

1 Q. Please provide a report of all test results of fuel oil in 2014 and a copy of the legal
2 requirement the supplier must abide by for testing the fuel being delivered in 2015.

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5 A. Below is the summary of all fuel testing for parcels delivered in 2014. The original
6 contract has not been revised for shipments to be delivered in 2015. See also
7 Hydro's response to DD-NLH-010.

Island Interconnected System Supply Issues and Power Outages

Load Port Fuel Analysis	ASTM Method	Contract Spec.	Baltic Sea I	Northern Ocean	Minerva Virgo	Baltic Sea I	Baltic Sea I	Krisjanis Valdemars	Lobelia	Marinoula	Northern Ocean	Northern Ocean
			9-Jan-14	17-Jan-14	28-Jan-14	10-Feb-14	12-Mar-14	4-Apr-14	1-May-14	30-Jun-14	18-Sep-14	22-Oct-14
Gravity API at 60 F (Min)	D-1298/D4052	5	16	15.4	7	7.1	6.1	7.4	9.1	10.1	11.3	11.6
Flash Point, Degrees C (Min)	D-93	66	>110	85	92	92	93	>110	>110	>110	>110	>110
Pour Point, Degrees C (Max)	D-97	15	3	12	-30	-12	-9	-18	-15	-12	-12	-9
Sodium, mg/kg (Max)	D-5863	50	22	14	34	17	34	18	27	23	30	18
Kinematic Viscosity @ 50°C, mm ² /s, (cSt) (Max)	D-445	700	307.1	462.3	38.29	115.9	136.9	79.89	147.1	176.4	122.1	108.6
Sulfur % by Weight (Max)	D-4294	0.7	0.69	0.686	0.581	0.635	0.679	0.675	0.654	0.673	0.62	0.67
Vanadium, ppm (Max)	D-5863	200	41	30	6	8	7	7	8	11	9	13
B.T.U.'s Per US Gal (Min)	D-240/D-4868	150,000	148609	149485	147531	150112		148624	148002	145715	146010	149038
Ash by Weight, % (Max)	D-482	0.1	0.094	0.07	0.0375	0.03	0.08	0.0809	0.0873	0.068	0.083	0.078
Sediment by Weight, % (Max)	D-473	0.2	0.05	0.06	0.1	0.08	0.16	0.17	0.18	0.17	0.07	0.16
Water by Volume, % (Max)	D-95	0.5	0.6	0.3	0.6	0.4	0.6	0.5	0.3	0.4	0.7	0.2
CLEANLINESS	D-4740	1	1	1	1	1	1	1	1	1	1	1
Asphaltenes by Weight, % (Max)	D-6560 / IP-143	8	3.6	1.4	1.4	3	4.2	2.91	4.6	2.4	1.22	2.4
Hydrogen Sulphide mg/kg. (Max)	IP-570	2	1.02	1.05	1	<5*	1	1	1	1		<1
Aluminum, mg/kg	D-5863		40	33	39	55	40	56	63	23	25	23
Silicon, mg/kg	D-5863		33	24	43	55	54	66	8	38	35	24
*Tested <5 ppm in the vapour space by D 5705 at load port												