

Recreation Management Tech Tips

United States Department of Agriculture
Forest Service



Technology &
Development Program

April 1998

2300

9823 1302—SDTDC

Graffiti Removers

Ellen Eubanks, Landscape Architect

Special thanks to Bill Morong, John Seales, George Duffy, Patrick Hersey, Frank Aquilar, and Barbara Croonquist of the San Gabriel River Ranger District, Angeles National Forest, for their contributions to this *Tech Tip*.

INTRODUCTION

Graffiti is a growing problem in forest recreation sites and along highways. When an object or facility is vandalized by graffiti, it is very likely that it will be vandalized again in an effort to erase the marks from the previous group. For this reason, it is important to remove graffiti as quickly and as thoroughly as possible, not only to eliminate unsightly messages but also to prevent further damage to facilities.

There are three successful approaches for eliminating graffiti:

1. Remove graffiti everyday. Do not give up. Eventually, the taggers will become frustrated and will leave the site alone.
2. Anti-graffiti paints and graffiti removers are effective and efficient.
3. A pressure blaster with a sand blaster attachment is effective at removing graffiti from natural features including trees and from unpainted paved surfaces.

The San Gabriel River Ranger District (formerly the Mt. Baldy Ranger District) of the Angeles National Forest began experimenting with various anti-graffiti treatments in the 1980's. Numerous anti-graffiti paints and graffiti removers were tried and information is presented here. Followup was done with several manufacturers and that information is presented also.

ANTI-GRAFFITI PAINTS

Anti-graffiti paints are formulated specifically to facilitate the removal of graffiti. Some of these paints are very dangerous; they should be handled with extreme caution and applied only when wearing the recommended Personal Protective Equipment. One brand contains suspected carcinogens, another can cause liver disease, and another is a known skin and pulmonary sensitizer. Due to the inherent risks posed by anti-graffiti paints, they are not discussed in this document.

Anyone currently using, or considering using, anti-graffiti paint should contact the paint manufacturer and ask for the Material Safety Data Sheet (MSDS). Use the data to make an informed decision on the health risks. Also, anyone contemplating the use of anti-graffiti paint should complete a job hazard analysis to identify additional site specific hazards and abatement actions.

GRAFFITI REMOVERS

Graffiti removers are agents that lift graffiti off most surfaces. A number of these products are on the market and they work with varying degrees of efficiency. Some smear the graffiti and leave a shadow; some work well; several are very toxic.

Most graffiti removers are as dangerous, and potentially as harmful, as anti-graffiti paints. One product can cause tumors and cardiovascular stress; another can cause permanent brain and nervous system damage; another may cause temporary corneal opacity (blindness); and another suggests routinely wearing a respirator when using the product. Due to the inherent health risks involved, the specific products that cause these medical problems are not discussed.



If you are currently using or considering using a graffiti remover, call the manufacturer and ask for the Material Safety Data Sheet (MSDS). Use the MSDS to help determine the health risks. Be aware that certain brands of graffiti removers are called graffiti cleaners by their manufacturers.

The Center has also learned that volunteer groups on certain forests are using oven cleaner as a graffiti remover. Sodium hydroxide (lye) is the active ingredient and is capable of causing severe burns. A light breeze may blow vapors on to the skin causing burns. It is highly recommended by the manufacturer that this product not be used for anything other than cleaning ovens. Improper use can result in injuries.

GRAFFITI-GONE™

GRAFFITI-GONE™ is one graffiti remover successfully tested in the field and warrants further discussion. It does not contain chlorinated solvents, does not cause cancer, and does not require the user to wear full protective gear. Field personnel report GRAFFITI-GONE did not sting their eyes or burn their skin. It did not smear the graffiti or leave a shadow.

The manufacturer reports its product removes:

- spray paint
- marker
- lipstick
- ball point pen
- crayon
- tree-marking paint with no damage to tree.

Use an enamel based paint rather than flat paint on graffiti-prone painted surfaces; enamel is less likely to be damaged by the graffiti remover. Graffiti remover left on a painted surface longer than 5 minutes will harm any paint. New paint, not thoroughly dried, and very old paint may be harmed by the remover.

Application

GRAFFITI-GONE does not work effectively if the surface temperature of the object covered with graffiti is warmer than 80°F (27°C). Graffiti remover applied to surfaces over 90°F (32°C) removes the surface paint with the graffiti.

Also, the warmer the surface the faster the active ingredients evaporate. Consequently, having less time for the product to work decreases effective-

ness. Also, the product does not work effectively on a surface that is too cold, below 40°F (4°C).

Instructions for Effective Use

- Spray the remover on the graffiti.
- Let the product remain on the graffiti no longer than five (5) minutes.
- Scrub off the graffiti using a rag and/or scrub brush.
- Wipe off all the liquid.
- Rinse the surface with clean water.

Rags used to wipe off the graffiti can be laundered with a detergent and used again.

General Safety Precautions

Wear safety goggles and rubber gloves when applying the product. If working indoors, ensure the area is well ventilated. Wash hands and any other exposed skin thoroughly with soap and water.

Storage

Do not store where temperatures exceed 120°F (49°C). Exposure to temperatures over 120°F (49°C) may cause bursting or venting of containers.

Fire

Extinguish fire with CO₂, standard foam, dry chemical, or Halon. Firefighters must wear self-contained breathing apparatus.

Health Hazards

GRAFFITI-GONE has a National Fire Protection Rating (NFPR) for Health of 2 (Warning) meaning the product may be harmful if inhaled or absorbed. This product can be absorbed through the eyes and skin; by ingestion; and by inhalation. Skin sensitivity and chemical allergies may be aggravated by this product.

Symptoms of Exposure

Eyes-may cause irritations, redness, or watering. Flush with water for 15 minutes and seek medical attention.

Skin-may cause irritations, itching, dryness, or redness. Wash with soap and water. If irritation persists, seek medical attention.

Ingestion-may cause nausea, headache, vomiting. Do not induce vomiting; seek medical attention.

Inhalation-a concentration of vapors may cause nausea or dizziness. If either occurs, seek fresh air immediately.



Figure 1—GRAFFITI-GONE and GRAFFITI-Q™

General Information

GRAFFITI-GONE is sold in a 16 ounce aerosol can; the propellant is xylene.

GRAFFITI-GONE can be ordered from Continental Research Corporation (800) 325-4869. Be sure to ask for the MSDS and, if it is possible, to have a free demonstration.

The following product has not been tested by the Forest Service but is noteworthy because of its chemical composition and effectiveness on specific surfaces.

GRAFFITI-Q™, also manufactured by Continental Research Corporation, contains no petroleum distillates or acids and is not an aerosol product. It has a NFPR Health rating of 1 (Caution) making it less toxic than GRAFFITI-GONE. GRAFFITI-Q was developed for a public utility and has been proven effective for removing graffiti from baked-on-enamel and fiberglass surfaces.

PRESSURE BLASTER

A pressure blaster machine with a sand blaster attachment works very well to remove graffiti from rocks, concrete, pavement, and trees.

The primary component of a sand blaster attachment nozzle should be tungsten carbide. Prices for nozzles range from \$100.00 to \$300.00, depending on tungsten carbide content.

The sand blaster attaches at the nozzle so sand and water mix together just before they are sprayed out. The sand, Silica #20, must be kept dry. In some climates the sand should be stored in temperature-controlled rooms so it will not collect moisture.

The preferred blaster has a pressure of at least 3,000 psi (20.7 MPa). The water flow is generally 4 to 4.5 gpm (0.25 L/s). This pressure setting works well to remove paint from rocks and other surfaces. In areas where water is plentiful, drafted from a stream or from a tank, a 4 to 4.5 gpm (0.25 L/s) water flow is best.

A 2.5 gpm (0.16 L/s) model can be special ordered for areas where water is scarce. The job will take longer to accomplish, but less water will be used in the long run. Pressure blasters have a fixed rate of flow so be sure to order the machine best suited for the water available.

Gasoline and electric models are available. Gasoline models have either a pull-start or electronic ignition. The gasoline engine is louder, requires a bit more maintenance than the electric model, and is probably the only practical model for the field, see figure 2.

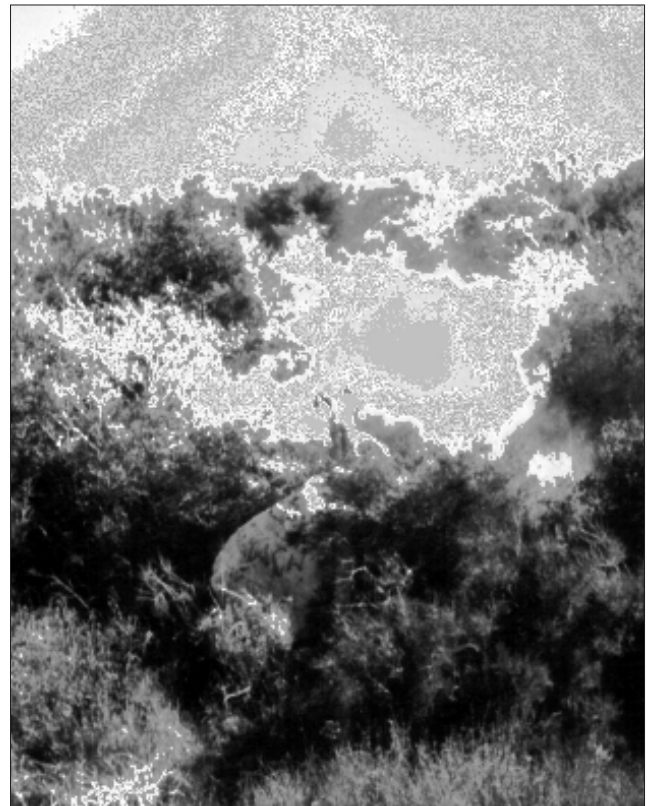


Figure 2— Using a pressure blaster in the field.

Application

When blasting graffiti from a multifaceted surface such as a rock, it is necessary to blast the same spot from several different angles to make sure the paint comes out of all the nooks and crannies. Figure 3 shows one rock covered with graffiti and another rock being pressure blasted to remove graffiti. Figure 4 shows a series of rocks with graffiti removed using a pressure blaster.



Figure 3. Partially removed graffiti from rock.

Removing graffiti from a tree takes practice. Trial and error determines just how close to stand to the tree to remove the graffiti and still leave the bark intact.

Safety Equipment

Proper safety equipment includes:

- ear plugs
- boots
- gloves
- long sleeved shirt
- face shield
- a respirator if working indoors.

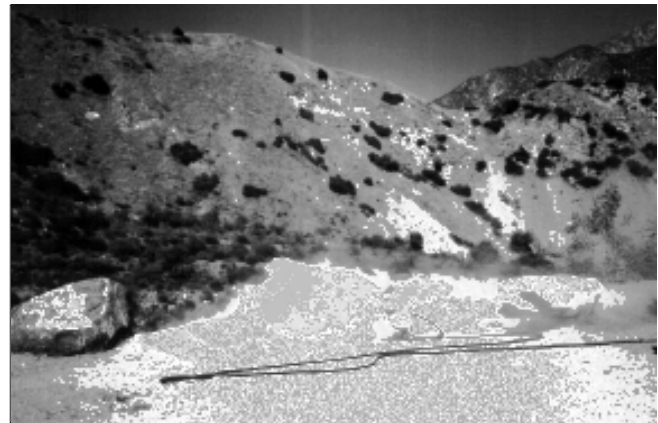


Figure 4. Three rocks after graffiti removed using a pressure blaster.

Literature

Many manufacturers have pressure blaster equipment and the industry publishes a magazine called *Cleaner Times*. For more information on pressure blasters including manufacturers, contact the magazine at (501) 455-1441.

General Information

GSA has a number of contracts with pressure blaster manufacturers. No one brand is best. The amount of service and repair needed depends on the care the blaster receives from the operator.

