Versar INC.

ORIGINAL
(Red)

441345

ANALYTICAL DATA PACKAGE
General Chemistry Section

DATE: 18-May-90
CODE / CONTROL #: VERSCDM / 2548
CLIENT: Versar Division 31
SITE: CDM
PROJECT / BATCH: 420.1 / 3
CASE # / SDG: R3-7 / MW-38

Versar INC.

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ANALYTICAL NARRATIVE
General Inorganic Chemistry Section

DATE : 18-May-90
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This task consisted of eleven water samples which were analyzed for total cyanide according to a CLP modified version of MCAWW 335.2.

Samples were received April 20, were distilled May 1 and 2, and were analyzed May 11. No analytical problems were encountered, and the distillation holding time was met. All check standard recoveries and duplicate precision results were within acceptable limits, and all blank results were below method detection limits. The distilled spike recovery for sample ID TB-1A was slightly outside the +/- 25% range, at 72%. An analytical spike for this same sample yielded acceptable results.

Release of this data has been authorized by laboratory management.

Sincerely,

Melanie J. Dillman

Melanie J. Dillman
General Chemistry
Laboratory Operations

C. Thompson

Approved for Release
Chris Thompson, Section Chief

Versar INC.

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(Red)

ANALYSIS REPORT
General Inorganic Chemistry Section

DATE: 18-May-90 PAGE: 1
CODE / CONTROL #: VERSCDM / 2548
CLIENT / SITE: Versar Divsion 31 / CDM
PROJECT / BATCH: 420.1 / 3
CASE # / SDG: R3-7 / MW-38

LAB #	FIELD #	TOTAL CYANIDE (ug/L)				
16677	MW-38	<10.0				
16678	MW-43	<10.0				
16679	MW-53	46.3				
16680	MW-79	<10.0				
16681	MW-79A	<10.0				
16682	SW-1	<10.0				
16683	SW-2	<10.0				
16684	TB-1A	<10.0				
16685	TB-3A	<10.0				
16686	TB-4A	<10.0				
16687	TB-5B	<10.0				

C. Thompson
LABORATORY MANAGER

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Versar INC.

QUALITY ASSURANCE REPORT
General Chemistry Section

DATE: 18-May-90 PAGE: 1
CODE / CONTROL #: VERSCDM / 2548
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	TOTAL CYANIDE				
INITIAL CALIBRATION VERIFICATION					
	EPA WP				
Source	586				
Units	ug/L				
True Value	500				
Found	474				
Recovery	95%				
METHOD DETECTION					
Limit (ug/L)	10.0				
Limit (mg/kg)					
1. Calib. Blank	<10.0ug/L				
2. Calib. Blank					
1. Reagent Blank	<10.0ug/L				
2. Reagent Blank	<10.0ug/L				
3. Reagent Blank					
CONTINUING CALIBRATION VERIFICATION					
Source	Versar				
Units	ug/L				
True Value	100				
1. Found	105				
Recovery	105%				
2. Found	105				
Recovery	105%				
3. Found					
Recovery					
LABORATORY CONTROL STANDARD					
	ICV #6				
Source	0789				
Units	ug/L				
1. True Value	94.0				
Found	83.8				
Recovery	89%				
2. Found	89.2				
Recovery	95%				

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QUALITY ASSURANCE REPORT
General Chemistry Section

DATE: 18-May-90

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	TOTAL CYANIDE (ug/L)				
DUPLICATE PRECISION SAMPLE RESULTS					
Duplicate 1 :					
Sample ID	TB-1A				
Lab #	16684				
Sample Result	<10.0				
Duplicate Result	<10.0				
RPD	*NC				
Duplicate 2 :					
Sample ID					
Lab #					
Sample Result					
Duplicate Result					
RPD					
SPIKED SAMPLE RESULTS					
Distilled Spike:					
Sample ID	TB-1A				
Lab #	16684				
Sample Result	<10.0				
Spike Result	71.6				
Spike Added	100				
Recovery	72%				
Analytical Spike:					
Sample ID	TB-1A				
Lab #	16684				
Sample Result	<10.0				
Spike Result	24.8				
Spike Added	20.0				
Recovery	124%				

*NC = Not Calculable

Data for calibration curve analysis
Waters

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Dates:
Anal.: 5/11/90
Prep.: 5/1/90 & 5/2/90

Analyte: CN
Method: CLP

Project/Batch: 420.1-3
Control #: 2548

Calibration:

Standard (µg/L)	Response (Peak Ht)
200	82.0
90	37.0
50	20.6
20	8.4
10	3.9
Blk	0.0

Vol_f = 250mL

Correlation coefficient
r= 0.99999

Calibration Verification Standard:
Source: CCV-NaCN / ICV6 (0789) / LCS ICV - WD586
Conc.: 100 µg/L / 94.0 µg/L / 500 µg/L

Sample #	Response (Peak Ht)	Conc. (µg/L)	dil.	adj. conc. (µg/L)	Remarks and Recoveries
ICV$	38.9	94.7863	Five fold	474.	95%
Int. Cal. Blk.	0.1	0.1820	-	<10.0	
Rgt. Blk.	0.0	-0.0618	-	<10.0	5/1/90
LCS	34.4	83.8141	-	83.8	89%
16677	0.9	2.1326	-	<10.0	
16678	1.1	2.6203	-	<10.0	
16679	19.0	46.2650	-	46.3	
16680	2.3	5.5462	-	<10.0	
16681	1.3	3.1079	-	<10.0	
16682	0.5	1.1573	-	<10.0	
16683	0.5	1.1573	-	<10.0	
CCV	43.0	104.783	-	105.	105%
CCB	0.0	-0.0618	-	<10.0	
dp					X= ___ %RPD= ___
spk					+ ___ % = ___
sdp					+ ___ % = ___
CVS					

Checked by: MJ
Date: 5/15/90

Analyst: Janet Farrell
Date: 5/15/90

ORIGINAL (Red)

Data for calibration curve analysis
Waters

Dates
Anal.: 5/11/90
Prep.: 5/1/90 & 5/2/90

Analyte: CN
Method: CCP

Project/Batch: 420.1-3
Control #: 2548

Sample #	Response (Peak Ht)	Conc. (µg/L)	dil.	adj. conc. (µg/L)	Remarks and Recoveries
* 16684	1.2	2.8641	-	<10.0	
* 16684 dp	1.4	3.3518	-	<10.0	
* 16684 spk	29.4	71.6229	-	71.6	+100 µg/L 72% Rec
CCV	42.8	104.295	-	104.	104 %
CCB	0.0	-0.0618	-	<10.0	
CCV	43.2	105.271	-	105.	105 %
* 16684 bench spk	10.2	24.8084	-	24.8	+20 µg/L 124% Rec
CCV	43.5	106.002	-	106.	106 %
CCB	0.0	-0.0618	-	<10.0	
CCV	43.6	106.246	-	106.	106 %
* 16684 bench spk	9.9	24.0769	-	24.1	+20 µg/L 120% Rec
CCV	43.7	106.490	-	106.	106 %
CCB	0.0	-0.0618	-	<10.0	
Rgt Blk	0.0	-0.0618	-	<10.0	5/2/90
LCS	36.6	89.1783	-	89.2	95%
16685	1.3	3.1079	-	<10.0	
16686	2.0	4.8147	-	<10.0	
16687	1.6	3.8394	-	<10.0	
CCV	43.2	105.27	-	105.	105 %
CCB	0.1	0.1820	-	<10.0	

Checked by: [illegible] 5/15/90

Analyst: Janet Forsell 5/15/90

(37)

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VERSAR INC.
GENERAL INORGANIC CHEMISTRY
DISTILLATION LOG SHEET

PARAMETER: CNT

MATRIX: HOH

PROJECT/BATCH: 420.1-3 #2548

LAB#	INITIAL VOL. (ml)	SAMPLE WT. (g)	FINAL VOL. (ml)	INITIALS	DATE	COMMENTS
Blank	500		250	MG	5-1-90	
LCS	250					pH>12.0
16677						
16678						
16679						
16680						
16681						
16682						
16683						
16684						
16684 DP						
16684 SP						
Blank	500		250	MG	5-2-90	
LCS	250					pH>12.0
16685						
16686						
16687						

SPIKE: LAB # 16684 SPIKED WITH 2.5 ml of 10 mg/l KCN SOLUT

CHECK STANDARD: SOURCE: ICV6 (0789) CONCENTRATION: 0.094 mg/l

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

2548

REGION 3
Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

CHAIN OF CUSTODY RECORD

PROJ. NO.: R3-7
PROJECT NAME: R3-7

SAMPLERS: (Signature) Sharon E. Schaffer, Kathy Blythe, Andrew P. Hyatt, Clare R. Grant

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BNA/Pest./PCB	VOA	TAL Metals	Cyanide	TAL Metals (Filter)		REMARKS (Tag #'s)
TB3A	4/18/90	1025		X	Location TB3A	6	1	2	1	1	1		3-1068400, 195, 96, 97, 98, 99
TB4A	4/18/90	1125		X	Location TB4A	6	1	2	1	1	1		3-1068200, 201, 202, 203, 204, 205
TB1A	4/18/90	1415		X	Location TB1A	6	1	2	1	1	1		3-1068206, 07, 08, 09, 10, 11
TB5B	4/18/90	1500		X	Location TB5B	6	1	2	1	1	1		3-1068212, 13, 14, 15, 16, 17
MW-43	4/19/90	1100		X	Location 43	6	1	2	1	1	1		3-1068218, 19, 20, 21, 22, 23
MW-79	4/19/90	1135		X	Location 79	6	1	2	1	1	1		3-1068224, 25, 26, 27, 28, 29
MW-79A	4/19/90	1200		X	Location 79A	6	1	2	1	1	1		3-1068230, 31, 32, 33, 34, 35
MW-38	4/19/90	1245		X	Location 38	6	1	2	1	1	1		3-1068236, 37, 38, 39, 40, 41
MW-53	4/19/90	1325		X	Location 53	6	1	2	1	1	1		3-1068242, 43, 44, 45, 46, 47
SW-1	4/19/90	1345		X	Location SW-1	5	1	2	1	1			3-1068248, 49, 50, 401, 402.
SW-2	4/19/90	1350		X	Location SW-2	5	1	2	1	1			3-1068403, 4, 5, 6, 7
TB-1	4/19/90	1830		X	Location TB-1	2		2					3-1068408, 9

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Sharon E. Schaffer	~~4/18/90 0000~~ 4/19/90 0000 SES 4/19/90				
Relinquished by: (Signature)	Date / Time	Received by: (Signature) J. L. Morrison	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) J. L. Morrison	4/20/90	Date / Time 0900	Remarks: Shipped via Federal Express 4026936082 Airbill # ~~4026936093~~ SES 4/19/90

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