

The oddest commodities

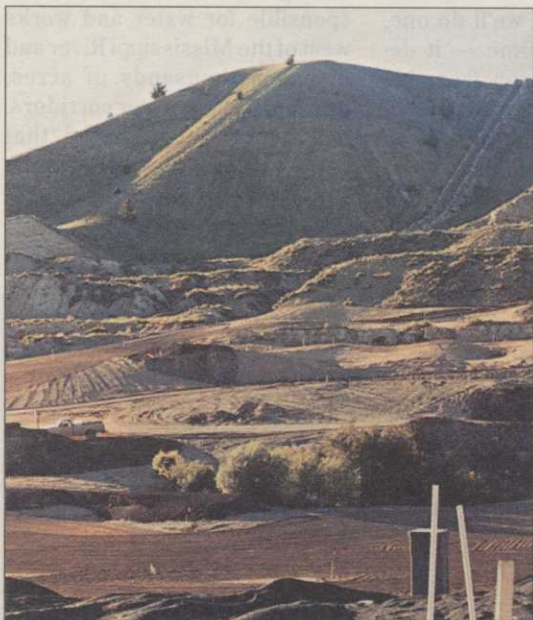
GCN APRIL

Old Works' magic: black bunker sand and much more

By MARK LESLIE

ANACONDA, Mont. — It's a legend before its own time, designed by a legend in his own time. Old Works Golf Course won't open until May 31, yet it has already made its mark: A Superfund cleanup site, which Jack Nicklaus called "one of the ugliest properties I've ever seen," transformed into a golf course that builder Chip Roe lauded as "breathtaking."

The former copper mine closed more than 90 years ago, but left behind a legacy of arsenic over its 250 acres. Turning it from a moon-landscape-like wasteland into a safe golf course presented immense technical and engineering problems — problems tangled in a web of legal hassles, extraordinary safety procedures and a sense of (as Roe said) "doing something for the children."



Jack Nicklaus called Old Works, with its mining flues and ovens, a golf museum.

"It has transformed this whole piece of property," said Old Works GC superintendent Fred Soller Jr. "Plus, the scope of the entire project has attracted a lot of interest from the EPA [Environmental Protection Agency] and scrutiny from people around the country waiting to see

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GCN JULY

Blowing up quarry adds spark to Bay Harbor project

By NORMAN SINCLAIR

PETOSKEY, Mich. — Golf critics are running out of superlatives to describe Bay Harbor Golf Club, taking shape on a five-mile stretch of Lake Michigan shoreline in northern Michigan where once stood a cement factory and sand and gravel quarry. The 27 holes, 18 of which are open this season and nine of which will be ready for limited play in the fall, "shreds every adjective in the book," said golf writer Jack Berry.

Architect Arthur Hills had high praise for the site, describing it as the opportunity of a lifetime. The golf course is the centerpiece of a mega-million-dollar Victorian-theme development that includes a yacht club, condominium-suites hotel, and shopping and restaurant village.

Seven holes play along the water, some on bluffs 170 feet above Little Traverse



Bay Harbor Golf Club took shape on a 5-mile stretch of Lake Michigan.

Bay. Hills routed the 27 holes over and through four diverse geological formations — sand dunes, a quarry, lakeshore and wooded uplands.

The Links Course holes flow along the top of the rocky bluffs above the water bluffs, with fairways and some greens

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Old Works

Continued from page 26

if it will fly."

Indeed, has any project drawn so much attention from so many varied groups? The federal and state EPAs had representatives on site every day during construction. The Montana Fish and Wildlife Department, U.S. Department of Justice, environmentalists of every ilk, sportsmen, townspeople.

"There are 100-year-old pictures that show not one blade of grass was growing on that 200 acres," said Kirk Welsh, di-

rector of field operations for North America for Nicklaus Design.

Soller confirmed the deadness of the property in his initial contact with the Audubon Cooperative Sanctuary Program. He listed "none" under "existing species." Yet, today there are moose, elk, deer, bluebirds... "You name it, it's amazing," said Welsh.

"When grass started turning green people were driving off the road," said Sandy Stash, general manager for the Montana Division of Atlantic Richfield Co. (ARCO). ARCO bought the old mine

from Anaconda Minerals Co. in 1977 and closed it down in 1980. Later, the federal government formed the Superfund and mandated that companies clean up toxic sites around the country. ARCO, not Anaconda Minerals, was stuck with the costs.

Superfund, Stash said, is "a you caught it you clean it law."

Faced with a \$60 million cleanup bill, ARCO sought a better way out. Grabbing hold of an off-the-cuff suggestion of a golf course from the then-county manager, the company began several years of negotiations with the federal EPA. The

struggle, she said, was convincing the state, EPA and Department of Justice that this was a good idea.

"Once they bought into the concept they were a wonderful partner," Stash said.

ARCO spent about \$15 million building Old Works. It will be turned over to the County of Deer Lodge and operated by the local golf authority board.

Approvals aside, building a golf course on a smelting site, with its ovens and flues, was a chore that consumed most of Tom Roe & Son Construction's time for nearly three years.

Some parts of the work took twice as long as normal — two weeks instead of one to build a green, for instance.

The course was shaped, lined, capped and reshaped, and finally seeded or sodded.

First, Soller explained, subdrainage was installed. Roe capped this with 2 inches of crushed limestone as a buffer zone between the subgrade and the cap. An 18-inch layer of heavy clay material was then spread over the whole site, and, on top of that, a sand-loam material in which compost was incorporated as the growing medium.

Roe's crews spread 60-mil PVC liner under the bunkers, greens, tees and the two lakes on the property.

Special care was taken with the greens. Herringbone drainage was installed. The liner was cut and fit down in the drainage, with the intent that no water will ever go through it. Because engineers felt that the gravel layer of the greens might puncture the liner, a 3/8-inch felt material was laid over the liner. Only then were the normal U.S. Golf Association-spec greens built — minus only the choker layer.

The materials used? The subgrade took 600,000 cubic yards of material, while trucks hauled in 550,000 cubic yards of heavy clay and 150,000 cubic yards for the growth cap, according to Soller.

Chip Roe estimated that there were 500,000 square feet of liner under one of the two manmade lakes and 200,000 square feet under the other.

The water supply, Soller said, comes from on-site wells and from water captured by the lining material. The front nine drains into a lake on the 5th hole. When that overflows it feeds into the second lake on the back nine, which serves as the irrigation pond.

Perhaps most eye-catching of all the facets of the course is the jet-black sand in the bunkers. Created decades ago when water was pumped into the hot slag from the mining operation, the sand, Nicklaus said, is "the best material he has ever hit out of in his life."

"Thomas Turf Labs tested it out beautifully," Soller confirmed, "And it gives the course a really unique appearance." A number of waste bunkers (called "low-maintenance bunkers" on this Superfund site) give the course aesthetic flash as well.

Through it all, Nicklaus has carried the mining theme through to the finished product. Old flues and ovens provide a fascinating backdrop to the fairways, greens and tees.

"The idea," Nicklaus said, "was to put up signs at each hole to give a brief history for people to understand what's there. It's like a museum."

The result is a Nicklaus signature design that sits halfway between Glacier and Yellowstone national parks, with a \$20 green fee.

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