

A company's system makes it easy to use natural gas as a fuel rather than flaring it.

Page D3

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An urban landscaping company can turn lawns into edible gardens.

Page D6

Section D ★★

BUSINESS

HISTORY



Gary Coronado / Houston Chronicle

David Treichel, left, field director, and Charles Bludau, senior project manager for HIRA Gray & Pape, pick through clay looking for artifacts while conducting an archaeological site survey for a development planned in Brazoria County.

They're sifting for the past before building the future

All kinds of modern-day projects depend on archaeologists' surveys

By Robert Grattan

CHARLES Bludau pushed his way through a tangled mass of branches, thorns and vines, heading for a muddy creek about 300 yards from the side of Texas 288.

A few months later, the

thicket he was fighting would be plowed under and built over.

Already, billboards along the highway foretold the creek's future — master-planned communities to house the rapidly growing population of the Houston area. Bludau had come to the

site about 25 miles south of downtown on a mild fall day looking for clues to history that might be left in the soon-to-be developed brush.

The creek, he said, was the most promising of a number of sites he planned to examine that day. Algae and floating plastic bottles obscured the surface. But hundreds of years ago, *Pipelines continues on D2*



James Nielsen / Houston Chronicle

Bludau uses a metal detector at the San Jacinto Battleground State Historic Site.

BUSINESS

Pipelines add to work for archaeologists

Pipelines from page D1

the stream could have been an important source of water, and the thickest a place for long-gone inhabitants to shelter from the heat.

"If they were out here, that's where they'd be," he said. Bludau and his small crew began probing the Texas clay with small holes, searching for artifacts or evidence that might lead back in time.

Consulting archaeologists such as Bludau, who works at HRA Gray & Pape, have done thousands of similar surveys in Texas and elsewhere before giving the go-ahead — or not — to all kinds of modern-day projects.

Following the pipelines

Perhaps the biggest driver of the archaeology business has been a boom in pipeline construction that has followed a massive increase in U.S. oil and gas production. Pipelines can stretch hundreds of miles across remote areas and often trigger federal regulations requiring assessments of how lines could affect relics of the nation's history.

"If the pipeline industry is really active, it can easily be 70 percent or more of our business," said Jim Hughey, a regional manager at HRA Gray & Pape. "There are some years where it can approach 90 percent."

At other times, Hughey said, business can lag as the oil and gas market stalls. The cyclical nature of the business is apparent now, as companies look to cut back on capital spending to survive falling oil prices.

For most of the past year, however, the energy industry has been in a building frenzy. The industry generated \$28.7 billion in new building contracts in Houston alone during the first 11 months of 2014, according to the Greater Houston Partnership.

While not all that activity requires archaeological review, the National Historic Preservation Act of 1966 mandates that federal or independent permitting agencies take into account how work they license might affect areas eligible for inclusion in the National Register of Historic Places.

Bludau investigated the creek near Texas 288 because the development requires a wetlands permit from the U.S. Army Corps of Engineers. He's also surveyed power lines, highways and other large building projects.

Pipelines and other energy transmission projects require licenses from the Federal Energy Regulatory Commission, and that permitting process includes evaluation of how a project might affect historical artifacts.

Companies hire archaeologists to conduct surveys as part of that process.

Avoiding history

The goal is often to avoid historical sites completely, said Todd Ahlman, the director of the Center for Archaeological Studies at Texas State University. With known sites, that can be a matter of routing projects around high-value areas. But with many pipelines running through remote areas, archae-



Rachel Perrine, a crew chief, and David Treichel look for flakes, pottery, shells or any other signs of human habitation.

Gary Coronado / Houston Chronicle

ologists often need to survey proposed routes to make sure they don't traverse undiscovered historical sites.

The work begins with a detailed review of maps and topography. It's not practical to survey the entire length of a proposed pipeline route, so archaeologists try to identify areas most likely to bear historical clues.

Sources of water, for example, might have attracted ancient inhabitants. Steep slopes probably didn't, Ahlman said.

The search process

Once the archaeologists identify survey areas, teams head out into the field.

The creek bank where Bludau searched contained years of sediment deposits. He began by digging holes about a foot wide and a foot deep in a grid pattern marked on a handheld GPS. The more likely an area was to have been active in the past, the denser the pattern. He used a sifter to parse the dirt from the hole.

About 6 inches into the second hole, water rushed into the small pit Bludau had cleared. He stopped digging.

People probably wouldn't have stayed in areas that waterlogged, he said, and even if they had it's considered unlikely that any historically relevant evidence would remain.

The creek search turned up nothing of interest, but it's not uncommon for a single survey to unearth multiple artifacts.

"I can think of very few projects where we did a survey of a good size where we didn't find any sites," Ahlman said. "I've done a 200-mile pipeline in North Dakota and found 15 sites. We did a transmission line across Oregon — it was a 200-mile line — and we ... were finding a site a mile."

If something is discovered during a survey, it is marked off, and often project managers can modify plans slightly to avoid the site, Ahlman said.

The most common finds,



James Nielson / Houston Chronicle

Tony Scott cleans a sifting screen during a search at the San Jacinto Battleground. His archaeological work was a preliminary step to reseeding the grounds with native grasses.

he said, are flint shavings that would result from carving or sharpening stone tools.

Big finds — ancient building foundations or burial grounds — are rare, but they can generate conflict.

In early 2013, TransCanada construction workers in East Texas were laying pipe for the \$2.3 billion Gulf Coast Pipeline when they stumbled upon pottery fragments and projectile points, according to the company's account of the dig. The artifacts were dated to between 1430 and 1680 and traced back to the Caddo Nation, a confederacy of several Native American tribes that inhabited an area including East Texas, Louisiana and Oklahoma.

Construction on the pipeline stopped while TransCanada hired contractors to catalog the

find and work with representatives of the Caddo Nation on a plan to mitigate the effects of the construction.

Companies often work with stakeholders in advance to develop plans for dealing with archaeological discoveries.

Regulators review the plans, but they rarely are public. The locations of archaeological sites are closely guarded secrets to avoid attracting visitors who might take valuable artifacts and destroy the context in which they were found.

'Protecting the past'

In developing the Gulf Coast Pipeline, TransCanada worked with several stakeholders, including the Texas Historical Commission, the Tribal Historic Preservation office and the Army Corps of Engineers, to record

and remove all archaeological evidence at the site. The pipeline began shipping crude from Cushing, Okla., to the Gulf Coast in January 2014.

The find even became something of a public relations win for TransCanada, which developed a blog about "protecting the past while building new pipelines" and held up the project as an example of the company's commitment to protecting cultural resources.

Pipeline construction can generate political friction from environmentalists and landowners, causing delays and extra costs. Cooperating with stakeholders and publicizing the preservation efforts can add a positive component to the narrative surrounding a project.

"I think it represents a new mindset with project proponents," said Ahlman, of Texas State.

TransCanada — which is facing fierce opposition to its proposed Keystone XL pipeline that would cross the Canadian border and eventually link up with the Gulf Coast system — did not respond to requests for comment.

Cultural resources

Regulations under the National Historic Preservation Act have created an industry in consulting archaeology. Firms including HRA Gray & Pape offer specialized services in a field called cultural resource management. Other large engineering firms have folded cultural resource management segments into their existing operations.

Hughey, of HRA Gray & Pape, said consulting deals and regulatory requirements have brought shovels to more potential sites than ever before.

"We know a whole lot more about how prehistoric populations behaved than we ever would have if we hadn't done this kind of thing," he said.

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