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Manganese ore reserves for a proposed concentrating plant at Las Vegas Wash (Three Kids), Nevada.

Item 1

Reserves: The manganese ores of the Three Kids are (Las Vegas Wash) are wad type ores that are variable both in grade and in the nature of their occurrence. Much of the ore is so situated that it can be mined in open pits, but a greater amount could be recovered only by underground mining. In view of these facts the reserve figures should be broken down as to grade and as to geologic occurrence that would influence mining methods. The following reserve figures are based on careful appraisal by Survey geologists of the results obtained from drilling both by the Bureau of Mines, and the M. A. Hanna Company.

Individual fault-block units	Tonnage above a 25% Mn Cut-off		Tonnage between 8% and 25% Mn	
	Near surface ore	Underground ore	Near surface ore	Underground ore
Three Kids	50,000			
Annex Mine	310,000		200,000	
Main Graben	210,000		700,000	1,040,000
Las Vegas		120,000		320,000
Totals	570,000	120,000	900,000	1,360,000

The ores above a cut-off value of 25 percent of manganese average about 31 percent of manganese in the ground, and the ores that contain between 8 percent and 25 percent of manganese average about 14 percent manganese in the ground. Including material down to 5 percent manganese increases in the total reserves to about 5,000,000 tons.

Availability of the reserves: About half of the total ore reserve, and about 83 percent of the higher grade ore is so situated geologically that it could be mined in open cuts and at a rapid rate. The remaining ore reserve is deeper, is mostly of the lower grade, and could be mined only by underground methods at a considerably slower rate. A production of 1,000 tons per day from three open pits could be obtained. This production rate could be maintained for a period of three to five years, depending on the grade of heads desired and, consequently, the amount of lower grade ore that could be utilized. After that period, continued production would be largely from underground operations and at a much slower rate.

Factors other than the rate of mining that would affect the availability of the reserves are: (1) contamination and unavoidable dilution in mining that may be counted on to drop about 50,000 tons of the higher grade ore below the cut-off value of 25 percent of manganese; and (2) silicification of the top 2 or 3 feet of ore at some places that might render about 50,000 tons of the higher grade ores unsuitable for some types of concentration, such as milling.

On the basis of reserves and their availability, the Geological Survey recommends that any proposal to treat 1,000 tons of ore per day from the Three Kids (Las Vegas Wash) deposits be given serious consideration, particularly such processes as permit the utilization of the maximum amount of lower grade ore.

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from data supplied by field
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