Exhibit 2 – CLF Operating Plan

Matanuska-Susitna Borough Solid Waste Division

Operating Plan

Central Landfill and Transfer Stations

December 2025

Review and Update

This Operating Plan is based on the past, current and future facility design and operation. The plan will be continually reviewed, and changes made when operations and/or maintenance of the Solid Waste Division are revised. At a minimum, this Operating Plan will be updated every five years in line with the State of Alaska Solid Waste Disposal Permit renewal period. This will allow for the inclusion of future lined cells and changes in operational practices.

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
AAC	Alaska Administrative Code
ABV	Abandoned Vehicle(s)
ACM	Asbestos-Containing Material
ADEC	Alaska Department of Environmental Conservation
AED	Automated External Defibrillator
AK	Alaska
ALPAR	Alaskans for Litter Prevention and Recycling
ATV	All-Terrain Vehicle
AWWU	Anchorage Water & Wastewater Utility
BBP	Bloodborne Pathogens
BLF	Butte Landfill
BLLF	Big Lake Landfill
Borough	Matanuska-Susitna Borough
C&D	Construction & Demolition
CCURPC	Community Cleanup and Recycling Program Coordinator
CDL	Commercial Driver's License
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CLF, Landfill	Central Landfill
CMT	Crevasse Moraine Trails
CPR	Cardiopulmonary Resuscitation
DOT	Department of Transportation
EAP	Emergency Action Plan
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
HAZCOM	Hazard Communication
HAZWOPER	Hazardous Waste Operations and Emergency Response
HDPE	High Density Polyethylene
HHW	Household Hazardous Waste
HMIS	Hazardous Materials Identification System
HR	Human Resources
HWF	Hazardous Waste Facility
IATA	International Air Transport Association
ICS	Incident Command System

IT	Information Technology
kV	kilovolt
kVA	kilovolt-amp
LOTO	Lock-Out / Tag-Out
MEA	Matanuska Electric Association
mil	one-thousandth of an inch, or 0.001 inch
MOLO	Manager of Landfill Operations
mph	miles per hour
MSB, Mat-Su	Matanuska-Susitna Borough
MSL	Mean Sea Level
MSW	Municipal Solid Waste
NIT	Northern Industrial Training
O&M	Operations & Maintenance
OSHA	Occupational Safety and Health Administration
PIT	Powered-Industrial Trucks
PPE	Personal Protective Equipment
PWD	Public Works Department
QAPP	Quality Assurance Project Plan
RCA	Regulatory Commission of Alaska
RFID	Radio Frequency Identification
SBF	Smith Ballfields
SCADA	Supervisory Control and Data Acquisition
SOA	State of Alaska
SOP	Standard Operation Procedure
SWANA	Solid Waste Association of North America
SWD	Solid Waste Division
US	United States
UTV	Utility Terrain Vehicle
VCRS	Valley Community for Recycling Solutions
VIN	Vehicle Identification Number
WDT	Waste Disposal Technician
WSDPT	Wheel Sump Drainer with Pressure Transmitter

LIST OF REFERENCES

Code of Federal Regulations (CFR)

- Title 29 – Labor
  - 29 CFR 1910.1030(g)(2)(ii)(A)
  - 29 CFR 1910.120(e)(1)(i)
  - 29 CFR 1910.1200(h)(1)
  - 29 CFR 1910.132(f)(1)
  - 29 CFR 1910.147(c)(7)(i)
  - 29 CFR 1910.157(g)
  - 29 CFR 1910.178(1)(1)(ii)
  - 29 CFR 1910.38(e)
  - 29 CFR 1910.39(b)
  - 29 CFR 1910.95(e)(4)
  - 29 CFR 1926.1060(a)
  - 29 CFR 1926.302(e)(1)
  - 29 CFR 1926.602(d)
- Title 40 – Protection of Environment
  - 40 CFR Part 258 – Criteria For Municipal Solid Waste Landfills
- Title 49 – Transportation
  - 49 CFR 172.201
  - 49 CFR part 172.702(a)
- OSHA Act of 1970 Section 5(a)(1) or the "General Duty Clause"

Matanuska-Susitna Borough Code

- Chapter 8.05 – Solid Waste
  - 8.05.080 – Littering Prohibited
  - 8.05.090(D) – Fees and charges
- Chapter 10.12 – Abatement of Abandoned Vehicles
  - 10.12.030 – Removal of abandoned vehicles

Permits

- ADEC Permit No. SC-18-79
- ADEC Permit No. SW1A007-20
- Industrial Wastewater Discharge Permit No. 4

Solid Waste Documents

- 2017-01-24 – MSB-US EPA – Amended Design Capacity Report

- 2020 Landfill Development Plan
- Cell 2B Record Drawings
- Cell 3 Record Drawings
- MSB Cell 2A Record Docs_Final
- Quality Assurance Project Plan (QAPP)
- Records Management Manual
- Records Retention Schedule

State of Alaska Administrative Code (AAC)

- 18 AAC 60, Solid Waste Management
  - 18 AAC 60.235
  - 18 AAC 60.335
  - 18 AAC 60.395
  - 18 AAC 60.397
  - 18 AAC 60.830

1. INTRODUCTION

This Operating Plan serves as a guide for directing Matanuska-Susitna Borough (MSB) Solid Waste Division (SWD) staff and contractor personnel in performing operations and maintenance services at the MSB Central Landfill (CLF) and Transfer Stations.

1.1. Vision Statement

Plan for and implement an economical and environmentally friendly operation providing maximum health and safe operations.

1.2. Mission Statement

The Solid Waste Division provides a system for refuse disposal and monitoring, critical to ensuring the health and safety of Borough residents, and, the Division provides professional advice to the Public Works Director, Borough Manager, Mayor and Assembly on matters pertaining to solid waste, and finally, the services provided by the Solid Waste Division include municipal solid waste disposal; construction and demolition debris disposal; household hazardous waste classification, disposition and disposal; leachate management; asbestos disposal; multiple gas and water monitoring of waste cells; recycling community outreach; community cleanup support; right of way cleanup, coordination and support; and abandoned vehicle removal.

1.3. Objectives

This Operating Plan provides a document that aggregates all policies, procedures and operational requirements to safely and efficiently manage day to day operations of the SWD facilities, equipment and personnel.

Goals:

- The primary goal of this Operating Plan is to provide guidance and standards for achieving sanitary and environmentally acceptable solid waste disposal operations within the Borough's Central Landfill, Transfer Stations and monitored closed landfills in accordance with federal, state, and local guidelines.
- The secondary goal of this Operating Plan is to maximize the useful life of the landfill by enhancing operational efficiency, standardizing procedures for daily operations, and establishing policies for the handling of universal, hazardous, special, and construction & demolition (C&D) wastes.

2. ADMINISTRATION

The Administrative Unit is comprised of the Division Manager, Division Administrative Specialist, Administrative Assistant, Project Manager, Program Coordinator, Operations Unit Supervisor, Transfer Station and Scale House Unit Supervisor, Environmental Unit Supervisor and two Office Assistants.

2.1. Waste Quantities

Waste quantity records are required by the United States (US) Environmental Protection Agency (EPA) and Alaska Department of Environmental Conservation (ADEC) regulations and are important for proper management of the landfill. Uses for this information include:

- Tracking the status of existing cell fills;
- Increased ability to forecast future waste quantities;
- Analysis of existing fill areas and planning development of new fill areas;
- Forecasting of equipment requirements and scheduling maintenance; and,
- A basis for cost allocation for financial planning.

2.2. Computerized Waste System

Central Landfill uses a computerized system for recording waste quantities received since the installation of scales occurred in October 1993. Weight records are cross-referenced with topographic surveys to determine waste quantities.

The computerized system provides:

- Vehicle weights upon entry and departure allowing for calculation of waste delivered;
- Data basing of all collected data;
- Vehicle numbers;
- Tare weights for commercially registered loads;
- Municipal Solid Waste (MSW) received;
- C&D Debris received;
- Asbestos received;
- Brush and Grass received; and,
- Environmentally related wastes (paints, oils, batteries, etc.) received.

2.2.1. WasteWorks

WasteWorks is the specialized software program used to record waste disposal and track recycling. The system provides load ticketing, customer billing, financial reporting, tare

weights for vehicles and containers, tracking of tonnage, material counts, and locations of wastes in support of the items mentioned above.

2.2.2. WasteWizard

The WasteWizard system provides a module for scale lane automation at the unattended commercial scale providing a "self-service express lane" for ticketing that includes a security camera, combining ticket information with a snapshot of the driver, and a radio frequency identification (RFID) system. See *Attachment 2-A: Scale Operating Procedures* and *Attachment 2-B: RFID Policy*.

2.2.3. Billing

The system provides customer billing for SWD business charge accounts that are available for commercial and agency entities disposing of 40 cubic yards or more per month in accordance with *MSB Code 8.05.090(D)*. See *Attachment 2-C: Business Charge Account Policy*.

2.2.4. Tracking

Tonnage received, material counts, and location of waste is tracked through the computerized system and the number of customers can be tracked by the number of tickets.

2.2.5. Reporting

Several report options for both manual and automated reporting including financial activity, material activity, site activity, and vehicle activity reports are available and easily accessible. SWD business charge accounts are given the option to have automated reports, such as vehicle activity reports, emailed to them daily, weekly, or monthly.

2.2.6. Compaction

The rate of compaction in the active MSW cell is calculated by taking the waste in pounds and dividing by the area used in the cell to arrive at an average compaction rate in pounds per cubic yard. Surveys must be performed on the specific area the waste was deposited to obtain the area used. In addition to surveys currently performed by a SWD contractor, the WasteWorks system provides material activity reports that assist in the calculation of compaction. These reports provide totals for both residential tonnage and commercial tonnage deposited into the cell. Surveys have been performed monthly for many years however, the frequency was recently cut back to quarterly surveys due to consistent compaction rates being achieved.

2.2.7. Ticketing

Ticketing is provided in conjunction with the inbound and outbound scales at the Central Landfill scale house and automated ticketing at the Central Landfill commercial scale. Ticketing at Transfer Stations is completed by a method known as "cubing" which is an assessment of volume obtained by adding the height, width and length of the material and dividing the total of those numbers by 27 which provides a cubic yard estimate. The cubic yard estimate is then used to determine an assembly approved fee. The system is also used to count and maintain a record of any other materials brought in. SWD business charge account holders are given the option to have automated ticket copies emailed daily.

2.3. Financial Accounting

The Transfer Station and Scale House Unit Supervisor is responsible for tracking and reporting all cash deposits and credit card processing collected at the Central Landfill, Transfer Stations and Transfer Sites. See *Attachment 2-D: Transfer Station and Scale House Unit Supervisor SOP*.

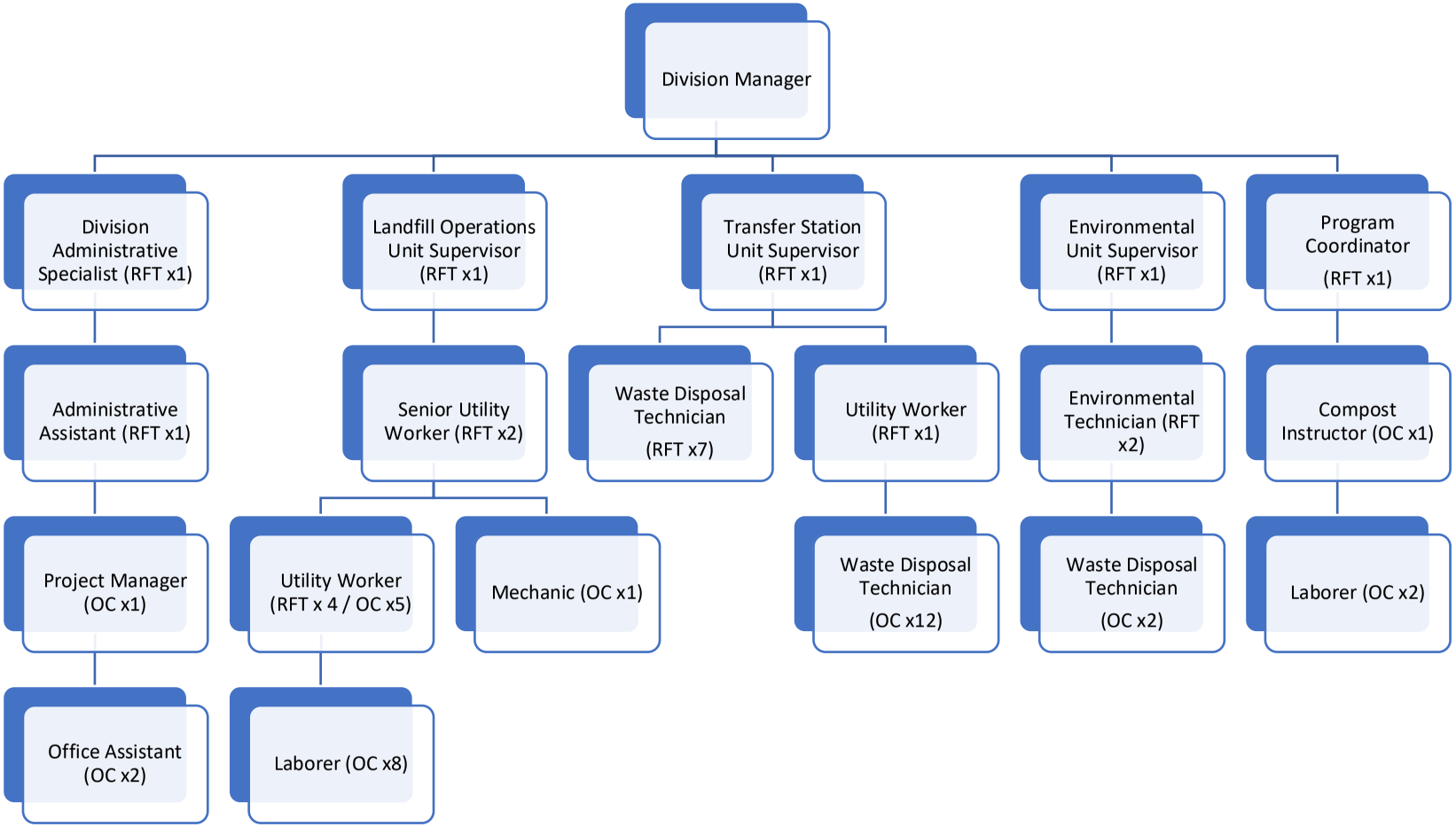
2.4. Recordkeeping

The MSB uses a recordkeeping software program called Content Manager. The SWD complies with local, state, and federal regulations and follows the MSB recordkeeping policy and the most current *Records Retention Schedule*, Record D-19-65565 in Content Manager. More detailed information can be found in the *Records Management Manual*, Record D-18-61623 in Content Manager.

3. PERSONNEL

The Solid Waste Division consists of the following units: Division Manager and Administrative Staff; Landfill Operations; Transfer Stations/Sites; Environmental; and Community Programs.

3.1. Org Chart



3.2. Responsibilities

Below is a brief overview of each position's responsibilities. For more detailed information see *Attachment 3-A: SWD Job Descriptions*.

- **Administrative Assistant:** This position is responsible for providing administrative and customer service support for the Solid Waste Division.
- **Division Administrative Specialist:** This position is responsible for providing specialized administrative support for the operations of the Solid Waste Division.
- **Environmental Technician:** This position performs technical duties to ensure division compliance with environmental regulations.
- **Laborer:** This position assists with manual tasks related to the handling of solid waste and litter control.
- **Office Assistant:** This position is responsible for providing clerical and customer service support for the Solid Waste Division.
- **Program Coordinator (Community Cleanup and Recycling):** This position is responsible for coordinating the division's Community Cleanup, Abandoned Vehicle Abatement, Health and Safety, and Recycling programs.
- **Project Manager:** This position is responsible for managing a variety of professional services and construction contracts associated with Solid Waste Division projects.
- **Solid Waste Division Manager:** This position manages the Solid Waste Division operation, including landfill, environmental, and transfer station operations, and provides oversight, direction, and mentoring to division staff.
- **Solid Waste Operational Unit Supervisor:** This position supervises assigned operations within the Solid Waste Division. There are three unit supervisors within the Solid Waste Division to include the Environmental Unit Supervisor, Landfill Operations Supervisor, and Scale House and Transfer Station Unit Supervisor.
- **Spotter (Contractor Supplied):** This position is based at either the MSW cell or the C&D cell and assists with traffic flow and monitors waste disposition to ensure regulatory requirements are followed.
- **Utility Worker I, II or III:** This position participates in Borough landfill and transfer station/site operations.
- **Waste Disposal Technician:** This position is responsible for performing customer service, administrative, technical, and physical duties in support of scale house and transfer station operations.

3.3. Training

This section describes the various training courses that are provided to all SWD employees throughout their employment through both hands-on and online sources.

3.3.1. New Employee Orientation

All new employees complete two orientations; one with the MSB Human Resources (HR) Department, and one with the Solid Waste Division.

- HR Orientation: New employees undergo a Borough-wide orientation program upon hire that includes informational sessions about the MSB and basic orientation procedures such as timekeeping and payroll. The employees are given *Attachment 3-B: New Employee Orientation (Draft) Agenda*, and asked to return the completed checklist to the HR Department when done.
- SWD Orientation: Once the HR Orientation is completed, the new employees are scheduled to meet with the SWD Division Administrative Specialist at the Central Landfill. The SWD Orientation includes informational sessions about landfill operations, customer services expectations, and several health and safety policy reviews. See *Attachment 3-C: SWD New Hire Checklist*. Once Admin has completed their portion of the orientation, the new hires are returned to their immediate supervisor to complete Sections II through VII on the HR Orientation Agenda.

3.3.2. Commercial Driver's License (CDL) Drivers & Equipment Operators Training and Evaluation Program

All commercial truck drivers and equipment operators attend training that includes the following: preliminary driving skills assessment (with Utility Worker III oversight), classroom instruction, and hands-on training. The driver will be evaluated before being allowed to drive or operate SWD trucks or equipment. Before training, truck drivers and equipment operators provide a copy of their State of Alaska Class A CDL, current medical card, and any formal training certificates for commercial vehicles, heavy equipment, or rough terrain forklift to their immediate supervisor.

- Orientation of SWD Procedures: New drivers/operators are briefed by staff on SWD procedures and follow a Utility Worker II during his/her daily activities. During this walk-thru period, the new hire is briefed on Personal Protective Equipment (PPE) and safety, vehicle inspections, landfill inspections, key sign out/in, radio procedures, waste disposal areas, and equipment storage.
- Preliminary Driving Skills & Pre-Trip Inspection Assessment: New hires complete a truck or equipment pre-trip inspection and drive the truck or operate the equipment within the landfill with a Utility Worker II present. During this phase, the new hire is evaluated on his/her driving and operating skills.
- Classroom Instruction: New hires attend classroom instruction on each type of waste disposal truck (semi-truck/trailer & roll-off) and each piece of equipment (front end loader, skid steers, backhoe, and rough terrain forklift).

- Hands-On Training: With guidance from the SWD instructor, new hires practice driving or operating the trucks or equipment until they feel they are ready for a skills evaluation.
- Skills Evaluation: New hires must demonstrate the required proficiency to the evaluator before they can drive or operate semi-trucks or equipment without supervision. See *Attachment 3-D: Semi or Roll-Off or Equipment Evaluation Forms*.
- Annual Evaluations: Evaluations are conducted for all drivers and equipment operators an on annual basis.

3.3.3. Health & Safety Courses

Health & safety courses are assigned on an annual or as-needed basis to stay in compliance with Occupational Safety and Health Administration (OSHA) regulations. These courses include:

- Bloodborne Pathogens (BBP): provided on employee's first day of work and then once per year thereafter as required in *29 CFR 1910.1030(g)(2)(ii)(A)*
- Cold Stress: provided once per year (normally in January) as required in *Section 5(a)(1)*, commonly known as the "General Duty Clause"
- Emergency Action Plan (EAP) and Evacuation Procedures: provided upon hire and then as needed in accordance with *29 CFR 1910.38(e)*
- Equipment Training (Backhoe, Bobcat, Skid Steer, and Utility Terrain Vehicles [UTV]): while loaders, skid-steers, and similar equipment with forklift attachments are not covered under *29 CFR 1926.602(d)*, training is provided as needed as described in the standard
- Ergonomics Training: provided upon hire and then once per year as required in *Section 5(a)(1)*, commonly known as the "General Duty Clause"
- Fire Extinguisher Training: provided once per year as required in *29 CFR 1910.157(g)*
- Fire Prevention Plan: provided once per year as required in *29 CFR 1910.39(b)*
- Hand and Power Tools: provided as needed in accordance with *29 CFR 1926.302(e)(1)*
- Hazardous Material Information System (HMIS) Labeling System Training: provided upon hire and then once per year as required in *29 CFR 1910.1200(h)(1)*
- Hazard Communication (HAZCOM): provided upon hire and then once per year as required in *29 CFR 1910.1200(h)(1)*
- Hearing Conservation Training: provided once per year as required in *29 CFR 1910.95(e)(4)*
- Heat Stress: provided once per year (normally in June) as required in *Section 5(a)(1)*, commonly known as the "General Duty Clause"
- Ladder Safety Training: provided once per year in accordance with *29 CFR 1926.1060(a)*
- Lock-out/Tag-out (LOTO) Training: provided as needed in accordance with *29 CFR 1910.147(c)(7)(i)*

- Personal Protective Equipment (PPE) Training: provided as needed in accordance with *29 CFR 1910.132(f)(1)*
- Powered Industrial Trucks (PIT): provided as needed in accordance with *29 CFR 1910.178(1)(1)(ii)*
- Workplace Violence Prevention: provided upon hire and then once per year as required in *Section 5(a)(1)*, commonly known as the "General Duty Clause"

Each employee is assigned additional online safety courses between one to four times per month through a web based system called PureSafety, based on the Administrative team's written schedule. See *Attachment 3-E: PureSafety Course List*.

3.3.4. State of Alaska Required Licenses and Certifications

The SWD Manager is required to maintain a Manager of Landfill Operations (MOLO) certification to meet the requirement listed in *ADEC Regulation 18 AAC 60.335*.

Utility Workers II and III are required to maintain current Class A CDL Driver licenses for transporting waste containers from Transfer Stations and Sites to the Central Landfill using semi-trucks.

3.3.5. Job Specific Required Licenses and Certifications

MSB job descriptions state the following positions are required to have the following licenses and/or certifications:

- Environmental Technician:
  - ✓ 40-Hour HAZWOPER as required in *29 CFR 1910.120(e)(1)(i)*,
  - ✓ CFC Removal Certification, Hazardous Materials Transport Training (DOT/IATA combined) as required in *49 CFR part 172.702(a)*, and,
  - ✓ ICS Courses
- Environmental Unit Supervisor:
  - ✓ SWANA MOLO certification,
  - ✓ 40-Hour HAZWOPER as required in *29 CFR 1910.120(e)(1)(i)*,
  - ✓ CFC Removal Certification, and,
  - ✓ Hazardous Materials Transport Training (DOT/IATA combined) as required in *49 CFR part 172.702(a)*
- Landfill Operations Unit Supervisor:
  - ✓ SWANA MOLO certification, and,
  - ✓ 40-Hour HAZWOPER as required in *29 CFR 1910.120(e)(1)(i)*
- Mechanic:
  - ✓ Class A Driver's License, and,

- ✓ ICS Courses

- Transfer Stations Unit Supervisor:
  - ✓ SWANA Certified Technical Associate of Transfer Station Systems
- Utility Worker III:
  - ✓ Class A Driver's License,
  - ✓ DOT Medical Card,
  - ✓ CDL HAZMAT Endorsement,
  - ✓ HAZWOPER as required in *29 CFR 1910.120(e)(1)(i)*,
  - ✓ Asbestos Identification Certification, and,
  - ✓ ICS Courses
- Utility Worker II:
  - ✓ Class A Driver's License,
  - ✓ DOT Medical Card,
  - ✓ CDL HAZMAT Endorsement,
  - ✓ HAZWOPER as required in *29 CFR 1910.120(e)(1)(i)*,
  - ✓ Asbestos Identification Certification, and,
  - ✓ ICS Courses
- Utility Worker I:
  - ✓ Class A Driver's License,
  - ✓ Asbestos Identification Certification, and,
  - ✓ ICS Courses
- Waste Disposal Technicians:
  - ✓ 24-Hour HAZWOPER as required in *29 CFR 1910.120(e)(1)(i)*

Although not required by job descriptions, the SWD also provides 24-Hour HAZWOPER training for many Laborer and Utility Worker's I.

3.4. Training Records

Training records are kept in paper form and digital form and are tracked by the Administrative team monthly.

3.4.1. Paper Training Records

The Administrative team sends paper copies of all recent training records to the Borough HR Department after the end of the month via inter-office mail and/or email. This includes all PureSafety training certificates and any in-house or outside class certificates such as those received from SWANA, NIT, FEMA, etc.

In addition to sending paper records to HR, the SWD keeps copies of some specific training records in paper files in the Administrative office. These records include any SWANA certifications, FEMA certificates of completion (ICS-100, -200, etc.), HAZWOPER cards, travel authorizations related to training classes, First Aid and/or CPR cards or other certificates/cards received that have a clear expiration date. PureSafety training certificates are not printed and kept on file as they can be found and reported from the PureSafety website. Other training courses assigned by HR and/or I.T. are tracked and paper copies are kept in the SWD office if they are available.

3.4.2. Digital Training Records

Digital copies of the training certificates that are kept as paper files in the Admin office are also scanned and saved to the Borough's record management program. In addition, a report of completed PureSafety courses is downloaded at the end of each fiscal year and saved in Content Manager.

3.4.3. Tracking Training Records

The Administrative team keeps a tracking spreadsheet in the SWD J:Drive (*J:\Solid Waste\HEALTH AND SAFETY\Employee Training*) of all in-house or outside class certificates, with the exception of PureSafety certificates, that includes the following information:

- Employee Name
- Course Name
- Training Source (i.e. Knowledge City, NIT, MSB, etc.)
- Requirement (annual, semi-annual, etc.), if applicable
- Course Completion Date
- Expiration Date (if applicable)
- Whether or not a certificate is kept on file in the Admin office
- Date sent to HR

This spreadsheet is used to keep track of expiration dates of required certifications so that the Administrative team can notify the certificate holder when it is time for certification renewal. Courses assigned by other Borough Departments (HR or I.T.) are listed on this spreadsheet as well.

4. SITES

4.1. Central Landfill

Central Landfill is located at Milepost 3 of the Palmer-Wasilla Highway, between the City of Palmer and Wasilla, Alaska. The site is located at the southern end of North 49th State Street, accessible from the north via the Palmer-Wasilla Highway. See *Attachment 4-A: CLF Location Map*. The 620-acre site is legally described as:

S ½ of Section 1, E ½ SE ¼ of Section 2, NE ¼ NE ¼, E ½ NW ¼ NE ¼ of Section 11, N ½ NW ¼, N ½ SW ¼ NW ¼, N ½ SE ¼ NW ¼, NW ¼ NE ¼ of Section 12, Township 17 North, Range 1 East, Seward Meridian, Alaska. See *Attachment 4-B: Resolution 89-182*.

Hydrogeological studies (July 1993, by Steven R. Rowland, P.E.) concluded, "The existing Central Landfill is located in an area which is geologically and hydro geologically, relatively well suited for landfilling". Of the 620 acres, landfilling has occurred on an approximately 200-acre section of the property. This section of the site has been developed with two unlined cells to include Cell 1 and Cell 2A; three lined cells to include Cell 2B, Cell 3, Cell 4, and the Cell 4 expansion; two Construction & Demolition cells, C&D 1 and C&D 2; one scrap metal yard; one brush disposal area; one asbestos cell; three scales to include two residential scales and one commercial scale; one residential disposal area (wall); one warm storage facility; two leachate holding lagoons; multiple groundwater/gas monitoring wells, gas probes and gas vents; an administrative/household hazardous waste (HHW) facility; a scale house; and a portable office building.

4.1.1. Geomorphic and Geologic Description

Surface forms throughout the site can be classified as ice disintegration features (kames, kettles, and eskers) composed of both ice contact stratified drift and pro-glacial pitted outwash deposits. Many of the features may also be defined as disintegration ridges or hummocky ablation drift. The active landfill area appears to be at the margin of two types of glacial drift deposits with kame and esker features being predominant to the south of the active landfill and hummocky topography to the north. Drill logs and inspection of large excavations on the property and adjacent properties confirm the surficial features and indicate that till deposits and a large glacial lake deposit are buried beneath the stratified drift and coarse pitted outwash deposits. Bedrock was logged in one well located immediately to the west of the landfill at an elevation of approximately 18 feet below sea level. Materials encountered in the drill holes located around the site is typical of the glacial drift deposits described. The stratigraphic sequences and gradations are extremely varied on a small scale but appear to show some general consistency over the entire depositional sequence.

Of primary significance is what appears to be a relatively consistent unit of lake type lacustrine sediment. This unit was encountered in all deep test borings and monitor wells located on the landfill property and in many of the domestic wells in the vicinity of the landfill. In the domestic wells nearest the north boundary of the landfill property, this deposit is logged as 120 to 150 feet thick. Test borings in the landfill area extended into the clay unit as much as 70 feet without penetrating the sediment. Monitoring well CLF-16 located 2,000 feet south of the active landfill was over-bored to a depth of 278 feet (elevation 1.9 feet above sea level) and encountered a 45-foot thick unit of clayey sand and gravel which appears to be the southern extension of the clay unit. Grain size analysis of representative samples indicates that the sediments are predominately lean clay and silty clay with some fine silt and sand stratification. Penetration tests performed in the clay unit show that it is over consolidated. This is likely due to having been overridden during one or more glacial advances.

Subsurface stratigraphy is depicted graphically in cross-section drawings attached to *Attachment 4-C: July 1993 Hydro Geologic Investigation Report*.

4.1.2. Climate

Central Landfill is in a transitional climate zone where temperature variations, precipitation, cloudiness, humidity, and surface winds are milder than in maritime or mountainous zones. The mountains located to the south tend to bar the moist Pacific air, moderating the amount of precipitation. The mountains to the north and east protect the area from cold air from the Interior.

Mean annual temperature for the area is about 35° F, with a range of about -38° F to 87° F. Average annual precipitation is about 16 inches: 47 inches of snow and 10 inches of rain. September is typically the wettest month. March is typically the driest month, averaging only 0.5 inch. Maximum snow accumulation occurs in December, averaging nearly 12 inches.

4.1.3. Vegetation and Wildlife

The site is characterized by mixed stands of cottonwood and birch forest, interlaced with other vegetative communities such as meadows, herbaceous and shrubby vegetation, and willow/alder thickets.

During the spring, the coastal areas south of Central Landfill serve as resting and staging areas for hundreds of thousands of migratory waterfowl. Numerous waterfowl remain to nest. Two species of swan, three species of geese, and several duck species and shorebirds utilize the adjacent areas. Bald eagles are commonly observed in or near the landfill site. An annual

eagle census is conducted by the Audobon Society. Populations average about 140 birds in the area daily during the specific time the census is conducted, normally in the spring. Other raptors seen in the area include golden eagles, red-tailed and rough-legged hawks, marlins, goshawks, and hawk owls. Ravens and seagulls are common residents of the landfill site.

The most visible large mammals in the area are moose. The Palmer Hay Flats, located to the south, provides both wintering and calving habitat. Black bear, mink, and red fox have been observed in the area, and furbearing muskrats are abundant throughout the general area. Other common species include snowshoe hares, meadow voles, and masked shrews.

4.1.4. Land Use

The entire 620-acre Central Landfill property is currently classified by Matanuska Susitna Borough Assembly Resolution as sanitary landfill, with current and future use of the land dedicated for use as landfill. Formal classification of the land occurred in 1985 with revalidation in August 1989 after a mistaken resolution was adopted to designate the land as trails. An August 1989 Assembly action corrected the mistake and the land in fact was revalidated and designated as sanitary landfill. Private residences are located adjacent to the site on the west and north sides of the site.

A final assembly resolution in 1989 (*Attachment 4-D: Resolution 89-183*) directed the SWD to enter into a management agreement allowing the Borough Land Management Division to manage and maintain several popular trails on the east and southern sides of the property known as the Crevasse Moraine Trail (CMT) System. Until required for landfill related activities, all trails will remain open to the public. A goal of the landfill development is to defer use of the lands of the CMT System for as long as possible. It should be made clear, however, that the trails will eventually be developed by the SWD and removed from use by the public.

Future reintroduction of the lands as trails or wildlands may occur based on gas development, monitoring required by EPA and State regulations and safety of the site.

4.2. CLF Utilities

4.2.1. CLF Electrical

Electrical service is provided by the Matanuska Electric Association (MEA) via 2 separate lines that enter the CLF. The first line is a 400-amp, single-phase pedestal mounted electrical service placed just north and west of the CLF Scale House. The distribution panel is in the scale house and controls power to the scales, residential disposal wall, and all exterior lighting. The second line is a 12.4 kV 3-phase service that was installed in 2018 in conjunction

with the Cell 4 and Leachate Lagoon project. The service follows a road from the west side of the property and is marked with white carsonite markers. The line terminates at a 350 kVA transformer adjacent to the southwest side of the leachate lagoons. From there, power is fed to panels on the south side of the lagoons which in turn feed the telemetry and Cell 4 pumps. Telemetry includes Cell 4 leachate levels, lagoon levels, and lagoon leak detection which are relayed to a readout board in the Environmental Operations office. See *Attachment 4-E: Electrical As-Built* and *Attachment 4-F: Animal Control As-Built*.

4.2.2. CLF Natural Gas

Natural gas is supplied by ENSTAR Natural Gas Company. The service enters the CLF near the scale house entrance and the line supplies natural gas to both the CLF Scale House and Admin/HHW facility.

4.2.3. CLF Water

The water supply is provided by two wells. Well 1 is located between Animal Control and the Admin/HHW facility and supplies water to the Animal Control facility as well as the CLF Scale House. Well 2 is located in the Admin/HHW employee parking area and supplies water to the Admin/HHW facility.

4.2.4. CLF Wastewater

Wastewater for both the CLF Scale House and Admin/HHW facility is provided by on-site septic tank and drain field systems. The septic system for the scale house is located to the east of the scale house behind the Operations Portable building. The septic system for the Admin/HHW facility is located to the northwest of the Admin/HHW facility.

4.3. CLF Site Access and Control

Public access is provided by the Palmer-Wasilla Highway, then south to North 49th State Street, which is a paved secondary roadway connecting the landfill site to the Palmer-Wasilla Highway (located north of the site). On-site access roads consist of paved roadways and well-maintained gravel roadways leading to the active fill areas and to the residential disposal area. Perimeter fencing provides site control. There are three separate lockable gates that are located along the North 49th State Street fence line.

Future access is envisioned through a Trunk Road, 49th State Street connector. Easement issues and funding remain the current road blocks to the project. Benefits include an access road away from homes unlike what is currently seen on the 49th State Street entrance and a reduction of considerable and steadily growing traffic. 49th State Street traffic has been known to create access issues to homeowners in the neighborhood occasionally.

4.4. CLF On-Site Roads

Three types of access roads are used within Central Landfill. These access roads are defined as follows:

- Permanent Access Roads: Paved roads and all-weather roads designed to carry heavy traffic and loadings. These roads consist of two lanes of sufficient width (minimum 12-feet per lane) and loading strength to handle commercial haulers and transfer box loads. The roads are also subject to frequent, though short-term loadings by landfill equipment. The grades of these roads are maintained at 8 percent or less, with a minimum cross slope of 2 percent to drain surface water.
- Temporary Access Roads: Graveled roadways leading from the permanent access roads into the current fill area. These roads are approximately 20-feet wide and, for safety reasons, are designed for one-way traffic whenever possible. The grades of these roads are maintained at 10 percent or less. One-way roads will be graded to drain with a cross slope of at least 3 percent.
- Interior Access Roads: Haul roads constructed of native material placed on prior cells or natural soils leading directly to the MSW working face. As cell construction proceeds along a lift, the material used in constructing the interior road will be incorporated back into the fill as cover soil.

The subgrade over which the permanent and temporary access roads are constructed may be undisturbed earth, refuse, or fill. The depth of rock stabilization and road base materials is governed by the integrity of the subgrade. When roads are constructed on a stable subgrade of rock or till, a road section consisting of 24-inches of gravel base material is acceptable. If the subgrade material has a high moisture content and is soft or subject to a relatively high degree of settlement, a deeper section of gravel is required to increase the stability and load capacity of the road.

Proper turn-around space is maintained to accommodate the largest commercial vehicles using the landfill. The normal traffic pattern to the working face requires the truck driver to maneuver the vehicle to a common staging area and then back the truck in a rear-turning movement toward the active unloading area.

Moveable traffic signs are provided to separate truck traffic from the public, as well as routes used by heavy earthmoving equipment.

4.5. CLF Road Maintenance

Permanent roadways are maintained by SWD staff while temporary and interior roadways are maintained by a SWD contractor.

During periods of dry weather, dust control may be required, and is accomplished by spraying the road surfaces with water. Winter operations require that access roads be maintained clear of snow.

The SWD contractor is responsible for all maintenance to active and closed cells, temporary and interior roads, snow removal, slope erosion, construction drainage ditches, repairing leachate seeps, repair to stormwater ponds and ditches and additional site maintenance issues as required.

MSB Public Works Department (PWD) Operations & Maintenance (O&M) Division maintains a salted sand storage building as well as a pea gravel lay down area on approximately 4 acres within the CLF. The O&M staff or their contractor is responsible for the maintenance of their salted sand area to include repair of damage to access roads, berms and lay down area. Sand sometimes protrudes from under the covered area in which case the salted sand pile is typically covered with tarps to reduce chloride leaching into the soil.

SWD staff maintain access roads, parking areas, residential drop off areas to include disposal wall, recycling, brush and grass, scrap metal, and compost area. This includes but is not limited to snow removal, grading or improving access roads, drainage issues and sanding.

4.6. Transfer Activities

At 25,258 square miles, waste transportation within the MSB is a considerable issue to overcome. When the requirement for lined cells was instituted (circa 1996) all small landfills across the Borough were closed with the exception of those legally sanctioned under various ADEC programs to help smaller lodge and business operations, typically off the grid, remain operating in terms of waste disposal. Upon closing the various landfills across the Borough, a series of Transfer Stations (Borough staffed) and Transfer Sites (business sites contracted with the borough) were created, currently totaling thirteen sites. The MSB constructed collection facilities at these locations and purchased a series of 40-cubic yard and 120-cubic yard containers for hauling waste. Some sites also have a hazardous waste collection area, a wood or brush collection area, and/or a scrap metal collection area.

4.7. Transfer Stations

The Solid Waste Division manages five Transfer Stations operated by Borough employees.

4.7.1. Big Lake Transfer Station

Big Lake Transfer Station is located at Mile 1 of Hollywood Road, adjacent to the resort community of Big Lake. The site is accessed via Big Lake Road, which intersects the George Parks Highway at Milepost 52. Legally described as Township 17N, Range 3W, Section 22, Lot D7, Big Lake Transfer Station is approximately 21 miles west from the Central Landfill in Palmer, Alaska.

4.7.2. Butte Transfer Station

Butte Transfer Station is located at 17390 E Butte Road, adjacent to the Butte Elementary School. The site is accessed via S George Plumley Rd, which intersects S Old Glenn Highway. Legally described as Township 17N, Range 2E, Section 25, Lot A21, Butte Transfer Station is approximately 11 miles east from the Central Landfill in Palmer, Alaska.

4.7.3. Skwentna Transfer Station

Skwentna Transfer Station is located adjacent to the old Skwentna School building and adjacent to a State of Alaska (SOA) building which is leased by the SOA and used for runway maintenance. The old Skwentna dump closed in 2017 and the Borough agreed to backhaul recyclable materials for the residents. Once or twice annually, recyclable materials are backhauled by barge. SWD employees fly into the Skwentna airport monthly to perform maintenance at the site.

4.7.4. Sutton Transfer Station

Sutton Transfer Station is located at 15625 North Glenn Highway and is accessed via Alaska Highway 1, north. Legally described as Township 19N Range 3E Section 27 Lot B9, Sutton Transfer Station is approximately 16 miles northeast from the Central Landfill in Palmer, Alaska.

4.7.5. Talkeetna Transfer Station

Talkeetna Transfer Station is located at 25150 S Comsat Road, which intersects Talkeetna Spur Road at Mile 11.8, which is accessed from Alaska Highway 3, north. Legally described as Township 26N Range 4W Section 31 Lot D2, Talkeetna Transfer Station is approximately 80 miles northwest of the Central Landfill in Palmer, Alaska.

4.7.6. Willow Transfer Station

Willow Transfer Station is located at 15469 Willow Station Road, which is accessed via Alaska Highway 3, north. Legally described as Township 19N Range 4W Section 5 Lot D6, Willow Transfer Station is approximately 37 miles northwest of the Central Landfill in Palmer, Alaska.

4.8. Winter Operations

Planning for winter operations is an essential part of solid waste disposal practices in Alaska. Freezing temperatures decrease the ability of oil and grease to provide proper lubrication, increasing equipment wear. Frozen refuse and cover soil increase the difficulty in compacting and covering the waste. Snow must be removed from roads and working areas to allow vehicle access for off-loading waste. Snow removed from working areas must be stockpiled to avoid becoming nuisance water or leachate during the spring thaw.

The cold presents a health hazard to workers through potential exposure to hypothermia and frostbite. Before winter landfilling operations occur, the SWD ensures that:

- Equipment has plug-in block heaters or protected storage;
- Equipment has cabs with heaters; and,
- Personnel have cold-weather clothing.

4.9. Operating Record

State Regulation *18 Alaska Administrative Code (AAC) 60.235* requires the owner or operator of a landfill facility to maintain an "operating record". The operating record must consist of the following:

- The permit application and the permit;
- Hazardous waste screening inspection records, training procedures, and notification procedures;
- Any demonstration, certification, finding, monitoring, testing, or analytical data required by the monitoring plan;
- Financial assurance documentation;
- This operating plan; and,
- As-built drawings of the landfill.

The operating record will be maintained in the SWD Manager's office and electronically in the Borough's recordkeeping software program.

4.10. Waste Volume Validation

The Borough retains an O&M contractor to provide all maintenance of the MSW working face and C&D cell compaction, and this contractor is monitored for proper compaction rates. The contractor must maintain better than 1,400 pounds per cubic yard compaction rate or suffer a liquidated damages penalty. To validate the exact amount of space used to place trash, a survey is performed quarterly to validate the baseline for the next quarter and validate the size of the waste placed the prior quarter. This data is used to calculate the compaction rate for the quarter.

Total tonnage is extracted from the computerized waste tracking system and together with the volume found in the survey, a calculation is made to determine the compaction rate for the quarter. The calculation is made by taking waste tonnage which is converted to pounds and the poundage is divided by the cubic yardage of volume used from the survey which results in a compaction rate in pounds per cubic yard. The waste volume serves the additional purpose of validating the engineers waste in place calculations listed in the *2020 Landfill Development Plan*. Variations are recorded to maintain a good sense of the volume used/remaining. Through this method we can anticipate the need to start planning and execution for the next cell construction and closure projects.

4.11. Closed Landfills

The Solid Waste Division monitors three closed landfills. The closed landfills are in Big Lake, Butte, and Wasilla (Smith Ballfields).

The Big Lake Landfill (BLLF) is located at Mile 1 of Hollywood Road near Big Lake, Alaska. BLLF was closed in 1991 but continues to operate as a transfer station. There are ten monitoring wells at the site. Two of the monitoring wells are sampled semi-annually, five are sampled annually, and three are not currently included in the monitoring program.

The Butte Landfill (BLF) is located on Plumley Road at Mile 11.5 of the Old Glenn Highway, southeast of Palmer, Alaska. The landfill was closed in 1987 but continues to operate as a transfer station. There are eight monitoring wells at BLF. Four monitoring wells and the Butte Elementary drinking water are sampled on a semi-annual basis; four of the monitoring wells are not currently included in the monitoring program. Ambient air monitoring is conducted on a semi-annual basis.

Smith Ballfields (SBF) is the site of the closed Knik-Wasilla Sanitary Landfill, which was operated in the 1960's and 1970's by the City of Wasilla. Access was unrestricted until the landfill was closed in 1980 under *ADEC Permit No. SC-18-79*. The facility is located at Mile 1.5 of Knik-Goose Bay Road in Wasilla, Alaska. There are eleven monitoring wells at the site. Ten of the monitoring wells and the Smith Ballfields and Iditarod Headquarters water wells are sampled on a quarterly basis as part of an on-going assessment of corrective measures. One monitoring well is not currently included in the monitoring program.

18 AAC 60.830 requires groundwater data and reports to be retained for five years. These records will be retained for, at a minimum, as long as active monitoring programs are in place at each respective site, and then five years after monitoring requirements have ceased.

5. FACILITIES AND MAINTENANCE

This section covers Central Landfill and Transfer Station facility maintenance, signage, litter control, bird, animal and vector control, and closed landfill, current cells, and operational areas.

5.1. Landfill Facilities

- **Administration/HHW Building:** Built in 2005, the 60' x 100' Hazardous Waste Facility (HWF) west of the scale house is used for collecting HHW and for consolidation of materials prior to shipping as well as the solidification of latex paint. All activities associated with hazardous waste management are conducted in this facility and it contains office space for the Environmental Unit Supervisor and Environmental Technicians. The other side of this facility houses office space for the Office Assistants, Scale House and Transfer Station Unit Supervisor, Solid Waste Division Manager, Administrative Assistant, Division Administrative Specialist, Project Manager, and Program Coordinator. This building also contains a conference room, supply closet, server room, break room, two bathrooms with shower and sink facilities, and a boiler room.
- **HHW Storage Connex:** Secure storage containers located near the HWF are used to shelter and store the hazardous waste collected until it can be picked up by the contracted Hazardous Waste transportation company.
- **Scale House:** The 12' x 40' scale house includes working space, an office space, a bathroom, and a sink.
- **Portable Building:** The 20' x 40' portable office building houses office space for the Central Landfill Operations Unit Supervisor, Senior Utility Workers, Utility Workers and Laborers as well as a classroom and computers for training and planning purposes. This facility includes a locker room but does not have restrooms or running water.
- **Commercial Scales:** The eighty-foot truck scales and associated computerized systems measure and record the weights of incoming and outgoing vehicles and generate billing information through a link with the Borough's mainframe computer system at its Palmer office. The public access the landfill via the incoming truck scale located at the main gate and exit via the outgoing truck scale. Commercial account holders access the landfill via the commercial truck scale, located to the west of the Admin/HWF facility.
- **Residential Disposal Wall:** The residential wall accommodates three 120-cubic yard trailers for the public to use for depositing solid waste. The drop off area and trailer area are covered.
- **Warm Storage Building:** West of the residential wall area, is a 60' x 80' equipment warm storage facility. It is used by the Borough to store equipment and may be made available to the landfill contractor through coordination with the contract administrator. This facility does not have restrooms or running water.

- **Storage Garage:** This building is comprised of three 40-foot connex, walls, roof, one-man door, and one roll up vehicle door. One connex is used for storage of office supplies, transfer station tools and supplies, extra building supplies, and maintenance staff hand tools. The second connex stores palletized electronics, sandbags and HHW support equipment. The third connex stores compost support equipment and supplies. During winter operations, the storage garage stores the landfill plow and sand truck while during summer operations, the landfill UTV is stored here.
- **Public Works O&M Salted Sand Storage Building:** The metal building stores salted sand and is maintained by Public Works O&M contractors.
- **Leachate Pump and SCADA Control Cabinets:** Located adjacent to Cell 4, the cabinet houses a specialized system of monitored control valves and pumps to provide data to the Environmental office space for monitoring purposes as well as to house the pumps that move leachate from an aggregation point within the lined, Cell 4 basin to two leachate lagoons.
- **Leachate Lagoons and Main Electrical Facility:** The leachate lagoons for storage of leachate prior to treatment with associated SCADA and electrical to include a 15,000-volt main electrical buried line to a 480-volt stepdown transformer adjacent to the site.
- **Landfill Gas Flare:** Adjacent to the leachate lagoon space is a newly constructed landfill gas flare and associated SCADA infrastructure transmitting data to the Environmental office space for monitoring purposes.

5.2. Central Landfill Facility Maintenance

The Solid Waste Division has overall responsibility of the facilities to include all structures at the landfill. Maintenance is performed by either the MSB Public Works O&M Division, a company contracted by O&M, a company contracted by the SWD or in some cases by the internal workface. Complexity and scope determine the type of workforce for the job.

5.3. Central Landfill Signage

The Central Landfill has multiple directional and safety signs throughout the landfill and surrounding the active areas. See *Attachment 5-A: Central Landfill Signs with Maps* for the specific type and location of each sign.

5.4. Central Landfill Litter Control

The first line of defense against litter is to maintain a daily routine of covering, as soon as possible after refuse is deposited. Some paper escapes from the working face despite these efforts due to the location and subsequent wind events associated with the landfill's location. Portable litter fences located near the working face and at the C&D cell have been used with some success, depending upon wind conditions and variability. The contractor moves the litter fencing daily to adjust for wind direction and speed.

Twice a year CLF sponsors a trail cleanup which allows the local community the opportunity to assist in the cleanup of the CMT system that surrounds the landfill. On a weekly basis Utility Workers and Laborers pick up trash on the trail at the landfill's northern boundary as well as the 49th State Street access road. Another addition to Central Landfill's litter removal along the fence line to the west of the C&D cell is the volunteer group from the Valley Community for Recycling Solutions (VCRS) that has been working with the contractor's litter pickers to remove all of the litter.

Several areas that are patrolled and, as necessary, cleaned up by a litter crew include:

- The landfill perimeter, both inside and outside of the landfill fence
- The access road to the landfill; and,
- Drainage ditches on site.

MSB Code 8.05.080 prohibits the hauling of unsecured loads, which result in littering of roadways. Such loads entering the scales at the landfill are assessed an unsecured load fee at the current MSB Assembly approved rates for residential loads (less than 5 cubic yards) and commercial loads (greater than 5 cubic yards).

5.5. Central Landfill Bird, Animal, and Vector Controls

Primary vector control is accomplished by minimizing the exposed working face and maintaining scheduled daily cover. This limits accessibility of food sources within the refuse and make the landfill less attractive to vectors and other animals.

Bird management options will be evaluated, and possible management options may include visual and audio deterrents. The SWD will be drawing from bird management programs implemented by other Class I landfills in the state.

5.6. Central Landfill Closed Landfill, Current Cells, and Operational Areas

The SWD has overall responsibility for maintenance and permit violations. All maintenance and permit violation occurrences will be remedied as soon as feasibly possible. Numerous contractors are used for repairs, upgrades, and adjustments for all operational elements of the current landfill and closed landfills. Additionally, the SWD employs contractors to plan for future operations.

5.7. Transfer Station Facilities

5.7.1 Big Lake Transfer Station

- Gate House: The 10’ x 10’ gate house offers a covered work area for the employees and computers but does not include running water or plumbing. There is a rented port-a-potty at this site.
- Residential Disposal Wall: The residential wall accommodates two 120-cubic yard trailers for the public to use for depositing solid waste. The drop off area and trailer area are covered.
- HHW Storage: There is a structure for the collection of antifreeze, batteries, cooking oil, motor oil and latex paint. This structure is used to shelter and store the hazardous waste collected until it can be picked up by the SWD Environmental Unit and taken back to the Central Landfill HWF.
- Tool and Equipment Shed: A 12’ x 12’ shed to hold tools and equipment is located next to the HHW storage structure.
- Burn Barrel Container: Burn barrels and ash are collected in a 40-yard container.
- Recycling Containers: There are two 40-yard recycling containers at this location.

5.7.2 Butte Transfer Station

- Gate House: The 10’ x 10’ gate house offers a covered work area for the employees and computers but does not include running water or plumbing. There is a rented port-a-potty at this site.
- Residential Disposal Wall: The residential wall accommodates two 120-cubic yard trailers for the public to use for depositing solid waste. The drop off area and trailer area are covered.
- HHW Storage: There is a structure for the collection of antifreeze, batteries, cooking oil, motor oil and latex paint. This structure is used to shelter and store the hazardous waste collected until it can be picked up by the SWD Environmental Unit and taken back to the Central Landfill HWF.

5.7.3 Sutton Transfer Station Facilities:

- Gate House: The 10’ x 10’ gate house offers a covered work area for the employees and computers but does not include running water or plumbing. There is a rented port-a-potty at this site.
- Residential Disposal Wall: The residential wall accommodates four 40-cubic yard trailers for the public to use for depositing solid waste.
- HHW Storage: There is a structure for the collection of antifreeze, batteries, cooking oil, motor oil and latex paint. This structure is used to shelter and store the hazardous waste

collected until it can be picked up by the SWD Environmental Unit and taken back to the Central Landfill HWF.

- Recycling Containers: There are two 40-yard recycling containers at this location.

5.7.4 Talkeetna Transfer Station Facilities:

- Gate House: The 10’ x 10’ gate house offers a covered work area for the employees and computers but does not include running water or plumbing. There is a rented port-a-potty at this site.
- Residential Disposal Wall: The residential wall accommodates four 40-cubic yard trailers for the public to use for depositing solid waste.
- HHW Storage: There is a structure for the collection of antifreeze, batteries, cooking oil, motor oil and latex paint. This structure is used to shelter and store the universal waste collected until it can be picked up by the SWD Environmental Unit and taken back to the Central Landfill HWF.
- Cardboard Baler Building: A 16’ x 12’ building at this property houses a cardboard baling machine.
- Cardboard Storage Connexes: Two 20’ long x 8’ wide connexes are used to store the cardboard bales until they can be picked up by SWD Utility Workers and transported to VCRS.
- Recycling Containers: There are two 40-yard recycling containers at this location.

5.7.5 Willow Transfer Station Facilities:

- Gate House: The 10’ x 10’ gate house offers a covered work area for the employees and computers but does not include running water or plumbing. There is a rented port-a-potty at this site.
- Residential Disposal Wall: The residential wall accommodates four 40-cubic yard trailers for the public to use for depositing solid waste.
- HHW Storage: There is a structure for the collection of antifreeze, batteries, cooking oil, motor oil and latex paint. This structure is used to shelter and store the universal waste collected until it can be picked up by the SWD Environmental Unit and taken back to the Central Landfill HWF.
- Recycling Containers: There are two 40-yard recycling containers at this location.

5.7.6 Skwentna Transfer Station Facilities:

- Facilities are limited to a 25’ x 20’ building that stores equipment, hand tools, totes, super sacs, and recyclable material waiting to be backhauled to the Central Landfill. Outside, along the west side of the building, are several cubic yard totes that residents use to

dispose of aluminum, plastic, batteries, and glass. Transportation to and from Skwentna is by boat, small aircraft, or snow machine.

5.8. Transfer Station Facility Maintenance

The Solid Waste Division has overall responsibility of the facilities to include all structures at the Transfer Stations. Maintenance will be performed by either the MSB Public Works O&M Division, a company contracted by O&M, a company contracted by the SWD or in some cases by the internal workface. Complexity and scope determine the type of workforce for the job.

5.9. Transfer Station Signage

The Transfer Stations have multiple directional and safety signs throughout their grounds and active areas. See *Attachment 5-B: Transfer Station Signs with Maps* for the specific type and location of each sign.

5.10. Transfer Station Litter Control

Litter control is the responsibility of the SWD and is accomplished by keeping the container lids closed when not in use and picking up windblown trash throughout the day and at the end of each day.

5.11. Transfer Station Bird, Animal, and Vector Controls

Primary bird, animal, and vector control is accomplished by keeping the waste container lids closed when not in use and keeping the disposal area clean. Waste Disposal Technicians (WDT) open the containers before use and close the containers when filled or at the end of each day. Disposal areas are cleaned throughout the day, at the end of each shift, and pressure washed when needed which limits the attraction to vectors.

5.12. Transfer Sites

The Solid Waste Division has seven contracted transfer sites operated by community businesses.

5.12.1 Clearwater Mountain Lodge

Clearwater Mountain Transfer Site is operated by Clearwater Mountain Lodge and is located at Milepost 82.2 Denali Highway. The MSB SWD has two 40-yard containers for the collection of waste that are picked up and changed out by SWD Utility Workers when full.

5.12.2 Eureka Lodge

Eureka Transfer Site is operated by Eureka Lodge and is located at Milepost 128 Glenn Highway. The MSB SWD has two 40-yard containers for the collection of waste that are picked up and changed out by SWD Utility Workers when full. There are also totes for the collection

of batteries, cooking oil, motor oil and latex paint that are picked up and changed out by SWD Environmental Unit employees when full.

5.12.3 Lake Louise

Lake Louise Transfer Site is operated by 3 Lakes Rentals and is located at 26501 South Lake Louise Road. The MSB SWD has two 40-yard containers for the collection of waste that are picked up and changed out by SWD Utility Workers when full. There are also totes for the collection of batteries, cooking oil, motor oil and latex paint that are picked up and changed out by SWD Environmental Unit employees when full.

5.12.4. Long Rifle Lodge

Long Rifle Transfer Site is operated by Long Rifle Lodge and is located at 31406 West Glenn Highway. The MSB SWD has two 40-yard containers for the collection of waste that are picked up and changed out by SWD Utility Workers when full. There are also totes for the collection of batteries, cooking oil, motor oil and latex paint that are picked up and changed out by SWD Environmental Unit employees when full.

5.12.5. Maclaren River Lodge

Maclaren River Transfer Site is operated by Maclaren River Lodge and is located at Milepost 42 Denali Highway. The MSB SWD has two 40-yard containers for the collection of waste that are picked up and changed out by SWD Utility Workers when full.

5.12.6 Point Mackenzie

Point Mackenzie Transfer Site is operated by PolarBear RV Park and is located at 22481 West Point Mackenzie Road. The MSB SWD has two 40-yard containers for the collection of waste that are picked up and changed out by SWD Utility Workers when full. There are also totes for the collection of batteries, cooking oil, motor oil and latex paint that are picked up and changed out by SWD Environmental Unit employees when full.

5.12.7 Trapper Creek

Trapper Creek Transfer Site is operated by Vitus Energy and is located at Milepost 116.5 Parks Highway. The MSB SWD has two 40-yard containers for the collection of waste that are picked up and changed out by SWD Utility Workers when full. There are also totes for the collection of batteries, cooking oil, motor oil and latex paint that are picked up and changed out by SWD Environmental Unit employees when full.

6. VEHICLE AND EQUIPMENT MAINTENANCE

Vehicle and equipment maintenance are the responsibility of the Landfill Operations Unit Supervisor and is managed by the mechanic. The maintenance program starts with pre-trip inspections and scheduled routine service. See *Attachment 6-A: Vehicle Maintenance Policy & Procedure*.

6.1. Inventory

The mechanic keeps an inventory list of all vehicles, equipment, and tools with detailed information on usage and replacement needs. The spreadsheet has the following tabs and information:

- **Vehicles:** Vehicle number, VIN number, MSB asset tag number, license plate number, registration tag year, Tesoro gas card number, make and model, vehicle type, year, special or additional equipment, mileage, average miles per year, purpose, warranty info, service agreement, status, cost at purchase date, replacement plan and assumed replacement cost.
- **Radios:** Radio number, manufacturer, serial number, MSB asset tag number, unit/user, last inspected, inspected by, and comments.
- **Trailers:** Trailer number, VIN number, MSB asset tag number, license plate number, registration tag year, make and model, equipment type, year, special or additional equipment, mileage/hours, purpose, warranty info, service agreement, status, cost at purchase date, replacement plan and assumed replacement cost.
- **Hand Tools:** Manufacturer, tool description, model number, serial number, quantity, and date of last inspection.
- **Power Tools:** Manufacturer, tool description, model number, serial number, quantity, date of last inspection, MSB asset tag number, and comments.
- **UTV's:** UTV number, VIN number, MSB asset tag number, license plate number, registration tag year, make and model, equipment type, year, special or additional equipment, mileage/hours, purpose, warranty info, service agreement, status, cost at purchase date, replacement plan and assumed replacement cost.
- **Snow Plows & Sanders:** Serial/VIN number, MSB asset tag number, make and model, equipment type, year, special or additional equipment, mileage/hours, purpose, warranty, service agreement, status, cost at purchase date, replacement plan and assumed replacement cost.
- **Computers and Cell Phones:** Computer name, MSB asset tag number, serial number, cost center (budget), location of computer, phone MAC I.D., replacement schedule and assumed replacement cost.
- **Heavy & Medium Equipment:** Equipment number, serial/VIN number, MSB asset tag number, license plate number, registration tag year, make and model, equipment type, year,

special or additional equipment, mileage/hours, purpose, warranty, service agreement, status, wear out date, cost at purchase date, replacement plan, purchase order information, related legislation, and assumed replacement cost.

- **120-Yard Containers:** Container number, serial/VIN number, MSB asset tag number, license plate number, registration tag year, DOT inspection date, make and model, equipment type, year, purpose, warranty, service agreement, status, date refurbished, cost at purchase date, replacement plan and assumed replacement cost.
- **40-Yard Containers:** Container number, serial/VIN number, MSB asset tag number, make and model, equipment type, year, special or additional equipment, purpose, warranty, service agreement, status, wear out date, cost at purchase date, replacement plan, date refurbished, value, licensed date, and assumed replacement cost.

7. INSPECTIONS

This section covers the many SWD inspection programs performed at the Central Landfill and Transfer Stations.

7.1. Central Landfill

The SWD established the inspection program to inspect access roads, site security, disposal areas, slopes, drainage, environmental protection measures, gas and water monitoring, equipment, leachate equipment to include leachate lagoons, and to screen commercial and residential customers for regulated hazardous waste, universal and special wastes.

7.1.1. Monthly Inspections

Monthly landfill inspections are performed by the SWD Environmental Technicians and consist of visual and physical inspecting of the leachate lagoons and supporting equipment, leachate escapement or pooling problems, gas and water monitoring vents, probes and wells, household hazardous waste collection equipment and storage areas. See *Attachment 7-A: Monthly Inspection Form* and *Attachment 7-B: Monthly Inspection Procedures*.

7.1.2. Daily Inspections

Daily landfill inspections are performed by SWD Utility Workers and consist of site security, access roads, illegal entry, commercial and residential scales, damaged or missing signage, disposal areas, signs of wildlife, signs of stress to vegetation, liner defects or erosion, vectors, signs of settlement or slope instability, stormwater pooling, fire or combustion problems, damage to facility or equipment and signs of gas venting and leachate seeps. See *Attachment 7-C: Central Landfill Daily Inspection Form*.

7.1.3. Daily Load Inspections

The Scale House Waste Disposal Technicians (WDT) select three residential customers at random at different times of the day to complete visual load inspections. The load is inspected for universal, hazardous, and special wastes, hot ash from burn barrels, asbestos, and refrigerators. The completed inspection form is sent to the Transfer Station Unit Supervisor. See *Attachment 7-D: Residential Load Inspection Form*.

7.1.4. Random Load Inspections

Laborers at the residential disposal wall and recycling area perform three random load inspections per day. Loads are screened for hazardous, universal, and special wastes, asbestos, cardboard, and C&D material. See *Attachment 7-D: Residential Load Inspection Form*.

7.1.5. Load Inspections at Cells

The SWD contractor supplies one spotter at the MSW Cell and one spotter at the C&D cell to screen each commercial and residential load. The MSW Cell spotter screens loads for C&D waste and the C&D Cell spotter screens loads for MSW waste. Both spotters inspect loads for hazardous, universal, and special wastes, large volumes of cardboard (over 1 cubic yard), and fire or combustible hazards. Additionally, spotters monitor for safety issues, the use of PPE, and help direct traffic. See *Attachment 7-E: Daily Spotter Log*.

7.2. Transfer Stations

The SWD established the inspection program to inspect site security, disposal areas, equipment, and to screen commercial and residential customers for regulated hazardous waste, universal and special wastes.

7.2.1. Monthly Inspections

The Transfer Station Unit Supervisor performs a documented monthly facility inspection. See *Attachment 7-F: Transfer Station Inspection Report*.

7.2.2. Daily Inspections

Before starting their shift each day, the WDT (Utility Worker II at Big Lake) visually inspects the Transfer Station for safety issues, access control, signs of trespass or illegal entry, facility damage, condition and status of containers, equipment, signage and universal waste structure. See *Attachment 7-G: WDT Daily Task Reference List*.

7.2.3. Load Inspections

The Gate House Waste Disposal Technicians (WDT) select three residential customers at random at different times of the day to complete visual load inspections. The load is inspected for universal, hazardous, and special wastes, hot ash from burn barrels, asbestos, and refrigerators. The completed inspection form is sent to the Transfer Station Unit Supervisor. See *Attachment 7-D: Residential Load Inspection Form*.

7.3. Inspection Records

To stay in compliance with the current *ADEC Permit No. SW1A007-20*, the Monthly Inspection results from the CLF are kept in the facility's operating record. All other completed inspection forms are kept anywhere from six to ten years for SWD reference, but retention of these completed forms is not required by ADEC or any other state or federal regulation.

8. CELLS

This section covers the different types of cells and drop off areas located within the Central Landfill. It also includes information on landfill closure planning and cell maintenance.

8.1. Municipal Solid Waste (MSW) Cells

MSW waste – more commonly known as trash or garbage – consists of everyday items that are used once or twice and then thrown away, such as product packaging, clothing, bottles, food scraps, and newspapers. MSW waste comes from a variety of sources within the MSB including homes, schools, hospitals, and businesses. As of 2020, the Central Landfill has four MSW cells.

8.1.1. MSW Cell 1

Fill operations in MSW Cell 1, located in the northeast corner of the Central Landfill, began in 1980. Use of this cell ended in the summer of 1987, when operations began in MSW Cell 2, located immediately east of the original fill area. Closure of MSW Cell 1 was completed in 1988.

MSW Cell 1 does not have a liner above or below the waste mass. The cell was covered with gravel and the area now serves as a staging/storage area for landfill operations. Official tonnage and airspace data are not available for Cell 1; however, an estimated 168,639 metric tons of waste are in place in the cell (Source: *2017-01-24 – MSB-US EPA – Amended Design Capacity Report*).

8.1.2. MSW Cell 2A

MSW Cell 2A fill operations began in the fall of 1987 and the cell was closed in 2015. The closure system is composed of a cushion layer, a geosynthetic clay liner, a geocomposite drainage net, a cover layer, topsoil, and a vegetative cover. MSW Cell 2A includes a network of passive landfill gas collection piping. The 4” HDPE piping is buried just below the closure system for the cell and collects and transmits landfill gas to the surface of the cell. Cell 2A does not have a bottom liner or a leachate collection system. Cell 2A contains 579,340 metric tons of waste and occupies 976,504 cubic meters of airspace (Source: *MSB Cell 2A Record Docs_Final*).

8.1.3. MSW Cell 2B

MSW Cell 2B opened in 2004 and closed in 2009. The cell is intermediately closed. The current closure system consists of approximately 12” of gravel cover. MSW Cell 2B was the first cell at the Central Landfill to have a bottom liner and leachate collection system. The liner system consists of a sand cushion layer, a geosynthetic clay liner, a geomembrane, and a granular

drainage layer. The leachate collection system consists of an 8" HDPE collection pipe oriented east-west with five 6" lateral collection lines oriented north-south. The lateral collection lines feed into the main line which then drains to Cell 3. Cleanout access for the main line is provided on the east end of the line, on the side-slope of the cell. No cleanout access is available for the lateral collection lines. Cell 2B contains approximately 266,301 metric tons of waste and occupies 468,495 cubic meters of airspace (Source: *Cell 2B Record Drawings*).

8.1.4. MSW Cell 3

MSW Cell 3 was built in 2008 and began receiving waste in the fall of 2009. As of July 7, 2020, the cell has approximately 1 year of airspace remaining. MSW Cell 3 is lined and has a leachate collection system that is connected to the MSW Cell 2B and MSW Cell 4 leachate collection system. The liner system consists of a sand cushion layer, a geosynthetic clay liner, a geomembrane, a cushion geotextile, and a granular drainage layer. The leachate collection system consists of an 8" HDPE collection pipe orientated north-south with three 6" lateral collection lines oriented east-west. The lateral collection lines feed into the main line which then drains into Cell 4. Cleanout access for the main line is provided on the south end of the cell, cleanout access for the 3 lateral lines is provided on the western side of the cell. When the cell is closed, Cell 3 will contain approximately 652,686 metric tons of waste and will occupy 910,350 cubic meters of airspace (Source: *Cell 3 Record Drawings*).

8.1.5. MSW Cell 4

MSW Cell 4 is the current MSW disposal cell. MSW Cell 4 construction was completed in 2019 with fill operations begining in 2021. Cell 4 is lined and has a leachate collection system. The liner system consists of a sand cushion layer, a geosynthetic clay layer, a geomembrane, a geotextile layer, and a granular drainage layer. The leachate collection system consists of two parallel 6" collection lines. Leachate gravity drains toward the two collection lines and is gravity drained to the sump in the southwest corner of the cell. Leachate collected from MSW Cells 2B and 3 is gravity drained into the sump in the southwest corner of MSW Cell 4 where it is then transmitted to leachate holding lagoons. No cleanouts exist for the leachate collection lines in the cell. Cell 4 is designed to hold approximately 1.1 million cubic yards of airspace worth of waste. The Cell 4 expansion was constructed in 2025, providing an additional 354,338 cubic yards are airspace. Leachate collected in the Cell 4 expansion flows either into the Cell 2B or Cell 4 collection system. Cleanouts are provided for both collection pipes in the Cell 4 expansion.

8.2. Construction and Demolition (C&D) Cells

C&D materials consist of the debris generated during the construction, renovation, and demolition of buildings, roads, and bridges. The Central Landfill accepts items such as concrete,

wood, asphalt, gypsum, bricks, glass, plastics, doors, windows, and other non-putrescible items such as tables, couches, and bookshelves as C&D material. As of 2020, the Central Landfill has two C&D cells.

8.2.1. C&D Cell 1

C&D Cell 1 is an unlined cell located on the western side of the landfill property and is directly south of the Animal Control building. The cell was constructed in 2000 but the exact date it began receiving waste is unknown. It was closed in January 2020, and final shaping and cover will take place during the summer of 2021.

8.2.2. C&D Cell 2

C&D Cell 2 is an unlined cell located south of C&D Cell 1 and southwest of the active asbestos disposal cell. The cell was constructed in 2018-2019 and began receiving waste in February 2020.

8.3. Asbestos Cell

The active Asbestos Cell is located south of the scrap metal collection area and northeast of C&D Cell 2. A closed asbestos cell exists to the west of MSW Cell 2A. A gate at the top of the access road controls access to the cell. Bi-annual volumetric surveys are performed and the volume of airspace and quantity of asbestos containing material in place is submitted to ADEC. For further information regarding asbestos cell operations see *Attachment 8-A: Asbestos Acceptance Procedures*.

8.4. Brush

Brush includes trees, shrubs, grass clippings, leaves, branches, stumps, and hay. The brush disposal area is located west of MSW Cell 2A and north of MSW Cell 1. Brush is disposed of throughout the year and chipped or burned annually. Utility Workers and Laborers monitor the brush area to ensure no MSW refuse, C&D material or HHW is disposed of in this area.

8.5. Scrap Metal

Scrap metal includes large appliances such as washers and dryers, exercise equipment, bicycles, metal boats, piping, metal containers, and other metal debris. The scrap metal disposal area is located south of the impound lot on top of MSW Cell 1. Once scrap metal is deposited by customers, a contractor bales the scrap and transports it off site for resale. Utility Workers and Laborers monitor the scrap metal area to ensure no MSW refuse, C&D material or HHW is disposed of in this area.

8.6. Refrigerators

Refrigerators, freezers, water coolers, and other refrigerant containing appliances are collected to the west of the impound lot. These appliances are collected year-round and staged for evacuation and disposal. Due to the physical properties of most refrigerants, refrigerant evacuation is typically conducted between May and October.

8.7. Compost

A composting area is located to the northwest of MSW Cell 2A. Utility Workers and Laborers monitor the compost area and turn the compost as needed. The SWD offers free composting courses to MSB residents, more information for the composting program can be found in the COMMUNITY PROGRAMS > Recycling > Composting Program section 12.3 in this Operating Plan.

8.8. Landfill Closure Planning

This section describes the maintenance, final closure, and post-closure procedures, which will apply to the Central Landfill. The following topics are addressed: post-closure regulatory requirements, including inspections of environmental control systems (surface drainage systems, landfill cover, etc.) and environmental monitoring for landfill gas, groundwater, and surface water.

8.8.1. Post-Closure Alternatives

Closed portions of the landfill that are not used for landfill facilities will be restored in accordance with the most current Landfill Management plan. Once they are fenced off from active portions of the landfill facility, they may be open to the public for recreational use. Post-closure use will be periodically reviewed during the life of the Central Landfill to ensure that other beneficial uses or opportunities which may arise are explored. Currently, no post-closure sites have been released for return to recreational use due to physical location and monitoring requirements.

8.8.2. Closure Requirements

State Regulation *18 AAC 60.395* defines the closure requirements, which are applicable to Central Landfill. As the owner of this facility, the Matanuska-Susitna Borough is responsible for construction of a final cover layer over the fill, re-vegetation, and long-term maintenance, repair, and monitoring of the landfill site. All cell and facility closures are performed in conjunction with state regulatory requirements. ADEC approval will be obtained prior to any closure activities.

8.8.3. Final Closure

The components to be considered for closure of this site include:

- Final grade,
- Final cover requirements and construction parameters,
- Surface water drainage,
- Landfill gas and leachate controls.

8.8.4. Post-Closure Operations & Maintenance and Final Use Designation

Landfill closure and installation of a final cover will occur progressively as sections of the landfill reach final design grade. The final cover will be constructed to minimize infiltration of precipitation into the underlying refuse and protect against erosion.

Construction of the final cover will begin with final grading and shaping of the landfill surface as shown in the permit drawings. On-site borrow material will be used to fill low areas and achieve positive drainage. The final cover system will be constructed in two phases, consisting of an interim cover and a final top cover. Interim cover will be placed as grading is completed on those areas adjacent to the active landfill, but that will not be disturbed by the daily activity. A separate design will be prepared for the final cover.

8.9. Maintenance of Cells

State Regulation *18 AAC 60.397* requires that the owner of a landfill maintain its cover and environmental controls throughout its operating life and for at least 30 years after closure. A shorter or longer period may be designated at ADEC's discretion. The Borough is responsible for maintaining the integrity of the final cover and any environmental controls of monitoring devices present at the site, and as required in the permit. O&M efforts will address the following:

- Landfill cover and vegetation,
- Gas monitoring devices,
- Groundwater monitoring wells,
- Surface water drainage controls,
- Site controls (fences, gates, etc.).

The entire landfill final cover envelope is inspected on a semi-annual basis or in accordance with the engineered or other closure documents.

Gas monitoring probes and groundwater monitoring wells will be periodically inspected for damage or tampering. Wells and probes will be secured with lockable caps, and positive surface drainage maintained away from their casings.

Surface drainage controls will be inspected at the same time as the cover inspection is performed. Repairs to drainage structures, including removal of excess vegetation or silt, re-grading of settled structures, or modification of drainage paths, will be made on an as-needed basis to maintain positive drainage away from the completed fill areas.

Site access roads will be maintained in adequate condition to allow for access for required inspections and necessary repairs. Site controls such as fences and gates, which may be designated to remain will be periodically checked for damage and necessary repairs. These inspections will be carried out concurrent with the cover inspections. Monitoring will continue in accordance with the approved plan, as amended for post-closure monitoring.

9. WASTE MANAGEMENT OPERATIONS

This section covers waste management operations at the Central Landfill and Transfer Stations to include general operational information, operational days and hours, types of waste accepted, salvaging guidelines, disposal practices, fill operations, refuse compaction, cover material, and landfill equipment used.

9.1. Operating Hours

- **Central Landfill:** Central Landfill is open to the public from 8:00 AM to 5:00 PM, seven days per week. Commercial haulers and private citizens deposit waste throughout the day and most landfilling activities occur within the authorized operating hours. Additional activity, such as emergency equipment repair, planned equipment repair or maintenance, or arrival of special refuse loads and gravel removal may occur outside of open operating hours. The frequency of these activities is usually seasonally dependent compared to normal operating requirements.
- **Transfer Stations:** Big Lake, Butte, Sutton, Talkeetna, and Willow Transfer Stations are open to the public from 10:00 AM to 5:00 PM on the days specified on *Attachment 9-A: FY21 SWD Services & Fees*.
- **Transfer Sites:** Clearwater Mountain Lodge, Eureka Lodge, Lake Louise, Long Rifle Lodge, Maclaren River Lodge, Point Mackenzie, and Trapper Creek Transfer Sites that are operated by contracted businesses set their own hours of operation which can be found online at https://www.matsugov.us/facilities?facility_type=transfer.

9.2. Holiday Closures

The Borough holiday calendar is published annually at the end of the calendar year for the next calendar year. Holiday closures are communicated to the public through social media, Borough website notices, and public radio announcements. Commercial hauling companies are notified by email. See *Attachment 9-B: SWD 2020 Calendar*. The most current calendar can be presented upon request.

9.3. Scheduled Maintenance Closures

Central Landfill closes twice per year for required scale maintenance/calibration and re-certification from the SOA Division of Weights and Measures. The maintenance closures are communicated to the public through social media, Borough website notices, and public radio announcements. Commercial hauling companies are notified by email. These closures are also listed on *Attachment 9-B: SWD 2020 Calendar*.

9.4. Emergency Closures

Central Landfill experiences high wind in the winter and spring with gusts of up to 80 miles per hour (mph). During high wind events, management evaluates disposal operations at the MSW working face, the residential disposal wall, and the C&D cell. If conditions are reported unsafe, the SWD Manager or his/her representative are notified. If winds reach 25 mph or gusts reach 45 mph, the SWD Manager, his/her authorized representative, or the Public Works Director will shut down disposal operations for the safety of SWD personnel and public. Typically, weather and wind are closely monitored and if high winds are expected, notifications are posted on social media and the Borough website that the facilities will close in one hour giving customers time to get their loads dumped prior to closure. Commercial hauling companies are notified by phone. To minimize wind-blown trash the contractor places cover on the working face and C&D cell. See *Attachment 9-C: Emergency Shut-Down Policy*.

9.5. Types of Waste Accepted

Several types of waste are collected or disposed of at the Central Landfill with the largest types being MSW and C&D. Whatever the waste, it may require different handling and procedures. Wastes are disposed of in accordance with the policies and procedures found in *Attachment 9-D: Waste Acceptance Policies*. These wastes include but are not limited to: American Flags; Animal Carcasses, Road Kills, and Euthanized Animals; Animal Feces & Manure; Appliances (white goods); Asbestos; All Terrain Vehicles (ATV's) and Snowmachines; Bio and Sewage Solids; Brush, Grass, and Leaves; Bulk Wastes (brown goods); Burn Barrels; Butchering (Offal)/Fish Processing Waste; Cardboard; Compressed Gas Tanks; Construction & Demolition Materials; Contaminated Soil; Electronics; Fire Extinguishers; Fireworks; Fluorescent Tubes/Lamps; Household Hazardous Waste; Marijuana Plant Waste; Medical Waste; Metal Tanks; Mobile Homes, Campers, and Trailer Shells; Motorcycles, Mopeds, and Scooters; Refrigerators and CFC Containing Appliances; Scrap Metal; Tires; and, Universal Waste.

9.6. Prohibited Waste

There are several materials that are not accepted for disposal in the landfill cells. These unacceptable materials either pose an immediate health risk or danger for landfill personnel or they are prohibited from land disposal by federal, state, or local regulations and are handled best by recycling or recovery. See *Attachment 9-E: Prohibited Waste Policy*.

9.7. Salvaging

Salvaging is not permitted at any Solid Waste Division facility by customers or employees. Salvaging is a dangerous and risky activity and is cause for dismissal. The Borough does reserve the right to enter into professional relationships with trained entities to remove salvageable materials from the waste stream at its discretion.

9.8. Disposal Practices at CLF

For operational efficiency, refuse commercial haulers are encouraged to time their off-loading during the period of 8:00 AM to 4:00 PM. Off-loading in later portions of each day is confined to a smaller area of the refuse working face than during the peak use periods, and compaction and cover placement timed to assure a secured working face by the end of the shift. For further information regarding improperly disposed waste see *Attachment 9-H: Improperly Disposed Waste Policy*.

9.8.1. Municipal Solid Waste (MSW) Cells

Spreading and compacting refuse at the working face occurs throughout the work shift. The final 2 hours of each shift are dedicated to placement of daily cover material, maintenance of prior fill areas, and placement of alternative daily cover on those areas not completely compacted to standards. Scheduling on-site equipment maintenance or repairs considers historic peak use periods and level of effort required to assure completion of compaction and cover material placement at the end of each day.

9.8.2. Unloading MSW Wastes

Passenger vehicles and light trucks are routed to the residential disposal wall. Commercial haulers and large vehicles are routed directly to the working face. The control and coordination of these incoming vehicles is an important issue for operational efficiency and site safety. SWD personnel and highly visible directional signs along the interior access roads direct incoming vehicles.

Trucks arriving at the working face while another truck is unloading will take direction from the cell monitor and line up in succeeding positions along the working face.

Private citizens hauling their own waste to the landfill are directed to the public disposal wall, away from active equipment operation except in very limited circumstances of larger or specialized loads (dead animal carcasses, sterilized-treated medical waste, police drug equipment deposits, etc.). Signage clearly indicates areas for use by small-quantity private haulers, and sufficient separation is maintained from the large commercial trucks to avoid crossover by either vehicle type.

As large vehicles unload and leave the working face, the operator pushes the refuse up the face of the cell, spreading and compacting the refuse in lifts no more than 10-feet high. The working face at Central Landfill is limited to 200-feet wide by 10-feet tall. The number of vehicles that must be accommodated determines actual width. For operating efficiency, the

width of the working face is limited to reduce litter dispersal and concentrate the spreading and compaction efforts to a smaller area.

9.8.3. Construction and Demolition (C&D) Cells

C&D debris consists of waste that is non-putrescible and does not create or contribute to leachate production or constituent breakdown into leachate. Spreading and compacting refuse at the working face occurs throughout the work shift. Several hours of each shift are dedicated to final daily compaction and placement of cover material as needed for litter control. C&D debris is covered as the cell fill progresses with compaction of sufficient cover material to result in a 6-inch thick layer of compacted soil being placed over the existing refuse. Scheduling on-site equipment maintenance or repairs considers historic peak use periods and level of effort required to assure completion of compaction and cover material placement.

9.8.4. Unloading C&D Wastes

All C&D waste is routed directly to the C&D working face. The control and coordination of these incoming vehicles is an important issue for operational efficiency and landfill site safety. SWD personnel and highly visible directional signs along the interior access roads direct incoming vehicles. Vehicles arriving at the C&D working face while another vehicle is unloading will take direction from the cell monitor and line up in succeeding positions along the working face. Sufficient separation is maintained from the large commercial trucks to avoid crossover with smaller private vehicles.

Private Citizens and generators of small quantities of C&D waste are encouraged to keep their C&D waste separate from their MSW through a disposal costs savings.

As vehicles unload and leave the working face, the operator pushes the refuse up the face of the cell, spreading and compacting the refuse in lifts 3- to 5-feet thick. Based on current estimated volumes of C&D waste, it is estimated that a 75-foot wide working face is a sufficient width to allow vehicles room to offload C&D waste. The number of vehicles that must be accommodated determines actual width. For operating efficiency, the width of the working face is limited to reduce litter dispersal and concentrate the spreading and compaction efforts to a smaller area.

9.9. Fill Operations

This section describes the short-term and long-term objectives for the phased fill operations, as well as the fill plan and fill method.

9.9.1. Objectives

Several specific short-term and long-term objectives have been identified for the phased fill operations. This operating plan will be used for guidance in implementing management practices to meet those objectives. Construction-specific goals are as follows:

Short-Term

- Provide sufficient volume capacity within the current active area for refuse disposal.
- Continue operations of the C&D cell.
- Attempt to achieve a compaction rate of at least 1,400 pounds per cubic yard in the current active cell.
- Adequately compact and cover solid wastes disposed of daily without excessive use of cover material but within regulatory guidelines.
- Continue to utilize alternative daily cover as appropriate.
- Conserve on-site soil cover material and coordinate development of cover borrow sources with planned phases of cell construction.
- Construct cell contour finished fills with appropriate grade and configuration for planned post-closure use to reduce closure costs.

Long-Term

- Provide sufficient volume of lined cell capacity within planned expansion area to provide refuse disposal currently estimated to last through 2032/2033 for Cell 5.
- Promote waste reduction and recycling through practices, public education, and by example.
- Maintain a low-cost recycling program in cooperation with local community councils and indirectly through local recycling efforts.
- Continue operation of the C&D Cell during the life of the solid waste permit.
- Adequately compact and cover solid wastes disposed of in Cell 4 daily without excessive use of cover material. Utilize alternative daily cover when appropriate.
- Conserve on-site soil cover material and coordinate development of cover borrow sources with planned phases of cell construction. Note: The gravel sales provide a large source of reject material perfect for cover material at a significant cost savings to mining the cover.
- Construct a finished fill with appropriate grade and configuration for planned post-closure use in both C&D Cell 2 and MSW Cell 4, including its expansion.
- Continue operation of the Asbestos Cell in accordance with all regulatory requirements.
- Fill the constructed MSW Cell 4 and Cell 4 expansion.
- Refrain from covering the MSW Cell 4 sump during the life of the cell to facilitate the movement of the sump to MSW Cell 5 when that cell is built.

9.10. Fill Plan

Waste fill operations are presently occurring in MSW Cell 4 and are expected to move into MSW Cell 4 expansion in early 2026. Waste filling generally occurs in an east to west pattern across the cell in 10-foot thick by 100-foot long by 50-foot wide compacted lifts until reaching the cell limits. The pattern of filling is then repeated in the opposite direction. The 100-foot long lifts allow sufficient area for safe maneuvering and coordination of landfill traffic and heavy equipment. The size of the active working face can vary depending on daily waste volumes, types of waste, and traffic flow. MSW Cell 4 and the Cell 4 expansion will be filled with 3:1 interior side-slopes until reaching an elevation of 340-feet MSL. The top deck area of Cell 4 will then be filled at a grade of approximately 4% to match the final grade elevation of Cells 2A, 2B, and 3. Allowances will be made in the top deck area final elevations to accommodate the final cover thickness and gas collection system. Note: Occasionally, when the outer edge is expected to be exposed during the windy season, a lift of waste may be inserted north to south to build a "berm" to intercept blowing trash before continuing with an east-west courses.

A layer consisting of cover material is placed on the boundary between the unlined MSW Cell 2A and the lined MSW Cell 3 to provide two feet of cover material to be placed over the base liner separating Cells 2A and 3 as subsequent waste lifts are placed.

Construction of the lined MSW Cell 4 expansion disposal area was completed in the fall of 2025. Future MSW Cell 5 will be located south of Cell 4. The larger combined area of MSW Cells 1 through 5 is now referred to as Phase 1. Initial waste placement in the Cell 4 expansion shall occur in two 5-foot thick lifts of uncompacted waste across the floor area. See *Attachment 9-I: Cell 4 Fill Sequencing Plan*. Note: MSW will not be placed over the Cell 4 sump area as depicted in Attachment 9-F, see Landfill Development Plan Figure 13 for limits of MSW placement in Cell 4. Lifts will be placed similarly to those described above in approximately 100-foot long lifts moving north-south across the floor until the lift is complete. The two initial 5-foot lifts (10-foot final) will serve as an insulation layer for the leachate collection and recovery system as well as a controlled method to protect the liner when it is susceptible to being poked with items that could rupture the liner.

A 18-inch-thick drainage and protective rock layer was placed over the geomembrane liner component to provide added protection during waste filling. Spotters will be used to monitor waste placement of the initial lifts to ensure no objects are visibly present that could penetrate the liner.

Additionally, only municipal waste from residential and commercial compactor trucks and smaller vehicles will be used for the first two lifts. Waste from these sources tend to be more consistent in nature and less bulky. Low ground pressure dozers will be used to spread and cover the waste in the first lifts. The steel wheeled waste compactor will not be operated in the new lined cell until at least ten feet of waste has been placed over the base liner.

9.11. Fill Method

The fill method for the MSW and C&D cells is explained in this section. Effective planning of lift construction minimizes the cover soils used and maximizes the fill volume of the final landfill envelope. Successive lifts are placed on top of one another until the final grade is achieved, at which point intermediate cover is provided until a closure plan is submitted and approved by ADEC.

9.11.1. MSW Cells Fill Method

The active MSW disposal area of the Central Landfill is an area-type fill operation. Solid waste is disposed of daily at the active working face with cover material spread and compacted over it unless it is in a new cell which in that case will not be compacted on the first lift. Native soils excavated from other portions of the site are used as daily cover material. Alternative daily cover consisting of tarps is used on a regular basis to cover any exposed waste overnight in accordance with regulatory requirements.

MSW is offloaded on top of the active cell and pushed onto the working face in layers. Each layer is compacted as the filling progresses over the course of the day, until the end of the day's operation or until the compacted waste reaches a height of 10 feet. At that time, a 12-inch layer of cover material is placed over the completed fill (except where alternative cover may be used) and compacted to 6 inches. Cover material is typically imported from borrow areas in other areas of the site or obtained from previously constructed stockpiles.

Permit conditions stipulate the maximum size of the working face shall not exceed 200 feet wide and 10 feet tall. The dimensions of the fill are dependent upon daily waste volumes received and the efficiency of the landfill equipment "pushing" the refuse. The working face is maintained at a horizontal to vertical slope of 3:1 on interior and 4:1 on exterior slopes in accordance with regulatory requirements.

9.11.2. C&D Cells Fill Method

The active C&D disposal area of the Central Landfill is an area-type fill operation. Only inert, non-putrescible materials are accepted, which may include, but are not limited to: concrete,

asphalt, wood-wastes, gypsum wall board (sheetrock), glass, metal, cardboard packaging that is residual to the load and plastics that are residual to the load. C&D debris is spread and compacted as needed throughout the day to minimize wind-blown litter.

C&D debris is offloaded on top of the active cell and pushed onto the working face in layers. Each layer is compacted as the filling progresses over the course of the day, until the compacted waste reaches a height of approximately 10 feet. After reaching the prescribed fill height, the working face moves forward as the next series of lifts are placed. As the working face moves, a 12-inch layer of cover material is placed and compacted to a minimum of 6-inches over the completed fill area. Compacted soil cover may be placed more frequently depending upon the types and amounts of C&D waste deposited in the cell and the amount of traffic traversing finished decks. At a minimum, the cell is covered monthly. Cover must be applied shortly after depositing light objects which can be blown out of the cell by wind. Cover material is typically imported from borrow areas in other areas of the site or obtained from previously constructed stockpiles.

9.12. Waste Compaction

The rate of compaction in the active MSW cell is calculated by taking the waste in pounds and dividing by the tonnage deposited in the cell to arrive at an average compaction rate in pounds per cubic yard. More information on calculating this total can be found in Section 2. ADMINISTRATION > 2.2 Computerized Waste System > 2.2.6 Compaction of this Operating Plan.

9.12.1. MSW Cell Compaction

MSW is compacted to an average density of approximately 1,450 pounds per cubic yard in the MSW cells using a steel-wheeled compactor. Waste is pushed onto the working face in layers approximately two feet thick and each layer receives between three to five passes from a compactor. The completeness of the compaction can be judged in the field by noting when the “spring-back” of the refuse has been reduced to a minimum. Another test for adequate compaction is to note when the compactor cleats do not sink into the refuse, but instead are visibly “walking” on the refuse as they pass over it.

9.12.2. C&D Cell Compaction

C&D debris is compacted to an initial density of approximately 1,000 pounds per cubic yard in C&D Cell 2 using a steel-wheeled compactor or a D7 equivalent bulldozer. Waste is pushed onto the working face in layers approximately three feet thick and each layer receives between three to five passes from a compactor.

9.12.3. Asbestos-Containing Material (ACM) Cell Compaction

When asbestos-containing material is deposited into the ACM Cell, it is covered with at least 6 inches of soil cover by the end of the day of disposal. Compacting ACM waste is strictly prohibited.

9.13. Cover Material

This section describes the types of cover material the SWD uses on the cells based on the types allowed in the most current ADEC permit, as well as cover sources, stockpiling, and borrowing operations.

9.13.1. Daily Cover Soil

Daily cover soil is spread and compacted to a minimum thickness of 6 inches over all municipal solid waste disposed of. No waste is left uncovered at the end of the day although alternative cover may be employed where waste is not fully compacted in small areas. Daily cover soil serves several important purposes, to include:

- Prevents rodents and flies from feeding and breeding in and around the refuse disposal area,
- Minimizes the potential for fires in the refuse,
- Controls blowing litter from the working face,
- Controls odors from the working face, and,
- Reduces moisture reaching the fill and aids in the effectiveness of the surface run-on/run-off controls.

Daily cover is placed to an average loose, uncompacted thickness of approximately 12 inches. The soil is compacted by the weight of the loader/dozers used for the soil placement. Following initial compaction of the soil cover and infiltration of some of the soil cover into the underlying waste lift, the compacted daily cover thickness will be no less than 6 inches on average in areas that will be revisited within 30 days.

9.13.2. Intermediate Cover

Intermediate cover must be placed on areas that have received waste but will be inactive for a period longer than 180 days. Intermediate cover must be at least 12 inches thick when compacted.

9.13.3. Alternative Daily Cover

The Borough received a variance from ADEC on *Permit No. SW1A007-20* to use 6.5 oz. polypropylene cover as an alternative to daily soil cover. This alternative cover is used in a

manner that is consistent with the operating permit and it is used daily in those areas that have not been sufficiently compacted for the day.

9.13.4. C&D Cell Cover Soil

C&D cell cover soil serves several important purposes. Cover minimizes the potential for fires in the debris, controls blowing litter from the cell, and aids in the effectiveness of the surface run-on/run-off controls. The contractor ensures the C&D debris is spread and compacted at the working face of the C&D cell throughout the day, as well as ensuring the placement of cover material is placed as needed for litter control.

9.13.5. Cover Sources, Stockpiling and Borrowing Operations

All soil used for daily cover is excavated from on-site borrow areas. The preferred material for daily cover application is glacial outwash, which is available on-site. This soil is generally a granular, free-draining material; therefore, it is relatively easy to excavate, haul, and compact daily on top of each cell. Due to its porous nature, it does not tend to confine landfill gas movement.

Additionally, a gravel removal contract allows for reject (3/4 minus) to remain on-site. A large portion of this material is going to be used for cover in the coming years prior to excavating on-site materials.

The operator is careful to avoid undercutting slopes or creating steep slopes that could pose a landslide safety hazard. If slopes become too steep, earth is pushed from the top of the slope down until a less steep slope is obtained.

Stockpiling of glacial outwash materials for daily and interim cover for use during winter operations is sometimes required at the Central Landfill. Sources and stockpile areas are planned and located with the development of individual fill areas. The following constraints are observed:

- Soil stockpiling occurs inside of the perimeter buffer zone and where noise and visual impacts on adjacent property owners are minimized.
- Whenever possible, soils are taken directly from an excavation (borrow) area and immediately used in landfill operations rather than being stockpiled.
- Material stockpiled should be relatively dry.

9.13.6. Winter Soil Cover

During winter months, the development of sufficient quantities of on-site cover material is limited by the susceptibility of the soil to freezing conditions. This susceptibility is causally

related to the number of fine-grained particles contained within the soil. The greater the number of fine-grained particles in the soil, the more susceptible the soil is to freeze, and the greater the potential depth of frost penetration will be. As the soils at the Central Landfill contain only small amounts of fine-grained particles and are relatively free draining, frost penetration is easily averted.

If there is a need for the development of additional soil cover stockpiles during the winter, designated landfill borrow areas are protected to the furthest extent possible. Dozers equipped with ripper teeth are used to break through the frost and replenish the stockpile material when required.

9.14. Landfill Equipment

Equipment is required at Central Landfill for six basic operations:

- Construction and maintenance of access roads and trails to various areas within the site, including snow removal and dust control,
- Refuse delivery by Regulatory Commission of Alaska (RCA) certified haulers and other commercial/private haulers of transfer boxes and SWD owned containers,
- Spreading refuse into lifts,
- Compacting refuse,
- Covering compacted refuse with soil material, and,
- Excavating, hauling, and stockpiling on-site cover material.

These operations require different types of heavy construction equipment. Typical construction equipment used in landfill operations include bulldozers, compactors, loaders, dump trucks, and scrapers. Bulldozers are used for initial pushing and spreading of refuse into lifts and ripping of soil during cover material extraction. Landfill compactors are primarily used for final compaction of the refuse, though they can also be used to assist with spreading refuse. Loaders, scrapers, and dump trucks are used to excavate, haul, and spread daily cover materials.

Equipment types used at Central Landfill are:

- A track-type bulldozer, equivalent in size to a Caterpillar D6, to push, spread, and compact refuse at the working face; the bulldozer is also used to help loosen and move cover material,
- A solid waste compactor, equivalent in size to a Caterpillar 826 landfill compactor, with chopper wheels for final spreading and compacting of refuse at the working face,
- A heavy-duty loader, equivalent in size to a Caterpillar 926, for excavation of daily cover material,
- A heavy-duty dump truck with at least a 20-cubic yard capacity for hauling and placement of daily cover material, and,

- A large excavator for selecting and re-dispositioning improperly dispositioned materials from one cell to another by means of a 40-yard container.

In addition to these minimum disposal requirements, other heavy equipment may be periodically needed for proper site maintenance, such as:

- A motor grader for on-site road maintenance,
- Belly-dump trucks to haul gravel for construction and maintenance of interior access roads,
- A water truck for dust control on interior access roads, and,
- A self-propelled vibratory compactor for construction of permanent, temporary, and interior access roads.

10.HOUSEHOLD HAZARDOUS WASTE (HHW) COLLECTION PROGRAM

This section covers the hazardous waste collection programs maintained by the SWD Environmental Unit, to include the processing of, disposition of, and recordkeeping of the collected waste.

10.1. Central Landfill

Limited quantity drop-off totes are available to residents during regular landfill hours outside of the Hazardous Waste Facility (HWF). Waste streams collected in the small quantity totes include latex paint, used oil, antifreeze, batteries, cooking oil, and propane tanks. These totes are provided for residential use only. Quantities greater than allowed at the drop-off totes may be brought to the HWF on Wednesday's or Saturday's between 10:00 AM and 3:00 PM, also known as HAZMAT Days. Commercial businesses may also drop off hazardous wastes during HAZMAT Days and this is the only period for commercial drop-offs at the HWF.

In conjunction with the HHW collection program, the Borough promotes a program of reuse for HHW that may have a usable quantity remaining in the original container. HHW staff sort through all dropped off wastes, identifying good, reusable products. These products are put onto shelves in the HHW Re-Use Store and are available to the public at no charge. Products include latex and oil-based paints, automotive fluids, herbicides and pesticides, household cleaners, and other miscellaneous products. The Re-Use Store is open during HAZMAT Days.

10.2. Transfer Stations and Sites

Limited quantity drop-off locations for latex paint, used oil, antifreeze, batteries, and cooking oil are available to residents at the following transfer stations and sites: Big Lake, Butte, Eureka, Lake Louise, Long Rifle Lodge, Point Mackenzie, Sutton, Talkeetna, Trapper Creek and Willow. SWD personnel collect the HHW from these locations and return it to the HWF where it enters the waste processing system. Residents bringing other hazardous waste streams to a transfer station are directed to the HWF.

10.3. Household Hazardous Waste Processing

No HHW (except for latex paint) is treated at the HWF, it is only processed and prepared for shipment to a proper disposal facility. The SWD retains a contractor for HHW disposal who manifests and transports the HHW to a proper disposal facility.

10.4. Household Hazardous Waste Disposition

The HHW contractor is called out on an approximately quarterly basis to manifest, transport, and dispose of the HHW. The same contractor is utilized on an as-needed basis to classify and

consolidate poisons, acids, and other unknown products. SWD personnel solidify latex paint using a corn-based solidifier. The solidified latex paint is disposed of in the active MSW cell. Latex paint is the only waste stream that is treated at the HWF.

SWD personnel palletize and prepare lead acid batteries for shipment through a contractor. The contractor collects the palletized batteries and coordinates the delivery to a recycling facility.

10.5. Household Hazardous Waste Recordkeeping

Hazardous waste manifests are retained for a period of three years, as required under *49 CFR 172.201*. Paper copies are retained in the HWF offices and digital copies are stored according to the records retention schedule as mentioned in Section 2. Administration of this Operating Plan.

11.MONITORING PROGRAMS

This section covers the SWD gas and water monitoring programs, leachate management program, and stormwater pumping operations conducted and managed by the SWD Environmental Unit.

11.1. Gas and Water Monitoring

The purpose of the MSB groundwater monitoring program is to satisfy the water monitoring requirements contained in *18 AAC 60, Solid Waste Management (April 2013)*, and *40 CFR 258, Criteria for Municipal Solid Waste Landfills*. The specific objective of the water monitoring program is to determine if leachate generated at Big Lake, Butte, Smith Ballfield (formerly Knik Sanitary Landfill), or Central Landfill is impacting groundwater quality at designated points of compliance. The full gas and groundwater monitoring details are contained in the *Quality Assurance Project Plan (QAPP)*.

Field activities include quarterly groundwater monitoring at the Central Landfill and the closed Smith Ballfields, and semi-annual groundwater monitoring at the closed Butte and Big Lake landfills.

11.2. Groundwater Monitoring

The SWD monitors groundwater at the Central Landfill and three closed landfills located in Big Lake, Butte and Wasilla (Smith Ballfields).

The Central Landfill (CLF) is located 3 miles west of Palmer, Alaska, at the southern end of North 49th State Street. CLF opened in 1980 and is the only Class 1 landfill in the Mat-Su Borough. There are ten monitoring wells at the site, all of which are sampled on a quarterly basis. The monitoring program is currently undergoing an assessment to determine if semi-annual monitoring would be appropriate for the site. The assessment will be completed after the June 2021 sampling event.

The Big Lake Landfill (BLLF) is located at Mile 1 of Hollywood Road, near Big Lake, Alaska. BLLF was closed in 1991 but continues to operate as a transfer station. There are ten monitoring wells at the site. Two of the monitoring wells are sampled semi-annually, five are sampled annually, and three are not currently in the monitoring program.

The Butte Landfill (BLF) is located on Plumley Road at Mile 11.5 of the Old Glenn Highway, southeast of Palmer, Alaska. The landfill was closed in 1987 but continues to operate as a transfer station. There are eight monitoring wells at BLF. Four monitoring wells and the Butte Elementary

drinking water are sampled on a semi-annual basis; four of the monitoring wells are not currently in the monitoring program. Ambient air monitoring is conducted on a semi-annual basis.

Smith Ballfields (SBF) is the site of the closed Knik-Wasilla Sanitary Landfill, which was operated in the 1960's and 1970's by the City of Wasilla. Access was unrestricted until the landfill was closed in 1980 under *ADEC Permit No. SC-18-79*. The facility is located at Mile 1.5 of Knik-Goose Bay Road in Wasilla, Alaska. There are eleven monitoring wells at the site. Ten of the monitoring wells, the SBF, and Iditarod Headquarters water wells are sampled on a quarterly basis as part of an ongoing Assessment of Corrective Measures. One monitoring well is not currently included in the monitoring program.

11.3. Landfill Gas Monitoring

Landfill gas monitoring is performed at the CLF, BLF, and SBF.

CLF monitoring is conducted on a monthly basis. Monitoring is conducted at six perimeter monitoring probes, two landfill gas wells, the crawlspaces of the CLF Scale House and Animal Control Facility, and at 200-foot intervals along the northern facility perimeter between the Animal Control facility and the entrance gate to the CMT System.

BLF monitoring is conducted on a semi-annual basis in conjunction with groundwater sampling at four groundwater monitoring wells.

SBF monitoring is conducted on a quarterly basis at eleven groundwater monitoring wells, two drinking water wells, two ambient air locations, the Iditarod headquarters building, and three ballfield buildings.

Monitoring is performed in accordance with procedures detailed in the *QAPP* and *2020 Landfill Development Plan*.

11.4. Leachate Management

MSW Cell 4 and the Cell 4 expansion design and construction included a geomembrane composite liner which is similar to the liner systems of MSW Cells 2B and 3. Leachate is collected and transferred to a sump within the cell utilizing perforated HDPE piping on top of the cell liner. Two pumps transfer leachate from the sump to newly constructed leachate storage lagoons via a 2" force main. The force main is routed along the south slope of Cell 3. This design is intended to keep the force main out of high traffic areas as well as allow for natural drainage of the force main due to the slope.

Two adjacent leachate lagoons were constructed during MSW Cell 4 construction. The new lagoons increased storage capacity from 35,000 gallons to over 700,000 gallons. Each lagoon can store 250,000 gallons, in addition to 227,000 gallons of combined free board capacity. The two-tank system was decommissioned as part of Cell 4 construction. The lagoons are lined in two layers with 60 mil HDPE liner which is the same material used to line Cell 4. A geo-net is utilized for leak detection in between liner layers. The lagoons feature a leak detection system and level sensors that communicate with an alarm panel in the Environmental Unit office in the event of a leak or higher than expected leachate levels. Only one lagoon is used at a time, allowing for backup capacity as well as maintenance flexibility.

Leachate is pumped to the lagoons using two side slope pumps from MSW Cell 4 where leachate from Cells 2B, 3, 4, and the Cell 4 expansion collect in the Cell 4 sump. The pumps are EPG Sure Pump WSDPT 9-4 Wheeled Sump Drainer model pumps. The 1.5 horsepower pumps are configured in an alternating lead/lag model. Pressure sensors on each pump are used to detect the level of leachate in the sump. The lead pump activates at 15 inches of leachate in the sump, the lag pump activates when the sump reaches 20 inches and both pumps run when leachate exceeds the 20-inch level. The 20-inch level indicates that 1 inch of leachate has accumulated on the liner. In addition to the automated pumping, the pumps may also be turned on or off manually. Each pump is capable of moving leachate at a maximum of 40 gallons per minute for a total of 80 gallons per minute capacity.

The MSB is currently planning to construct a leachate treatment facility but until the facility is operational, leachate will continue to be hauled to the Anchorage Water & Wastewater Utility (AWWU) transfer station at Turpin Street in Anchorage, Alaska. Leachate is removed from the lagoons via trailer mounted pumps on a 7,000-gallon tanker. Each lagoon is outfitted with two 6-inch standpipes that go to the bottom of the lagoons; leachate will be transported through the perforated piping at the bottom of the lagoon. Leachate generation is expected to increase from 1,300,000 gallons per year to 2,100,000 gallons per year with the addition of MSW Cell 4. To accommodate the additional leachate, MSB received approval from AWWU to increase hauling limits from 18,000 gallons per day to three 7,000 gallon tank loads per day (unit of measure changed from gallons to tank loads). MSB is also in discussion with AWWU to keep the *Industrial Wastewater Discharge Permit No. 4* active as a redundancy for when the leachate facility becomes operational.

11.5. Stormwater Pumping Operation

The design of MSW Cell 4 and the Cell 4 expansion includes two stormwater diversion flaps that run horizontally through the cell. The diversion flaps segregate stormwater in the inactive portion of the cell from coming into contact with municipal solid waste, thereby reducing leachate

generation in the cell. Stormwater is collected at the diversion flaps and pumped out of the cell. See *Attachment 11-A: July 11, 2018 Multi-Sector General Permit letter to ADEC (page 10)* for a diagram detailing the location of the diversion flap.

The discharged water infiltrates the ground within the vicinity of future MSW Cell 5. A multi-sector general permit is not required for this process as stormwater is neither discharged to a municipal stormwater sewer system or waters of the United States. See *Attachment 11-A: July 11, 2018 Multi-Sector General Permit letter to ADEC* for further information regarding this determination. See *Attachment 11-B: Stormwater Pumping Plan* for full plan details.

12.COMMUNITY PROGRAMS

The SWD maintains several community programs aimed at helping and/or educating the public on the following topics.

12.1. Abandoned Vehicles

The MSB Abandoned Vehicle (ABV) Program is designed for abatement of abandoned and junk vehicles from MSB roadsides and rights-of-way. At this time there are no privately operated impound lots within the Borough that meet MSB code requirements to impound and dispose of junk vehicles. Abandoned vehicles are tagged for abatement in accordance with *MSB Code 10.12.030* by the following MSB Divisions:

- Public Works Department, Solid Waste Division,
- Public Works Department, Operations and Maintenance Division,
- Planning and Land Use Department, Development Services Division, and,
- Community Development, Land and Resources Management Division.

The tagged abandoned vehicles that are removed by the MSB are impounded at the Central Landfill* where they remain until pick up by owner occurs or final disposal time arrives. The Community Cleanup and Recycling Program Coordinator (CCURPC) is responsible for tracking all vehicles towed by the MSB using the Borough Problem Reporter program. If the vehicle is not picked up by the registered owner, vehicle disposal happens by public auction or by a contractor who will remove the vehicle to decant and destroy off-site. See *Attachment 12-A: SWD Abandoned Vehicle Impound Policy and Procedures*.

*NOTE: No vehicles are accepted for disposal purposes. Vehicles are only stored temporarily and only if they have been tagged and towed by the Borough. MSB residents wanting to dispose of a vehicle are directed to local wrecking companies.

12.2. Recycling

The SWD supports the non-profit Valley Community for Recycling Solutions (VCRS) with a monetary grant each fiscal year and encourages customers coming through the Central Landfill and Transfer Stations to drop off their recyclable materials for free, thereby saving airspace in the CLF cells. See *Attachment 12-B: VCRS Grant Agreement*.

Additionally, partnerships are maintained with the local community councils and organizations in Talkeetna, Big Lake, Willow, and Sutton to collect recyclable materials at the Transfer Stations in their area. MSB transports the collected recyclable materials, at the Borough's expense, to VCRS at no cost to the community or the customer. Through grant funding, the communities

reconditioned old Borough out-of-service 40-yard containers to new standards for recycling, and through written agreements with the MSB, the communities oversee the recycling programs at the transfer stations to ensure the recyclable materials collected meet VCRS standards. The SWD CCURPC oversees the entire program and provides recycling outreach and education to the public at various community events in addition to supporting recycling efforts at VCRS, Big Lake, Sutton, Talkeetna, and Willow recycling drop-off locations. See *Attachment 12-C: Community Council Recycling Program Agreements*.

12.3. Composting

Free composting classes are offered to MSB residents to encourage composting and potentially reduce the volume of organic matter coming into the landfill. The SWD employs one compost instructor who works part-time to provide compost classes during the spring and fall that consist of instruction on backyard composting, vermi-composting, and master composting. Classroom instruction and demonstration is provided at Central Landfill and occasionally off-site at locations within the MSB by customer request. See *Attachment 12-D: SWD Composting Policy*.

12.4. Community Cleanup

The MSB has a community cleanup program designed solely for cleaning up litter from MSB roadsides, rights-of-way, and Borough property used by the public. This program is not meant to be used to clean up private property. Groups wanting to organize a community cleanup must submit an application to the CCURPC. The approved application stipulates the dates the group is approved to bring in their collected waste for free disposal. Yellow Alaskans for Litter Prevention and Recycling (ALPAR) bags are provided at no cost to the groups that request them, and the groups can drop off the bags at the Central Landfill or nearest Transfer Station for no charge on the days designated on their approved application.

Groups can request a 40-cubic yard dumpster for use during their cleanup event if collection is expected to exceed 25 half-ton truckloads of material. Dumpsters have a 1-day use limit unless other arrangements are made with the CCURPC prior to the organized cleanup event. Dumpster availability is limited, and approval is determined by the CCURPC based on SWD budget availability and the contractor's ability to coordinate pickup and deliveries. Groups are always required to have a monitor at the dumpster to ensure no hazardous or other improper waste disposal occurs. The CCURPC coordinates the dumpster delivery time, delivery location, and pickup time with the contractor. When the dumpster is picked up it is hauled to the CLF the collected waste disposed of at the Borough's expense. See *Attachment 12-E: Community Cleanup Policy*.

12.5. Illegal Dumpsite Cleanup

In conjunction with the Community Cleanup program, the CCURPC removes illegally dumped trash from MSB roadsides and rights-of-way. Three programs are used to report and track illegal dumpsites.

Problem Reporter allows the public and other Borough departments such as Code Compliance to enter illegally dumped trash issues into the system using their phone or computer which in turn generates an email notification to the CCURPC.

Collector is the program used by Borough employees in the field to enter illegally dumped trash issues.

All information entered into Problem Reporter and Collector populates Cleanup Manager, which is a program with a backdoor view of all reported illegally dumped trash issues. Cleanup Manager is used to track, view, and update illegally dumped trash records, and can be used by all MSB employees who have authorization to access the program. See *Attachment 12-F: Illegal Dumpsites Policy*.

12.6. Annual Coupons

The SWD issues waste disposal coupons to MSB residents who meet the criteria for the coupon program in accordance with the policy. The CCURPC obtains a list of MSB resident names and mailing addresses from the MSB Assessment Division and removes those that do not meet the criteria such as those addressed to Trusts or those with mailing addresses outside of the Borough. See *Attachment 12-G: Annual Coupon Policy*.

13.SAFETY

This section covers safety minimums upheld by the SWD for personnel safety, site safety, operational safety, and safety equipment.

13.1. Personnel

Upon hire, all SWD employees are required to read and review *Attachment 13-A: MSB Workforce Health and Safety Plan* dated December 15, 2016 and several SWD specific safety policies, to include:

- *Attachment 13-B: Emergency Actions Guide*,
- *Attachment 9-C: Emergency Shut-Down Policy*,
- *Attachment 13-C: Personal Protective Equipment (PPE) Policy*, and,
- *Attachment 13-D: SWD Safety Policy*.

All employees of the SWD are regularly assigned 2 to 4 online safety courses each month which are assigned and tracked by SWD administrative personnel. More information on this program can be found in Section 3. Personnel > 3.3 Training of this Operating Plan.

13.2. Personal Protective Equipment (PPE)

PPE required for the job is provided by the SWD at no cost to the employee. Specific gear provided to employees is based on their job position and there is also specific gear provided for different work areas throughout the SWD facilities. The complete list of PPE provided can be found in *Attachment 13-C: Personal Protective Equipment (PPE) Policy*.

All enclosed work areas, including trenches deeper than 3 feet, manholes, or any confined space must be properly ventilated. Smoking is restricted to 50 feet from the administrative office in the administrative parking lot area and behind the Operations portable building.

Periodic review of these safety procedures will be conducted to assess their effectiveness and appropriate amendments will be made to remedy any unsafe practices.

13.3. Site Safety

A member of management and an employee who works at the site being checked conduct a weekly walk-around safety inspection. Inspections help provide safe working conditions for employees and ensure safety equipment is functional and ready when needed.

Staff safety meetings provide the opportunity to review the weekly walk-around inspection results and any hazards identified, answer safety-related questions from employees, and review online safety course completion.

13.4. Fire, Explosion, and Emergencies

This section covers the fire control equipment kept on hand and the actions taken by the SWD to minimize potential fires and explosions within the Central Landfill, Transfer Stations, Transfer Sites, and refuse containers.

13.4.1. Fire Control Equipment

The availability and readiness of firefighting equipment can significantly minimize the damages caused by fire. Fire extinguishers are located at all buildings on the CLF site, all Transfer Station gate houses, and all pieces of equipment to control accidental fires. There are also two 100-gallon fire extinguishers secured to the CLF residential disposal wall, one at Butte Transfer Station and one at Big Lake Transfer Station.

Fire protection is provided by Central Matanuska-Susitna Station No. 51 (Lakes Fire-hall, located on Trunk Road). Backup services are provided by Central Matanuska-Susitna Station No. 52 (Lakes Fire-hall, located on Bogard Road). Additional support, if needed, is available from the City of Palmer.

13.4.2. Fire and Explosion

If a load of burning waste is brought on-site, the transfer vehicle is immediately routed to a designated area where the load is dumped, and the fire department is called. After determining that no sparks or “hot spots” remain, the cooled material is incorporated into the MSW working face.

13.4.3. Equipment Fires

At the first sign of fire in equipment, the operator immediately cuts the engine off, evacuates the equipment, and activates any built-in fire suppression system or uses a fire extinguisher on the machine. A second operator alerts the Division Manager or his/her designee to summon emergency assistance, and then aids the first operator with an additional fire extinguisher.

13.4.4. General Emergency Response

The safety of all individuals involved in the operation and maintenance of the landfill depends upon the employee’s ability to quickly identify and react properly to an emergency. SWD

safety policies and procedures are frequently reviewed at employee meetings to keep safety at the forefront of employee's minds.

All fire and general emergency response procedures can be found in *Attachment 13-B: Emergency Actions Guide*.

13.5. Accident Reporting

All accidents, near misses or other safety reporting is done online through the PureSafety system at https://ulworkplace.puresafety.com/. Reporting procedures are outlined in *Attachment 13-E: MSB Employee Health and Safety Accident/Injury Reporting Procedures*, Revised May 2020, and *Attachment 13-B: Emergency Actions Guide*.

13.6. Operations Safety

Safety while transporting and unloading solid waste is a serious concern. Uncontrolled dust, differing flows and directions of traffic and equipment, and equipment operation angles pose dangers to those in the vicinity of the working face. For these reasons, safeguards are provided on landfill cells and equipment to protect the operators and the vehicles. Landfill equipment is provided with seatbelts and enclosed rollover protective cabs to protect the operator from accidents, weather, and flying debris. Filtered forced-air ventilation systems in the cabs provide safe, dust-free airflow to the equipment operators.

Landfill personnel who direct the waste hauling trucks take care to maintain sufficient clearance between the vehicle and the landfill equipment. Landfill operating equipment is furnished with an audible backup signal. In addition, highly visible clothing and a hard hat must always be worn when outside of a vehicle or equipment.

During operating hours, a SWD employee who has completed a 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) course and DOT 49 CFR Hazardous Materials Transportation Training course is on staff.

13.7. Safety Equipment

First aid kits are located at the Central Landfill scale house, Admin/HAZMAT building, CLF warm storage facility, all transfer station gate houses, and all fleet vehicles and landfill equipment. The supplies required to be in the first aid kits are listed in *Attachment 13-F: SWD Health & Safety Policy*.

First aid kits are inventoried quarterly and kept up to date by designated employees in each unit. Expired items are removed and a list of removed or missing (used) items is sent to the Administrative office as a request to order. An eyewash station located in the HWF is accessible

to landfill employees for use in the event of exposure to injurious materials and an automated external defibrillator (AED) is in the Administrative building break room. The AED is inspected monthly and a list of authorized employees who have been trained to use the AED equipment is listed on the outside of the box.

Emergency exit maps are posted throughout the Admin/HAZMAT building and employees are informed upon hire that if an evacuation occurs, all employees are to meet at the electronic reader board by the CLF front gate. Most importantly, all employees receive annual safety training that includes reviewing the operation and location of emergency equipment.

LIST OF ATTACHMENTS

Section 1. INTRODUCTION

- None

Section 2. ADMINISTRATION

- 2-A: Scale Operating Procedures
- 2-B: RFID Policy
- 2-C: Business Charge Account Policy
- 2-D: Transfer Station and Scale House Unit Supervisor SOP

Section 3. PERSONNEL

- 3-A: SWD Job Descriptions
- 3-B: HR New Employee Orientation Agenda
- 3-C: SWD New Hire Checklist
- 3-D: Semi or Roll-Off or Equipment Evaluation Forms
- 3-E: PureSafety Course List

Section 4. SITES

- 4-A: CLF Location Map
- 4-B: Resolution 89-182
- 4-C: July 1993 Hydro Geologic Investigation Report
- 4-D: Resolution 89-183
- 4-E: Electrical As-Built
- 4-F: Animal Control As-Built

Section 5. FACILITIES AND MAINTENANCE

- 5-A: Central Landfill Signs with Maps
- 5-B: Transfer Station Signs with Maps

Section 6. VEHICLE AND EQUIPMENT MAINTENANCE

- 6-A: Vehicle Maintenance Policy & Procedure

Section 7. INSPECTIONS

- 7-A: Monthly Inspection Form
- 7-B: Monthly Inspection Procedures
- 7-C: Central Landfill Daily Inspection Form
- 7-D: Residential Load Inspection Form
- 7-E: Daily Spotter Log
- 7-F: Transfer Station Inspection Report
- 7-G: WDT Daily Task Reference List

Section 8. CELLS

- 8-A: Asbestos Acceptance Procedures

Section 9. WASTE MANAGEMENT OPERATIONS

- 9-A: FY21 SWD Services & Fees
- 9-B: SWD 2020 Calendar
- 9-C: Emergency Shut-Down Policy
- 9-D: Waste Acceptance Policies
- 9-E: Prohibited Waste Policy
- 9-F: Cell 4 Fill Sequencing Plan
- 9-G: Cell 4 Conceptual Final Grading Plan
- 9-H: Improperly Disposed Waste Policy
- 9-I: Cell 4 Expansion Sequencing Plan

Section 10. HOUSEHOLD HAZARDOUS WASTE

- None

Section 11. MONITORING PROGRAMS

- 11-A: July 11, 2018 Multi-Sector General Permit letter to ADEC
- 11-B: Stormwater Pumping Plan

Section 12. COMMUNITY PROGRAMS

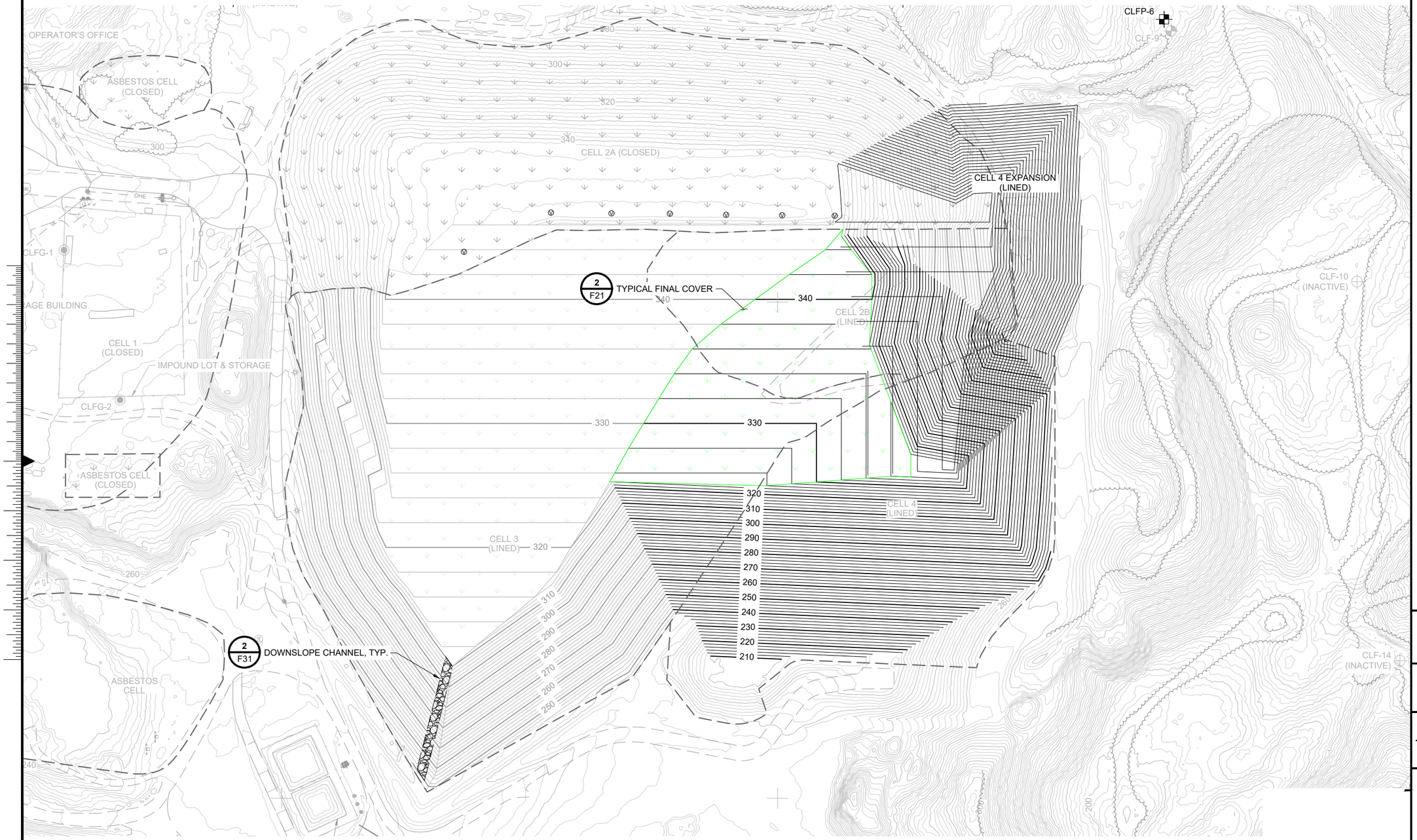
- 12-A: SWD Abandoned Vehicle Impound Policy & Procedure
- 12-B: VCRS Grant Agreement
- 12-C: Community Council Recycling Program Agreements
- 12-D: Composting Program
- 12-E: Community Cleanup Policy
- 12-F: Illegal Dumpsites Policy
- 12-G: Annual Coupon Policy

Section 13. SAFETY

- 13-A: MSB Workforce Health and Safety Plan
- 13-B: Emergency Actions Guide
- 13-C: Personal Protective Equipment Policy
- 13-D: SWD Safety Policy
- 13-E: MSB Employee Health and Safety Accident/Injury Reporting Procedures
- 13-F: SWD Health & Safety Program

Attachment 9-I

Attachment 9-I is the only attachment that has been added or changed for this Permit Modification



PHASE 1, CELL 4 A -

SCALE: 1"=100'

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

NOTES:

1. EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
2. EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
3. DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS REPRESENT TOP OF FINAL INTERMEDIATE GRADING.
4. CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.
5. THE ESTIMATED VOLUME OF AIRSPACE (WHICH INCLUDES WASTE, DAILY COVER AND FINAL INTERMEDIATE COVER) IS CALCULATED FROM THE TOP OF DRAINAGE LAYER TO TOP OF FINAL INTERMEDIATE COVER. CELL 4 ESTIMATED AIRSPACE = 984,000 CY. CELL 5 ESTIMATED AIRSPACE = 1,410,000 CY.

NORTH

0 100' 200'
SCALE IN FEET

FOR PLANNING PURPOSES ONLY

BURNS McDONNELL

date	detailed
JULY 2020	M. AULT
designed	checked
T. KOLLER	F. DORAN

MSB CENTRAL LANDFILL
ALASKA

LANDFILL DEVELOPMENT PLAN
MSW SEQUENCING PHASE 1
(CELLS 4 AND 5)

project	contract
120344	

drawing **FIGURE 13.1 –** rev. **A**

sheet 13 of 37 sheets

file FIGURE 13 MSW Sequencing Phase 1 (Cells 4).dwg

Scale For Microfilming: Millimeters / Inches

Exhibit 3 – Closure and Post Closure Analysis

Matanuska-Susitna Borough Central Landfill
Burns & McDonnell, October 2025
Closure Cost Estimate

Year of Closure =	2046	
Year of Estimate =	2025	
Area of Closure (Cells 2B-5) =	43.1	
Inflation Rate =	2.31%	*10-yr CPI long term forecast as published by Fed Reserve Bank of Philidelphia, 3Q2025*

No.	Item	Depth (ft)	Quantity	Units	Unit Cost (2025)	Total Cost (2025)
1	Project Admin, Temp Facilities, Mob/Demob, Contract Closeout		8.00%	total	$ 9,341,399	$ 747,312
2	Survey		43.10	Acres	$ 560	$ 24,137
3	Subgrade Preparation		43.10	Acres	$ 2,232	$ 96,187
4	Leveling Course/Cushion Layer	0.5	34,768	CY	$ 19.13	$ 665,142
5	40 mil LLDPE Geomembrane Liner		1,877,497	SF	$ 1.28	$ 2,397,796
6	Cover/Drain Material	1.5	104,305	CY	$ 17.93	$ 1,870,129
7	Silt-Loam Topsoil	0.5	34,768	CY	$ 31.53	$ 1,096,129
8	Seeding		43.10	Acres	$ 7,242	$ 312,142
9	Stormwater Control		43.10	Acres	$ 6,490	$ 279,738
10	Active LFG System Expansion (Wells and Piping)		1	LS	$ 2,600,000	$ 2,600,000
					Subtotal =	**$ 10,088,711**
	Contingency Final Cover		5%	subtotal		$ 374,436
	Contingency Gas System		15%	subtotal		$ 390,000
	Engineering and Oversight		10%	subtotal		$ 1,008,871
					Total =	**$ 11,862,017**
					Closure Cost per Acre =	**$ 275,212**

NSPS Check:

Cells 1-5	TONS	MG	
Historic 1980-2024:	1,979,837	1,796,108	
Cells 1-4B (2025-2034):	735,605	667,341	
		2,463,449	<2.5 M Mg
Cell 5 (2035-2045):	996,525	904,047	
		3,367,496	>2.5 M Mg

Therefore; active LFG system is needed once in Cell 5

Matanuska-Susitna Borough Central Landfill
Burns & McDonnell, October 2025
Post-Closure Cost Estimate

Year of Closure =	2046	
Year of Estimate =	2025	
Post-Closure Period =	30	years
Inflation Factor =	2.31%	
Area of Final Cover (Cells 1-5) =	65.3	

POST CLOSURE COST ITEM			ANNUAL COST 2025
Item	**Quantity**	**Units**	
Annual Inspection and Reporting			
Site Visits & Reports	4	per year	
Inspection Time	10	hours/visit	
Labor Rate	$88.57	per hour	
ANNUAL INSPECTION AND REPORTING COST			$3,543
Cover Maintenance			
Repair Cover Side Slopes	0.50%		
Repair Area	0.33	Acres	
Soil Cover Cost (from closure cost estimate)	$ 76,062	per acre	
ANNUAL COVER MAINTENANCE COST			$24,848
Vegetation and Stormwater Control			
Frequency	2	times/year	
Duration/visit (assume 0.5 hr per acre)	40	hours	
Equipment/Operator Cost	$88.57	hour	
Clean Perimeter Drainage Ditches	650	LF	
Cost for Cleaning Ditches	$6.22	per LF	
ANNUAL VEGETATION AND STORMWATER CONTROL COST			$11,129
Gas System Monitoring, Operation and Maintenance			
Methane Sampling and Analysis	$11,810	per year	
Piping Repair, Well Replacement	$3,543	per year	
Condensate Disposal	$750	per year	
System Operator	$34,249	per year	
Power and Pilot Gas	$11,810	per year	
ANNUAL GAS SYSTEM COST			$62,162
Environmental Monitoring			
Groundwater Sampling and Analysis	$41,335	per year	
Surface Water Sampling and Analysis	$14,762	per year	
Groundwater Well Maintenance	$2,362	per year	
ANNUAL ENVIRONMENTAL MONITORING COST			$58,459
Leachate Control Costs			
System Operator	$22,439	per year	
Equipment Maintenance & Replacement	$3,200	per year	
Leachate System Cleanout	$23,620	per year	

Leachate Sampling and Analysis	$14,762	per year	
Leachate Quantity per Year	250,000	gal	
Hauling/Disposal Rate	$0.06	per gal	
Leachate Disposal	$15,000	per year	
ANNUAL LEACHATE CONTROL COSTS			$79,021
Miscellaneous Civil Maintenance			
Road Repair	$2,362	per year	
Surface Water Drainage Repair & Cleaning	$2,362	per year	
ANNUAL CIVIL MAINTENANCE			$4,724
Post-Closure Certification (only last year)	$37,000	LS	$37,000
SUBTOTAL			$243,885
Technical and Professional Services	5%	of total	$12,194
Contingency	10%	of total	$24,389
TOTAL			**$281,702**

30-YEARS OF POST-CLOSURE COSTS	**$8,451,047**

Exhibit 4 – Financial Assurance Forms – FY 21-FY 25

Local Government Financial Assurance Form

I, Cheyenne Heindel, the Chief Financial Officer for the Matanuska-Susitna Borough certify that the local government has complied with the provisions of 18 AAC 60.398 for financial assurance by complying with the following sections of 40 CFR 258.74(f)[Local Government Financial Test] for fiscal year 2021.

Please initial those sections that were done to demonstrate compliance. (All five must be initialed to be in compliance.)

CH A. The current cost estimate for:
1) Closure and post-closure of the landfill is $19,640,061.00.
2) Corrective action for the landfill is $_____.[1]

CH B. The cost for closure, post-closure and corrective action is not greater than: (circle one)
1) 43 percent of the local government's total annual revenue, if the local government does not assure other environmental obligations through a financial test, **or**
2) 43 percent of the local government's total annual revenue for the total of all environmental obligations assured through a financial test.[2]

CH C. Currently the Local Government has: (circle one)
1) Outstanding general obligation bonds rated no lower than Baa for Moody's or BBB for Standard and Poor, **or**
2) The following financial ratios:
i) cash plus marketable securities to total expenditures greater than or equal to 0.05, and
ii) annual debt service to total expenditures less than or equal to 0.20.

CH D. The local government's comprehensive annual financial report was:
1) Prepared in conformity with Generally Accepted Accounting Principles for governments,
2) Audited by an independent, certified public accountant, and
3) The auditor issued an unqualified opinion for the report.

CH E. The local government:
1) Is not currently in default on any outstanding general obligation bonds,
2) Has no outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's; and
3) Has not operated at a deficit equal to five percent or more of total revenue in each of the past two fiscal years.

Cheyenne Heindel
Signature of Local government's Chief Financial Officer

4/5/2022
Date

[1] Corrective action costs are only required if a long-term remediation project for the landfill is currently required.
[2] The total of all environmental obligations including landfill closure must be considered when addressing the 43% limit. This would include such things as UIC facilities under 40 CFR 144.62, petroleum underground storage facilities under 40 CFR 280, PCB storage facilities under 40 CFR 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR 264 and 265.

Any additional monies needed to service the school general obligation bonds or retire other governmental activity debt are provided by transfers to the Debt Service Funds from the General Fund. The following bond authorizations remain open and unissued:

	Authorized But Unissued
October 2008, Transportation Bonds	$ 15,000,000
October 2011, School Bonds	2,465,000
October 2013, Transportation Bonds	14,615,000
October 2018, Transportation Bonds	23,845,000
	$ 55,925,000

There is no legal debt margin for municipalities in the State of Alaska. In 1983, the Borough Assembly adopted an ordinance limiting outstanding general obligation debt to 7% of the Borough's assessed value. At June 30, 2021, the Borough was in compliance with these requirements.

Landfill Closure and Postclosure Care Cost

State and federal laws and regulations require the Borough to place a final cover on its landfill site when it stops accepting waste and to perform certain maintenance and monitoring functions at the site for thirty years after closure. Although closure and postclosure care costs will be paid only near or after the date the landfill stops accepting waste, the Borough reports a portion of these closure and postclosure care costs as a long-term liability at June 30, 2021, based on landfill capacity used as of that date. In August 2020, the Borough finalized a landfill closure review process which resulted in certain changes to the closure cost estimate. The $5,603,336 reported as landfill closure and postclosure care liability at June 30, 2021 represents the cumulative amount reported to date based on the use of 32% of the estimated capacity of the landfill. The Borough will recognize the remaining estimated cost of closure and postclosure care of $14,036,725 as the remaining capacity is filled. The Borough expects to close the landfill in the year 2044. Actual costs may change due to inflation, deflation, changes in technology, or changes in laws and regulations.

As of June 30, 2021, the Borough is required to provide financia ɔsure care of the landfill in accordance with state and federal regula ɣable mechanisms available. The Borough has decided to use the "Loc ance mechanism to be in compliance with the April 1997 regulation ional costs that might arise from changes in closure and postclo: ɛs in technology or more rigorous environmental regulations, for exan ırges to future landfill users, taxpayers or both.

Special Assessment Debt

From time to time, the Borough will issue nonrecourse speci ɔad, water or gas line improvements in local improvement distric t of the bonds is through special assessments levied against the property in the local improvement districts that benefit from the project. The bonds are special obligations of the local improvement districts and are payable solely from the assessments. As such, the Borough is not obligated in any manner for the special assessment debt and is acting solely as agent on behalf of the local improvement districts. These balances are therefore only recorded in the Fiduciary Fund.

Local Government Financial Assurance Form

I, Cheyenne Heindel, the Chief Financial Officer for the Matanuska-Susitna Borough certify that the local government has complied with the provisions of 18 AAC 60.398 for financial assurance by complying with the following sections of 40 CFR 258.74(f)[Local Government Financial Test] for fiscal year 2022.

Please initial those sections that were done to demonstrate compliance. (All five must be initialed to be in compliance.)

CH A. The current cost estimate for:
(1) Closure and post-closure of the landfill is $16,929,800.
2) Corrective action for the landfill is $_____.[1]

CH B. The cost for closure, post-closure and corrective action is not greater than: (circle one)
(1) 43 percent of the local government's total annual revenue, if the local government does not assure other environmental obligations through a financial test, **or**
2) 43 percent of the local government's total annual revenue for the total of all environmental obligations assured through a financial test.[2]

CH C. Currently the Local Government has: (circle one)
(1) Outstanding general obligation bonds rated no lower than Baa for Moody's or BBB for Standard and Poor, **or**
2) The following financial ratios:
i) cash plus marketable securities to total expenditures greater than or equal to 0.05, and
ii) annual debt service to total expenditures less than or equal to 0.20.

CH D. The local government's comprehensive annual financial report was:
1) Prepared in conformity with Generally Accepted Accounting Principles for governments,
2) Audited by an independent, certified public accountant, and
3) The auditor issued an unqualified opinion for the report.

CH E. The local government:
1) Is not currently in default on any outstanding general obligation bonds,
2) Has no outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's; and
3) Has not operated at a deficit equal to five percent or more of total revenue in each of the past two fiscal years.

Cheyenne Heindel
Signature of Local government's Chief Financial Officer

6/15/23
Date

[1] Corrective action costs are only required if a long-term remediation project for the landfill is currently required.
[2] The total of all environmental obligations including landfill closure must be considered when addressing the 43% limit. This would include such things as UIC facilities under 40 CFR 144.62, petroleum underground storage facilities under 40 CFR 280, PCB storage facilities under 40 CFR 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR 264 and 265.

The following summarizes the amounts available for payment of general long-term debt at June 30, 2022:

	Debt Service Funds
School general obligation bonds	$ 21,741,217
Transportation bonds	843,617
Parks and recreation bonds	853,290
Certificates of participation	6,685,038
	$ 30,123,162

Any additional monies needed to service the school general obligation bonds or retire other governmental activity debt are provided by transfers to the Debt Service Funds from the General Fund. The following bond authorizations remain open and unissued:

	Authorized But Unissued
October 2008, Transportation Bonds	$ 15,000,000
October 2011, School Bonds	2,465,000
October 2013, Transportation Bonds	14,615,000
October 2018, Transportation Bonds	23,845,000
	$ 55,925,000

There is no legal debt margin for municipalities in the State of Alaska. In 1983, the Borough Assembly adopted an ordinance limiting outstanding general obligation debt to 7% of the Borough's assessed value. At June 30, 2022, the Borough was in compliance with these requirements.

Landfill Closure and Postclosure Care Cost

State and federal laws and regulations require the Borough to place a final cover on its landfill site when it stops accepting waste and to perform certain maintenance and monitoring functions at the site for thirty years after closure. Although closure and postclosure care costs will be paid only near or after the date the landfill stops accepting waste, the Borough reports a portion of these closure and postclosure care costs as a long-term liability at June 30, 2022, based on landfill capacity used as of that date. In August 2020, the Borough finalized a landfill closure review process which resulted in certain changes to the closure cost estimate. The $6,163,439 reported as landfill closure and postclosure care liability at June 30, 2022 represents the cumulative amount reported to date based on the use of 36% of the estimated capacity of the landfill. The Borough will recognize the remaining estimated cost of closure and postclosure care of $10,766,361 as the remaining capacity is filled. The Borough expects to close the landfill in the year 2044. Actual costs may change due to inflation, deflation, changes in technology, or changes in laws and regulations.

As of June 30, 2022, the Borough is required to provide financial assurances for closure and postclosure care of the landfill in accordance with state and federal regulations. There are a number of allowable mechanisms available. The Borough has decided to use the "Local Government Test" financial assurance mechanism to be in compliance with the April 1997 regulations. Future inflation costs and additional costs that might arise from changes in closure and postclosure requirements (due to changes in technology or more rigorous environmental regulations, for example) may need to be covered by charges to future landfill users, taxpayers or both.

Special Assessment Debt

From time to time, the Borough will issue non recourse special assessme
line improvements in local improvement districts within the Borough. Repa
assessments levied against the property in the local improvement districts t
are special obligations of the local improvement districts and are payable
the Borough is not obligated in any manner for the special assessment deb
of the local improvement districts. These balances are therefore only recor

Local Government Financial Assurance Form

I, Cheyenne Heindel, the Chief Financial Officer for the Matanuska-Susitna Borough certify that the local government has complied with the provisions of 18 AAC 60.398 for financial assurance by complying with the following sections of 40 CFR 258.74(f)[Local Government Financial Test] for fiscal year 2023.

Please initial those sections that were done to demonstrate compliance. (All five must be initialed to be in compliance.)

CH A. The current cost estimate for:
(1) Closure and post-closure of the landfill is $28,911,677.
2) Corrective action for the landfill is $_____.[1]

CH B. The cost for closure, post-closure and corrective action is not greater than: (circle one)
(1) 43 percent of the local government's total annual revenue, if the local government does not assure other environmental obligations through a financial test, **or**
2) 43 percent of the local government's total annual revenue for the total of all environmental obligations assured through a financial test.[2]

CH C. Currently the Local Government has: (circle one)
(1) Outstanding general obligation bonds rated no lower than Baa for Moody's or BBB for Standard and Poor, **or**
2) The following financial ratios:
i) cash plus marketable securities to total expenditures greater than or equal to 0.05, and
ii) annual debt service to total expenditures less than or equal to 0.20.

CH D. The local government's comprehensive annual financial report was:
1) Prepared in conformity with Generally Accepted Accounting Principles for governments,
2) Audited by an independent, certified public accountant, and
3) The auditor issued an unqualified opinion for the report.

CH E. The local government:
1) Is not currently in default on any outstanding general obligation bonds,
2) Has no outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's; and
3) Has not operated at a deficit equal to five percent or more of total revenue in each of the past two fiscal years.

Cheyenne Heindel
Signature of Local government's Chief Financial Officer

1/16/24
Date

[1] Corrective action costs are only required if a long-term remediation project for the landfill is currently required.
[2] The total of all environmental obligations including landfill closure must be considered when addressing the 43% limit. This would include such things as UIC facilities under 40 CFR 144.62, petroleum underground storage facilities under 40 CFR 280, PCB storage facilities under 40 CFR 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR 264 and 265.

The following summarizes the amounts available for payment of general long-term debt at June 30, 2023:

		Debt Service Funds
School general obligation bonds	$	14,472,312
Transportation bonds		431,703
Parks and recreation bonds		855,082
Certificates of participation		5,726,644
	$	21,485,741

Any additional monies needed to service the school general obligation bonds or retire other governmental activity debt are provided by transfers to the Debt Service Funds from the General Fund. The following bond authorizations remain open and unissued:

		Authorized But Unissued
October 2008, Transportation Bonds	$	15,000,000
October 2011, School Bonds		2,465,000
October 2013, Transportation Bonds		14,615,000
October 2018, Transportation Bonds		11,845,000
	$	43,925,000

There is no legal debt margin for municipalities in the State of Alaska. In 1983, the Borough Assembly adopted an ordinance limiting outstanding general obligation debt to 7% of the Borough's assessed value. At June 30, 2023, the Borough was in compliance with these requirements.

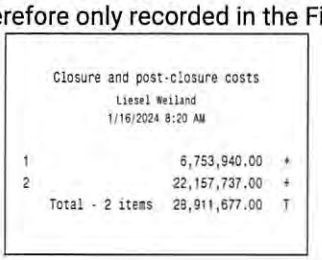
Landfill Closure and Postclosure Care Cost

State and federal laws and regulations require the Borough to place a final cover on its landfill site when it stops accepting waste and to perform certain maintenance and monitoring functions at the site for thirty years after closure. Although closure and postclosure care costs will be paid only near or after the date the landfill stops accepting waste, the Borough reports a portion of these closure and postclosure care costs as a long-term liability at June 30, 2023, based on landfill capacity used as of that date. In August 2020, the Borough finalized a landfill closure review process which resulted in certain changes to the closure cost estimate. The $6,753,940 reported as landfill closure and postclosure care liability at June 30, 2023 represents the cumulative amount reported to date based on the use of 36% of the estimated capacity of the landfill. The Borough will recognize the remaining estimated cost of closure and postclosure care of $22,157,737 as the remaining capacity is filled. The Borough expects to close the landfill in the year 2044. Actual costs may change due to inflation, deflation, changes in technology, or changes in laws and regulations.

As of June 30, 2023, the Borough is required to provide financial assurances for closure and postclosure care of the landfill in accordance with state and federal regulations. There are a number of allowable mechanisms available. The Borough has decided to use the "Local Government Test" financial assurance mechanism to be in compliance with the April 1997 regulations. Future inflation costs and additional costs that might arise from changes in closure and postclosure requirements (due to changes in technology or more rigorous environmental regulations, for example) may need to be covered by charges to future landfill users, taxpayers or both.

Special Assessment Debt

Prior to Fiscal Year 2022, the Borough would issue non-recourse special assessment bonds to finance road, water, or gas improvements in local improvement districts within the Borough. As part of the Fiscal Year 2022 Budget, the Borough created an internal service fund to allow it to finance the local improvement special assessment without the issuance of non-recourse bonds. As such, the Borough is not obligated in any manner for the special assessment bond debt and is acting solely as agent on behalf of the local improvement districts. These balances are therefore only recorded in the Fiduciary Fund.



Closure and post-closure costs
Liesel Weiland
1/16/2024 8:20 AM

1		6,753,940.00	+
2		22,157,737.00	+
	Total - 2 items	28,911,677.00	T

Local Government Financial Assurance Form

I, Cheyenne Heindel, the Chief Financial Officer for the Matanuska-Susitna Borough certify that the local government has complied with the provisions of 18 AAC 60.398 for financial assurance by complying with the following sections of 40 CFR 258.74(f)[Local Government Financial Test] for fiscal year 2020.

Please initial those sections that were done to demonstrate compliance. (All five must be initialed to be in compliance.)

CH A. The current cost estimate for:
1) Closure and post-closure of the landfill is $20,744,213.00.
2) Corrective action for the landfill is $_____.[1]

CH B. The cost for closure, post-closure and corrective action is not greater than: (circle one)
(1) 43 percent of the local government's total annual revenue, if the local government does not assure other environmental obligations through a financial test, **or**
2) 43 percent of the local government's total annual revenue for the total of all environmental obligations assured through a financial test.[2]

CH C. Currently the Local Government has: (circle one)
(1) Outstanding general obligation bonds rated no lower than Baa for Moody's or BBB for Standard and Poor, **or**
2) The following financial ratios:
i) cash plus marketable securities to total expenditures greater than or equal to 0.05, and
ii) annual debt service to total expenditures less than or equal to 0.20.

CH D. The local government's comprehensive annual financial report was:
1) Prepared in conformity with Generally Accepted Accounting Principles for governments,
2) Audited by an independent, certified public accountant, and
3) The auditor issued an unqualified opinion for the report.

CH E. The local government:
1) Is not currently in default on any outstanding general obligation bonds,
2) Has no outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's; and
3) Has not operated at a deficit equal to five percent or more of total revenue in each of the past two fiscal years.

Cheyenne Heindel
Signature of Local government's Chief Financial Officer

7.26.21
Date

[1] Corrective action costs are only required if a long-term remediation project for the landfill is currently required.
[2] The total of all environmental obligations including landfill closure must be considered when addressing the 43% limit. This would include such things as UIC facilities under 40 CFR 144.62, petroleum underground storage facilities under 40 CFR 280, PCB storage facilities under 40 CFR 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR 264 and 265.

Local Government Financial Assurance Form

I, Cheyenne Heindel, the Chief Financial Officer for the Matanuska-Susitna Borough certify that the local government has complied with the provisions of 18 AAC 60.398 for financial assurance by complying with the following sections of 40 CFR 258.74(f)[Local Government Financial Test] for fiscal year 2024.

Please initial those sections that were done to demonstrate compliance. (All five must be initialed to be in compliance.)

CH A. The current cost estimate for:
(1) Closure and post-closure of the landfill is $28,911,676.
2) Corrective action for the landfill is $_____.[1]

CH B. The cost for closure, post-closure and corrective action is not greater than: (circle one)
(1) 43 percent of the local government's total annual revenue, if the local government does not assure other environmental obligations through a financial test, **or**
2) 43 percent of the local government's total annual revenue for the total of all environmental obligations assured through a financial test.[2]

CH C. Currently the Local Government has: (circle one)
(1) Outstanding general obligation bonds rated no lower than Baa for Moody's or BBB for Standard and Poor, **or**
2) The following financial ratios:
i) cash plus marketable securities to total expenditures greater than or equal to 0.05, and
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CH E. The local government:
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2) Has no outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's; and
3) Has not operated at a deficit equal to five percent or more of total revenue in each of the past two fiscal years.

Cheyenne Heindel
Signature of Local government's Chief Financial Officer

6/3/25
Date

[1] Corrective action costs are only required if a long-term remediation project for the landfill is currently required.
[2] The total of all environmental obligations including landfill closure must be considered when addressing the 43% limit. This would include such things as UIC facilities under 40 CFR 144.62, petroleum underground storage facilities under 40 CFR 280, PCB storage facilities under 40 CFR 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR 264 and 265.

The following summarizes the amounts available for payment of general long-term debt at June 30, 2024:

	Debt Service Funds
School general obligation bonds	$ 9,107,515
Transportation bonds	666,643
Parks and recreation bonds	1,021,604
Certificates of participation	5,315,574
	$ 16,111,336

Any additional monies needed to service the school general obligation bonds or retire other governmental activity debt are provided by transfers to the Debt Service Funds from the General Fund. The following bond authorizations remain open and unissued:

	Authorized But Unissued
2018, Transportation Bonds	11,845,000
2021, Transportation Bonds	61,135,000
2023 Transportaton Bonds	38,168,120
	$ 111,148,120

There is no legal debt margin for municipalities in the State of Alaska. In 1983, the Borough Assembly adopted an ordinance limiting outstanding general obligation debt to 7% of the Borough's assessed value. At June 30, 2024, the Borough was in compliance with these requirements.

Landfill Closure and Postclosure Care Cost

State and federal laws and regulations require the Borough to place a final cover on its landfill site when it stops accepting waste and to perform certain maintenance and monitoring functions at the site for thirty years after closure. Although closure and postclosure care costs will be paid only near or after the date the landfill stops accepting waste, the Borough reports a portion of these closure and postclosure care costs as a long-term liability at June 30, 2024, based on landfill capacity used as of that date. In August 2020, the Borough finalized a landfill closure review process which resulted in certain changes to the closure cost estimate. The $7,376,260 reported as landfill closure and postclosure care liability at June 30, 2024 represents the cumulative amount reported to date based on the use of 39% of the estimated capacity of the landfill. The Borough will recognize the remaining estimated cost of closure and postclosure care of $21,535,416 as the remaining capacity is filled. The Borough expects to close the landfill in the year 2044. Actual costs may change due to inflation, deflation, changes in technology, or changes in laws and regulations.

As of June 30, 2024, the Borough is required to provide financial assurances for closure and postclosure care of the landfill in accordance with state and federal regulations. There are a number of allowable mechanisms available. The Borough has decided to use the "Local Government Test" financial assurance mechanism to be in compliance with the April 1997 regulations. Future inflation costs and additional costs that might arise from changes in closure and postclosure requirements (due to changes in technology or more rigorous environmental regulations, for example) may need to be covered by charges to future landfill users, taxpayers or both.

Special Assessment Debt

Prior to Fiscal Year 2022, the Borough would issue non-recourse special assessment bonds to finance road, water, or gas improvements in local improvement districts within the Borough. As part of the Fiscal Year 2022 Budget, the Borough created an internal service fund to allow it to finance the local improvement special assessment without the issuance of non-recourse bonds. As such, the Borough is not obligated in any manner for the special assessment bond debt and is acting solely as agent on behalf of the local improvement districts. These balances are therefore only recorded in the Fiduciary Fund.

Matanuska-Susitna Borough Central Landfill
Burns & McDonnell, October 2025
Annual Expense Recognition

FY*	Percent of Capacity Used	Landfill Closure and Post-Closure Costs	Total Liability	Accounting Expense to Recognize [1]
2024-25			$7,376,260	
2025-26	38.2%	$20,313,065	$7,767,700	$391,440
2026-27	40.8%	$20,782,297	$8,476,250	$708,550
2027-28	43.4%	$21,262,368	$9,224,217	$747,967
2028-29	46.0%	$21,753,528	$10,013,515	$789,298
2029-30	48.7%	$22,256,035	$10,846,147	$832,632
2030-31	51.5%	$22,770,149	$11,724,208	$878,061
2031-32	54.3%	$23,296,140	$12,649,888	$925,680
2032-33	57.2%	$23,834,280	$13,625,477	$975,590
2033-34	60.1%	$24,384,852	$14,653,372	$1,027,895
2034-35	63.1%	$24,948,142	$15,736,077	$1,082,705
2035-36	66.1%	$25,524,445	$16,876,213	$1,140,135
2036-37	69.2%	$26,114,059	$18,076,517	$1,200,304
2037-38	72.4%	$26,717,294	$19,339,853	$1,263,336
2038-39	75.6%	$27,334,463	$20,669,216	$1,329,363
2039-40	78.9%	$27,965,890	$22,067,736	$1,398,520
2040-41	82.3%	$28,611,902	$23,538,684	$1,470,949
2041-42	85.7%	$29,272,837	$25,085,483	$1,546,799
2042-43	89.2%	$29,949,039	$26,711,707	$1,626,225
2043-44	92.8%	$30,640,862	$28,421,096	$1,709,389
2044-45	96.4%	$31,348,666	$30,217,557	$1,796,461
2045-46	100.1%	$32,072,820	$32,105,174	$1,887,617

**Fiscal Year runs from July 1 to June 30*

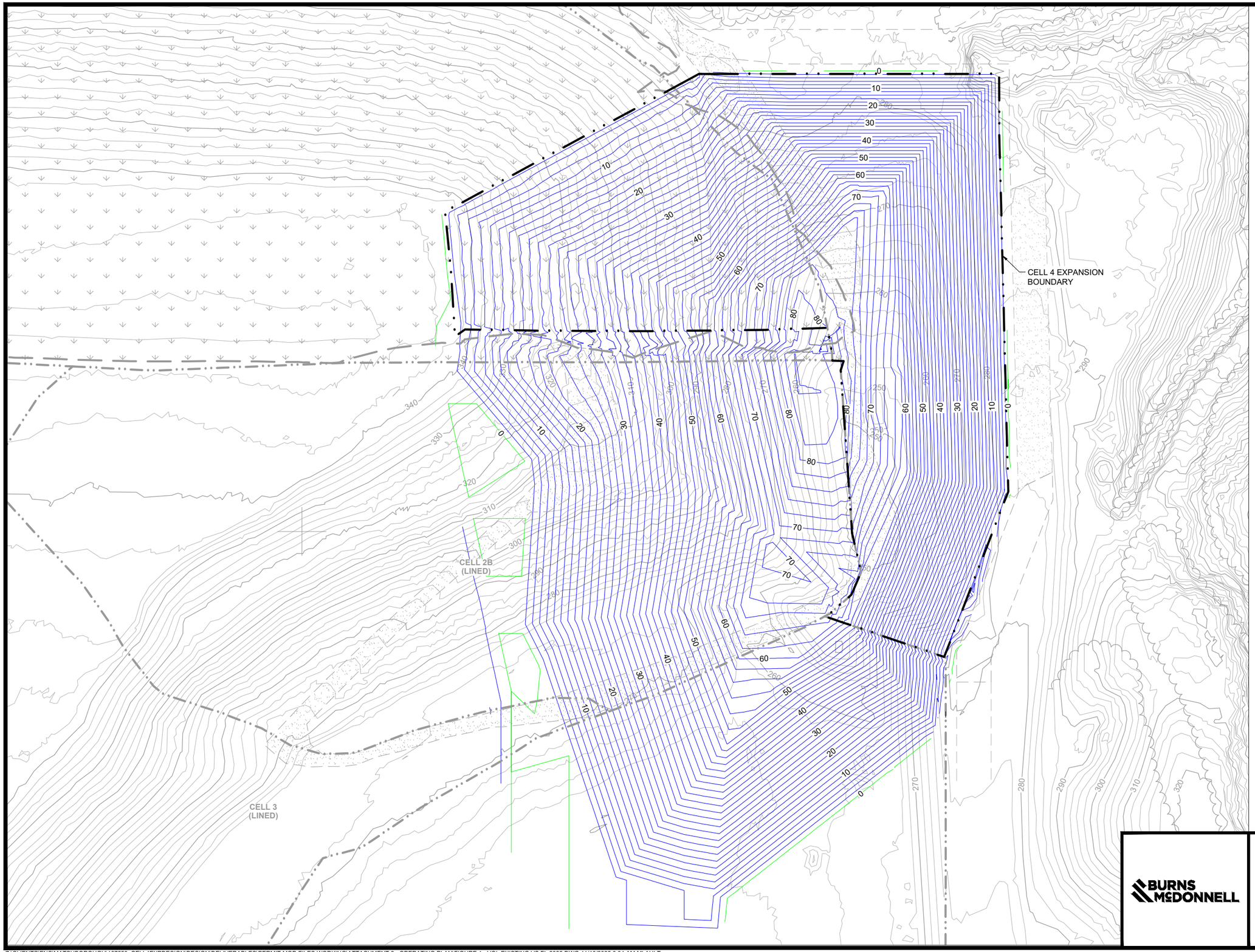
1. Represents the annual expense to be recognized per GASB 18

Exhibit 5 – Remaining Airspace

Matanuska-Susitna Borough Central Landfill
Burns McDonnell Engineering Company
MSW Remaining Life Calculations of Cells 3-5 with Cell 4 Expansion
October 2025

MSW Tonnage 2024 =	65,863	tons
Average AUF =	1,400	lb/cy
Growth % =	2.0%	(Client Provided)
Remaining Life Cell 3 =	3,791	CY (based on 6/20/25 survey)
Remaining Life Cell 4 =	605,986	CY (based on 6/20/25 survey)
Remaining Life Cell 4 EXP =	354,338	CY (based on design GDM)
Remaining Life Cell 5 =	1,410,507	CY (permitted capacity)
Total Capacity Remaining Cells 3-5 =	2,020,283	CY (permitted capacity)
Total Capacity Remaining with Cell 4 Expansion=	2,374,621	CY (permitted capacity after permit modification)

Year	Projected Tonnage	Airspace Consumed (CY)	Cell 3 Remaining Airspace (CY)	Cell 4 Remaining Capacity (CY)	Cell 4 EXP Remaining Airspace (CY)	Cell 5 Remaining Airspace (CY)	Total Cell 3-5 Airspace Remaining (CY)	Notes	
Remaining Airspace as of June 2025 survey			**3,791**	**605,986**	**354,338**	**1,410,507**	**2,374,621**		
Partial 2025	35,707	51,010	(47,219)	558,767			2,323,611	Actively filling Cell 4	**7/4/2025** <-- Cell 3 Full
2026	68,524	97,891		460,876			2,225,720	Move into Cell 4 Expansion with Permit Mod	
2027	69,894	99,849		361,027			2,125,871		
2028	71,292	101,846		259,181			2,024,025		
2029	72,718	103,883		155,298			1,920,142		
2030	74,172	105,961		49,337			1,814,181		
2031	75,656	108,080		(58,743)	295,595		1,706,101		**6/15/2031** <-- Cell 4 Full
2032	77,169	110,241			185,353		1,595,860	<-- Excavate Cell 5	
2033	78,712	112,446			72,907		1,483,414	<-- Construct Cell 5	
2034	80,287	114,695			(41,788)	1,368,719	1,368,719	Move into Cell 5;	**8/20/2034** <-- Cell 4 Expansion Full
2035	81,892	116,989				1,251,730	1,251,730		
2036	83,530	119,329				1,132,401	1,132,401		
2037	85,201	121,715				1,010,685	1,010,685		
2038	86,905	124,150				886,535	886,535		
2039	88,643	126,633				759,903	759,903		
2040	90,416	129,165				630,737	630,737		
2041	92,224	131,749				498,989	498,989		
2042	94,069	134,384				364,605	364,605		
2043	95,950	137,071				227,534	227,534	<-- Excavate PH2C1	
2044	97,869	139,813				87,721	87,721	<-- Construct PH2C1	
2045	99,826	142,609				(54,888)	(54,888)	Move into PH2C1; Cell 5 Life Depleted	**8/12/2045** <-- Cell 5 Full



NOTES:

1. EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
2. EXISTING SITE TOPOGRAPHY CREATED FROM LIDAR SURVEY DATED JUNE 20, 2025, PROVIDED BY MATANUSKA-SUSITNA BOROUGH.
3. EXISTING CONTOUR INTERVAL IS TWO FEET.
4. ISOPACH CONTOURS SHOWN REPRESENT THE COMPARISON BETWEEN CELL 4 EXPANSION TOP OF GRANULAR DRAINAGE MATERIAL GRADES/CELL 4 TOP OF FINAL INTERMEDIATE GRADES TO CELL 4 EXPANSION TOP OF FINAL INTERMEDIATE COVER GRADES.
5. ISOPACH CONTOUR INTERVAL IS TWO FEET

LEGEND:

EXISTING CONTOURS

CELL BOUNDARY

ISOPACH:

CUT

FILL

ZERO

CY = CUBIC YARDS

CELL 4 EXPANSION AIRSPACE: 354,338 CY

BURNS McDONNELL

Figure 1

Cell 4 Expansion Airspace

Central Landfill (SW1A007-26)
Matanuska-Susitna Borough

Z:\CLIENTS\ENS\MATSUBOROUGH\167550_CELL4EXPDESIGN\DESIGN\DELIVERABLES\PERMIT MOD FILES WORKING\ATTACHMENT 2 - OPERATING PLAN\FIGURE 1 - VOL EXISTING VS FI_2025.DWG 11/18/2025 9:34 AM MLAULT