APS
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MANUFACTURED GAS PLANT NEWSLETTER

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Approximately 60,000 tons of contaminated soil had been excavated by the end of June. The project is expected to be completed in about October.

October Completion Projected

Excavation Going Satisfactorily; Over 60,000 Tons Of Soil Moved

Progress is continuing at the APS site in Prescott. By the end of June approximately 60,000 tons of contaminated soil had been excavated and replaced with clean fill dirt. Although winter precipitation was below normal, weather caused work delays.

The excavation is being done in six areas, shown on Page 2. Work is completed in Area 2 and Area 6. Crews have moved into Area 4 and Area 3, which adjoins Miller Creek, which has been temporarily diverted through a bypass.

Voluntary Remediation Program officials from the Arizona Department of Environmental Quality visited the site in February and in June. ADEQ representatives said the clean up is progressing satisfactorily.

APS managers have met with area residents, environmental groups, the West Granite Creek Master Planning Committee, and City of Prescott Parks and Recreation personnel to create a plan for developing city property at the east end of the site into a recreation area.

APS Cleaning Up Contaminated Prescott Site

Arizona Public Service Company (APS) in November started its project to clean up an area near North Granite Street in Prescott where the soil and groundwater have been contaminated by residue left behind by a gas manufacturing process that was discontinued approximately 50 years ago.

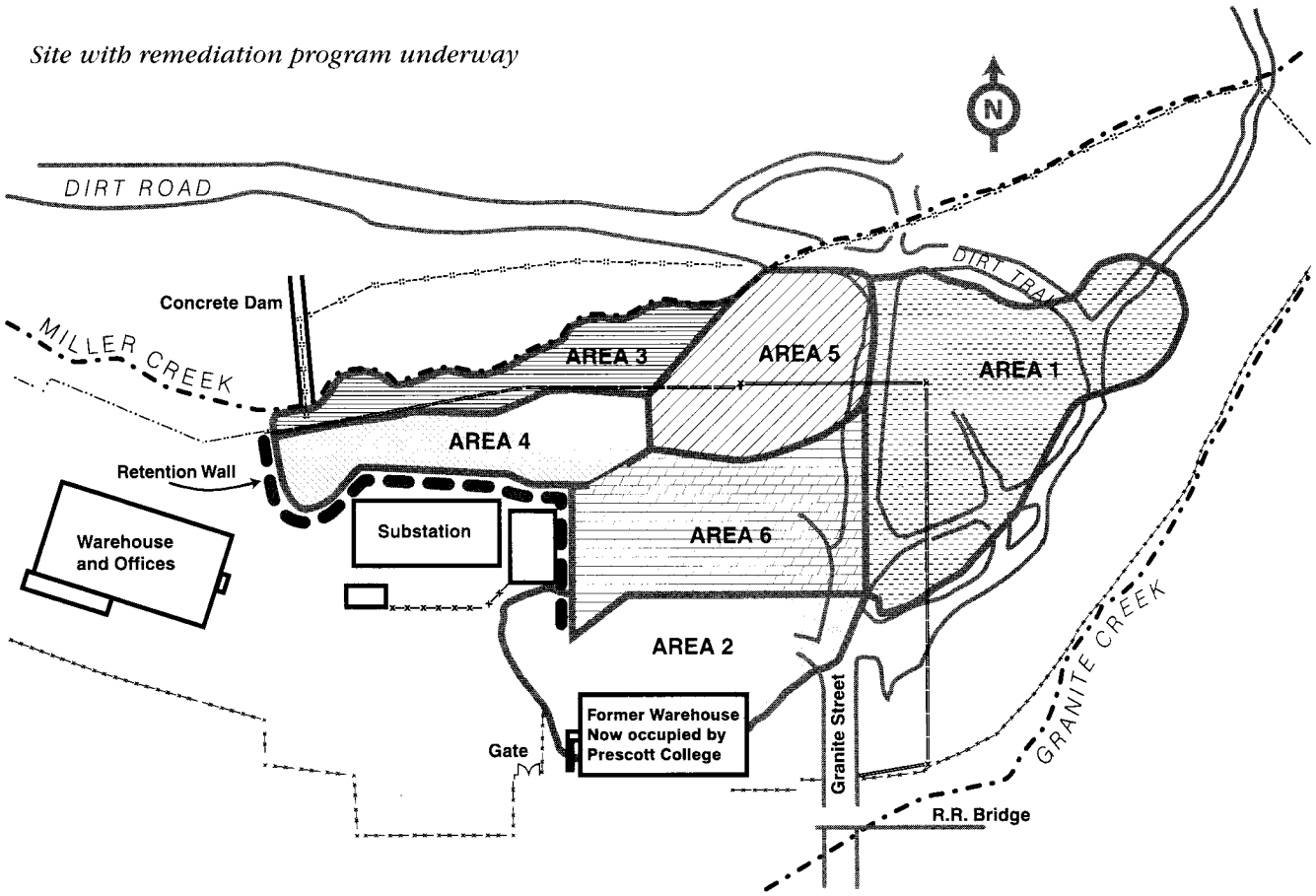
APS is conducting the project under the Arizona Department of Environmental Quality's (ADEQ) Voluntary Remediation Program.

Over 1,500 manufactured gas plants (MGPs) operated throughout the United States from the early 1800s to about 1950. They made synthetic gas for domestic heating and lighting. By 1908, there were 13 manufactured gas plants operating in Arizona, including the one in Prescott, which was operated by a corporate predecessor of APS.

The former Prescott plant site, located at 300 N. Granite St., covers about one-half of the six-

SEE: PRESCOTT SITE, PAGE 4

Site with remediation program underway



DETERMINING THE BEST CLEAN UP STRATEGY

After the environmental studies were conducted to thoroughly characterize the impacts of the operation of the former MGP, a number of alternatives to cleaning up the site were analyzed. A variety of alternatives were reviewed using two primary approaches:

1. Treating contaminated soil and groundwater in place (called "in-situ treatment"), using techniques such as biological treatments, soil containment, and hydraulic control of groundwater or groundwater treatment.

2. Treating contaminated soil after removing it from the ground. This will result in the removal of the source of groundwater and surface water impacts. (known as "ex-situ treatment").

Each alternative was evaluated based on the following criteria:

- Overall protection of human health and the environment.
- Short- and long-term effectiveness.
- Compliance with ADEQ standards.
- Reduction in toxicity and volume.
- Implementability.
- Cost.
- Public acceptance.

The MGP byproducts have remained very stable in the soil, and have not moved or degraded appreciably in the 50 years since operations ceased at the Prescott site. After carefully analyzing the material and looking at various options to address the problem, the clean up strategy which best met the overall goals was soil excavation and off-site soil treatment. The Remedial Action Plan for the excavation of the impacted soil was approved by the Arizona Department of Environmental Quality.

The excavation will be deep enough to remove the impacts to groundwater and surface water in the area. It is being conducted in stages (shown as Areas 1-6 in the diagram) to minimize overall disruptions.

THE CLEAN UP EFFORT

The excavation work involves the eastern half of the APS service center, as well as part of the City of Prescott land just east of the site and the nearby Prescott College facility. The APS Customer Service Office at 120 N. Marina St. is not affected.

The excavation work is divided into six areas, and is being conducted in stages. Work is done Monday through Saturday.

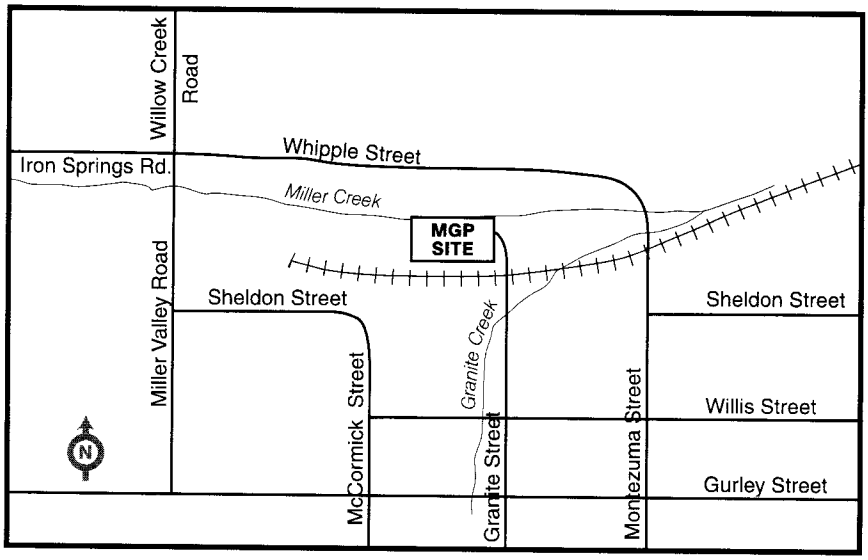
Some areas will be excavated to depths of 20-26 feet, although the average excavation depth will be about 16 feet.

Miller Creek has been temporarily diverted under a permit from the U.S. Army Corps of Engineers. The creek will be returned to its normal flow area when work is finished in Area 3.

As each area is excavated, the soil is temporarily stockpiled onto plastic-lined pads or placed into large metal storage bins. A number of soil samples are taken to determine the specific concentrations of MGP byproducts and define how the soil will be treated. A mobile lab is located on-site to provide a quick turn-around on soil analysis.

The soil is being removed from the site in large covered trucks. At full operation, there are as many as six trucks an hour entering and leaving the site. APS has coordinated with the City to minimize traffic impacts.

Most of the contaminated soil is being treated as a "special waste" and transported to a permitted treatment facility near Vicksburg about 100 miles west of Phoenix. Trucks carrying contaminated soil exit the site on Granite Street, go west on Willis and Sheldon streets to Miller Valley Road, north on Miller Valley, then leave Prescott going west on Iron Springs Road.



Prescott MGP Site Location

A small amount of the soil is found to have higher levels of contamination. This soil is being handled as a "hazardous waste" and is contained and transported to a permitted out-of-state facility.

APS is taking special precautions to prevent dust. On-site air monitoring occurs at least once an hour to ensure there are no effects beyond the excavation site. The air monitoring instruments provide instantaneous readings and detect excess dust or other contaminants in the air which might occur when the MGP material is exposed. Some of the material may smell like mothballs, so an odor-suppressing spray foam and other measures will be used to control dust and odors if necessary. Air samples are also collected and sent to a laboratory for analysis.

As excavation areas are completed, they are filled with clean soil from the Willow Lake area. Trucks carrying clean soil travel south on Willow Creek Road, left on Whipple Street to Montezuma Street, right on Willis Street, and right on Granite Street.

Once the excavation is complete, groundwater and surface water samples will continue to be collected to ensure the effectiveness of the clean up efforts. A recreational area will be developed on City of Prescott property east of the site, following plans coordinated by the City's West Granite Creek Park Master Plan Committee in conjunction with APS, area residents and various environmental groups.

APS Cleaning Up Contaminated Prescott Site

Continued From Page 1

acre parcel currently owned by APS.

The Company now operates a service center there consisting of a shop, a warehouse, a substation, a materials storage area, and a vehicle refueling center. The area surrounding the site is residential to the north and a mix of retail, commercial and light industrial to the south and west. Prescott College operates a building just south of the property, which houses faculty offices and classroom space.

The plant operated in Prescott from 1909 until 1949. By 1957, it appears that the property had been converted to the current shop and warehouse facility by APS.

The site is adjacent to Miller Creek on the north, and vacant City of Prescott land on the east. Lincoln Avenue is the western boundary of the APS property, and the former right of way for the Atchison, Topeka and Santa Fe Railway is located to the south.

Need More Information?

If you have questions or comments about the APS project, please call (520) 776-3657.

A worker sprays water to control dust as heavy equipment excavates soil at the site.

Environmental, Health Studies Preceded Remediation

When synthetic gas was manufactured in Prescott, the process used a variety of petroleum fuels and generated several byproducts. These byproducts included tars, lampblack, oils and purifier wastes. The tars are comprised primarily of polynuclear aromatic hydrocarbons (PAHs). Lampblack is primarily elemental carbon with trace levels of PAHs and metals such as lead. Purifier wastes can include tar and lampblack, as well as metals, sulfur and cyanide. The process also generated wastes such as residual crude oil.

Environmental studies on the Prescott MGP site started in 1993. Samples have been collected from 20 groundwater monitor wells, subsurface soils, creek sediments and surface water. The initial studies indicated there were surface and subsurface soil impacts as well as groundwater impacts, which were related to former MGP operations.

It was also determined that under certain conditions, the groundwater recharges to Miller Creek. None of the groundwater or surface water in the area is used for any drinking water purposes.

In 1996, APS installed a 150-foot air sparging trench near the Miller Creek bed to treat the water through air stripping and enhanced bioremediation.

Two health risk assessments have been conducted. One study was conducted in 1992 and a follow-up assessment was prepared in March 1999. Using EPA-approved risk methodologies, the analyses factored in exposures to both children and adults. The results of both assessments showed APS workers and nearby residents have no measurable increased risk of contracting cancer when compared to people who do not live or work near the site.