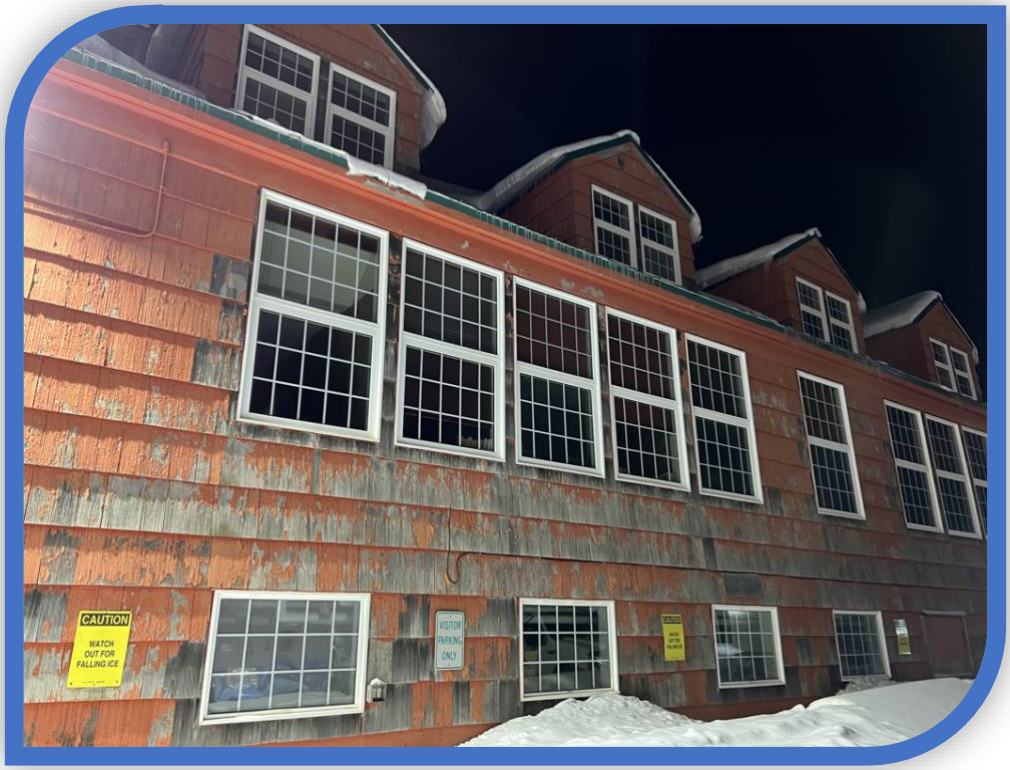
DELTA BACKHAUL COMPANY

FEBRUARY 28, 2023



SOLID WASTE ASSESSMENT

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Assessment Overview

Dillingham is located in the Bristol Bay region in Southwestern Alaska. Dillingham has a population of 2,203 people and operates a Class II landfill. The landfill accepts municipal waste, construction & demolition debris, scrap metal and recyclables. The primary form of treatment in the landfill is incineration of waste for volume reduction. The landfill has a transfer station within the landfill for the public to drop off waste and recyclables. Residents are encouraged to separate waste at home and stage waste in separate drop-off areas for disposal. Burnable waste is then burned, and the cooled ash removed from the incinerator and disposed of in an ash cell. The ash cell is covered daily with 6" of soil to discourage animals in the waste and to prevent windblown litter. Non-burnable waste is taken to different areas of the landfill for either disposal, and/or staged for recycling, or backhaul. The landfill is staffed by three full and part-time staff and operated several pieces of heavy equipment. The average Alaska Department of Environmental Conservation landfill inspection score has been in the high 80th percentile until recently.

On January 17th, 2023, I conducted a landfill assessment for Delta Backhaul Company, along with Joy Britt with the Alaska Forum Green Star Program, Patricia Buholm, City Planner for the City of Dillingham, and Max, landfill operator for the City of Dillingham. The assessment conditions were fair, but snow covered much of the site and did not allow an adequate picture of the site. Due to the large volume of snow, the drone was not used for aerial surveys and photo documentation. A tour of the overall site, the incinerator building, the landfill shack was conducted. Further, a review of records was included with the tour.

A follow-up assessment will be performed in June to evaluate the scrap metal pile at the Dillingham landfill. The current scrap metal pile is the accumulation of many years of abandon vehicles, derelict equipment, construction & demolition debris, loose scrap, tires, and occasional household waste. The pile has grown to an estimated six and a half acres in size. The pile, as recent as last summer, caught fire and burned uncontrolled for some time. The scrap pile is located near a wetlands area and monitoring wells have picked up hits of contamination during recent monitoring events.

Several problems have plagued the Dillingham landfill in recent years. Dwindling work force, the equipment shop fire, broken equipment, and the high cost of operation for the incinerator has contributed to a current landfill score of 58%. The deficiencies of the landfill have also led to ADEC solid waste issuing a Notice of Violation (NOV) to the landfill with corrective action required to fix the site. This report will provide insight into the issues at the landfill, along with corrective action measures to fix the problem and reduce impact.

The last ADEC solid waste inspection report had 11 issues that needed to be addressed immediately to prevent further action from the department. The problems observed during the January 17, 2023 assessment along with the corrective action require to address the issue is also included.

Landfill Cover

The landfill is required to be covered with 6" of approved landfill cover at the end of each working day. Landfill cover prevents water from coming into contact waste. Waste in municipal waste allows waste to break down quicker and can lead to the creation of leachate. Leachate is defined as any contaminated liquid that is generated from water percolating through a solid waste disposal site, accumulation g contaminants, and moving in subsurface areas. A second source of leachate arises from the high moisture content of certain disposed wastes. Landfill cover also helps to prevent windblown litter. Consolidating waste and applying cover material regularly are the best long-term solutions for this problem. Heavy equipment is required to

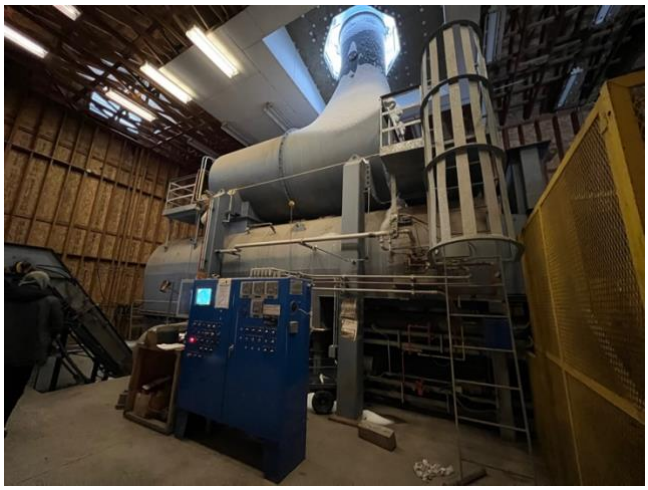
consolidate, compact and cover waste. A landfill the size of the Dillingham landfill will require a minimum large waste compactor, large dozer with waste push blade, and possibly a larger excavator.

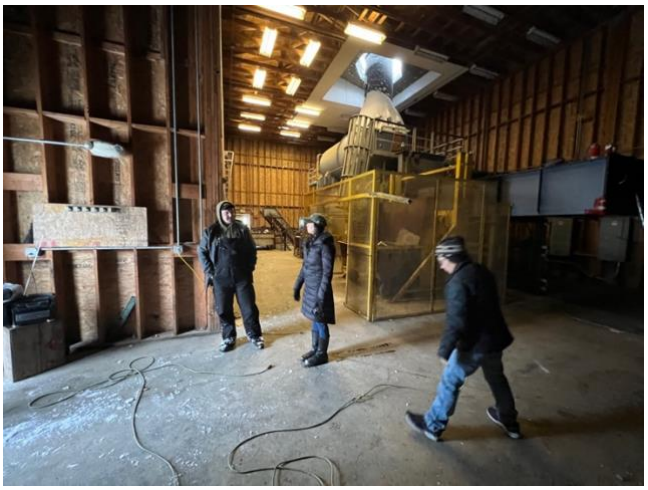
Corrective Action: Repair and replace equipment for effective landfill operations. Consolidate, compact, and cover the active working face at regular intervals. The landfill should be covered with 6 inches of approved cover material at regular intervals, stipulated in the ADEC landfill permit.

Incinerator

The landfill waste incinerator was dormant during the January 17, 2023 assessment. The unit may require equipment updates and maintenance to make this unit functional. The high cost of fuel and the lack of equipment to load the incinerator have caused the landfill staff to temporarily shutter the facility. We discussed filtering and separating out the good used oil for use in the burn unit. This would eliminate the current inventory of used oil as well as help to reduce the amount of diesel required to operate the unit. We also discussed a better schedule for burning waste, keeping the unit on for longer runs. A hotter incinerator runs more efficiently and burns less fuel.

Corrective Action: Research used oil filtering/centrifuge devices for the stockpile of used oil at the Dillingham landfill. https://dolphincentrifuge.com/used-oil-centrifuge/ Contact the incinerator manufacture (Pennram Diversified Manufacturing Corporation / pennram@pennram.com (570) 327-2802) to discuss options for using filtered used oil for startup and incinerator operations.





Water & Air Monitoring Program

The water monitoring program has not been completed in some time. This program needs to be reinstated to meet the ADEC permit requirements. There were several areas of concern during the last few monitoring events. Corrective action may be required because of monitoring outcomes. The ADEC Air Quality Program should be notified about starting the waste burning program back up. A discussion on using used oil for the fuel source should also be talked about and approved by the department.

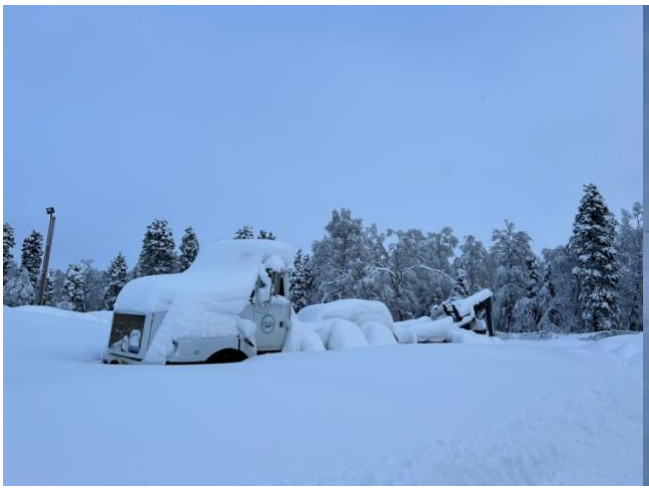
Corrective Action: Contact ADEC to discuss proper steps to reinstate the program. Kaylie Holland – kaylie.holland@alaska.gov is the contact for landfill monitoring.

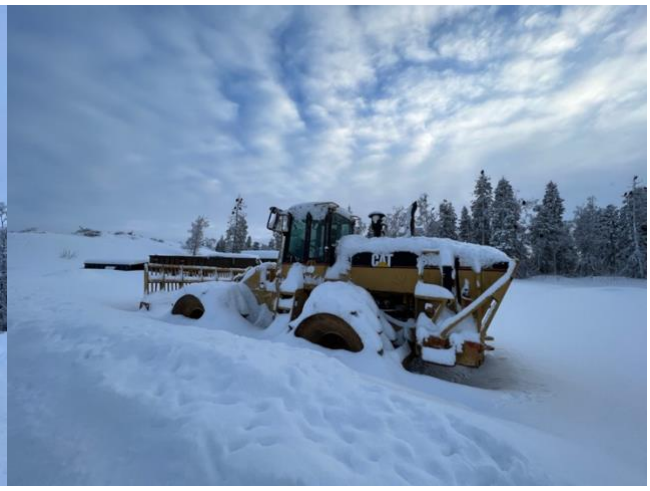
Landfill Equipment

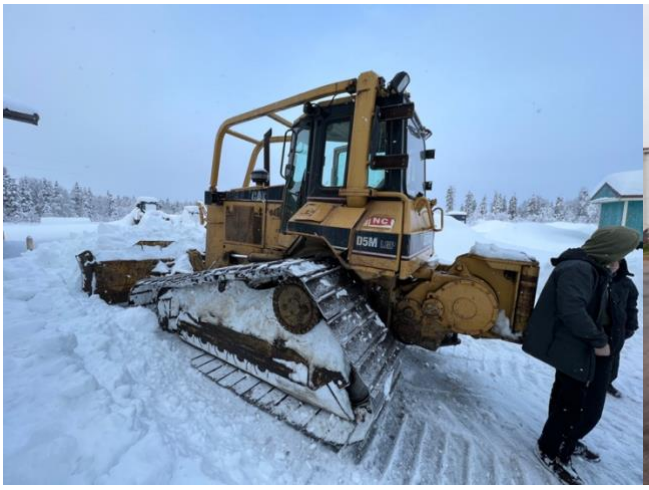
Several pieces of landfill equipment were broken, needing repair, or replacing. The equipment is key to landfill operations. The Hook truck/trailer combination is crucial in getting the transfer station started back up and keeping people out of the landfills working face. It is my recommendation to replace the current truck trailer combination with a new truck/hook. There are several options available for used and new equipment. Prices for the truck with hook range from $95,000 – $265,000+. You will have immediate improvements to the site with the addition of a new hook truck.

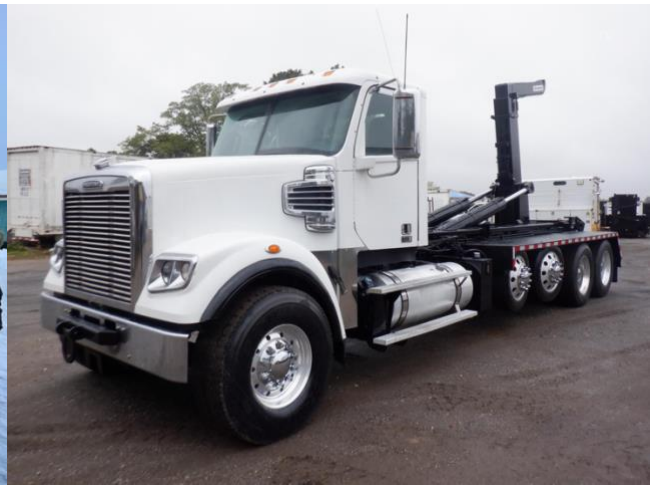
The waste compactor, medium sized dozer, and the excavator were all in various states of repair. I would focus on having a mechanic travel to Dillingham and evaluate each piece of equipment for necessary repairs, or replacement. Each piece of equipment plays a vital role in landfill operations. Proper training on each piece of equipment along with keeping up on routine maintenance is essential in keeping a productive fleet. Delta Backhaul Company partners with several mechanics that can evaluate the equipment.

Corrective Action: Contact Delta Backhaul Company, or local mechanic for evaluation of landfill equipment. We can also assist with selection of hook trucks.









Incinerator Air Permit

There are several hurdles that will need to be completed to reinstate the burning of waste for volume reduction in the Dillingham waste incinerator. Using filtered waste oil may complicate the air permit process and should be brough to the attention of the ADEC Air program. Permitting and any paperwork concerning the incinerator should be completed prior to the first burn. The conditions within the air permit will provide you with guidance for operating the incinerator.

Corrective Action: Contact Alan Pefley with ADEC Air Quality program to discuss reinstating the Dillingham incineration program and any specific operating conditions that may apply.

Bear Fencing

Bear fencing is an effective way to prevent bears from encountering landfill waste. The fence was reportedly working during summer months when the bears are present. Reported problems with the fence involve bears digging under the fence and accessing the landfill. The bears will not go over, or through the fence and the fencing remains operational, but bears have become wise to the fact that they can go under. Max had a solution that involved scaring the bears as they start to dig and placing wires in the ground in the freshly dug hole. This could serve as a preventative fix for the problem as it is thought that the bears will think that the wires go down into the earth and digging will result in encountering the electrified wires and becoming shocked.

Corrective Action: Attempt to add wires to freshly dug bear holes to trick the bears into thinking that buried wires protect the site from access.

Windblown Litter

Windblown litter is the result of lack of cover on the working face. High winds in the region can blow loose trash into the surrounding trees and low brush. Some litter can blow out of the site and has the potential to impact the surrounding tundra, and/or Bristol Bay. The bay is a world class resource and should be protected at all costs. Windblown litter can also carry biological and chemical traces from the site. Fencing with barbed wire can help in collecting litter as will a periodic litter collection from around the site.

Corrective Action: Cover the working face with six inches of material daily. Litter that escapes the site should be collected at regular intervals.

Solid Waste Training

Landfill management training is imperative for operators and serves as a roadmap for best management practices at the site. As a class II landfill proper operation and set schedules are important in minimizing the impact from municipal solid waste to the environment.

Corrective Action: Sign up the landfill staff for the Alaska Landfill Operator Training (A LOT). Joy Britt sent Patty Buholm the contact information on how to do so, but can also be accessed here: https://akforum.org/training-apprenticeship/alaska-landfill-operator-training/

Visual Monitoring

Visual monitoring of the landfill must be completed by staff every month. Landfill observations and issues must be recorded. This helps to ensure consistency at the site and helps to document seasonal changes and problems at the site. The visual monitoring will serve as a record for future operators about conditions at the site and help them to be pro-active in the maintenance schedule.

Corrective Action: Fill out the Monthly Visual Monitoring form and keep record of this in the landfill shack.

Landfill Operating Records

The landfill operating records (including the monthly visual monitoring forms) should be readily available for landfill staff to review. Some of the documents, like the landfill operations plan, are meant to be living documents, reviewed annually, and updated when needed throughout the year. Documents like the landfill operations plan and the landfill permit application are useful documents that ensure all staff know the long-term goals. These documents, along with the landfill permit, and past ADEC landfill inspections are required by the permit and should be kept in the landfill shack. Contact ADEC Solid Waste program for current copies of the landfill permit and/or latest landfill inspections. Some of this information is available on the ADEC solid waste website: https://dec.alaska.gov/eh/solid-waste.

Corrective Action: Collect the operating records for the landfill and keep in the on-site landfill employee office. Ensure that this information is readily available for landfill staff.

Permit Conditions

Permit conditions contain information specific to the Dillingham landfill and is vital to the operation of the site. This information is available in the landfill permit and should be reviewed by staff. There are 15 specific Conditions in the permit in addition to the 9 general conditions for the site. The current Dillingham Class II landfill permit, including the conditions is available on the ADEC Solid Waste website under *Database of Facilities*.

Specific conditions

1. Prohibit disposal
2. Hazardous waste
3. Conduct and document weekly random load inspections
4. Burning
5. Incineration
6. Sample ash annually
7. Landfill Cells
8. Sewage Solids
9. Cover
10. Salvage materials and recyclables
11. Hold all vehicles and white goods
12. Prevent the discharge of firearms
13. The facility gate
14. Monitoring
15. Documentation

General Conditions

1. Access to inspections
2. Information access

3. Civil and criminal liability
4. Availability
5. Adverse impacts
6. Cultural or paleontological resources
7. Applications for renewal
8. Other legal obligations
9. Pollution prevention

Corrective Action: Have landfill staff review the permit conditions and past landfill inspections.

Next Steps

Re-start transfer station / public interface – Purchasing a new/used hook truck to move dumpsters in the landfill and reopening the transfer station/public access site should be the top priority for the landfill. Many of the issues the landfill currently faces will be resolve by keeping residents out of the landfill.

Incinerator Operation – The incinerator program needs to be reinstated for the reduction of waste at the Dillingham landfill. The current cell is filling up fast and adding another cell to the landfill can be time consuming and expensive. The current landfill cell was designed as an ash cell and was not meant for traditional waste disposal methods. The incinerator will help to minimize impacts from MSW in the landfill and will reduce animal attractants and windblown litter. 20,000 gallons of used oil currently at the landfill should be used to power the incinerator. Research used oil injector equipment needed for the conversion and development of a long-term solution for separating used oil from contaminates and storing clean used oil onsite.

Landfill equipment – Equipment is a vital part of landfill operations. Equipment should be evaluated for repair/replace options as time and funds allow. The compactor is key to daily operations and should be prioritized.

Scrap metal backhaul – The scrap metal pile covers the entirety of a 6.5-acre site. Funding should be considered to process the metal, stage for removal, and then backhaul to Seattle for recycling. This process will take at minimum 3 months and may take longer depending on the volume and type of material. A car crusher, excavator with a scrap magnet, a wheeled loader with solid wheels, cutting torches and a metal sheer will be required to manage the material for backhaul. Delta Backhaul Company is planning to travel to Dillingham to reevaluate the site once the snow has cleared in June. A better estimate for backhaul can be generated at that time. The current projections for collection and backhauled is $4.5 – $5 million.

Conclusion

Corrective actions of current landfill issues and review of permit conditions is imperative to improving the ADEC landfill inspection score and ultimately landfill operations. This will serve to reduce the environmental and human impact from the Dillingham landfill. Some of the issues are small while several will require large capital investments.