



Rhode Island Airport Corporation

January 13, 2022

Mr. Aaron Mello
Rhode Island Department of Environmental Management
Office of Water Resources
RIPDES Program
235 Promenade Street
Providence, Rhode Island 02908

**Subject: 4th Quarter 2021 Report in Lieu of Sampling
T.F. Green Airport
Permit No. RI0021598**

Dear Mr. Mello:

The RIPDES Permit No. RI0021598 ("Permit"), issued to the Rhode Island Airport Corporation (RIAC), requires that samples meeting certain criteria must be collected quarterly. RIAC submits this report in accordance with Part I.(A)(6)(i) of the Permit in lieu of 4th Quarter 2020 sampling as the result of a "lack of a representative storm event during the entire quarterly monitoring period."

RIPDES Permit - Storm Event Criteria for Sampling

In accordance with Part I.(A)(6)(g) of the Permit, samples must be collected from a discharge resulting from a representative storm event. A representative storm event is "precipitation that: (a) occurs at least seventy-two (72) hours from the previous measurable storm event", and (b), "is greater than or equal to 0.1 inches water equivalent per twenty-four (24) hours in magnitude". In addition, Parts I.A.1.(footnote 6) and I.A.2.(footnote 5) of the Permit require Q4 sampling to be conducted "while aircraft deicing is occurring". Parts I.A.1.(footnote 2) and I.A.2.(footnote 1) further define sampling event precipitation to be: "During snow events, the start of precipitation shall be assumed to occur when the total accumulation of snowfall is 0.5 inches in depth. During other freezing (i.e., sleet, freezing rain) or non-freezing (i.e., rain) precipitation events, the start of precipitation shall be assumed to occur when the total accumulation is 0.1 inches in depth."

Prior to precipitation events (where deicer is likely to be applied), weather forecasts (National Weather Service, Weatherunderground, and local media forecasts) are used to assess whether the event will present a potential sampling opportunity. As precipitation begins, weather conditions and forecasts are continually monitored to determine if the minimum precipitation requirements for sampling will or are likely to be met (>0.1" for rain and freezing rain events, >0.5" for snow events). Sampling commences once the minimum depths have been met and deicing activities have occurred. In addition, RIAC uses data derived from National Climatic Data Center (NCDC) Quality Controlled Local Climatological Data from the weather station at Rhode Island T. F. Green International Airport to determine if an event met all criteria for a sampling event.

4th Quarter 2021 Precipitation and Deicing Events

During the 4th Quarter of 2021, there were 34 days of measurable precipitation. Of these, 21 events resulted in precipitation depths greater than 0.1" (water equivalent). Four (4) days included measurable snowfall, only one of these had snowfall depths greater than 0.5". During this Quarter there were five (5) days that had measurable precipitation on which tenants reported aircraft deicing. Below is a description of why these events did not qualify and were not sampled.

In October, there were no dates where aircraft deicing occurred during measurable precipitation.

In November there was no measurable frozen precipitation. There were two dates where aircraft deicing occurred on days with measurable precipitation. On November 13, 2021 (0.36") three (3) aircraft were deiced, and on November 14, 2021 (0.02") six (6) aircraft were deiced, however, 1.46" of precipitation fell on November 12, 2021 yielding less than 72 hours antecedent dry conditions for both dates.

In December there were four (4) dates where aircraft were deiced on days with measurable precipitation. On December 18, 2021 four (4) aircraft were deiced between 11:00 AM and 2:00 PM. Precipitation began at approximately 9:00 AM. Measurable precipitation (<0.1") did not occur until after 8:00 PM, more than six hours after commencement of measurable precipitation and aircraft deicing. There was no measurable frozen precipitation. Aircraft were deiced December 24 through December 26. On December 24 approximately 0.13" of precipitation fell (2.2" as snow). This event was preceded by 0.12" on December 22, 2021 yielding less than 72 hours antecedent dry conditions.

A summary of daily deicing fluid application, collection, and weather summaries for the 4th Quarter of 2021 is attached.

Summary

The weather and deicing conditions between October 1st and December 31st, 2021 did not yield a representative storm event while aircraft deicing occurred. RIAC did not collect samples during this period, and submits this report in lieu of monitoring in accordance with Part I.(A)(6)(i) of the Permit.

If you have any questions, please do not hesitate to call me at (401) 691-2490.

Sincerely,


Jay Brolin
Manager Environmental Program

Attachments:

Daily Deicing Fluid Application and Collection October, November, December 2021

PVD October 2021 Monthly Deicing Usage and Collection

Date	Applied				Estimated Amount Recovered			Weather					
	Type I	Pure Type I	Type IV	as PG Type I Type IV	Collected	Diverted Terminal	Diverted Cargo	Actuals (°)	Precip Amounts	Snow	Ground		
10/1/2021								1	69	47	0	0	0
10/2/2021								2	74	47	0	0	0
10/3/2021								3	74	55	0.04	0	0
10/4/2021								4	63	56	1.5	0	0
10/5/2021								5	62	54	0.13	0	0
10/6/2021								6	74	52	0	0	0
10/7/2021								7	75	51	0	0	0
10/8/2021								8	75	54	0	0	0
10/9/2021								9	65	56	0	0	0
10/10/2021								10	65	56	T	0	0
10/11/2021								11	75	58	0	0	0
10/12/2021								12	73	53	0	0	0
10/13/2021								13	75	53	0	0	0
10/14/2021								14	78	58	0	0	0
10/15/2021								15	72	57	0	0	0
10/16/2021								16	77	61	0.16	0	0
10/17/2021								17	66	51	0.18	0	0
10/18/2021								18	63	45	0	0	0
10/19/2021								19	65	43	0	0	0
10/20/2021								20	75	53	0	0	0
10/21/2021								21	76	55	0	0	0
10/22/2021								22	74	55	T	0	0
10/23/2021								23	64	51	T	0	0
10/24/2021	100	50	0	44.00	0	44.00	Y	24	60	41	0.01	0	0
10/25/2021								25	59	51	0.58	0	0
10/26/2021								26	65	51	1.04	0	0
10/27/2021								27	52	49	0.18	0	0
10/28/2021								28	52	47	T	0	0
10/29/2021								29	55	42	0	0	0
10/30/2021								30	64	50	1.4	0	0
10/31/2021								31	67	52	0.34	0	0

MONTHLY TOTALS 100 50 0 44.00 0 44.00 0 0 0 0

5.56 0

PVD November 2021 Monthly Deicing Usage and Collection

Date	Applied						Estimated Amount Recovered			Weather							
	Type I	Pure Type I	Type IV	Type I	as PG Type IV	Total	Collected	Diverted Terminal	Diverted Cargo	Date	Actuals (°)	High	Low	Precip Amounts	Precip	Snow	Ground
11/1/2021																	
11/2/2021	20	10	0	8.80	0	8.80	Y	0	0	0	1	62	40	0	0	0	0
11/3/2021	25	13	0	11.00	0	11.00	Y	0	0	0	2	57	38	T	0	0	0
11/4/2021	288	144	0	126.72	0	126.72	Y	0	0	0	3	54	35	0	0	0	0
11/5/2021	104	52	0	45.89	0	45.89	280	0	0	0	4	53	30	0	0	0	0
11/6/2021	258	129	0	113.52	0	113.52	Y	0	0	0	5	53	31	0	0	0	0
11/7/2021	398	199	0	175.12	0	175.12	Y	0	0	0	6	53	29	0	0	0	0
11/8/2021	155	78	0	68.20	0	68.20	451	0	0	0	7	58	28	0	0	0	0
11/9/2021								0	0	0	8	64	37	0	0	0	0
11/10/2021								5000	0	0	9	71	36	0	0	0	0
11/11/2021	70	35	0	30.80	0	30.80	302	0	0	0	10	65	42	0	0	0	0
11/12/2021								0	0	0	11	58	33	0	0	0	0
11/13/2021	60	30	0	26.40	0	26.40		0	0	0	12	64	49	1.46	0	0	0
11/14/2021	111	55	0	48.75	0	48.75	Y	0	0	0	13	62	38	0.36	0	0	0
11/15/2021								5000	0	0	14	53	36	0.02	0	0	0
11/16/2021								0	0	0	15	52	38	0.03	0	0	0
11/17/2021	294	147	0	129.36	0	129.36	600	0	0	0	16	50	35	0	0	0	0
11/18/2021								1000	0	0	17	56	29	0	0	0	0
11/19/2021								0	0	0	18	69	52	T	0	0	0
11/20/2021	165	83	0	72.60	0	72.60	Y	3000	6000	0	19	52	36	0.16	0	0	0
11/21/2021	100	50	0	44.00	0	44.00	Y	0	0	0	20	46	29	0	0	0	0
11/22/2021								19000	0	0	21	56	33	T	0	0	0
11/23/2021	20	10	0	8.80	0	8.80	Y	0	0	0	22	59	37	0.13	0	0	0
11/24/2021								0	0	0	23	42	29	0	0	0	0
11/25/2021	91	46	0	40.04	0	40.04	334	0	0	0	24	44	27	0	0	0	0
11/26/2021								0	12000	0	25	58	32	0	0	0	0
11/27/2021	25	13	0	11.00	0	11.00	Y	0	0	0	26	48	35	0.14	T	0	0
11/28/2021	245	123	14	107.80	7	114.80	200	0	0	0	27	42	29	0	0	0	0
11/29/2021	255	128	0	112.20	0	112.20	585	0	0	0	28	37	29	T	T	0	0
11/30/2021	160	80	0	70.40	0	70.40	Y	0	0	0	29	44	27	0	0	0	0
								0	0	0	30	41	23	0	0	0	0

MONTHLY TOTALS 2844 1422 14 1251.40 7 1258.40 2752 28000 23000 2.3 0

PVD December 2021 Monthly Deicing Usage and Collection

Date	Applied					Estimated Amount Recovered			Weather						
	Type I	Pure Type I	Type IV	Type I as PG	Type IV as PG	Collected	Divered Terminal	Divered Cargo	Date	Actuals (°)	High	Low	Precip. Amounts	Snow	Ground
					Total	Y	0	0							
12/1/2021	247	124	0	108.68	108.68	Y	0	0	0	1	50	33	0	0	0
12/2/2021	13	7	0	5.72	5.72	Y	0	0	0	2	62	34	0	0	0
12/3/2021							0	0	0	3	46	27	T	0	0
12/4/2021							0	0	0	4	43	27	0	0	0
12/5/2021	152	76	0	66.88	66.88	Y	0	0	0	5	48	30	0	0	0
12/6/2021							0	0	0	6	62	42	0.37	0	0
12/7/2021							0	0	0	7	45	33	0	0	0
12/8/2021	103	52	25	45.32	57.82		0	0	0	8	38	31	0.01	0.1	0
12/9/2021	1085	543	0	477.40	477.40	700	0	5000	6000	9	39	27	T	0	0
12/10/2021	50	25	0	22.00	22.00	Y	1000	0	0	10	48	30	0	0	0
12/11/2021							0	0	0	11	63	35	0.17	0	0
12/12/2021							0	0	0	12	61	34	0.07	0	0
12/13/2021							0	0	0	13	53	37	0	0	0
12/14/2021							0	0	0	14	54	37	0	0	0
12/15/2021	125	63	0	55.00	55.00	Y	0	0	0	15	51	27	0.02	0	0
12/16/2021							0	0	0	16	65	51	0.02	0	0
12/17/2021							0	0	0	17	63	42	0	0	0
12/18/2021	105	52	90.89	46.17	91.62		0	0	0	18	44	37	0.14	T	0
12/19/2021	25	13	0	11.00	11.00		0	0	0	19	41	24	0.08	0	0
12/20/2021	258	129	0	113.52	113.52	Y	0	0	0	20	34	19	0	0	0
12/21/2021	175	88	0	77.00	77.00	Y	0	0	0	21	45	27	0	0	0
12/22/2021							0	3000	0	22	47	32	0.12	0	0
12/23/2021							108000	15000	0	23	34	26	0	0	0
12/24/2021	3606	1803	770	1586.64	385	1971.64	25000	6000	0	24	29	23	0.13	2.2	1
12/25/2021	802	401	270	352.88	135	487.88	0	0	0	25	35	28	0.23	0	2
12/26/2021	100	50	0	44.00	0	44.00	Y	6000	0	26	44	34	0.16	0	0
12/27/2021	120	60	0	52.80	0	52.80	Y	82000	3000	27	37	30	T	T	0
12/28/2021	750	375	10	330.00	5	335.00	0	0	0	28	50	33	0.08	0.2	0
12/29/2021							0	0	0	29	44	37	0.02	0	0
12/30/2021	30	15	0	13.20	0	13.20	0	0	0	30	42	39	0.03	0	0
12/31/2021							0	0	0	31	47	41	0.07	0	0

MONTHLY TOTALS

7746 3873 1165.89 3408.21 583 3991.16 700 218000 44000 1.72 2.6