

SPAR Annual Report

FISCAL YEAR 2022

DEC | SPILL PREVENTION AND RESPONSE



ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE

OIL AND HAZARDOUS SUBSTANCE RELEASE
PREVENTION & RESPONSE FUND ANNUAL REPORT

FISCAL YEAR 2022

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A list of acronyms and abbreviations used frequently throughout this report can be found on our website at <https://dec.alaska.gov/spar/reports>.

1.0 RESPONSE FUND HISTORY AND STRUCTURE

HISTORY OF THE RESPONSE FUND

The Oil and Hazardous Substance Release Prevention and Response Fund (the Response Fund) was created by the Legislature in 1986 to provide a readily available funding source to investigate, contain, clean up, and take other necessary action to protect public health, welfare, and the environment from the release and threatened release of oil or hazardous substances. Alaska Statute 46.08.030 reads: “It is the intent of the legislature and declared to be the public policy of the state that funds for the abatement of a release of oil or a hazardous substance will always be available.” (SLA 1986 Ch. 59 Sec 1). Since 1989, the statutes governing the Response Fund have been amended several times to further define the usage, management, and funding sources.

STRUCTURE OF THE FUND

In 1994, the Alaska Legislature amended the Response Fund structure by dividing it into two separate accounts: The Response Fund Account and the Prevention Account. These accounts fund the Department’s mission in distinct ways and have separate revenue sources.

THE RESPONSE ACCOUNT

The Response Account is used to finance the state’s response to an oil or hazardous substance release disaster declared by the governor or to address a release or threatened release that poses an imminent and substantial threat to public health, welfare, or the environment. If the Response Account is accessed for any incident other than a declared disaster, the Commissioner of the Department of Environmental Conservation, or their designee, must provide the Governor and the Legislative Budget and Audit Committee a written report summarizing the release, and the state’s actions and associated costs, both taken and anticipated, within 120 hours of that access.

The Response Account receives revenue from two sources:

1. A surcharge of \$0.01 per barrel that is levied on each taxable barrel of oil produced in Alaska deposited into the response surcharge account.
2. Costs recovered from parties financially responsible for the release of oil or a hazardous substance deposited into the response mitigation account.

The legislature must annually appropriate revenue from the response surcharge and response mitigation accounts into the Response Account.

The \$0.01 (one cent) per barrel surcharge is suspended when the combined balances of the response surcharge account, the response mitigation account, and the unreserved and unobligated balance in the Response Account itself reaches \$50 million.

The Commissioner of Administration reports the balance of the Response Account at the end of each calendar quarter and makes the determination if the \$0.01 surcharge shall be suspended. The combined balance of the Response Account as of December 31, 2022, was \$35.1 million; as a result, the \$0.01 surcharge remains in effect.

THE PREVENTION ACCOUNT

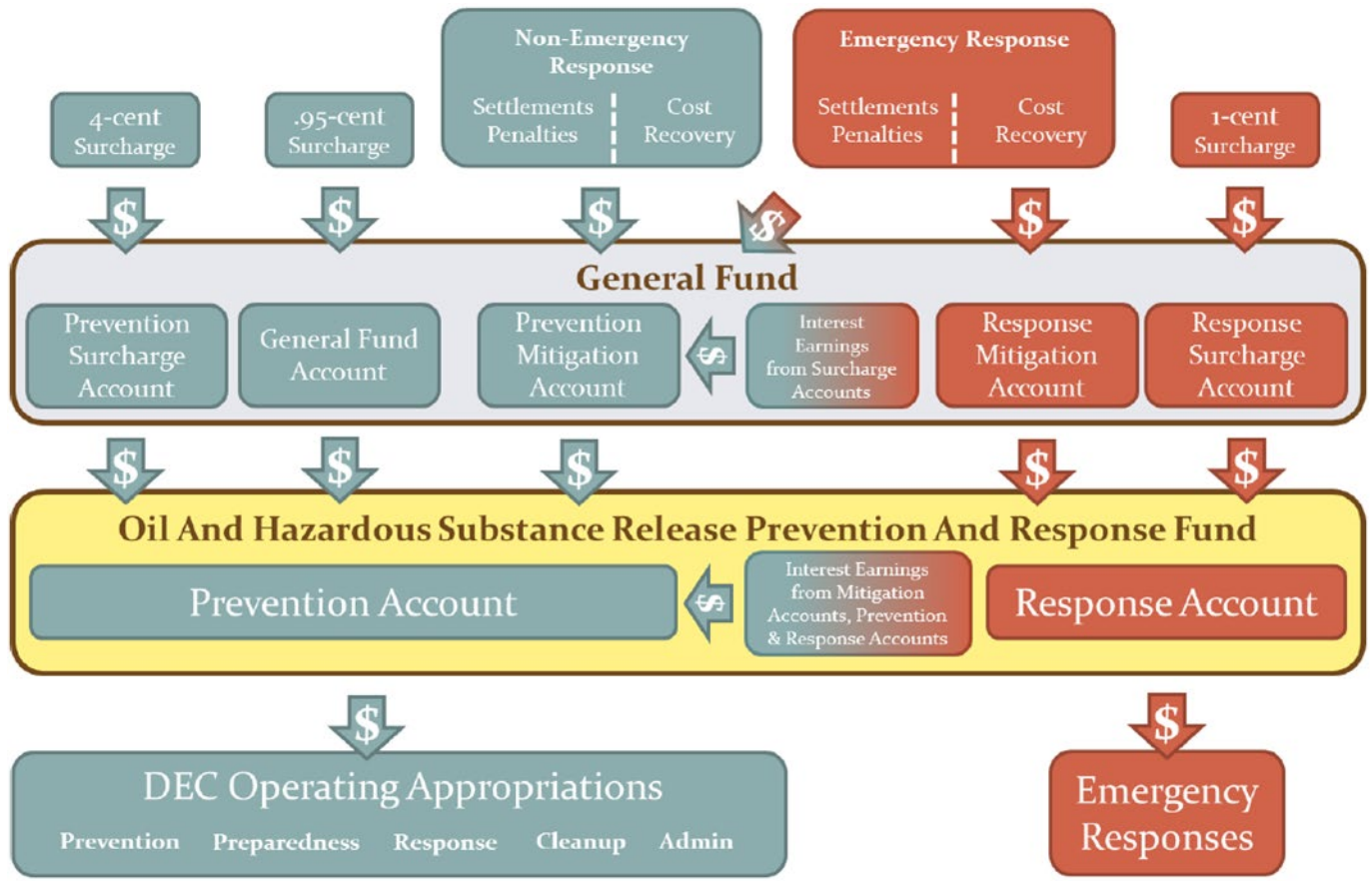
The Prevention Account may be used to investigate, evaluate, clean up, and take other necessary action to address oil and hazardous substance releases that have not been declared a disaster by the governor or do not pose an imminent and substantial threat to the public health and welfare of the environment. The Prevention Account may also be used to fund Alaska's oil and hazardous substance release prevention programs and to fund activities related to cost recovery. The Prevention Account pays for most of the SPAR operating budget.

The Prevention Account receives funding from four sources:

1. A surcharge of \$0.04 per barrel that is levied on each taxable barrel of oil produced in the state which is deposited in the prevention surcharge account.
2. A surcharge of \$0.0095 per-gallon on refined fuel sold, transferred, or used at the wholesale level in Alaska (municipalities and electrical co-ops were exempted).
3. Fines, settlements, penalties, and costs recovered from parties financially responsible for the release of oil or a hazardous substance deposited into the prevention mitigation accounts.
4. Interest earned on the balance of each of the following accounts deposited into the general fund and credited to the Prevention Account: (a) the prevention account; (b) the prevention mitigation account; (c) the response account; (d) the response mitigation account.

The legislature must annually appropriate revenue from the prevention surcharge and prevention mitigation accounts into the Prevention Account. The Prevention Account pays for most of the SPAR operating budget. The Prevention Account had an unobligated balance of \$7.36 million at the end of FY2022.

RESPONSE FUND FLOW CHART



2.0 RESPONSE FUND HEALTH

IMMINENT OPERATIONAL IMPACTS FROM REVENUE SHORTFALL

The Prevention Account is facing a revenue shortfall that will impact the DEC's ability to protect human health and the environment within the SFY30 budget. This is due in part to the decline in oil production.

In 2015, House Bill 158 was passed to address the shortfall by implementing a surcharge on refined fuel. At the time of the passage, the refined fuel surcharge was estimated to bring in approximately \$7.5 million annually to fund the Department's prevention and response activities. Due to declining production numbers and exemption for municipalities and electric co-ops the state has been collecting approximately \$1 million less per year than originally projected.

EMERGENCY RESPONSE FUNDING AFFECTED BY DIRECT APPROPRIATIONS

In 2018, the Legislature made a \$5 million capital appropriation from the Response Account to export soil at the Wrangell Junkyard to a landfill in the Lower 48 instead of a previously identified on-island disposal site. Because there was not a viable responsible party for this site, the Department could not recover any of this expenditure.

In 2019, there was a \$9.4 million supplemental capital appropriation from the Response Account to address per- and polyfluoroalkyl substance (PFAS) contamination at the airports owned by the Alaska Department of Transportation and Public Facilities (DOT&PF).

These large draws on the Response Account have a direct impact on the amount of available funds to immediately respond to releases that pose a substantial threat to Alaskans and increases the duration that the \$0.01 per barrel of oil surcharge will remain in effect.

RESPONSE FUND FINANCIAL TABLES

Table A - Fiscal Year 2022 Expenditures (AS 46.08.060)

This table summarizes the expenditures for appropriations funded by the Oil and Hazardous Substance Release Prevention and Response Fund (Response Fund) in Fiscal Year 2022.

	Appropriation	Budgeted ¹	Expended
Operating Funds			
Division of Spill Prevention and Response	181610700	\$ 13,312,200	\$ 12,736,713
DEC Administrative Services	181100700	\$ 1,717,900	\$ 1,525,922
DEC State Support Services	181200700	\$ 309,800	\$ 309,800
Spill Prevention and Response GF	181610300	\$ 562,200	\$ 562,200
		\$ 15,902,100	\$ 15,134,635
Capital Funds			
Statewide PFAS Response ORIG 19 OHSRPF	182190007		\$ 442,367
Oil & Haz Substance 1stRespond Equip & Prepare ORIG20 OHSRPF	182200002		\$ 68,794
Home Heating Oil Tank Spill Asst Pilot Prj ORIG 19 OHSRPF	182190004		\$ 54,109
			\$ 565,270
Response Account Funds			
Chevak Building Fire Cleanup OHSPRF	18ER21001		\$ 1,562,032
Flint Hills OHSRPF	18ER10200		\$ 14,229
Kaktovik PW Pump House OHSRPF	18ER17200		\$ 149
APL Yard Diesel Release Kodiak OHSRPF	18ER19017		\$ 36
X-49 Crude Oil Release OHSRPF	18ER19024		\$ -
Miller Salvage Leaking Drums OHSRPF	18ER18120		\$ -
			\$ 1,576,446
Total 2022 Fiscal Year Expenditures:			\$ 17,276,351

¹Budgeted amounts are not included for Capital and Response Account appropriations due to the multi-year nature of the work.

3.0 COST RECOVERY

OBLIGATION TO RECOVER

The Department has a statutory obligation to recover costs. Recovery of response costs are based on the provisions of AS 46.03.760(d), AS 46.03.822, AS 46.04.010, and AS 46.08.070. A person is liable under AS 46.03.760 and AS 46.03.822 for costs incurred by the Department or another state agency. Billable costs are the costs reasonably attributable to the investigation and cleanup of a site and/or the containment and cleanup of a spill incident; those of direct activities and support of direct activities. Billable costs also include legal costs, potentially responsible party (PRP) searches, obtaining site access, enforcement actions, and interest charges for delayed payments. Recoverable monies are the costs incurred by the Department, contractors, or other entities acting at the direction of the Department.

COST RECOVERABLE EXPENSES

Most site charges are cost recoverable and are billable to responsible parties. Non-personal service charges that are directly attributable to the site (travel, contractual, and supply charges) are billable. Most personal service charges are billable, but not all.

While the Department makes every effort to recover response and oversight costs from responsible parties, there are numerous reasons why billable costs are not recovered. A responsible party's inability to pay is the primary reason. In FY2017, the Department, in partnership with the Alaska Department of Law, established an internal inability to pay process that includes making inability to pay determinations by using the U.S. Environmental Protection Agency (EPA) financial modeling software, negotiations with the responsible party to recover partial costs and/or, establish an installment payment plan. Other reasons for low recovery rates relate to third party liability issues, unclear responsible party determinations, and disputed liability.

As demonstrated in the graph below, SPAR's Cost Recovery Unit has made several process improvements to increase the team's recovery rate. Bills are being sent to the Responsible Parties monthly, while ongoing communication with the Responsible Parties has become a primary focus of the team. Additionally, the program is working to resolve older, outstanding accounts in the next several years to enhance this percentage further.

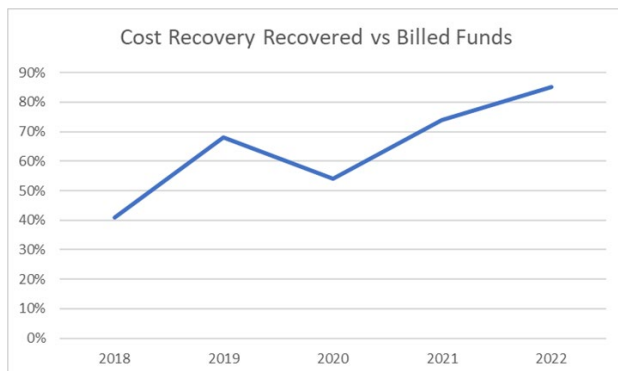
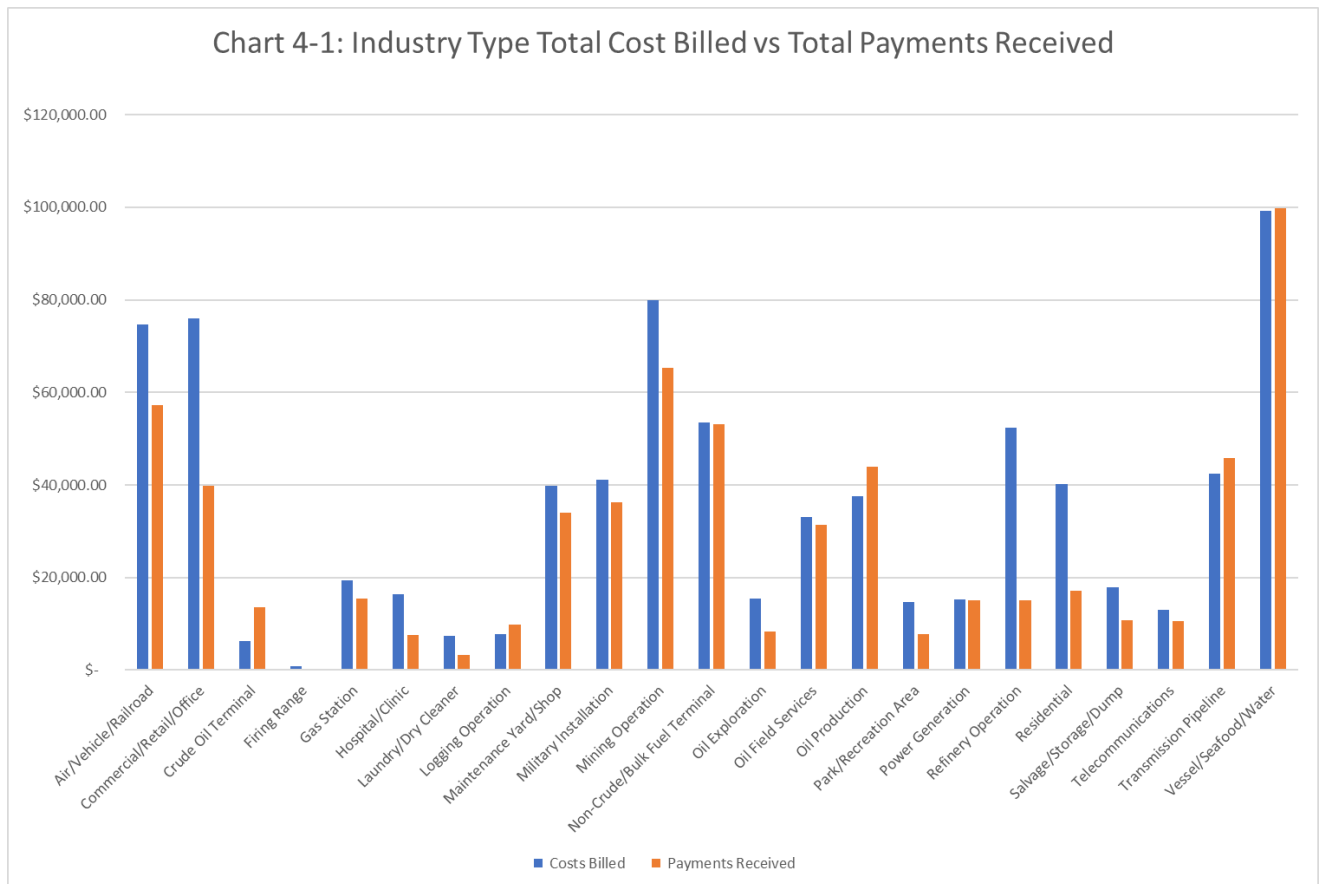


CHART 4-1, TABLE D, AND PIE CHARTS BY ENTITY: COSTS BILLED IN FY2021 VS RECOVERED BY INDUSTRY TYPE

The chart and table below compare the amount of costs billed through SPAR’s Cost Recovery billing process to responsible parties during the fiscal year with the total amounts of payments received during the fiscal year. The industry types shown reflect the type of facilities where releases have occurred. The “Residential” category includes releases at shared living facilities (such as nursing homes and correctional institutions) as well as home heating oil releases where cost recovery has not been exempted. The three pie charts represent costs billed vs recovered by entity: federal, state, or private.



NOTE: School not reflected in this graph due to distortion of graph.

Table D - Industry Type Total Billed vs Total Payments Received

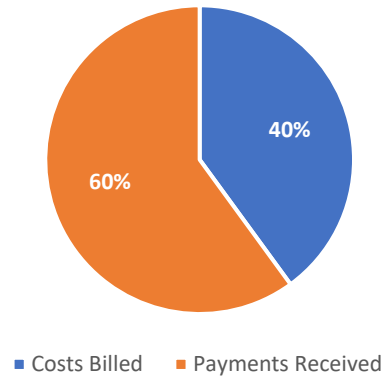
This table supports the above chart which compares the amount of costs billed through SPAR's Cost Recovery billing process to responsible parties during the fiscal year with the total amounts of payments received during the fiscal year.

Industry Type	Costs Billed	Payments Received	Percentage
Air/Vehicle/Railroad	\$ 74,697.96	\$ 57,297.49	77%
Commercial/Retail/Office	\$ 75,926.81	\$ 39,847.44	52%
Crude Oil Terminal	\$ 6,277.60	\$ 13,605.65	217%
Firing Range	\$ 888.44	\$ 58.09	7%
Gas Station	\$ 19,382.51	\$ 15,361.19	79%
Hospital/Clinic	\$ 16,406.41	\$ 7,516.74	46%
Laundry/Dry Cleaner	\$ 7,468.63	\$ 3,348.83	45%
Logging Operation	\$ 7,706.16	\$ 9,760.37	127%
Maintenance Yard/Shop	\$ 39,742.68	\$ 34,069.61	86%
Military Installation	\$ 41,050.16	\$ 36,336.66	89%
Mining Operation	\$ 79,849.72	\$ 65,207.97	82%
Non-Crude/Bulk Fuel Terminal	\$ 53,454.11	\$ 53,160.60	99%
Oil Exploration	\$ 15,396.26	\$ 8,336.53	54%
Oil Field Services	\$ 33,019.08	\$ 31,376.95	95%
Oil Production	\$ 37,465.64	\$ 43,981.00	117%
Park/Recreation Area	\$ 14,647.35	\$ 7,757.15	53%
Power Generation	\$ 15,306.79	\$ 15,136.93	99%
Refinery Operation	\$ 52,316.80	\$ 14,994.17	29%
Residential	\$ 40,130.30	\$ 17,134.70	43%
Salvage/Storage/Dump	\$ 17,829.99	\$ 10,769.95	60%
Telecommunications	\$ 13,053.34	\$ 10,558.57	81%
Transmission Pipeline	\$ 42,451.84	\$ 45,844.96	108%
Vessel/Seafood/Water	\$ 99,208.14	\$ 99,789.97	101%
Total	\$ 2,268,435.24	\$ 1,922,281.66	85%

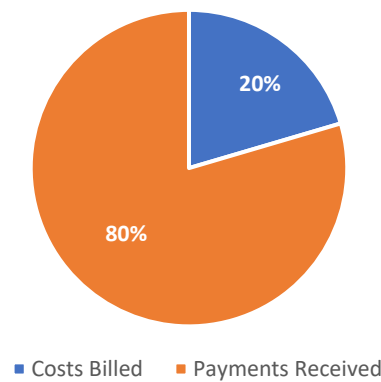
Projects span multiple years and costs are billed monthly, as such, the payments received may relate to prior fiscal year expenses.

TOTAL COST vs TOTAL PAYMENTS RECEIVED BY ENTITY

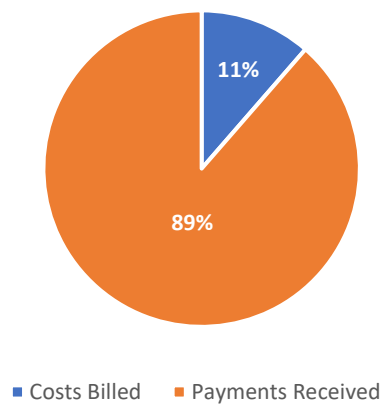
Federal Total Cost Billed vs Total Payments Received



Private Total Cost Billed vs Total Payments Received



State Total Cost Billed vs Total Payments Received



4.0 PREVENTION PREPAREDNESS AND RESPONSE PROGRAM

PREVENTION AND PREPAREDNESS

PPR RESPONSE STRUCTURE REORGANIZED TO FOUR REGIONS

PPR reorganized existing staff from three geographic regions to four, adding the Western Alaska Region to the existing Northern, Central, and Southeast. Western Alaska oversees prevention and response work in Bristol Bay, Western Alaska, and the Aleutian Islands. The realignment also eliminated the use of smaller geographic based Units led by individual supervisors to instead organize and complete work at the regional level. The goal of the realignment was to absorb staff turnover better, maintain better statewide consistency, and balance individual workload.

OIL DISCHARGE PREVENTION AND CONTINGENCY PLAN REGULATIONS UPDATE

The Department posted proposed changes to the regulations for Oil Discharge Prevention and Contingency Plan requirements in 18 AAC 75, Article 4 for public comment on November 1, 2021, with the public comment period closing on January 31, 2022. The proposed regulations were drafted based on department needs and public input received during an extensive public comment scoping process from October 15, 2019, through March 16, 2020. The goal of the project is to better implement the statutory authorities for contingency plans under AS 46.04, streamline, and clarify regulations, and reorganize and update the content and approval requirements for all five parts of the plan. One significant proposed change is merging and streamlining the requirements for what must be in a plan with the criteria DEC will use when approving plans. Previously these had been in two separate sections of the regulations, leading to confusion over what was required. Another improvement is to clarify what operators can expect during DEC inspections, and to incorporate virtual technology into the department's oversight regimen where it will improve the outcome. Communication methods, records requirements, requirements for submitting plans, and public notice requirements have all been modernized to reflect current technology. The 90-day public comment period generated comment submissions from 50 separate individuals and organizations. Together, these submissions encompassed approximately 200 separate questions or comments. The final regulation changes are anticipated to be promulgated in FY23.

STAFF TRAINING AND ONBOARDING

During FY22, a new employee Onboarding Resource tool was developed for staff. While oriented toward new employees, the resource also contains a variety of tools that benefit staff at all levels of professional development. A one-on-one onboarding training session reviewing the onboarding document is now provided to staff using the tool as a guide within the first few days of hire. In addition, a New Employee Curriculum document was created as a resource to assist supervisors with new employee training. This document contains training options that are selected by the employee's supervisor and facilitated by PPR's Training and Exercise Group. Other training initiatives are also being developed as part of a revitalized training program to effect consistency and technical and professional competency of staff. PPR has experienced significant staff turnover and our goal is to create a quality and efficient training environment.

PUBLIC REVIEW AND ENGAGEMENT: ARCTIC WESTERN ALASKA AND PRINCE WILLIAM SOUND AREA CONTINGENCY PLANS

The Department of Environmental Conservation (DEC), U.S. Coast Guard (USCG), and the U.S. Environmental Protection Agency (EPA), sought public input on proposed updates to the Arctic Western Alaska Area Contingency Plan (ACP) and the Prince William Sound Area Contingency Plan. The Arctic Western Alaska Area ACP and the Prince William Sound ACP represent a coordinated and cooperative effort by government agencies to develop operational plans in consultation with industry, local governments, tribes, and stakeholders. Plan content is intended to guide and support individuals that fill a response role and to achieve a coordinated and effective response to a pollution event.

To streamline the public review process and comment review by the Area Committees, SPAR developed an optional comment matrix to improve the public comment process and provide an efficient review mechanism. Completion of the updated ACPs and final signatures are anticipated at the beginning of FY23.

DEC hosts web-based versions of the Regional Contingency Plan, ACPs, and information about Area Committee working groups meetings and response preparedness efforts. The website is continuously improving, including adding a new section devoted to stakeholder engagement. The improved websites and availability of web-based resources greatly promotes Area Committee transparency and ensures accessibility of response planning for all Alaskans.

FLOW LINES INSPECTION

Flow line inspections are an important measure in prevention. Inspections were less frequent during the pandemic but have since picked back up with a focus in areas posing higher potential risk.



Pipelines in the Prudhoe Bay field, crossing the Sagavanirktok River (left) and in the Kuparuk River field, crossing the tundra in the vicinity of CPF-3 (right)

RESPONSE

The Prevention, Preparedness, and Response (PPR) program receives, investigates, and/or responds to approximately 2,000 releases annually, below are examples of the variety of releases received in FY22.

SAVOONGA 13,500 GALLON DIESEL SPILL

PPR was notified on April 21, 2022 that 13,500 gallons of heating fuel had been released into secondary containment from a Bering Straits School District (BSSD) bulk storage tank in Savoonga. A hole was discovered on the bottom of the 27,000-gallon tank that had drained the entire contents into the snow-covered secondary containment area (SCA). By May 6, 2022, BSSD responders had recovered 13,264 gallons of fuel from the SCA using free product recovery and then pumped water throughout the SCA gravel to flush out any residual fuels. Boom and pads were used to recover product released during the flush tactic until no further sheen emanated from the gravel, and water without sheen was approved for discharge. BSSD responders used 100-gallon fuel transfer tanks pulled by snow machines to move recovered fuel from the SCA of the damaged tank to other BSSD storage tanks. BSSD had sufficient fuel to finish out the winter season without obtaining emergency shipments of additional fuel.



27,000 gallon diesel tank that leaked into secondary containment. Fuel can be observed pooled to the right of the tank.

MANLEY HOT SPRING FLOODING

Manley Hot Springs experienced severe flooding in May 2022 caused by an ice jam on the Tanana River. When floodwaters receded, the Alaska Division of Homeland Security and Emergency Management (DMVA) requested DEC's assistance. Responders deployed on May 11, 2022, to survey hazardous substance releases throughout the high water areas; assess flood damage to heating fuel storage tanks; establish a collection system for petroleum, oil, and lubricants and hazardous substance waste streams; and provide technical assistance to local homeowners with flooded wells. DEC used a response contractor to recover hazardous substances and empty containers from the Manley Slough. Recovered fluids were recycled, treated, or disposed of at approved locations.



Burned down home with impacted drums of fuel awaiting transfer to save containers.



US Ecology and DEC personnel surveying Manley Slough for petroleum and other hazardous substance containers washed in by the flood and visible in the retreating flood waters. (Photo credit US Ecology.)



Containers of petroleum and hazardous substances recovered from the flood awaiting proper disposal.

TUG WESTERN MARINER GROUNDING NEVA STRAIT

On March 21, 2022, the tug vessel, Western Mariner, was towing the freight barge, Chichagof Provider, headed south in Neva Strait outside of Sitka, when a temporary steering failure onboard the Western Mariner caused the barge to collide with the tug. The collision pushed the tug onto the rocky shoreline, damaging both port side tanks, and resulting in a release of diesel. There was an estimated 43,000 gallons of diesel onboard at the time of the grounding. On the morning of the grounding, initial source control and containment actions along with a Unified Command (UC) was initiated. Over the following days, additional response contractors arrived on scene to assess and repair damages to the tug, manage containment boom, recover spilled fuel, and lighter the remaining fuel off the tug. On March 24, source control was achieved, and on March 29, the tug was refloated and towed to Sitka. An estimated 4,337 gallons of diesel was not able to be recovered from the spill.

A significant concern during the response were potential impacts to the commercial, subsistence, and private harvesting of seafood. The grounding coincided with the aggregation of Pacific Herring in the greater Sitka Sound area. Between March 22 and early April, daily overflights collected information about the geographic extent of diesel sheening and information was shared with the public through Situation Reports, the DEC webpage, and stakeholder meetings held by the UC. DEC and the Alaska Department of Health and Social Services issued a Seafood Safety Advisory to address the concerns of subsistence and private harvesters. The Alaska Department of Fish & Game issued an announcement that the commercial sac row fishery would remain closed in areas where sheening had been observed.

A Shoreline Cleanup Assessment Technique (SCAT) team assessed shoreline impacts at the grounding site and priority areas identified by the UC. The UC identified shoreline cleanup endpoints as: no pooled sheen, no rainbow sheen, no continuous silver sheen, and no persistent odor. Small amounts of isolated silver sheen are acceptable. As a result of the SCAT surveys, three sites within Neva Strait received manual agitation and/or flushing. One area still exceeded cleanup endpoint criteria and will be revisited by a SCAT team in FY23.



Contaminated boom deployed following the grounding of the tug Western Mariner in Neva Strait on March 21, 2022. Red-dye diesel contained within boom was recovered using skimmers and absorbent materials. (Photo credit Hanson Maritime.)

PETRO STAR VALDEZ REFINERY TRUCK RACK EXPLOSION

On June 27, 2022 the Petro Star Valdez Refinery truck rack experienced an explosion event that caused the release of 5,000 gallons of diesel and an aqueous firefighting foam mixture to an area mostly within the facility boundary. In 2019 a similar incident occurred at the refinery truck rack due to a truck operator error. Though no injuries occurred during either explosion events at the facility, PPR staff conducted field visits to evaluate procedures and additional safety measures that were implemented at the truck rack to prevent the occurrence of another incident. Spill cleanup included the removal of approximately 700 cubic yards of petroleum and PFAS (from aqueous firefighting foam) contaminated soil from the 2022 incident.



Contaminated boom deployed following the grounding of the tug Western Mariner in Neva Strait on March 21, 2022. Red-dye diesel contained within boom was recovered using skimmers and absorbent materials. (Photo credit Hanson Maritime.)

AFFF RELEASE AT THE ANCHORAGE AIRPORT ALASKA AIRLINES HANGAR

On March 3, 2022, a release occurred of 1,100 gallons of Ansulite 3% Aqueous Film Forming Foam (AFFF) concentrate mixed with 40,000 gallons of water was released to areas inside the Alaska Airlines hangar at the Ted Stevens International Airport. This release caused an unknown quantity of the mixture to flow outside the building onto paved areas near the building and into the drainage ditches along the roadway. Snow and ice on the paved areas and approximately 1,500 feet of drainage ditch were recovered and treated for AFFF contamination. The cause of this release was reportedly due to a faulty fire suppression system. The department continues to work with Alaska Airlines to characterize potential impacts from this release and determine if additional cleanup actions are necessary.



Clean up work on the Alaska Airlines Facility Maintenance AFFF release along the road way

VALDEZ MARINE TERMINAL SNOW LOAD ISSUES

In March and April of 2022, PPR staff were notified by the Alyeska Pipeline Service Company (APSC) that the Valdez Marine Terminal (VMT) experienced issues related to snow load. Multiple tanks at the VMT had more than 6 feet of snow depth accumulated that contributed to damage to pressure and venting valves. In addition, the snow load damaged pressure transmitters on the tank farm crude lines that caused a 5-10 gallon spill. PPR staff visited the VMT to observe APSC's effort to mitigate the snow load impacts, support the cleanup from the spill, and to collect information to ensure tank integrity at the facility. PPR staff continue to work with APSC to evaluate the VMT snow management program.



A tank at the Valdez Marine Terminal with damaged vents and accumulated snow on the roof

5.0 CONTAMINATED SITES PROGRAM

STATEWIDE PFAS

In FY22, the Contaminated Sites Program continued to identify and respond to per- and polyfluoroalkyl substances (PFAS) contamination at 150 sites across the State. Most PFAS impacts identified to date are attributed to the use and discharge of Aqueous Film Forming Foam (AFFF). Contaminated Sites worked closely with the United States Air Force (USAF), Alaska Department of Transportation and Public Facilities (DOT&PF), and other responsible parties on their efforts to evaluate groundwater and drinking water for PFAS contamination, provide alternative drinking water, and work towards long term solutions for treated or alternative drinking water sources.

In FY22, Contaminated Sites conducted well searches and drinking water sampling in Wrangell, Petersburg, Bethel, and Cold Bay. PFAS were below the DEC action level in Wrangell, Petersburg, and Bethel, but above the action level in samples collected from the Cold Bay public water system, which provides water to most of the town's population of approximately 50 residents. DOT&PF began supplying bottled drinking water immediately and is coordinating with DEC on a more permanent solution.

Contaminated Sites staff track nationwide information about PFAS toxicity, laboratory analytical methods, treatment technologies, regulatory standards and guidance, and public concerns. In FY22, EPA released revised, interim Lifetime Health Advisories (LHAs) for perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) that are significantly lower than the previous values and established final LHAs for two additional PFAS; hexafluoropropylene oxide dimer acid (GenX) and perfluorobutane sulfonic acid (PFBS). DOT&PF and Department of Health (DOH) are evaluating the impacts of the interim and final LHAs, with the knowledge that enforceable drinking water standards are scheduled to be introduced by EPA by the end of calendar year 2022.

EIELSON AIR FORCE BASE

Contaminated Sites continued its regulatory oversight and partnership with the USAF and the Environmental Protection Agency (EPA) to ensure proper management of contaminated sites at Eielson AFB, and at locations affected by PFOS and PFOA groundwater contamination from Eielson AFB which has migrated off base into the Moose Creek community. Since contamination was discovered in 2015, upgrades to the Eielson AFB water treatment plant and efforts to provide alternate water or treatment systems to residential well users in Moose Creek have addressed the immediate drinking water exposure pathway. Construction of the City of North Pole's public drinking water system expansion to the community of Moose Creek continued with 175 properties connected to the North Pole public water supply and 170 drinking water wells decommissioned. Environmental Covenants are under development or completed for 293 properties. Groundwater use within the Critical Water Management Area (CWMA) is restricted. The USAF continued its effort to define the nature and extent of contamination in soil, groundwater, and surface water.

As part of a nationwide effort, the Agency for Toxic Substances and Disease Registry (ATSDR) released the PFAS exposure assessment (EA) for the Moose Creek Fairbanks North Star Borough area, which began in 2020. The EA assessed PFAS levels in the blood and urine of Moose Creek residents and compared those levels to national averages. The results indicated blood levels of participants in the assessment had concentrations perfluorohexane sulfonic acid (PFHxS) and PFOS

at levels higher than national levels. Contaminated Sites assisted ATSDR to assist in community outreach during the EA.

ANCHORAGE INTERNATIONAL AIRPORT

Contaminated Sites continues to coordinate with Anchorage Airport on development projects in PFAS contaminated areas, most recently initiating a site characterization effort at the former Fire Training pit to inform development of the adjacent property and potential risk to a neighborhood south of the airport.

SKAGWAY ORE BASIN

Contaminated Sites worked closely with the White Pass and Yukon Railroad project group and the Municipality of Skagway to advance cleanup of the Skagway Ore Basin site. Over 3,000 cubic yards of highly lead-contaminated sediments were removed from the basin. Contaminated Sites is working with the Municipality on the planned redevelopment of docks and associated infrastructure to support crucial shipping and economic activities for Skagway.

GAFFNEY LARGE BUILDING AND SOIL GAS SAFE PROJECT

Contaminated Sites has been coordinating with the EPA Office of Research and Development on techniques to better assess vapor intrusion in the large buildings and communities. This study, funded by the EPA, is conducting intensive sampling in indoor air and soil gas to evaluate vapor intrusion over the Gaffney Road contaminated groundwater plume in Fairbanks which resulted from past drycleaning establishments along Gaffney Road. As part of the EPA-funded research, indoor air samples have been collected in the Northern Light Church of Christ in Fairbanks. Preliminary results indicate that trichloroethylene (TCE) and tetrachloroethylene (PCE) are below indoor air target levels for most of the year, but occasionally exceed target levels. Contaminated Sites staff are working with the DOH to present the results to the church and discuss potential response action.

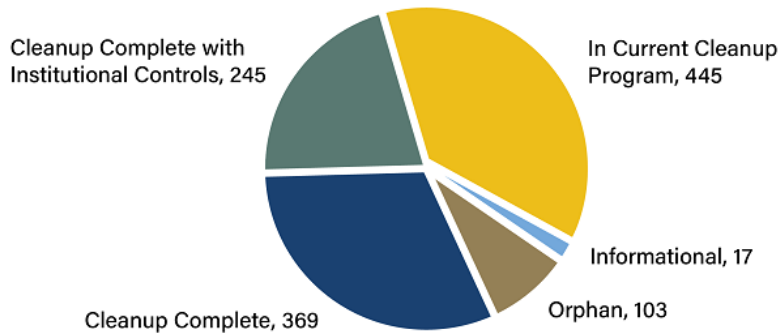
ANCSA SITES

Contaminated Sites finished review of the Bureau of Land Management (BLM) inventory. Using funding provided by EPA, SPAR staff have improved the accuracy of the site inventory by identifying sites for potential actions including removing duplicates, clarifying site locations, and researching site histories. Contaminated Sites continued work on a pilot project to conduct site assessments at locations that may be Alaska Native Claims Settlement Act (ANCSA) contaminated sites but have not been confirmed. Four locations were chosen for the pilot project assessment work.

To compel federal agencies to expediate cleanup at ANCSA conveyed contaminated sites, Governor Dunleavy and Commissioner Brune sent letters to the Biden Administration in May 2021 to call attention to the situation and demand action. In July 2022, the State and DEC filed suit against the federal government, including the Department of the Interior, BLM and the Director of BLM.

Conveyed Contaminated Sites - November 2019

1,179 Sites Total



BROWNFIELDS PROGRAM

The Contaminated Sites Brownfields program supports reuse and redevelopment opportunities at brownfields sites by addressing contamination challenges throughout Alaska's communities. In FY22, the Brownfields program provided technical assistance to tribes and communities on eligible projects for assessment or cleanup funding, researched properties' use and ownership history, and provided potential funding opportunities.

DEC's Brownfield Assessment and Cleanup (DBAC) services were provided to projects in five communities in FY22. These included assessment services provided at the Former Power Plant site in Palmer which resulted in soil excavation and DEC issuing a cleanup complete determination that the property was ready for reuse. DBAC services were provided to conduct extensive sampling for polychlorinated biphenyls (PCBs), to remove and dispose of universal waste, and to support broader cleanup planning and stakeholder facilitation efforts at the Polaris Hotel in Fairbanks, in preparation for the City of Fairbanks to utilize \$10 million in federal funding to safely demolish and dispose of the building. Additionally, DEC provided assessment services at two sites on Knight Island (Thumb Bay) and near Chenega (Sawmill Bay) to promote future development of cultural camps by the Chenega Corporation, as well as installed fencing around a historic dumpsite in Delta Junction, allowing for the expansion of a recreational trail by a local non-profit organization.

STATE-LEAD PROJECTS

The Contaminated Sites Program leads assessment, interim actions and cleanup at contaminated sites where legal settlements have relieved responsible parties (RPs) of their liability and no other viable RP exists, sites without viable RPs, select state-agency sites, sites without a willing or able RP, and sites where a significant risk is presented by a release of a hazardous substance but is not being adequately addressed by the RP. Contaminated Sites relies on contractors to conduct much of this

work, but also draws on CIP funding for Contaminated Sites staff-led sampling on an as-needed basis.

EXAMPLES OF PROGRESS MADE AT STATE-LEAD SITES IN FY22 INCLUDE THE FOLLOWING:

Alaska Real Estate Parking Lot, Anchorage. - This site is contaminated with PCE from a former dry-cleaning operation located at 4th and Gambell streets near downtown Anchorage. Contaminated Sites monitors PCE contamination in groundwater that affects numerous properties and mitigates vapor intrusion into residential housing located adjacent to the site.

Home Heating Oil Tank Spills, Fairbanks and Palmer - Groundwater and indoor air was sampled at two home heating oil tank (HHOT) sites that are carry-overs from the HHOT Pilot Project.

77 Same Old Road, Gustavus. - This was the site of a brush fire that was extinguished using AFFF containing PFAS. The fire was put out by the Gustavus volunteer fire department using AFFF that came in a truck acquired from the DOT&PF and neither the City nor DOT&PF are accepting liability for the contamination that resulted. Contaminated sites monitored groundwater and sampled drinking water wells in the vicinity of the release.

Kaltag School Oil Seep - Due to large releases of petroleum, heating oil would seep out of an embankment adjacent to the Kaltag School on a seasonal basis. SPAR began remediation activities at this site in 2014 that included the excavation and landfarming of a large volume of petroleum contaminated soil and re-contouring of the affected area. In FY22, Contaminated Sites sampled the soil in the land farm which will be needed until it meets cleanup levels, which is estimated to occur by 2024.

Gaffney Road, Fairbanks. - This site is comprised of several former dry cleaners located within a few blocks of each other. Vapor intrusion is an ongoing concern at the site, where PCE in groundwater has impacted several blocks of residential housing. Contaminated Sites monitors the groundwater and soil-gas and mitigates vapor intrusion into buildings where it occurs.

UNDERGROUND STORAGE TANKS

The Underground Storage Tank (UST) Unit in the Contaminated Sites Program oversees compliance for 871 federally regulated and active USTs at 407 facilities. During FY22, the Contaminated Sites UST unit implemented the third-party inspection program to ensure technical compliance with spill prevention, overfill prevention, corrosion protection, and release detection, provided technical assistance to the regulated community, administered facility registration fee and financial assurance, and worked with the Department of Commerce, Community, and Economic Development to maintain a tank worker certification program.

In FY22, Contaminated Sites conducted corrective actions at three leaking UST sites. At the Zipmart Store in Sterling, DEC continued maintenance of the groundwater wells and operation of a soil vapor extraction and air sparging treatment system to remove fuel from the groundwater. At the Former Mom and Pop's Grocery & Gas in Palmer, DEC-funded actions included groundwater monitoring and soil gas sampling to provide direction on the next phase of remediation. Finally, at the Moose Creek General Store in North Pole, DEC-funded actions included re-installation of

damaged monitoring wells and a round of groundwater monitoring to track contaminant degradation.

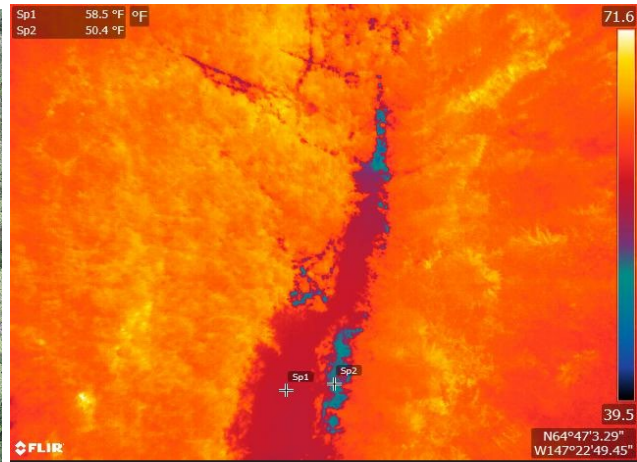
INCORPORATING TECHNOLOGY – USE OF DRONES TO IDENTIFY GROUNDWATER DISCHARGE

During FY22, Contaminated Sites staff continue to test the use of a thermal infrared (IR) camera mounted on a small, unmanned aircraft system (sUAS), or drone, to identify temperature differences in surface water bodies. The overall goal is to use drone technology to identify and map groundwater discharge into a surface water body, based on temperature differences. Using a drone to resolve areas where groundwater is connected to surface waters, can help prioritize locations where further sampling and assessment may occur, and where contaminant exposure evaluations may be focused.

Contaminated Sites also incorporated the use of drones in response and investigation of contamination. As an example, a surface water sheen on the Chena River in Fairbanks was reported on multiple occasions during 2022. Multiple field visits were conducted to identify the source of the sheen, covering over 30 miles of the river. A small unmanned aerial vehicle (sUAV) was utilized to investigate the extent of the sheen.



Visible imagery



Thermal IR imagery (dark blue indicates colder water from groundwater discharge)

6.0 TABLES, CHARTS, GRAPHICS, AND STATISTICS

TABLE 1: SPILL CASELOAD SUMMARY

SPILL CASELOAD SUMMARY	
New spill cases (total spills reported in FY22)	1,824
Oil and hazardous substance releases (some spill cases involve releases of multiple substances)	1,883
New spill cases characterized by highest level of DEC response:	
1) Field visit	88
2) Phone follow-up	607
3) Took report	1,123
Cases Carried Over From Previous Fiscal Years	249
Cases Closed in FY22	1,794
Cases Transferred to Contaminated Sites Program	29

TABLE 2: OIL DISCHARGE PREVENTION AND CONTINGENCY (ODPCP) PLANS

OIL DISCHARGE PREVENTION AND CONTINGENCY (ODPCP) PLANS	
Number of Plans operational during FY22	128
New Plans	4
Plan renewals (plans are renewed every 5 years)	39
Major plan amendments (includes new owners and operators)	1
Other ODPCP applications (includes vessel additions and short-term approvals)	93
Exercises	22
Inspections	63
Enforcement Actions - Notice of Violation (NOV)	2
Enforcement Actions – referral to LAW / Environmental Crimes Unit	1

TABLE 3: NON-TANK VESSEL (NTV) CONTINGENCY PLANS

NON-TANK VESSEL (NTV) CONTINGENCY PLANS	
Total Plan Review Actions during FY22	338
Plan Renewals (plans are renewed every 5 years)	10
Plan Amendments	78
Inspections	11
Enforcement Actions - Notice of Violation (NOV)	1
Enforcement Actions – referral to LAW / Environmental Crimes Unit	0

TABLE 4: FINANCIAL RESPONSIBILITY CERTIFICATES (RENEWED ANNUALLY)

TOTAL FINANCIAL RESPONSIBILITY APPROVALS (NEW, AMENDMENTS, AND ANNUAL RENEWALS)	
Oil Discharge Prevention and Contingency Plan (ODPCP)	294
Nontank Vessels (NTV)	358
Underground Storage Tanks (UST)	410
Enforcement Actions - Notice of Violation (NOV)	17
Enforcement Actions – referral to LAW / Environmental Crimes Unit	1

TABLE 5: PRIMARY ACTION RESPONSE CONTRACTORS (PRAC)

PRIMARY RESPONSE ACTION CONTRACTORS (PRAC)	
New Registration and Renewals	8

Graphic 1: Total Spill Volume by Geographic Zone FY21

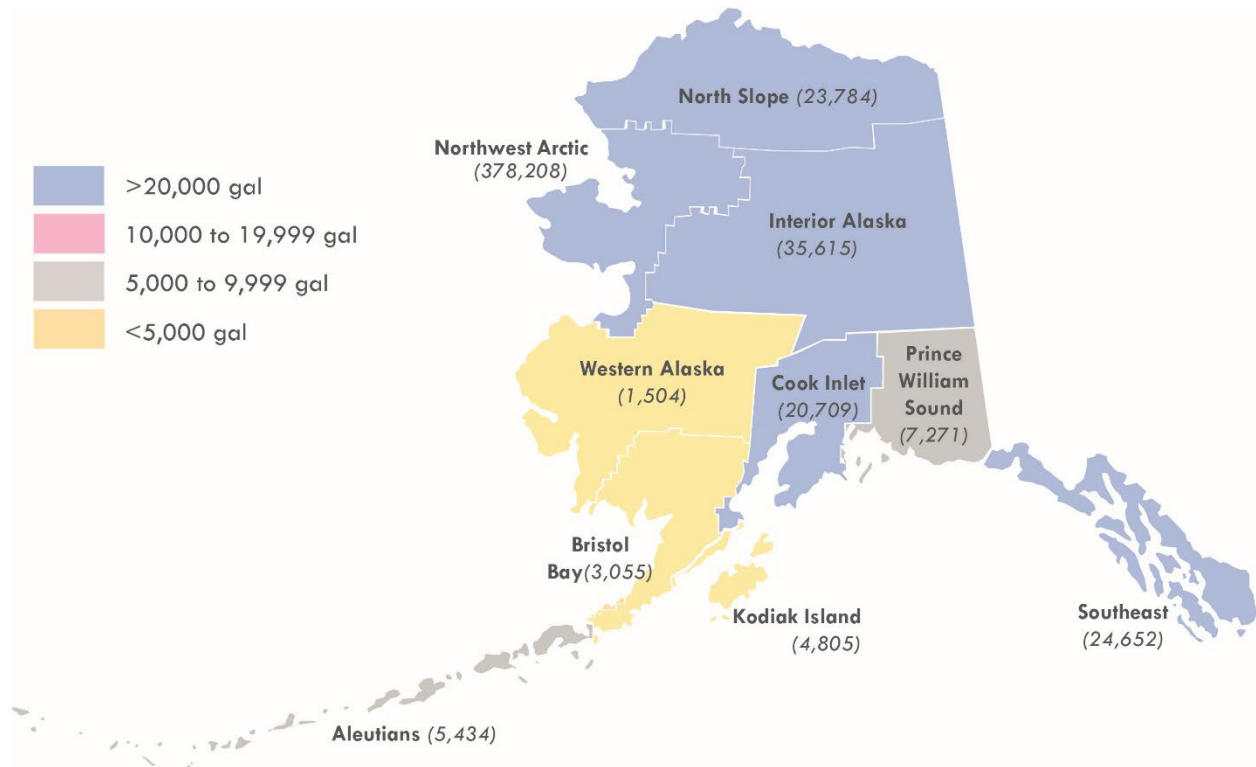
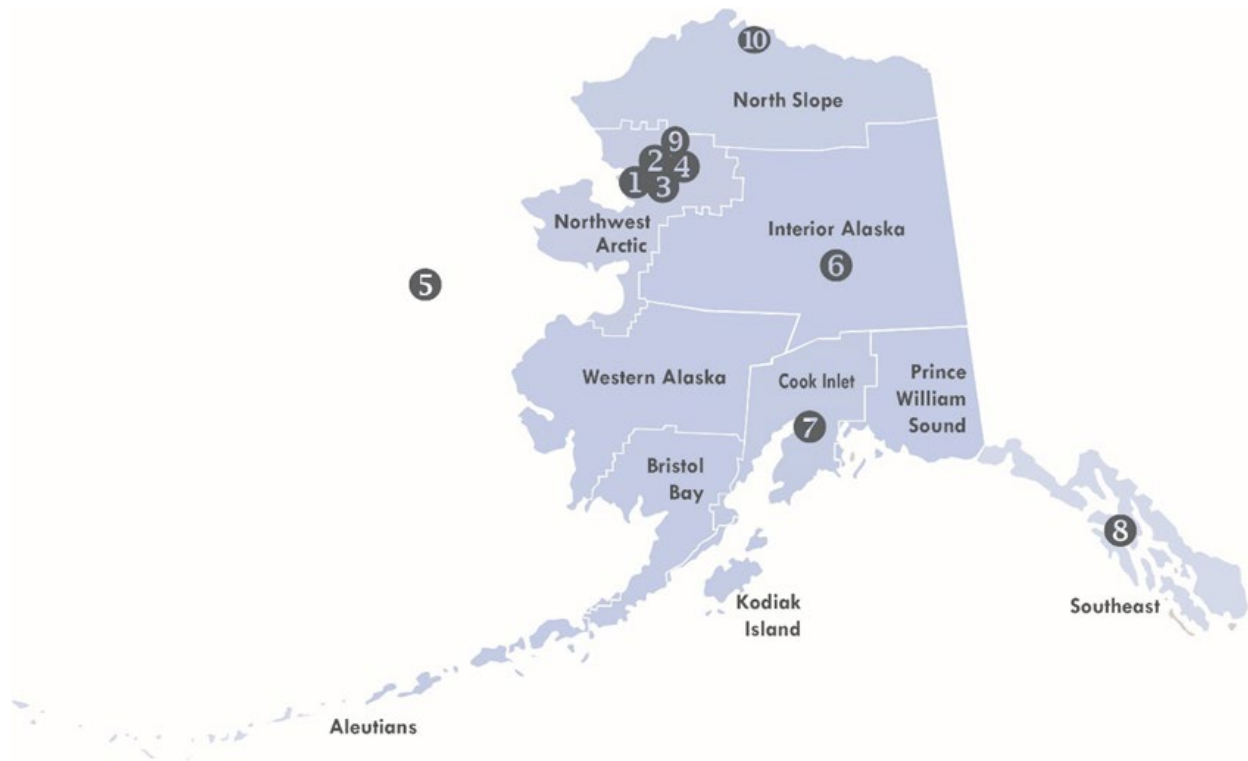


Table 6 and Graphic 2: Most Significant Petroleum Releases in FY22

DEC established the top 10 significant petroleum releases by considering relative spill volume, spills with regional significance, high public interest, and spills that used a significant amount of resources.

MAP KEY	SPILL DATE	SPILL NUMBER	SPILL DESCRIPTION	PRODUCT	GALLONS
1	7/29/2021	21389921001	Red Dog Mine, tailings pond release to land and fresh water due to line failure.	Contaminated Water	225,000
2	11/14/2021	21389931801	Red Dog Mine tailings pond impoundment release to land due to equipment failure.	Contaminated Water	70,000
3	11/5/2021	21389930901	Red Dog Mine planned black out event when a tank released to land due to equipment failure.	Contaminated Water	42,000
4	4/24/2022	22389911401	Red Dog Mine overflow of water treatment plant to secondary containment due to human error.	Contaminated Water	22,000
5	4/21/2022	22389911102	Savoonga School, heating oil tank rupture released to containment and land due to equipment failure.	Diesel	13,500
6	6/8/2022	22309915901	Fort Knox Mine Barnes Creek leach field overflow of containment to land due to equipment failure.	Sodium Cyanide (Solution)	11,620
7	11/19/2021	21239932303	Petro Star bulk fuel terminal Port of Alaska release to containment, land, and marine waters due to equipment failure.	Diesel	11,000
8	3/21/2022	22119908001	Tug Western Mariner Grounding Neva Strait release to marine waters due to an accident.	Diesel	10,460
9	5/26/2022	22389914602	Red Dog Mine an open facility clarifier released to land due to human error.	Zinc Concentrate	9,000
10	10/29/2021	21399930201	Hilcorp North Slope oil production flow lines had corrosion on pig receiving door releasing to land due to equipment failure.	Contaminated Water	5,250



CHARTS 6-1 AND 6-2: RELEASES AND VOLUME BY FISCAL YEAR

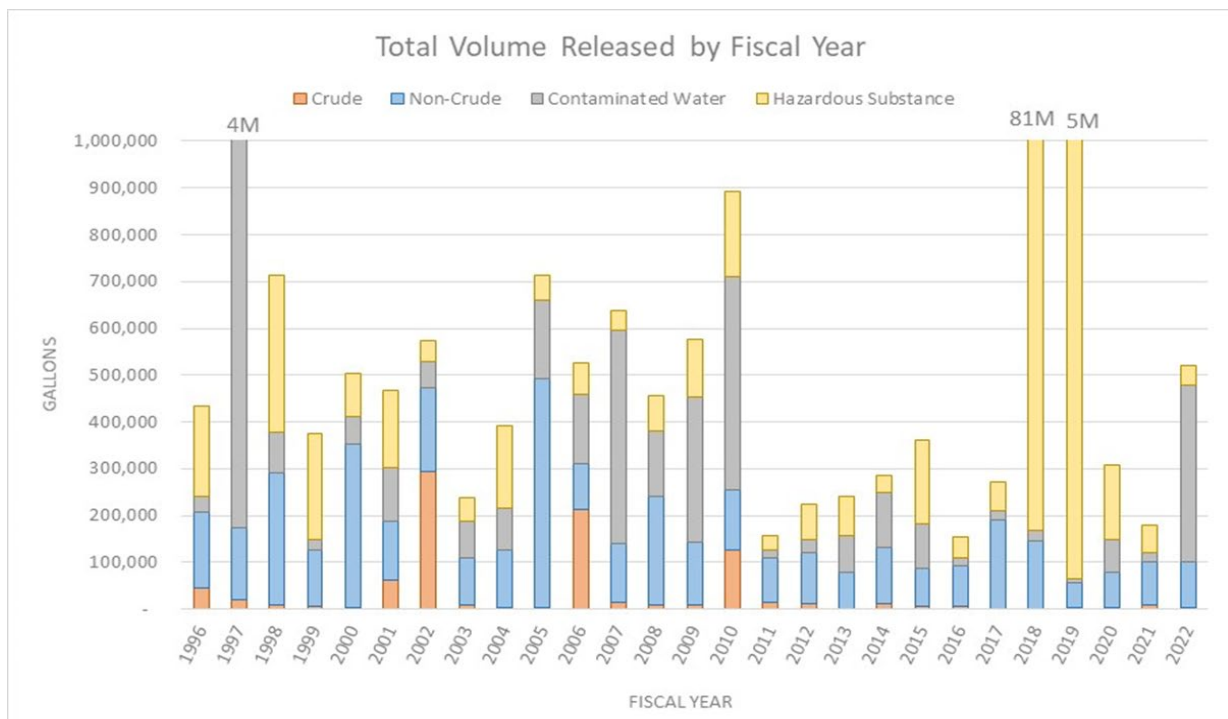
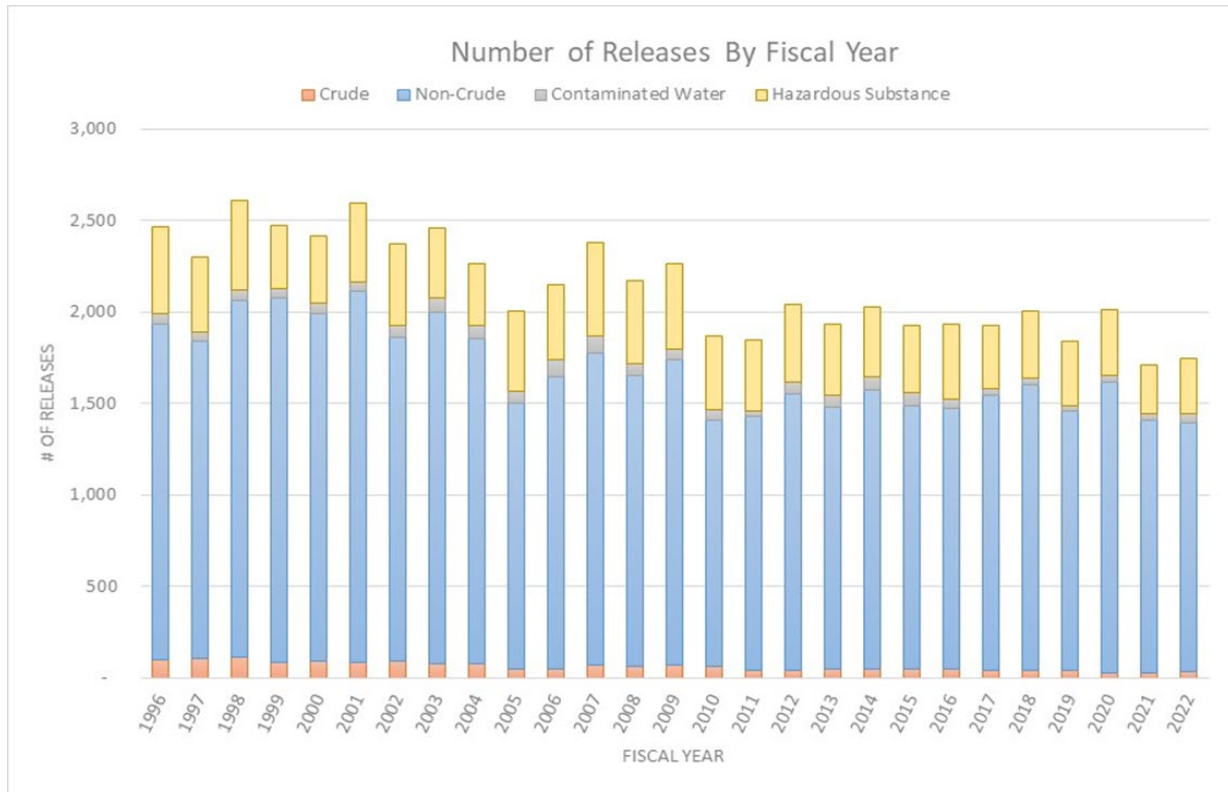
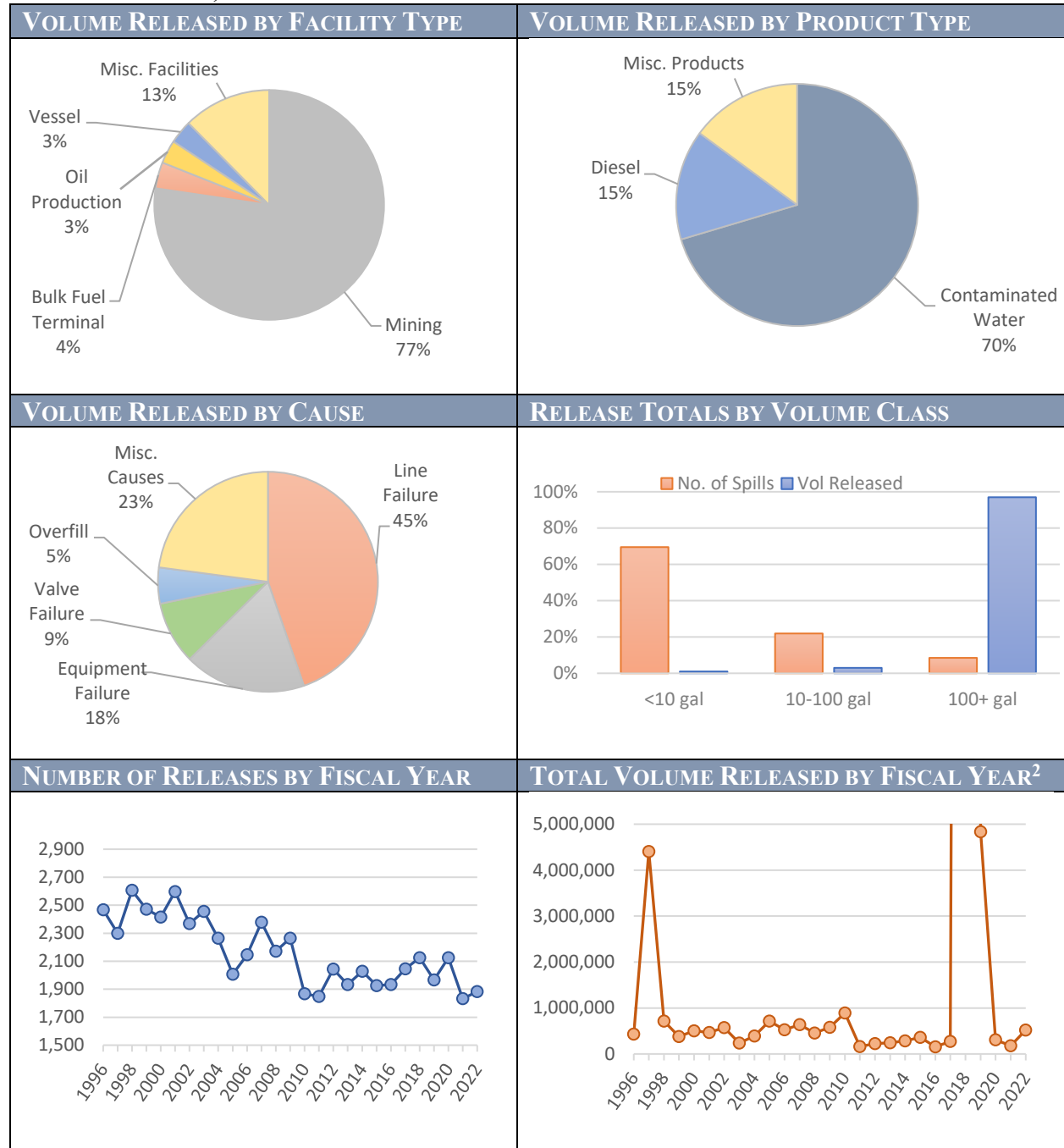


CHART SET 1: ALL PRODUCTS¹

Oil and Hazardous Substances Releases: 1,883

Total Gallons: 521,757



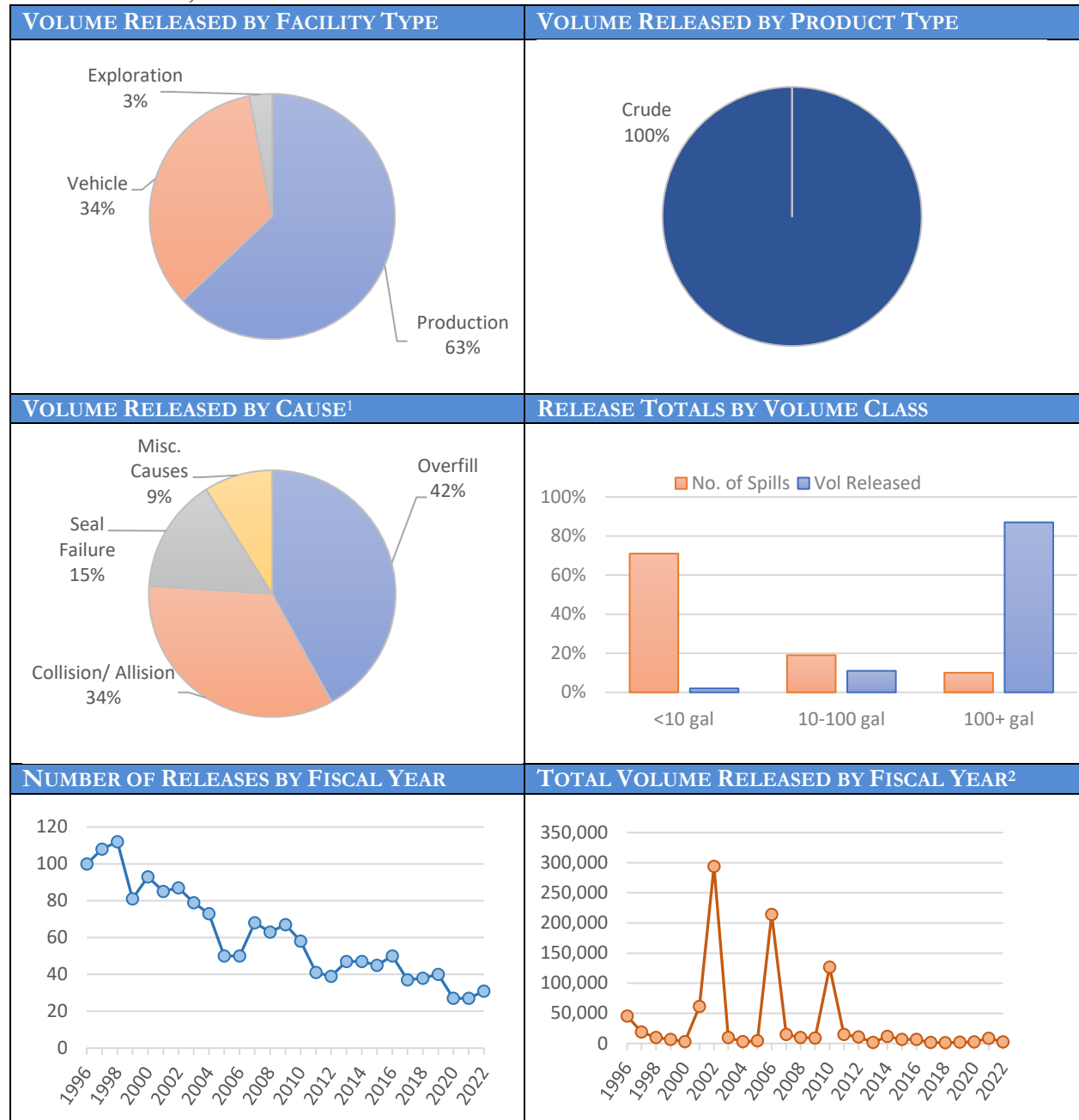
¹ Facilities, Products, and Causes <5% of the total are combined as miscellaneous (Facilities, Products, Causes) for display.

² In 2018 and 2019 the large spikes are due to the 81 M and the 4.6 M gallons PFOS/PFOA contaminated water discharge at Eielson Air Force Base; the large spike in 1997 is the result of two large spills, one in January when a barge capsized and lost 25,000,000 pounds of Urea (solid converted to gallons) and the other in March when 995,400 gallons of sea water were released at ARCO DS-14 in Prudhoe Bay.

CHART SET 2: CRUDE OIL

Crude Oil Releases: 31

Total Gallons: 2,670



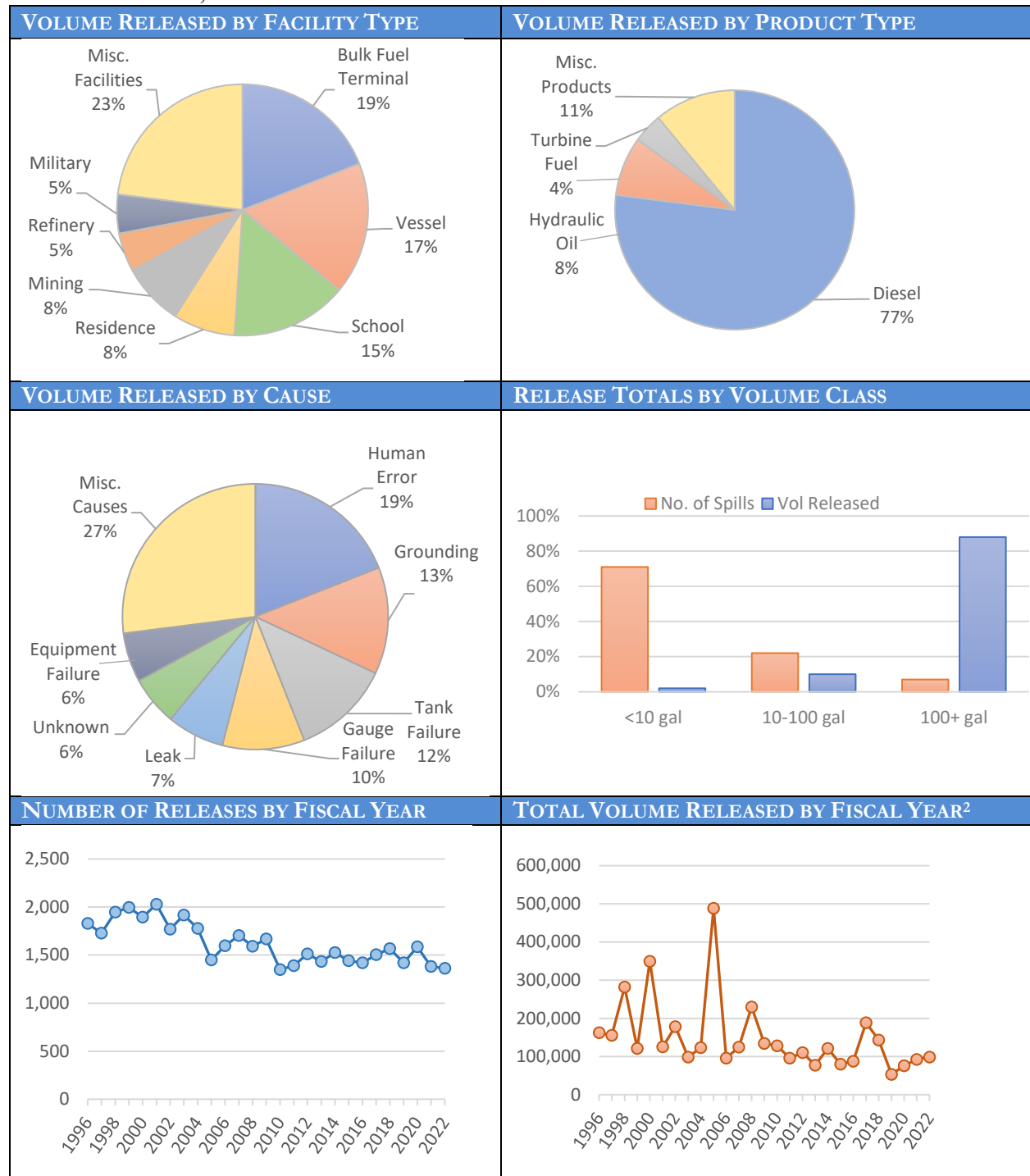
¹ Causes <5% of the total are combined as miscellaneous causes for display.

² The largest spill volumes resulted from a) Trans Alaska Pipeline (TAPS) bullet hole 285,600 gallons release on 10/4/2001, b) BP GC-2 oil transit line release of 212,252 gallons on 3/2/2006, and c) TAPS pump station 9 released 108,360 gallons on 5/25/2010 to secondary containment.

CHART SET 3: NON-CRUDE OIL

Non-Crude Oil Releases: 1,363

Total Gallons: 98,869

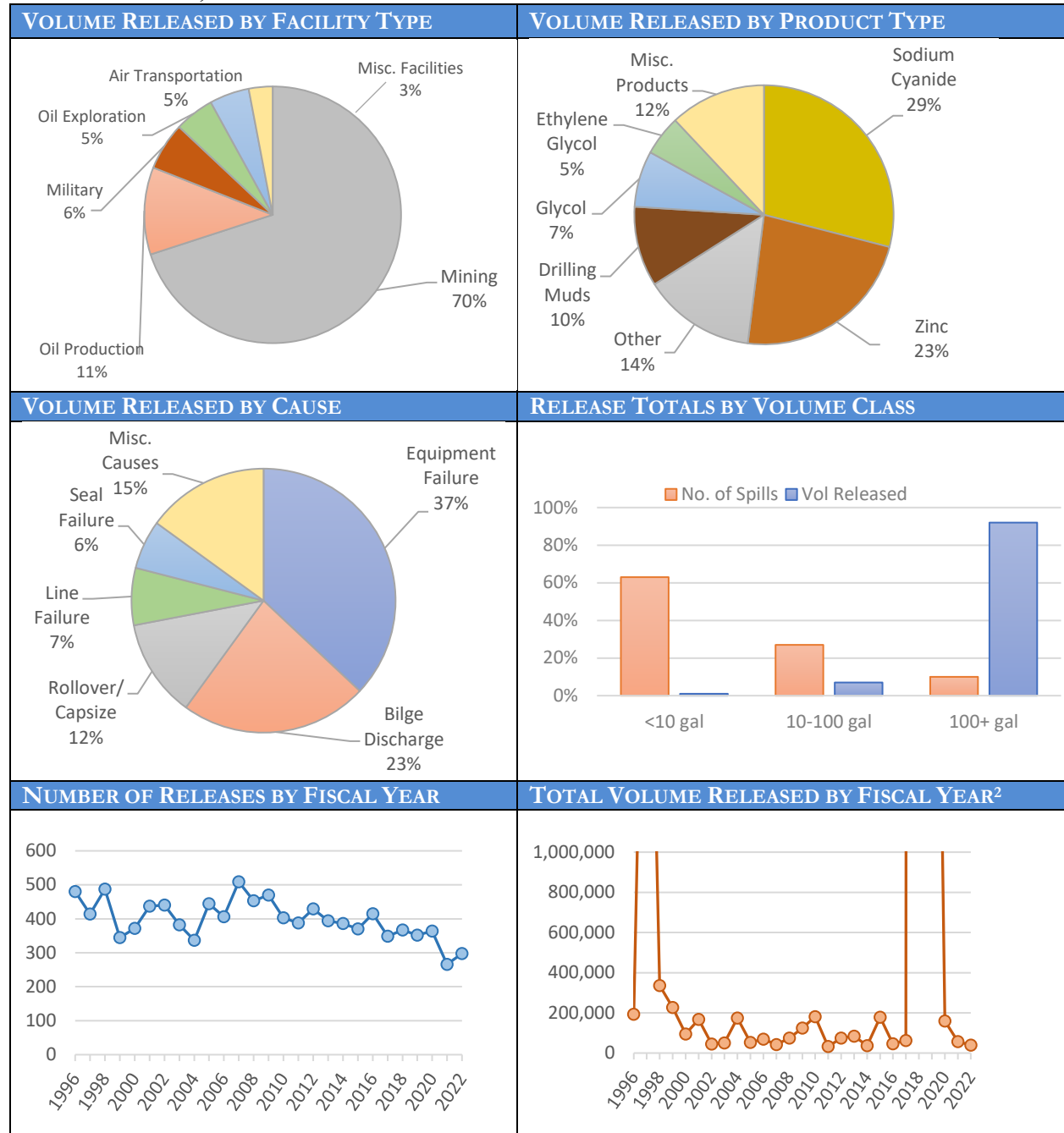


¹ The large spike in spill volume was the result of the breaking apart of the *M/V Selendang Ayu* on 12/8/2004 (FY05), which released 321,052 gallons of intermediate fuel oil 380 and 14,680 gallons of diesel.

CHART SET 4: HAZARDOUS SUBSTANCES¹

Hazardous Substance Releases: 298

Total Gallons: 39,628



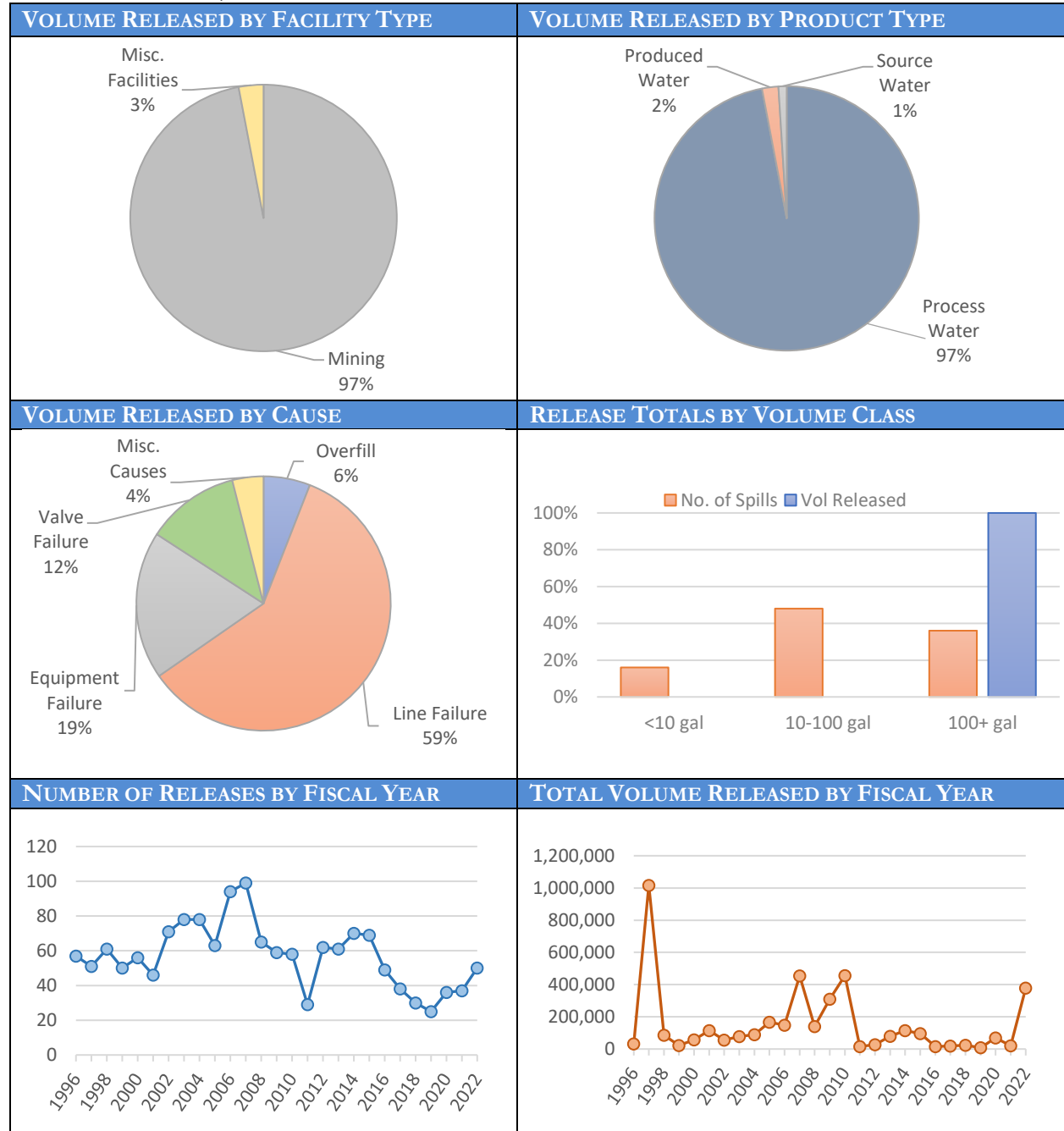
¹“Other” includes routine testing of fire suppression systems.

²The large spike in spill volumes from 4.6M gallons (FY19) and 81 M gallons (FY18) PFOS/PFOA contaminated water discharge that occurred at Eielson Air Force Base the large spike in 1997 is the result a large spill, in January when a barge capsized and lost 25,000,000 pounds of Urea (solid converted to gallons).

CHART SET 5: CONTAMINATED WATER

Process Water Releases: 50

Total Gallons: 378,208



¹ Process Water: water used in industry processes that include hazardous substances. Produced Water: water is separated during crude oil processing and may contain <1% crude oil and have saline concentration similar to seawater; Source Water: in North Slope oil production, water is extracted from aquifers and injected into an oil formation to maintain pressure, it contains elevated levels of salt and is toxic to freshwater tundra vegetation.

CHART 6-3 AND 6-4: CONTAMINATED SITE INFORMATION BY FISCAL YEAR

Some releases (such as gases and solids) are reported in pounds rather than gallons. For graphing purposes, spill quantities reported in pounds were converted to gallons using an estimated conversion factor.

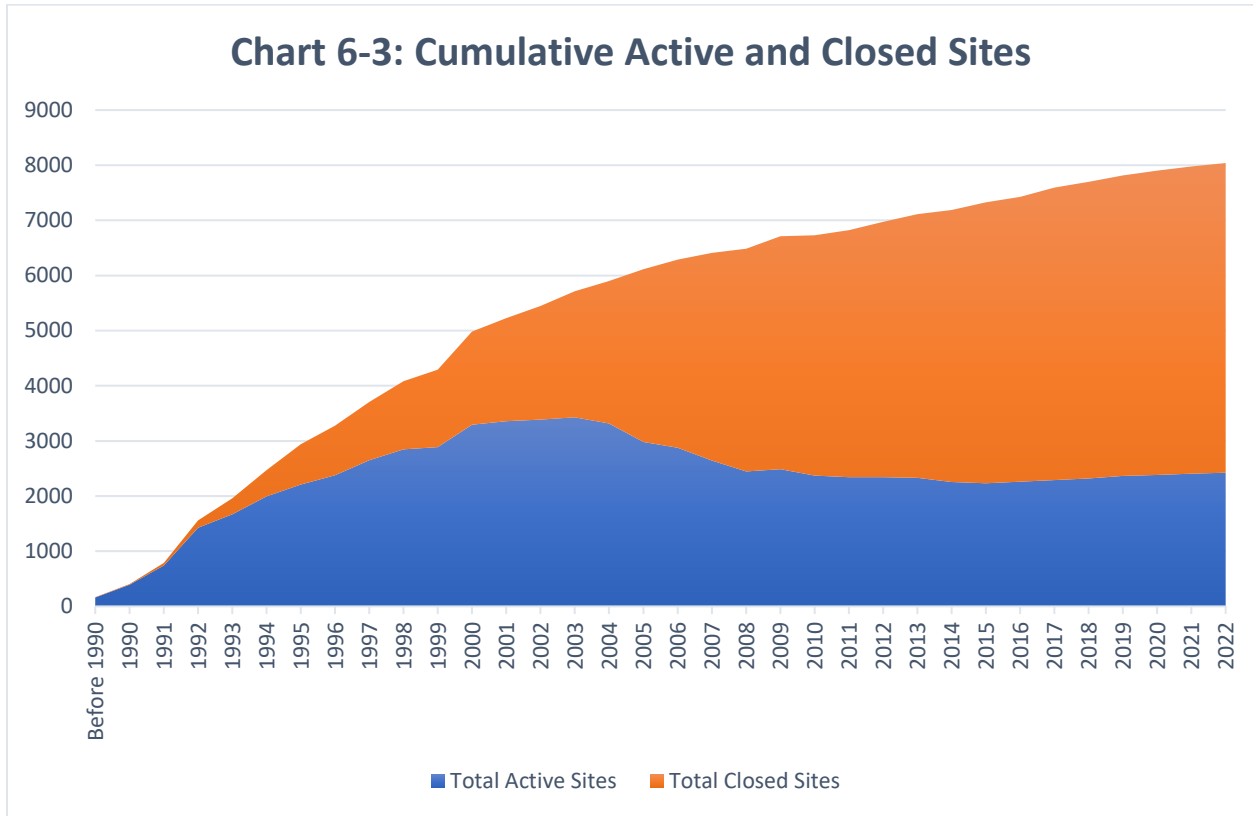
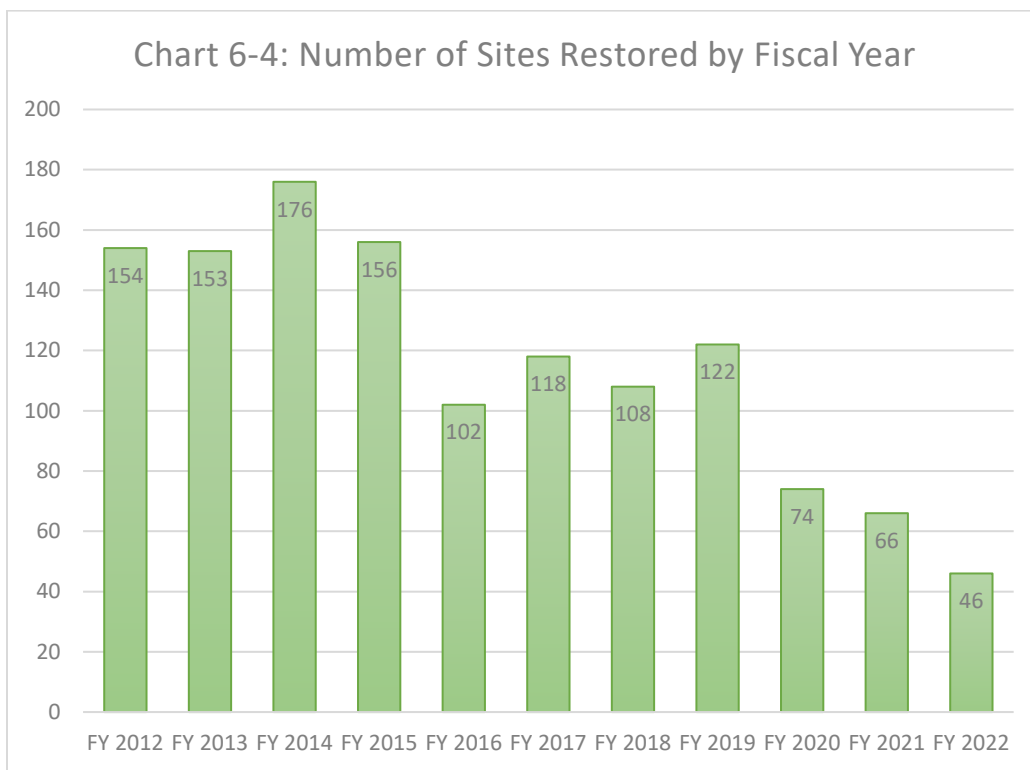


Chart 6-4 shows the number of contaminated sites where cleanup was determined to be complete by fiscal year. Since 2014 there has been a decline in the number of site closures due to several factors including a concerted focus on shifting efforts to addressing risks at the highest priority sites, where complete exposure pathways (such as contaminated groundwater used for drinking, or subsistence resources are impacted). However, cleanup and closure of these sites is often challenging and complex due to the type and extent of contamination, remote site locations, the existence of multiple responsible parties and a need to determine which will conduct the work and how costs will be allocated, and lack of willing or financially viable responsible parties to clean up the sites. During FY22, 9% of the site closures were risk-based closures that include institutional controls to limit future activities that could result in exposure to residual contamination, and 91% of the closures were suitable for unrestricted future land use.



GRAPHIC 6-5: CONTAMINATED SITES BY GEOGRAPHIC ZONE

Graphic 6-5 show the total active, high priority contaminated sites by geographic zone.

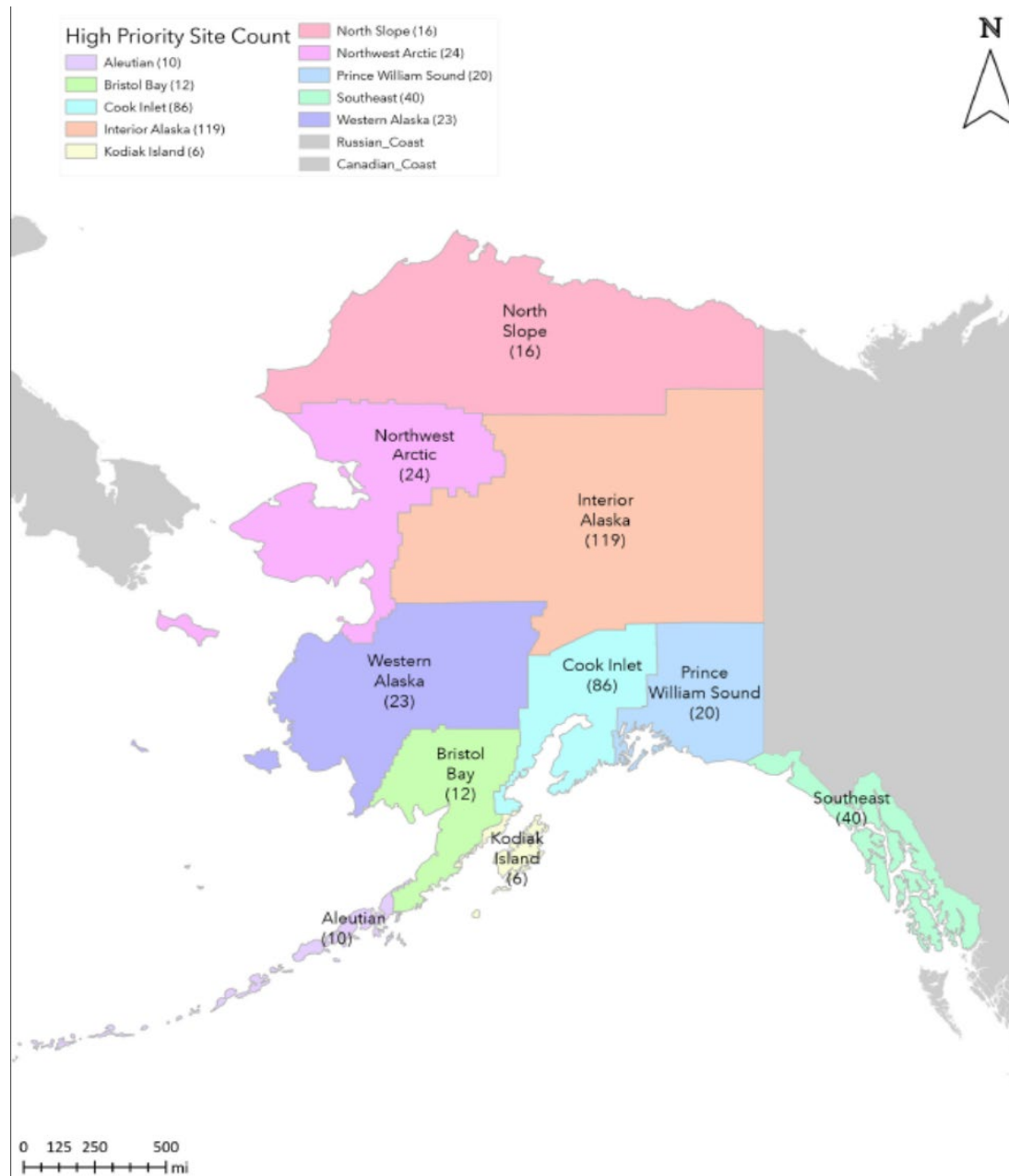
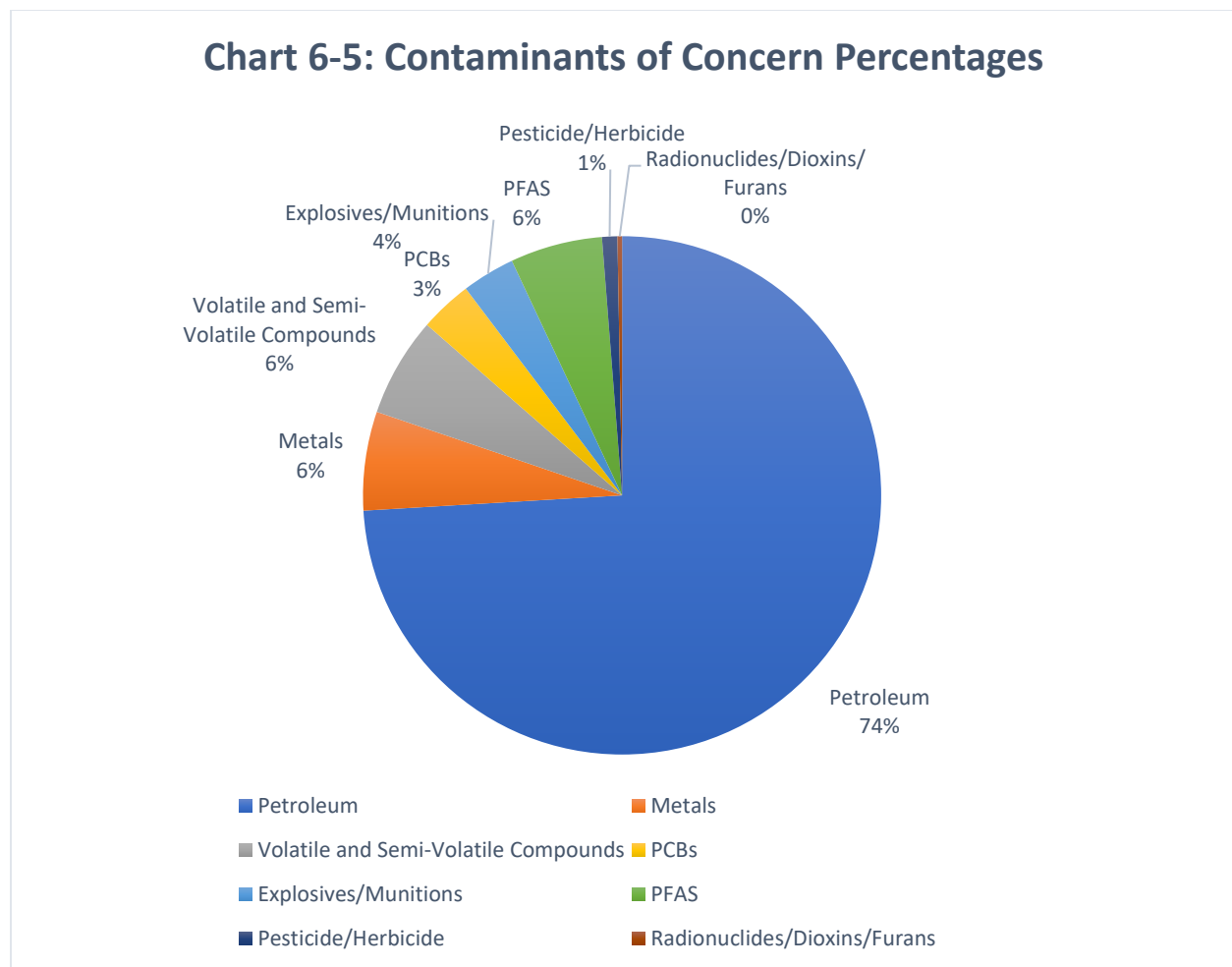


CHART 6-5, CHART 6-6 AND TABLE 6-7: CONTAMINANTS OF CONCERN AT CURRENT ACTIVE SITES

The chart and table show the percentage and number of current active sites that have been impacted by various contaminants of concern. Petroleum hydrocarbons are by far the most common contaminant and are the primary contaminant at 74% of the active sites. Other hazardous substances are the primary contaminant of concern at 26% of the active sites. PFAS have been identified as a contaminant of concern at only 6% of the active sites; however, PFAS have been found to have impacted more drinking water wells than any other contaminants and are therefore a high priority.



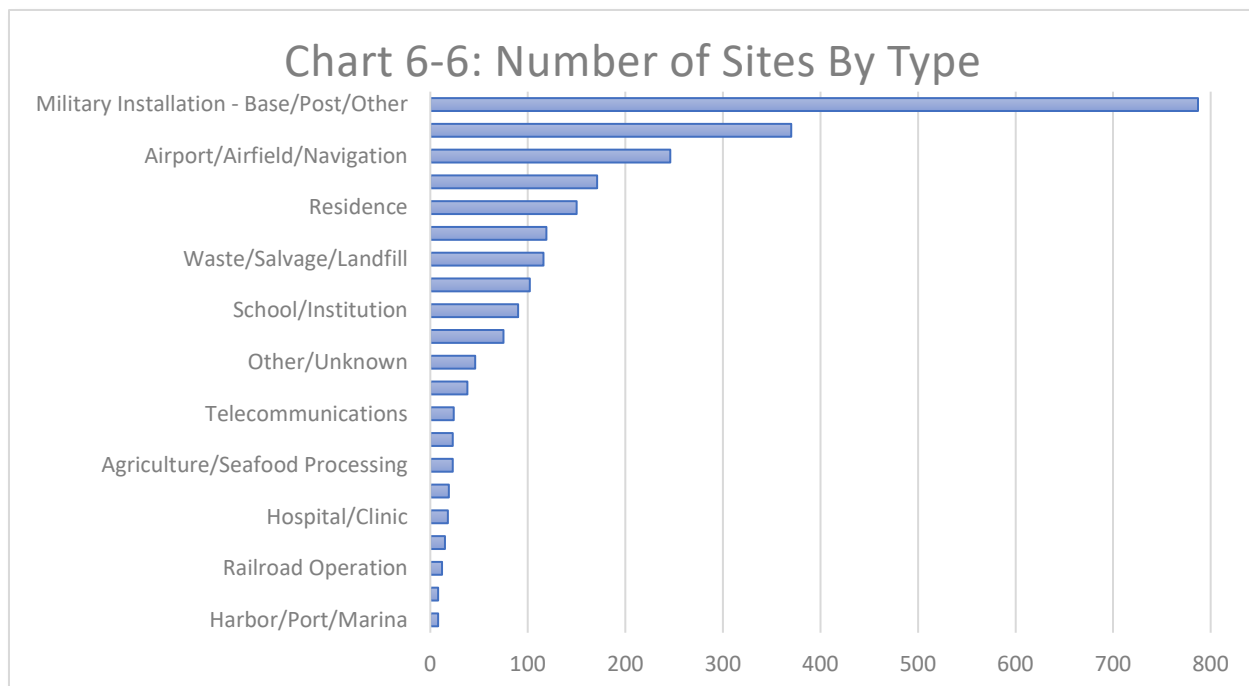


Table 6-7: Number of Sites with Contaminants of Concern

Contaminant of Concern ¹	Number of Active Sites
Petroleum	1790
Metals	149
Volatile and Semi-Volatile Compounds	150
PCBs	79
Explosives, Munitions	80
PFAS	139
Pesticide, Herbicide	23
Radionuclides, Dioxins, Furans, Other	7

¹ This table lists the primary contaminant of concern at a site. Many sites have multiple contaminants present, only the primary contaminant class is shown in this table.

7.0 ACRONYMS AND ABBREVIATIONS

A list of acronyms and abbreviations used frequently throughout this report can be found on our website at <https://dec.alaska.gov/spar/reports>.