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ALASKA SPILLS HIGHLIGHT EVER-PRESENT RISKS FROM OIL INDUSTRY

Alaska's oil and gas industry has experienced several high-profile oil spills over the past few months, highlighting the risk associated with oil and gas exploration, pipeline operation and vessel activity. Harsh arctic winter conditions have played a part in causing some incidents, delaying the detection of others and slowing the response and cleanup in some cases.

Between 2006 and 2009, nearly 660,000 gallons of oil, natural gas and wastewater was spilled on the North Slope.

A review of North Slope oil spills from 2006 to 2009 shows that three to six major spills a year are the norm. The total amount of oil, natural gas and wastewater—all harmful to Arctic tundra—spilled on the North Slope during those years is estimated at nearly 660,000 gallons. Even more oil is spilled from oil and gas exploration, vessel operations and pipelines in other parts of the state.

DECEMBER 2009: Leaking well line and grounded tugboat pour oil, diesel into Alaska waters

On Dec. 21, 2009, a six-inch well line carrying a mixture of crude oil, natural gas and produced (high-salinity) water separated and leaked an estimated 300 to 700 gallons. The spill occurred in Prudhoe Bay on Alaska's North Slope, at a BP exploration well that was shut in at the time. Investigation into the cause is ongoing, and the actual spill volume is still unknown.



Dec. 4, 2009: Cleanup of oiled tundra in Prudhoe Bay.

Photo: Alaska Department of Environmental Conservation (ADEC)



Dec. 23, 2009: Contaminated snow at the BP spill site in Prudhoe Bay after release of crude oil and produced water. A flow line is blamed.

Photo: J. Engles, ADEC

Two days later, the tug Pathfinder, which had been sent to Prince William Sound to scout for icebergs in the shipping lanes, ran aground on the well-marked Bligh Reef, where the Exxon Valdez tanker ran aground in 1989, unleashing one of the biggest environmental disasters in U.S. history. The reef tore a five-foot gash in the Pathfinder's hull, spilling an unknown quantity of diesel fuel.

Since 2006, three to six significant spills have occurred annually on the North Slope.

NOVEMBER 2009: BP pipeline rupture in Prudhoe Bay spills 46,000 gallons

On Nov. 29, 2009, a pipeline associated with BP's Lisburne Production Center in Prudhoe Bay on Alaska's North Slope ruptured, causing a major spill of crude oil, produced water and natural gas. An estimated 46,000 gallons spilled from a two-foot gash in the pipeline, probably caused by ice plugs within the line that allowed pressure to build to unsafe levels. The spill contaminated 8,400 square feet of snow-covered tundra, requiring manual and mechanical cleanup, including construction of an ice road for vehicles to access the spill site; jackhammers to remove frozen, contaminated snow and ice from around the pipeline; and melting the frozen waste so the oil and water could be separated, stored and disposed of.

North Slope operations typically result in several spills a year, the worst in 2006

Unfortunately, 2009 was not the exception for North Slope oil production-related spills; it was the norm. Since 2006, three to six significant spills have occurred annually, including the largest North Slope oil spill to date in 2006.



Dec. 25, 2009: The tug Pathfinder leaks oil in Prince William Sound after running aground on Bligh Reef. Photo: J. Engles, ADEC



Dec. 1, 2009: Area of heaviest contamination mounded below spill site. Photo: ADEC



March 3, 2006: Cleanup of GC-2 oil spill that released 212,000 gallons of crude oil in the largest spill on the North Slope. Oil spilled from a quarter-inch hole in the pipeline, caused by corrosion. Nearly two acres of tundra and frozen lakes were impacted.

Photo: British Petroleum Exploration (Alaska) (BPXA)

ALASKA NORTH SLOPE OIL SPILLS, 2006-09

Incident Name	Date	Location (Company)	Cause	Type and Amount of Product Spilled
Drill Site 6, Well 11 Spill	12/21/09	Prudhoe Bay (BPXA)	Flow line separation; under investigation	300-700 gallons (est.); mixed product
R-Pad Produced Water Leak	12/3/09	Prudhoe Bay (BPXA)	Unknown; under investigation	7,000 gallons (est.); produced water
LPC-LO3 Release (Lisburne Common Line)	11/29/09	Prudhoe Bay (BPXA)	Rupture linked to ice plugs; under investigation	46,000 gallons (est.); crude oil, produced water, natural gas
FS-2 Flowline 9A Release	2/18/09	Prudhoe Bay (BPXA)	Corrosion	1,900 gallons (est.); crude oil, produced water, natural gas
Milne Point Module 54 Spill	1/12/09	Prudhoe Bay (BPXA)	Failure, automated flow control system	24,000 gallons (est.); produced crude, water
Kuparuk DS 1L Well 22 Spill	12/25/08	Prudhoe Bay (ConocoPhillips Alaska [CPAI])	Corrosion	63,000-94,000 gallons (est.); Produced water containing trace crude oil
Y Pad, Well 1 Spill	10/2/08	Prudhoe Bay (BPXA)	Ruptured pressure gauge	150 gallons; crude oil
Alpine CD1 Pad Spill	5/17/08	Prudhoe Bay (CPAI)	Corrosion	170 gallons; crude oil, produced water
Kuparuk 2U Pad Spill	12/16/07	Prudhoe Bay (CPAI)	Corrosion	4,200 gallons; crude oil, gas, fluids
DS-16, Flowline D (Flow Station 2) Spill	10/15/07	Prudhoe Bay (BPXA)	Flowline punctured	1,900 gallons; methanol, methanol/water mixture, crude oil/water mixture
DS-5 Access Road Vac Truck Rollover	4/8/07	Prudhoe Bay (BPXA)	Human error	6,900 gallons; diesel fuel
Milne Point C Pad Release	2/8/07	Prudhoe Bay (BPXA)	Inadequate thawing of line before startup	1,000 gallons; produced water
Trans-Alaska Pipeline, RGV 32	1/9/07	Trans-Alaska Pipeline	Loose valve	400-500 gallons; crude oil
GC-2 Tank 8511 Spill	12/19/06	Prudhoe Bay (BPXA)	Corrosion	200,000-255,000 gallons; produced water, crude oil
Flow Station 2 Release	8/6/06	Prudhoe Bay (BPXA)	Corrosion	960 gallons; crude oil
Kuparuk 2M-Pad Pipeline	3/9/06	Prudhoe Bay (CPAI)	Corrosion	250-500 gallons; produced water
GC-2 Oil Transit Line Release	3/2/06	Prudhoe Bay (BPXA)	Corrosion	212,000 gallons; crude oil

SOURCE: ADEC