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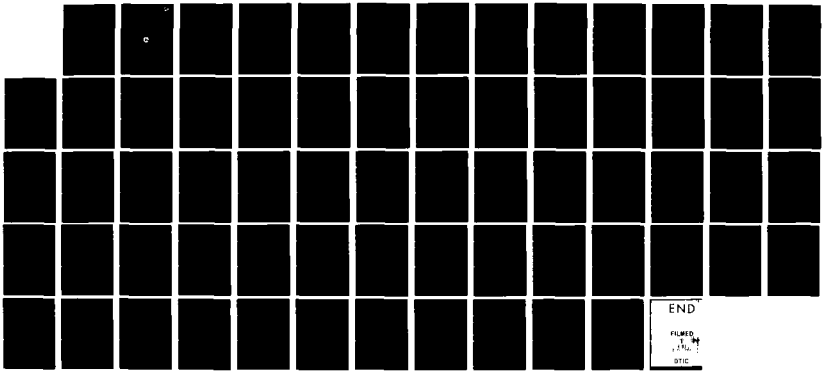

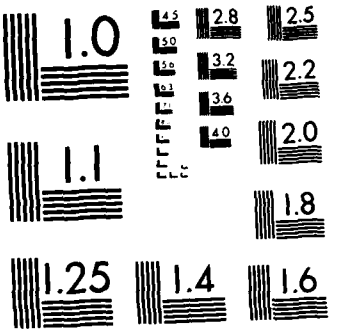

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SURFACE DRIFTER STUDY - BEAUFORT SEA, ALASKA

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Final Report

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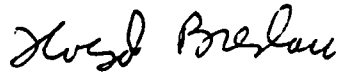

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16. Abstract

Surface drifters were released in the Beaufort Sea near Prudhoe Bay, Alaska for two years (1979-82). The releases were made under the shorefast ice just prior to summer breakup of the ice and in leads in the pack ice. The drifter recoveries indicate that the winds play a significant role in the surface circulation during the open water season. A significant number of drifters beached "onshore" of their release sites. "Preferred" beaching areas are identified from the drifter recoveries. All these results indicate the strong possibility that oil released offshore in the Beaufort Sea will impact the North Alaska Coast.

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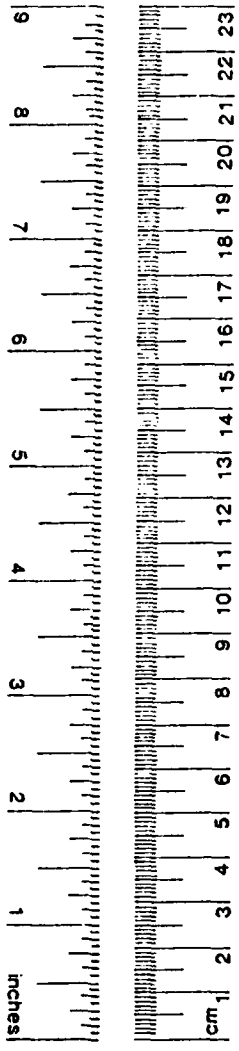
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

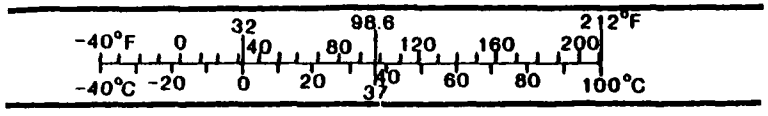
Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
in	inches	* 2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (WEIGHT)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (EXACT)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

* 1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, *Units of Weights and Measures.* Price $2.25. SD Catalog No. C13.10:286



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (WEIGHT)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	0.125	cups	c
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (EXACT)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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1.0 INTRODUCTION

A major area for oil exploration in the United States is the Beaufort Sea along the North Slope of Alaska. The estimated reserves on the North Slope and under the continental shelves of Alaska are potentially the largest untapped petroleum sources in North America. Various estimates of recoverable reserves (including the MacKenzie Bay area and the Canadian Archipelago) range up to 190 billion barrels of oil and 31 trillion cubic meters of gas.

Arctic oil spills could originate from any of several possible sources which have been identified as major threats. The most serious threat arises from the possibility of a well blowout. While it is difficult to estimate the magnitude of such a spill, a spill of hundreds of thousands of barrels is not unreasonable. Another possible source of an oil spill would be from tankers transporting crude oil from the North Slope to refineries in other states. Such an alternative appears to be both economically and technically feasible. With increased discoveries and production of oil expected to surpass the capacity of the pipeline from Prudhoe Bay to Valdez, the marine alternative to oil transport will take on added significance in the mid 1980's. A third source for an oil spill arises from the tankers which will be used to supply the North Slope area with refined petroleum products. The track these ships would take carries them through sometimes treacherous and ice-infested waters; the possibility of an accident with a resulting oil spill must be seriously considered.

Response to an oil spill in the Arctic is likely to be much slower than that of a similar situation in the temperate region, because of the remoteness of the area and its severe climate. In addition, it is possible that oil will be spilled under ice, or be covered with snow if it is spilled on the ice, making it difficult to locate the boundaries of the spill. In the face of these unique problems presented by an oil spill in the Arctic environment, accurate prediction of the extent and subsequent movement of an oil spill is vital to any cleanup effort.

The Coast Guard has sponsored research and field tests in attempting to define mechanisms of oil spreading in the Arctic environment. The WEBSEC (Western Beaufort Sea Ecological Cruise) studies of 1970-1973 have defined some features of the general oceanography of the North Slope continental shelf. Theoretical models, as yet untested, have been developed which address spreading on and under a solid ice cover and in open water (Matthews, 1981b, Free, et al. 1981). In addition, the Alaskan Outer Continental Shelf (OCS) environmental studies program of the Bureau of Land Management (BLM) has and is acquiring new information on the coastal waters of Alaska and the possible dispersion of oil in these environments. However, there are large gaps in our understanding of the Arctic environment, particularly in the area of surface currents and ice drift data.

2.0 OBJECTIVE

The United States Coast Guard's Office of Research and Development gave its Research and Development Center the specific responsibility to study oil/ice interaction phenomena and to provide guidance in defining appropriate spill response methods. An objective of the oil spill response program is the development of methods for predicting the movement of oil spills in ice-infested areas. The methods to be developed must account for the dynamics

of pack ice, and shear zones associated with the pack ice. Investigations were required to determine the factors that cause oil spill transport and the rates at which the spill changes physically and chemically with time.

Therefore, the Coast Guard R&D Center commenced a research project to develop methods for predicting the movement of oil spills in Arctic waters. One investigation undertaken was a drifter study to determine the net surface circulation in the nearshore region of the Southern Beaufort Sea between Point Barrow and the Canadian border.

3.0 PROCEDURE

Surface drifters have been used successfully in temperate waters to acquire useful data on surface drift (Paskausky and Murphy, 1976; Conomos, 1974). Similar studies in the Beaufort Sea were less successful because of low rates of return. Hufford, et al. (1976) documents a U.S. Geological Survey experiment where the rate of return for 4200 surface drifters was only 1.8%. Later drifter studies showed greater percentages of return because of expanded activities on the North Slope, however, they were still low in comparison to similar studies in temperate areas. Drifters for this study were released in 1979 and 1980. During 18-22 May 1979 1500 drifters were released under the ice, and during 28-31 March 1980 2000 drifters were released under the ice. The field party cut holes in the ice and forced the drifters under the ice. The release sites for 1979 and 1980 are shown in Figures 1 and 2. BP indicates the line of stations from Beechey Point seaward, SS is the line of stations in the Stefansson Sound area, north of Tigvariak Island. In addition to the under-ice releases a Coast Guard field party released drifters in open water leads during 1979 and 1980. Five-hundred-fifty drifters were released on 12 July 1979 from five stations north of the barrier islands. These are shown as CG 1-5 on Figure 1. On 7 July 1980 500 drifters were released in groups of 100 on a line running north of Reindeer Island (CG 1-5 on Figure 2). The first group of 100 drifters was released 5 miles north of the island and subsequent groups released at intervals of 5 miles from that point.

In this study, Woodhead-type surface drifters were used to determine the surface drift. They consist of a yellow plastic disc (18 cm diameter) with a 55 cm long stem attached through the center of the disc. Both the disc and the stem have slight positive buoyancy. The stem acts as a rudder and causes the drifter to float mostly submerged, rather than on the surface where the drifter could become airborne or be wind blown. The disc is stamped with a serial number and a legend with a promise of a $1.00 reward upon the return of information regarding the time and location of discovery.

4.0 RESULTS

Drifter recoveries began in the summer after the ice broke up and began moving. During breakup, the drifters released under the ice entered the surface flow field and moved in the mixed ice and open water environment. This part of the experiment was intended to simulate the movement of oil which had been trapped on or in ice. In the Coast Guard release the drifters moved in an open water environment. Table 1 summarizes the drifter release and recovery data.

TABLE 1
DRIFTER RELEASE AND RECOVERY DATA

Date Released	Number Released	Number Recovered	Percent Recovered
18-22 May 1979 (under ice)	1500	168	11.20
28-31 March 1980 (under ice)	2000	239	11.95
12 July 1979 (in leads)	550	9	1.64
7 July 1980 (in leads)	500	38	7.60
TOTAL ALL RELEASES	4550	454	9.98

Directional movement and drifter speed are listed in Appendices A and B. Table 2 is an analysis and summary of the drifter data contained in the appendices. Onshore for Table 2 has been arbitrarily set as any shore recovery 10 kilometers either side of the first Beechey Point (BP) and Stefansson Sound (SS) release stations (Figure 1). This computation was not done for the offshore CG stations.

The results of the drifter movements suggest that the drifters respond primarily to wind-driven surface water movement during open water conditions. The combined drifter returns show 334 (74%) were found to the west of their release points indicating a predominant easterly wind direction. This dominance of easterly winds has been well documented by Hufford, et al., 1976. Even though easterly winds dominate, causing a majority of the drifters to move west, there is still some significant movement to the east of release stations. Table 3 shows the maximum eastward and westward movement of drifters from each of the four transects of 1979 and 1980 as well as the CG release sites for 1979 and 1980. Even individual release sites can exhibit extreme dispersion in the movement of drifters released at these points. For example, from the released drifters at station BP-8 (1980), one drifter was found 122 kilometers west of the release site, and another was found 129 kilometers east of the release site.

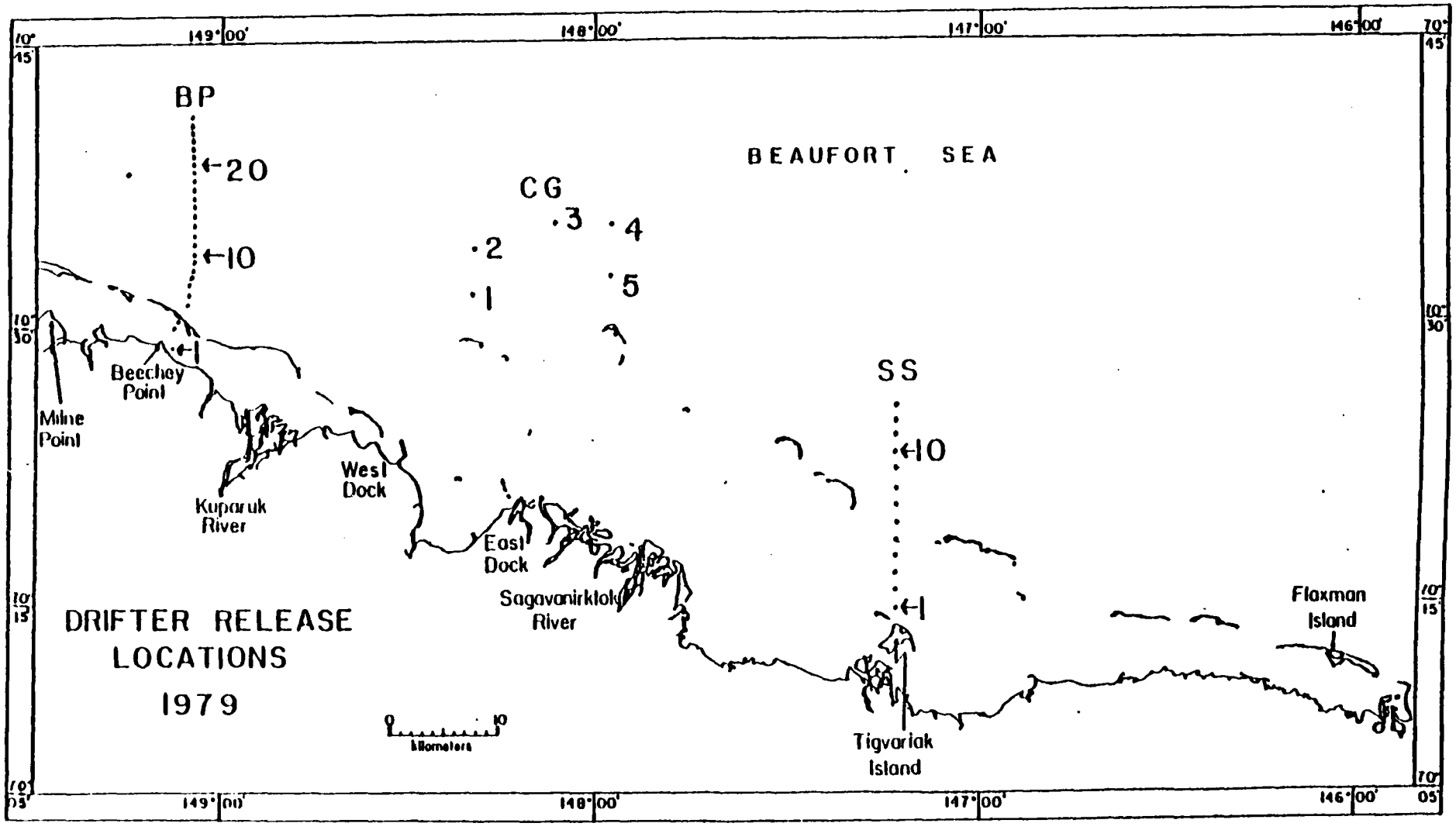

Figure 1. Drifter release locations - Beaufort Sea, Alaska, 1979

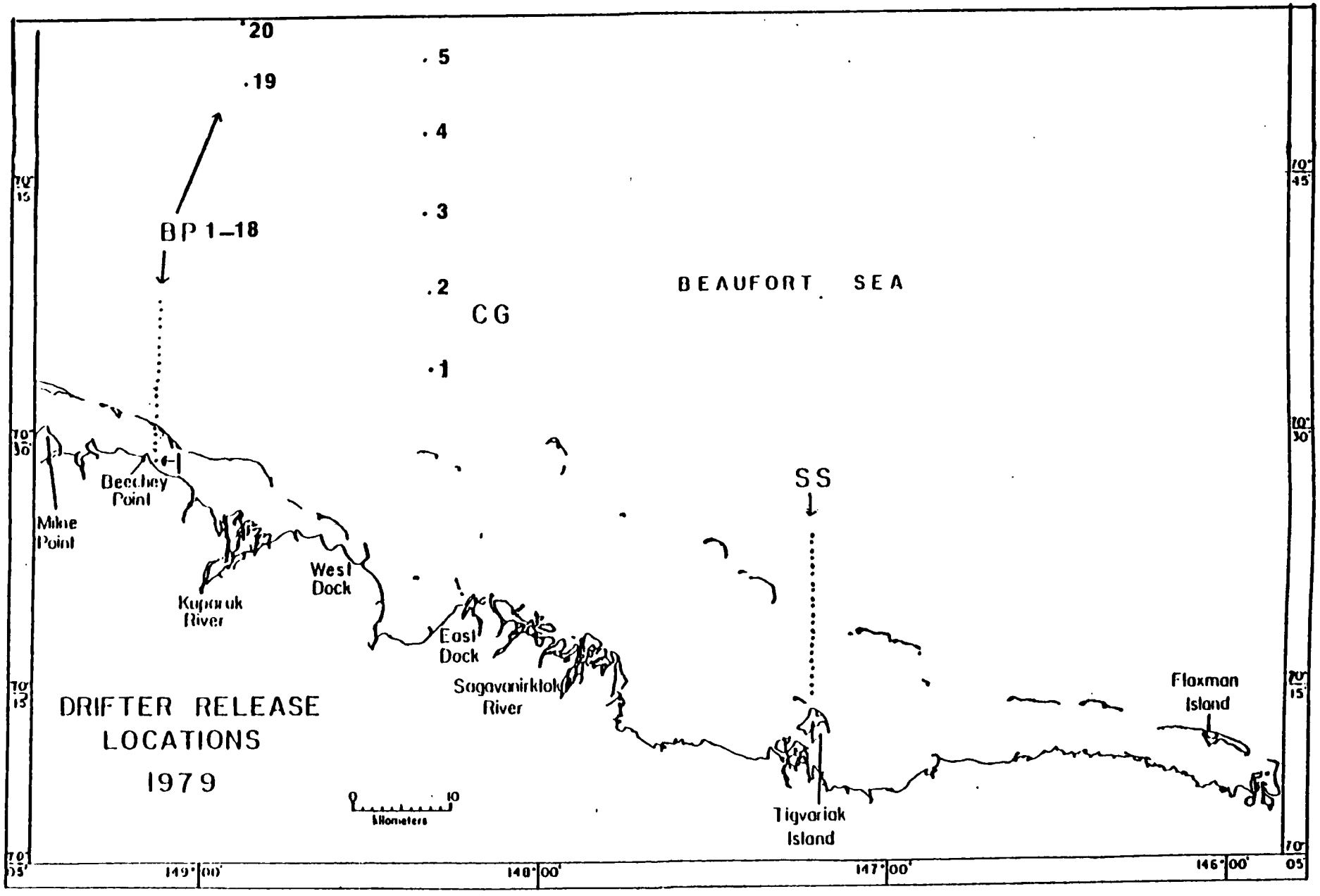

Figure 2. Drifter release locations - Beaufort Sea, Alaska, 1980

TABLE 2
SUMMARY OF DRIFTER MOVEMENTS

Year	Stations	Direction of Movement	Number	Percent
1979	BP 1-26	East along coast	25	(76%)
		On shore	2	(-)
		West along coast	8	(24%)
	SS 1-13	East along coast	29	(24%)
		On shore	13	(-)
		West along coast	91	(76%)
	CG 1-5	East along coast	3	(33%)
		West along coast	6	(67%)
1979 (totals)		East along coast	40	(25%)
		Onshore	15	(-)
		West along coast	122	(75%)
1980	BP 1-20	East along coast	14	(14%)
		Onshore	41	(-)
		West along coast	83	(86%)
	SS 1-20	East along coast	6	(06%)
		Onshore	4	(-)
		West along coast	91	(94%)
	CG 1-5	East along coast	2	(05%)
		West along coast	36	(95%)
1980 (totals)		East along coast	22	(09%)
		Onshore	45	(-)
		West along coast	210	(91%)
1979-80 (combined totals)		Easterly	120	(26%)
		Westerly	334	(74%)

TABLE 3
MAXIMUM EASTWARD AND WESTWARD DRIFTER RECOVERIES

Year	Stations	Maximum Eastward (KM)	Maximum Westward (KM)
1979	BP 1-25	118.5	253
1979	SS 1-13	48	96
1979	CG 1-5	82	30
1980	BP 1-20	153	251
1980	SS 1-20	62	337
1980	CG 1-5	207	178.5

All of the release transects show a predominance of drifters moving to the west except for BP 1-26 (1979). The results from this transect (Table 2) show 76% of the drifters found were east of the release sites. Review of National Weather Service wind data for Barter Island and Point Barrow indicate some short episodes of westerly winds which would have moved the drifters to the east. These drifters generally did not move far to the east (Figure 3). However, should a longer period of westerly wind occur, larger drift to the east would ensue.

Another interesting facet of the drifter data returns is the apparent preferred beaching areas of drifters. Figure 3 depicts the number of drifter recoveries east and west of their release points for 10 kilometer intervals. There is a peak of recoveries both east and west of release sites for the distances 0-10 and 10-20 km from the release sites. Matthews (1981a) speculates that this onshore movement of drifters may be caused by under-ice currents when the drifters were first released. Further verification of this assumption is necessary and highlights the need for measurements of under-ice currents. Two other areas where the frequency of recoveries peaks are 40-50 and 120-130 kilometers west of the release sites. The peak at 40-50 kilometers is caused mainly by releases from SS stations. These drifters moved west and many of them beached in the Prudhoe Bay area. The peak at 120-130 kilometers is caused mainly by drifters from BP station beaching at Harrison Bay. This type of information is extremely important for the development of oil spill contingency plans for the North Slope area.

5.0 CONCLUSIONS

1. The results of two years of drifter releases indicate that they respond primarily to wind-driven surface water movement during open water conditions. The data suggest the dominance of easterly winds during open water conditions caused 334 (74%) of drifter recoveries to be found west of their release sites.

2. Although easterly winds cause movement to be from east to west there can be significant drifter movement in the opposite direction.

3. Dispersion of the drifters is significant as shown in Table 3. Dispersion from a single line of drifter releases (BPI-25, 1979) was 371.5 kilometers.

4. Dispersion from a single station (point source) can be significant. From the fifty drifter releases at site BP-8 (1980) one drifter was found 122 kilometers west of the release point, and another was found 129 kilometers east of the release site. Thus the total separative distance for two drifters released at the same spot at the same time was 251 kilometers.

5. For those drifters that were found, a significant number beached "onshore" of their release sites.

6. There are certain coastal areas where "preferred" beaching of drifters occurs. This preferred beaching appears to be a function of release site and meteorological conditions. This type of information and future information from subsequent drifter releases in other areas can therefore provide extremely important data for oil spill contingency planning.

6.0 SUGGESTIONS FOR FURTHER STUDIES

Results of the experiment indicate that there is a strong possibility that oil released offshore in the Beaufort Sea will impact the North Alaskan Coast. Also indications are that oil from a single source may be dispersed over great distances (up to 250 km) along the Coast. However, little is known about the transport trajectories, or the circulation dynamics governing these trajectories. Lagrangian drifter studies (satellite tracked) and current surveys (current meter deployments) in the nearshore area could contribute toward providing additional information which would be useful in understanding these circulation patterns.

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APPENDIX A

DRIFTER SPEED COMPARISON AND DATA

DRIFTER SPEED COMPARISON AND DATA - 1979

BP = releases due north of Beechey Point

SS = Stefansson Sound - releases due north of Tigvariak Island

CG = released by the Coast Guard

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 1	149°8.3' 70° 29.5'	May 18	July 9	53	24	.5	.6	East	ARCO WEST DOCK
		May 18	Aug. 27	102	24	.2	.2	East	West dock - west side, halfway between dockhead #2 & 3
		May 18	July 28	72	6	.1	.1	West	In a bay 1/2 between Drill Point & Kavearak Point
		May 18	July 18	62	24	.4	.5	East	ARCO Causeway, West side 300 m shoreward of dockhead #2
BP 2	149° 8.1' 70° 30.0'	May 18	July 25	69	18.5	.3	.3	East	Stump I. North side East end
		May 18	July 14	58	11	.2	.2	East	Southeast Long Island Nearshore Beach
		May 18	July 14	58	11	.2	.2	East	Southeast Long Island Nearshore Beach
		May 18	July 14	58	11	.2	.2	East	Southeast Long Island Nearshore Beach
BP 3	149°7.8' 70° 30.3'	May 18	July 21	65	22	.3	.3	East	Stump I. North side West end
BP 4	149° 5.6' 70° 31.2'	May 18	July 20	65	25	.4	.5	East	ARCO Causeway, East side, 300 m toward dockhead #3 from dockhead #2

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 4	149° 5.6' 70° 31.2'	May 18	July 21	65	21	.3	.3	East	Stump I. North side near middle of Island
		May 18	July 21	65	13.5	.2	.2	West	Near old wood house on Milne Point
BP 6	149° 5.7' 70° 32.3'	May 19	Aug. 22	96	25	.3	.3	East	East side Prudhoe Causeway
BP 7	149° 4.8' 70° 32.6'	May 19	Aug. 6	80	13.5	.2	.2	West	Milne Point Beach (off hut area)
		May 19	Aug. 7	81	35	.4	.5	East	Niakuk I. (high ground) furtherest north in chain
BP 8	149° 5.3' 70° 33.0'	May 19	July 28	71	10	.1	.1	West	In a bay midway between Drill Point & Kavearak Point
BP 9	149° 4.8' 70° 33.4'	May 19	July 21	64	14	.2	.2	West	Near old wood house Milne Point
BP 10	3.5 miles of Cottle Island	May 21	July 21	62	21	.3	.3	East	Stump I. North side Wend
		May 21	Aug. 6	80	15	.2	.2	West	Milne Point Beach (off hut area)
		May 21	July 27	68	89	1.3	1.5	East	Bullen Point
		May 21	July 25	66	19	.3	.3	East	North side of Egg I.
BP 11	4.0 miles north of Cottle I.	May 21	July 25	66	14	.2	.2	West	.5 km east along shoreline from Kavearak Point

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 12	4.5 miles north of Cottle I.	May 21	July 23	64	10.5	.2	.2	West	Near the point on east side of Beechey Point
BP 13	5.0 miles north of Cottle I.	May 21	Aug. 14	86	34	.4	.5	East	North side Reindeer I.
		May 21	Aug. 4	76	32	.4	.5	East	In water 100' offshore 70° 27.13 148° 14' 58
		May 21	Aug. 22	94	29	.3	.3	East	West side Prudhoe Causeway 70° 25'13 148° 30'30
BP 15	6.0 miles north of Cottle I.	May 21	Aug. 5	77	119	1.5	1.7	West	600 yds west of Husky Oil Camp, Naval Petroleum Reserve, Lonely
BP 18	7.5 miles north of Cottle I.	May 22	Aug. 14	85	31	.4	.5	East	North side Reindeer I.
		May 22	Sept. 25	102	253	.4	.5	West	On beach in Pet 4, Cape Simpson, old DEW line site
BP 21	9.0 miles north of Cottle I.	May 22	Aug. 4	75	61.5	.8	.9	East	70°24.2' 147°31.4'
BP 22	9.5 miles north of Cottle I.	May 22	Aug. 27	98	37.5	.4	.5	East	On shore, South of west dock

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 23	10.0 miles north of Cottle I.	May 22	Sept. 5	107	40	.4	.5	East	East shore, Prudhoe Bay
BP 24	10.5 miles north of Cottle I.	May 22	Sept. 1	103	118.5	1.2	1.4	East	On the inward side of Flaxman I.
BP 25	11.0 miles north of Cottle I.	May 22	Aug. 22	93	47	.5	.6	East	East side Prudhoe Causeway
BP 26	11.5 miles north side Cottle I.	May 22	Aug. 14	85	34.5	.4	.5	East	North side Reindeer Island
SS 1	1 mile north Tigvariak I.	May 24	July 17	55	21	.4	.5	West	Near mouth of Sagavanirktok River
		May 24	Aug. 14	83	47.5	.6	.7	West	North side Reindeer Island
		May 24	July 26	64	47	.7	.8	West	South of old east dock on shore
		May 24	Aug. 27	96	50	.5	.6	West	On shore, south of west dock
		May 24	Sept. 11	111	15	.1	.1	East	On the east side of Bullen Point, 146°50' 70°10.8'
		May 24	July 24	62	10	.2	.2	West	Mainland beach of east Foggy Island Bay

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 1	1 mile north of Tigvariak Island	May 24	July 24	62	10	.2	.2	West	Mainland beach of east Foggy Island Bay
		May 24	July 26	64	6.5	.1	.1	West	Southwest beach Tigvariak Island
		May 24	Aug. 7	76	15	.2	.2	East	East of Bullen Point
SS 2	2 miles north of Tigvariak Island	May 24	July 11	49	50	1.0	1.2	West	.3 mi. from tip of west dock
		May 24	July 18	56	3.5	.1	.1	East	Along north shore Tigvariak Island
		May 24	July 20	58	6	.1	.1	East	Along east shore Tigvariak Island
		May 24	July 20	58	6	.1	.1	East	Along east shore Tigvariak Island
		May 24	July 21	59	54	.9	1.0	West	Stump I. north side, near middle of Island
		May 24	July 21	59	55	.9	1.0	West	Stump I. north side, west end.
		May 24	July 18	56	49	.9	1.0	West	ARCO Causeway, west side 300 m shoreward of dockhead #2
		May 24	Aug. 27	96	47.5	.5	.6	West	West side east dock

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 2	2 miles north of Tigvariak Island	May 24	July 26	64	50	.8	.9	West	South of west dock
		May 24	July 24	62	11	.2	.2	West	N. inland beach of east Foggy I. Bay
		May 24	July 26	64	6.5	.1	.1	East	Southeast Beach Tigvariak Island
		May 24	July 26	64	6.5	.1	.1	East	Southeast Beach Tigvariak Island
		May 24	July 24	62	50	.8	.9	West	Mouth of Putuligayak River
SS 3	3 miles north of Tigvariak Island	May 24	July 21	59	55	.9	1.0	West	Stump I. north side, near middle of island
		May 24	July 23	61	73.5	1.2	1.4	West	Near the point on east side of Beechey Pt.
		May 24	July 23	61	73.5	1.2	1.4	West	Near the point on east side of Beechey Pt.
		May 24	Aug. 6	75	49	.7	.8	West	1 mi. west of east dock on beach
		May 24	July 24	62	12	.2	.2	East	Mainland beach of east Foggy Is. Bay
		May 24	Aug. 31	100	49	.5	.6	West	East shore Prudhoe Bay
		May 24	Sept. 13	113	47	.4	.5	West	Shore south of west dock

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 4	6 miles north of Tigvariak Island	May 24	July 20	58	11.5	.2	.2	East	Along east shore Tigvariak Island
		May 24	July 20	58	11.5	.2	.2	East	Along east shore Tigvariak Island
		May 24	July 20	58	11.5	.2	.2	East	Along east shore Tigvariak Island
		May 24	Aug. 27	96	45.5	.5	.6	West	West side east dock
		May 24	July 27	65	45	.7	.8	West	On old east dock near bay end
		May 24	July 27	65	45	.7	.8	West	North of old east dock on shore
		May 24	Aug. 14	83	17	.2	.2	West	Mainland beach of east Foggy Is. Bay
		May 24	Aug. 12	81	16.5	.2	.2	West	Mainland east of Shavlovik R. Delta
		May 24	July 28	66	19	.3	.3	East	East of Bullen Point
		May 24	Aug. 7	76	19	.3	.3	East	East of Bullen Point
		May 24	Aug. 4	73	48	.7	.8	East	West of Staines River

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 5	4 miles north of Tigvariak Island	May 24	July 25	63	58	.8	.9	West	Stump Is. north side west end
		May 24	July 20	50	47.5	.8	.9	West	ARCO Causeway, east side, 1/2 way between dockhead #3 and dockhead #2
		May 24	Aug. 22	91	48.5	.5	.6	West	East side Prudhoe Causeway
		May 24	July 25	63	46.	.7	.8	West	On shore just south of west dock
SS 6	5 miles north of Tigvariak Island	May 24	July 18	56	8	.1	.1	West	Along north shore Tigvariak Island
		May 24	July 21	59	49	.8	.9	West	Stump Is. north side west end
		May 24	July 21	59	49	.8	.9	West	Stump Is. north side west end
		May 24	July 21	59	50	.8	.9	West	ARCO Causeway, east side, 50 m toward dockhead #3 from dockhead #2
		May 24	Aug. 11	80	21.5	.3	.3	West	Mouth of Sagavanirktok River
		May 24	Aug. 27	96	46.5	.5	.6	West	West side east dock

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 6	5 miles north of Tigvariak Island	May 24	Aug. 27	96	50	.5	.6	West	On shore, south of west dock
		May 24	Aug. 18	56	84	1.5	1.7	West	Beach east of Milne Pt., 2 km east of HARL cabins
		May 24	Aug. 31	100	49	.5	.6	West	East shore Prudhoe Bay
		May 24	Aug. 31	100	49	.5	.6	West	East shore Prudhoe Bay
		May 24	July 1	39	52	1.3	1.5	West	Shore up to 1 m left of west dock
SS 7	7 miles north of Tigvariak Island	May 24	July 21	59	48.5	.8	.9	West	Stump Is. north side west end
		May 24	Aug. 11	80	48	.6	.7	West	148°30'30" 70°23'18"
		May 24	Aug. 10	79	47	.6	.7	West	1/2 m west of east dock, Prudhoe Beach
		May 24	July 25	63	49	.8	.9	West	West shore of Prudhoe Bay above Putuligayuk River
		May 24	July 25	63	49	.8	.9	West	West shore of Prudhoe Bay above Putuligayuk River
		May 24	Aug. 18	56	82	1.5	1.7	West	East of Milne Point Beach near sod house

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 7	7 miles north of Tigvariak Island	May 24	July 24	62	17.5	.3	.3	West	Mainland Beach of east Foggy Is. Bay
		May 24	Sept. 5	105	43	.4	.5	West	East shore Prudhoe Bay
		May 24	Aug. 31	100	43	.4	.5	West	East shore Prudhoe Bay
		May 24	Sept. 1	101	13.5	.1	.1	West	South central point of Tigvariak Is. 70°12'48" 147°14'26"
		May 24	July 1	39	50	1.3	1.5	West	Shore up to 1m left of west dock
		May 24	July 1	39	50	1.3	1.5	West	Shore up to 1m left of west dock
SS 8	8 miles north of Tigvariak Island	May 24	July 20	58	15	.3	.3	East	Along east shore Tigvariak Is.
		May 24	July 20	58	15	.3	.3	East	Along east shore Tigvariak Is.
		May 24	July 18	56	15	.3	.3	East	Along east shore Tigvariak Is.
		May 24	July 18	56	13.5	.2	.2	East	Along north shore Tigvariak Is.
		May 24	July 18	56	13.5	.2	.2	East	Along north shore Tigvariak Is.

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 8	8 miles north of Tiuvariak Island	May 24	July 20	58	47	.8	.9	West	ARCO Causeway, east side 300 m toward dockhead #3 from dockhead #2
		May 24	July 21	59	49	.8	.9	West	Stump Is. north side, west end
		May 24	Aug. 27	96	46.5	.5	.6	West	West side, east dock
		May 24	July 25	63	50	.8	.9	West	West shore of Prudhoe Bay above Putuligayuk River
		May 24	Sept. 4	104	11	.1	.1	West	North shore Narwhal Is.
		May 24	Sept. 4	104	11	.1	.1	West	North shore Narwhal Is.
		May 24	Sept. 4	104	11	.1	.1	West	North shore Narwhal Is.
		May 24	July 24	62	18.5	.3	.3	West	Mainland Beach of east Foggy Is. Bay
		May 24	July 24	62	18.5	.3	.3	West	Mainland Beach of east Foggy Is. Bay
		May 24	July 24	62	18.5	.3	.3	West	Mainland Beach of east Foggy Is. Bay
		May 24	July 24	62	18.5	.3	.3	West	Mainland Beach of east Foggy Is. Bay
		May 24	July 24	62	18.5	.3	.3	West	Mainland Beach of east Foggy Is. Bay
		May 24	Aug. 14	83	18.5	.2	.2	West	Mainland Beach of east Foggy Is. Bay

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 9	9 miles north of Tigvariak Island	May 24	July 21	59	50	.8	.9	West	Stump Is. north side, west end
		May 24	July 21	59	50	.8	.9	West	Stump Is. north side west end
		May 24	July 25	63	50	.8	.9	West	Stump Is. north side, west end
		May 24	July 21	59	50	.8	.9	West	Stump Is. north side, west end
		May 24	July 20	58	46.5	.8	.9	West	ARCO Causeway, east side 1/2 way between dockhead #3 & dockhead #2
		May 24	July 25	63	51.5	.8	.9	West	Stump Is. north side, west end
		May 24	July 25	63	51.5	.8	.9	West	Stump Is. north side, east end
		May 24	Aug. 6	75	47	.6	.7	West	1 mi. west of east dock of Prudhoe Bay on beach
		May 24	Aug. 22	60	48.5	.8	.9	West	West side Prudhoe Causeway
		May 24	July 25	65	49.5	.8	.9	West	West shore of Prudhoe Bay above Putuligayuk River

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 9	9 miles north of Tigvariak Island	May 24	Aug. 8	77	10.5	.1	.1	East	East end Pole Is.- offshore beach
		May 24	Aug. 8	77	10	.1	.1	East	Pole Island
		May 24	Aug. 8	77	10	.1	.1	East	Pole Island
		May 24	Aug. 8	77	10	.1	.1	East	Pole Island
		May 24	July 21	59	46.5	.8	.9	West	ARCO Causeway, east side
		May 24	July 24	62	49	.8	.9	West	Mouth of Putuligayuk River
		May 24	Aug. 31	100	46	.5	.6	West	East shore Prudhoe Bay
		May 24	July 1	39	50	1.3	1.5	West	Shore up to 1 m left of west dock
		May 24	July 1	39	50	1.3	1.5	West	Shore up to 1 m left of west dock
SS 10	10 miles north of Tigvariak Island	May 24	Aug. 22	60	45.5	.8	.9	West	East side Prudhoe Causeway
		May 24	Sept. 4	104	10	.1	.1	West	North shore Narwhal Is.
		May 24	July 24	62	12	.2	.2	West	Mainland beach of east Foggy Is. Bay
		May 24	July 24	62	12	.2	.2	West	Mainland Beach of east Foggy Is. Bay

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 11	11 miles north of Ilgvarlak Island	May 24	Aug. 27	96	46.5	.5	.6	West	West dock, east side 1/2 between dockhead #2 & #3
		May 24	Aug. 8	77	12	.2	.2	East	East end Pole Is. - offshore beach
		May 24	Aug. 8	77	13	.2	.2	East	East end Pole Is. - offshore beach
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island
		May 24	Aug. 8	77	11.5	.1	.1	East	Pole Island

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 12	12 miles north of Tigvariak Island	May 24	July 20	58	47.5	.8	.9	West	ARCO Causeway, east side, 300 m towards dockhead #3 from dock-head #2
		May 24	Aug. 6	75	50	.7	.8	West	1 mi. west of east dock of Prudhoe Bay on beach
		May 24	Aug. 27	96	49	.5	.6	West	West side, east dock
		May 24	July 26	64	50	.8	.9	West	South of old east dock on shore
		May 24	Aug. 14	83	25	.3.	.3	West	Mainland beach of east Foggy Is. Bay
		May 24	July 26	64	21.5	.3	.3	West	West beach of Tigvariak Island
		May 24	Aug. 31	100	47.5	.5	.6	West	East shore Prudhoe Bay
SS 13	12.5 miles north of Tigvariak Island	May 24	Aug. 11	80	47.5	.6	.7	West	148°30'30" 70°23'18"
		May 24	Aug. 6	75	81	1.1	1.3	West	Milne Pt. Beach (off hut area)
		May 24	Aug. 18	87	80	.9	1.0	West	1 km east of NARL cabins on beach east of E. Milne Pt.
		May 24	Aug. 8	77	15	.2	.2	East	Mid Pole Is. to west spit offshore beach

DRIFTER SPEED COMPARISON AND DATA - 1979

RELEASE #	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KILOMETERS)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
CG 2	10 km north Reindeer Island	July 12	Aug. 27	47	21	.4	.5	West	On shore, south of west dock
CG 3	10 km north-west of Cross Island	July 12	Aug. 24	44	82	1.9	2.2	West	North shore, Flaxman Island
		July 12	Sept. 2	53	82	1.5	1.7	West	Inward side, Flaxman Island
CG 4	10 km north of Cross Island	July 12	Aug. 27	47	30	.6	.7	West	On shore, south of west dock
		July 12	Sept. 2	53	77.5	1.5	1.7	West	Seaward side, Flaxman Island
		July 12	Aug. 31	51	29.5	.6	.7	West	West dock, east side of dockhead #3
		July 12	Sept. 13	64	29.5	.5	.6	West	Shore to right of west dock
CG 5	5 km north of Cross Island	July 12	Aug. 14	34	14	.4	.5	West	North side Reindeer Island
		July 12	Aug. 24	44	26	.6	.7	West	Near center of Stump Island on east side

APPENDIX B

1980 DRIFTER SPEED COMPARISION AND DATA

DRIFTER SPEED COMPARISON AND DATA - 1980
SS = Stefansson Sound - releases due north of Tigvariak Island

BP = releases due north of Beechey Point
m = meter
mi = mile

CG = releases by Coast Guard
km = kilometer
cm = centimeter

RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 1	0.5 mi true N of Beechey Pt.	Mar. 28	5 Aug.	131	23	.17	.20	East	1/3 way to W along Stump Lagoon
		Mar. 28	9 Aug.	135	3	.02	.02	East	2 km E of Beechey Pt., 100 meters inland on South shore of narrow lake 1.0 m above water line
		Mar. 28	9 Aug.	135	2	.01	.01	East	1 km E of Beechey Pt. 10-15 m inland on NE shore of stream outlet
		Mar. 28	9 Aug.	135	2	.01	.01	East	1 km E of Beechey Pt. 10-15 m inland on NE shore of stream outlet
BP 2	1.0 mi true N of Beechey Pt.	Mar. 28	5 Aug.	131	34	.25	.29	East	W end oceanside Argo Is.
		March 28	9 Aug.	43	3	.06	.08	East	1.3 km E of Beechey Pt. on beach
		March 28	9 Aug.	135	3.5	.02	.03	East	1 km E of Beechey Pt. 10-15 m inland on NE shore of stream outlet

DRIFTER SPEED COMPARISON AND DATA -1980
SS = Stafansson Sound- releases due north of Tigvariak Island

BP = releases due north of Beechey Point
m = meter
mi = mile

CG = releases by Coast Guard
km = kilometer
cm = centimeter

RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 3	1.5 mi true N of Beechey Pt.	Mar. 28	July 19	114	116	1.01	1.17	West	South shore of Kogru River SW of landing strip
		Mar. 28	July 23	118	112.5	.95	1.1	West	North shore of Peninsula above Kogru River 3 mi E of Saktuina Pt.
		Mar. 28	July 23	118	112.5	.95	1.1	West	North shore of Peninsula above Kogru River 3 mi E of Saktuina Pt.
		Mar. 28	July 21	116	96.5	.83	.96	West	North of Garry Creek
		Mar. 28	Aug. 2	128	123	.96	1.11	West	18 km South of Cape Halkett
		Mar. 28	Aug. 2	128	123	.96	1.11	West	18 km South of Cape Halkett

DRIFTER SPEED COMPARISON AND DATA -1980
SS = Stafansson Sound- releases due north of Tigvariak Island

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km = kilometer
cm = centimeter

RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 3	1.5 mi true N of Beechey Pt.	Mar. 28	July 19	114	116	1.01	1.17	West	South shore of Kogru River SW of landing strip
		Mar. 28	July 23	118	112.5	.95	1.1	West	North shore of Peninsula above Kogru River 3 mi E of Saktuina Pt.
		Mar. 28	July 23	118	112.5	.95	1.1	West	North shore of Peninsula above Kogru River 3 mi E of Saktuina Pt.
		Mar. 28	July 21	116	96.5	.83	.96	West	North of Garry Creek
		Mar. 28	Aug. 2	128	123	.96	1.11	West	18 km South of Cape Halkett
		Mar. 28	Aug. 2	128	123	.96	1.11	West	18 km South of Cape Halkett

DRIFTER SPEED COMPARISON AND DATA - 1980
SS = Stefansson Sound - releases due north of Tigvariak Island

BP = releases due north of Beechey Point
m = meters
mi = mile
CG = releases by Coast Guard
km = kilometers
cm = centimeters

RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM/DAY)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 4	2.0 mi true N of Beechey Point (dry ice hole)	Mar. 28	Aug. 9	135	4.9	.03	.04	East	1.9 km E of Beechey Point on beach buried in 8 cm of sand
		Mar. 28	Aug. 9	135	4	.02	.03	East	1 km E of Beechey Pt. 10-15 m inland on NE shore of stream outlet
		Mar. 28	Jul. 23	118	120	1.01	1.17	West	N shore Peninsula above Kogru River 3 mi E of Saktuina Point
		Mar. 28	Jul. 23	118	120	1.01	1.17	West	N shore Peninsula above Kogru River 3 mi E of Saktuina Point
		Mar. 28	Jul. 23	118	120	1.01	1.17	West	N shore Peninsula above Kogru River 3 mi E of Saktuina Point.
		Mar. 28	Aug. 2	128	122.5	.95	1.1	West	18 km S of Cape Halkett
		Mar. 28	Aug. 2	128	122.5	.95	1.1	West	18 km S of Cape Halkett

DRIFTER SPEED COMPARISON AND DATA - 1980
SS = Stefansson Sound - releases due north of Tigvariak Island

BP = releases due north of Beechy Point
m = meter
mi = mile
CG = releases by Coast Guard
km = kilometer
cm = centimeter

RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 4	2.0 mi true N of Beechey Point (dry ice hole)	Mar. 28	Aug. 23	149	5	.03	.03	East	Inside the V at the E of Cottle Island
		Mar. 28	Aug. 23	149	5	.03	.03	East	Inside the V at the E of Cottle Island
		Mar. 28	Jul. 24	119	37	.31	.35	West	SE tip of Thetis Island, oceanside
BP 5	2.5 mi true N of Beechey Pt.	Mar. 28	Aug. 5	131	30	.22	.26	East	W. Dock, Prudhoe Bay
		Mar. 28	Aug. 10	136	3.5	.02	.02	West	N side, Bodfish Island
		Mar. 28	Aug. 10	136	3.5	.02	.02	West	N side, Bodfish Island
		Mar. 28	Aug. 10	136	3.5	.02	.02	West	N side, Bodfish Island
		Mar. 28	Aug. 5	131	1	0	0	East	Cottle Island - oceanside
		Mar. 28	Aug. 5	131	1	0	0	East	Cottle Island - oceanside
		Mar. 28	Aug. 5	131	2	.01	.01	East	Cottle Island - oceanside
		Mar. 28	Aug. 5	131	3	.02	.02	East	Cottle Island - oceanside

DRIFTER SPEED COMPARISON AND DATA - 1980
SS = Stefansson Sound - releases due north of Tigvariak Island

BP = releases due north of Beechey Point
m = meter
mi = mile
CG = releases by Coast Guard
km = kilometer
cm = centimeter

RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 5	2.5 mi true N of Beechey Point	Mar. 28	Aug. 5	131	2.5	.01	.02	East	Cottle Island - oceanside
		Mar. 28	Aug. 5	131	2.5	.01	.02	East	Cottle Island - oceanside
		Mar. 28	Aug. 5	131	2.5	.01	.02	East	Cottle Island - oceanside
		Mar. 28	Aug. 5	131	1	0	0	East	Opposite tower on Cottle Island - oceanside
		Mar. 28	Aug. 5	131	.75	0	0	East	1/4 mi. W of tower on Cottle Island - oceanside
		Mar. 28	Aug. 5	131	.75	0	0	East	1/4 mi. W of tower on Cottle Island - oceanside
		Mar. 28	Aug. 5	131	.75	0	0	East	1/4 mi. W of tower on Cottle Island - oceanside
		Mar. 28	Aug. 5	131	.75	0	0	East	1/4 mi. W of tower on Cottle Island - oceanside
		Mar. 28	Aug. 5	131	6	.04	.05	East	West end of Long Island - oceanside
		Mar. 28	Aug. 5	131	6	.04	.05	East	West end of Long Island - oceanside

DRIFT SPEED COMPARISON AND DATA -1980
SS = Stafansson Sound - releases due north of Tigvariak Island

BP = releases due north of Beechey Point
m = meter
m = mile
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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 5	2.5 mi true N of Beechey Point	Mar. 28	Aug. 5	131	10	.07	.08	East	Midway along W half of Long Island - oceanside
		Mar. 28	Aug. 5	131	10	.07	.08	East	Midway along W half of Long Island - oceanside
		Mar. 28	Aug. 5	131	10	.07	.08	East	Midway along W half of Long Island - oceanside
		Mar. 28	Aug. 5	131	10	.07	.08	East	Midway along W half of Long Island - oceanside
		Mar. 28	Aug. 5	131	14	.1	.12	East	East end West half of Long Island - oceanside
		Mar. 28	Aug. 5	131	10.5	.08	.09	West	Pingok Island
		Mar. 28	Aug. 5	131	15	.11	.13	West	West end Pingok Lagoon
		Mar. 28	Aug. 5	131	97	.74	.85	West	2 mi South of Atigaru Point

DRIFTER SPEED COMPARISON AND DATA -1980
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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 6	3.0 mi true N of Beechey Point	Mar. 30	Aug. 2	126	42.5	.33	.39	East	1/2 mi West of East Dock
		Mar. 30	Aug. 10	134	3	.02	.02	West	North side Bodfish Island
		Mar. 30	Aug. 11	135	3	.02	.02	East	North side Cottle Island
		Mar. 30	Aug. 10	134	3.5	.02	.03	West	North side Bodfish Island
		Mar. 30	Aug. 10	134	3.5	.02	.03	West	North side Bodfish Island
		Mar. 30	Aug. 5	129	2	.01	.01	East	1/4 mi West of tower on Cottle Island - oceanside
		Mar. 30	Aug. 5	129	15.5	.12	.13	East	East end West half of Long Island - oceanside
		Mar. 30	Aug. 5	129	27	.2	.24	East	Stump Island - oceanside
		Mar. 30	Aug. 5	129	15.5	.12	.13	East	East end Long Island - oceanside
		Mar. 30	Aug. 4	128	29.5	.23	.26	East	1.5 mi West of West Dock near Pt. McIntyre

DRIFTER SPEED COMPARISON AND DATA -1980
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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 7	3.5 mi true N of Beechey Point	Mar. 30	Jul. 26	119	158.5	1.33	1.54	West	On beach at Lonely, Alaska
		Mar. 30	Aug. 10	134	3.5	.02	.03	West	North side, Bodfish Island
		Mar. 30	Aug. 10	134	3.5	.02	.03	West	North side, Bodfish Island
		Mar. 30	Aug. 5	129	114.5	.88	1.02	West	4.5 mi West of Saktuina Point
		Mar. 30	Aug. 5	129	15.8	.12	.14	East	East end West half of Long Island - oceanside
		Mar. 30	Aug. 5	129	110.5	.85	.99	West	4 mi West of Saktuina Point
		Mar. 30	Aug. 5	129	90.5	.7	.81	West	1.5 mi West of Saktuina Point
		Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km South of Cape Halkett on beach
		Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km South of Cape Halkett on beach

DRIFTER SPEED COMPARISON AND DATA - 1980
SS- Stefansson Sound - releases due north of Tigvariak Island

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 8	4.0 mi true N of Beechey	Mar. 30	Aug. 5	129	4	.03	.03	East	Cottle Island - oceanside
		Mar. 30	Aug. 5	129	115	.89	1.03	West	4.5 mi West of Saktuina Point
		Mar. 30	Aug. 5	129	16	.12	.14	East	West end East half of Long Island-oceanside
		Mar. 30	Aug. 5	129	9	.06	.08	West	E end of E Island between Pingok Is. & Cottle Is. Lagoon (channel) side
		Mar. 30	Aug. 5	129	9	.06	.08	West	E end of E Island between Pingok Is. & Cottle Is. Lagoon (channel) side
		Mar. 30	Aug. 5	129	24	.18	.21	West	E. end Spy Is. - oceanside
		Mar. 30	Aug. 5	129	15	.11	.13	East	Long Island - oceanside
		Mar. 30	Aug. 4	128	29	.22	.26	East	1.5 mi West of W. Dock near Pt. McIntyre
		Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km South of Cape

DRIFTER SPEED COMPARISON AND DATA - 1980
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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 9	4.5 mi true N of Beechey Point	Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km S of Cape Halkett on beach
BP 10	5.0 mi true N of Beechey Point	Mar. 30	Aug. 5	129	110	.85	.98	West	4 mi West of Saktuina Point
		Mar. 30	Aug. 5	136	122	.89	1.03	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 5	136	122	.89	1.03	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 5	136	122	.89	1.03	West	18 km S of Cape Halkett on beach
BP 11	5.5 mi true N of Beechey Point	Mar. 30	Aug. 19	143	107.5	.75	.87	West	Mouth of Kalikpik River
		Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km S of Cape Halkett on beach

DRIFTER SPEED COMPARISON AND DATA -1980

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 12	6.0 mi true N of Beechey Point	Mar. 30	Aug. 12	136	122	.89	1.03	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 19	143	122	.85	.98	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 17	141	109	.77	.89	West	Mouth of Kalikpik River
		Mar. 30	Aug. 2	126	109	.86	1.00	West	Mouth of Kalikpik River
		Mar. 30	Aug. 4	128	251	1.96	2.26	West	Cooper Island 71°14' 155°40'
		Mar. 30	Jul. 27	151	37	.24	.28	West	East of Thetis Island - oceanside
BP 13	6.5 mi true N of Beechey Point	Mar. 30	Aug. 5	129	97	.75	.87	West	1 mi West of Atigaru
BP 14	7.0 mi true N of Beechey Point	Mar. 30	Aug. 5	129	110	.85	.98	West	S Kogru
		Mar. 30	Aug. 5	132	115	.87	1.00	West	4 mi West of Saktuina Point
		Mar. 30	Aug. 5	129	115	.89	1.03	West	4.5 mi West of Saktuina Point
		Mar. 30	Aug. 17	141	121	.85	.99	West	15 km S of Cape Halkett
		Mar. 30	Sep. 19	174	96	.55	.63	West	44 mi SE of Camp

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 15	7.5 mi true N of Beechey Point	Mar. 30	Aug. 2	126	142	1.12	1.3	West	152°50' 70°55' N shore of Island
		Mar. 30	Aug. 12	136	122	.89	1.03	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 3	127	122	.96	1.11	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 2	126	122	.96	1.12	West	18 km S of Cape Halkett on beach
BP 16	8.0 mi true N of Beechey Point	Mar. 30	Aug. 5	129	115	.89	1.03	West	4.5 mi W of Saktuina Point
		Mar. 30	Aug. 5	129	110	.85	.98	West	1.5 mi W of Saktuina Point
		Mar. 30	Aug. 5	129	109	.84	.97	West	S Kogru Entrance
		Mar. 30	Aug. 5	129	113.5	.87	1.01	West	4 mi W of Saktuina Point
		Mar. 30	Jul. 23	116	113.5	.97	1.13	West	4 mi W of Saktuina Point
		Mar. 30	Aug. 18	142	121	.85	.98	West	15 km S of Cape Halkett
		Mar. 30	Aug. 18	142	121	.85	.98	West	15 km S of Cape Halkett
		Mar. 30	Aug. 2	126	121	.96	1.11	West	15 km S of Cape Halkett
		Mar. 30	Aug. 5	129	251	1.94	2.25	West	Cooper Island

DRIFTER SPEED COMPARISON AND DATA - 1980
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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 17	8.5 mi true N of Beechey Point	Mar. 30	Aug. 4	128	156.5	1.22	1.41	West	Lonely, Alaska, on beach
		Mar. 30	Aug. 12	136	123.5	.9	1.05	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 12	136	123.5	.9	1.05	West	18 km S of Cape Halkett on beach
		Mar.30	Aug. 12	136	123.5	.9	1.05	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 17	141	121.5	.86	.99	West	15 km S of Cape Halkett
		Mar. 30	Aug. 2	126	123.5	.98	1.13	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 2	126	123.5	.98	1.13	West	18 km S of Cape Halkett on beach
		Mar. 30	Aug. 2	126	123.5	.98	1.13	West	18 km S of Cape Halkett on beacg
		Mar. 30	Sep. 4	159	37.5	.23	.27	West	South side Thetis Island near hut
BP 18	9.0 mi true N of Beechey Point	Mar. 30	Aug. 5	129	107	.82	.96	West	N Kogru South of Saktuina Point
		Mar. 30	Aug. 5	129	114	.88	1.02	West	4 mi West of Saktuina Point
		Mar. 30	Aug. 5	129	115	.89	1.03	West	4.5 mi West of Saktuina Point

DRIFTER SPEED COMPARISON AND DATA - 1980
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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
BP 18	9.0 mi true N of Beechey Point	Mar. 30	Aug. 18	142	121.5	.85	.99	West	15 km South of Cape Halkett
		Mar. 30	Aug. 12	136	123.5	.9	1.05	West	18 km South of Cape Halkett on beach
		Mar. 30	Aug. 2	126	123.5	.98	1.13	West	18 km South of Cape Halkett on beach
		Mar. 30	Aug. 2	126	123.5	.98	1.13	West	18 km South of Cape Halkett on beach
		Mar. 30	Sep. 13	168	48.5	.28	.33	East	Lee side of Cross Island
BP 19	24 mi north of Long Is.	Mar. 30	Aug. 12	136	153	1.12	1.3	West	18 km South of Cape Halkett on beach
BP 20	28 mi. north of Long Is.	Mar. 30	Aug. 7	131	69	.52	.6	West	West end of Thetis Is. oceanside

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 1	.5 mi true N of Tigvariak Island	Mar. 31	Aug. 12	135	16	.11	.13	West	Mouth of Kadleroshilik River
		Mar. 31	Aug. 5	128	1.5	.01	.01	West	N shore of Island W of Tigvariak Is.
		Mar. 31	Sep. 6	160	160	1.0	1.15	East	E of Beaufort Lagoon, 141°32' 69°45'
SS 2	1.0 mi true N of Tigvariak Island	Mar. 31	None recovered						
SS 3	1.5 mi true N of Tigvariak Island	Mar. 31	Jul. 14	106	103.5	.97	1.13	West	Beach of Oliktok Pt approx. 70°30' 149°50'
		Mar. 31	Aug. 19	142	185	1.3	1.5	West	Mouth of Kalikpik River
		Mar. 31	Aug. 12	135	205	1.51	1.75	West	18 km S of Cape Halkett on beach
SS 4	2.0 mi true N of Tigvariak Island	Mar. 31	Aug. 4	127	57	.44	.51	West	1.5 mi W of W Dock
		Mar. 31	Aug. 8	131	76	.58	.67	West	1.5 mi S of Beechey Point
SS 5	2.5 mi true N of Tigvariak Island	Mar. 31	Aug. 12	135	204.5	1.51	1.75	West	1.8 km S of Cape Halkett on beach

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 6	3.0 mi true N of Tigvariak Island	Mar. 31	Aug. 5	128	194.5	1.51	1.75	West	4 mi W of Saktuina Point
		Mar. 31	Aug. 5	128	195.5	1.52	1.76	West	4.5 mi W of Saktuina Point
		Mar. 31	Aug. 5	128	190.5	1.48	1.72	West	1 mi W of Saktuina Point
		Mar. 31	Aug. 5	128	192	1.5	1.73	West	N Kogru, S of Saktuina Point
		Mar. 31	Aug. 12	135	206	1.52	1.76	West	18 km S of Cape Halkett on beach
		Mar. 31	Aug. 12	135	206	1.52	1.76	West	18 km S of Cape Halkett on beach

DRIFTER SPEED COMPARISON AND DATA - 1980
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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 7	3.5 mi true N of Tigvariak Island	Mar. 31	Aug. 12	135	206	1.52	1.76	West	18 km S of Cape Halkett on beach
		Mar. 31	Aug. 17	140	204	1.45	1.68	West	15 km S of Cape Halkett on beach
		Mar. 31	Aug. 2	125	206	1.64	1.9	West	18 km S of Cape Halkett on beach
		Mar. 31	Aug. 2	125	206	1.64	1.9	West	18 km S of Cape Halkett on beach
		Mar. 31	Aug. 2	125	206	1.64	1.9	West	18 km S of Cape Halkett on beach
		Mar. 31	Aug. 2	125	206	1.64	1.9	West	18 km S of Cape Halkett on beach
		Mar. 31	Aug. 2	125	206	1.64	1.9	West	18 km S of Cape Halkett on beach
SS 8	4.0 mi true N of Tigvariak Island	Mar. 31	Aug. 12	135	206	1.52	1.76	West	18 km S of Cape Halkett on beach
		Mar. 31	Aug. 12	135	206	1.52	1.76	West	18 km S of Cape Halkett on beach
		Mar. 31	Aug. 12	135	206	1.52	1.76	West	18 km S of Cape Halkett on beach
		Mar. 31	Sep. 18	172	325	1.88	2.18	West	35 mi S of Barrow on beach
		Mar. 31	Aug. 4	127	337	2.65	3.07	West	Cooper Island

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 9	4.5 mi true N of Tigvariak Island	Mar. 31	Aug. 5	128	6.5	0.5	0.5	West	Island N of Tigvariak Is. Oceanside
SS 10	5.0 mi true N of Tigvariak Island	Mar. 31	Aug. 5	128	195	1.52	1.76	West	4.5 mi West of Saktuina Pt.
		Mar. 31	Aug. 8	131	80	.61	.7	West	2 mi East of Kavearak Pt.
		Mar. 31	Jul. 15	107	101	.94	1.09	West	1.5 mi East of Oliktok Pt.
		Mar. 31	Aug. 18	141	203	1.43	1.66	West	15 km South of Cape Halkett
		Mar. 31	Aug. 2	125	205	1.63	1.89	West	18 km South of Cape Halkett on beach
		Mar. 31	Sept.13	167	36.5	.21	.25	West	Lee side of Cross Island
		Mar. 31	Aug. 16	139	336	2.41	2.79	West	Cooper Is. 71° 14' 156° 15'
SS 11	5.5 mi true N of Tigvariak Island	Mar. 31	Aug. 12	135	205	1.51	1.75	West	18 km South of Cape Halkett on beach
		Mar. 31	Aug. 12	135	205	1.51	1.75	West	18 km South of Cape Halkett on beach

DRIFTER SPEED COMPARISON AND DATA - 1980
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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIREC-TION	RECOVERY LOCATION
SS 12	6.0 mi true N of Tigvariak Island	Mar. 31	Aug. 4	127	235	1.85	2.14	West	Lonely, Ak. on beach
		Mar. 31	Aug. 5	128	191	1.49	1.72	West	N. Kogru, West facing entrance
		Mar. 31	Aug. 12	135	206	1.52	1.76	West	18 km south of Cape Halkett on beach
		Mar. 31	Aug. 2	125	206	1.64	1.9	West	18 km south of Cape Halkett on beach
SS 13	6.5 mi true N of Tigvariak Island	Mar. 31	Aug. 10	113	82.5	.62	.71	West	North side, Bodfish Island
		Mar. 31	Aug. 11	134	74.5	.55	.64	West	North side, Cottle Island
		Mar. 31	Aug. 5	128	93	.72	.84	West	Pingok Island, oceanside
		Mar. 31	Aug. 5	128	74	.57	.66	West	Cottle Island Oceanside
		Mar. 31	Aug. 5	128	197	1.53	1.78	West	4 mi West of Saktulna Pt.

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 13 (Continued)		Mar. 31	Aug. 5	128	198	1.54	1.79	West	4.5 mi West of Saktuina Pt.
		Mar. 31	Aug. 5	128	53.5	.41	.48	West	Stump Island - oceanside
		Mar. 31	Aug. 5	128	105.5	.82	.95	West	Spy Island - oceanside
		Mar. 31	Aug. 8	131	81.5	.62	.72	West	East SE of Kavearak Pt.
		Mar. 31	Aug. 12	135	205	1.51	1.75	West	18 km South of Cape Halkett on beach
		Mar. 31	Aug. 2	125	205	1.63	1.89	West	18 km South of Cape Halkett on beach

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 14	7.0 true N of Tigvariak Island	Mar. 31	Aug. 10	133	81	.6	.7	West	North side of Bodfish Island
		Mar. 31	Aug. 5	128	196.5	1.53	1.77	West	4 mi. West of Saktunia Pt.
		Mar. 31	Aug. 5	128	196.5	1.53	1.77	West	4 mi. West of Saktunia Pt.
		Mar. 31	Aug. 5	128	196.5	1.53	1.77	West	4 mi. West of Saktunia Pt.
		Mar. 31	Aug. 5	128	58.5	.45	.52	West	Egg Island - oceanside
		Mar. 31	Aug. 5	128	41	.32	.37	West	West end of Argo Is.- oceanside
		Mar. 31	Aug. 5	128	68	.53	.61	West	West end of Long Is. - oceanside
		Mar. 31	Aug. 5	128	68	.53	.61	West	West end of Long Is. - oceanside
		Mar. 31	Aug. 5	128	68	.53	.61	West	West end of Long Is. - oceanside
		Mar. 31	Aug. 5	128	50	.39	.45	West	East end of Stump Is. - oceans
		Mar. 31	Aug. 8	128	80.5	.61	.71	West	East SE of Kavearak Pt.
		Mar. 31	Aug. 8	128	52.5	.4	.46	West	On beach of Cape

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RELEASE # DRIFTER	RELEASE LOCATION	RELEASE DATE	RECOVERY DATE	DAYS ADRIFT	DISTANCE (KM)	RATE (KM/DAY)	RATE (CM/SEC)	DIRECTION	RECOVERY LOCATION
SS 15	7.5 mi.true N. of Tigvariak Island	Mar. 31	Aug. 3	126	48	.38	.44	West	W. Dock extension - Prudhoe Bay
		Mar. 31	Aug. 5	128	61	.47	.55	West	East end of Long Is. - oceanside
		Mar. 31	Aug. 4	127	53	.41	.48	West	1.5 mi. West of W. Dock in Prudhoe Bay nr. Pt. McIntyre
		Mar. 31	Aug. 12	135	204.5	1.51	1.75	West	18 km South of Cape Halkett on beach
SS 16	8.0 mi true N. of Tigvariak Island	Mar. 31	Aug. 5	128	22.7	.17	.2	East	Mid Mikkelson Bay
			Aug. 9	132	74	.56	.64	West	SE of Beechy Pt
			Sep. 10	164	104	.63	.73	West	Highest crest of Spy Island (deposited during 8/29 storm
			Aug. 17	140	58	.41	.47	East	2.5 km East of Brownlow Pt. on Spit

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SS 17	8.5 mi true N of Tigvariak Island	Mar. 31	Aug. 5	128	194.5	1.51	1.75	West	4 mi West of Saktuina Pt.
		Mar. 31	Aug. 5	128	69	.53	.62	West	West of W. half of Long Island - oceanside
		Mar. 31	Aug. 5	128	57	.44	.51	West	Egg Island Channel Is. oceanside
		Mar. 31	Aug. 5	128	14	.1	.12	East	N. Tigvariak Is. near begining of Spit
		Mar. 31	Aug. 17	140	200	1.42	1.65	West	15 km S of Cape Halkett
		Mar. 31	Aug. 13	136	61	.44	.51	East	Middle oceanside of Spit Island east of Brownlow Point.

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SS 18	9.0 mi true N of Tigvariak Island	Mar. 31	Aug. 5	128	8	.06	.07	East	Stockton Island - oceanside
		Mar. 31	Aug. 5	128	56	.43	.5	West	East end of Stump -Oceanside
		Mar. 31	Aug. 5	128	28	.21	.25	West	Sagvanirktok River delta
		Mar. 31	Aug. 4	127	52	.4	.47	West	1.5 mi West of W. Dock (near Pt. McIntyre)
SS 19	9.5 mi true N of Tigvariak Island	Mar. 31	Aug. 5	128	78	.6	.7	West	E. Island between Cottle Is. and Pingok Is. Lagoonside
		Mar. 31	Aug. 5	128	49.5	.38	.44	West	East end of Stump Is. oceanside
		Mar. 31	Aug. 5	128	68	.53	.61	West	West end W. half of Long Island - oceanside
		Mar. 31	Aug. 5	128	82	.64	.74	West	On East channel of Pingok Is.
		Mar. 31	Aug. 5	128	74.5	.58	.67	West	West end of Cottle Island - oceanside
		Mar. 31	Aug. 5	128	28.5	.22	.25	West	Sagvanirktok R

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SS 19	9.5 mi true N of Tigvariak Island	Mar. 31	Aug. 4	127	51.5	.4	.46	West	1.5 mi West of W. Dock (near Pt. McIntyre)
		Mar. 31	Aug. 10	133	78.5	.59	.68	West	North side of Bodfish Island
		Mar. 31	Aug. 11	134	74.5	.55	.64	West	North side of Cottle Island
		Mar. 31	Aug. 10	133	78.5	.59	.68	West	North side of Bodfish Island
		Mar. 31	Aug. 10	133	78.5	.59	.68	West	North side of Bodfish Island
		Mar. 31	Aug. 6	129	56	.43	.5	East	Oceanside of Spit West of Brownlow Pt.
		Mar. 31	Jul. 30	122	116.5	.95	1.1	West	East of Thetis Island cabin oceanside

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SS 20	10.0 mi true N of Tigvariak Island	Mar. 31	Aug. 5	128	23.5	.18	.21	West	Sagvanirktok River delta
		Mar. 31	Aug. 5	128	15	.11	.13	West	North shore of Island west of Tigvariak Island
		Mar. 31	Aug. 5	128	9	.07	.08	East	West end of Stockton Island oceanside
		Mar. 31	Jul. 19	111	51	.45	.53	West	Pt. McIntyre
		Mar. 31	Aug. 9	132	73.5	.55	.64	West	SE Beechey Pt.
		Mar. 31	Jul. 25	117	115.5	.98	1.14	West	East end of Thetis Island cabin - oceanside
		Mar. 31	Aug. 13	136	62	.45	.52	East	2.5 km East of Brownlow Point

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CG 1	5 mi N of Reindeer Is. in open water	Jul. 7	Aug. 10	25	33	1.31	1.52	West	North side Bodfish Island
		Jul. 7	Aug. 10	25	33	1.31	1.52	West	North side Bodfish Island
		Jul. 7	Aug. 10	25	33	1.31	1.52	West	North side Bodfish Island
		Jul. 7	Aug. 11	26	31	1.19	1.37	West	North side Cottle Island
		Jul. 7	Aug. 5	20	38	1.89	2.19	West	East end Pingok Is., oceanside
		Jul. 7	Aug. 5	20	47.5	2.37	2.74	West	East end Leavitt Island
		Jul. 7	Aug. 5	20	31	1.54	1.79	West	Cottle Island - oceanside
		Jul. 7	Aug. 5	20	19	.94	1.09	West	East end West half Long Island, oceanside
		Jul. 7	Aug. 5	20	38	1.89	2.19	West	East end Pingok Is. - oceanside
		Jul. 7	Aug. 5	20	33.5	1.67	1.93	West	Cottle Island -

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CG 1	5 mi N of Reindeer Is, in open water	Jul 7	Aug. 4	19	21	1.1	1.27	West	1.5 mi West of West dock
		Jul. 7	Aug. 5	20	120.5	6.02	6.97	West	Mouth of Salt Lake
		Jul. 7	Aug. 17	32	152	4.75	5.49	West	15 km South of Cape Halkett
		Jul. 7	Aug. 2	17	154	9.05	10.48	West	18 km South of Cape Halkett on beach
		Jul. 7	Aug. 25	40	18.5	.46	.53	West	West Dock - Prudhoe Bay
		Jul. 7	Aug. 29	14	66	4.71	5.45	West	East end of Thetis Island - oceanside
		Jul. 7	Aug. 29	14	66	4.71	5.45	West	East end of Thetis Island - oceanside
		Jul. 7	Aug. 9	24	66.5	2.77	3.2	West	Thetis Island
		Jul. 7	Aug. 10	25	33	1.31	1.52	West	Bodfish Island - northside

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CG 1	5 mi N of Reindeer Is. in open water	Jul. 7	Aug. 10	25	33	1.31	1.52	West	Bodfish Island - northside
		Jul. 7	Aug. 10	25	33	1.31	1.52	West	Bodfish Island - northside
		Jul. 7	Aug. 11	26	31	1.19	1.37	West	Cottle Island - northside
CG 2	10 mi N of Reindeer Is. in open water	Jul. 7	Aug. 5	20	32	1.59	1.85	West	Cottle Island - oceanside
		Jul. 7	Aug. 5	20	36.5	1.82	2.11	West	West end Bertoncini Is. oceanside
		Jul. 7	Aug. 5	20	23.5	1.17	1.35	West	East end West half of Long Is. - oceanside
		Jul. 7	Aug. 5	20	23.5	1.17	1.35	West	East end West half of Long Is. - oceanside
		Jul. 7	Aug. 5	20	39	1.94	2.25	West	End end of Pingtok Is. - oceanside
		Jul. 7	Aug. 5	20	30.5	1.52	1.76	West	Cottle Island
		Jul. 7	Aug. 5	20	38	1.89	2.19	East	Sagvanirktok River

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CG 2	10 mi N of Reindeer Is. in open water	Jul. 7	Jul. 20	5	26.5	5.29	6.13	West	Half up East side of West Dock
		Jul. 7	Aug. 4	19	28.5	1.5	1.73	West	1.5 mi West of West Dock
		Jul. 7	Aug. 4	19	28.5	1.5	1.73	West	1.5 mi West of West Dock
		Jul. 7	Aug. 1	16	152	9.5	10.99	West	18 km South of Cape Halkett on beach
		Jul. 7	Jul. 27	12	65	5.41	6.26	West	East end Thetis, oceanside
		Jul. 7	Sep. 10	56	58	1.03	1.19	West	Highest crest of Spy Is. (deposited during 8/29 storm)

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CG 3	15 mi N of Reindeer Is. in open water	Jul. 7	Aug. 30	55	207	3.76	4.35	East	Shoreline, Komokuk Beach, Yukon (Dewline Station)
CG 4	20 mi N of Reindeer Is. in open water	Jul. 7	Aug. 28	43	56	1.3	1.5	West	Beach on lagoon side of Spit at West end of Pingok Island
CG 5	25 mi N of Reindeer Is. in open water	Jul. 7	Aug. 10	25	178.5	7.13	8.26	West	Beach at Camp Lonely, 153° 10' West 70° 55' North


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