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The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

Background Report Reference

AP-42 Section Number: 12.20

Background Chapter: 4

Reference Number: 80

Title: Summary of Source Test Results,
Mare Island Naval Shipyard

Bay Area Air Quality Management
District

May 1988

DISTRIBUTION:

Firm
 Permit Services
 Enforcement
 Technical Services
 Source Inventory
 Requester
 D.A.P.C.O.

BAY AREA
 QUALITY MANAGEMENT DISTRICT
 939 ELLIS STREET
 SAN FRANCISCO, CALIFORNIA 94109
 (415) 771-8000
**SUMMARY OF
 SOURCE TEST RESULTS**

Report No. 88163

Test Date: April 6, 1988

Test Times: AP-42 Section 12.26

Run A: Reference

Report Sect. 4

Run B: Reference

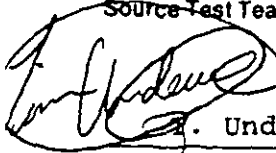

80

Run C:

SOURCE INFORMATION		BAAQMD REPRESENTATIVES	
Firm Name and Address Mare Island Naval Shipyard Code 461 Stop 032 Vallejo, CA 94592	Firm Representative and Title Leslie Berlot, Env. Engineer Phone No. (707) 646-2421 x3375	Source Test Engineers T. Underwood G. Colwell	
Permit Conditions under review	Source: A439 Plant #44 Permit No. on demand Operates hr/day & days/yr	Permit Services Division	
Operating Parameters	TANK: <u>Plating:</u> <u>Anodizing</u> run 1 1000 <10 amps run 2 1040 <10 amps run 3 1070 <10 amps	Enforcement Division	
Applicable Regulations: rule development	Test Results and Comments:	Test Requested by: G. Karels (cds)	
		VN Recommended: NO	

METHOD	TEST	RUN A	RUN B	RUN C	AVG.	LIMIT
ST-17	Volume flowrate, SDCFM	10800	9200	12400	10800	
	Stack Temperature, °F	67	69	70	68	
ST-23	Water Content, Volume %	1.1	.4	.5	.7	
	Total Amps	1000	1040	1070	1037	
ST-35	Cr Emissions, mg/amp-hr	.9176	.7827	1.0928	.9328	
ST-35	Cr Emissions, g/hr	.92	.81	1.17	.97	
ST-35	Cr Emissions, gr/SDCF	2.19E-05	2.28E-05	2.43E-05	2.30E-05	
ST-35	Cr Emissions, lbs/hr	.00202	.00179	.00258	.00213	
	Isokinetic Ratio, act/theo	1.04	1.04	1.04	1.04	

NO COMMERCIAL USE OF THESE RESULTS IS AUTHORIZED

Source Test Team Leader  T. Underwood	Date 4/29/88	Approved—Chief of Source Test  G. Karels	Date 5/9/88
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BAY AREA
 QUALITY MANAGEMENT DISTRICT
 939 ELLIS STREET
 SAN FRANCISCO, CALIFORNIA 94109
 (415) 771-8000
**SUMMARY OF
 SOURCE TEST RESULTS**

Report No. 88163

Test Date: April 6, 1988



Test Times: AP-42 Section / 2.20
 Run A: Reference
 Report Sect. 4
 Run B: Reference 80
 Run C:

SOURCE INFORMATION		BAAQMD REPRESENTATIVES
Firm Name and Address Mare Island Naval Shipyard Code 461 Stop 032 Vallejo, CA 94592	Firm Representative and Title Leslie Berlot, Env. Engineer Phone No. (707) 646-2421 x3375	Source Test Engineers T. Underwood G. Colwell
Permit Conditions under review	Source: A439 Plant #44 Permit No. Operates on demand hr/day & days/yr	Permit Services Division Enforcement Division
Operating Parameters	TANK: Plating: Anodizing	Test Requested by:
	run 1 1000 <10 amps	G. Karels (cde)
	run 2 1040 <10 amps	
	run 3 1070 <10 amps	
Applicable Regulations: rule development		VN Recommended: NO

Test Results and Comments:

METHOD	TEST	RUN A	RUN B	RUN C	AVG.	LIMIT
ST-17	Volume flowrate, SDCFM	10800	9200	12400	10800	
	Stack Temperature, °F	67	69	70	68	
ST-23	Water Content, Volume %	1.1	.4	.5	.7	
	Total Amps	1000	1040	1070	1037	
ST-35	Cr Emissions, mg/amp-hr	.9176	.7827	1.0928	.9328	
ST-35	Cr Emissions, g/hr	.92	.81	1.17	.97	
ST-35	Cr Emissions, gr/SDCF	2.19E-05	2.28E-05	2.43E-05	2.30E-05	
ST-35	Cr Emissions, lbs/hr	.00202	.00179	.00258	.00213	
	Isokinetic Ratio, act/theo	1.04	1.04	1.04	1.04	

NO COMMERCIAL USE OF THESE RESULTS IS AUTHORIZED

Source Test Team Leader  T. Underwood	Date 5/9/88	Approved—Chief of Source Test  G. Karels	Date 5/9/88
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COMPANY: Mare Island Naval Shipyard Contact: Leslie Berlot Test No. 88163 Tim's spread sheet
 Address: Code 461 Stop 032 Title: Env Eng Updates:
 City, Zip: Vallejo, Ca 94592 Phone: (707) 646-2421 x3375 11/27
 Date: April 6, 1988 Plant no. 44 1/28/88
 Permit No. A439 3/11
 4/22

Traverse Sample
 PITOT COEFFICIENT .813 .813 Stack Id [in] 46.00 35.00
 Pbar 30.2 Stack Area [ft2] 11.18
 Pstatic 0 cap formula
 Process weight (tons/hr) 29.9592 40 39.99992

	run			Net weights				
	run 1	run 2	run 3	Run 1	Run 2	Run 3	Run 1	Run 2
particulate weight gains								
nozzle diameter [mm]	7.65	7.65	7.65					
nozzle area [ft2]	.0004947	.0004947	.0004947	Run 1	Run 2	Run 3	Run 1	Run 2
nozzle wash	.0000505	0	0	.0000169	.0000143	.0000193		
nozzle tare	0	0	0					
probe wash	0	0	0	0	0	0		
probe tare	0	0	0					
filter weight	.000017	.0000155	.0000235	.000017	.0000155	.0000235		
filter tare	0	0	0					
impinger 1 final	596.7	562.1	588.1				5.1	4.6
impinger 1 tare	591.6	557.5	583.9					
impinger 2 final	556.9	575	586.6				-2	-3.3
impinger 2 tare	557.1	578.3	588.3					
acetone blank (gr/ml)	.000011	.000011	.000011	0	0	0		
acetone volume [ml]	0	0	0					
water blank (gr/ml)	0	0	0	0	0	0		
water volume [ml]	0	0	0					
Totals				.0000339	.0000298	.0000428	5.427035	1.805285

Fixed Gas Analysis:	Run 1	Run 2	Run 3					
Pbar evac	29.92	29.92	29.92	Sat imp contrib			.5270354	.505285
Pbar analysis	29.92	29.92	29.92					
Initial Vacuum	29.92	29.92	29.92					
Final Vacuum	-12	-12	-12					
Analysis Pressure	12	12	12					
			tank factor	1	1	1	Dry mol w	
O2	20.9	20.9	20.9	20.9	20.9	20.9	Run 1	
CO2	.04	.04	.04	.04	.04	.04	Wet mol w	
CO	0	0	0	0	0	0	28.7271	
Other	0	0	0	0	0	0		
Other Molecular Weight	100	100	100					

Field Data Run 1		Time interval								
Time	Meter Reading	Ts	Tm	Tsat	delta P	iso	Ts(R)	Tm(R)	Tsat(R)	sdcf
1056	35.847	(start)								
1108	43.6	68	59	40	.16	1.025714	528	519	500	7.991414
1120	48.7	66	60	42	.07	1.016196	526	520	502	5.246722
1132	53.3	66	61	42	.055	1.032045	526	521	502	4.723254
1144	59.126	66	62	44	.08	1.08172	526	522	504	5.970644

48 23.279		66.5	60.5	42	.09125	1.038919	526.5	23.93204		
Run 2		Time Int	Run 2	12	(Q60)					
Time	Meter Reading	Ts	Tm	Tsat	delta P	iso	Ts(R)	Tm(R)	Tsat(R)	sdcf
1156	59.126	(start)								
1208	66.7	69	64	44	.15	1.032647	529	524	504	7.732416
1220	70.8	69	64	44	.045	1.020586	529	524	504	4.185755
1232	73.6	70	65	44	.02	1.044473	530	525	504	2.853119
1244	78.94	68	65	44	.07	1.062736	528	525	504	5.441306

48 19.814		69	64.5	44	.07125	1.04011	529	20.2126		
Run 3		Time Int	Run 3	12	Q80					
Time	Meter Reading	Ts	Tm	Tsat	delta P	iso	Ts(R)	Tm(R)	Tsat(R)	sdcf
1256	78.94	(start)								
1308	87.3	71	67	44	.18	1.036531	531	527	504	8.486271
1320	93.5	69	68	44	.1	1.027451	529	528	504	6.281726
1332	99.4	69	69	44	.09	1.028676	529	529	504	5.966471
1344	105.802	69	70	44	.1	1.056923	529	530	504	6.461912

48 26.862		69.5	68.5	44	.1175	1.037395	529.5	Q(100)	27.19638
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Water percentage calcs from below
Run 3 Run 1 Run 2 Run 3

4.2

-1.7

3.032606 .0106345 .0042157 .0052577

.5326059

Run 2 Run3
28.8424 28.8424

28.79669 28.78539

Veccum imp water k

23 .2847589 .2477309 .4
11.5 .0761886 .2676595 .2645751
8 .057642 .2676595 .2345208
14 .1084459 .2889944 .2828427

.5270354 .0873112

Vacuum imp water k

23	.323343	.2889944	.3872983
9	.057848	.2889944	.212132
5.5	.0337772	.2889944	.1414214
12.5	.0903168	.2889944	.2645751

.505285 .0631802

Vacuum imp water k

19	.2247717	.2889944	.4242641
14	.1140961	.2889944	.3162278
15	.1156379	.2889944	.3
6	.0781003	.2889944	.3162278

.5326059 .115043

REQUEST FOR LABORATORY ANALYSIS

FL-1

NAME Mare Island Naval Shipyard LAB # 88-329
ADDRESS Mare Island, Vallejo S.T. # _____
CITY Vallejo ZIP _____ BOOK _____
TEL. _____ PLT # _____ PAGE _____
SOURCE OPERATION (S#) A436, A439 FILM _____

SAMPLE DESCRIPTION Nitric Acid impinger (O.I.N #7103)
anal 6 filters for digestion (teflon filter)
NOTE: A436 ACETONE RINSE IS THE ONLY ONE WITH ACETONE
 TWO PART SAMPLE SPEC. SHEET ATTACHED

SAMPLE TAKEN FROM _____
SAMPLE TAKEN BY Tom Underwood DATE 4-5, 6-88 TIME _____
SAMPLE TAKEN IN PRESENCE OF B.A.A.Q.M.D. YES NO
SAMPLE RCVD. BY W. O. J. DATE 4-7-88 TIME 11:30
SAMPLE RCVD. BY _____ DATE _____ TIME _____
CONTAINER DESCRIPTION AND MARKINGS: R1, R2, R3, R5, R6, R7, R8, R9, R10, R11, R12
A436 LINE RINSE, A436 ACETONE RINSE NOTE: THESE MAY BE COMBINED
A439 RINSE
MFG. NAME BLANK, A436 Filter R1, R2, R3
MFG. CODE(S) BLANK, A439 Filter R1, R2, R3

COPY FL-2 TO: _____ (OTHER THAN REQUESTOR)

PRIORITY SAMPLE BY: _____
REASON _____ DATE REQD. _____

ANALYSIS REQUESTED: Chrom, TOTAL OF 22 samples
 OPERATION UNDER PERMIT CONDITION # 2 FOR APPLIC. # _____
 OPERATION UNDER "BUBBLE" BY PROPOSED ST-35
 FOR INFORMATION ONLY
COMPLIANCE WITH REG. _____ RULE _____ SECTION(S) _____
SUBSECTIONS _____
PERSON SUBMITTING SAMPLE Tom Alaver PERSON RECEIVING SAMPLE FOR ANALYSIS W. O. J.
DATE 4-7-88 DATE 4-7-88

BAY AREA AIR POLLUTION CONTROL DISTRICT

Source Test Data Sheet

Source Operation A439 Mesa Island 7-65 Nozzle Diameter
 Plant Chase Pitot Tube
 Sample Type Cond Gas Collector No.
 Process Cycle 30.28 Barometric Pressur
 Duct Size 3.5 x 4.6 Leak Rate @ 15"Hg
 Duct Pressure AMB

Source Test No. 74RBE
 Run No. 4-6-88
 Date: 4-6-88

4 ft 7-65 Nozzle Diameter
AMB Pitot Tube
30.28 Gas Collector No.
229 Barometric Pressur
Leak Rate @ 15"Hg

Sampling Train:

Traverse Point	Dist. From inches	INITIAL TRAVERSE		SAMPLING							REMARKS					
		Duct Temp of	h H ₂ O	Traverse Point	h H ₂ O	Vs FPS	Time	Rate CFM	Temp of	Volume Ft ³		Vac "Hg	Sat'd Gas Temp of	Ts Duct Temp of		
						1256										
						1256										
				9	.10	1308	.69	67	87.3	23	44	71	44	8.7		
				10	.10	1320	.52	68	93.5	18	44	69	44	14.6		
				11	.09	1332	.49	69	99.4	15	44	69	44	20.5		
				12	.10	1344	.52	70	105.0	15	44	69	44	20.8		

$$D_n = 13.7 \left[\frac{T_s + 460}{K_p V_s (100 - \%H_2O)} \right]^{1/2}$$

$$Q_m = \left[(2.638 \times 10^{-3}) K_p (100 - \%H_2O) D_n^2 \frac{V_s}{T_s} \right]$$

Condensate Vo gm.
 %H₂O _____
 %CO₂ _____
 %CO _____
 %O₂ _____

Source Test Team
440
458

88-329 LAB METHOD LAB-29 DRAFT
 SAMPLE LOCATION MARIE ISLAND NAVAL SHIPYARD WALLEJO
 DATE REC'D 4-7-88
 ANALYST W. Dwyer
 DATE OF REPORT 4-15-88
 LAB REFERENCE ORR8-8C

Sample #	Total Vol	Total Mg/m ³ (Maximum)
R1	104.0	< 10.4
R2	99.7	< 9.7
R3	107.3	< 10.7
R5	104.9	< 10.5
R6	101.5	< 10.2
R7	105.3	< 10.5
R8	100.4	< 10.0
R9	105.4	< 10.5
R10	97.2	< 9.7
R11	106.2	< 10.6
R12	99.1	< 9.9
R# 1-6 BLANK	118	< 11.8
R# 7-12 BLANK	116	< 11.6
A 436 LINE RINSE + HEZONE RINSE COMBINED	50	10.5
A 439 RINSE	50	50.5
2 BLANK FILTERS, COMBINED	-	< 5
A 436 FILTER R1	-	26.5
A 436 FILTER R2	-	20.5
A 436 FILTER R3	-	20.5
A 439 FILTER R1	-	17.0
A 439 FILTER R2	-	15.5
A 439 FILTER R3	-	23.5
Load Error = 0.1 ppm		