

United States  
Department of  
Agriculture

Forest Service

Technology &  
Development  
Program

2300—Recreation  
December 1995  
9523 1206—SDTD



# CLEANING RECREATION SITES



# CLEANING RECREATION SITES



*DECEMBER 1995*

**William Makel**  
Program Leader  
San Dimas Technology and Development Center

**Gary Hoshide**  
Program Leader  
Missoula Technology and Development Center

**James Kautz**  
Audio-Visual Production Specialist  
Missoula Technology and Development Center

**Technology & Development Program**  
San Dimas, CA 91773  
**4E41A08**

---

Information contained in this document has been developed for the guidance of employees of the Forest Service, USDA, its contractors, and its cooperating Federal and State agencies. The Department of Agriculture assumes no responsibility for the interpretation or use of this information by other than its own employees. The use of trade, firm, or corporation names is for the information and convenience of the reader. Such use does not constitute an official evaluation, conclusion, recommendation, endorsement, or approval of any product or service to the exclusion of others that may be suitable.

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, large print, audiotape, etc.) should contact the USDA Office of Communications at 202-720-2791.

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, DC 20250 or call 202-720-7327 (voice) or 202-720-1127 (TDD). USDA is an equal employment opportunity employer.

**CAUTION:** Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife—if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

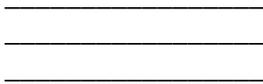
**C  
O  
M  
M  
E  
N  
T  
S  
H  
E  
E  
T**

**Format:** (If you believe the format of this publication could be improved, please list your specific recommendations below.)

**Corrections:** (If you find inaccuracies or incomplete information we would appreciate it if you would identify those for us.)

**Additions:** (If you would like to suggest future additions, please note them.)

***PLEASE FOLD AND MAIL***



Attn: Program Leader, Recreation  
**USDA Forest Service**  
**San Dimas Technology and Development Center**  
**444 East Bonita Avenue**  
**San Dimas, CA 91773**



## *Preface*

*The basic ideas for this publication are traced back to a 1972 cooperative project between San Dimas Equipment Development & Testing Center and Region 2 (R-2). In 1974, the San Dimas Technology and Development Center (formerly, the San Dimas Equipment Development & Testing Center) published the first Service-wide guide titled, "Cleaning Recreation Sites." In subsequent years, the publication has been revised to update manufacturer sources listed in the appendix. The last revision was completed in 1988 and issued with the title, "Cleaning Recreation Sites...an update."*

*Legislation promoting cultural diversity, occupational safety and health, and accessibility make it necessary to adapt the information to these evolving programs. To meet the needs of today's workforce, this publication was updated to visually highlight newer facilities and technologies applicable to cleaning recreation sites.*

## *Acknowledgments*

*The Forest Service thanks its employees and cooperators whose ideas and expertise make this publication a useful tool for other stouse. Special recognition is given to retired Forest Service employees Dick Spray, Briar Cook, and Jeanie Irwin for their work on previous editions of this publication.*

*This revision was completed through a collaborative effort between the staff at San Dimas and Missoula Technology and Development Centers. We like to thank Janie Ybarra, Sue Cox, Susan Clements, Brenda Holland, Hans Wilbrecht, and Bob Beckley for assisting in the preparation of the publication.*

*A special thank to Donald and Barbara Dalton, Eddie Rieb, Florence Emery, and Roberto Ybarra on the Tonto Basin Ranger District for their participation in the photographs.*

# TABLE OF CONTENTS

- INTRODUCTION ..... i**
  
- PUBLIC SERVICE ..... 1**
  - Cleaning and Policing Standards ..... 3
  - Maintenance ..... 5
  - Frequency and Management ..... 5
  - How To Do The Job ..... 6
  - Disposing of Chemicals ..... 6
  - Personal Hygiene and Protective Equipment and Clothing ..... 6
  
- CLEANING WASTE FACILITIES ..... 9**
  - Vault Toilets ..... 9**
    - Safety and Sanitation ..... 9
    - Odor Control ..... 13
    - Insect Control ..... 14
  
  - Composting Toilets ..... 15**
    - Safety and Sanitation ..... 15
  
  - Chemical Recirculating & Chemical Toilets ..... 17**
    - Safety and Sanitation ..... 17
    - Chemical Recirculating Toilets ..... 17
    - Chemical Toilet ..... 17
  
  - Flush Toilets ..... 20**
    - Safety and Sanitation ..... 20
  
  - Showers and Dressing Areas ..... 23**
    - Safety and Sanitation ..... 23
  
  - Recreational Vehicle Sanitary Dump Stations ..... 26**
    - Safety and Sanitation ..... 26
  
  - Garbage Containers ..... 27**
    - Safety and Sanitation ..... 27
    - Single Unit Container ..... 27
    - Multi Unit Bins ..... 30
    - Dumpsters ..... 30
  
- CLEANING OTHER FACILITIES ..... 31**
  - Fish Cleaning Stations ..... 31**
    - Safety and Sanitation ..... 31
  
  - Tables ..... 32**
    - Safety and Sanitation ..... 33

# TABLE OF CONTENTS

<b>Fire Rings and Grills</b> .....	<b>33</b>
Safety and Sanitation .....	33
Fire Rings .....	33
Grills .....	35
<b>Water Hydrants</b> .....	<b>36</b>
Safety and Sanitation .....	36
<b>Recreation Grounds</b> .....	<b>37</b>
Safety and Sanitation .....	37
Signs .....	39
.....	.....
<b>Visitor Information Boards</b> .....	<b>40</b>
<b>Rock and Masonry</b> .....	<b>41</b>
Safety and Sanitation .....	41
<b>Pressure Washers</b> .....	<b>42</b>
Safety and Sanitation .....	42
Vault and Compost Toilets .....	43
Chemical and Chemical Recirculating Toilets .....	44
Flush Toilets and Urinals .....	44
Picnic Tables .....	45
Grills .....	45
<b>BIBLIOGRAPHY</b> .....	<b>47</b>
<b>APPENDIX A—Tools And Materials</b> .....	<b>49</b>
<b>APPENDIX B—Sources Of Supply</b> .....	<b>55</b>
<b>APPENDIX C—Cleaning Compounds</b> .....	<b>56</b>
<b>APPENDIX D—Recreation Site Inspection Checklist</b> .....	<b>60</b>
<b>APPENDIX E—Job Hazard Analysis Form</b> .....	<b>66</b>
<b>NOTES</b> .....	<b>68</b>

# INTRODUCTION

---

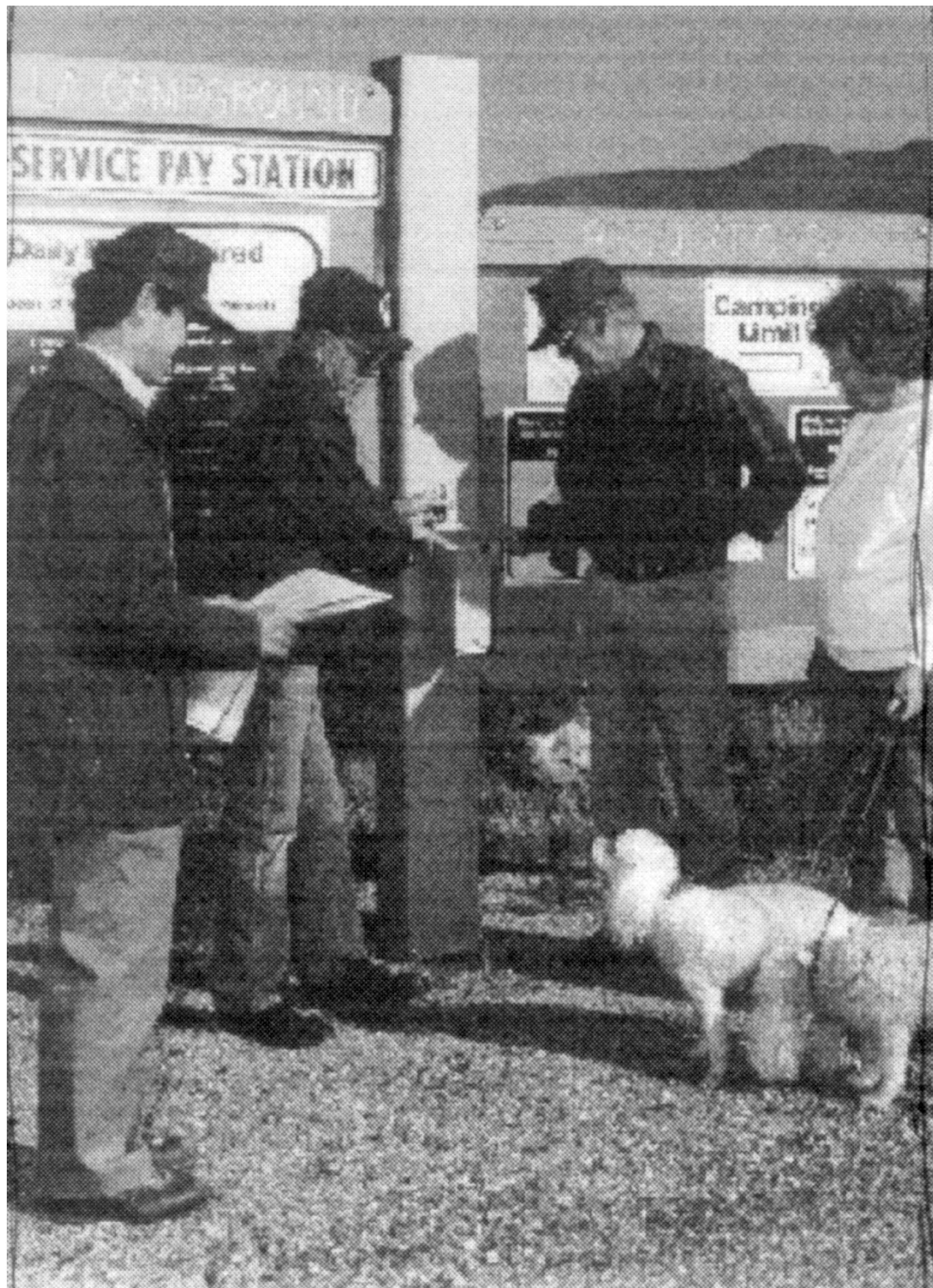
This publication is for the use of recreation managers, designers, aides, volunteers, and other Forest Service personnel involved in recreation activities. Recreation managers can use this information to implement “Meaningful Measures”<sup>1</sup> and to better organize tools, equipment, supplies, and procedures for recreation maintenance personnel. Recreation site designers can use this information along with other pertinent guidelines to satisfy all aspects of site development, construction, and use. Recreation aids, volunteers, and other Forest Service personnel can use this information to become more efficient and effective at cleaning and policing recreation sites.

There are several elements of recreation management that, when properly applied, can contribute to efficient and effective cleaning and policing. Some are briefly discussed below.

1. The location and design of a recreation site can have a considerable effect on cleaning and policing efficiency. Factors that are somewhat controllable at the time of site selection and design, such as crew travel time, job load on the site, use of easy-to-clean materials in building facilities, and location of facilities relative to equipment access, have considerable influence on cleaning and policing. Tradeoffs must be made as any design cannot just concentrate on optimizing cleaning and policing, but it should be a major consideration.
2. Modification and/or new design of existing recreation site facilities can often replace difficult-to-clean improvements with new, easier-to-clean systems. Sometimes this can be accomplished at a cost savings, such as the replacement of easily vandalized stainless steel vault toilet risers with the new vandal-resistant, less expensive, cross-linked polyethylene risers.
3. Properly selected materials for heavy maintenance can greatly ease the cleaning job. Examples are the use of hard, impervious coatings on toilet interiors and floors, and the restoration of wood tabletops with easy-to-clean fiberglass shells instead of using paint or stain.
4. Management techniques, such as the use of mechanized cleaning equipment, controlling the number of camp units open for use to the actual demand, proper sizing of crews, task organization, and many others, will have a great effect on cleaning and policing efficiency and effectiveness.

There are several techniques and many types of equipment that can be combined to perform the required job. Different geographical areas have access to various equipment, materials, and supplies, and different people have numerous ideas on how to utilize them. Thus, the objective of this publication is to offer some cleaning and policing techniques that will result in performing the job satisfactorily and also to stimulate thought processes that will innovate even better techniques for cleaning and policing.

*1 Meaningful Measures (MM) is a six step process. The concept builds on forest plan direction by describing a total recreation program of work, then determining the cost needed to manage at predetermined standards. Once the total picture is known, realistic goals and priorities, consistent with current and expected funding levels, are set. The information resulting from implementing the MM process is then used to report accomplishments in the Forest Service Infrastructure database. For more information on MM, contact the National MM coordinator or your Regional Recreation Staff.*



## PUBLIC SERVICE

---

Even though the Forest Service is a large organization with many employees, the average visitor will often judge the entire Forest Service based on the action of a single employee. If this employee is rude or inefficient, it will take considerable kindness and efficiency by other employees to overcome this one bad impression, and a bad experience may never be erased from the memory of some visitors.

Therefore, YOU become the most important member of the Forest Service more often than you realize. You are constantly in the view of visitors who may have no other contact with the Forest Service. What our visitors think of the Forest Service depends on the character of service rendered by you and your co-workers.

Not everyone can willingly, cheerfully, and effectively clean up another person's mess. Not everyone can cheerfully and tactfully withstand the public's diverse attitudes. Considerable time and effort has been spent selecting employees who will do recreation clean-up work. Be proud you have been selected.

You must always be a good host by being courteous and helpful to everyone at all times. You must also recognize that in the final analysis the public appreciates a busy employee. Leave the impression that you are friendly and helpful, but also a person with a busy schedule. Remember, visitor satisfaction depends on the service you and your co-workers provide.

### ***Be a good HOST!***

Here are a few hints that, if followed, can help those who meet the public to present himself or herself and the Forest Service to the public:

**1. How do you look to others?** Employees, permittees, and volunteers should maintain a well groomed appearance with a neat haircut or style. Hair styles should be acceptable to wearing a hard hat. Clothes should be neat, well kept and clean within the limits of the job. Specific dress code will be given by each supervisor. If a uniform is authorized, avoid mixing uniform components with civilian attire.

**2. How do you act toward others?** You are rendering a service when you help people, and you must have the attitude to render assistance when needed. Do this with a smile, be courteous, and try to help. When assistance has been provided, go back to your other duties promptly.

**3. How is your housekeeping?** Your equipment, supplies, and vehicle should be neat and orderly, and clean (when possible) within the limits of the job. The cab of your vehicle should always be clean and neat.

**4. Do you practice what you preach?** We cannot make one rule for the public and another for ourselves. If we are going to enforce the rules, we must set an example. Watch speed limits and traffic control signs within and outside recreation sites. They apply to you.

**5. How do you answer questions?** Employees must always answer questions cheerfully, courteously, and tactfully. Direct the person to someone else or admit you do not know, if you cannot answer the question. The wrong answer to a question can only lead to problems.

## PUBLIC SERVICE

---

**6. How well do you serve the public?** A complete first aid kit should be in the vehicle and you should have better than average knowledge of its use. Questions can be answered by supplying various types of printed literature and area maps or making professional maps available to the public. Maintain a supply with you and be familiar with their content so you can fill a visitor's needs. Do not merely hand out literature. Point out where the needed information is found in the map or printed literature. Fire extinguishers should be kept in the vehicle and constantly checked to assure that they will be operational when needed.

**7. How do you explain rules and regulations?** Most rule violations occur because people are not aware of the rule or cannot see the purpose it serves. Take the time to explain the reason for a particular rule or regulation—ask people to pass this along to other campers as a favor to you. Thank them for helping you in your job and, if possible, compliment them on a noticeably good point in their camp unit. Remember, most of our visitors have an urban background, which may give them a point of view or attitude that may be hard for us to understand. Build understanding. Teaching forest etiquette will save many cleanup dollars in the long run.

You will receive complaints on the rehabilitation of campgrounds, closing of campground loops, and closing off waterfront zones—these are common complaints that are caused mainly by a lack of information or understanding of the problem. Old-time campers remember the days, free of restrictions, when they could camp where they pleased, cut trees, toss garbage, and hunt and fish with little or no limits. This pioneering tradition dies hard. Times change.

Conquest of the land and, conversely, land available for conquest, has come to an end because of population pressures, more leisure time available, and the growing popularity of outdoor recreation. In place of the pioneering tradition, try to encourage the “land ethic”—the love of land so that each action by a person in the woods is self-judged as to its potential harm or good to the land.

By encouragement and example of the land ethic by schools, conservation education, outdoor clubs, etc., and you as the sole Forest Service representative to many visitors, in time, enforcement and explanation of rules and regulations may become less necessary.

Many levels of developed campgrounds are available to visitors. Sometimes campers get into a campground that doesn't suit their tastes. It is too primitive, or it is overdeveloped. What pleases the beginning camper may not please the “Pro” at all. All levels of development are necessary to serve different tastes and needs. When you run into complaints about the appropriateness of a campground, try to explain, then recommend a campground more suitable to the camper's desires.

Campground hosts and recreation aides are not to expound their personal views on Forest Service policy to the public if they are not in accord with that policy. Campground hosts and recreation aides may have many responsibilities; including welcoming visitors, locking gates, cleaning rest rooms, providing information, and performing minor maintenance. All responsibilities should be conducted with a smile. Be positive with the public. If problems occur let your supervisor know.

## **Cleaning and Policing Standards**

Cleaning and policing should be performed with sufficient regularity and consistency at each developed site to give the overall appearance of being clean and sanitary, free of litter, neat in appearance, and well kept by minor maintenance.

Application of Meaningful Measures (MM) requires reporting accomplishments as "To Standard" or "Not to Standard" for each measurable component<sup>2</sup> and Key Measure<sup>3</sup> Managing "To Standard" refers to meeting the standards of quality developed for each Key Measure of each measurable component. If resources available are not adequate to meet the standard of quality for ALL the Key Measures, then management of the measurable component is reported as "Not to Standard". The result displays the measurable components and Key Measures that meet or do not meet visitor preference, policy, and legal requirements. The following are established Key Measures:

### **Health and Cleanliness**

- *Healthy environment for users and employees.*
- *No threat of diseases or infection.*
- *Odor Free.*
- *Litter Free.*

### **Setting**

- *Site development is consistent with Recreation Opportunity Spectrum (ROS) objectives and Forest Land Management Plan (FLMP) development scale.*
- *Resources are maintained or enhanced.*
- *Scenery management is consistent with objectives.*
- *Density of Users is appropriate.*

### **Safety and Security**

- *Safe environment for users and employees.*
- *Uniformed Forest Service Personnel are present.*
- *Abusive and nonconforming activities are controlled.*
- *Risk of crime is eliminated.*

### **Responsiveness**

- *Experience meets expectations, needs, and preferences.*
- *Information and interpretive services are available.*
- *Appropriate unique amenities are available.*
- *Good hosting.*

### **Condition of Facilities and Equipment**

- *They look good.*
- *They are in good repair.*
- *They are appropriate.*
- *They function.*

Special attention should be given to making toilets clean and sanitary. It is the one common facility that receives the most use and the one common place most probable for disease transmission.

<sup>2</sup> "Measurable Components" or Components are major categories of recreation opportunities produced. Each component can be a single area or site, or a group of areas or sites having the same unit of measure and types of recreation products. A simple example of a component is a campground.

<sup>3</sup> "Key Measures" gauge quality. Standards of quality are developed from visitor input, policy, plans, and legal requirements for each designated component. Initially the quality standards are set by local managers who are knowledgeable of conditions and use patterns.

# PUBLIC SERVICE

---

For the total operation of the recreation site refer to the Forest's Operation and Maintenance Plan.

The following standards should be met in sites offering services to the public. These standards are necessary to ensure a pleasant recreation experience for the visitor.

## 1. Toilets, showers, and dressing areas

- ✓ Toilet bowls, risers, seats, seat covers, and urinals free of deposits on surfaces
- ✓ Building interiors free of dirt, trash, graffiti, insects (dead and alive), and spider webs
- ✓ Floors free of standing water
- ✓ Chromeware clean and bright
- ✓ Toilet paper, towels, and seat covers (where provided), stocked to last until next day and/or cleaning
- ✓ Unpleasant odors (both sewage and chemical) minimized.

## 2. Toilets and other buildings (exterior)

- ✓ Walkways and trails clean and clear of obstructions for public safety and accommodating people with disability
- ✓ Floor mats clean
- ✓ Exterior walls free of graffiti
- ✓ Roof generally free of leaves and branches
- ✓ Eaves free of wasp nests, bird nests, and spider webs.

## 3. Toilet vaults

- ✓ Vaults not more than three-fourths full
- ✓ During pumping, the vaults should be cleaned as thoroughly as possible to help prevent the production of odors.

## 4. Tables and benches

- ✓ Tops and seats free of dirt, grease, and large carvings
- ✓ Under portion free of spider webs, etc.
- ✓ Tops, seats, and legs secure and functional.

## 5. Fireplaces, char-grills, fire rings, and stoves

- ✓ No more than half-full of ashes
- ✓ All ashes and partially burned wood confined to fireplace or grill
- ✓ Grill surface free of grease and food particles at time of ash removal
- ✓ Pedestals and bases straight and secure, and components functional
- ✓ Leftover firewood stacked beside unit.

## 6. Garbage cans and depositories

- ✓ Plastic liner half-full or less
- ✓ Emptied within 7 days
- ✓ Cans clean on the outside. All litter and debris picked up around cans or container.

## 7. Hand-pumps, fountains, and hydrants

- ✓ All units free of grease or residue
- ✓ All units secure and drip-free
- ✓ Catch basins (drains) free of food particles, soaps, grease, debris, standing water, and functioning properly

- ✓ All fixtures and facilities meet applicable standards. Threaded faucets removed
  - ✓ Fixtures disinfected as necessary
  - ✓ Water tests meet applicable standards.
8. Grounds
- ✓ Generally free of trash, bottles, cans, glass, and obvious litter
  - ✓ Family units free of all litter, including bottle caps, flip tops, and cigarette butts
  - ✓ Trees free of nails, rope, wire, hazard branches, etc.
  - ✓ Managed, planted lawns maintained according to operations and maintenance (O&M) plan-
  - ✓ Steps, decks, and ramps free of loose boards, loose nails, and slick spots
  - ✓ All tripping hazards eliminated.
9. Signs, posters, bulletin boards, and information boards
- ✓ All signs bright, straight, and secure
  - ✓ Signs, bulletin boards, and visitor information boards free of holes, blemishes, random staples, nails, etc.
  - ✓ Signs and posters fresh, and provide up-to-date information (e.g., current maps, emergency information, applicable recreation site regulations)
  - ✓ Area around sign posts free of weeds and brush, unless part of the planned landscaping
  - ✓ Posters kept to minimum
  - ✓ No unauthorized signs, posters, or bulletins shall be attached to buildings.

### **Maintenance**

All personnel should be alert for minor maintenance needs. Performing “on the spot” maintenance often prevents serious problems later. Examples of such projects are:

1. Replacing gaskets in leaky faucets.
2. Straightening a signpost.
3. Tightening door hinges.
4. Minor drainage work to protect the site.
5. Remove all nails, ropes, poles, and wire from trees and facilities.
6. Perform minor work to wood facilities to eliminate recurring splinters.

Major maintenance items that cannot be taken care of immediately should be reported to the appropriate authority. A recreation site inspection checklist is provided in Appendix D.

### **Frequency and Management**

Frequency for performing the various cleanings and policing tasks must be determined by site managers. Recognize that there will be times when, because of occupancy by the public, it will not be possible to clean or police a given facility. In these cases, considering the severity of the situation, treatment can be postponed until the next reasonable time. However, items of work needed for safety or sanitation should not be postponed. Thus, cleaning the living area of a camp unit will be postponed until the unit is next vacant. On the other hand, if a toilet needs cleaning, other work in the area should be done until the toilet is vacated, rather than postponing the cleaning until the next day. Site managers should maintain close contact with use patterns to vary the frequency of cleaning and policing treatment to meet the existing conditions. Managers can vary frequency of treatment by:

## PUBLIC SERVICE

---

1. Adjusting number of personnel.
2. Adjusting amount of equipment (vehicles, garbage cans, etc.)
3. Adjusting length of stay of visitors.
4. Executing "variation clauses" in contracts, or if using force account, increasing cleaning visits.
5. Temporarily closing whole sites or portions of sites when use is light.
6. Permanently closing uneconomical and unneeded sites.
7. Using the "pack-in/pack-out" method of trash removal. This idea has met with huge success when developed on a well planned basis including informing the public.

### How To Do The Job

A recreation site that is clean and well maintained is easier to keep in that condition, since visitors are more cooperative when they are pleased with clean facilities. This also deters vandalism. One of the target areas for vandalism is "property that tends to be derelict, incomplete, or badly kept."

Facilities have been divided into two sections to separate the tools and materials into two kits, Cleaning Waste Facilities and Cleaning Other Facilities. The tools, materials, and procedures that follow have been derived from Service-wide sources and from professional janitorial firms and have been demonstrated to do a superior job. Deviations should be carefully considered for their potential effect on safety, effectiveness, sanitation, and cost and should not be applied unless there is overwhelming evidence that they represent improvement.

### Disposing of Chemicals

During the cleaning process throughout each site there will be cleaning agents and chemicals needing disposal. Each site's waste disposal practice and landscape is different, so no standard guideline is given for the disposal of cleaning agents and various chemicals. The Forest Recreation Staff Officer, in conjunction with the Engineering Staff, should establish which types and concentrations of cleaners and chemicals are to be used for the required tasks as well as the requirements for disposal of the cleaning residue. Indiscriminate dumping of these cleaners or chemicals into toilets or vaults might upset entire treatment plants and/or septic tank leech field systems.

---

***CAUTION: Mixing cleaning products can produce fatal chemical reactions. Read all product labels for instruction on use and disposal. A copy of the product materials safety data sheet (MSDS) should be on file and made available to the users.***

---

### Personal Hygiene and Personal Protective Equipment and Clothing

Work supervisors have the responsibility for providing a healthful work environment for every worker. This includes informing workers of the hazards associated with performing assigned cleaning tasks. The "Job Hazard Analysis (JHA)" serves to document this information and addresses personal hygiene and engineering controls for prevention and protection against personal injuries. A JHA form is provided in Appendix E. Workers who routinely come into contact with wastewater, or work in or inspect wastewater treatment facilities, should have a current immunization for tetanus and also practice good personal hygiene.

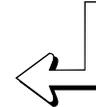
**NOTE: Respirators, when required, must be used in accordance with an approved respirator program prepared in compliance with Occupational Safety and Health Administration (OSHA) regulations. Contact your Safety and Health Manager before using any respirator to ensure procedure for training, fit testing, and medical requirements are in compliance.**



**Inform workers of job hazards and the use of protective equipment and clothing.**



**Safety for the public is priority. Use warning devices to mark danger where practical.**



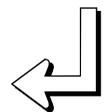
**Wearing disposable gloves provides protection, and is recommended even under a leather glove.**



**Practice universal precautions when encountering suspected infectious waste.**



**Be familiar with established unit procedures for handling and disposing of known or suspected infectious wastes. Infectious waste should be placed in marked containers and disposed of separately. The agency or unit exposure control plan provides additional information on disposal and procedures to follow in case of exposure.**



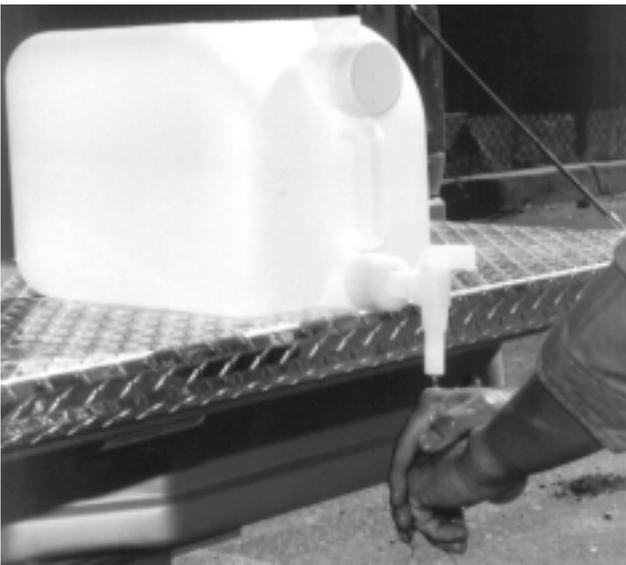
## PUBLIC SERVICE



Wash with soap and water after removing personal protective equipment and before eating. Practicing personal hygiene prevents infectious injuries.



...or use disposable towelettes. However, follow-up with soap and water at the first opportunity, because towelettes contain alcohol which removes natural skin oils and results in dry chapped hands. Moisturizer supplements help replenish moisture to dry chapped skin.



If wash facilities are unavailable provide alternate means of washing.

### Recommended Personal Protective Equipment and Clothing:

- ✓ Hard hat (Class B protection)
- ✓ Hearing protection (disposable foam type)
- ✓ Eye protection (safety glasses or goggles)
- ✓ Mouth protection (dust/mist respirator)
- ✓ Disposable gloves
- ✓ Rubber gloves
- ✓ Leather gloves
- ✓ Knee pads
- ✓ Rubber boots
- ✓ Apron
- ✓ Coveralls
- ✓ High visibility reflective vest



## NOTICE

*The lead-in page of each subsection contains a list of suggested tools and materials to do the job. The number(s) in parentheses ( ) following each tool or material is a locator for a more detailed description of the item in Appendix A.*

Since these facilities (toilets and garbage cans) are potentially contaminated with disease causing bacteria they should be cleaned separately. Use different tools and materials than those used for cleaning Other Facilities. An effective method to alert maintenance personnel to use the right tools for the right job is to color code all tools. Also, using the right tools will help eliminate the possibility of cross-contamination of those tools used for Other Facilities.

## VAULT TOILETS

- ✓ Rags (41)
- ✓ Mop Bucket & Wringer (16)
- ✓ Putty Knife (34)
- ✓ Dustpan (24)
- ✓ Deodorant (22, 23)
- ✓ Toilet Bowl Cleaner (19)
- ✓ Broom (7, 8)
- ✓ Double Bucket (14)
- ✓ Measuring Cup (21)
- ✓ Toilet Paper (56)
- ✓ Sponge (54)
- ✓ Scouring Pad (47)
- ✓ 3D Solution (17)
- ✓ Pesticide (38,39)
- ✓ Dusting Brush (10a)
- ✓ Toilet Seat Covers (57)
- ✓ Toilet Riser Brush (12a)
- ✓ Mop (37)
- ✓ Floor Signs or Markers (27)
- ✓ Personal Protective Equipment (as recommended in JHA)

## Safety and Sanitation

While performing routine maintenance watch for splinters, protruding nails, torn screen or hardware cloth, loose screws on door hinges and toilet paper dispensers, tripping hazards on walkways and around site, etc. Correct hazards as you go along.

The 3D (detergent, disinfectant, and deodorant) solution in proper strength is not hazardous to handle, but most toilet bowl cleaners are. Read the labels of all chemicals; follow instructions; and pay particular attention to disposing of used and unused cleaning agents and chemicals. Always install insecticide and deodorant blocks where children cannot reach them.

Prevent slippery floors by removing water, sand particles, etc. If the process is followed according to the illustrations below, less time will be required to do the job.



## VAULT TOILETS



Provide for public safety. When propping the door open use a wooden wedge or other device specifically made for such application. In the past, rocks have been used for this purpose, but they created tripping hazards for the public and have often found their way to the bottom of vaults.



Pick up all scrap paper and refuse on the trail to the toilet and on the toilet floor. Never throw scrap paper or refuse into the vault. The constant addition of these items in the vault significantly increases the difficulty of pumping.



Dust vent louvers to keep the return air flow clear of obstructions. Also, remember to dust other catch areas, such as window sills, rafters, tops of partitions, and other flat surfaces. Remove all cobwebs and insect nests.

Carefully sweep the floor, paying particular attention to the corners. Pick up all material with a dustpan. Do not sweep small litter, etc., out the door or throw it into the vault.





Scrape gum, etc., from floor with a putty knife.



Replace space deodorant as needed.



Mix a solution of 3D (disinfectant, deodorant, and detergent) in one side of a double bucket. Have clear water in the other side. Use a measuring cup to measure the proper amount of 3D concentrate recommended by the manufacturer. Dilutions vary from 1:20 to about 1:120, depending on the amount of soil encountered and the disinfecting desired. However, always use a measuring cup, because unneeded detergent or disinfectant will not do a better job—it will be wasted and make your job more difficult. Always read the label and follow instructions for proper use and safety to the user and the public.

Wipe or scrub (as needed) all walls, using a 3D soaked brush and sponge. Use the abrasive side of the sponge where necessary on stubborn marks after the detergent has had a chance to loosen the mark. Rinse the sponge in clear water before dipping it into the 3D solution again. This step will keep the 3D solution clean and effective. It is not necessary to rinse the 3D solution from the walls unless soil is heavy. It will provide residual disinfecting and deodorant action. If wash basins are provided, use the fresh 3D solution to clean the basins first, but do not use the same sponge for the walls and toilets.





## VAULT TOILETS



Use a long-handled riser brush soaked with 3D solution or toilet bowl cleaner to clean the inside of the toilet riser. It is important to keep the interior of the riser clean not only for sanitary reasons but also to help prevent odors. The toilet riser shown in the illustrations is an alternative to the previously used stainless steel riser. For information on this riser, refer to Equip Tips 8823 1301, "Update-Cross-Linked Vault Toilet Riser," March 1988.



Mop floor at least once a week with 3D solution or as often as necessary to maintain a clean smear-free floor. Dry mop, squeegee or wet-vacuum the floor to leave it as dry as possible. Change mop bucket 3D solution often; dirty solution loses its effectiveness.



The toilet seats and covers should always be free of stains and soil marks. Replace or repaint seats and covers if noticeable marks cannot be removed. Use a sponge, brush, and/or scouring pad soaked in 3D solution to scrub the outside of the toilet riser and both sides of the seat and cover. Pay particular attention to the hinge area. Remember do not use this sponge, brush, or scouring pad for cleaning wash basins or the items included under other facilities.



Check toilet paper supply and replace as necessary. Also, pay particular attention to the selection of toilet paper dispensers. Empty dispensers invite vandalism. Too much consumption is uneconomical, wasteful, difficult for the sewage pumper to remove, and difficult for biological treatment systems to digest. Multiple dispensers that do not allow the roll of paper to rotate will solve most of the problems and still give the user an adequate amount. Such devices however, may not meet accessibility needs. The site manager must consider the trade-offs. The use of individual tissue dispensers is not recommended, neither is placing partially used rolls on top of newly installed rolls because they either end up missing or thrown into the vault. A lock-bar toilet paper dispenser similar to the one illustrated is still available, and a new retrofit adapter for making the dispenser accessible is also available.



***NOTE: when installing the lock bar dispenser be sure to mount the lock away from the toilet to reduce vandalism of the lock. Mount the toilet paper roll on the bar as shown—allowing the paper to unroll off the top and drape in front where it can be easily grasped by the user.***

## Odor Control

### *Toilet Vaults*

Most odor problems are associated with vault or pit-type toilets. The construction, type, size, or material of the vault is unimportant, with the exception of concrete. (Concrete vaults are porous and absorb and retain odors.) It is important to know that there are many square feet of waste surface, not including the exposed waste usually left on the vault walls, under the large opening of the toilet riser. The vent system is often too small and cannot overcome the draft up through the toilet riser. This allows strong, unpleasant odors to enter the toilet compartment. However, modern technology has established new design criteria for vault toilet buildings, which greatly reduces the reverse ventilation problems that were the primary cause of odor in the user compartment.

Odor is caused by bacterial action on the waste mass. There are two forms of bacterial action, anaerobic and aerobic. Anaerobic action is typical of septic tanks and takes place in the absence of oxygen. Aerobic action takes place in the presence of oxygen. Aerobic action is typical of aerated sewage treatment plants and requires oxygen. Anaerobic action is characterized by strong odors; aerobic action is relatively odorless.

It is impractical to introduce enough oxygen into the concentrated waste mass to create an aerobic condition. Temperatures and pH, also difficult to control, are important environmental factors in the growth of bacteria. Therefore, additions of aerobic bacteria or enzymes can only be of negligible benefit to the surface of the waste mass and should not be used.

Suppression of odor by chemical means is not recommended because of the chemicals negative effect on the final treatment process. Many treatment plant operators will not even accept chemically treated wastes. Also, strong, unpleasant chemical odors often result from the use of bactericides.



## VAULT TOILETS

---

There are many chemicals on the market for use in vault- type toilets. When considering the purchase of deodorants be guided by your nose, the total cost of the treatment and the method of application. Make sure that the product is truly a deodorant and not an additive to treat the waste. Dosages and frequency of application should be determined from manufacturer's instructions, from a good deal of experience, and constant checking with the nose. For additional information on Vault toilet additives refer to the publication: Do Biological and Chemical Additives Really Control Vault Toilet Odor?

### *Toilet Compartments*

**Odor control with deodorants is recommended. Space deodorants in an appropriate diffuser should be used in toilet buildings including flush toilets. There are two general types of deodorants that suppress odor by working on the odor molecule. One masks the odor and the other combines with the bad odor to form a new more pleasant odor or neutralizes it entirely. Both are effective in making the toilet compartment more pleasant. Diffusers should be placed out of reach, and if possible, out of sight. Sometimes a heavy wire screen must be used to protect the diffusers from theft or vandalism.**



### **Insect Control**

Flies can be more objectionable than odor in vault and pit-type toilets. Every effort should be made to eliminate flies. According to information from the field, maintaining a water level in the vault instead of allowing the waste material to mound up is an effective method to reduce flies. This prevents the flies from laying their eggs in the waste mass.

The "No-Pest" strips provide easy, safe, and effective control. One strip, removed from its cardboard diffuser, cut in half, and tacked high in the rafters of the toilet compartment should provide adequate control of flies. Another method of using the strip is to attach it to the bottom of the toilet riser with a stiff wire so that it hangs into the vault but away from the waste impact pattern. Wear gloves when handling "No-Pest" strips. Follow all precautions carefully.

Insect type and population vary across the country. Directions and procedures for other insects (wasps, yellow jackets, hornets, etc.) should be available on a local level for the maintenance personnel.



- ✓ Rags (41)
- ✓ Mop Bucket & Wringer (16)
- ✓ Putty Knife (34)
- ✓ Dustpan (24)
- ✓ Deodorant (22)
- ✓ Toilet Bowl Cleaner (19)
- ✓ Broom (7, 8)
- ✓ Double Bucket (14)
- ✓ Measuring Cup (21)
- ✓ Toilet Paper (56)
- ✓ Sponge (54)
- ✓ 3D Solution (17)
- ✓ Bleach (6)
- ✓ Pesticide (38,39)
- ✓ Dusting Brush (10a)
- ✓ Toilet Seat Covers (57)
- ✓ Toilet Riser Brush (12a)
- ✓ Mop (37)
- ✓ Floor Signs or Markers (27)
- ✓ Litter Picker (36)
- ✓ Sharps Container (49)
- ✓ Personal Protective Equipment (as recommended in JHA)

### **Safety and Sanitation**

Many of the precautions for cleaning vault toilets apply to cleaning compost toilets. However, the cleaning staff responsible for removing non-degradable debris from the composter should use considerable caution because the work involves potential contact with fecal waste. Also, there is a higher risk of exposure to infectious diseases, infectious rodent bites, and fleas.

Other safety considerations may include hazardous access to the toilet basement or poisonous insects in and around the composter. Refer to the JHA for site specific hazards that may apply to your conditions.

***CAUTION: OSHA Permit-Required Confined Spaces for General Industry regulations (29 CFR Part 1910.146) may apply to some composting toilet buildings, specifically, where entrance to the basement uses a vertical ladder to access the building basement housing the composter unit. The JHA should address hazards and procedures for working in permit-required confined space.***



## COMPOSTING TOILETS



Clean the user compartment of composting toilets in the same manner as you would a vault toilet. If possible, avoid using too much 3D solution when scrubbing the interior of the toilet riser. Excessive 3D solution entering the composter unit may upset or inhibit the composting of the waste over time.



Dispose of syringes in a marked sharps container. Sharps containers are commercially available. Any container used for disposing infectious waste must be marked with a label bearing the "biohazard" symbol.



*(NOTE: Before cleaning the composter, close the toilet seat lids and temporarily lock the restroom doors. The closed toilet seat lids ensures maximum air flows into the composter when the cleaning access door is opened.) Remove all non-degradable debris deposited in the composter. Wearing disposable dust and mist respirators is recommended as they protect against contact with flies and serve as a reminder against accidentally touching the mouth with contaminated hands.*



Keep tools sanitized following use.



- ✓ Measuring Cup (21)
- ✓ Dusting Brush (10a)
- ✓ Rubber Gloves (29)
- ✓ 3D Solution (17)
- ✓ Toilet Brush (11)
- ✓ Sponge (54)
- ✓ Double Bucket (14)
- ✓ Squeegee (55)
- ✓ Putty Knife (34)
- ✓ Toilet Paper (56)
- ✓ Dustpan (24)
- ✓ Rags (41)
- ✓ Personal Protective Equipment (as recommended in JHA)

## Safety and Sanitation

Use caution when working with toilet chemicals. In the past, many of the chemicals used in chemical and chemical recirculating toilets contained formaldehyde, a suspected carcinogen. This danger has resulted in some states prohibiting the sale or use of formaldehyde products.

Follow the prescribed engineering controls in the JHA if handling chemical additives and follow the manufacturer's recommended practices for the toilet system in use. A copy of the current materials safety data sheet (MSDS) should be readily available.



**A chemical toilet is simply a holding tank with a toilet seat on the top and no bowl between the seat and the waste material. The system is precharged with chemical and water and requires the same cleaning procedures as do chemical recirculating toilets.**

## Chemical Toilets

During chemical toilet use, no additional chemical is added mechanically. Consequently the precharged chemical may not remain effective for the time it takes to fill the holding tank. Pump-out schedules may have to be based on odor production rather than when the tank is full unless measures are taken to periodically add chemicals or modify the venting system. The toilet contents are pumped through the toilet seat opening. Care should be taken not to contaminate the interior of the building during pumping.

## Chemical Recirculating Toilets

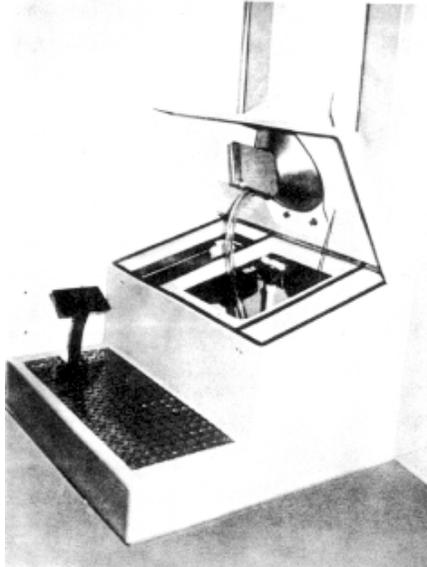
Chemical recirculating toilets can be electric, air-operated, foot-pedal operated, or hand-lever operated. The principle is all the same. The holding tank is precharged with a predetermined amount of chemical and water. When the toilet is flushed, a mixture of precharged chemical, water, and waste material (a colored dye helps to visually obscure small waste particles) is recirculated in the bowl to discharge the new waste material. With each flush some systems dispense a small amount of chemical in addition to the precharged chemical. When the holding tank is full, the contents have to be removed by pumping or discharging into a lower, larger container.



## CHEMICAL & CHEMICAL RECIRCULATING TOILETS

**NOTE:** The following procedures are for demonstration purposes only. Additional personal protective equipment and clothing, such as long sleeved shirt, apron, goggles, mouth protection and rubberized boots are recommended during the handling of chemical additives and protection against potential direct contact with fecal waste.

On newer models, the top lifts—allowing easier access to the bottom discharge system. Cleaning the waste material from the holding tanks is critical for maintaining a reasonably odor-free toilet. Some of the earlier model chemical recirculating toilets had small access holes for pumping. If these systems are still in use, consider making special adapters for pumping the tanks. Every effort should be made to do a thorough cleaning job.



Flush the toilet once or twice to help loosen any accumulated fecal matter on the bowl.



Pick up all large paper pieces and miscellaneous trash on floor.



Sweep the interior clean.



Use a stiff brush with a 3D solution to thoroughly clean the bowl area. Use a 3D solution to clean the toilet seat, surrounding platform, and particularly the seat hinge area.

# CHEMICAL & CHEMICAL RECIRCULATING TOILETS



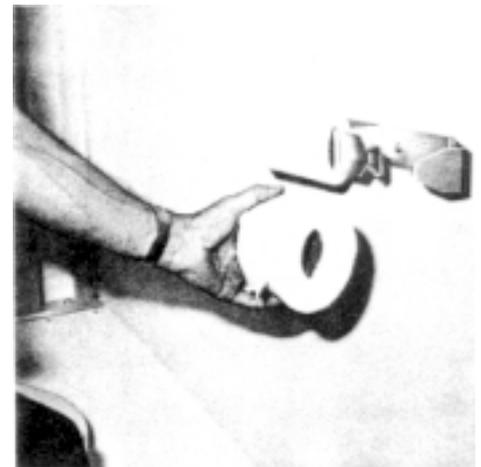
Use a 3D solution for cleaning the wall of the enclosure.



Use a scrub brush and 3D solution to clean the small floor area.



Rinse well and sponge dry.



Make sure toilet paper dispensers are securely fastened and refill with paper as needed. Toilet paper dispensers should be the type that discourages excessive use, yet provides reasonable access.



## FLUSH TOILETS

- ✓ Mop Bucket & Wringer (16)
- ✓ Measuring Cup (21)
- ✓ Dustpan (24)
- ✓ Double Bucket (14)
- ✓ Putty Knife (34)
- ✓ Toilet Bowl Cleaner (19)
- ✓ 3D Solution (17)
- ✓ Toilet Paper (56)
- ✓ Scour Pad (47)
- ✓ Sponge (54)
- ✓ Rubber Gloves (29)
- ✓ Toilet Brush (11)
- ✓ Dusting Brush (10a)
- ✓ Rags (41)
- ✓ Broom (7, 8)
- ✓ Mop (37)
- ✓ Floor Signs or Markers (27)
- ✓ Personal Protective Equipment (as recommended in JHA)

### Safety and Sanitation

The same safety precautions for vault toilets apply to flush toilets. Keep in mind, studies have shown that during the flushing action, bacteria are carried out of the toilet bowl in a fine aerosol spray and deposited on and around the toilet. The area surrounding the toilet may appear to be clean, but in fact can be very contaminated. The procedure for cleaning flush toilet buildings is similar to any other toilet building. The large paper pieces and debris should be picked up and placed in a trash can. All horizontal surfaces should be dusted, and the floors should be swept with special attention given to corners and concealed areas. Gum, etc., should be scraped from the floor with a putty knife.

The selection of the toilet bowl cleaner is very important. A caustic substance used daily in small dosages in a number of toilets could easily upset a septic tank leech field system or a small extended aeration system.

Use a long-handled brush and a toilet bowl cleaner to thoroughly clean the interior of the bowl. Make certain that up under the rim and the throat of the bowl are clean. The holes around the bowl rim should be periodically checked and reamed out to prevent reduction of flushing action.



**Having the proper tool makes the job easier.**



In the reverse order, wipe the underside of the seat, top of the seat, and surrounding bowl.



Remove existing toilet paper rolls from dispenser if you plan to hose down the walls and floors. Using 3D solution or a commercial grade foam disinfectant cleaner, clean both sides of the seat, the hinge area, and the outside of the toilet. If the toilet uses a flush valve, use the 3D solution or foam cleaner to clean the valve. Polish and dry all surfaces of the toilet seat, toilet exterior, and flush valves.



Wash the walls with a 3D soaked sponge and brush. It is not necessary to rinse the 3D solution from the walls unless they are heavily soiled. The solution will provide a residual disinfectant and deodorant action.



Next, clean the bowl.

**NOTE:** *If urinals are provided they should be thoroughly cleaned after cleaning the toilet area. It may be necessary to use a fresh mix of 3D solution. The interior of the urinal may require the use of a toilet bowl cleaner if stains and soil are excessive. Again, be sure that all chrome is clean and left polished and dry. It is not necessary to dry the interior of the urinal.*



## FLUSH TOILETS

Use a 3D soaked sponge (not the one used for the toilet) to thoroughly clean the sink and faucet. Stubborn stains may require a light application of scouring powder or the use of a nylon scrubbing



pad. Rinse and polish dry. All chrome surfaces and mirrors should be cleaned and free from stains and smears.



Hose down the walls and floors— followed by wiping all wet fixtures with a clean dry rag or sponge.

The floor should be mopped frequently with a 3D solution to prevent any accumulation of bacteria resulting from the aerosol carry-over during the flushing



action and to maintain a clean smear-free floor. Dry mop, squeegee or wet vacuum the floor to leave as dry as possible. The remaining contents of a mop bucket should not be dumped into the toilet unless it has been determined they will not adversely affect the sewage disposal system.



Replace toilet paper.

## SHOWERS AND DRESSING AREAS



- ✓ Mop Bucket & Wringer (16)
- ✓ Measuring Cup (21)
- ✓ Dustpan (24)
- ✓ Double Bucket (14)
- ✓ Putty Knife (34)
- ✓ Scale Remover (46)
- ✓ 3D Solution (17)
- ✓ Bleach (6)
- ✓ Squeegee (55)
- ✓ Scouring Pad (47)
- ✓ Sponge (54)
- ✓ Rubber Gloves (29)
- ✓ Scrub Brush (12)
- ✓ Corner Brush (10)
- ✓ Dusting Brush (10a)
- ✓ Rags (41)
- ✓ Broom (7, 8)
- ✓ Mop (37)
- ✓ Floor Signs or Markers (27)
- ✓ Personal Protective Equipment (as recommended in JHA)

### Safety and Sanitation

Follow the same guidelines for cleaning flush toilets. Remember, public safety is paramount.

**CAUTION:** *A bleach solution or virtually any other mycocide can be an irritant to the mucous membranes. For asthmatics, the mycocide could cause an asthma attack. So, use it only when people are not in the facility and make sure to air the room out before people enter it.*



Sweep the floor to remove large debris such as dirt, toilet paper, etc..



Starting above and working towards the floor, clean the fixtures and walls using 3D solution, scouring pads, and scrub brush.



## SHOWERS AND DRESSING AREAS



Rinse wall surfaces with a hose.



Mineral deposits and soap scum can be removed with a scale remover. (NOTE: In some locations, treating the water by installing a water softener system can greatly reduce the mineral deposit)



Use the corner brush to remove hard to reach debris. A coved corner helps in reducing the entrapment of dirt.



Clean the dressing areas with a sponge and 3D solution. Also, clean the under side of benches and lower walls.



Complete the cleaning by mopping the floors and squeegee, if needed. Experience has shown that moving the mop in a figure eight motion provides the most efficient coverage for cleaning floors.



## RECREATION VEHICLE SANITARY DUMP STATIONS

- ✓ Double Bucket (14)
- ✓ Putty Knife (34)
- ✓ 3D Solution (17)
- ✓ Bleach (6)
- ✓ Sponge (54)
- ✓ Rubber Gloves (29)
- ✓ Riser Brush (12a)
- ✓ Scrub Brush (12)
- ✓ Rags (41)
- ✓ Broom (7)
- ✓ Personal Protective Equipment (as recommended in JHA)

### Safety and Sanitation

Follow the safe practices for working around raw sewage and sewage treatment plant operation. Hazards should be identified in the job hazard analysis.



Cleaning sanitary dump stations involves a high risk of exposure to or the potential to come in contact with raw sewage. It is important to use personal protective equipment and practice personal hygiene before eating.



The concrete apron should be sealed with a commercial coating to reduce bacteria buildup in the porous surface. After washing the apron, scrub the tank hatch cover with 3D solution and broom or sanitized riser brush.



The water tower should be inspected for damages to the back flow valve. Wash and sanitize the tower with bleach or 3D solution. The hose nozzle is a common point of contamination and should be cleaned regularly.



- ✓ File (26)
- ✓ Bucket (15)
- ✓ Pesticide (38, 39)
- ✓ 3D Solution (17)
- ✓ Rags (41)
- ✓ Scrub Brush (9, 12)
- ✓ Wrench (61)
- ✓ Pliers (40)
- ✓ Hammer (32)
- ✓ Sandpaper (44a)
- ✓ Plastic Bags (4)
- ✓ Gloves (28, 29, 30)
- ✓ Litter Picker (36)
- ✓ Sharps Container (49)
- ✓ Personal Protective Equipment (as recommended in JHA)

### Safety and Sanitation

Plastic liners should be lightly lifted to check their weight before removing from the container. Double-bagging may be necessary for heavy or torn liners—get help! Watch out for plastic liners containing toilet wastes and/or broken glass. Use heavy work gloves and handle with care. Stay alert to sharp edges on cans, bins, and dumpsters and correct hazards when found. Replace badly damaged cans, bins, and dumpsters and ones that will no longer accept a tight fitting lid. Stabilize dumpsters so they will not turn over.

Avoid directly compacting the trash with your hands or feet. Instead, use a compacting tool or piece of plywood to compress the contents.

It is recommended that all cans be thoroughly steam cleaned at the end of the season prior to storing. Use plastic liners to help prevent dirty garbage cans. Consider the fact that an empty can weighs approximately 30 lb and the average weight of waste in a full can is approximately 27 lb. By using appropriate plastic liners, a lot of lifting is saved at each can. Three-mil thick plastic bags are recommended in lieu of double-bagging.

### Single Unit Containers



**Garbage removal can coincide with other cleaning activities such as restroom cleaning. Regardless of the placement within the recreation site, hazardous materials such as glass, needles, and other sharp objects can appear. Use universal precaution when in doubt and report any injuries to your work supervisor.**



## GARBAGE CONTAINERS



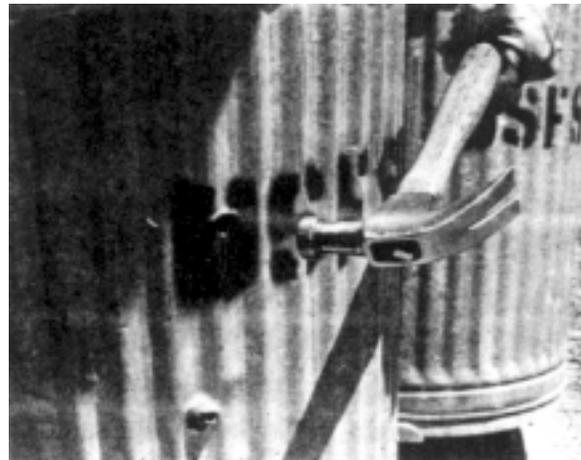
Pick up all litter and garbage immediately surrounding the can. Gloves are required.



Before hauling, tie-off plastic liners or cover the load with a tarp. Don't allow the litter and garbage to scatter while in transit.



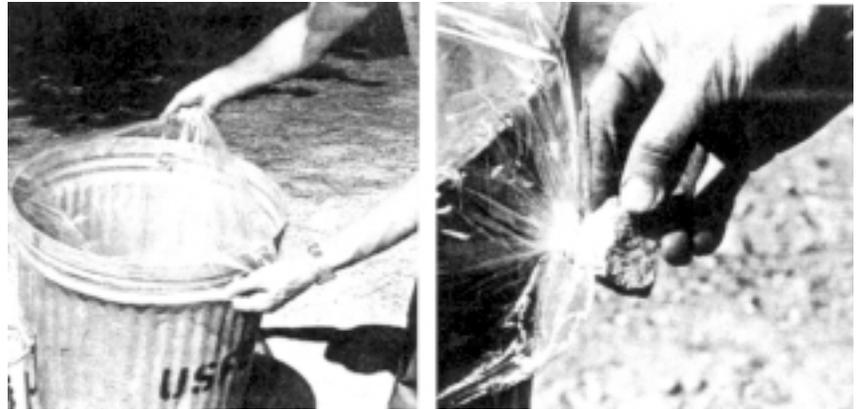
Scrub (as needed) garbage cans inside and out to remove caked and dried garbage. Check the underside of the can for grease and garbage. Check with your supervisor concerning procedures for dumping detergents, chemicals, and washed-out garbage in the area of garbage cans. Cleaning at each garbage can location may result in a garbage residue buildup, vegetation damage, or possible stream contamination. At some sites it may be necessary to clean all garbage cans at a central location.



Pound out all bullet holes and other tears in the metal to prevent tearing the plastic liner and user's clothing.



Spray with a commercially available insecticide at least once a week.



Install a clean plastic liner and use a small stone (as shown) or stick to twist the liner tight around the can, then tuck the stone or stick up under the liner to hold it secure.



Tie-down (or otherwise secure) cans to prevent vandalism, unauthorized removal, and animals from tipping them over. (Note stone in final position for tightening liner around can.)



If the garbage cans are continually overflowing, increase the number of cans; consider larger capacity bins; or increase the frequency of service.



## GARBAGE CONTAINERS

### Multi Unit Bins

The procedure for maintaining bins is the same as for garbage cans. Some recreation managers prefer the bins because:

1. They maintain a neater overall appearance.
2. They resist animal pilferage and damage.
3. The side opening permits easy removal of the plastic liners, unlike lifting the liner straight out of the can.
4. The public is less likely to move them about because of the added weight.

### Dumpsters

Centrally located dumpsters are beginning to replace individually spaced garbage cans. Public acceptance and economics are major factors in their use.



Dumpsters are too big to use plastic liners so they become dirty and caked with garbage very quickly. Fly and odor suppression should be a high priority in the daily maintenance of these containers. Cleaning the dumpsters should be done on an as-needed basis and at a central location where a steam cleaner or pressure washer can be used and where the detergent and/or chemical cleaner mixed with the waste garbage can be properly disposed of.



Consider the prevailing wind direction when locating dumpsters in a recreation site. This prevents unpleasant odors from drifting into use areas.



Facilities in this group must not be cleaned with tools or materials used for cleaning Waste Facilities. Those tools and materials are contaminated.

## FISH CLEANING STATIONS

- ✓ Measuring Cup (21)
- ✓ Dustpan (24)
- ✓ Double Bucket (14)
- ✓ Putty Knife 34)
- ✓ 3D Solution (17)
- ✓ Bleach (6)
- ✓ Scouring Pad (47)
- ✓ Sponge (54)
- ✓ Rubber Gloves (29)
- ✓ Scrub Brush (12)
- ✓ Chassis Brush (9)
- ✓ Rags (41)
- ✓ Broom (7)
- ✓ Personal Protective Equipment (as recommended in JHA)

### Safety and Sanitation

Check station work area for sharp edges. Wear protective rubber gloves, apron or coveralls, and eye protection. Use caution when blood is observed. Although the blood is most likely from the fish, the source may however have come from a human cut on the hand resulting from an accident. The JHA should address blood borne pathogen exposure and procedures.



**Soak and scrub entire work area to remove scales and dried debris.**



**Thoroughly scrub and remove fish viscera from the disposal opening.**



## TABLES

- ✓ 3D Solution (17)
- ✓ Rake (42)
- ✓ Sandpaper (44a)
- ✓ Double Bucket (14)
- ✓ Squeegee (55)
- ✓ Scrub Brush (12)
- ✓ Sponge (54)
- ✓ Rags (41)
- ✓ Personal Protective Equipment (as recommended in JHA)

### Safety and Sanitation

Watch for splinters, nails, spider webs, and loose planks. Correct deficiencies on the spot. Also, check for knee hazards under the table.



Pick up all litter around and under the table. (Wet litter is messy to handle.) Apply a liberal amount of the 3D solution to the table top and benches. Let the detergent work for a minute or so.

Scrub the table top and benches with a scrub brush to remove the soil or stain. Pay attention to possible soiling between the planks on wooden tables.

Use as little water as possible to effectively rinse off the 3D solution and the soil. Too much water will result in a muddy soil condition around and/or under the table.



Squeegee excess rinse water from the table top and benches to allow the table to dry quickly and prevent spotting. With a sponge or clean rag, wipe excess water from plank edges and wet spots that the squeegee missed. Wet spots will occur



under and around the tables from water and cleaning solution splashing or draining off the tables during the cleaning process. These wet spots should be raked through to dissipate them more quickly.

This cleaning procedure for wood table tops and benches is the same for other type table tops and benches (fiberglass and concrete). The only difference is that a stronger cleaning agent may be used because of the sturdier surfaces. However, the ease of cleaning these surfaces usually does not require extra strength cleaning agents.



- ✓ Shovel (51,52,53)
- ✓ Wire Brush (13)
- ✓ Putty Knife (34)
- ✓ Scraper (48)
- ✓ Double Bucket (14)
- ✓ Ash Can (2)
- ✓ Rubber Apron (1)
- ✓ Rubber Gloves (29)
- ✓ Leather Gloves (28)
- ✓ Heavy Duty Cleaner or 3D Solution (17)
- ✓ Personal Protective Equipment (as recommended in JHA)

## Safety and Sanitation

The heavy duty cleaner will not cause chemical burns, but it is very strong and contact with it should be minimized. Eye protection may be necessary if vigorous wire brushing causes splattering.

Wherever food is being prepared, it is important to remove all traces of cleaner solution.

Remove all toe-trippers from the traffic pattern around the fire rings and grills.

## Fire Rings



**Make sure ashes are cool before handling.**



**Shovel excess ashes from the ring into a plastic-lined metal container that does not contain burnable garbage. Poring water into the plastic liner is recommended. Make sure all charred logs are inside the fire ring or stacked neatly beside it for use.**



## FIRE RINGS & GRILLS



Rake the area, if necessary, to camouflage any ashes that may have blown from the ring and to leave the site neat and ready for use. Whether or not wood is supplied would be an individual unit's policy.



Remove any makeshift fire rings. Scatter the stones from the site. Remember to use proper lifting technique when removing large rocks.



Remove the ashes, and rake the area to remove all signs of the fire ring.



## Grills



Clean the ashes from the grill before it is half full and place the ashes in a metal container that does not contain burnable garbage. If the ashes are allowed to accumulate, the public has no alternative but to scatter them on the ground, creating a messy site. The ashes contain potassium and potash and could be beneficial as a soil nutrient if properly disposed of away from the public use areas. Further direction on ash disposal should be obtained at each Forest.



Scrape all caked grease and food particles from the grate with a metal scraper. Scrub the grate and concrete pad (if applicable) with a wire brush and heavy duty cleaner. Allow the cleaner to work for several minutes to soften the grease. A rubber apron is recommended to protect clothing from grease and cleaning solution. Thoroughly rinse the cleaner solution and soil from the grate.

Rake around grills, if necessary, to obscure any signs of discarded or spilled ashes.





## WATER HYDRANTS

- ✓ Rags (41)
- ✓ Rake (42)
- ✓ Shovel (52)
- ✓ Scrub Brush (12)
- ✓ 3D Solution (17)
- ✓ Bleach Solution (6)
- ✓ Bucket (15)

### Safety and Sanitation

Do not allow the basin rims to get high enough to cause a tripping hazard. Rims constructed below the ground surface will allow run-off to silt in the gravel basin. Check the water flow from the hydrant to see that it is clear and free of foreign matter.

Instructions on the care and maintenance of potable water disinfecting equipment are beyond the scope of this publication. Guidelines should be established for each individual system by the Forest.



Remove all litter, accumulated vegetation, and other debris from the catch basin. Turn over existing gravel with a shovel to help prevent soaps and silt from ponding water. Note any drainage problems that could cause silting of the gravel. Repair drainage at this time. If ponding of water persists, note the hydrant location and request complete replacement of the gravel.



Clean the entire water hydrant with a bleach solution. Scrub the faucet with a small brush using the bleach solution and then rinse the solution from the faucet with clean water.



Carefully clean the faucet outlet (spout). Thoroughly flush the area after cleaning with the bleach solution to reduce the risk of contaminated water samples.



- ✓ Rake (42)
- ✓ Hammer (32)
- ✓ Pliers (40)
- ✓ Wire Cutters (40a)
- ✓ Tamping Bar (5a)
- ✓ Level (36a)
- ✓ Hard Hat (31)
- ✓ Litter Picker (36)
- ✓ Plastic Bags (4,5)
- ✓ Pruning Saw (45)
- ✓ Leather Gloves (28)
- ✓ Shovel (51,52,53)
- ✓ Personal Protective Equipment (as recommended in JHA)

### Safety and Sanitation

Whenever tools such as litter pickers, hammers, pruning saws, rakes, etc. are used there is the imminent danger of minor accidents. Always use these tools with utmost caution.

Hard hats are required whenever working in wooded areas.

Refer to the JHA for specific requirements if operating powered tools. Special training, qualifications, and protective equipment are required for operating powered equipment such as chain saws, augers, and weed trimmers.



**Pick up litter. Family units need more intensive policing than do buffer areas around them. Pick up even small litter in family units when it detracts from a clean appearance. Pay particular attention to removing broken glass and other safety hazard material. Recheck to see that areas around tables, grills, etc., are raked to smooth soil surfaces. Redistribute loose soil, fill holes, and remove litter not otherwise picked up.**

**Pick up larger pieces of litter in buffer areas so that litter is not noticeable. Do not perform litter pick-up in family units that are occupied. Pick up all litter in streams and on waterfronts that run through, or are adjacent to the site.**



## RECREATION GROUNDS

Dismantle and haul off all camper-constructed furniture abandoned on site. Remove all nails and wire in trees and facilities in or adjacent to family units. Protect the tree by placing a wooden block or piece of a tree limb between hammer and tree. Removing old nails is sometimes easier if the nail is first lightly tapped into the tree.



Use a pruning saw to trim all limb stubs that may be a hazard to visitors in family units or along pathways. New technology shows that improper pruning of trees can be very harmful to the tree. At least one person on the maintenance crew should receive training on proper methods for tree pruning. Trees around a recreation site have to withstand enough abuse without improper pruning by untrained personnel. As a quick guide prune diseased and dead branches anytime; cut dead branches back to the callus collar but do not remove the living collar. Information on tree care can be obtained from USDA Forest Service, Northeastern Forest Experiment Station, Broomall, PA 19008.



Painting of newly pruned limbs is not recommended because studies have shown that no benefit exists. However, all freshly cut tree stumps should be treated for *Fomes annosus* with Borax (technical grade sodium tetraborate decahydrate) at a dosage rate of 0.45 kg (1 lb) to 4.5 m<sup>2</sup> (50 sq ft) of stump area. The best time for the treatment is the same day the tree is cut.

Some portions of the Southern Region (R-8) will not require treatment in late spring and summer because the climate prevents the growth of the disease spores.



During the maintenance route, stay alert to performing nonscheduled maintenance such as unplugging culverts, repairing erosion damage, repairing barriers, etc. Sometimes, because of time constraints, these unassigned activities cannot be accomplished. If this is the case, record the problem and report it to the supervisor for scheduling.

**CAUTION:** Use caution when removing rodent nests, especially where known cases of the plague and hantavirus have been reported. Such hazards should be documented in the JHA. For more information on Hantavirus Prevention, contact the Centers for Disease Control and Prevention (CDC), 1-800-532-9929.

## Signs



Sign posts periodically require straightening because of wind, snow drifts, or vandalism. This is an opportunity to inspect the post for decay or rotting at the base. A tamping bar provides leverage for compacting the area around the post.

Surveys of recreation facilities indicate vandalism of signs is a top priority problem. Different materials should be considered for signs to try and offset the vandalism that readily occurs.

Keep signs bright, patch holes or blemishes, and tighten. Keep posters and signs fresh and neat.

Use as few signs as possible to do the job and only use signs which fit the recreation situation or setting. Place the signs on main travel paths.

Keep sign posts and backboards in developed sites. Neither nail signs on trees, nor post on toilet doors or screens.

Remove publicly installed impromptu signs and/or other methods of communication. Message boards may be necessary to serve the users' needs.



### Visitor Information Boards



Information Boards should be neat and clutter free. Keep posters to a minimum and arrange the information by category, i.e., Emergency Instructions, "Things To Do," Regulations, etc.. Remove all staples left by previous information posted. (Additional guidelines on visitor information boards can be found in the Tech Tips—Visitor Information Boards in Recreations Sites, listed in the Bibliography.)

- ✓ Needle Scaler (37a)
- ✓ Air Compressor (20)
- ✓ Sand Blaster (44)
- ✓ Leather Gloves (28)
- ✓ Face Shield (50)
- ✓ Ear Protection (25)

### Safety and Sanitation

When using a sand blaster, blow torch or steam cleaner, eye protection and heavy gloves are necessary. Sand blasters, blow torches and steam cleaners are extremely dangerous when two or more people are working together. Face masks and goggles create blind spots so be careful not to injure someone while operating this equipment.

If industrial paint removers are used, remember that they are caustic and will burn. Use rubber gloves and keep water at hand to flush any paint remover that gets on the skin. Eye protection is necessary. Old clothes or a rubber laboratory apron should be worn.

***CAUTION: Open sand blasting is regulated under the Clean Air Act and OSHA. Equipment hazards should be documented in the JHA.***

Suggestions from the field have shown that using an industrial paint remover or oven cleaner is the least popular method of cleaning rocks and masonry. The following are the recommended methods:



**Hold the sand blaster nozzle close to the paint on the rock and as far away as possible from the operator's face.**



**After removing the paint lines, feather the painted area to prevent leaving sand blasted lines. Remove all paint and give a final check for sand blast markings.**

- 1. Needle scaler.** The needle scaler removes paint by impacting the surface with steel needles using compressed air. Irregular surfaces are easily cleaned. The needle scaler removes paint from rocks faster and more effectively than sand blasting.
- 2. Blow torch.** There is no scorching effect if the blow torch is regulated correctly to provide a blue flame. Heavy gloves and goggles or face mask are recommended.
- 3. Steam cleaner.** This method is self-explanatory. Gloves and goggles or face shield are also recommended.
- 4. Slurry (a mix of cement and water).** Paint or roll this mixture over the defaced portion of rock. The cement paste blends very well with most rocks if it is applied to a total section, i.e., one side, ridge to ridge, or fracture to fracture, etc. Blend the slurry to a natural breaking point. The rock should be well cleaned for the cement paste to adhere.

## PRESSURE WASHERS

---

- ✓ 3D Solution (17)
- ✓ Double Bucket (14)
- ✓ Rags (41)
- ✓ Rake (42)
- ✓ Sandpaper (44a)
- ✓ Scrub Brush (12)
- ✓ Squeegee (55)
- ✓ Pressure Washer (58)
- ✓ Floor Signs or Markers (27)
- ✓ Personal Protective Equipment (as recommended in JHA)

### Safety and Sanitation

Squeegee pressure washers and/or steam cleaners operate with very high pressures and/or pressure with heat. Extreme care should be taken when operating this equipment in confined spaces. All pressure systems are different and the length of the wands are different so care must be taken to see that the solution is not splashed back on the operator because of irregular surfaces. The mist produced by the spray is also a vehicle for transporting bacteria. Change soiled protective clothing and bathe after cleaning is recommended. Eye protection is required. Previously mentioned precautions also apply to this section.

Pressure washer systems and steam cleaners have become more popular in the last few years. They are an effective means of doing a quality job and the operator does not have the laborious task of hand-cleaning. Although pressure washers have their place, the following items should be considered before purchasing.

- ☛ *Some pressure washer systems need a hose hook-up or other pressure water system.*
- ☛ *Location of facilities make it inconvenient or impossible to get pressure equipment to the site.*
- ☛ *Excess soap and water used on picnic tables and grills may cause a muddy condition and require more time eliminating this condition than time saved in cleaning.*
- ☛ *The configuration of some surfaces may cause cleaning solution to splash back onto the operator. Eye protection should be considered.*
- ☛ *Cracks and crevices in buildings may collect dirty soapy water during pressure application.*
- ☛ *Surfaces of some material may be porous and soak up excess water.*
- ☛ *Floor drains may be inadequate or nonexistent and excess water used in pressure cleaning may be a nuisance to clean up, or may leave a muddy condition if squeegeed out the door. If the floor drains are connected to the sewer system the chemicals used may be harmful to the sewage treatment process.*
- ☛ *Space may be limited and may prevent effective operation of the pressure wand.*

The frequency of use of the pressure washer depends on the schedule set up by the individual Forest. For example, water hydrant posts do not need to be cleaned as often as toilets, although the faucet assembly of the hydrant should be cleaned routinely. It only takes one messy person to create the need for cleaning. Any established cleaning schedule should be used as a minimum guideline. More frequent cleaning should be on an as-needed basis.

## PRESSURE WASHERS

All toilet paper should be removed or covered with plastic before using a pressure washer. Cover space deodorant containers if they are low enough to be in the splash zone.

The initial tasks of picking up litter, raking, dusting horizontal surfaces, sweeping, etc., all have to be done before using the pressure washer. Tools and materials previously addressed are adequate to accompany the pressure washer. These items will not be readdressed.

### Vault and Compost Toilets

A pressure washer may not be able to remove the abrasive marks on the outside of the toilet riser caused by people rubbing their heels or kicking against it. However, the pressure washer is an excellent means of cleaning the hinge area and other hard-to-clean areas. If the pressure washer is used to clean the inside of the toilet riser, direction should be obtained from the supervisor concerning the type of cleaner to be used. Daily cleaning could add excessive amounts of chemicals to the vault and could be harmful to further treatment of the waste. This is extremely critical in compost toilet systems.



**Spray the outside of the toilet riser with a 3D solution giving special attention to the seat hinge area and the crack between the riser flange and the floor.**

**Start spraying the walls from the bottom up and allow the solution to work for a few minutes. Rinse the walls starting from the top down and rinse the toilet riser. Wipe or squeegee the walls to keep them from streaking.**

**Stains or smears not removed by the pressure washer should be removed by hand.**



**Dry mop, squeegee, or wet vacuum the floor and leave as dry as possible. Do not throw mop bucket contents into the vault unless approved by the supervisor. Replace toilet paper and space deodorants as necessary.**

# PRESSURE WASHERS

## Chemical and Chemical Recirculating Toilets

The space confinement in chemical recirculating toilets may cause the spray of the pressure washer to splash back onto the operator. Flush the toilet a few times to loosen any fecal matter that may be adhering to the bowl area. Apply a 3D solution with the pressure wand to all toilet surfaces and allow the solution to work for a few minutes.

Use the same 3D solution on the walls by starting at the bottom and working up. After the solution has had a few minutes to work, rinse entire compartment using as little water as possible.

Squeegee or wipe the walls and the outer toilet area. Leave dry and polished.

Replace toilet paper as needed. If drainage within the building is not an integral part of the structure then drainage modifications will have to be made prior to using a pressure washer system.



## Flush Toilets and Urinals

The interior toilet rim and bowl are difficult to clean using a pressure washer. Use a toilet brush with a toilet bowl cleaner (approved by Engineering) and thoroughly clean up under the rim and in the throat of the bowl. Spray a 3D solution on the exterior of the toilet with special attention given to the seat hinge area.

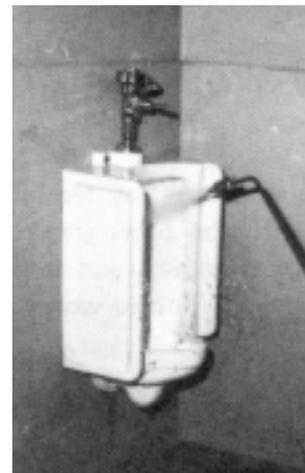
Spray the walls with a 3D solution starting from the floor up. Allow the solution to work for a few minutes on the toilet and the walls and then rinse starting from the top down. Dry mop, squeegee or wet vacuum the floor, and leave as dry as possible. Do not throw mop bucket contents into the toilet unless approved by the supervisor.

Wipe or squeegee the walls to keep them from streaking. Dry and polish the exterior of the toilet and flush valve.

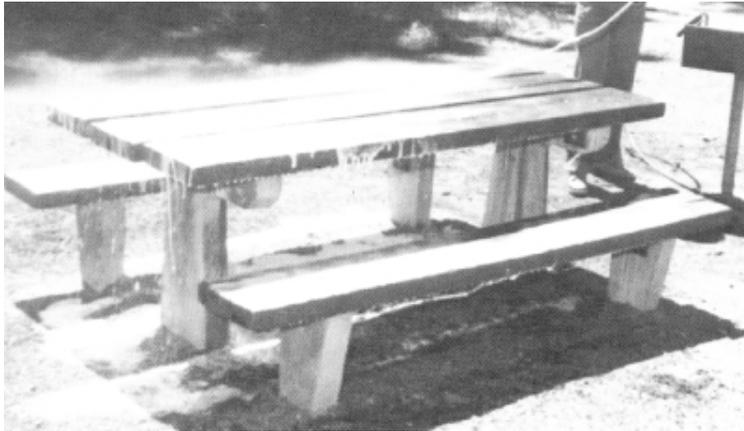


Urinals are cleaned using the same method as the toilets. The lower portion of the urinal is curved in such a manner that the cleaning solution from the pressure washer can adversely splash out into the room and potentially on the operator. The lower bowl area may have to be cleaned by using a long-handled brush with an appropriate cleaner.

Polish and dry all exterior surfaces including the flush valves.



## Picnic Tables



Apply a 3D solution with the pressure wand to the top and benches. Be careful not to use an excessive amount. Let stand for a few minutes to allow the detergent action to work. Stubborn stains can generally be removed with a second application using the wand's full pressure.

Rinse the 3D solution from the table and be certain that all stains are removed by hand-cleaning. Squeegee excess rinse water from table top and benches. Wipe with a clean rag to get squeegee skips and water on plank edges.

## Grills



Thoroughly clean all ashes from the grill and scrape off the excess grease. Apply a degreasing solution with the pressure wand and allow it to work for a few minutes. While still using a degreasing solution, place the tip of the pressure wand close enough to the grill to obtain the maximum pressure and, as quickly as possible, remove the remaining grease, then rinse.

Rake around the grill, if necessary, to loosen soil and speed the evaporation of excess water.

---

**NOTES:**

## BIBLIOGRAPHY

---

- Missoula Technology and Development Center, USDA Forest Service, Sign Maintenance Guide, Report Number 7971-2608, Tom Nettleton, October 1979.
- Missoula Technology and Development Center, USDA Forest Service, Placement Guide for Traffic Control Devices, Report Number 8171-2603, Tom Nettleton, July 1991.
- Missoula Technology and Development Center, USDA Forest Service, Visitor Information Boards in Recreation Areas, John Nobert, Tech Tips Number 9523-2302, November 1994.
- National Recreation and Parks Association, Park Maintenance Standards, 1986.
- Northeastern Forest Experiment Station, USDA Forest Service, Homeowner's Guide for Beautiful, Safe, and Healthy Trees, Report Number NE-INF-58R 7-89, 1989.
- San Dimas Technology and Development Center, USDA Forest Service, Guidelines for the Selection of a Toilet Facility, Report Number 9123-1204, Briar Cook, April 1991.
- San Dimas Technology and Development Center, USDA Forest Service, In Depth Design and Maintenance Manual for Vault Toilets, Report Number 9123-1601, Briar Cook, July 1991.
- San Dimas Technology and Development Center, USDA Forest Service, Do Biological or Chemical Additives Really Control Vault Toilet Odors?, Report Number 9123-1203, Gary Hoshide, February 1991.
- San Dimas Technology and Development Center, USDA Forest Service, Cryptosporidium, What is it?, Tech Tips Number 9371-1305, William Makel, August 1993.
- San Dimas Technology and Development Center, USDA Forest Service, Utilities Hookups for Campgrounds, Report Number 9123-1209, Gary Hoshide, December 1991.
- San Dimas Technology and Development Center, USDA Forest Service, Accessible Lock-Bar Toilet Paper Dispenser, Tech Tips Number 9423-1301, Lester Sinclair, March 1994.
- San Dimas Technology and Development Center, USDA Forest Service, Vault Toilet Pumping Contract Specifications Guidelines for Preparing Contracts, Tech Tips Number 9223-1308, Briar Cook, October 1992.
- San Dimas Technology and Development Center, USDA Forest Service, A Brush For All Risers, Equip Tips Number 9023-1307, September 1990.
- San Dimas Technology and Development Center, USDA Forest Service, Unblocking Toilet Building Vents, Equip Tips Number 9023-1303, February 1990.
- San Dimas Technology and Development Center, USDA Forest Service, Update—Cross-Linked Polyethylene Vault Toilet Riser, Equip Tips Number 8823-1301, March 1988.

## BIBLIOGRAPHY

---

The Idea Bank, *A Custodian's Guide to On-The-Job Safety*, 1991 (video).

The Idea Bank, *Fast & Effective Restroom Maintenance*, 1990 (video).

USDA Forest Service, *Health and Safety Code Handbook*, FSH 6709.11.

USDA Forest Service, *Standards for Forest Service Signs and Posters*, EM-7100-15, August 1994.

U.S. Department of Labor—Occupational Safety and Health Administration, *Occupational Exposure to Bloodborne Pathogens*, OSHA 3127, 1992.

## APPENDIX A — TOOLS AND MATERIALS

---

The following is a list of recommended tools and materials. Descriptions are listed as they appear in General Services Administration (GSA) supply catalogs and schedules (when applicable). GSA numbers are not included because they are subject to change. The numbers preceding the following list of tools and materials are keyed to the tasks for which they are required. Suggested tool and material sources are listed in Appendix B.

- (1) **APRON, Laboratory** Synthetic rubber coated on both sides should be adequate for most common cleaning jobs. Disposable aprons are not recommended for continuous use.
- (2) **ASH CAN, Metal** A 10-gallon size is adequate. The material of the can must be nonflammable.
- (3) **BAGS, Infectious waste** Red, polyethylene bags for disposing of infectious waste. Exterior of the bag clearly identified with "Biohazard" symbol or "Danger Infectious Waste."
- (4) **BAGS, Waste receptacle** Polyethylene bags are now available only by the box. The size that fits the average Forest Service garbage can is 19-1/2 x 14-1/2 x 38-1/2 inches or approximately 32 gallons. Field experience has shown that a 3 mil thickness or greater reduces the need for double-bagging.
- (5) **BAGS, Waste receptacle** Most any thickness is acceptable because items picked up are generally light in weight. The flat 24 x 24-inch polyethylene bags will fit the litter carrier. Tall kitchen-can bags (2 x 2-1/2 ft) found in most markets are acceptable.
- (5a) **BAR, Digging and Tamping** For setting fence and sign posts/poles. The bar has a 2-1/2 inch diameter posthole type head and a 2-1/2 inch wide tapered, double-beveled cutting edge at the other end. The bar is made of forged steel and has a painted or oil-coated finish. Diameter 1 inch, overall length 68 to 73 inches.
- (6) **BLEACH** Household type. Sodium Hypochlorite (5.25 percent) solution. May be used for disinfecting and purifying water.
- Warning: Read product labels. Some products (specifically products containing fragrances) may not be suitable for purifying water.**
- (7) **BROOM, Upright** Corn fiber brooms are adequate. The standard length broom (40 inches) is best for most uses.

## APPENDIX A — TOOLS AND MATERIALS

---

- (8) **BROOM, Whisk** Whisk or hearth size brooms with corn fibers are useful for areas inaccessible to larger brooms.
- (9) **BRUSH, Chassis** Palmetto or polypropylene bristles are running gear adequate. The long handle makes it easier to reach in garbage cans.
- (10) **BRUSH, Corner** Scrub brush, specially designed for scrubbing baseboards, corners, and floors, this triangular brush has a 54-in long handle that can be skewed into either of the brush's side. The handle has a ACME thread and a 15/16-in diameter. Tufts form a 90 degree angle at the brush's apex. synthetic bristles taper in length from 2-in at the apex to 1-1/2-in at the corners.
- (10a) **BRUSH, Dusting** A bakery and counter brush with 100 percent horsehair bristles is the best all around brush for dusting. A medium sized paint brush can be used for small crevices. A ceiling and wall brush with a long handle is handy to dust the cobwebs from the rafters.
- (11) **BRUSH, Sanitary** The curved brush head with 100 percent horsehair is the most commonly used, but other styles are adequate—some may even prefer the swab, toilet bowl type.
- (12) **BRUSH, Scrub** The household type with white tampico fibers is adequate.
- (12a) **BRUSH, Toilet Riser** The 5-ft long handle with two 10-in rubber grips gives ergonomic leverage for pressure scrubbing interior of the vault toilet riser and garbage containers. The head of the brush is injected molded with 1-1/8 in long polypropylene bristles. The head swivels on stainless steel pins with Teflon sleeves.
- (13) **BRUSH, Wire** Scrub away paint, rust and acid stains, and other dried debris with this steel wire brush. For use in general cleaning of masonry and cook grills. Bristles made of carbon steel wire or stainless steel wire (for hard, wet surfaces) arranged in 4 x 16 rows and 1-1/8 inches long. Offset shoe handle made of wood or molded plastic, 10-1/2 x 1 x 5/8 inches length is adequate.
- (14) **BUCKET, Double** The most convenient is the two-compartment plastic pail. Second choice would be two separate pails.
- (15) **BUCKET (Pail)** The 12-quart size in either metal or plastic is adequate.

## APPENDIX A — TOOLS AND MATERIALS

---

- (16) BUCKET AND WRINGER** The bucket and wringer should be heavy duty because of constant handling and use. An important consideration is that the wringer and bucket be compatible with the mop.
- (17) CLEANSERS, 3D** A combination of a disinfectant, deodorant, and detergent solution is excellent for most cleaning tasks that will be encountered. The strength of the mixed solution or commercial product can be varied for most cleaning conditions. Keep the solution clean to maintain effectiveness—see Appendix C.
- (18) CLEANSERS, Cleaning** This heavy duty cleaner is for removing grease. A number of products exist for this purpose—see Appendix C.
- (19) CLEANSERS, Toilet bowl** All cleaning compounds used for cleaning toilet bowls (water flush, chemical recirculating, compost, or vault) should be approved by the recreation manager to prevent possible upset of sewage treatment processes.
- (20) COMPRESSOR, Air** The main requirement of the air compressor is to be compatible with the sand blaster for effective removal of paint on rocks.
- (21) CUP, Measuring** Any one- to two-cup plastic measuring cup is adequate.
- (22) DEODORANTS, Toilet** These are space deodorants designed to be installed high on the wall of restrooms. Vandalism can be discouraged by placing the dispensers out of sight. Be sure to get the proper diffuser for the deodorant you plan to use.
- (23) DEODORANTS, Toilet vault** There are numerous products on the market claiming to eliminate the malodor in vaults. However, comments from experienced field staff indicate results are mixed. Products with flowery fragrances tend to attract bees and other insect thus making conditions unpleasant for the user. Consult the GSA schedule for products and specific application in vaults.
- (24) DUSTPAN, Household style** A simple rubber or steel pan is adequate.
- (25) EAR PLUGS** Non-toxic expandable foam ear plugs are washable and reusable. The headset (ear muff style) protection may be better to help keep the sound out of your ears, but they may not be compatible when wearing a face shield.

## APPENDIX A — TOOLS AND MATERIALS

---

(26) FILE, Half-round	Bastard cut.
(27) FLOOR SIGNS OR MARKER	Free standing warning signs. Traffic cones can be used.
(28) GLOVES, Leather	Experience will dictate the style and thickness of the glove to perform the various tasks.
(29) GLOVES, Rubber	Rubber gloves should not be so thick and bulky that they will hinder a person in performing a task. They also should not be so thin that they will easily tear. A cloth-lined neoprene is recommended.
(30) GLOVES, Disposable	Rubber (latex), vinyl, or nitrile. A 4 to 8 mil thickness is recommended. Usually available in box of 50 or more. Sizes: small, medium, large, extra-large.
(31) HELMET, Safety	Construction workers hardhat. The brimless helmet with a visor sunshield is the most common. Class B, wildlands firefighter's helmet meets this requirement.
(32) HAMMER, Hand	The carpenter's curved claw is the most versatile.
(33) HAND CLEANER, Waterless	Disinfectant cleaner for sanitizing hand. Alcohol gel or sponge wipe.
(34) KNIFE, Putty	The semiflexible type is most commonly used.
(35) LABELS, Adhesive	Identification labels for marking biohazard/infectious waste containers.
(36) LITTER PICKER	The litter picker can be a commercial or a self-made product, as long as it assists recreation personnel in removing the litter.
(36a) LEVEL, Carpenter's	Truss or channel style, aluminum alloy, double face for side reading. Fixed vial, 18 inches overall length.
(37) MOP	Almost any mop will be adequate. Be sure the mophead is compatible with the mop bucket and wringer.
(37A) NEEDLE SCALER	The needle scaler uses a number of small steel rods that alternately impact the surface using compressed air as the driving force.
(38) PESTICIDE, Aerosol	Various insects around the country require different types of insecticides. Consult with reputable manufacturers before using any pesticide.

## APPENDIX A — TOOLS AND MATERIALS

---

(39) PESTICIDE, Pest Strip	For controlling flying insect, such as moth's, mosquitoes, and flies. Consult with reputable manufacturers before using any pesticide.
40) PLIERS, Slip-joint	Straight nose style. The most commonly used are 8-inch with wire skinner.
(40a) PLIERS, Diagonal cutting	General purpose, diagonal cutting pliers for cutting wire, nails, pins, screws, or light metal. Forged from alloy steel and with polished heads. Pliers should have standard cutting edges and cushion-grip handles. The most commonly used is 6 inches.
(41) RAGS, Wiping	Only highly absorbent rags should be used.
(42) RAKE, Garden	The bow style iron garden rake is recommended.
(43) RESPIRATOR, Disposable Dust/Mist	For protection against bloodborne pathogens and other work where protection against contaminated waste is needed.  <b><i>CAUTION: respirator use must comply with established OSHA requirements, contact your Safety and Health Manager before using any respirator to ensure procedure for training, fit testing and medical requirements are in compliance.</i></b>
(44) SAND BLASTER	The sand blaster should be small enough for one- or two-person operation.
(44a) SAND PAPER	For most situations, a medium sand paper is recommended.
(45) SAW, Pruning	A small saw with a blade approximately 18 inches long is recommended for the miscellaneous pruning required. A lockable folding blade design used by hunters/sportsman is practical for small limbing tasks.
(46) SCALE REMOVER	Acidic aqueous cleaning solution. For the removal of calcium, lime, or rust deposit.
(47) SCOURING PAD	Abrasive nylon pad.
(48) SCRAPER	A small metal scraper a little larger than a putty knife is recommended for scraping excess food and grease accumulations on grills.
(49) SHARPS DISPOSAL CONTAINER	Red colored, leak-proof, puncture-resistant box with clear reclosible lid for viewing contents. Clearly labeled with "Biohazard" symbol for easy identification. Available in 1 to 4 quart sizes. Meets OSHA's Bloodborne Pathogen specifications.

## APPENDIX A — TOOLS AND MATERIALS

---

- (50) **SHIELD, Face** A clear plastic protective face shield 9 inches long by 18 inches wide is recommended.
- (51) **SHOVEL, D-handle** The smallest square point is recommended.
- (52) **SHOVEL, Long-handle** The shorter round point is recommended.
- (53) **SHOVEL, Hand (fireplace type)** This small hand shovel or scoop is used for removing ashes from fire grills.
- (54) **SPONGE, Cellulose** The coarse texture is recommended. For more versatile use, sponges with an abrasive backing is recommended.
- (55) **SQUEEGEE** The small hand squeegee for windows is recommended.
- (56) **TOILET, Paper** Toilet paper should be carefully selected depending on the type of toilet being used. The Forest Service utilizes vault, pit, compost, recirculating, minimum flush, oil flush, standard flush, etc., and the requirements of each system vary.
- (57) **TOILET, Seat cover** If paper seat covers are used, consider the possibility of excess paper products clogging sewer lines, and low volume toilets, adding too much cellulose for compost toilets and hindering the pumping of vault, pit, and chemical recirculating toilets. (1)
- (58) **WASHER, Pressure** Variable pressure washers with adjustable pressure are recommended. Consider portability of unit. Consult GSA Federal Supply Schedules for contract specifications.
- (59) **WASH KIT, Personal** Designed for issue to the individual firefighter. The kit consists of plastic basin, soap, soap holder, hand towel, bath towel, and wash cloth.
- (60) **WATER CONTAINER** Transparent, rectangular, polypropylene or polyethylene container to be used as a portable water supply for washing hands. Container should have a lever type spigot, sturdy carrying handle, and meet FDA approval for potable water storage. Recommended capacity is 2-5 gallons.
- (61) **WRENCH, Open-end adjustable.** The 10-1/2-inch size is adequate.

## APPENDIX B—SOURCES OF SUPPLY

---

### **General Procurement Products:**

Tools and materials listed in Appendix A are available through commercial janitorial or custodial equipment suppliers listed in your local phone book. Some equipment and tools may also be rented through local rental agencies.

For large quantity orders, the use of GSA's Stock Catalog and Federal Supply Schedule is recommended. Procurement of some tools and equipment is mandatory. Consult your unit procurement officer for further information or restrictions on open market purchases.

## APPENDIX C — CLEANING COMPOUNDS

---

In 1978, a Forest Service survey showed that approximately 100 different cleaning products were being used within 400 Ranger Districts. With this number of products being used, it was apparent that comparison testing of the products was impractical.

For the type of cleaning involved in campgrounds and picnic sites, products have been divided into six broad categories. These are:

- ☛ Pine Oil Cleaners and Disinfectants
- ☛ Quaternary Ammonium Cleaning/Disinfecting Solutions
- ☛ Alkaline Cleaners
- ☛ Acid Cleaners
- ☛ Scouring Powder
- ☛ Bleach

***Note: The following labeling terminology is used for antimicrobial pesticides by manufacturers and conforms to terminology used by the Environmental Protection Agency (EPA).***

**Sterilizers or sterilants** are intended to destroy all viruses and all living bacteria, fungi, and their spores on inanimate surfaces. Sterilization is the highest level of antimicrobial activity.

**Disinfectants** are intended to destroy or irreversibly inactivate specific viruses, bacteria or pathogenic fungi, but not necessarily their spores, on inanimate surfaces. Disinfectants are intended to provide a lower level of activity than sterilization.

With some exceptions (i.e., household bleach), disinfectant products considered appropriate for cleanup of environmental surfaces contaminated by bloodborne pathogens (HVB/HIV) must be registered with the EPA as a tuberculocidal.

A brief description of several commonly used cleaners follows:

conditions require them.

Consult your local GSA representative for additional recommendation on specific cleaning applications.

## APPENDIX C — CLEANING COMPOUNDS

---

### 1. Pine Oil Cleaners and Disinfectants

Pine Oil cleaners and disinfectants are useful as all-purpose cleaning and disinfecting agents. However, these products are not currently on EPA's list of products registered as tuberculocidal or HIV-1 disinfectants.

#### Pine Oil Disinfectant

This is a disinfectant detergent composed primarily of soaps and pine oil (distilled pine resin). Pine oil is recommended by the manufacturer for all hard surfaces including wood, concrete, metal, and ceramic normally found in restrooms.

Pine oil disinfectant is available through General Services Administration (GSA). It is listed in the GSA's "Industrial Products" supply catalog under "Disinfectant, Germicidal, and Fungicidal," and is available in quart, gallon, and 55-gallon containers.

#### Pine-Sol Cleaner

This is another disinfectant detergent composed primarily of soaps and pine oil. It is recommended for use on all hard finished surfaces, both natural and painted. The manufacturer does state, however, that if used on rubber or asphalt tile, it should be rinsed immediately. The manufacturer also states that it should be kept away from food, heat, sparks and flame, and that containers should be rinsed before they are discarded.

Pine-Sol is not available through GSA. It is sold through retail outlets, such as grocery and hardware stores, in 1-quart containers. By ordering through a Clorox Company wholesaler, it is also possible to obtain Pine-Sol in 1-gallon containers.

### 3. Quaternary Ammonium Cleaners and Disinfectants

Quaternary Ammonium based cleaners ("QUATS") are useful as all-purpose cleaning and disinfecting agents and acceptable products for disinfecting environmental surfaces contaminated with the HIV virus but not tuberculocidals [i.e., hepatitis B (HVB) virus]. QUATS are of a group of cleaners/disinfectants usually distinguished by the presence of the active germicidal agent, alkyl dimethyl benzyl ammonium chloride and other ammonium chloride compounds.

#### Simple Green d

Simple Green d is combination biodegradable detergent, disinfectant, and deodorizer (sassafras scent). Active ingredients in this product are octyl dimethyl ammonium chloride, dioctyl dimethyl ammonium chloride, didecyl dimethyl ammonium chloride, and alkyl dimethyl ammonium chloride.

It is recommended by its manufacturer for use on hard surfaces such as concrete, tile, porcelain, stainless steel, glass, vinyl flooring, and washable paint.

Undiluted liquid Simple Green d is a mild eye irritant and prolonged skin contact may irritate the skin. Therefore, as with all chemical products, should be handled with care. Simple Green d is available through GSA .

#### Air Kem A-33

A-33 is a combination detergent, disinfectant, and odor counteractant. Active ingredients in this product are N-alkyl dimethyl benzyl ammonium chlorides, tetrasodium ethylene diamine tetracetate, and essential oils.

## APPENDIX C — CLEANING COMPOUNDS

---

It is recommended by its manufacturer for use on hard surfaces such as tile, porcelain, stainless steel, glass, vinyl flooring, and washable paint.

The manufacturer recommends A-33 for use on all hard-sealed surfaces. Although literature on A-33 does not discuss using it on unfinished wood surfaces, according to the 1978 survey it is the most widely used product within the Forest Service for cleaning natural wood. When asked specifically about this use, the manufacturer replies that it will not harm any unfinished wood surface that is not harmed by water. The liquid is diluted at a ratio of 2 ounces per gallon of water to make a cleaning solution.

Undiluted liquid A-33 is a moderate irritant to skin and eyes and therefore should be handled with care. However, the manufacturer states that it is not a strong enough irritant to require the use of gloves and face mask when handling, and that when diluted to suggested working strength, it is not irritating at all—even to the eyes. A-33 is available through GSA .

### 4. Alkaline Cleaners

Alkaline cleaners are particularly effective in removing oils and greases, however, such cleaners are characterized by a residue film left on the cleaning surface.

### 5. Acid Cleaners

These cleaners include acidic aqueous cleaning solutions containing phosphoric acid, glycolic acid, oxalic acid, sulfamic & hydroxyactic acids, or citric acid. Acid cleaners are effective in removing scale (calcium, lime, or rust) deposits from concrete and tile formed in showers and restrooms. Products commonly used include: Lime-A-Way, X-14, and CLR.

The user should be reminded that such products are acidic and always wear protective gloves, wash exposed skin surface after handling product, and thoroughly rinse/flush cleaning surfaces with clean water.

### 6. Scouring Powder

Composition of different brands of scouring powder varies, but all apparently contain chemical cleaning agents, such as sodium phosphate, sodium hypochlorite (bleach), and abrasive polishing agents such as pumice.

Scouring powder is useful in removing soil from most hard surfaces. The user should always read instructions on the container before using any scouring powder, as some brands warn against mixing with other types of cleansers, and some warn that use on certain surfaces may cause damage.

Scouring powder can be purchased from GSA, and is also available through retail sources under various trade names.

### 7. Bleach

Bleach is sold commercially under many trade names and is available through GSA as “sodium hypochlorite (5.25 %) solution.” It is an excellent sanitizer, but is not a particularly good cleaning agent. Better overall results can usually be obtained by using a product that is intended to be both a disinfectant and a detergent. Bleach, though not registered as a tuberculocidal, is acceptable for disinfecting of environmental surfaces and for decontamination of sites following initial cleanup (i.e., wiping up) of spills of blood or other potentially infectious materials. The recommended dilution ratio is between 1:10 and 1:100 with water.

## APPENDIX C — CLEANING COMPOUNDS

---

The specific products discussed here were identified by name only because they happened to be the most widely used. There may be similar, less widely known, products that will do as good a job in cleaning.

As a general recommendation, it is suggested that a "QUAT", scouring powder, and bleach be purchased for general cleaning of campground and picnic sites. In most cases, these are all that will be needed. Acid- or alkaline-type cleaners and pine oil cleaners may be added if specific conditions require them.

Consult your local GSA representative for additional recommendation on specific cleaning applications.

# APPENDIX D — RECREATION SITE INSPECTION CHECKLIST

Recreation Site or Area Name:		Forest:	
Recreation Site or Area Kind:		District:	
(Place completed form in site folder)   Inspector:			Date:

Part A			
Item	Condition <small>(For Conditions Needing Correction--Complete Part B.)</small>	Correction Priority High / Low	
<b>A. Camp or Picnic Unit</b>			
1. Tables	stable, bolts and nuts tight, tops and seats sound, splinters and sharp edges removed, support sound and stable, sanitary		
2. Fire Facility	stable, good condition, no sharp edges, safe facility and proper location		
3. Refuse Container	stable, sanitary, no sharp edges, good condition, stationary		
4. Tent Pad	surface maintained with drainage, sharp edges and obstacles removed		
5. Family Unit	safe location, trees pruned, litter and debris removed, area maintained, area drained, remove (overall) nails and wire		
<b>B. Toilets</b>			
1. Building	structure sound, fixtures safe and secure, door hinges and latches secure, security of deodorants and pest strips		
2. Vault	no cracks or leaks apparent, proper drainage		
3. Grounds	proper drainage, approaches safe, litter and debris removed, proper signing		
4. Septic Tank/Sewer Line	no ground setting, drainage away from manholes, functioning as designed, pumped or inspected once a year		
<b>C. Roads and Trails</b>			
1. Access Road	good sight distance, proper drainage		
2. Interior Road	good sight distance, proper drainage		
3. Parking Lot & Spurs	surface maintained, proper drainage, barriers and striping adequate		
4. Signs	good visibility, post and bolts tight, installed as needed		
5. Trails	surface maintained, proper drainage, clearance necessary for users		
6. Bridges	safe approaches, handrails secure, proper drainage, tread sound		
7. Steps, Walks, Retaining Walls	properly maintained and safe, proper drainage, hazardous trees and limbs removed		
<b>D. Signing</b>			

## APPENDIX D — RECREATION SITE INSPECTION CHECKLIST

<b>Part A</b>		
<b>Item</b>	<b>Condition</b> (For Conditions Needing Correction--Complete Part B.)	<b>Correction Priority</b> High / Low
1. Signs & Posters	secure, timely and appropriate, proper location	
2. Information Bds.	proper location, current information, attractively arranged, safe and secure	
3. Special Orders	current, proper location	
<b>E. Fee Collection</b>		
1. Signs & Posters	appropriate, visible, neatly arranged	
2. Fee Envelopes	no sharp edges on dispenser, visible	
3. Fee Deposit	no sharp edges on deposit box, safe and good sight distance, adequate space, convenient to station	
<b>F. Swimming Sites</b>		
1. Bathhouse	structure sound, sanitary, proper drainage, fixtures safe and secure	
2. Life-saving	per site safety plan, proper location, usable visible	
3. Signs & Posters	appropriate and timely, visible, secure	
<b>G. Boating Sites</b>		
1. Boat Ramps	check for cracks, surface and undercutting erosion, rip rap in place	
2. Boat Docks	safe, secure, sharp edges removed, mechanically sound, safe tread surface	
3. Signs & Posters	in place, appropriate, visible, current	
4. Parking Lots	surface maintained, proper drainage, barrier and striping adequate	
5. Other Facilities	safe, functional, appropriate	
<b>H. Drinking Water Supply</b>		
1. Hand pump	sanitary, mechanically sound, surface drainage concrete slab in good condition pump base, flanges and rod packing tight and sealed	
2. Hydrant & Fountains	sanitary, operable, mechanically sound, drain valve operable, adequate drainage, post and pipe and stable, daylight drain screened	
3. Chlorinator	cleanliness, ventilated, surface and spill water drainage, mechanically sound, consult manufacturer's manual for specific items to check	
4. Storage Tank	surface drainage, interior clean, adequate manholes and sealed, main valve operable, daylight drain screened, leaks	
5. Source	sanitary, protected, surface drainage, intake valves, free of rust and operable, drain visible and screened	
6. Distribution Line	valves located, accessible and operable, daylight drains visible and screened, leaks, meter equipment accessible and operable	
<b>I. RV Sanitary Station</b>		
1. Potable Water	insure that it is potable, properly signed and visible, protected	
2. Non-Potable Water	Properly signed, surface drainage	
3. Road	proper drainage, good sight distance, surface maintained, adequate barriers	
4. Disposal System	operable, surface drainage	

# APPENDIX D — RECREATION SITE INSPECTION CHECKLIST

<b>Part A</b>			
<b>Item</b>	<b>Condition</b> (For Conditions Needing Correction--Complete Part B.)	<b>Correction Priority</b> High / Low	
5. Signs	visible, maintained, appropriate		
<b>J. Miscellaneous</b>			
1. Fences/Barriers	stable, appropriate		
2. Graywater Disposal	operable and surface drainage		
3. Gates	maintained, sharp edges removed, operable		
4. Play Areas	litter and debris removed, equipment maintained, sharp edges removed, surface maintained		
5. Amphitheater & Campfire Circle	stable facilities, no sharp edges or splinter, supports sound and stable, sanitary, safe access and clearance		
6. Chemicals & Cleaning Agents	proper and secure storage, use and disposal of chemicals-insecticides, weed killers, deodorants, cleaning agents		
7. Wild Animals	nuisance animals, potential carriers of plague, hantavirus, or rabies, poisonous snakes		
<b>K. Other (specify)</b>			



# TREE HAZARD EVALUATION FORM

FOREST: \_\_\_\_\_ DISTRICT: \_\_\_\_\_ SITE NAME: \_\_\_\_\_

DATE OF INSPECTION: \_\_\_\_\_ EVALUATED BY: \_\_\_\_\_

REVIEW AND COMMENTS BY: \_\_\_\_\_  
(District Ranger)

		UNIT NO.	RISK VALUE																					
1/		MAP NO.																						
		TREE NO.																						
		D.B.H. (MINIMUM 7")																						
TREE SPECIES	'A'	Pinyon, junipers, scrub oak	1																					
		ponderosa pine, 5-needle pines, Douglas-fir	2																					
		Spruce/fir, aspen, cottonwood, lodgepole pine	3																					
POTENTIAL TARGET(S)	'B'	trails (low use), signs, etc.	1																					
		temporary structures, trails (heavy use)	2																					
		permanent structures, parked vehicles, people	3																					
DEFECT(S) PRESENT	'C'	no visible defect	0																					
		slime flux, small mechanical injury	1																					
		limb defects, brooms, frost cracks, lightning scars, large mechanical wounds, forked trees, bole cankers	2																					
		exposed roots, bole cankers (decayed), dead top, conks, punky knots, butt rot, basal cavity, leaner (unnatural), root rot, dead trees	3																					
RISK RATING	3/ Ax	HIGH (21-27)																						
	Bx	MED. (10-20)																						
	C	LOW (0-9)																						
INTERNAL INSPECTION	4/	increment borings (yr.) taken																						
		inches sound wood																						
		year next boring recommended																						
RECOMMENDED ACTION		Fell																						
		Top																						
		Prune																						
		Remove Target																						
		Observe																						
		None																						
		Other																						
	Date Corrective Action Taken																							
			COMMENTS																					

- 1/ Prepare map of hazard tree location on reverse side of form.
- 2/ Any tree with a risk value of 1 or 2 may require increment boring; a value of 3 requires increment boring.
- 3/ To determine Risk Rating (High, Medium, Low) for each tree evaluated, sum risk values (1, 2, & 3) under A, B, C (value not to exceed 3) and multiply sums AxBxC (i.e. Risk Rating cannot exceed 27).
- 4/ Tree Hazards: Recognition and Reduction in Recreation Sites, Rocky Mtn. Tech. Rep. R2-1 (Revised 1981) See Figure 7.

# HAZARD TREE LOCATION

<p>SAMPLE</p> <p>12" R.P.P. ① 24' N 55° W</p> <p>8" Aspen ② 15' N 30° E</p> <p>UNIT # 10</p>	<p>SAMPLE</p> <p>12" L.P.P. ① 12' N 20° W</p> <p>10" L.P.P. ② 10' S 60° W</p> <p>8" L.P.P. ③ 28' N 45° E</p> <p>Parking Lot #2</p>
<p>1</p>	<p>2</p>
<p>3</p>	<p>4</p>
<p>5</p>	<p>6</p>

# APPENDIX E—JOB HAZARD ANALYSIS FORM

<b>USDA Forest Service</b>	1. Primary Job/Project:	2. Location:	3. Unit:
<b>JOB HAZARD ANALYSIS</b>	4. Name of Analyst:	5. Job Title of Analyst:	6. Date Prepared:
7. Tasks/Procedures	8. Hazards:	9. Abatement Actions: (Engineering Controls; Substitution; Administrative Controls; Personal Protective Equipment and Clothing, etc.)	
10. Line Officer Signature:		11. Title:	12. Date:

Adapted from Form FS-6700-7 (4/94)

# APPENDIX E—JOB HAZARD ANALYSIS FORM

---

## Instructions

The Job Hazard Analysis is prepared at the same time as the Project Work Plan.

Blocks 1, 2, 3, 4, 5, and 6 are self-explanatory.

Block 7. Identify all tasks/procedures associated with the job/project and location that have potential to cause injury or illness to personnel and damage to property or materiel.

Block 8. Identify all known or suspect hazards associated with each respective task/procedure listed in block 7. Hazards can be identified by:

- a. Observing the job.
- b. Discussing job/project with participants, e.g., equipment operators.
- c. Researching past accidents/incidents.
- d. Researching the Health and Safety Code Handbook, FSH 6709.11 or other appropriate literature.
- e. A combination of the above.

Block 9. Identify appropriate actions to reduce or eliminate the hazards identified in block 8. Abatement measures are listed below in order of the preferred abatement method:

- a. Engineering Controls (most desirable method of abatement). For example, machine guarding and fume hoods.
- b. Substitution. For example, switching to a low flash point solvent.
- c. Administrative Controls. For example, limiting exposure by reducing the work schedule.
- d. Personal Protective Equipment (least desirable method of abatement). For example, requiring the use of respirators in an atmosphere containing asbestos hazards.
- e. A combination of a, b, and c.

Block 10. The Job Hazard Analysis must be approved by a line officer. Attach a copy of JHA to purchase orders as line officer justification for the procurement of personal protective clothing and equipment and safety equipment.

Blocks 11 and 12 are self-explanatory.

---

## NOTES



*“Our goal is to keep our recreation sites in a neat, safe, and sanitary condition so that visitors will not be distracted from their recreation pursuits by poor housekeeping. Recreation facilities should always be clean and neat regardless of their age or condition. We will continue to live with many old improvements, but they can still be kept clean and neat.”*