



The
UNIVERSITY
of **VERMONT**

**Green Cleaning Policy and Practices of the
University of Vermont for the
First Year Residential Hall and
Dining Facility LEED project**

April 2016

Table of Contents

Objectives	2
Staff Responsibilities	2
Staff Roles	2
Personnel Training	2
Safety Measures	2
Standard Operating Procedures	3
General Cleaning	3
Dust Mopping	3
Vacuuming	3
Floor Care	3
Carpet Care	4
Entryway Maintenance	4
Pest Control	4
Standards	4
Cleaning Equipment Standards	4
Cleaning Products	5
Paper Products	6
Cloths and Wipes	7
Floor Care Systems	7
Entryway Systems	7
Innovations	7
Aiken Eco-Machine TM	7
Compost Collection	8
Washers and Dryers	8
Appendix	8
A. Green Certifications	8
B. Organization Chart	10
C. Cleaning Schedule	12
D. Visual Guide for Cleaning Procedures	19
E. MSDS	20
F. Custodial Service Awards	26
G. Composting	26
Acknowledgements	27

Objectives

This purpose of this document is to consolidate and present the green cleaning practices of the University of Vermont with the intent of review by the U.S. Green Building Council (USGBC) to achieve an Innovation in Design credit through the Leadership in Energy and Environmental Design (LEED) rating system. These green cleaning practices were created and implemented to help ensure the health and safety of UVM students, staff, visitors, and affected indoor and outdoor environments.

The LEED rating system developed by the USGBC is an internationally recognized green building certification system whose standards are followed by UVM. Green Seal (GS) and ECOLOGO by UL are also sources for our green cleaning standards (See Appendix A for more details).

The Vision of Custodial Services, “We will lead our industry in Customer Satisfaction, Professionalism, Quality, Sustainability, Safety, and Employee Development while remaining Fiscally Responsible,” will continue to be upheld, guided by our commitment to diversity, social justice, and Our Common Ground. We value and embrace individual differences across campus. We measure our success by metrics which include empowering our staff, achieving continuous improvement, and implementing environmental sustainability initiatives.

Staff Responsibilities

Staff Roles

See Appendix B for a sample Custodial Organization Chart.

Personnel Training

The University of Vermont custodial services team is made up of a diverse group of over 200 staff members. As of 2015, the Custodial Services staff represented 22 countries speaking 28 different languages. UVM Custodial Services provides a combination of on-staff translators for Vietnamese and Bosnian, the two most common languages spoken among staff. Other translators are brought in regularly for other languages, such as Chinese, when needed. Translators are hired for the purpose of safety reasons. In combination with these translators, most tasks employ on the job training, where staff members are partnered to learn proper procedures. Visual guides are also made available wherever possible (See Appendix D for example).

Collecting occupant feedback and continuous improvement

The Custodial Services team receives feedback multiple ways, including a *customer satisfaction survey* from the entire University community in the fall, and specifically from the laboratories in the spring. They also hold MOU structured meetings, post project and work order fulfillment meetings, and hold public forums and publicize when service changes occur on campus. Additionally, a contact email address and telephone number is publicized on the Custodial Services website (<http://www.uvm.edu/custodial/?Page=contact.html>).

Continuous improvement is achieved by working with product vendors as a “test site” for new and innovative cleaning tools and products (such as ionized water instead of chemicals), attending association trade shows, and working with internal constituents such as Risk Management and the Training and Compliance Office on reducing hazardous materials associated with Custodial Services.

Safety Measures

Labels and Material Safety Data Sheets (MSDS)

- MSDS are accessible for all staff to reference.
- Supervisors have access to them and introduce them to staff during initial training.
- See Appendix E for main chemical MSDS.

OSHA and VOSHA

Custodial services adheres to OSHA, VOSHA, and general industry standards. The Occupational Safety and Health Administration (OSHA) serves to assure safe and healthful working conditions. In cooperation with OSHA, the Vermont Department of Labor sets and enforces standards and provides training, outreach, education, and assistance to employees.

Hand Washing Procedures

All custodial staff are instructed to wash their hands according to the *OSHA Hand Hygiene Recommendations* (https://www.osha.gov/dte/grant_materials/fy10/sh-20839-10/hand_hygiene.pdf), including modifications which may include using non-alcohol-based hand sanitizer which is the current product available for use on campus. Additionally, all Custodial staff must wash their hands each time they change their gloves, and at break. The University has also created an *Exposure Control Plan for Blood borne Pathogens* document (see Appendix H).

Vulnerable Populations

The University of Vermont custodial services team provides the university community with a clean, safe, and healthy environment in which to live, learn, and work. All client needs and special requests shall be considered and accommodated as required and as we are able to. For instance, for vulnerable populations including those who may have chemical sensitivities, fragrance-free soaps are available for use. Additionally, for those with sensitivities to airborne elements, cleaning schedules and standard operating procedures will continue to be adjusted on a case-by-case basis. Lastly, supervisors will continue to work with custodians who may require physical accommodations in order to complete their tasks, and standard operating procedures will be adjusted as necessary.

Standard Operating Procedures

General Cleaning

General cleaning of all surfaces are performed once a week at minimum. Restrooms and other public high-traffic areas are cleaned a minimum once a week but usually daily.

- Only microfiber cloths are used. The use of paper cloths has been eliminated aside from paper towels for break rooms and kitchens.

- Cloths are used with the Lotus® PRO Chemical-Free Cleaning Solution or Green Seal™ Certified Clean by Peroxy® all-purpose cleaner.
- When cloths can no longer be used effectively by maintenance staff, they are given to Residential Life for student cleaning of dorm rooms and en-suite bathrooms.
- GS Neutral Disinfectant Cleaner is used primarily in restrooms on all touch zones and all fixtures.

Dust Mopping

Dust mopping of floors, stairways, and corridors is performed daily.

- Microfiber dust mops are used in place of dry or chemically treated mops.

Vacuuming

Vacuuming of floors, including carpets, is performed a minimum of once a week. Public places a weekly complete vacuuming and daily spot vacuuming.

- Vacuum bags are checked periodically and changed once they are half-full.

Floor Care

All floors are swept, dust mopped, or wet mopped with ozonated water a minimum of once weekly. Public areas daily.

- Auto-scrubbing performed daily during winter months and three times a week during warmer months.
- Ceramic tile, Marmoleum, and cork require less care

Carpet Care

Carpets are deep cleaned once a year or more.

- Hallways once a year and spot cleaned as needed.
- Event spaces done four times per year and spot cleaned as needed.

Entryway Maintenance

Entryway maintenance is performed a minimum of once a week.

- Walk off matting for entryways is all Anderson ECOLOGO certified.
- A daily dry vacuuming is performed with wet vacuuming of mats performed approximately 4 times per year or more in high traffic areas.
- Wet floor signs are placed before damp mopping of entryway and removed after the floor has dried and the floor mats are replaced.
- Entryway mats shall be sized to fit entryways, as well as meet USGBC LEED requirements for Indoor Environmental Quality.

Pest Control

As needed standard treatments are used, including a food service areas BMP plan. It is mainly handled by Residential Life.

Standards

The intent of the following standards and requirements is to reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological, and particulate contaminants that negatively affect air quality, health, building finishes, building systems and

- The indoor environment is kept healthy and toxin-free because more than 90% of the cleaning supplies used in Davis meet environmentally sustainable standards as specified by the US Green Building Council. Toxin-free wastewater also means a cleaner, healthier Lake Champlain.
- For regular jobs in the Davis Center, the custodial staff uses an all-purpose cleaner from EnvirOx and for tougher cleaning jobs they usually rely on an environmentally safe degreaser called The Greasinator™, which is Green Seal Certified™, or a low-toxicity mineral cleaner, called Mineral Shock™.

Cleaning Equipment Standards

The following requirements are designed to protect the health of building occupants and maintenance personnel from powered cleaning equipment. The intent is to reduce the risk of exposure to potentially hazardous chemical, biological, and particulate contaminants that could negatively affect air quality, building systems and finishes, and the overall building environment. The requirements are in compliance with LEED v4 for Existing Buildings Operations and Management (updated October 1, 2014).

The following requirements are meant to reduce building contaminants and environmental impact. The janitorial equipment must meet these standards:

- Vacuum cleaners are certified by the Carpet and Rug Institute “Green Label” Testing Program and operate with a sound level of less than 70 dBA
- carpet extraction equipment is certified by the Carpet and Rug Institute’s “Seal of Approval” Testing Program for deep-cleaning extractors
- Powered floor maintenance equipment is equipped with devices for capturing fine particulates and operates with a sound level of less than 70 dBA
- Propane-powered floor equipment has high-efficiency, low-emissions engines with catalytic converters and mufflers that meet Environmental Protection Agency (EPA) standards for the specific engine size and operate with a sound level of less than 90 dBA
- Automated scrubbing machines are equipped with variable-speed feed pumps and on-board chemical metering to optimize the use of cleaning fluids or operate using only tap water and no added cleaning products
- Powered equipment is ergonomically designed to minimize vibration and noise
- Battery-powered equipment is equipped with environmentally preferable gel batteries
- equipment is designed with safeguards, such as rollers or rubber bumpers, to reduce potential damage to building surfaces

A log of all powered cleaning equipment must be kept to document the date of equipment purchase and all repair/maintenance activities and must include vendor specification sheets for each type of equipment.

Cleaning Products

The following requirements are meant to reduce the environmental effects of cleaning products. Cleaning products must meet one or more of the following:

- Green Seal GS-37 for general purpose, bathroom, glass and carpet cleaners used for industrial and institutional purposes
- UL EcoLogo 2792 for cleaning and degreasing compounds
- UL EcoLogo 2759 for hard-surface cleaners
- UL EcoLogo 2795, for carpet and upholstery care; Green Seal GS-40, for industrial and institutional floor care products
- UL EcoLogo 2777 for hard-floor care
- EPA Design for the Environment Program's Standard for Safer Cleaning Products
- and/or Cleaning devices that use only ionized water or electrolyzed water and have third-party-verified performance data equivalent to the other standards mentioned above (if the device is marketed for antimicrobial cleaning, performance data must demonstrate antimicrobial performance comparable to EPA Office of Pollution Prevention and Toxics and Design for the Environment requirements, as appropriate for use patterns and marketing claims).

Hand soaps and hand sanitizers must meet one or more of the following:

- no antimicrobial agents (other than as a preservative) except where required by health codes and other regulations (e.g., food service and health care requirements)
- Green Seal GS-41, for industrial and institutional hand cleaners
- UL EcoLogo 2784 for hand cleaners and hand soaps
- UL EcoLogo 2783 for hand sanitizers
- And/or EPA Design for the Environment Program's standard for safer cleaning products.

Disinfectants, metal polish, or other products not addressed by the above standards must meet one or more of the following:

- UL EcoLogo 2798 for digestion additives for cleaning and odor control
- UL EcoLogo 2791 for drain or grease trap additives
- UL EcoLogo 2796 for odor control additives
- Green Seal GS-52/53, for specialty cleaning products
- California Code of Regulations maximum allowable VOC levels for the specific product category
- EPA Design for the Environment Program's standard for safer cleaning products
- and/or Cleaning devices that use only ionized water or electrolyzed water and have third-party-verified performance data equivalent to the other standards mentioned above (if the device is marketed for antimicrobial cleaning, performance data must demonstrate antimicrobial performance comparable to EPA Office of Pollution Prevention and Toxics and Design for the Environment requirements, as appropriate for use patterns and marketing claims).

Paper Products

Disposable janitorial paper products and trash bags must meet the minimum requirements of one or more of the following:

- EPA comprehensive procurement guidelines, for janitorial paper
- Green Seal GS-01, for tissue paper, paper towels and napkins
- UL EcoLogo 175, for toilet tissue
- UL EcoLogo 175, for hand towels
- Janitorial paper products derived from rapidly renewable resources or made from tree-free fibers
- FSC certification, for fiber procurement
- EPA comprehensive procurement guidelines, for plastic trash can liners
- and/or California integrated waste management requirements, for plastic trash can liners (California Code of Regulations Title 14, Chapter 4, Article 5, or SABRC 42290-42297 Recycled Content Plastic Trash Bag Program).

Cloths and Wipes

- A color coded microfiber cleaning cloth system shall be used to ensure there is no cross contamination for services (i.e.: bathroom cloths are not used for cleaning windows).

Floor Care Systems

Equipment and products used in floor care systems must meet requirements listed above.

Entryway Systems

Equipment and products used in entryway systems must meet requirements listed above.

Innovations

Aiken Eco-Machine™

The Aiken Eco-Machine™ is an indoor constructed wetland which holds communities of aquatic micro-organisms, invertebrates, and wetland plants working in concert to treat the Aiken building's wastewater and recycle it for flushing toilets. Faculty, staff and students research improvements to the Eco-Machine and the wastewater treatment process. Cleaning staff are not involved in the cleaning or maintenance of this area.



Source: <https://i.ytimg.com/vi/tZRAWqpUnJQ/maxresdefault.jpg>

Compost Collection

As a result of a partnership between University Dining Services and the Intervale Center in Burlington, food scraps and coffee grounds from the Davis Center are collected each day and taken to Green Mountain Compost in Williston, VT. See Appendix E for compost collection data for the Davis Center waste stream.

Brown paper towel composting from restrooms (Currently Waterman)

Washers and Dryers

To eliminate the excess energy used when sending linens out to a professional cleaning service, on-site washers and dryers have been installed in the Davis Center to do all of the cleaning in-house.

Appendix

A. Green Certifications

ECOLOGO Certifications are voluntary, multi-attribute, lifecycle based environmental certifications that indicate a product has undergone rigorous scientific testing, exhaustive auditing, or both, to prove its compliance with stringent, third-party, environmental performance standards.



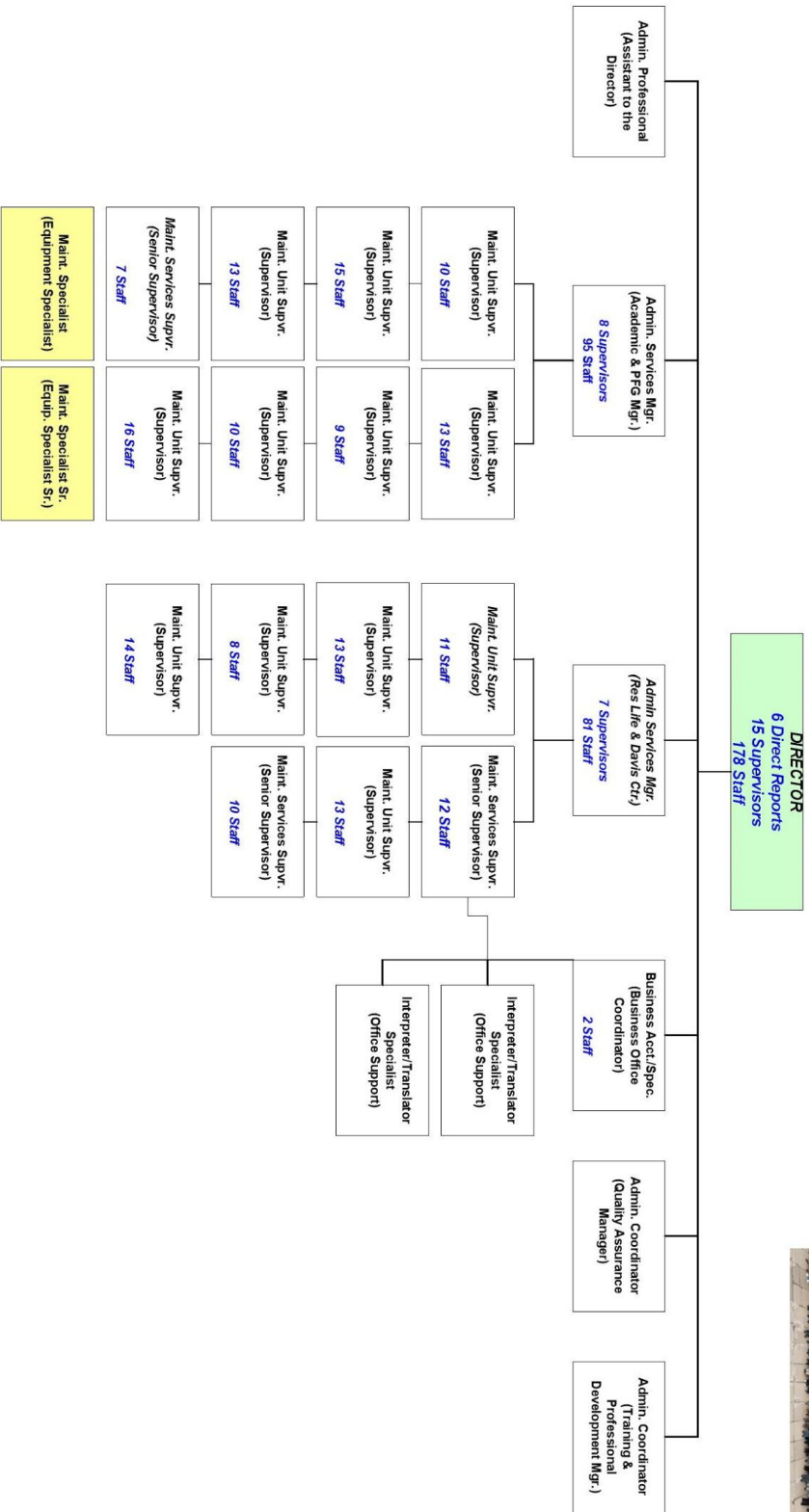
The LEED building certification is a program created by the U.S. Green Building Council to encourage sustainable building and sustainable renovations.



Green Seal develops life cycle-based sustainability standards for products, services and companies and offers third-party certification for those that meet the criteria in the standard.



CUSTODIAL SERVICES HEAD COUNT CHART
Revised: 04/28/15



Organization Chart

B. Cleaning Schedule

Cleaning Specifications	
<i>Apartments / Living Areas</i>	
Task Description	Annual Frequency
Provide additional services as required due to the unpredictable nature of campus and student needs	As Required
Empty general and recyclable trash, replace liners when soiled or torn. Remove trash to designated area.	Annually
Clean kitchen including sinks, counters, cabinets and walls.	Annually
Dust and damp wipe refrigerator exterior.	Annually
Dust and damp wipe stove exterior.	Annually
Clean refrigerator interior using approved cleaner.	Annually
Clean stove interior using approved cleaner.	Annually
Fully vacuum all carpeted areas from wall to wall.	Annually
Dust mop floors.	Annually
Dust furniture and spot clean all horizontal and vertical surfaces.	Annually
Dust areas above shoulder level and below knee level.	Annually
Vacuum fabric furniture. Wipe clean all hard surface furniture.	Annually
Damp wipe trash containers to remove soil and stains.	Annually
Perform all restroom cleaning procedures; apply germicidal cleaner to all fixtures, refill dispensers, empty trash and replace liners, spot clean mirrors and partitions, wipe fixtures clean, sweep and mop floors with germicidal cleaner.	Annually
Clean and disinfect tub & shower walls, fixtures, and other surfaces.	Annually
Hot-water extract carpeted areas using approved equipment and supplies.	Annually
Shampoo fabric furniture to remove soil and stains.	Annually
Completely strip and refinish all vinyl floors, apply three coats of approved floor finish and buff.	Annually
Machine scrub hard surface floors to include restrooms.	Annually
Machine wash walls using approved cleaner.	Annually

Cleaning Specifications

Cafeteria/Food Service

Task Description	Annual Frequency
Police dining areas daily to spot clean, remove trash, and pick up debris.	Daily When Open
Fully vacuum all carpeted areas from wall to wall.	Daily When Open
Damp mop floors to remove dirt and spills.	Daily When Open
Dust mop floors with a water-based chemically treated dust mop.	Daily When Open
Spot clean carpet using approved carpet spotting equipment and supplies.	Daily When Open
Dust and spot clean all horizontal and vertical surfaces.	Daily When Open
Dust areas above shoulder level and below knee level.	Weekly
Burnish finished floor using electric burnisher.	30 X Annually
Dust or vacuum air vents to remove loose dust, soil and cobwebs.	Quarterly
Machine scrub and recoat floors using approved floor finish.	3 X Annually
Dry extract carpets using approved equipment.	3 X Annually
Hot-water extract carpeted areas using approved equipment and supplies.	Annually
Completely strip and refinish floors, apply three coats of approved floor finish and buff.	Annually
Dust light fixtures to remove exterior dust and cobwebs.	Annually

Cleaning Specifications

Classroom / Lab

Task Description	Annual Frequency
Empty general and recyclable trash, replace liners when soiled or torn. Remove trash to designated area.	Daily
Dust furniture and spot clean all horizontal and vertical surfaces.	Daily
Spot clean interior partition and door glass.	Daily
Erase chalk board/white board and wash.	Daily
Dust mop or sweep hard-surface floors.	Daily
Spot mop floors to remove visible dirt and spills.	Daily
Spot clean telephones and sanitize receivers.	Weekly
Damp mop floors to remove dirt and spills.	Weekly
Burnish finished floor using electric burnisher.	Quarterly
Vacuum fabric furniture.	Monthly
Dust areas above shoulder level and below knee level.	Monthly
Dust or vacuum air vents to remove loose dust, soil and cobwebs.	Quarterly
Dust window dressings including horizontal and vertical blinds.	Quarterly
Machine scrub hard surface floors.	2X Annually
Dust light fixtures to remove exterior dust and cobwebs.	Annually
Shampoo fabric furniture to remove soil and stains.	Annually
Damp wipe trash containers to remove soil and stains.	Annually
Completely strip and refinish floors, apply three coats of approved floor finish and buff.	Annually
Machine scrub and recoat floors using approved floor finish.	Annually

Cleaning Specifications

Corridors

Task Description	Annual Frequency
Empty general and recyclable trash, replace liners when soiled or torn. Remove trash to designated area.	Daily
Dust corridor furniture; spot clean all horizontal and vertical surfaces including interior and door glass.	Daily
Dust mop/vacuum corridor or open areas	Daily
Scrub floors using riding automatic scrubber.	4 X Weekly
Dust areas above shoulder level and below knee level.	Monthly
Dust or vacuum air vents to remove loose dust, soil and cobwebs.	Quarterly
Burnish finished floor using electric burnisher.	Quarterly
Damp wipe trash containers to remove soil and stains.	Annually
Dust light fixtures to remove exterior dust and cobwebs.	Annually
Completely strip and refinish floors, apply three coats of approved floor finish and buff.	Annually

Cleaning Specifications

Entrances & Lobby

Task Description	Annual Frequency
Empty general and recyclable trash, replace liners when soiled or torn. Remove trash to designated area.	Daily
Dust mop floors	Daily
Clean door glass and other adjacent glass areas.	Daily
Damp mop floors to remove dirt and spills.	Daily
Dust furniture and spot clean all horizontal and vertical surfaces.	Daily
Police exterior areas to remove litter.	Daily
Empty and clean ash urns.	Daily
Light shovel and spread ice melt during inclement weather.	As Needed
Dust areas above shoulder level and below knee level.	Weekly
Dust or vacuum air vents to remove loose dust, soil and cobwebs.	Monthly
Shampoo and extract walk-off mats.	Quarterly
Machine scrub hard surface floors.	Quarterly
Damp wipe trash containers to remove soil and stains.	Annually
Dust light fixtures to remove exterior dust and cobwebs.	Annually

Cleaning Specifications

Restrooms

Task Description	Annual Frequency
Perform all daily restroom cleaning procedures; apply disinfectant cleaner to all fixtures, refill dispensers, empty trash and replace liners, spot clean mirrors and partitions, wipe fixtures clean, sweep and mop floors with germicidal cleaner.	Daily
Dust furniture and spot clean all horizontal and vertical surfaces.	Weekly
With a germicidal cleaner, completely damp wipe restroom partitions including high/low areas.	Weekly
Wash restroom walls with germicidal cleaner.	Monthly
Dust or vacuum air vents to remove loose dust, soil and cobwebs.	Monthly
Machine scrub restroom floors with germicidal cleaner.	Quarterly
Damp wipe trash containers to remove soil and stains.	Annually
Dust light fixtures to remove exterior dust and cobwebs.	Annually






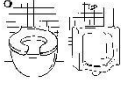






C. Visual Guide for Cleaning Procedures



DAILY BATHROOM / RESTROOM CLEANING PROCEDURES

Cleaners Needed:	Spray bottle of Lotus Ozone Cleaner	Spray bottle of #103 Disinfectant Cleaner	Mop Bucket of Lotus Ozone Cleaner
Supplies Needed:	Paper Towels Toilet Tissue	Hand Soap Trash Can Liners	Gloves Face Mask
Tools Needed:	Cleaning Cart / Trash Barrel or Caddy Wet Floor Caution Sign Broom & Dust Pan Microfiber Cleaning Cloths Toilet Bowl Swab	Putty Knife High Duster Wnad High Duster Head White Scouring Pads Green Scouring Pads	Goggles Urinal Screens/ Blocks Sani-Napkin Waxed Liner Microfiber Flat Mop- Blue Microfiber Flat Mop-Green Mopbucket for Flat Mops Magic Eraser Pads Instant Hand Sanitizer

Procedures for DAILY Bathroom Cleaning & Disinfecting:

1. Put on personal protection equipment -  gloves & goggles
2. Knock & Announce Service
3. Block door entrance with cart, barrel  Place **Wet Floor** caution sign and/or **Closed for Cleaning** sign
4. Pre-Spray  faucets, sinks, toilets & urinals using **#103 Disinfectant**. Allow to sit for 10 minutes. 
5. Empty & replace  trash can liners in all waste receptacles and sanitary napkin container after picking up loose litter. Spot clean receptacles with **Lotus Ozone Cleaner**
6. Refill all dispensers (hand soap, paper towels, toilet tissue and feminine hygiene dispenser). Use key to unlock paper towel and toilet dispensers. Drop the paper towel stub roll to the bottom of the dispenser and insert new roll. Use key to open and refill toilet paper, soap and hand sanitizer dispensers. Clean as you fill using the **#103 Disinfectant**
7. Flush toilets and urinals. Using the **#103 Disinfectant** in spray bottle, spray in & around entire toilet and urinal. Allow to sit for 10 minutes. Spray & wipe down surrounding wall surfaces. 
8. Using a toilet bowl swab,  clean the inside of the toilet bowl & urinal
9. Spray clean  mirrors with **Lotus Ozone Cleaner**
10. Dust all surfaces working top to bottom using a high duster tool. 
Pay attention to pipes, light fixtures , ceiling air vents & tops of partitions.
11. Wipe  down all pre-sprayed areas including faucets, sinks, door handles & outside of toilets and urinals with damp cloth. Polish all chrome & porcelain fixtures (leave toilet seat up after cleaning). Spot clean all partitions and stalls near urinals. Empty & spot clean sanitary napkin receptacles & replace liner bag. Replace any light bulbs that are not working.
12. Sweep or dust mop floor surfaces and hand mop floor with **Lotus Ozone Cleaner**. Pick up wet floor signs.  

D. MSDS



Safety Data Sheet

Spartan Chemical Company, Inc.

Revision Date: 17-Dec-2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: CLEAN BY PEROXY
Product Number: 0035
Recommended Use: Cleaning agent
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier: Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:
Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification
Skin Corrosion/Irritation: Category 2
Serious Eye Damage/Eye Irritation: Category 2A

GHS Label Elements

Signal Word:

Warning

Symbols:



Hazard Statements: Causes serious eye irritation
Causes skin irritation.

Precautionary Statements:

Prevention: Wash hands and any exposed skin thoroughly after handling.
Wear protective gloves
Wear eye / face protection

Response:

-Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
-Skin IF ON SKIN (or hair): Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash before reuse.
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage: Not Applicable

Disposal: Not Applicable

Hazards Not Otherwise Classified: Not Applicable

- Other Information:**
- May be harmful if swallowed.
 - Inhalation of vapors or mist may cause respiratory irritation.
 - Keep out of reach of children.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
water	7732-18-5	60-100
alcohol ethoxylate	34398-01-1	1-5
hydrogen peroxide	7722-84-1	1-5
alcohol ethoxylate	68439-46-3	1-5
quatamary amine	68478-94-4	1-5
fragrance	PROPRIETARY	<0.1

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

- Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Skin Contact:** Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical attention.
- Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or physician if you feel unwell.
- Ingestion:** Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if you feel unwell.
- Note to Physicians:** Contains hydrogen peroxide. Ingestion may result in distention of esophagus and stomach.

5. FIRE-FIGHTING MEASURES

- Suitable Extinguishing Media:** Product does not support combustion. Use extinguishing agent suitable for type of surrounding fire
- Specific Hazards Arising from the Chemical:** Combustion products are toxic. Releases oxygen when heated to decomposition which may intensify fire.
- Hazardous Combustion Products:** May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.
- Protective Equipment and Precautions for Firefighters:** Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.
- Environmental Precautions:** Do not rinse spill onto the ground, into storm sewers or bodies of water.
- Methods for Clean-Up:** Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE

- Advice on Safe Handling:** Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.
- Storage Conditions:** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.
- Incompatible Materials:** Sodium hypochlorite (or other hypochlorites). Metals.



Spartan Chemical Company, Inc.
Material Safety Data Sheet

SECTION I: PRODUCT INFORMATION

Product Name or Number (as it appears on label):
GS NEUTRAL DISINFECTANT CLEANER
Product Number: 3502
2-Liter Cartridge 103: 3513

Product Division:
Janitorial

Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee OH 43537

Product/Technical Information: **1-(800)-537-8990**
Medical Emergency: **1-(888)-314-6171 (24 hours)**
Chemical Leak/Spill Emergency: **CHEMTREC 1-(800) 424-9300 (24 hours)**

Shipping Description: Non-Hazardous Products

NFPA Ratings:	HMIS Ratings:
Health: 3 - Serious Fire: 0 - Minimal Reactivity: 0 - Minimal	Health: 3 - Serious Fire: 0 - Minimal Reactivity: 0 - Minimal Pers. Prot. Equip.: See Section VIII

SECTION II: HAZARDOUS INGREDIENTS

(Listed when present at 1% or greater, carcinogens at 0.1% or greater) All component chemicals are listed or exempted from listing on the "TSCA Inventory" of chemical substances maintained by the U.S. Environmental Protection Agency.

Chemical Name(s)	%Wt	CAS Registry No.	Table Z-1-A			NTP, IARC or OSHA Carcinogen
			TWA mg/m ³	STEL mg/m ³	CEILING mg/m ³	
Dialkyl dimethyl ammonium chloride	1-5	68424-95-3	Not Established	Not Established	Not Established	No
Alcohol ethoxylate	1-5	68439-46-3	Not Established	Not Established	Not Established	No
Alkyl dimethyl benzyl ammonium chloride	1-5	68424-85-1	Not Established	Not Established	Not Established	No
Ethanol	1-5	64-17-5	1900	Not Established	Not Established	No
Tetrasodium ethylene diaminetetraacetate	1-5	64-02-8	Not Established	Not Established	Not Established	No

SECTION III: PHYSICAL DATA

Boiling Point: 212 °F	Vapor Pressure: Not determined
Vapor Density (AIR = 1): Not determined	Solubility in Water: Complete
pH: 6-7	Specific Gravity (H ₂ O=1): 1.0
Evaporation Rate (but. ace.=1): <1	Percent Solid by Weight: 5-10
Physical State: Liquid	
Appearance & Odor: Clear to slightly yellow liquid, low odor	

SECTION IV: FIRE & EXPLOSIVE HAZARD DATA

Flash Point: > 212°F	Method Used: ASTM-D56
Flammable Limits: Not Established	Flame Extension: N/A
Extinguishing Media: Product does not support combustion. Use extinguishing media appropriate for surrounding fire.	
Special Fire Fighting Procedures: Wear NIOSH approved self-contained breathing apparatus and protective clothing. Cool fire-exposed containers with water spray.	
Unusual Fire & Explosive Hazards: Combustion products are toxic.	

SECTION V: HEALTH HAZARD DATA

Threshold Limit Value:	Not established	Primary Routes of Entry:	Inhalation, Skin Contact, Eyes
Effects of Overexposure:	CORROSIVE.		
Conditions to Avoid:	CAUSES IRREVERSIBLE EYE DAMAGE AND SKIN BURNS: Symptoms may include pain, redness, swelling and tissue damage. May be fatal if absorbed through the skin. HARMFUL IF SWALLOWED. Symptoms may include nausea, vomiting, pain and diarrhea. INHALATION OF SPRAY MIST MAY CAUSE RESPIRATORY IRRITATION. Breathing spray mist may cause coughing and difficulty breathing. Do not get in eyes, skin or clothing. Do not taste or swallow. Avoid inhalation of spray mist. Wash thoroughly with soap and water after handling.		
Conditions Aggravated by Use:	Use of this product may aggravate preexisting skin; eye and respiratory disorders including asthma and dermatitis.		

Emergency & First Aid Procedures:

Eyes:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses; if present; after the first 5 minutes; then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash contaminated clothing before reuse.
Ingestion:	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
Inhalation:	In case of respiratory irritation; move person to fresh air. If person is not breathing; call 911 or an ambulance then give artificial respiration; preferably by mouth-to-mouth; if possible. Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION VI: REACTIVITY DATA

Stability:	Stable	Incompatible Materials:	Strong oxidizers
Hazardous Decomposition Products:	CO, CO ₂	Hazardous Polymerization:	Will Not Occur

SECTION VII: SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:	Small spills of one gallon or less may be flushed with plenty of water to sanitary sewer system (if permitted by local sewer regulations). Dike and contain large spills with inert material and transfer liquid to containers for recovery or disposal.
Waste Disposal Method:	Same as above. Container disposal: Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate, or if allowed by state and local authorities, burn. If burned, stay out of smoke.

SECTION VIII: SPECIAL PROTECTION INFORMATION

Respiratory Protection:	Not normally required when good general ventilation is provided. However, if respiratory irritation occurs, use of a NIOSH approved respirator suitable for the use-conditions and chemicals in Section II should be considered.
Ventilation:	Provide good general ventilation. Local exhaust ventilation may be necessary for some operations.
Protective Gloves(Specify Type):	Rubber or other water-proof gloves are recommended.
Eye Protection(Specify Type):	Splash goggles are recommended to prevent eye contact.
Other Protective Equipment:	Eye wash stations and washing facilities should be readily accessible in areas where undiluted product is handled.. See 29 CFR 1910.132-138 for further guidance.

SECTION IX: SPECIAL PRECAUTIONS

Precautions; Handling & Storing:	Keep from freezing.
Other Precautions:	Keep out of reach of children.

© SCC 04/07/2011 Name: Ronald T. Cook Title: Manager, Regulatory Affairs
 GS NEUTRAL DISINFECTANT CLEANER Effective Date: 04/07/2011
 Ref: 29 CFR 1910.1200 (OSHA) Changes: New Product

This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as



Health	0
Fire	0
Reactivity	0
Personal Protection	A

Material Safety Data Sheet (MSDS)
lotus® PRO

Version Date:
April 2014

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION	
Product Name: lotus® PRO Synonym(s): Ozonated Water Catalog Code: LBUxxx, LSRxxx, LSCxxx, LQFCxxx CAS#: 7732-18-5 RTECS: ZC0110000 TSCA : TSCA 8(b) inventory : Water CI#: Not available Chemical Name: Water Chemical Formula: H ₂ O + O ₃	Contact Information: Tersano Inc. 5000 Regal Drive Oldcastle, ON N0R 1A0 Toll-free (U.S.): 1-800-808-1723 wecare@tersano.com www.tersano.com

SECTION 2. COMPOSITION AND INFORMATION ON INGREDIENT(S)		
Composition:		
Name	CAS #	% by weight
Water	7732-18-5	> 99.99 %
Ozone	10028-15-6	< 0.01 %

SECTION 3. HAZARDS IDENTIFICATION
Potential Acute Health Effects: Non-corrosive for skin. Non-irritant for skin. Non-sensitizer for skin. Non-permeator by skin. Non-irritating to the eyes. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation. Non-irritant for lungs. Non-sensitizer for lungs. Non-corrosive to the eyes. Non-corrosive for lungs.
Potential Chronic Health Effects: Non-corrosive for skin. Non-irritant for skin. Non-sensitizer for skin. Non-permeator by skin. Non-irritating to the eyes. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation. Non-irritant for lungs. Non-sensitizer for lungs.
Carcinogenic Effects: Not available.
Mutagenic Effects: Not available.
Teratogenic Effects: Not available.
Developmental Toxicity: Not available.

SECTION 4. FIRST AID MEASURES

Eye Contact: Not applicable.

Skin Contact: Not applicable.

Serious Skin Contact: Not available.

Inhalation: Not applicable.

Serious Inhalation: Not available.

Ingestion: Not applicable.

Serious Ingestion: Not available.

SECTION 5. FIRE FIGHTING MEASURES

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances: Not applicable.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Small Spill: Mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

SECTION 7. HANDLING AND STORAGE

Precautions: No specific safety phrase has been found applicable for this product.

Storage: Not applicable.

E. Custodial Service Awards

IEHA is a non-profit organization which certifies excellent persons employed in facility housekeeping at the management level. The members of Custodial Services who have earned a credential from IEHA are as follows:

- International. Executive Housekeeping Association (IEHA) Master REH Designation -- Leslye Kornegay, 2011-2016
- UVM Staff Women of the Year Award -- Leslye Kornegay, 2013-2014
- Johanna Brabham, *REH* 2011
- Paul Campo, *REH*, 4-year degree, 2013
- Caleb Gilbert, *REH*, 4-year degree, 2013
- Guy Shane, *REH*, 4-year degree, 2013
- Slavojka Avdibegovic, *CEH* 2013
- Emir Cicak, *CEH* 2013
- Bich Doan, *CEH* 2013
- Hasnija Dobraca, *CEH* 2013
- Matt Dugener, *CEH* 2013
- Dan Dulude, *CEH* 2013
- Gordie Leeuw, *CEH* 2013
- Mary Palin, *CEH* 2013

(*REH* is Registered Executive Housekeeper and *CEH* is Certified Executive Housekeeper)

F. Composting

Refrigerated composting in Davis Center

Acknowledgements

Thank you to Hannah Shmase and Allison Maynard for their work creating this document for future use in LEED certification. Also thank you to Paul Campo and Dan Dulude for their input on a wide array of custodial services information and to Green Building Coordinator Michelle Smith for her guidance.