CONSULTING ENGINEERS, INC.
Civil Infrastructure Preservation

03-063

June 3, 2004

Adam Harvey, P.E.
URS Corporation
2520 Venture Oaks Way, Suite 250
Sacramento, CA 95833

SUBJECT: Coating Inspection Report for US Filter EPA Carbon Filter Vessels

Dear Adam,

V&A Consulting Engineers (V&A) has completed the inspection for the internal lining of 12 of the 24 EPA vessels at the U.S. Filter facility in Red Bluff, CA. This completes the initial inspection of all the vessels V&A has been retained to inspect under this contract. A copy of the field inspector's notes has been included with this report. The following is a summary of the inspection reports for the vessel inspections. All tanks were inspected in accordance with the manufacturer's recommendations.

Vessels Inspected:

160052901-2 (National Board No. 180),	160052901-1 (National Board No. 179),
160052401-1 (National Board No. 166),	160052601-1 (National Board No. 173),
160079001-2 (National Board No. 182),	160052801-1 (National Board No. 177),
160079001-3 (National Board No. 183),	160079001-1 (National Board No. 181),
160052801-2 (National Board No. 178),	160052601-2 (National Board No. 174),
160052701-2 (National Board No. 176),	160052701-1 (National Board No. 175)

Date of Coating Inspection: 05/19/2004 - 05/21/2004
Inspector: Jim Wiggens
Coating Inspection Summary:
Dry film thickness measurements were recorded, per SSPC-PA 2 guidelines, and mapped throughout the vessels. The inspector located and marked where the dry film thickness was too low or too high. Spark testing was conducted and holidays were identified and marked for repair.

An average of 5 holidays was detected per tank. Up to 13 holidays and as few as 2 holidays were detected per tank (see inspector notes for details).

V&A CONSULTING ENGINEERS, INC.
Lake Merritt Plaza, 1999 Harrison Street, Suite 975, Oakland, CA 94612 | Tel. (510) 903-6600, Fax (510) 903-6601 | www.vaengr.com

Holidays should be repaired and recoated in accordance with the manufacturer's recommendations. Low film thickness areas that were marked for repair should be coated with Plasite 4110, vinyl ester, to the appropriate thickness recommended by the manufacturer. The locations where coating has been applied in excess should be sanded down to meet the manufacturer's required dry film thickness.

Please call if you have any questions or comments.

Sincerely,
V&A CONSULTING ENGINEERS
Civil Infrastructure Preservation

Glenn Willson, P.E.
Manager Engineering Services

Daily Quality Assurance Report

Bay Area Coating Consultant Services

1-888-384-6839

Report # 34	Client: VILLALOBOS & ASSOC. / US FILTER		
Contractor Start Time: N/A	Lunch Break: N/A	D/H Starting Hours: N/A	
Contractor Depart Time: N/A	Total of Crew: 3	D/H Ending Hours: N/A	
Inspector Hours: 05:30 - 12:00		Company: US FILTER	
Project Name: VERTICAL FILTER VESSELS		Foreman: BRITT BELLEGRINI	
Project Location: 1711 READING RD. RED BLUFF, CA.		Inspector: JIM WIGGINS	

Time	DB	WB	R/H	D/P	Substrate	High	Low	Location
10:30	66 °F	58 °F	61 %	52 °F	STEEL	68 °F	62 °F	INT. VESSEL
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	

Outside Climatic Conditions:	Sunshine	Cloudy	Fog	Rain	Snow	Wind/MPH

Anchor Profile	#1	#2	#3
AVG.			

NO ABRASIVE BLASTING THIS DATE

Blast Hose P.S.I:	Needle Pressure Gauge			Compressor Gauge:
Air Cleanliness:	(AM)	(PM)		
Type of Prep:	Abrasive Blast	Water Blast	Vacuum Blast	SP#
	Abrasive:		Size:	

Product/Number/MFG:	NO COATING THIS DATE		Mfg. Date:
Base Batch #:			Shelf Life:
Activator Batch #:			Application:
Other Component:			Technique:
Thinner Batch # & %:			Color:
Dwell Time:			
Paint Temp:			
Amount Used:			
Mixing Procedure: Box	Drill:		Mixing Time:

WFT / DFT Mil Thickness	Area Recorded	Surface Type
DFT SEE ATTACHMENTS	INT. SHELL, ROOF, FLOOR & MANWAYS	CARBON STEEL

Inspectors Signature: Jim Wiggins NACE # 7273 Date: 5/21/04 FRI

#4 P2

TIME START - STOP	HOURS	REPORT OF OPERATIONS (CONTINUED) VERTICAL FILTER VESSELS	MEMORY JOGGERS
05:30-	VESSEL	ARRIVED AT US FILTER FACILITY SIGNED IN, WORK PERMIT SIGNED BY BRITT BELLEGRINI US FILTER. DONALD JORDON NACE # 4513 KTA ON SITE, ASSISTING WITH FINAL INSPECTION, HOLIDAY DETECTION AND DRY FILM THICKNESS READINGS CONTINUING THIS DATE. HOLIDAY DETECTING UNDER NACE RPO-188-99 PARAMETERS, SAME TEST EQUIPMENT AND TEST PROCEDURES AS PREVIOUSLY DOCUMENTED. DFT READINGS RECORDED USING SSPC-PA 2-96 PARAMETERS SAME TEST EQUIPMENT AND CALIBRATION PROCEDURES AND SAME SERIAL NUMBERS AS PREVIOUSLY DOCUMENTED. BOTH TYPE II GAUGES CALIBRATED AND RECHECKED AFTER READINGS.	SPECIFICATION REVIEW AMBIENT CONDITIONS CLEAN AIR SUPPLY CLEAN ABRASIVE SURFACE CONTAMINATION NOZZLE SIZE SURFACE PROFILE GROUNDED BLAST EQUIPMT PROPER PAINT STORAGE BATCH # RECORDED PROPER MIXING AGITATORS SWEAT IN TIME WFT MEASUREMENTS DFT MEASUREMENTS STRIPE COAT SPRAY TIP SIZE POT PRESSURE POT SIZE AIRLESS PUMP PRESSURE GROUNDED SPRAY EQUIPMT
06:30-0800	(9)	INSPECTION STARTED IN VESSEL # 1600 52901-2 NB#180 LOCATED 3 HOLIDAYS (1) INTERIOR ROOF MANWAY SHARP EDGE, (1) SHELL NOZZLE AND (1) ENTRY MANWAY RAISED FLANGE.	
0800-09:30	(10)	INSPECTION STARTED IN VESSEL # 1600 52901-1 NB# 179 LOCATED 4 HOLIDAYS (1) INTERIOR ROOF MANWAY SHARP EDGE (1) SHELL NOZZLE, (2) ENTRY MANWAY RAISED FLANGE	
09:30-10:30	(11)	INSPECTION STARTED IN VESSEL # 1600 52401-1 NB 166 LOCATED 2 HOLIDAYS (1) INTERIOR ROOF MANWAY SHARP EDGE (1) SHELL NOZZLE	
10:30-11:30	(12)	INSPECTION STARTED IN VESSEL # 1600 52601-1 NB 173 LOCATED 7 HOLIDAYS (1) INTERIOR ROOF MANWAY SHARP EDGE, 3 INTERIOR FLOOR (1) 6INX3IN AREA (1) 12INX 12IN (1) 6INX6IN, 3 ENTRY MANWAY (2) COVER (1) WELD SEAM THROAT.	RAISED FLANGE FACES WELD DEFECTS PIPE UNDERSIDES SPARK TESTING REJECTS DOCUMENTED CALIBRATION HOUSE KEEPING DIAGRAMS-DRAWINGS WASTE CONTAINMENT WASTE DISPOSAL
11:30-12:00		LOADED EQUIPMENT CHECKED IN WITH SCOTT IGARTA, PROJECT ENGINEER US FILTER	
12:05		DEPARTED FACILITY	
		NOTE: WHILE TESTING INTERIOR ROOF MANWAY COVER SHARP EDGE, BOTH EDGES SHOULD BE COATED MANWAY COVER EDGE AND THE FLANGE EDGE, IT WAS DIFFICULT TO DETECT WHICH EDGE WAS SPARKING DURING TEST. WAS NOTIFIED BY BRITT BELLEGRINI US FILTER THE ENTRY MANWAY RAISED FLANGE FACE EDGE WAS NO CONCERN BECAUSE AREA IS COMPLETELY COVERED BY GASKET MATERIAL.	

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
#4 P3		#9 FILTER VESSEL

(9) VESSEL # 1600052901-2 NB# 180

ROOF

45	42	46
41	42	33
50	48	38
45	38	37
43	45	36
43	54	43
41	42	44
43	42	53
51	41	41
47	42	43
45	41	37
55	36	47
62	41	44
48	38	47
56	40	41
45	44	39
54	39	50
51	42	50
50	46	769
42	40	
42	44	
939	887	

44.2
60 | 2655

SHELL

46	48	46	44	53
42	60	59	39	59
61	51	43	36	44
45	46	44	35	65
53	45	46	46	49
45	45	50	45	270
65	60	49	55	
47	56	34	29	
44	54	35	64	
49	44	51	44	
68	59	32	46	
44	43	32	61	
49	51	42	37	
47	61	37	61	
48	40	40	49	
60	52	31	48	
53	46	39	60	
49	60	30	40	
47	40	46	68	
42	45	39	53	
41	42	48	54	
1045	1048	873	1014	

47.7
89 | 4250

FLOOR

45	40	40
40	60	52
46	53	37
40	46	52
34	50	41
53	49	47
45	52	769
46	50	
45	45	
44	45	
41	50	
43	50	
46	40	
47	45	
46	40	
40	47	
41	40	
57	50	
50	47	
39	47	
888	946	

45.9
46 | 2103

MANWAY AREA

42	35	38
32	41	40
38	39	78
41	38	
153	153	

38.4
10 | 384

44.0 AVG.
4 | 176

VESSEL # 1600052901-2

OVERALL AVG. IN MILS INTERIOR LINING

44.0 AVG

Jim Livingston NACE # 7273
5/21/04

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
#4 P4		#10

(10) VESSEL # 1600529O1-1 NB# 179

ROOF

40	45	55
56	52	55
57	56	45
52	45	46
60	45	50
53	44	42
42	42	48
45	38	49
54	38	47
60	60	42
45	49	34
50	43	40
49	47	40
38	48	35
49	50	44
42	45	35
57	52	34
42	46	42
38	48	35
40	51	818
969	944	

46.2 | 59 | 2731

SHELL

40	45	46	34
43	41	41	48
43	35	38	57
37	42	52	50
41	27	47	49
41	52	36	50
47	48	38	35
36	42	26	47
49	50	41	45
37	40	44	43
47	47	43	51
47	38	35	40
42	41	47	60
35	42	35	37
48	42	37	44
38	42	32	33
45	49	33	32
40	40	30	44
35	37	36	793
42	33	38	
833	833	775	

41.4 | 78 | 3234

FLOOR

45	44	35
49	36	50
43	32	44
42	31	41
26	35	42
34	33	46
42	35	48
43	43	35
45	40	35
45	41	50
36	37	44
40	43	59
40	38	529
37	40	
37	34	
36	39	
38	44	
39	37	
48	41	
47	42	
812	745	

40.5 | 52 | 2106

MANWAY AREA

41	38
43	39
31	38
36	30
41	37
192	182

37.4 | 10 | 374

41.3 | 14 | 1655

VESSEL # 1600529O1-1
NB # 179

OVERALL AVG. IN MILS
INTERIOR LINING
41.3 AVG.

Jim Williams NACE # 7273
5/21/04

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
4 P5		#11

(11) VESSEL # 160052401-1 NB # 166

ROOF

38	44	43
35	43	38
37	39	37
41	45	46
36	49	164
32	35	
45	40	
54	41	
47	39	
39	36	
45	44	
47	47	
38	45	
33	54	
44	45	
36	49	
47	35	
57	44	
50	40	
49	40	
47	47	
891	901	

42.5
46 | 1964

SHELL

33	39	32	43
40	39	33	40
40	41	50	34
44	42	41	45
33	35	36	44
37	42	36	44
38	45	32	37
40	39	30	44
33	43	38	49
39	39	50	37
39	38	44	47
33	41	33	49
34	46	49	513
37	53	30	
33	55	45	
35	39	30	
38	43	46	
37	44	63	
41	48	38	
34	45	55	
33	49	35	
771	900	846	

40.14
75 | 3030

FLOOR

47	38	42
51	45	37
56	45	50
45	44	47
56	35	44
47	45	40
60	42	45
45	41	
37	47	305
48	50	
42	54	
38	56	
45	41	
38	50	
37	47	
39	47	
42	43	
48	49	
41	47	
862	866	

45.1
45 | 2033

MANWAY AREA

44	47	33
43	40	43
33	40	41
36	40	117
156	167	

40.0
11 | 440

42.0
4 | 168

VESSEL # 160052401-1 N.B 166

OVERALL AVG. IN MILS
INTERIOR LINING

42.0 AVG.

Jim Higgins
NACE # 12173 5/24/04

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
#4 P6		#12

(12) VESSEL # 1600526O1-1 NB# 173

FLOOR

44	54	51
57	47	47
50	44	42
50	61	50
49	57	40
47	51	44
47	56	274
45	51	
49	42	
44	39	
44	54	
54	61	
41	49	
49	45	
40	43	
58	50	
60	49	
60	31	
50	47	
40	37	
978	968	

48.9
46 | 2220

SHELL

58	45	47	43
65	52	46	48
60	51	60	40
55	47	54	45
52	60	37	48
60	57	38	47
53	43	49	45
41	57	46	58
61	47	46	60
62	50	40	57
52	51	29	48
52	52	35	57
57	49	39	52
44	52	40	48
58	60	50	57
47	51	44	64
50	43	36	817
30	49	48	
35	49	40	
70	48	35	
1056	1013	859	

49.2
76 | 3745

ROOF

45	36
40	39
40	41
33	45
39	40
45	43
43	44
50	43
45	38
54	50
55	43
41	47
43	60
50	39
49	37
40	46
47	56
57	34
38	45
848	826

44.0
38 | 1674

MANWAY AREA

34	43
39	48
42	47
40	39
42	44
197	221

41.8
10 | 418

45.8
4 | 183.2

VESSEL# 1600526O1-1 NB# 173

OVERALL AVG. IN MILS
INTERIOR LINING

45.8 AVG

Jim Hughes NACE# 7273
5/24/04

Daily Quality Assurance Report

Bay Area Coating Consultant Services

1-888-384-6839

Report # 2	Client VILLALOBOS & ASSOC. / US FILTER

Contractor Start Time: N/A	Lunch Break: N/A	D/H Starting Hours: N/A	
Contractor Depart Time: N/A	Total of Crew: 3	D/H Ending Hours: N/A	
Inspector Hours:	11:00 - 17:30	Company: US FILTER	
Project Name:	VERTICAL FILTER VESSELS	Foreman: BRETT BELLEGRINI	
Project Location:	RED BLUFF, CA. 11711 READING RD.	Inspector: JIM WIGGINS	

Time	DB	WB	R/H	D/P	Substrate	High	Low	Location
11:00	74 °F	58 °F	36 %	45 °F	STEEL	70 °F	66 °F	INT. VESSEL
14:30	76 °F	58 °F	31 %	43 °F	STEEL	78 °F	74 °F	INT. VESSEL
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	
	°F	°F	%	°F		°F	°F	

Outside Climatic Conditions:	Sunshine	Cloudy	Fog	Rain	Snow	Wind/MPH

Anchor Profile	#1	#2	#3
AVG.	NO ABRASIVE BLASTING THIS DATE		

Blast Hose P.S.I:	Needle Pressure Gauge			Compressor Gauge:
Air Cleanliness:	(AM)	(PM)		
Type of Prep:	Abrasive Blast	Water Blast	Vacuum Blast	SP#
	Abrasive:		Size:	

Product/Number/MFG:	NO COATING	THIS DATE	Mfg. Date:
Base Batch #:			Shelf Life:
Activator Batch #:			Application:
Other Component:			Technique:
Thinner Batch # & %:			Color:
Dwell Time:			
Paint Temp:			
Amount Used:			

Mixing Procedure: Box | Drill: | Mixing Time:

WFT / DFT Mil Thickness	Area Recorded	Surface Type
DFT	INT. SHELL, ROOF, FLOOR	CARBON STEEL
SEE ATTACHMENTS	AND NOZZLES	

Inspectors Signature: Jim Wiggins NACE # 7273 Date: 5/19/04 WED.

#2 P2

TIME START STOP	HOURS	REPORT OF OPERATIONS (CONTINUED) VERTICAL VESSELS	MEMORY JOGGERS
11:00-11:30		ARRIVED AT US FILTER, SIGNED IN, SCOTT IGARTA OFF SITE, BRITT BELLEGRINI US FILTER SIGNED WORK PERMIT, CONFINED SPACE PERMIT. INSPECTION OF VESSEL SERIAL # 16.00 79001-2 DONALD JORDAN KTA OKLAND, CA ON SITE, STEVE GUIDERA BACCS, HOLE WATCH. VESSEL 10,165 GAL. NATIONAL BOARD # 182, MFG. YR. 2004 MODERN FABRICATION, FRESNO CA. VESSELS INSPECTED ARE VERTICAL CARBON FILTER VESSELS. NO SCOPE OF WORK ON SITE, INSTRUCTED TO RECORD DRY FILM THICKNESS READINGS APPROXIMATELY EVERY SQ. FT AND HOLIDAY DETECT AT 3,500 VOLTS, ELCOMETER DIGITAL DETECTOR	SPECIFICATION REVIEW AMBIENT CONDITIONS CLEAN AIR SUPPLY CLEAN ABRASIVE SURFACE CONTAMINATION NOZZLE SIZE SURFACE PROFILE GROUNDED BLAST EQUIPMT PROPER PAINT STORAGE BATCH # RECORDED PROPER MIXING AGITATORS SWEAT IN TIME WFT MEASUREMENTS DFT MEASUREMENTS STRIPE COAT SPRAY TIP SIZE POT PRESSURE POT SIZE AIRLESS PUMP PRESSURE GROUNDED SPRAY EQUIPMT
	236,	SERIAL # DB 36870-41, 30 KV. VOLTAGE SET AT 3500 VOLTS. 12 INCH COPPER WIRE BRUSH AND EXTERNAL GROUND. MANWAY PIN HINGE. ELCOMETER 456 ENE TYPE T GAUGE SERIAL # C130471, CERTIFIED 3/19/04 CALIBRATED USING ELCOMETER 3B-46 PLASTIC SHIM SERIAL # BH 3220 ON A CARBON STEEL BLASTED COUPON. CALIBRATION WITNESSED BY DONALD JORDAN, KTA. THREE READINGS RECORDED 3"X 3" AREA, AVERAGE DOCUMENTED WITH CHALK ON STEEL SURFACE.	
11:30-14:00		INSPECTION STARTED IN VESSEL # 16007 9001-2. LOCATED A TOTAL OF 9 HOLIDAYS. EACH HOLIDAY MARKED WITH PERMANENT PAINT MARKER. ROOF (2) NOZZLES, (2) ROOF, (1) MANWAY COVER SHARP EDGE, SHELL (1) FLOOR (4) EXT. MANWAY (1) FLOOR NOZZLES FILTERS INSTALLED NO DETECTION RECORDED DFTS, SEE ATTACHMENT FOR AVERAGES ROOF, SHELL AND TWE FLOOR.	RAISED FLANGE FACES WELD DEFFECTS PIPE UNDERSIDES SPARK TESTING REJECTS DOCUMENTED CALIBRATION HOUSE KEEPING DIAGRAMS-DRAWINGS WASTE CONTAINMENT WASTE DISPOSAL
14:00-17:30		INSPECTION STARTED IN VESSEL # 16005 2801-1 N.B. # 177, 10,165 GAL MFG. 2004 624 SQ FT. LOCATED A TOTAL OF 5 HOLIDAYS, EACH HOLIDAY MARKED WITH PERMANENT PAINT MARKER. ROOF (2) WELD SEAM, FLOOR (1) WELD SEAM, ROOF (1) NOZZLE, UPPER MANWAY COVER SHARP EDGE RECORDED DFT READINGS SEE ATTACHMENT FOR AVERAGES ROOF SHELL, FLOOR. CALIBRATION CHECK ELCOMETER 456 AFTER READINGS NO VARIATION. CONTACT FOR VILLALOBOS & ASSOCIATES - MIKE ORIOL 510-903-6600	
		NOTE: INSTRUCTIONS FOR INSPECTION RECEIVED VIA TELEPHONE FROM ED CARRIGAN, OWNER BACCS SMALL EXTENSION LADDER USED TO RECORD UPPER SECTION OF SHELL, ALL DFTS ~~FROM~~ TAKEN ON UPPER SHELL AND ROOF AREA WERE DONE IN A SAFE MANNER, SMALL AREA TOP OF INTERIOR ROOF SECTION NOT RECORDED, AREA UNREACHABLE. UPPER ROOF NOZZLES WERE HOLIDAY DETECTED USING EXTENSION HANDLE AND SMALL WIRE BRUSH.	
		ALL READINGS RECORDED ON PAPER WERE TAKEN USINGS SSPC-PA-2-96 PARAMETERS SHOWING 3 POINT READING AVG.	
		BOTTOM 8 NOZZLES FLOOR (BOWL) ON ALL VESSELS HAVE S/S FILTERS INSTALLED HOLIDAY DETECTED WELD AREA ONLY.	

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
2 P3		

(1) VESSEL #1600790001-2 NATIONAL BOARD #182

ROOF

48	37	
37	48	
35	48	
37	42	
37	44	
48	41	
57	43	
49	46	
49	42	
45	45	
50	48	
50	39	
48	54	
44	55	
42	54	
55	52	
41	51	
39	37	
39	39	
38	45	
45	47	
38	957	
31	44.3 AVG	
43	461 2040	
38		
1083		

138 ~~250~~ READINGS
3 READINGS AVG SHOWN

SHELL

43	38	51
37	39	41
37	40	35
37	40	31
33	35	38
35	56	37
42	48	40
41	47	38
45	44	35
49	37	42
57	40	43
38	41	43
35	44	44
38	38	35
37	49	553
45	53	35
35	48	42
40	36	37
35	40	45
45	49	40
37	45	44
44	48	48
44	52	50
54	41	53
48	39	50
1031	1087	444

192 READINGS
3 READING AVG SHOWN
41.7 AVG

45	46
47	48
57	56
45	33
60	37
59	37
50	37
43	42
37	41
56	45
49	40
48	462
50	
45	
46	
40	
35	
40	
897	

120 READINGS
45.0 AVG

ROOF AVG 44.3

SHELL TOTAL READINGS 312 43.3 AVG

FLOOR (BOWL) 120 READINGS 3 READING AVG SHOWN

FLOOR (BOWL) 41.4 AVG.

47	41
43	42
41	42
46	45
34	41
45	41
35	41
40	35
45	38
44	50
42	41
40	41
47	45
45	46
40	30
35	44
31	43
50	40
40	37
40	786
40	
870	

MANWAY & COVER

31	30	28
27	32	29
30	30	32
34	30	33
31	35	27
40	33	27
27	30	32
27	28	33
		35
		771

75 READINGS

MANWAY 30.8 AVG

VESSEL 1600790001-2

OVERALL AVG. IN MILS INTERIOR LINING 39.95 AVG

NACE #7273 5/19/04

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
#2 P4		

(2) VESSEL # 160052801-1 NATIONAL BOARD # 177

126 READINGS JW

ROOF	FLOOR
37	45
42	34
46	40
46	50
44	44
48	48
50	50
42	47
44	58
48	49
40	47
45	49
48	40
42	40
35	40
40	37
45	35
49	37
51	42
41	50
33	42
916	924

43.8

42 | 1840

43.8 AVG

SHELL 360 READINGS

50	65	40	40	45	44
44	66	48	44	40	41
36	48	37	40	36	43
48	51	33	37	35	49
40	60	42	37	35	35
51	48	40	42	54	75
44	50	45	46	32	67
57	42	34	44	37	65
40	48	29	41	39	42
40	45	34	45	40	41
40	60	55	45	53	43
40	48	48	47	52	45
46	49	44	53	41	44
48	40	50	51	43	65
40	45	48	50	39	66
33	55	47	51	44	765
38	46	60	48	55	
41	47	55	49	43	46.3
43	50	47	47	45	120 | 5558
40	44	49	50	32	
49	43	53	57	48	
908	1050	938	1009	888	46.3 AVG.

FLOOR – 138 READINGS

37	38	51
44	32	44
38	42	42
40	35	45
30	37	36
33	36	41
47	37	36
37	45	35
44	34	38
38	41	38
34	34	406
33	37	
30	35	
40	30	39.1
56	40	46 | 1801
37	47	
47	41	
40	49	39.1 AVG
705	690	

MANWAY

38	47	
38	44	
39	45	
33	50	
40	41	
39	41	
38	40	40.4
35	41	20 | 808
40	39	
41	39	40.4 AVG
381	427	

VESSEL 160052801-1

OVERALL AVG. IN MILS INTERIOR LINING

42.4 AVG.

Glen Wiggins NACE# 7273 5/19/04

#2 P2

TIME START STOP	HOURS	REPORT OF OPERATIONS (CONTINUED) Filter Vessels
5:30-08:30	VESSEL	ARRIVED AT FACILITY, BROT BELLEGRINI SIGNED WORK AND CONFINED SPACE PERMIT. STEVE GUIDERA HOLE WATCH DON JORDAN N.A.C.E. CERTIFIED 6513, KTA ASSISTING. HOLIDAY DETECTION AND DRY FILM THICKNESS READINGS CONTINUING THIS DATE. ALL HOLIDAY DETECTION COMPLETED USING N.A.C.E. RP0-188-99 PARAMETERS. CHANGED HOLIDAY DETECTORS, MAIN DETECTION WILL BE COMPLETED WITH TINKER RASOR APW UNIT. TINKER RASOR UNIT HAS A SUPERIOR STAINLESS STEEL BRUSH AND A SUPERIOR AUDIBLE TONE, COMPARED TOO THE ELCOMETER
	236	~~3236~~ DIGITAL DETECTOR. 236 ELCOMETER DETECTOR WILL BE USED FOR NOZZLE INTERIORS ONLY FOR THE REMAINING VESSELS INSPECTION, USING BAND BRUSH PROBE. TINKER RASOR SERIAL# R230 WAS FURNISHED BY KTA BATTERY IS TESTED DAILY, POWER PACK 3.5-10 KV, SELECTOR SWITCH WAS SET POSITION #1 LOW POSITION AND EXTERNAL GROUND WAS USED. ALL VESSELS DETECTED 100% WITH SPECIAL ATTENTION TOO WELD SEAM AND NOZZLE PENETRATIONS AND MANWAY AREAS, ALL VESSELS FABRICATED MODERN FABRICATION, FRESNO YR. MFG. 2004, 10,165 GAL WITH 624 SQ FT INTERIOR SURFACE. TO EXPEDITE INSPECTION DONALD JORDON ASSISTED IN RECORDING DFT READINGS USING A POSITECTOR 6000 F2 SERIAL # 25801, BOTH UNITS CALIBRATED USING ELCOMETER 38.46 PLASTIC SHIM SERIAL# BH 3220 ON A CARBON STEEL BLASTED COUPON. CALIBRATION WAS VERIFIED AFTER INSPECTION COMPLETED, ON BOTH GAUGES.
0700-0830	(3)	INSPECTION STARTED IN VESSEL# 1600 79001-3 N.B.# 183 LOCATED 3 HOLIDAYS INTERIOR ROOF MANWAY SHARP EDGE, 1 NOZZLE AND 360° RAISED FLANGE FACE AND MANWAY COVED
0900-10:30	(4)	STARTED INSPECTION VESSEL# 1600 79001-1 N.B.# 181 LOCATED 5 HOLIDAYS 1 ROOF NOZZLE INTERIOR ROOF MANWAY COVER SHARP EDGE, 1 SHELL NOZZLE AND 2 MANWAY AREA
11:30-13:00	(5)	STARTED INSPECTION VESSEL# 1600 52801-2 N.B.# 178 LOCATED 4 HOLIDAYS (1) ROOF MANWAY SHARP EDGE (3) FLOOR (6IN. X 6IN. AREA)
13:30 15:00	(6)	STARTED INSPECTION VESSEL# 1600 52601-2 N.B.# 174 LOCATED 11 QTY 2 HOLIDAYS 1 ROOF INTERIOR MANWAY COVER SHARP EDGE (1) NOZZLE CENTER FLOOR
15:30-16:30	(7)	STARTED INSPECTION VESSEL# 1600 52701-2 N.B.# 176 LOCATED 4 HOLIDAYS (1) INTERIOR ROOF MANWAY SHARP EDGE, 1 SHELL 6INX6IN AREA NEXT TO MANWAY AND 2 SHELL NOZZLES OUTSIDE LIP FLANGE
17:00-18:00	(8)	STARTED INSPECTION VESSEL# 1600 52701-1 N.B.# 175 LOCATED 2 HOLIDAYS (1) INTERIOR ROOF MANWAY SHARP EDGE (1) SHELL AND ONE LOW MIL AREA 6 FT X 2.5 FT ON UPPER SHELL MAPPED OUT; ALL READINGS IN AREA WERE 24 MILS OR LESS.
1800		DEPARTED FACILITY

MEMORY JOGGERS
SPECIFICATION REVIEW
AMBIENT CONDITIONS
CLEAN AIR SUPPLY
CLEAN ABRASIVE
SURFACE CONTAMINATION
NOZZLE SIZE
SURFACE PROFILE
GROUNDED BLAST EQUIPMT
PROPER PAINT STORAGE
BATCH # RECORDED
PROPER MIXING
AGITATORS
SWEAT IN TIME
WFT MEASURMENTENTS
DFT MEASUREMENTS
STRIPE COAT
SPRAY TIP SIZE
POT PRESSURE
POT SIZE
AIRLESS PUMP PRESSURE
GROUNDED SPRAY EQUIPMT
RAISED FLANGE FACES
WELD DEFFECTS
PIPE UNDERSIDES
SPARK TESTING
REJECTS DOCUMENTED
CALIBRATION
HOUSE KEEPING
DIAGRAMS-DRAWINGS
WASTE CONTAINMENT
WASTE DISPOSAL

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
#3 P3		#3

(3) VESSEL # 1600 7900 1-3 N.B. # 183

ROOF

56	50	44
47	37	53
50	55	48
47	50	44
49	49	50
40	52	40
38	58	41
49	44	35
41	45	37
43	42	36
48	50	37
49	52	38
46	49	46
58	44	47
50	43	50
40	44	53
41	52	51
46 MIL 53	44	48
58 | 2680 48	43	798
42	44	
935	947	

SHELL

40	31	39	48	41	37	53
45	42	42	51	46	38	30
33	55	42	48	41	37	42
42	49	38	52	38	40	36
40	40	35	53	48	33	37
35	44	41	50	32	37	47
56	47	41	55	31	27	52
58	55	36	43	36	34	35
56	40	43	44	37	30	31
55	37	43	46	36	30	43
64	41	40	58	50	32	38
60	33	45	48	41	30	47
41	35	45	46	48	34	50
39	44	37	52	46	35	41
60	40	50	41	41	38	44
54	33	45	50	42	36	46
57	44	44	44	43	44	47
49	40	58	47	30	40	45
53	39	40	54	33	40	45
45	45	36	44	36	40	42
982	834	840	980	796	712	851

42.8 MIL
140 \| 5995

FLOOR (BOWL)

40	35	40		
48	48	34		
38	41	40		
37	49	37		
40	49	47		
42	35	47		
39	47	43		
44	45	36		
40	45	40		
43	48	38		
50	47	33		
41	41	43		
45	42	35		
44	42	44	42 MIL	
41	50	44	48 | 2018	
44	40	37		
676	704	638		

MANWAY & COVER

49	45		
45	51		
43	46		
40	42		
40	42		
37	41		
37	41		
38	41		
41	50		
42	44		
47	44		
47	45		
59	45		
50	50	45 MIL	
50	50	32 | 1440	
48	50		
713	727		

VESSEL # 1600 7900 1-3
OVERALL AVG IN MILS INTERIOR LINING 43.95 AVG.

Jill Ingram 5/20/04
NACE # 7273

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
23 P4		#4

(4) VESSEL # 160079001-1 NB# 181

ROOF

50	41
53	50
47	51
44	50
54	48
51	55
51	49
47	51
57	44
44	54
49	35
51	59
49	58
50	36
49	52
53	61
49	47
55	60
54	45
50	43
60	60
1067	1054

50.5
42 | 2121

SHELL

66	49	55 48
49	46	48 50
53	33	57 55
49	50	57 57
45	58	51 46
44	42	55 44
52	57	53 50
50	57	55 53
59	53	57 58
54	42	54 34
50	56	50 54
46	60	43 50
54	61	47 46
55	57	48 47
43	50	49 42
45	62	51 39
64	54	43 772
52	49	47
48	55	51
51	47	53
64	53	55
1093	1085	1067

50.18
79 | 4017

FLOOR (BOWL)

44	36	39
50	34	31
35	37	35
43	38	44
34	40	39
35	60	39
36	57	227
42	36	
51	53	
40	50	
40	45	
47	36	
36	35	
46	41	
37	38	
42	35	
50	46	
44	41	
40	39	
38	39	
830	836	

41.1
46 | 1893

MANWAY AREA

36	33
39	36
28	30
36	38
33	29
40	32
36	29
35	32
37	28
36	31
29	32
30	39
33	38
31	32
31	32
510	491

33.3
30 | 1001

43.9
41 | 1757

VESSEL # 160079001-1
OVERALL AVG IN MILS INTERIOR LINING
43.9 AVG.

Jim Williams 5/20/04
NACE # 7273

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
#3 P5		#5

(5) VESSEL # 160052801-2 NR# 178

ROOF

55	38	52
49	41	39
44	38	42
34	48	44
46	55	40
47	40	40
50	50	42
34	46	49
30	47	47
42	39	59
42	51	47
47	58	501
60	51	
60	47	
60	45	
60	38	
60	38	
57	44	
47	35	
55	39	
999	888	

46.4
51|2368

SHELL

34	38	37	44	39
50	40	40	42	43
48	41	36	30	45
43	43	43	45	50
47	46	49	35	47
49	35	40	40	36
50	45	41	45	50
30	26	37	37	310
40	42	53	46	
40	42	45	59	
38	46	40	36	
40	43	39	42	
49	41	40	33	
43	40	34	37	40.7
32	46	36	36	87|3546
35	47	40	42	
39	47	36	31	
45	36	33	32	
37	52	39	29	
37	46	40	29	
824	842	798	770	

FLOOR (BOWL)

50	40	38
37	43	34
40	54	45
30	34	41
30	50	47
31	27	49
34	29	60
33	45	35
35	35	46
50	41	47
31	36	33
35	32	44
35	28	43
31	49	37
32	35	30
31	32	25
38	42	42
35	27	33
40	38	31
48	40	760
724	757	

49.8
69|2941

MANWAY AREA

30	
40	
50	36.7
38	19|698
35	
40	
22	
41	
40	
44	
40	
36	
24	
33	
30	43.4
35	4|173.6
37	
42	
41	
698	

VESSEL #160052801-2
OVERALL AVG. IN MILS INTERIOR LINING 43.4 AVG.

Jim Williams 5/20/04
NACE # 7273

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
23 P6		
	16	VESSEL # 1600 52601-2 N.B. # 174

ROOF

39	62	48	52
39	61	43	43
33	45	40	44
39	52	31	43
43	61	46	32
34	58	38	214
37	57	33	214
44	60+	35	
54	60+	36	
51	60+	38	
45	47	40	
51	43	40	
57	48	44	
48	44	43	
48	44	48	
48	48	41	
46	43	40	
49	37	51	
50	45	38	
57	33	41	
912	1008	814	

45.3
65 | 2948

SHELL

45	37	46	48	47
42	60+	33	29	36
43	61	43	32	43
47	48	44	36	48
46	41	38	45	41
62	39	33	37	45
60	43	44	39	34
38	45	45	40	43
35	50	47	38	47
44	45	37	38	31
62	45	38	44	38
42	39	45	45	48
56	48	60	44	49
43	37	59	30	33
40	35	37	44	32
60	49	35	47	38
60+	60	38	38	41
40	60	37	44	39
33	55	54	42	32
35	40	47	44	41
~~933~~	937	860	804	805
933				

54.2
80 | 4339

FLOOR (Bowl)

40	55	35
32	42	47
40	38	40
54	36	42
37	42	36
43	37	41
47	30	40
45	40	45
47	44	44
38	33	37
31	32	47
37	31	47
45	39	37
45	40	37
43	32	40
31	39	56
45	40	59
45	30	730
36	43	
61	45	
842	768	

41.0
57 | 2340

MANWAY AREA

45
47
45
46
39
38
39
43
44
44
430

43.0
10 | 430

45.8
4 | 183.5

VESSEL # 1600 52601-2
OVERALL AVG IN MILS INTERIOR LINING

45.8 AVG.

5/20/04

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)
#3 P7		

(7) VESSEL # 160052701-2 NIB.# 176

ROOF

30	34	38
30	45	35
33	50	38
33	41	30
36	38	35
42	33	176
36	32	176
31	40	
41	33	
35	37	
48	32	
40	37	
44	40	
42	41	
48	42	
35	50	
44	47	
33	46	
39	52	
39	39	
40	37	
799	846	

38.7
47 | 1821

SHELL

40	38	36	39	45	39
35	21	37	45	46	45
35	29	40	35	48	33
43	28	38	44	66	41
56	30	42	39	45	39
33	38	55	43	38	35
31	29	70	62	39	38
35	25	33	40	33	32
42	22	39	34	46	38
57	27	33	40	46	47
43	37	45	37	33	30
43	29	60	38	32	30
32	28	47	60	37	43
40	39	29	55	39	28
40	35	33	36	48	35
43	37	38	29	40	49
27	39	46	37	35	37
40	44	59	45	41	38
35	32	37	43	31	27
33	47	40	66	33	32
43	37	44	67	42	736
826	686	896	934	863	

39.5
125 | 4941

FLOOR (BOUR.)

41	42	45	27
58	38	33	37
46	41	51	33
41	41	28	34
50	43	54	41
50	38	41	35
37	45	21	22
57	51	38	52
55	49	39	40
57	49	36	331
55	50	32	
47	41	39	
45	48	37	
36	45	45	
41	45	42	
39	55	48	
40	48	32	
38	36	38	
43	45	47	
47	56	49	
923	906	775	

42.5
69 | 2935

MANWAY AREA

44	35
46	39
43	36
42	40
40	44
215	194

40.9
10 | 409

40.4
4 | 1616

VESSEL # 160052701-2
OVERALL AVG IN MILS
INTERIOR LINING

404 AVG

Jim Williams 5/20/04
NACE # 7273

TIME START-STOP	HOURS	REPORT OF OPERATIONS (CONTINUED)

#3 P8

(18) VESSEL # 160052701-1 N.B. # 175

ROOF-

40	24	50	28	29	28	33	40	34	41
41	33	47	32	30	28	34	40	30	49
47	37	39	44	34	27	29	34	29	31
35	35	43	33	40	30	35	31	33	28
34	36	37	45	35	35	31	33	48	39
42	30	44	33	41	30	36	31	46	36
34	37	260	28	30	30	41	33	37	30
44	40		33	47	31	34	33	35	28
41	40		25	35	28	31	38	34	31
52	32		32	45	24	44	33	26	35
40	33		41	34	33	24	39	28	45
44	33		31	40	37	24	29	38	30
51	35		34	30	38	23	33	27	30
43	36		34	40	27	22	31	28	39
48	34		27	22	28	21	34	33	30
28	36		32	33	31	25	32	35	28
35	43		45	31	37	26	30	31	550
25	46		32	33	35	23	26	39	
28	46		44	39	39	24	36	33	
27	41		40	26	32	24	31	35	
27	40		37	28	40	27	33	38	
806	769		730	722	668	613	699	717	

38.2
48 | 1835

SHELL

33
142 | 4699

FLOOR

38	34	34	37
50	31	45	48
45	34	42	34
35	47	32	47
29	38	45	50
53	45	37	36
35	42	42	35
57	42	36	34
47	46	38	30
38	49	36	31
42	51	58	382
58	47	34	
56	48	39	
51	39	37	
39	41	37	
40	34	45	
47	29	50	
57	44	44	
39	34	39	
42	45	36	
48	45	33	
946	865	839	

411.5
73 | 3032

MANWAY AREA

47	51	49
49	48	44
49	47	43
44	46	136
189	192	

47
11 | 517

39.9
4 | 159.7

VESSEL # 160052701-1
OVERALL AVG IN MILS INTERIOR LINING
39.9 AVG.

Jim Hodgman 5/20/04
NACE # 7273