

The Valentine Iron Ore Washing Plant



Valentines and Co. operated their iron ore washing plant in the late 1800s. At this site, as it did in its other locations, the company continued to innovate.

About 1865, the second generation's Robert Valentine oversaw the building of a derrick and drilling of two artesian wells, the first in the county. The technology, adapted for the state's new petroleum industry, sought water, not oil. An independent water source moved ore washers away from shallow streambeds and right to the ore mines, called banks. Robert later said that the plentiful water source more than quadrupled the available ore.

E.V. D'Inwilliers, who surveyed county mines in 1883, wrote that Valentine ore washing plant wells were 180 feet and 200 feet deep. From them a 50 horsepower motor pumped 180 gallons per minute.

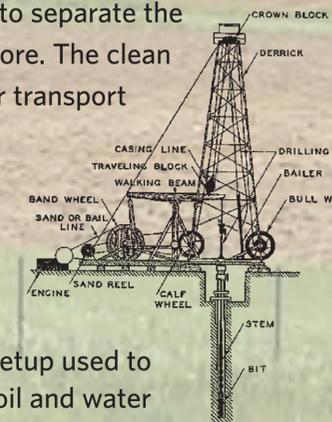
D'Inwilliers described a wooden structure housing two 25-foot washers that processed 35 to 40 tons of ore daily. The washers used principles developed by first-generation Abraham S. Valentine in 1842 and still used worldwide. Like the wells, this invention made small chunks previously considered waste into a valuable commodity.

At the Valentine Ore Washing Plant, operated by Abraham

S. Valentine's son Henry from 1887-1898, ore carts were pulled by mule or motor up a long incline and their contents dumped through a grate into a trommel; a rotating screen that size-sorted the materials. The larger ore fragments and rocks dropped onto iron sorting trays or moving conveyor belts from which men and boys picked out impurities. The small ore fragments, flint, and clay fell through the trommel screen into the log washer trough below.

Inside the trough, the paddles of the spinning logs beat clay from the ore and flint, which were expelled from its upper end. The cleaned ore and flint then passed through a mechanical

jig, which used water-movement to separate the lighter flint from the heavier iron ore. The clean ore was then loaded into carts for transport to the furnace. Local yields were reportedly one ton of clean ore for every three to six cubic yards of earth.



Typical cable-tool setup used to drill for both oil and water

The nearby Nigh Bank ore washing plant, also operated by Henry Valentine, was similar to the Valentine ore washing plant in construction.

