FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

7 MAR '97

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU JFK/ SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DIS-CHARGE (YES/ NO)	STREAM-ING CUR-RENT (NANO-AMPS)	HUMID-ITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAK-AGE (ML)
IV.b. WIGGINS 1" COUPLING FLUORO CARBON "O" RING - 1x10" - .088 - .094	13	15	1	.07	D	JFK	1.2x10^11 0.131								
	14	25	1	.07	D	JFK									
	15	42	1	.07	D	JFK									
	16	15	8	.07	D	JFK									
	17	25	8	.07	D	JFK									
	18	42	8	.07	D	JFK									
	19	15	TBD	.07	D	JFK									
	20	25	TBD	.07	D	JFK									
	21	42	8 TBD	.07	D	JFK			14	NO	-11	1.4/68.8	97		
	22	15	TBD	.07	D	JFK									
	23	25	TBD	.07	D	JFK									
	24	42	TBD	.07	D	JFK									

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

ROOM TEMP. °F 68.9

ROOM RH % 13.0

FUEL JFK (NEW YORK KENNEDY) MIL SPEC VALUE

LOW CU (0 - 10 PS/M)
HIGH CU (150 - 600 PS/M)

H_xO CONTENT

START FUEL CU 9/10 PS/M

END FUEL CU PS/M

TIME START 3:24:49 START COMP. 3:30:46

SHEET # 2

UDRI132.DOC

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX 5 Mar 97

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU NYK/SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (M-OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DISCHARGE (YES/NO)	STREAMING CURRENT (NANO-AMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)
IV.b WIGGINS COUPLING T7/T8 M4 E4 C-10.46 R-1.1E7	1	15	1.75	~~.030~~ .040	D	NYK									
	2	25	1.75	~~.030~~ .040	D	NYK									
	3	42	1.75	~~.030~~ .040	D	NYK	10.78 R1.1E7	10.883 R1.2E7	0	No	.14	1.4/70	84.6	120	1310
	4	15	8	.030	D	NYK									
	5	25	8	.030	D	NYK									
	6	42	8	.030	D	NYK									
	7	15	TBD	.030	D	NYK									
	8	25	TBD	.030	D	NYK									
	9	42	TBD	.030	D	NYK									
	10	15	TBD	.030	D	NYK									
	11	25	TBD	.030	D	NYK									
	12	42	TBD	.030	D	NYK									

14426
15033

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

ROOM - 33.0
TEMP - 70°F

START FUEL CU 10 / 69°F PS/M OR 11 AT °72

END FUEL CU _____ PS/M

FUEL NYK (NEW YORK KENNEDY) MIL SPEC VALUE

LOW CU (0 - 10 PS/M)
HIGH CU (150 - 600 PS/M)

DATE: 5 Mar '97
LEL: .2
O2: 5.7

SHEET # 1

UDRI132.DOC

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

5 MAR. '97

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES) Spray Rugged (Hole)	HUMIDITY D = DRY W - WET	FUEL CU JFK/SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DISCHARGE (YES/NO)	STREAMING CURRENT (NANOAMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)	
~~MF~~	1	15	1.75	.040	D	JFK	2.606	2.99								
IV.a Maggans Corp	2	25	1.75	.040	D	JFK	1E8	1E8	0	No	4	1.1/72	81.3	120	1000	1128
M6	3	42	1.75	.040	D	JFK			0	No	.15/16	1.1/72	83.1	120	1310	1134/3
F6	4	15	8	.040	D	JFK										1144
T12	5	25	8	.040	D	JFK										1494
T11	6	42	8	.040	D	JFK										
1×10^8	7	15	TBD	.040	D	JFK										
	8	25	TBD	.040	D	JFK										
	9	42	TBD	.040	D	JFK										
	10	15	TBD	.040	D	JFK										
	11	25	TBD	.040	D	JFK										
	12	42	TBD	.040	D	JFK										

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

ROOM TEMP. °F 66

ROOM RH % 31.5

DATE : 5 MAR, 97

H_2O CONTENT _____

START FUEL CU 10 / 69°F PS/M OR 11 at 72°F

END FUEL CU _____ PS/M

FUEL JFK (NEW YORK KENNEDY) MIL SPEC VALUE LOW CU (0 - 10 PS/M) HIGH CU (150 - 600 PS/M)

LEL : 1.2 0-7.4

SHEET # 1

UDRI132.DOC

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU JFK/ SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DIS-CHARGE (YES/NO)	STREAMING CURRENT (NANO-AMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)
[illegible]	1	15	1.75	[illegible] .056	D	JFK	4473	.52							
IV C,	2	25	1.75	[illegible] .056	D	JFK	2.4E9	7.0E8							
WIGGINS COUPLING	3	42	1.75	[illegible] .056	D	JFK			1	NO	16	0/67	83.0	120/120	3740
T 7/8	4	15	8	.040	D	JFK									3735
M +	5	25	8	.040	D	JFK									
F +	6	42	8	.040	D	JFK									
C = N/A	7	15	TBD	.040	D	JFK									
R = 1.5E9	8	25	TBD	.040	D	JFK									
TAPE Elect. ON TO FERREL OF coupling	9	42	TBD	.040	D	JFK									
	10	15	TBD	.040	D	JFK									
	11	25	TBD	.040	D	JFK									
	12	42	TBD	.040	D	JFK									

31 ml/hr

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

ROOM TEMP. °F 71.8

ROOM RH % 32

DATE: 5 MARCH '97

H_2O CONTENT 80 ± 10 ppm Carl Fisher

ISOLATION Tube Distance

START FUEL CU 17 At 60°F PS/M

END FUEL CU 17 At 60°F PS/M

FUEL JFK (NEW YORK KENNEDY) MIL SPEC VALUE

LOW CU (0 - 10 PS/M)
HIGH CU (150 - 600 PS/M)

SHEET # 1

UDRI132.DOC

D. KALT 6 MAR 71

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU JFK/SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DISCHARGE (YES/NO)	STREAMING CURRENT (NANO-AMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)
I.	1	15	2	.040	D	JFK	C. .091 R=>1x10^12		229	NO	.52	0/70.6	92.7	120	720
DG26	2	25	2	.040	D	JFK		C. 0910 R=>1E12	212	NO	.31	0/71.5	75.5	120	1000
UMPCO	3	42	2	.040	D	JFK			280	NO	.27	0/69	85.7	120	1310
MS21919	4	15	8	.040	D	JFK									
TEFLON	5	25	8	.040	D	JFK									
LINER	6	42	8	.040	D	JFK									
TEFLON LINER is pulled up. Aluminum Foil	7	15	2 ~~TBD~~	~~.040~~ CRACK	D	JFK	C=.0912 R=>E12		351	NO (13 MIN)	.5	0/61	90.9		
	8	25	2 ~~TBD~~	~~.040~~ CRACK	D	JFK									
	9	42	2 ~~TBD~~	~~.040~~ CRACK	D	JFK			522	No	.41	0/69	92.4		
	10	15	5 TBD	~~.040~~ CRACK	D	JFK									
	11	25	5 TBD	~~.040~~ CRACK	D	JFK									
	12	42	5 TBD	~~.040~~ CRACK	D	JFK			544	5½	.40	0/69			
	12	42	5												

57 TEST (9) Tim 20131

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 60 - 70 % TO BE MEASURED/ RECORDED

ROOM TEMP. °F 69 — 1 thru 3

ROOM RH % 8/71

LEL 0/0.7

FUEL JFK (NEW YORK KENNEDY) MIL SPEC VALUE 1%/5 LEL

LOW CU (0 - 10 PS/M) HIGH CU (150 - 600 PS/M)

14% Rain/-5 Run 7-9

H_xO CONTENT

START FUEL CU 9/ /70 °F PS/M 72°F

END FUEL CU PS/M

25psi 212 - 701 — 5 minutes Bleed off

40psi 280 - 293 — 5 minutes Bleed off

15psi 230 - 214 — 5 " " "

SHEET # 1

UDRI131.DOC

*12 ABORTED RUN (RUN OUT OF FUEL)

TIME

1037 - 1037 [illegible]

1037 12 - 11103

13724 - 15111

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX 7 Mar. '97

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU JFK/ SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DISCHARGE (YES/NO)	STREAMING CURRENT (NANOAMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)
I. DG26 UMPCO MS21919 TEFLON LINER	13	15	1	.07	D	JFK	.0913	.0908							
	14	25	1	.07	D	JFK	>10^12	>10^12							
	15	42	1	.07	D	JFK									
	16	15	8	.07	D	JFK									
	17	25	8	.07	D	JFK									
	18	42	8	.07	D	JFK									
	19	15	~~TBD~~ 5"	.07	D	JFK									
	20	25	~~TBD~~ 5"	.07	D	JFK									
	21	42	~~TBD~~ 5"	.07	D	JFK			575	NO	11	0/70	105/108		
	22	15	TBD	.07	D	JFK									
	23	25	TBD	.07	D	JFK									
	24	42	TBD 8"	.07	D	JFK			658	NO	13/	0/70	107/105		

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

ROOM TEMP. °F 63°F

ROOM RH % 13%

2% 0~/

FUEL JFK (NEW YORK KENNEDY) MIL SPEC VALUE

LOW CU (0 - 10 PS/M)
HIGH CU (150 - 600 PS/M)

H_xO CONTENT

START FUEL CU 10/9psm/86°F PS/M OR 7.5 AT 72°F

END FUEL CU _____ PS/M

(21) TIME: START 10:24:30 END 10:41:24 (17 min)

SHEET # 2

(24) Time: START - 10:59:12 END T. _____ (60/13%) (15 min)

UDRI131.DOC

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

EST ON- GUR- TION /. / TR. - S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMID-ITY D = DRY W - WET	FUEL CU JFK/ SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DIS-CHARGE (YES/ NO)	STREAM-ING CUR-RENT (NANO-AMPS)	HUMID-ITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAK-AGE (ML)
I.	13	15	1	.07	D	JFK									
326	14	25	1	.07	D	JFK									
PCO	15	42	1	.07	D	JFK									
21919	16	15	8	.07	D	JFK									
LON	17	25	8	.07	D	JFK									
NER	18	42	8	.07	D	JFK									
(Ath) Jordan	19	15	TBD	.07	D	JFK									
	20	25	TBD	.07	D	JFK									
	21	42	TBD 6+	.07	D	JFK			344	NO	N/A	0/61	65.4		
	22	15	TBD	.07	D	JFK									
	23	25	TBD	.07	D	JFK									
	24	42	TBD 6+	.07	D	JFK			512	NO	2	0/63	64.4 / 61.5		
	12	42	6+	CRACK	D	JFK			168	NO	N/A	0/65	64.7		

DITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

A TEMP. °F 57
A RH % 60.2

Time 4:22:07
4:26:44

Test Run 21.

Room 58°F
Room 13.0%RH
Time 6:20:22
- 6:36:20

H_2O CONTENT _____

START FUEL CU 5 At 64 PS/M

END FUEL CU _____ PS/M

Room Temp 56
" RH% 15.5
Time 7:15:10
7:32:05

JFK (NEW YORK KENNEDY) MIL SPEC VALUE

LOW CU (0 - 10 PS/M)
HIGH CU (150 - 600 PS/M)

SHEET # 2

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

5 Mar 97

P. 3/9

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU NYK/SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (M-OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DISCHARGE (YES/NO)	STREAMING CURRENT (NANOAMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)
* IV.b WIGGINS COUPLING T7/T8 M4 E4 C-10.46 R-1.1E7	1	15	1.75	~~.030~~ .040	D	NYK									
	2	25	1.75	~~.030~~ .040	D	NYK									
	3	42	1.75	~~.030~~ .040	D	NYK	10.38 R1.1E7	10.883 R1.2E7	0	No	.14	1.4/70	84.6	120	1310
	4	15	8	.030	D	NYK									
	5	25	8	.030	D	NYK									
	6	42	8	.030	D	NYK									
	7	15	TBD	.030	D	NYK									
	8	25	TBD	.030	D	NYK									
	9	42	TBD	.030	D	NYK									
	10	15	TBD	.030	D	NYK									
	11	25	TBD	.030	D	NYK									
	12	42	TBD	.030	D	NYK									

14426
15033

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

Room - 33.0
Temp - 70°F

START FUEL CU 10 / 69°F PS/M OR 11 AT 72

END FUEL CU _____ PS/M

FUEL NYK (NEW YORK KENNEDY) LOW CU (0 - 10 PS/M)
MIL SPEC VALUE HIGH CU (150 - 600 PS/M)

DATE: 5 Mar 97
LEL: 2
O2: 5.7

SHEET # 1

UDRI132.DOC

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

P. 4/9

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU NYK/ SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (M-OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DISCHARGE (YES/NO)	STREAMING CURRENT (NANO-AMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML) 31033 3
~~[illegible]~~	1	15	1	.030	D	NYK	1.4810 .0734								
DG26	2	25	1	.030	D	NYK									
UMPCO	3	42	1.75	~~.030~~ .040	D	NYK			9	No	.17	0/	84.2	120	1310
MS21919	4	15	~~8~~ 5	~~.030~~ .040	D	NYK									
~~TEFLON~~	5	25	~~8~~ 5	.030 .040	D	NYK									
~~LINER~~	6	42	~~8~~ 5	.030 .040	D	NYK									
White	7	15	TBD	.030	D	NYK									
Rubber	8	25	TBD	.030	D	NYK									
Liner	9	42	TBD	.030	D	NYK									
WH29	10	15	TBD	.030	D	NYK									
	11	25	TBD	.030	D	NYK									
	12	42	TBD	.030	D	NYK									

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

Room-RH- 28. Cab RH. 0
Temp-°F- 74.9 Cab. 74.9

FUEL NYK (NEW YORK KENNEDY) LOW CU (0 - 10 PS/M)
MIL SPEC VALUE HIGH CU (150 - 600 PS/M)

Water 80 ppm CARL FISHER

START FUEL CU 10 / 69°F PS/M OR 11 cu at 72°F

END FUEL CU _____ PS/M

DATE 5 Mar. 97
O^2 - 0
LEL - [illegible]

SHEET # 1

UDRI131.DOC

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

P. 5/9

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU JFK/SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DISCHARGE (YES/NO)	STREAMING CURRENT (NANO-AMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)
~~[illegible]~~	1	15	1.75	~~[illegible]~~ .056	D	JFK	.4473	.52							
IV C,	2	25	1.75	~~[illegible]~~ .056	D	JFK	2.4E9	7.0E8							
WIGGINS Coupling	3	42	1.75	~~[illegible]~~ .056	D	JFK			1	NO	16	0/67	83.0	120/120	3740 31 ml/hr
T 7/8	4	15	8	.040	D	JFK									3735
M 4	5	25	8	.040	D	JFK									
F 4	6	42	8	.040	D	JFK									
C = N/A	7	15	TBD	.040	D	JFK									
R = 1.5E9	8	25	TBD	.040	D	JFK									
TAPE Elect.	9	42	TBD	.040	D	JFK									
ON TO	10	15	TBD	.040	D	JFK									
FERREL	11	25	TBD	.040	D	JFK									
OF coupling	12	42	TBD	.040	D	JFK									

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

ROOM TEMP. °F 71.8

ROOM RH % 32

DATE: 5 MARCH '97

H_2O CONTENT 80± 10 PPM Carl Fisher Isolated Tube Distance

START FUEL CU 17 At 68°F PS/M

END FUEL CU 17 At 68°F PS/M

FUEL JFK (NEW YORK KENNEDY) MIL SPEC VALUE LOW CU (0 - 10 PS/M) HIGH CU (150 - 600 PS/M)

SHEET # 1

UDRI132.DOC

D. KALT 6 MAR '97

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

P. 6/9

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU JFK/SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DISCHARGE (YES/NO)	STREAMING CURRENT (NANO-AMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)
I.	1	15	2	.040	D	JFK	C-.091 R=>1x10^12		229	NO	-.52	0/70.6	92.7	120	720
DG26	2	25	2	.040	D	JFK		C.0910 R=>1E12	212	NO	-.31	0/71.5	75.5	120	1000
UMPCO	3	42	2	.040	D	JFK			280	NO	-.27	0/69	85.7	120	1310
MS21919	4	15	8	.040	D	JFK									
TEFLON	5	25	8	.040	D	JFK									
LINER	6	42	8	.040	D	JFK									
TEFLON	7	15	2 TBD	CRACK	D	JFK	C=.0912 R=>E12		351	NO (13 MIN)	.5	0/61	90.9		
LINER	8	25	2 TBD	CRACK	D	JFK									
is pulled	9	42	2 TBD	CRACK	D	JFK			522	No	.41	0/69	93.4		
up.	10	15	5 TBD	CRACK	D	JFK									
Aluminum	11	25	5 TBD	CRACK	D	JFK									
Foil	12	42	5 TBD	CRACK	D	JFK			544	5½	.40	0/69			
	12	42	5												

57 TEST (9) Tim 20131

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 50 - 70 % TO BE MEASURED/ RECORDED

ROOM TEMP. °F 69 — 1 thru 3
ROOM RH % 8/71
LEL 0 / 0.7

H_xO CONTENT
START FUEL CU 9 / 70 °F PS/M 72°F
END FUEL CU PS/M

FUEL JFK (NEW YORK KENNEDY) MIL SPEC VALUE — LOW CU (0 - 10 PS/M) HIGH CU (150 - 600 PS/M)

1% / 5 LEL (14% Rain / -5 RUN 7-9)

25psi 212 - 201 — 5 minutes Bleed off
40psi 280 - 243 — 5 minutes Bleed off
150psi 230 - 214 — 5 " " "

SHEET # 1

UDRI131.DOC

TIME 1105-1212 - 1111-1135 1372A-1611

FUEL IMPINGEMENT / STATIC ELECTRICITY CHARGING TEST MATRIX

7 MAR 97

P. 9/9

TEST CONFIGURATION NO. / MFTR. - P/N S/N	TEST RUN NO.	TEST VARIABLES: FUEL PRESSURE (PSIG)	FUEL SPRAY DISTANCE (INCHES)	ORIFICE SIZE (INCHES)	HUMIDITY D = DRY W - WET	FUEL CU JFK/ SPEC (PS/M)	TEST MEASUREMENTS (IN SET-UP): CAPACITANCE (NANOFARADS) / RESISTANCE (OHMS) BEFORE (DRY)	AFTER (WET)	VOLTAGE MAXIMUM MEASUREMENTS VALUE (VOLTS)	DIS-CHARGE (YES/NO)	STREAMING CURRENT (NANO-AMPS)	HUMIDITY / TEMP CHAMBER (%RH) (° F)	FUEL TEMP (° F)	FUEL SPRAY TIME (SEC)	FUEL SPRAY LEAKAGE (ML)
IV.b. WIGGINS 1" COUPLING FLUORO CARBON "O" RING 1x10" .088 .094	13	15	1	.07	D	JFK	1.2x10^7 0.131								
	14	25	1	.07	D	JFK									
	15	42	1	.07	D	JFK									
	16	15	8	.07	D	JFK									
	17	25	8	.07	D	JFK									
	18	42	8	.07	D	JFK									
	19	15	TBD	.07	D	JFK									
	20	25	TBD	.07	D	JFK									
	21	42	8" TBD	.07	D	JFK			14	NO	-11	1.4/68.8	97		
	22	15	TBD	.07	D	JFK									
	23	25	TBD	.07	D	JFK									
	24	42	TBD	.07	D	JFK									

HUMIDITY DRY 0 TO 23 % TO BE MEASURED / RECORDED
WET 60 - 70 % TO BE MEASURED/ RECORDED

ROOM TEMP. °F 68.9

ROOM RH % 13.0

H_2O CONTENT

START FUEL CU 9/10 PS/M

END FUEL CU PS/M

TIME START 3:24:49 START COMP. 3:30:46

FUEL JFK (NEW YORK KENNEDY) MIL SPEC VALUE

LOW CU (0 - 10 PS/M)
HIGH CU (150 - 600 PS/M)

SHEET # 2