true that sulfide minerals are naturally weathering within the rocks, the excavation of these materials for road construction greatly increases the surface area exposed to the atmosphere and may accelerate their weathering. It would be prudent to test these materials before broadcasting them widely as road metal. If they are found to have high sulfide contents, then possibly other sites might be located for road materials. Generally, the material in gravel pits in the region does not have the same problem with sulfide mineralization. The bedrock units that underlie this area include a variety of sedimentary/metamorphic units and granodiorite, an igneous rock similar to granite. Work by Moench (1971) in neighboring areas, and a summary by Moench and Pankiwskyj (1988) including the Redington area defines the geologic framework of the project area. The broad valley of Nash Stream is underlain mostly with rocks of the Quimby Formation, consisting of shale, volcanic rocks, and impure sandstone. Some of the black shale units in this formation contain relatively abundant sulfide minerals, but their distribution in the project area is not well known. The upper slopes of Black Nubble are underlain with rocks of the Rangeley Formation – a variety of sandstones, conglomerates, and shales. Some of these units are sulfidic, but again the detailed distribution of sulfidic units is not well established in the project area. Most of the Redington Pond Range is underlain with granodiorite, which generally should not be a major source of sulfide mineralization.

Response:

As discussed with Bob Marvinney on May 12, 2006, Maine's forest soils are naturally acid and highly buffered in general. The road construction design is allowing for sheet flow to take place whenever possible. Hence most wash materials will re-enter into the soil solum and the natural soil solution.

This issue is not expected to rise to a level of an environmental issue or concern.

- 2) Cut and fill – chemistry of materials. Much of the discussion in the preceding section applies here. The application describes the necessity for numerous cuts and fills, particularly at the higher elevations, to maintain the required road grades. The issue of sulfide mineralization is more important on Black Nubble than on the Redington Pond Range for the reasons outlined above. It would be prudent to test these materials as well,

but since roadcuts need to be where they need to be, there is less flexibility in addressing any problems.

- 3) Ground water. According to mapping done by the Maine Geological Survey, there are no significant sand and gravel aquifers in the immediate project area. Ground water impacts from this project will be minimal.
- 4) Water supply. There are no issues with the water supply needs of the maintenance facility.

References:

Moench, R. H., 1971, Geologic map of the Rangeley and Phillips quadrangles, Franklin and Oxford Counties, Maine: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-605, 1:62,500.

Moench, R.H., and Pankiwskyj, K.A., 1988, Geologic map of western interior Maine: U.S. Geological Survey Miscellaneous Investigations Series Map I-1692, 1:250,000.