

**NORTH CENTRAL MONTANA
REGIONAL WATER AUTHORITY**

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www.ncmrwa.com

Member Entities:

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City of Cut Bank

City of Havre

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At Large

Hill County Water District

November 28, 2018

Chippewa Cree Construction Corporation

Mr. Larry Morsette

P.O. Box 3008

Box Elder, MT 59521

RE: Federal Funding Considerations

Dear Mr. Morsette:

Since authorization of the Project, we have worked together to successfully maximize the limited Federal funding received to achieve significant progress. According to authorizing legislation, Federal funding between the Core System and the Non-Core System is split on a 64/36 percentage basis, respectively.

In our meeting yesterday, the Core team requested any available funds in the FY 2019 Budget from Reclamation's Rural Water Project funding be devoted solely to the Water Treatment Plant (WTP). After careful consideration, the Authority voted to allocate their entire percentage split of Reclamation's Rural Water Funding to advance the construction of the WTP. With this allocation to the WTP, we require our Non-Core engineering team, led by KLJ, be directly involved in the development of the concepts, design, and formal design review processes (30%, 60%, and 90%) of the WTP in its entirety. In addition, we request Non-Core Engineering Team contribute to the determination of specific scoped items to be included in the proposed Part 1 and Part 2 bid packages.

The Executive Committee recognizes the need for a WTP and we look forward to continuing to work with the Construction Corporation and the Chippewa Cree Tribe of the Rocky Boy's Reservation. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,



Larry Bonderud, President

North Central Montana Regional Water Authority

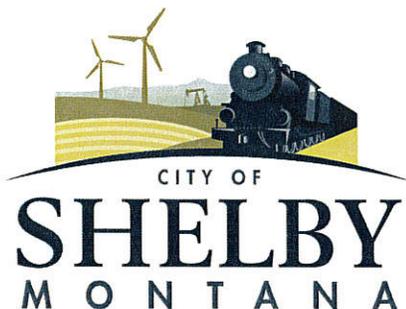
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cc: Senator Tester
Senator Daines
Representative Gianforte
Secretary Ryan Zinke
Harlan Baker, Chippewa Cree Tribe
NCMRWA Board Members
Greg Kruzich, Bureau of Reclamation
Jody Hellegaard, NCMRWA
Core Engineering Team
Non-Core Engineering Team
Anna Miller, DNRC
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CITY OF SHELBY

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Mayor: Gary McDermott
Council: Luke Casey, Deb Clark, Aaron Heaton,
Lyle Kimmet, Bill Moritz, Trent Tustian
Animal Control: Mark Warila
Attorney: William E. Hunt, Jr.
Building Inspector: Rob Tasker
Community Development: Lorette Carter
Finance Officer: Jade Goroski
Judge: Joe Rapkoch
Superintendent: Loren Skartved

November 29, 2018

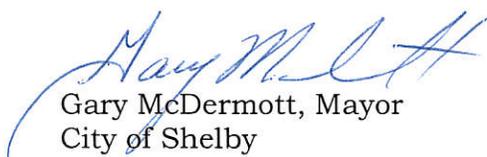
David Irvin, Transit Coordinator
Northern Transit Interlocal
226 1st St. So.
P.O. Box 246
Shelby, MT 59474

Re: Shelby Appointee ~ Northern Transit Interlocal Board

David,

Lorette Carter, Community Development Director will continue to serve on the Board of the Northern Transit Interlocal on behalf of the City of Shelby. In her absence, I will try to attend meetings and vote on transit matters.

Sincerely,


Gary McDermott, Mayor
City of Shelby

Cc: Shelby City Council



RECEIVED

DEC 03 2018

CITY OF SHELBY
Montana

Mayor
Super
CPD
12-3-18

PUBLIC NOTICE

The Montana Department of Environmental Quality's (DEQ) Materials Management Program has completed an update to the Integrated Waste Management Plan for 2018.

This notice informs the public of the proposed update and seeks public participation before the document is finalized.

Passed in 1991, the Montana Integrated Waste Management Act establishes integrated waste management as the policy for the state to manage municipal solid waste with the least adverse impact on human health and the environment. The Act is found in Title 75, Chapter 10, Part 8, of Montana Code Annotated. In addition to defining integrated waste management as "the coordinated use of a priority of waste management methods," the Act establishes priorities for waste management, sets a solid waste reduction target, requires state government to implement source reduction/recycling programs and procure recycled supplies and materials, and requires development and implementation of a solid waste management plan.

A copy of the draft document is available upon request from the Waste and Underground Tank DEQ's website at <http://deq.mt.gov/public/ea/WasteMgt>.

The deadline for submitting comments on the proposed document is the close of business on December 20, 2018. Comments may be submitted to DEQ via U.S. Mail to the above address, or via email to: wutbcomments@mt.gov. Please call (406) 444-5300 for information or help.

Dated this 20th day of November 2018

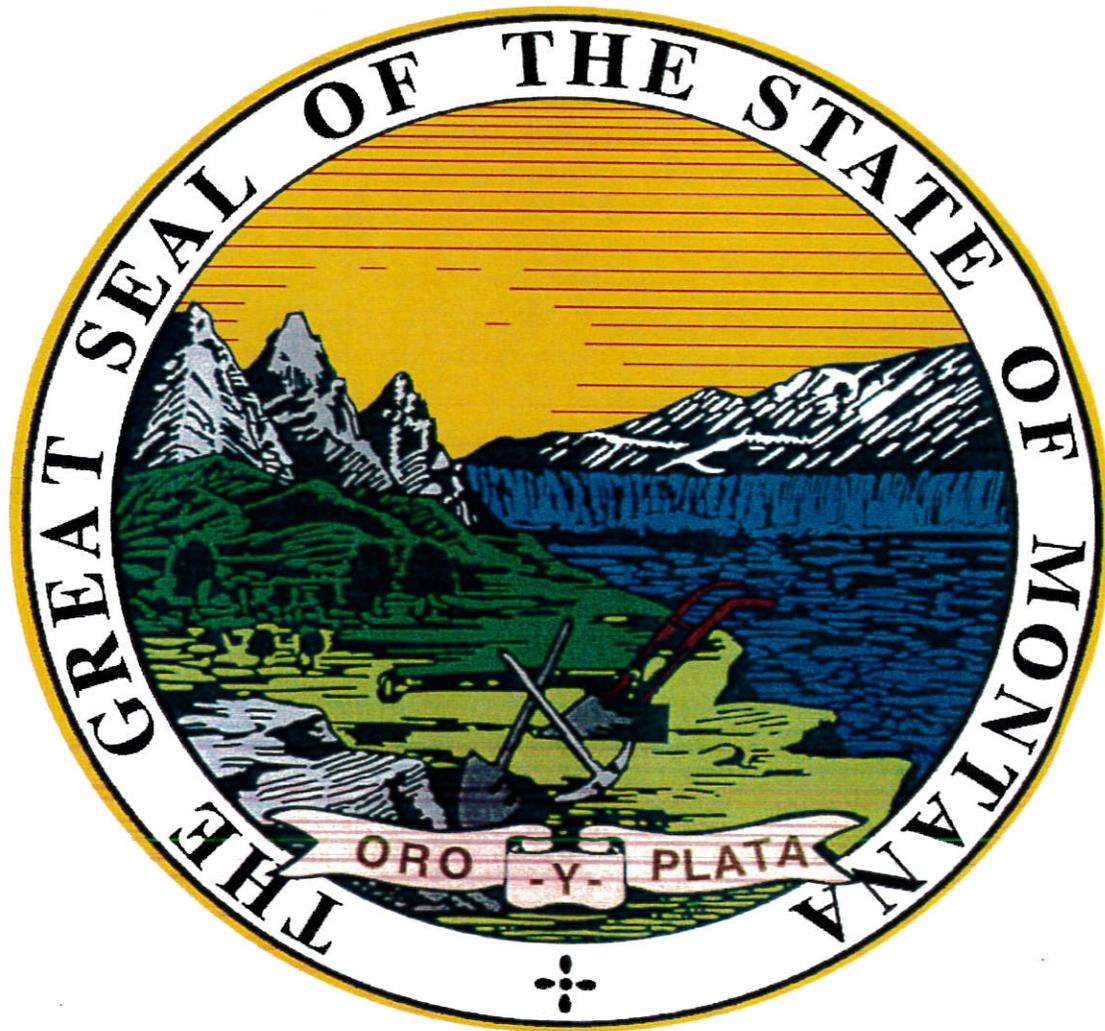
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DEC 03 2018

CITY OF SHELBY
Montana

2018

Integrated Waste Management Plan



Montana Department of Environmental Quality
Waste Management & Remediation Division
Waste & Underground Storage Tank
Management Bureau
October, 2018

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EXECUTIVE SUMMARY

Every day solid waste is generated in Montana, including household garbage, construction debris, electronics, recyclables, yard trimmings and other organic and inorganic wastes. The Montana Department of Environmental Quality (DEQ) regulates and manages this waste using a variety of prioritized approaches, such as source reduction, re-use, recycling, composting, and landfilling and incineration.

Every five years DEQ issues an Integrated Waste Management Plan (IWMP) that reports on materials management and source reduction trends in Montana. DEQ receives input from a stakeholder task force that included representatives of local governments, solid waste and recycling entities, environmental organizations, citizens and other interested parties. The report also sets aggressive goals to divert waste from landfills and compares these goals against past targets.

INTEGRATED WASTE MANAGEMENT

Passed in 1991, the Montana Integrated Waste Management Act establishes integrated waste management as the policy for the state to manage municipal solid waste with the least adverse impact on human health and the environment. The Act is found in Title 75, Chapter 10, Part 8, of Montana Code Annotated (MCA). In addition to defining integrated waste management as "the coordinated use of a priority of waste management methods," the Act establishes priorities for waste management, sets a solid waste reduction target, requires state government to implement source reduction/recycling programs and procure recycled supplies and materials, and requires development and implementation of a solid waste management plan.

Integrated Waste Management Hierarchy/Priorities

The integrated solid waste management policy is based on a hierarchy of prioritized approaches to managing waste (Section 75-10-804, MCA). These approaches, in order of priority, are:

1. **Source Reduction** (also Waste Reduction): Preventing waste in the first place.
2. **Reuse**: Giving a second life to a used product or material.
3. **Recycling**: Introducing one or more waste materials or products into a manufacturing process to produce a new product.
4. **Composting**: The controlled decomposition of organic materials by microorganisms.
5. **Landfill and Incineration**: The final destinations for most waste in United States.

Diversion Target Goals

The Act set the goal to reduce, according to the hierarchy, the amount of solid waste generated in the state and established recycling and composting reduction targets. Building on the work of the 1991 Legislature, the 2005 Legislature updated these target goals to better reflect the ability of DEQ to calculate waste diversion rates based on materials recycled and composted (Section 75-10-803, MCA). Currently, licensed facilities voluntarily report these amounts on renewal submissions, and a voluntary survey is sent to all recycling facilities not required to hold a license. Because this survey is not mandatory, some facilities choose not to submit recycling data. Therefore, it is likely that Montana waste diversion rates are higher than DEQ's calculated percentages.

The 2006 IWMP and Section 75-10-803, MCA adopted the updated target goals for recycling and composting:

- 17% of the state's solid waste by 2008
- 19% of the state's solid waste by 2011
- 22% of the state's solid waste by 2012

Montana DEQ uses yearly facility reports and voluntary surveys to calculate yearly diversion rates. A summary of diversion rates achieved since 2004 is given below.

- 2011 – 19.4%
- 2012 – 21.9%
- 2013 – 15.9%
- 2014 – 22.2%
- 2015 – 17.6%
- 2016 – 17.1%

Individual reports can be found at: http://deq.mt.gov/Land/recycle/recycling_statistics_page.

To date, Montana has often met and exceeded the diversion goals set by the 2005 Legislature. These successes can be attributed to increased community based recycling programs as well as focus on diversion of large volume materials such as e-waste, construction and demolition waste, and mercury-containing equipment and devices.

Education and Public Outreach

DEQ promotes the achievement of the Diversion Target Goals through distribution of information to the public, businesses, and industry on source reduction, reuse, recycling, and composting of wastes. Information is available on DEQ's website. Additionally, DEQ regularly presents information at various training events, conferences, and community meetings. Examples of past training events include plastics recycling, waste tire reuse/recycling, construction and demolition reuse/recycling, home composting, and community approaches for rural recycling. DEQ also works to expand the markets within Montana which can use recyclables and other "wastes" productively, thereby eliminating or delaying disposal in landfills. Information on upcoming training events can be found on DEQ's website at <http://deq.mt.gov/Land/solidwaste/training>.

Landfill Operator Training

Operational practices at municipal solid waste (MSW) landfills can have a major impact on the environment and public health. Training of landfill operators improves landfilling practices and standardizes operations around the state. Prior to state Fiscal Year 2012, DEQ used fees paid by landfills to provide training through a contract with the Montana Association of Counties and Montana State University Extension Service. As a result, 95% of all landfill operators in Montana are Manager of Landfill Operations (MOLO) certified by the Solid Waste Association of North America. Additional types of training offered include Occupational Safety and Health Administration (OSHA) 24-hour and 8-hour Hazardous Waste Operations and Emergency Response HAZWOPER refresher classes, landfill operator safety, household hazardous waste collection events, and composting. Beginning in state Fiscal Year 2012, DEQ assumed the lead role of coordinating the landfill operator training events. Surveys of participants show that quality and value of training opportunities has remained steady, or improved, since training was absorbed by DEQ. For more information on scheduled training events, contact DEQ's Waste and Underground Tank Management Bureau or view the training calendar at <http://deq.mt.gov/Land/solidwaste/training>

COMMUNITY APPROACHES TO INTEGRATED WASTE MANAGEMENT

Integrated waste management programs provide communities and local governments with the ability to manage costs, control items accepted at landfills, and extend the useful life of landfills. Costs related to solid waste management are increasing for most communities, regardless of whether the landfill is municipally or

privately operated. For most communities, most resources focus on the most expensive, least-preferred management option: landfilling. Effective solid waste cost management plans include concepts from each step of the waste hierarchy, reducing the volume of waste that must be buried and monitored.

- First Step: Source Reduction - avoid generating waste in the first place
- Second Step: Reuse - find an alternative use for the material
- Third Step: Recycling - divert materials and products that may have value from landfill
- Fourth Step: Composting - turn yard and food waste and other organics into a valuable product while conserving landfill space
- Final Step: Landfilling - most expensive, requiring continued monitoring after closures (when waste disposal fees no longer generate income)

Communities can shift focus and resources away from landfills when programs and infrastructures are built to support the alternative management concepts identified in the Montana Integrated Waste Management Act. Successful programs include actively engaging consumers and commercial businesses in source reduction, reuse, and recycling programs.

Rural Recycling

Rural recycling is a challenging but important issue for local and state government. Recycling programs must be developed with logistics of rural areas in mind. These communities are striving to meet recycling and reduction goals; however, they are hampered by their low populations and tax base, limited municipal and county budgets and personnel, low-density housing, and limited commercial development. Though they try to establish infrastructure to recycle, rural communities do not generate enough recyclables to lure large recyclers to their areas, nor do they produce enough recyclables to effectively start a full-scale recycling program of their own. Transportation costs to ship recyclables hundreds of miles for processing are often cost-prohibitive, and the value of the recyclables often aren't enough to pay for the fuel to haul it to market.

To fill this gap, DEQ has promoted the "Hub and Spoke" concept to help rural communities overcome these barriers. The Hub and Spoke concept is dependent on several communities working in partnership to collect and aggregate materials for recycling. For example, five communities all collect recyclables and ship the material to one central community, establishing a volume that economically supports hauling to a recycling business. In May 2011, DEQ provided a rural recycling workshop to bring community representatives together to find solutions to Montana's rural recycling challenges. The outcome was to work to build on the regional recycling approach. Building on the 2011 meeting, DEQ again gathered small communities together in 2012 to discuss waste diversion strategies and successes.

A regional recycling approach helps to overcome the obstacles encountered by individual rural governments. Benefits of this type of approach include increased volumes of recyclables and increased marketing opportunities, as well as:

- Potential for cooperative marketing, which can substantially increase revenues
- Conserved landfill capacity and avoided tipping fees to citizens
- Regional economic stimulus from new collection and processing jobs
- Shared costs for equipment, personnel, processing, transportation, marketing, and facility capital and operating costs

Contracts/Agreements

Contracts and legal agreements are useful tools for providing incentives to help reduce tonnage landfilled, while rewarding and encouraging waste prevention, reuse, recycling, and composting. Economic incentives such as Pay-As-You-Throw, revenue sharing, bonus and penalty payments tied to goals, franchise fees, and similar strategies are used by communities across the country to build successful integrated waste management systems.

Getting Started 101

Below are basic guidelines for revising current waste management practices to include an integrated approach. Earlier versions of this plan included more extensive explanations; the information below includes major points and is designed with rural communities in mind.

Local Government Framework for Implementing an Integrated Waste Management System

1. **Set up a citizens' solid waste advisory committee** - The committee should include both public and private interests as well as local experts. Committee responsibilities should be clearly outlined with specific goals or projects.
2. **Audit the local waste stream** - The information gathered will establish a foundation for any projections, while providing a snapshot of current conditions. DEQ's Materials Management Program can provide waste audit information to communities.
3. **Write a local integrated solid waste management plan** - A local plan addresses the economic conditions and resources unique to each community.
4. **Implement aggressive public education** - Educational campaigns are necessary to spread awareness and encourage participation. Use community partners and existing businesses to help spread the message.
5. **Provide incentives for waste reduction** - Economic incentives encourage the private sector to participate in solving solid waste management problems while supporting local recycling goals. In addition to economic incentives and disincentives, communities can offer awards programs and other public recognition programs to businesses or individuals that reduce waste.
6. **Target large industrial waste components** - Review local industry activities to identify large generators of waste material and work with them to develop alternative management strategies.
7. **Explore cooperative agreements and structures** - Small communities may be able to coordinate recycling drives, taking advantage of higher volumes of materials and lower transportation costs. Communities may be able to share mobile balers, shredders, and crushers.
8. **Build on existing programs** - When possible, build on existing programs to minimize capital costs. Save further costs by using existing container sites, landfills, and transfer stations as part of the new integrated waste management system.

A local integrated waste management plan may include one or more of the following:

- Recycling drop-off bins with marketing to nearest buy-back center
- Roll-off waste containers for disposal
- Waste exchanges, swap programs, yard sales, thrift stores
- Community recycling collection events
- "Buy-recycled" policy for local government
- Rate structure incentives
- Residential curbside collection of recyclables
- Reuse/repair center
- Drop-off for yard waste and windrow composting

- Curbside collection of yard waste and aerated static pile composting with sewage sludge and green wastes
- Collection programs for commercial sector recycling
- Environmentally sound landfill in the region
- Materials recovery facility/transfer station

MONTANA LANDFILLS STATUS/ OVERVIEW

As Montana continues implementing a more integrated approach to solid waste management, it is obvious that landfills are and will continue to be an important part of the state's management of solid waste. As the population of Montana grows, the need for sufficient and properly operated waste disposal facilities also grows. Landfill capacity assurance is the process of planning for the future so that local governments and their citizens can be assured they will have access to adequate solid waste disposal capacity.

Although Montana seems to have limitless space for landfills, the costs of siting, operating, and maintaining landfills are expensive and monitoring and controlling leachate continue well into the future. Thirty-year post-closure monitoring and care regulations make it clear that no landfill can ever be forgotten. Nationally, communities are burdened by expenses from poorly sited, inadequately maintained, and improperly closed landfills. Montana has largely avoided such misfortune, but the missteps of others underline the importance of environmentally sound landfills. To avoid permitting costs, and the environmental impacts of new landfill units, it is important to conserve space in properly sited and operated landfills.

Siting and constructing a landfill is sometimes difficult due to public perception and the stigma associated with landfills. Therefore, it is increasingly important for citizens, local governments, and DEQ to work together to plan for future landfill needs. Everyone involved must be aware of trends in population growth, waste generation rates, new rules, and other factors that influence the available landfill capacity in Montana.

Montana Municipal Solid Waste

Municipal solid waste (MSW) refers to those materials that historically have come from municipal sources and are disposed at municipal landfills. MSW may be generated in residential, commercial, institutional, or industrial settings. MSW includes: packaging, newspapers, miscellaneous paper, magazines, glass and plastic bottles, cardboard, aluminum and steel cans, wood pallets, food scraps, yard waste, furniture, appliances, tires, electronics, clothing, and batteries. These materials are characterized by product type or by material.

Waste Generation Rates

Records from waste management facilities evaluated by DEQ indicate the generation of MSW in Montana increased from 1,697,085 tons in 2011 to 1,803,435 tons in 2016, and that per-capita waste generation increased from 9.3 pounds/day/person in 2011 to 9.7 pounds in 2016. Using the 2016 census estimated population of 1,023,391, each day Montanans contributed an average 7.7 pounds to the state's landfills and recycled 2 pounds of solid waste for a diversion rate of 17.1% (http://deq.mt.gov/Land/recycle/recycling_statistics_page).

Montana's per-capita waste generation statistics are skewed as they include wastes that do not meet the standard definition of municipal solid waste (MSW). For example, industrial as well as construction and demolition wastes are not considered true MSW, yet they often end up in Montana Class II landfills because

there is no other place for them. In many instances, these wastes are disposed of and weighed with MSW, falsely elevating state totals. Because Montana does not track the type of MSW going into landfills, DEQ uses national statistics for MSW material percentages. The following chart shows the Environmental Protection Agency's (EPA) estimated national breakout of MSW for 2015.

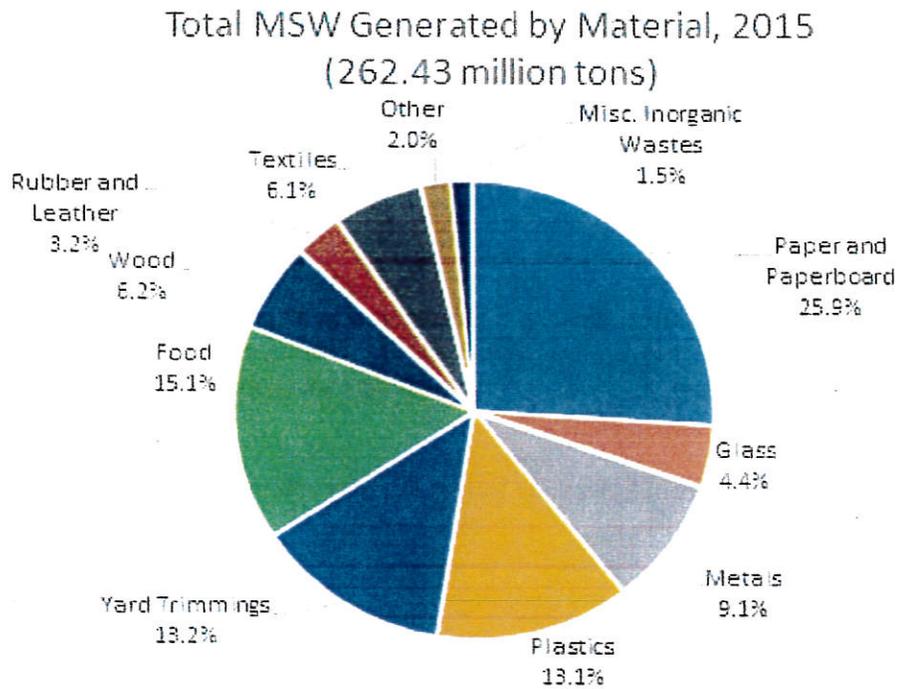


Figure 1: Advancing Sustainable Materials Management: 2015 Fact Sheet, EPA

Existing Disposal Capacity

Currently, there are 30 licensed Class II landfills in Montana, compared to 29 in 2011, 31 in 2006, 59 in 1993, and 87 in 1979. They must meet federal Subtitle D and Montana requirements for liner design, leachate collection, methane monitoring, and other criteria. Overall, the average life of these facilities is about 43 years. However, because of the population growth occurring in Montana, landfill space is being used at a higher rate than anticipated.

Future Capacity Needs

The Montana Department of Commerce Census and Economic Information Center projects that Montana's population will continue to grow at a moderate rate of 0.79%. This growth rate is middle-of-the-road for the United States. The population is expected to continue to shift to the high-density centers in Gallatin, Yellowstone, and Lewis and Clark Counties, and to the four-county region of Flathead, Lake, Missoula, and Ravalli along the western slope of the Rocky Mountains. Montana's rural areas will continue to lose people while the urban areas grow. In 2010, these seven counties contained just over 57% of Montana's population. Forecasts show Montana's population will grow 14% over the next 30 years, reaching 1.16 million by 2030.

Solid Waste Importation into Montana

Montana's moratorium on importation of out-of-state waste ended in 1993. Given the demographics of Montana and its neighboring states, the most efficient and reasonable management of waste involves transportation across state borders. Montana imports solid waste from Wyoming, North Dakota, Idaho, Washington, and Yellowstone National Park. Montana exports solid waste to Idaho and North Dakota.

Montana assesses a fee of \$0.27 per ton of imported solid waste in addition to the standard tonnage-based disposal fee of \$0.40 per ton. This fee is based on administrative costs to the State of Montana. The total imported tonnage for facilities accepting out-of-state waste has averaged 10,860 from FY2013 through the FY2017, with one facility accepting 86,230 in FY2017. Although export tonnages are not tracked by DEQ, the agency estimates that exports and imports are well balanced except for the large amount accepted by a single facility in FY2017.

Technology Alternatives

Nationally, there has been little recent development in solid waste technology and Montana follows this trend. In fact, facilities that were using promising diversion technologies are currently not operating, or not taking diverted products (e.g., tire-derived fuel at Holcim Cement and product substitution [glass] at Ash Grove Cement and Holcim Cement).

While not solid waste diversion, the City of Billings and Flathead County collect biogas at their landfills to use as a fuel source.

LANDFILL REGULATIONS

SUBTITLE D OVERVIEW: FEDERAL REGULATIONS 40 CFR 257 and 40 CFR 258

These regulations specify minimum criteria for municipal landfills, including location, operation, design, groundwater monitoring, corrective action, closure and post-closure care, and financial assurance. In 2015, the EPA promulgated rules on the disposal of coal combustion residue (CCR) and designated CCR as a Subtitle D waste, setting standards for landfilling or surface impoundment under 40 CFR 257 Subtitle D. The rules establish requirements for both existing and new CCR sites, including lateral expansions of any existing sites. These rules are "self-implementing" by regulated industries with an effective date of October 19th, 2015. The CCR rule does not apply to coal residue which is placed in coal mines or MSW landfills. Montana has not yet promulgated State rules to implement CCR disposal requirements due to ongoing litigation at the national level that continues to change the federal rule.

Subtitle D regulations also include regulations pertaining to garbage, including: food containers and coffee grounds, non-recycled household appliances, refuse such as metal scrap and construction materials, sludge from industrial and municipal wastewater facilities, and waste from drinking water treatment plants. Hazardous wastes exempted from Subtitle C regulations — from households and conditionally exempt small-quantity generators — also fall under Subtitle D.

As the regulatory agency for RCRA Subtitle D, EPA approved the State of Montana's MSW program in 1993 (as set out in the Administrative Rules of Montana (ARM) 17.50.501 through 17.50.542 and 17.50.701 through

17.50.726). Montana's program was developed by DEQ's predecessor agency (Department of Health and Environmental Services) under the authority of the Montana Solid Waste Management Act (75.10.201-233). Montana's Solid Waste program protects public health and the environment, while providing the maximum flexibility allowed by EPA in setting alternative standards for the siting, design, operation, monitoring, and closure of municipal (Class II) landfills and CCR landfills or impoundments.

The text of the CFR requirements, as well as Montana-specific information, follows. 40 CFR 257 and 258 can be found at: <https://www.ecfr.gov/cgi-bin/ECFR?page=browse>. Montana's solid waste laws and rules can be accessed through DEQ's website at: <http://deq.mt.gov/Land/SolidWaste/LawsRules>.

Small Community Exemption

Small MSW landfills that meet all the following criteria may be exempted by DEQ from landfill design criteria described in ARM 17.50.12-13:

- Receive less than 20 tons of waste per day on an annual average
- Have no evidence of existing groundwater contamination from the landfill
- Receive 25 inches or less of precipitation per year
- Serve a community for which no practicable waste management alternative exists

DEQ considers "practicable waste management alternative" to mean a complying MSW landfill, transfer station, or materials recovery facility within 100 miles of the small community landfill that can accept waste for an annual cost of less than 1% of the median household income.

If an exemption is granted, the landfill is not required to be constructed according to an EPA-prescribed design, or a design that DEQ approves, demonstrating that the uppermost aquifer will be protected from contamination. However, all location, operation, closure and post-closure care, groundwater monitoring, and corrective action requirements still apply. These landfills must also comply with all financial assurance requirements. DEQ has the authority to revoke an exemption if any groundwater contamination is found or if any of the required conditions can no longer be met.

The small community exemption has not been implemented in Montana as no community has demonstrated the need for the exemption. DEQ has the flexibility to approve alternative design criteria based on geologic features, which is more protective of the environment than exemptions based on size. In addition, many small landfills have closed over the past 21 years because of the costs associated with required groundwater monitoring, methane monitoring, and financial assurance requirements.

Location Criteria

MSW landfills cannot be located or operated in wetlands, floodplains, fault areas, seismic impact zones, or unstable areas without a DEQ-approved demonstration. Since landfills attract seagulls, crows, vultures, and other scavenger birds, MSW landfills cannot be located within 10,000 feet of an airport that has jet aircraft landing or taking off, or within 5,000 feet of airports used by propeller aircraft. Exceptions may be made if the operator of the landfill can demonstrate that the facility does not pose a bird hazard to aircraft.

Much of western Montana lies in seismic impact zones. DEQ has the authority to approve landfills in seismic impact zones if all containment structures are designed to adequately resist the expected impact of an earthquake. Landfills that existed in restricted areas before the 1993 adoption of the regulations were evaluated on a site-specific basis. Those sites that were designed, or which could be re-engineered, to address the issues continue operation. Fifty percent of Montana's landfills have closed since 1993.

CCR landfills or surface impoundments are required to meet specific location criteria, such as no placement above the uppermost aquifer, in a wetland, in fault areas or seismic impact zones or unstable areas. Current sites must provide DEQ with engineering plans to enhance or meet location restrictions, while any future sites will be built in compliance with the new EPA standards and requirements. CCR sites are required to notify the MTDEQ of specific actions taken to come into compliance with Subtitle D.

Operational Criteria

Owners and operators of MSW landfills must comply with the following:

- Implement procedures for prohibiting the dumping of regulated hazardous wastes and PCB wastes.
- Conduct random inspections of incoming loads, maintain records of inspections, train workers to recognize hazardous waste, and notify state and/or federal officials of unauthorized materials.
- Cover disposed waste with six inches of earthen material at the end of each operating day (but more frequently if necessary).
- Prevent or control populations of disease vectors such as rodents.
- Ensure that the concentration of methane gas generated by the landfill does not exceed set limits in structures or at the facility's boundary, by implementing methane monitoring programs. If methane gas concentrations do exceed those limits, take necessary steps to reduce them and notify DEQ.
- Ensure that the landfill meets all applicable air quality standards.
- Conduct open burning according to applicable regulations and never burn mixed MSW.
- Control public access, prevent unauthorized traffic, and prevent illegal dumping.
- Design the landfill to prevent run-on to its active portion during the peak of a 25-year storm.
- Control runoff from the active portion of the landfill in the event of a 24-hour, 25-year storm.
- Prevent the discharge of pollutants into any water which would violate federal or state standards.
- Refuse to accept bulk, non-containerized, or large containers of liquid wastes.
- Record and retain information relating to all aspects of the ARM 17.50.11-12, which regulate landfill operation and design.
- Record a notation to the deed of the land where the facility is located that notifies any potential purchaser of the land, in perpetuity, that the land was used for a solid waste management system, and that its use is restricted under ARM 17.50.1404(3)(c).

Under ARM 17.50.5 and 17.50.10-14, DEQ has the authority to approve alternate daily cover that meets performance standards, provide flexibility governing the number and location of methane monitoring wells, and approve alternate waste-screening methods if the landfill operator ensures that incoming loads do not contain regulated hazardous or PCB-containing waste. Federal law, however, does not allow any state to waive random inspections for hazardous waste, methane monitoring, groundwater monitoring, run-on/runoff controls, and recording-keeping requirements.

Design Criteria

MSW landfills must employ design standards that have been proven to be protective of human health and the environment in most circumstances. These design standards include — for any new landfill or for the lateral expansion of an existing landfill — a standard composite liner consisting of a minimum 2-ft layer of soil, compacted to specifications, directly overlain by either a 30-mil polyvinyl chloride (PVC), or a 60-mil high-density polyethylene (PE), flexible membrane liner in uniform contact with the soil (see ARM 17.50.1202(5) and 1204).

DEQ may accept alternative designs based on performance standards and local geological and hydro-geological conditions, and allow the use of other technology that the applicant can demonstrate is protective of the environment in site-specific circumstances. For example, in areas where natural clay soils are unsuitable, a geosynthetic clay liner may be approved. DEQ also has the authority to approve various low-cost options for leachate collection systems and alternative landfill covers, depending on site-specific circumstances. CCR landfills and surface impoundments are required to install a composite liner as well as a leachate collection and removal system.

Groundwater Monitoring and Corrective Action

Under ARM 17.50.13, all MSW landfills must monitor groundwater. Each monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer. Each system must include sampling of wells up-gradient and down-gradient from the landfill. An operator must conduct monitoring semiannually over the life of the landfill and during the post-closure period. Samples must be analyzed for at least 15 heavy metals and 47 volatile organic compounds.

If elevated levels of any of these metals or compounds are detected, the operator must implement an assessment monitoring program as specified in ARM 17.50.1307. If the groundwater assessment monitoring shows that contamination exceeds legal limits, ARM 17.50.1308-10 prescribes a corrective action program. Should contamination be detected at any CCR sites which are unlined surface impoundments, the corrective action will include a cleanup process and initiate the closure process for that site.

DEQ has the authority to suspend monitoring requirements if the landfill operator demonstrates that there is no potential for contamination of ground water.

Closure and Post-closure

Under ARM 17.50.14, each MSW landfill must prepare a closure and post-closure care plan, and submit it to DEQ for approval. The closure process must include notification to DEQ of when the closure will occur, and placement of a final cover over the landfill. The design features of the final cover are specified in the rules (ARM 17.50.1403) and include minimization of infiltration and erosion. However, DEQ has the flexibility to allow an alternative final cover design based on site-specific conditions.

The post-closure plan must describe the integrity and effectiveness of the final cover, as well as the leachate collection system, groundwater monitoring system, and the gas monitoring system, and outline how they will be maintained for 30 years after closure. DEQ may choose to approve extensions of deadlines for closure, increase or decrease the post-closure monitoring period or frequency, and even allow the operator to suspend monitoring entirely.

Financial Assurance

Under ARM 17.50.540, landfill operators are required to provide an annual cost estimate for a third party to perform closure, post-closure care, and any corrective action. They are also required to provide and fund "financial assurance," which will enable DEQ to pay these costs should the operators run out of funds. The mechanism may be a trust fund, insurance policy, surety bond, letter of credit, local government financial test, or a combination of these.

SPECIAL WASTES

By statute, the term “special waste” is defined as a solid waste that has unique handling, transportation, or disposal requirements to ensure protection of the public health, safety, and welfare and the environment (Section 75-10-802, MCA). Special wastes are identified for specific attention because of the toxicity of the wastes and the higher possibility of contamination from small amounts of the wastes. Occasionally, materials are identified as special wastes because of special handling that is needed.

Hazardous Waste Conditionally Exempt Small Quantity Generators

Hazardous wastes are regulated under the Resource Conservation and Recovery Act (RCRA), Subtitle C. A waste is considered hazardous if it has one or more of the following characteristics, or if it appears on any list of hazardous wastes contained in 40 CFR 261.20 through 261.33.

1. Ignitable: A liquid with a flashpoint below 140°F.
2. Corrosive: A liquid with a pH less than or equal to 2.0 or greater than or equal to 12.5. Also, a liquid that dissolves steel at an established rate.
3. Reactive: Waste that is unstable or undergoes rapid or violent chemical reaction with water or other substances (waste bleaches and other oxidizers).
4. Toxic: Waste that contains high concentrations of heavy metals (i.e., lead, cadmium, mercury, etc.), specific pesticides, or select volatile organic compounds that could be released into the environment.

“Acutely hazardous” waste is a waste so dangerous in small amounts that more stringent regulation is warranted.

The Montana Hazardous Waste Rules, which incorporate by reference federal Resource Conservation and Recovery Act (RCRA) Subtitle C regulations, classify generators of hazardous waste according to the total amount of hazardous waste they generate in a calendar month, measured in pounds.

Conditionally exempt small quantity generators (CESQGs) are businesses that generate no more than 220 pounds of HW (100kg) in any month, or no more than 2.2 pounds (1kg) of an acutely hazardous waste in any month. CESQGs can dispose of their hazardous waste (HW) in a Class II landfill if allowed by the landfill operator. CESQGs are also exempt from reporting to DEQ how much hazardous waste they have generated and/or disposed. Therefore, the amounts of CESQG hazardous waste disposed of in Montana landfills are unknown.

Management

Montana’s “small” and “large” quantity generators of hazardous waste shipped a total of 73,280 tons of material to out-of-state handlers between 2012 and 2016. For these sizes of generators, handling, transportation, storage, and disposal of hazardous waste are regulated by stringent federal law and rules. Hazardous waste must be sent to a treatment, storage, and disposal facility that is designed and permitted to accept hazardous wastes. There are no such facilities in Montana open to the public; therefore, all hazardous waste generated in Montana by large and small generators must be shipped out-of-state.

Environmental Issues

Waste from CESQGs can be a safety concern to landfill personnel as wastes can cause fires, explosions, and the release of toxic fumes. Additionally, wastes can react with other landfill materials to cause an increase in production and toxicity of leachate.

Economic Issues

Proper collection, storage, transportation, and disposal of hazardous waste can be costly to generators. However, disposal of hazardous waste to municipal landfills may transfer costs to landfill budgets for the proper treatment of potential leachate toxicity.

Coal Combustion Residuals (CCR)

CCR, also referred to as coal ash, is primarily produced from the process of burning coal in coal-fired power plants. It also encompasses a number of by-products, including:

- Fly Ash: a powdery material mostly composed of silica made from burning finely ground coal in a boiler.
- Bottom Ash: a coarse and angular ash particle that forms at the bottom of the coal furnaces.
- Boiler Slag: molten bottom ash from slag tap and cyclone type furnaces that forms into pellets with a smooth glassy appearance after it is cooled with water.
- Flue Gas Desulfurization Material: a material leftover from the process of reducing sulfur dioxide emissions from a coal-fired boiler. It can be a wet sludge consisting of calcium sulfite or calcium sulfate, or a dry powdered material that is a mixture of sulfites and sulfates.

Other types of by-products are:

- Fluidized bed combustion ash,
- Cenospheres, and
- Scrubber residues.

Management

Wet CCR in slurry form are generally disposed into impoundments. Dry CCR is either beneficially reused or disposed into landfills.

Currently only one facility in Montana operates a CCR landfill unit. This CCR unit is located at the City of Hardin's Class II landfill. The CCR unit at the Hardin Class II landfill meets and/or exceed all regulation put forth by the proposed federal CCR rules.

Environmental Issues

Beneficial reuse of CCR includes reduced greenhouse gases, reduced materials entering landfills, and virgin resource reduction. Leaking or failed impoundments both nationally and in Montana precipitated federal regulations specific to CCR.

CCR sites must be operated to minimize environmental impacts and meet the following minimum standards:

- Control water run-on and run-off in order to minimize the amount of water entering the unit;
- Implement prevention measures for erosion, water discharges, and the creation of leachate;
- Control measures in place to protect against run-off releases to surface waters;
- Control measures in place to prevent flood flows;
- Monitor groundwater with a system of monitoring wells, sampling procedures and data analysis;
- Detection of hazardous constituents will immediately require corrective action and clean up;

- Any hazardous detection at unlined surface impoundments will result in closure of those sites;
- Minimize fugitive or windblown dust emissions;
- Conduct structural stability inspections, weekly, monthly and annually, including an annual safety assessment, and hazard potential classification assessment;
- Record facility compliance actions and keep with operating records;
- Establish and maintain a publicly accessible internet site which holds facility compliance and operating records.

Economic Issues

Economic benefits include reduced costs associated with coal ash disposal, increased revenue from the sale of coal ash, and savings from using coal ash in place of other, more costly materials.

Household Hazardous Waste (HHW)

Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are considered HHW. Products such as paints, cleaners, oils, batteries, and pesticides that contain potentially hazardous ingredients require special care for disposal.

Management

HHW in any amount is exempt from hazardous waste regulation because it is generated by households, even though the constituents of that waste might be identical to hazardous wastes generated by industry. HHW can be legally disposed of in a MSW landfill. Because HHW is exempt from hazardous waste regulation, DEQ does not collect data on amounts going into municipal landfills. However, EPA estimates that each person in the U.S. produces an average of four pounds per year (<http://www.epa.gov/region9/waste/solid/house.html>). Assuming that Montana reflects the national statistics, it is estimated that 1,978.83 tons of HHW were disposed of in Montana landfills in 2017.

In response to customer request and landfill need, several communities across Montana have either established permanent HHW take-back services, or schedule periodic collection events which are permitted by DEQ. DEQ uses the Earth 911 website (<http://www.earth911.org/>), newspaper and radio ads to communicate where permanently licensed locations for HHW collection exist. Additionally, a spreadsheet listing landfills that offer HHW collection can be found on DEQ's website (<http://deq.mt.gov/Land/solidwaste>) under the heading "Who Accepts What Waste." For those local governments offering periodic HHW collection, DEQ will list these events on the program calendar at <http://www.deq.mt.gov/Recycle/calendar.mcp.x>.

Environmental Issues

Household products contain many of the same toxic chemicals used in industry, small businesses, and agriculture. While consumer products often come in smaller sizes or contain lower concentrations of hazardous ingredients, the shelves of grocery and hardware stores contain a wide variety of hazardous products, including some with high concentrations of hazardous ingredients. For example, certain drain-cleaning products are 100% sodium hydroxide, and mothballs are 100% naphthalene. When no longer useful, these products exhibit all the properties of industrial hazardous waste and need to be handled with extreme care during use, storage, and disposal to avoid health or environmental damage.

Economic Issues

Proper collection, storage, transportation, and disposal of HHW can be costly to generators and/or local governments. Disposal of HHW in municipal landfills may ultimately cause an increase to landfill budgets to offset costs for proper treatment of potential leachate toxicity.

Mercury-Containing Equipment, Switches, and Bulbs

Mercury can be found in pressure regulators, thermometers, thermostats, switches, appliances, clothes irons, electronics, light bulbs, and other common items. The majority of products contain only small amounts of mercury. However, the sheer volume of mercury-containing products that enter the waste stream raises concern about the potential pollution of natural resources and threats to human health. Many mercury-containing items can be classified as either HHW (see previous section) or as Universal Waste (UW). When mercury-containing items are handled as UW, regulations have been streamlined to make collection and recycling of these materials easier for businesses and local governments, ARM 17.53.1301 adopts and incorporates by reference the Federal Universal Waste Rules 40 CFR 273.

Management

Depending on generator and handling procedure, mercury-containing devices can fall under the CESQG, HHW, or UW categories. Although many different types of products can contain mercury, this section focuses on thermostats, vehicle switches, and fluorescent tubes/ compact fluorescent lights (CFLs).

Thermostats: Montana passed the Mercury-Added Thermostat Collection Act in 2009. See Title 75, Chapter 10, part 15, MCA. This law requires thermostat manufacturers to offer a take-back program within the state and mandates that wholesalers in Montana accept mercury-containing thermostats for recycling. Since passage of the law, the Thermostat Recycling Corporation (TRC) has increased its outreach effort to Montana wholesalers, inviting them to participate in its mercury-containing thermostat collection program for a one-time fee of \$25. TRC is a non-profit financed by Honeywell, White-Rodgers, and General Electric, which all manufacture thermostats. The law also encourages local government to participate in the program, and offers thermostat recycling at municipal landfills. TRC has limited collection points in Montana, which can be found at www.thermostat-recycle.org.

Vehicle switches: Mercury-containing switches were used in many vehicles manufactured before 2003. Because used vehicles are usually recycled for their steel content, recovering the mercury-containing switches before the vehicles are melted down significantly reduces mercury emissions resulting from that process. To that end, EPA established the National Vehicle Mercury Switch Recovery Program (NVMSRP) in 2006, collaborating with industry, environmental groups, auto dismantlers, and state officials. The program's goal is to reduce up to 75 tons of mercury emissions from steel electric-arc furnaces (EAF) by 2017, which is when EPA expects that most vehicles with mercury-containing switches will no longer be in service. To support NVMSRP, the automotive industry established the End of Life Vehicle Solutions Corporation (ELVS), which assists program participants in implementing the switch recovery program. ELVS initially offered financial incentives for participants as well, but those funds are no longer available. Although the incentives for the collection of the mercury switches had ended, the ELVS program has been extended and will continue to accept mercury switches until December 31, 2021. More information about this program can be found at <http://elvsolutions.org/>.

Fluorescent Tubes/CFLs: Few community recycling opportunities for CFLs exist in Montana, although the issue is getting increased attention nationally and more companies are offering take-back programs. In Montana and elsewhere, new building codes, federal regulations, and high energy costs are driving consumer and business interest in CFLs, which are highly energy efficient. CFLs save about \$30 in electricity costs over the lifetime of the bulb and last ten times longer than incandescent bulbs. Montana utility companies, along with state and local governments and private businesses, are working together to increase awareness and acceptance of CFLs.

As the cost of comparable LED bulbs decreases, there will be a decrease in the demand for CFLs because LED's are even more efficient and do not contain mercury.

Environmental Issues

Mercury occurs naturally in air, water, and soil in several forms: elemental (metallic) mercury, inorganic mercury compounds, and organic mercury compounds. Mercury can affect the human nervous system and cause harm to the brain, heart, kidneys, lungs, and immune system.

Economic Issues

EPA continues to develop stringent regulations limiting the use of mercury in consumer products. It is unclear how the financial costs of managing mercury in compliance with federal regulations will be addressed by industry and government stakeholders. EPA also works with industry to develop voluntary and mandated take-back programs for some mercury-containing equipment. Over the long term, EPA predicts that mercury will have little value as a commodity due to the success of global efforts to successfully decrease its industrial use.

Medical /Infectious Waste

Medical, or infectious waste, is any waste capable of transmitting a disease to humans. It includes the blood-saturated wastes from patients with infectious diseases, certain laboratory wastes, and used healthcare items designed to cut or puncture. Examples include bandages, lancets, syringes, microbiological cultures, blood and tissue specimens, and personal care items. Most medical or infectious waste is generated in hospitals; however, it may be generated in numerous other settings, including clinics, dental offices, veterinary offices, nursing homes, laboratories, and private homes.

Management

In 1991, the Montana Legislature passed the Infectious Waste Management Act, Section 75-10-10, MCA, to set standards for the storage, transportation, treatment, and disposal of infectious waste. The Act requires that generators separate infectious waste from regular waste at the point of origin and that it be stored in specially-marked containers in a secured area until it is rendered noninfectious.

Sharps waste, such as hypodermic needles, must be placed in rigid "Sharps" containers. Infectious waste that has been treated and rendered non-infectious by one of three methods — incineration, steam sterilization, or chemical sterilization or equivalent method (Section 75-10-1005(4)(a)(ii), MCA) — may be disposed of in a Class II municipal solid waste landfill. The Act requires the state licensing board of any profession or facility that generates infectious waste to ensure compliance with the provisions of the Act. DEQ is charged with regulating the transportation and disposal of infectious waste.

Incineration waste managers may treat and dispose of infectious waste through "incineration with complete combustion that reduces infectious waste to carbonized or mineralized ash" (Section 75-10-1005, MCA). Two medical treatment facilities operate in Montana, treating wastes generated by their associated facilities. DEQ regulates both air emissions from these incinerators and solid waste aspects of the facilities. In addition, there is one commercial autoclave in the state that treats infectious waste from Montana and surrounding states. In 2008, this facility collected and treated 1,611.77 tons of infectious waste. After being autoclaved at 290 degrees Fahrenheit and 45 pounds per square inch pressure of saturated steam for 38 minutes, the now-noninfectious waste is transported to a landfill where it is placed in a specially designated area for disposal. It is immediately covered. All medical waste containers are cleaned at the company's warehouse/processing facility by heat and chemical sterilization. They are then stored and distributed for reuse by customers.