Ted Stevens Anchorage International Airport
2016 Environmental Section Summary Report

Solid and Hazardous Waste Management

Recycling from Ted Stevens Anchorage International (ANC) tenants and State of Alaska operations at ANC diverted over 250,000 pounds of solid waste from going into the Anchorage Regional Landfill. Cardboard and waste paper recycling saved the State of Alaska close to $5,500 in tipping fees alone.

Airport operations produced tens of thousands of pounds of recyclable products such as batteries, scrap metals, reclaimed/reground asphalt, concrete and aggregates, used oil, printer/toner cartridges, electronics and other materials, which would have once ended up in the landfill, are now beneficially reused through recycling. Here is a breakdown of weights for those materials:

Recycled batteries =	~6,650 lbs.
Scrap Metal =	~96,520 lbs.
Toner/Printer Cartridges =	~200 ea.
Electronic Waste =	~2,200 lbs.
Concrete/Aggregate =	~5,000 c.y.
Mixed paper/newspaper =	~8,000 lbs.
Cardboard =	~190,000 lbs.
Antifreeze =	~2070 lbs. (250 gallons)
Used oil =	~22,652 lbs. (2665 gallons)

During 2016 our waste minimization efforts resulted in the airport generating less than 400 pounds of hazardous waste. Recycling, product substitution and training airport staff on proper identification, handling, and disposal of hazardous and solid waste has contributed greatly to the airport reducing the amount of hazardous materials that is used and disposed of by the airport.

Pollution Prevention & Spill Response

During 2016, 25 spills totaling ~850 gallons were reported to the Environmental Section at ANC. Most of the spills were accidental releases during aircraft refueling operations. The majority of the spills were onto paved surfaces where they had minimal environmental impacts and spill response was immediate in most cases which prevented any contaminates from reaching sensitive environments. The largest release (~650 gallons) was from a Boeing 747 aircraft with a faulty valve. In that case, most of the fuel was recovered immediately using a vacuum truck.

To further prevent any contamination from entering Cook Inlet or Lakes Hood and Spenard ANC operates three “watershed protection stations” that are designed to capture and recover petroleum contaminates from storm water discharges. The spill stations contain floating weirs and oil skimmers to recover any oil accumulated behind the weir. In addition to the spill stations, Airfield Maintenance places absorbent booms at all

outfalls where storm water daylights from underground piping into an open waterbody or channel.

Contaminated Site Investigation and Remediation
The ANC Environmental staff works closely with ANC tenants and the Alaska Department of Environmental Conservation (ADEC) to address and resolve issues related to contaminated sites on ANC lands. Because the airport area has been one of Alaska's primary industrial hubs since the early 1950's, many of the contaminated sites at ANC are the result of once accepted industrial practices that were later found to be detrimental to the environment.

The number of contaminated sites on ANC property has steadily declined in the past decade as the parties responsible for pollution of these sites clean-up the contamination to meet standards set forth by ADEC.

The airport has several contaminated sites under its jurisdiction that have been regularly monitored for years to ensure the contamination is not migrating. Based on the data collected over the years the airport has requested that the intervals between monitoring events be extended; ADEC has granted this request for the three sites the requests were made for.

ANC has had their landspreading area re-authorized by ADEC for the treatment of moderately contaminated soils on airport property. Landspreading moderately contaminated soils allow the soils to be efficiently and naturally bio-remediated without requiring the transport and thermal destruction of the fuels at a soil burning facility.

During the summer of 2016, the Army Corps of Engineers conducted a study which included the installation of 11 monitoring wells at the former Kulis Air National Guard Base, in the southern portion of ANC, to look for and measure perfluorinated compounds (PFOS/PFOA). Perfluorinated compounds have been determined by the US EPA to be an "emerging environmental contaminate" that may be regulated in the future. The PFOS/PFOA compounds were known to have been in firefighting foam used to extinguish liquid petroleum fires. The Air National Guard firefighters used the foam during training exercises in several areas around the base. ANC also installed a monitoring well near the Fire Training Area near South Airpark to look for PFOS/PFOA compounds. Groundwater results from sampling near the Fire Training Area showed the contaminants at levels significantly below EPA and ADEC determined levels of concern. One well at Kulis had samples that were above the EPA/ADEC levels of concern. ANC will stay abreast of any changes in the environmental regulations which may require further action.
*Note: these chemicals are not present in modern firefighting foams in the United States.

Environmental/Health & Safety Training
ANC employees received several hundred hours of training related to Environmental Protection and employee health and safety in 2016.
Training was offered on topics such as

- Pollution Prevention & Energy Conservation
- Spill Response, Control & Containment
- Recycling & Waste Minimization
- Hazardous Waste Management & Operations (HAZWOPER)
- Hazard Communication Standard (OSHA required)
- 1st Responder Emergency Response (OSHA required)

This training provides ANC employees with the knowledge base to recognize workplace hazards, protect themselves and others, report incidents or accidents, and to work safely and productively. In addition to training provided by the Environmental Section, other ANC departments provide classes within their sections to meet OSHA requirements and provide employees with training relevant to their jobs.

In 2016, the Alaska Department of Transportation & Public Facilities (ADOT/PF) began using a new statewide computer program with a database of Safety Data Sheets (formerly known as Material Safety Data Sheets or MSDS). The program, SDS Pro, now contains Safety Data Sheets for all chemicals used by ADOT/PF statewide. The program is easy to use and is available to all ADOT/PF employees.

Energy Conservation
Over the last several years ANC has been implementing measures to reduce the energy consumption at all airport facilities. Improvements and upgrades to heating, cooling and electrical lighting systems combined with operational efficiencies have reduced the electrical and natural gas consumption and are expected to save the State of Alaska thousands of dollars. Some of these ongoing measures such as replacing older lighting fixtures and lamps with LED bulbs will continue to reduce our environmental footprint and energy costs.

Air Quality
Under the Clean Air Act (CAA), ANC must comply with regulations related to air emissions. To meet these compliance requirements ANC collects and maintains data on all stationary equipment that may emit regulated air pollutants. This is mainly combustion equipment such as boilers, water heaters, unit heaters, etc. that burn diesel or natural gas as fuel. The emissions from this equipment are calculated based on the run time of the equipment, the volume and type of fuel burned as well as the technical data provided by the equipment manufacturer.

During 2016 air emissions from the airport were well below the limits allowed under our Air Quality permit issued by ADEC.

Water Quality

Ensuring the quality of the water bodies around ANC is one of the main goals of the ANC Environmental Section. To make sure operations do not degrade these waters ANC has a comprehensive Storm Water Pollution Prevention Plan (SWPPP) that contains Best Management Practices (BMPs). These BMPs address various types of facility activities that can lead to water pollution and provide requirements and recommendations to minimize the impacts from those activities.

One of the primary activities that contribute to water pollution at airports around the country is the use of glycol-based aircraft deicing fluids (ADF). Airline operators typically use two types of ADF, propylene glycol and ethylene glycol, which are applied to aircraft to ensure the safety of the traveling public. Glycol left alone to decompose in the environment would become carbon dioxide and water. However, glycols can adversely influence water quality primarily by reducing the available oxygen for aquatic life.

The average amount of deicing fluids used at ANC has been relatively consistent over the last several years but the yearly amount varies according to the amount of snow or icing events during the winter. During the 2015-2016 reporting period (September-August) airlines and ground service providers operating at ANC reported that they had applied 441,101 gallons of ADF to aircraft (96% propylene glycol and 4% ethylene glycol).

ANC and its tenants continue to make strides to reduce the environmental impact of ADF and incorporate BMPs in order to do so. For example, in ANC's East Air Park, tenants must utilize equipment that has ADF reduction tools such as forced air, proportional mix nozzles and, low flow nozzles; aircraft service providers in other areas of ANC's airfield also employ these same glycol reduction techniques. The more modern equipment reduces the amount of time it takes to de-ice aircraft and uses less glycol, which saves the airline operator's money. In addition, in 2017 those airlines and aircraft service providers that meet a specific threshold for gallons of ADF applied will be required to use more modern equipment airport wide.

In May 2016, the ADEC requested that ANC submit an Alaska Pollutant Discharge Elimination System (APDES) Individual Permit (IP) application. This application was submitted December 2016 and will be reviewed by ADEC and then go through the permitting process, which includes public comment. ANC will continue to be covered under the ADEC Multi-Sector General Permit to discharge storm water from the facility until the IP is approved and issued.

At ANC snow from the airside, where deicing activities occur, is "dirty snow" (snow potentially mixed with ADF) and snow from parking lots, roadways, etc., is "clean snow". The "dirty" and "clean" snow is placed in designated snow dumps so that meltwater does not enter Lakes Hood and Spenard and in areas where some biological treatment can occur prior to discharge into the storm water drainage system for ANC.

The water quality in Lakes Hood and Spenard continue to improve. For the past six years, dissolved oxygen levels have met water quality standards and the ANC Environmental Section is working to have the lakes delisted as impaired water bodies of the State.

During the summer and fall of 2016, the lakes were treated again with an herbicide to address the presence of the invasive weed Elodea. The Department of Natural Resources (DNR) is working to eliminate the presence of this invasive plant in other lakes around the State and took the lead again this year for treating Lakes Hood and Spenard including a few other sites in the Anchorage Bowl. A survey of the aquatic plants conducted by DNR in 2016 did not find any Elodea in Lakes Hood and Spenard.

It is expected that ANC will have to continue this treatment periodically in order to eliminate Elodea's threat to Lakes Hood and Spenard and to other lakes or water bodies that ANC's large floatplane base may land.

If you have any questions regarding this information please contact me at 266-2129

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