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NBMG OFR 83-11
See also 83-12 for
geochemical
results.

LAS VEGAS/VIRGIN RIVER MANGANESE DISTRICTS

(31)
Item 11

The manganese deposits in Clark County are thoroughly described in the literature and will only be reviewed here. The Las Vegas mining district is located approximately 16 miles southeast of Las Vegas on the northern flank of the rugged River Mountains immediately east of Henderson, in Clark County, Nevada. Access to the district is along well used paved and dirt roads. The Virgin River district is located along the southeast flank of the Black Mountains bordered by Lake Mead on the south and east. Access to the district is by boat or along dirt roads. The deposits are located within the boundary of the Lake Mead Recreational Area.

The main property in the Las Vegas district, the Three Kids Mine, was discovered by Edwards, Jefferson, and Marrs in 1917 during the prospecting rush inspired by WW I. That same year, the three men formed the Manganese Association and began production of manganiferous ore. In 1918, the mine changed ownership and although ore production greatly increased, the property was closed in 1919, probably because the end of WW I and the availability of cheap foreign ore depressed the market (Crittendon, 1964). During it's early period, the mine produced about 12,000 tons of 40% manganese ore at a rate of 60 tons per day (Lincoln, 1923). Production resumed again with the onset of WW II and an estimated 16,000 tons of 40% ore was mined. Mining was conducted by room-and-pillar methods, and then later by open pitting. Low grade manganiferous ore was also mined from the properties east of the Three Kids Mine in the 1940's (Longwell, 1965). The district has had intermittent activity reported through 1961 with the percentage of manganese ore produced dropping to below 20%. The district has produced over 2.5 million long tons of crude manganiferous ore along with minor amounts of lead, copper, silver, and gold. At the time of inspection, the Three Kids Mine, along with the adjacent properties were inactive and the old pits were being used as landfill sites.

The Virgin River deposits were discovered about 1900 by Daniel Bonnell, however, they were known by the Mormons as early as the 1850's (Lincoln, 1923). In 1941 and 1942, the USBM conducted an exploratory drilling program. No production has ever been recorded from the Virgin River deposits (Longwell, 1965). The Virgin River district was not visited.

The River Range where the Las Vegas manganese deposits occur are composed of the Pliocene Muddy Creek Formation (clastic, volcanic, and lacustrine sediments), which is in fault contact and is overlain by a series of Miocene basalt flows and rhyolitic/andesitic tuffs and breccias (Bell and Smith, 1980). The deposits are located in graben structures formed during faulting. The ore at the Three Kids Mine occurs in lenticular bodies varying in size and grade concentrated along the faulted limbs of a northeast trending open syncline. Van Gilder (1963) suggests the origin of the bedded deposits to be hydrothermal-sedimentary with ascending manganese bearing solutions following faults and fissure into a lake environment where manganese precipitated and formed oxides.

The principal ore mined was wad with occasional streaks and grains of pyrolusite, psilomelane, and other minor manganese minerals. Locally, the wad has been opalized forming a hard, vitreous rock. Impurities within the deposit are unreplaced material, usually sand or tuffs, or introduced impurities, such as lead and copper oxides. The deposit is cut by gypsum and calcite veinlets.

The Virgin River deposits located in the Black Mountains consist of Tertiary volcanics overlain by the Muddy Creek Formation. In the vicinity of the deposits, the Muddy Creek Formation consists of beds of pillow basalt, andesite flows and agglomerate interbedded with gypsum and fine clastics, that are overlain unconformably by conglomerates and massive basalt flows (Longwell, 1965). The deposits are localized on the south and east limbs of a southeast plunging syncline, the south limb dipping more steeply than the east limb. Minor north-south faults occur in the east limb. On the south limb, the manganiferous beds are separated by basalt flows.

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