

Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

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: Plating: Anodizing run 1 1000 <10 amps run 2 1040 <10 amps run 3 1070 <10 amps		Enforcement Division
Applicable Regulations: rule development		Test Requested by: G. Karels (cds)
Test Results and Comments:		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

Date

Approved—Chief of Source Test

Date

T. Underwood

K. Kunaniec 5/9/88
 K. Kunaniec

G. Karels

5/9/88

DISTRIBUTION:

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Permit Services
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Source Inventory
Requester
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BAY AREA
QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET
SAN FRANCISCO, CALIFORNIA 94109
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SOURCE TEST RESULTS**

Report No. 88163

Test Date: April 6, 1988

Test Times: AP-42 Section 12.20

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: A439 Plant #44 Permit No. on demand Operates hr/day & days/yr	Source Test Engineers T. Underwood G. Colwell Permit Services Division Enforcement Division
Permit Conditions under review		Test Requested by: G. Karels (cds)
Operating Parameters	TANK: Plating: Anodizing run 1 1000 <10 amps 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

Date

Approved—Chief of Source Test

Date

T. Underwood
T. Underwood
4/29/88

K. Kunaniec
K. Kunaniec
5/4/88

G. Karels
G. Karels
5/4/88

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, California 94109
(415) 771-6000

DISTRIBUTION

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

Test Number: 88163
Test Date April 6, 1988
Test Times:
Run A: 1056 to 1144
Run B: 1156 to 1244
Run C: 1256 to 1344

SUMMARY OF SOURCE TEST RESULTS

SOURCE INFORMATION

BAAQMD Representatives

Firm Name and Address: Mare Island Naval Shipyard
Code 461 Stop 032
Vallejo, Ca 94592
Representative and Title: Leslie Berlot
Env Eng
Source Test Engineers: Tim Underwood
Glen Colwell

Phone No. (707) 646-2421 x3375

Plant No. 44

Source No. Permit Services:

Permit No A439

Enforcement Division:

On demand

Operating Parameters:

Tank: Plating Anod
Run 1 1000 <10
Run 2 1040 <10
Run 3 1070 <10

Test Requested By:

G. Karels

Applicable Regulations: R... VN Recommended? No

Test Results and Comments:

METHOD	TEST	RUN A	RUN B	RUN C	AVERAGE	LIMIT
ST-17	Volume Flowrate, SDCFM	1.08E+04	9.20E+03	1.24E+04	1.08E+04	
	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	2.02E-03	1.79E-03	2.13E-03	2.13E-03	
	Isokinetic Ratio, act/theo	1.04	1.04	1.04	1.04	

NO COMMERCIAL USE OF THESE RESULTS IS AUTHORIZED

Source Test Team Leader Date Approved-Chief of Source Test

Tim Underwood
Ken Kunanec

Gale Karels

	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		

				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				Set 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						Dry mol
			tank factor	1	1	1			Run 1
O2	20.9	20.9	20.9	20.9	20.9	20.9			28.8424
CO2	.04	.04	.04	.04	.04	.04			Wet mol
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		12						
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

Vacuum 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 <u>Marine Islands Naval Shipyard</u>	LAB # <u>88-329</u>
ADDRESS <u>Marine Islands, Vallejo</u>	S.T. #
CITY <u>Vallejo</u> ZIP	BOOK
TEL. PLT #	PAGE
SOURCE OPERATION (S#) <u>A436, A439</u>	FILM

SAMPLE DESCRIPTION Nitric Acid Impinger (O.I.N #7103)
anal 6 filter 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 Tim 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. Guy 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
Tim Alaver PERSON SUBMITTING SAMPLE W. O. Guy PERSON RECEIVING SAMPLE FOR ANALYSIS
 DATE 4-7-88 DATE 4-7-88

BAY AREA AIR POLLUTION CONTROL DISTRICT

Source Test Data Sheet

Source Operation A430 Nozzle Diameter 7.65
 Plant Mandeville Island Pitot Tube 4 ft Glass
 Sample Type Chromatographic Gas Collector No. AMB
 Process Cycle Cont Barometric Pressure 30.28
 Duct Size 35 x 46 Leak Rate @ 15"Hg ---
 Duct Pressure AMB

Source Test No. 760
 Run No. 4-6-BB
 Date: ---

Sampling Train: A910

Sampling Train: <u>A9 & A10</u> <u>Down / ps</u>															
T-verse ant	Dist. From inches	TRVERSE INITIAL		SAMPLING											REMARKS
		Duct Temp of	h H ₂ O	Traverse Point	h H ₂ O	V _s FPS	Time	Rate CFH	METER Temp Op	Volume Ft ³	Vac "Hg	Sat'd Gas Temp of	T _s Duct Temp of		
Ducting 1040	Anodizing	4110 ft. 30 in	1040	5	.15	21	1208	.63	64	59.126	23	44	69	38	7.7
				6	.045	12	1220	.35	64	70.8	9	44	69	21	11.8
				7	.020	8	1232	.23	65	73.6	5.5	44	70	14	14.6
				8	.07	15	1244	.43	65	78.9	12.5	44	68	26	19.9
													</		

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

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

Condensate gm.
 %H₂O ---
 %CO₂ ---
 %CO ---
 %O₂ ---

Source Test Team
440
450

LAB METHOD LAB-29 DRAFT

NAVAL SHIPPING VALUERS

DATE OF REPORT 4-15-88

LAB REFERENCE 0588-8C

Sample #	TOTAL VOL	Total Vol Alqum (Columbus)
R1	104.0	< 10.4
R2	97.7	< 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 + ACETONE 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
L.O.D. Ca by AAS = 0.1 ppm		