

132544

13

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

Corclis# OH D063963714
ACTIVITY# C51100

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skimmer PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER VOLATILE ORGANICS SCAN UG/L TOX 17664	WATER ABN ORGANICS SCAN UG/L TOX 17574	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 216622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 216722
* 86RA01544	5-95901		X		
	5-95910		X		
	5-95911		X		
86RA01545	5-95915		X		
86RA01546	5-95924		X		
86RA01547	5-95933		X		
86RA01548	5-95942		X		
86RA01048	5-95951		X		
86RA01549	5-95960		X		
86RA01550	5-95969		X		
86RA01551	5-95978		X		
86RA01552	5-95987		X		
86RA01553	5-95996		X		
86RA01R53	5-97055		X		

8/25/86
↓

* Matrix spike

For Samples to CRL

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

Contract # OH D063963714
ACTIVITY # C51100

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skinner PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION <i>sample tag #</i>	WATER VOLATILE ORGANICS SCAN UG/L TOX 17664	WATER ABN ORGANICS SCAN UG/L TOX 17674	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 216822	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 216722
* 86RA01544	5-95903	X			
	5-959034	X			
* 86RA01544	5-95912	X			
	5-95913	X			
* 86RA01544	5-97066	X			
	5-97067	X			
86RA01545	5-95917	X			
	5-95918	X			
86RA01546	5-95927	X			
	5-95928	X			
86RA01547	5-95935	X			
	5-95936	X			
86RA01548	5-95944	X			
	5-959445	X			
86RA01D48	5-95953	X			
	5-95954	X			
86RA01549	5-95962	X			
	5-95963	X			

For Samples to CRL

* Matrix Sample

1986

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS	ABN	VOA	PESTICIDES	METALS	CYANIDE	MINERALS	NUTRIENTS	SAS PESTICIDES	REMARKS									
SAMPLERS: (Signature)														STATION LOCATION	CASE 6339							
STA. NO.	DATE	TIME	COMP. GRAB												Superfund 3453 TAGS							
544	8/22		X	SL-RW01-501	1-80oz	X							5-95901, 11, 17, 10									
					2-40ml	X							5-95903, 04, 05, 13, 14, 15, 97, 98									
					1-80oz		X						5-95905, 2									
					1-1l			X					5-95906, 5									
								X					5-95907, 6									
									X				5-95908, 7									
										X			5-95909, 8									
					1-80oz	X							5-95910, 5-9700, 1, 6, 5, 12, 18									
545				SL-RW02-01	2-40ml	X							5-95915									
					1-80oz		X						5-95917, 18									
					1-1l			X					5-95916									
								X					5-95919									
									X				5-95920									
										X			5-95921									
											X		5-95922									
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)												
<i>[Signature]</i>		8-21-86 10:10		<i>[Signature]</i>																		
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)												
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks														
				<i>[Signature]</i>		8/25/86 12:25 PM		HAND DELIVERED CRL														

1986

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	ABN / VOA / METALS / CYANIDE / MINERALS / NUTRIENTS / Pesticides / PCBs / SAS Pesticides							REMARKS		
86RA01		Skinner Landfill														
SAMPLERS: (Signature)													CASE 6339 Superfund 3453			
Laura Weyes <i>[Signature]</i>																
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION								TAG #			
545	8/22			X	SL-RW02-01	1-80oz										
546	8/22				SL-RW03-01	1-80oz	X									5-95924 ✓
						2-40ml		X								5-95926, 27 ✓
						1-1l			X							5-95928 ✓
										X						5-95929 ✓
											X					5-95930 ✓
						1-80oz						X				5-95931 ✓
													X			5-95925 ✓
547					SL-RW04-01	1-80oz	X									5-95932 ✓
						2-40ml		X								5-95933 ✓
						1-1l			X							5-95935, 36 ✓
										X						5-95937 ✓
											X					5-95938 ✓
												X				5-95939 ✓
													X			5-95940 ✓
Relinquished by: (Signature)			Date / Time		Received by: (Signature)			Relinquished by: (Signature)			Date / Time		Received by: (Signature)			
<i>[Signature]</i>			8/25/86 10:05		<i>[Signature]</i>											
Relinquished by: (Signature)			Date / Time		Received by: (Signature)			Relinquished by: (Signature)			Date / Time		Received by: (Signature)			
Relinquished by: (Signature)			Date / Time		Received for Laboratory by: (Signature)			Date / Time		Remarks						
					<i>[Signature]</i>			8/25/86 12:25pm		HAND DELIVERED CRL						

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

1986

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	ANALYTES							REMARKS
86RA01		Skinner Landfill					ABN	VDA	Pesticides/PCBS	Metals	Cyanide	Minerals	Nutrients		995 Pesticides
SAMPLERS: (Signature)													TAGS	
Laura Meyer <i>[Signature]</i> J. G. <i>[Signature]</i>														
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION									
5457	8/22			X	SL-RW04-01	1-80oz		X						5-95934 ✓
547					↓	↓						X		5-95941 ✓
5468					SL-RW05-01	1-80oz	X							5-95942 ✓
548					↓	2-40ml	X							5-95944, 45 ✓
					↓	1-80oz		X						5-95943 ✓
					↓	1-1l			X					5-95946 ✓
					↓	↓			X					5-95947 ✓
					↓	↓				X				5-95948 ✓
					↓	↓					X			5-95949 ✓
0468					SL-RW05-DP	1-80oz						X		5-95950 ✓
048					↓	1-80oz	X							5-95951 ✓
					↓	2-40ml	X							5-95953, 54 ✓
					↓	1-80oz		X						5-95952 ✓
					↓	1-1l			X					5-95955 ✓
					↓	1-1l				X				5-95956 ✓
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)				
<i>[Signature]</i>		8/25/86 10:05		<i>[Signature]</i>										
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)				
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks						
				<i>[Signature]</i>		8/25/86 12:25pm		HAND DELIVERED CRL						

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

1986

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	ABN VOA Pesticides/PCBs Metals Cyanide Inorganics Nutrients SAS Pesticides							REMARKS				
86RA02		Skinner Landfill																
SAMPLERS: (Signature) Kara Weyer							CASE 6339 Superfund 3453											
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	TAGS												
D488 D48	8/22			X	SL- 604 ⁶⁰² RW05-0P	1-1l							X					5-95957 ✓
						↓								X				5-95958 ✓
						1-80oz									X			5-95959 ✓
S489 S49					SL- 604 ⁶⁰² RW06-01	↓	X											5-95960 ✓
						2-40ml		X										5-95962, 63 ✓
						1-80oz			X									5-95961 ✓
						1-1l				X								5-95964 ✓
						↓					X							5-95965 ✓
						↓						X						5-95966 ✓
						↓							X					5-95967 ✓
S453					SL-RW10-01	1-80oz										X		5-95968 ✓
						1-80oz	X											5-95996 ✓
						2-40ml		X										5-95998, 99 ✓
						1-80oz			X									5-95997 ✓
						1-1l				X								5-95996, 000 ✓
Relinquished by: (Signature) Kara Weyer		Date / Time 10/25/86 10:05		Received by: (Signature) William Sargent		Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)		
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)		
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature) William Sargent		Date / Time 8/25/86 12:25pm		Remarks HAND DELIVERED CRL										

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

1980

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME			NO. OF CONTAINERS	ANALYTES							REMARKS
86RA01		Skinner Landfill				ABN	VOA	Pesticides	Metals	Cyanide	Minerals	Nutrients		SAS Pesticides
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION								
553	8/22			X	SL-RW10-53				X				5-97051
↓	↓	↓	↓	↓	↓					X			5-97052
↓	↓	↓	↓	↓	↓						X		5-97053
↓	↓	↓	↓	↓	↓							X	5-97054
R53					SL-RW10-BK		X						5-97055
↓	↓	↓	↓	↓	↓		X						*5-97057, 58
↓	↓	↓	↓	↓	↓			X					5-97056
↓	↓	↓	↓	↓	↓				X				5-97059
↓	↓	↓	↓	↓	↓				X				5-97060
↓	↓	↓	↓	↓	↓					X			5-97061
↓	↓	↓	↓	↓	↓						X		5-97062
↓	↓	↓	↓	↓	↓							X	5-97063

CASE 6339

REMARKS
Superfund 3453
TAGS

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 10/25/86 16:05	Received by: (Signature) <i>William Sargent Jr.</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) <i>William Sargent Jr.</i>	Date / Time 8/25/86 12:25pm	Remarks HAND DELIVERED CRL	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

VOA BOTTLE SG RAVIR53 TAG 5-97057 RECEIVED
BROKEN IN ICE CHEST.

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

Corclio# OH D063963714
ACTIVITY# C51100

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skimmer PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION <i>sample tag #</i>	WATER VOLATILE ORGANICS SCAN UG/L TOX 17564	WATER ABN ORGANICS SCAN UG/L TOX 17574	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 216622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 216722
* 86RA01544	5-95901		X		
	5-95910		X		
	5-95911		X		
86RA01545	5-95915		X		
86RA01546	5-95924		X		
86RA01547	5-95933		X		
86RA01548	5-95942		X		
86RA01048	5-95951		X		
86RA01549	5-95960		X		
86RA01550	5-95969		X		
86RA01551	5-95978		X		
86RA01552	5-95987		X		
86RA01553	5-95996		X		
86RA01R53	5-97055		X		

* Matrix spike

For Samples to CKL

8/25/86
↓

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

Circle # OH D063963714
ACTIVITY # C51100

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skimmer PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION <i>sample tag #</i>	WATER VOLATILE ORGANICS SCAN UG/L TOX 17584	WATER ABN ORGANICS SCAN UG/L TOX 17574	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 215622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 215722
* 86RA01544	5-95903	X			
	5-959034	X			
* 86RA01544	5-95912	X			
	5-95913	X			
* 86RA01544	5-97066	X			
	5-97067	X			
86RA01545	5-95917	X			
	5-95918	X			
86RA01546	5-95927	X			
	5-95928	X			
86RA01547	5-95935	X			
	5-95936	X			
86RA01548	5-95944	X			
	5-959445	X			
86RA01D48	5-95953	X			
	5-95954	X			
86RA01549	5-95962	X			
	5-95963	X			

* Matrix spike

For Samples to CRL

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

Corclis # OH D063963714
ACTIVITY # C51100

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skimmer PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION <i>sample tag #</i>	WATER VOLATILE ORGANICS SCAN UG/L TOX 17564	WATER ABN ORGANICS SCAN UG/L TOX 17574	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 215622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 215722
86RA01597	5-95971	X			
_____	5-95972	X			
86RA01351	5-95980	X			
_____	5-95981	X			
86RA01352	5-95989	X			
_____	5-95990	X			
86RA01553	5-95998	X			
	5-95999	X			
86RA01R53	5-97057	X			
	5-97058	X			

skipped
↓

For Samples to CRL

Order # OHDO63963714

ACTIVITY # CS1100

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH: Superfund SAMPLING DATE: 8/25/86 LAB ARRIVAL DATE: 8/25/86 DUE DATE: 9/15/86

DU NUMBER: 4905 DATASET NUMBER: 3453 STUDY: Skinner PRIORITY: N CONTRACTOR: N

CRL LUG NUMBER	SAMPLE DESCRIPTION	MATCH		NITRATE & NITR		AMMONIA		TOTAL NITROGEN		TOTAL PHOSPHORUS		WATER	
		TE	MG N/L	MG N/L	MIN7204	MG N/L	MIN7204	MG N/L	MIN7304	MG P/L	MIN7315	MG P/L	MIN7325
<u>5-95908</u>													
<u>545</u>	<u>32'</u>												
<u>546</u>	<u>31'</u>												
<u>547</u>	<u>40'</u>												
<u>548</u>	<u>49'</u>												
<u>048</u>	<u>58'</u>												
<u>549</u>	<u>67'</u>												
<u>550</u>	<u>76'</u>												
<u>551</u>	<u>85'</u>												
<u>552</u>	<u>94'</u>												
<u>553</u>	<u>5-97053</u>												
<u>R53</u>	<u>5-97062</u>												

8/25/86

WHL
↓

Skinner

Circle # OH D063963714

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES AND PCB'S

ACTIVITY # C51100

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER 4905 DATA SET NUMBER 3453 STUDY Skinner PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER TRICHALOMETHANES UG/L PES17414	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES 17134	WATER HERBICIDES UG/L PES 17424	WATER OIL AND GREASE MG/L PES 17439
* 86RA01544	5-95902		X	X		
* 86RA01544	5-95909			X		
* 86RA01544	5-97064		X	X		
* 86RA01544	5-97065		X	X		
* 86RA01544	5-95914			X		
* 86RA01544	5-97068			X		
86RA01545	5-95916		X	X		
	5-95923			X		
86RA01546	5-95925		X	X		
	5-95932			X		
86RA01547	5-95934		X	X		
	5-95941			X		
86RA01548	5-95943		X	X		
	5-95950			X		
86RA01048	5-95952		X	X		
	5-95959			X		
86RA01549	5-95961		X			
	5-95968			X		

* Matrix spike

10/1/86

Circle # OH D063963714

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES AND PCB'S

ACTIVITY # C51100

DIVISION/BRANCH Super Fund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER 4905 DATA SET NUMBER 3453 STUDY Skinner PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER TRIHALOMETHANES UG/L PES17414	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES 17134	WATER HERBICIDES UG/L PES 17424	WATER OIL AND GREASE MG/L PES 17430
86RA01550	5-95970		X	X		
	5-95977			X		
86RA01551	5-95979		X	X		
	5-95986			X		
86RA01552	5-95988		X	X		
	5-95995			X		
86RA01553	5-95997		X	X		
	5-97054			X		
86RA01R53	5-97056		X	X		
	5-97063			X		

8/25/86
Wd.
↓

special pest.
special pest.
special pest.
special pest.
special pest.
special pest.

Cerclis # 0ND0639637K
ACTIVITY # C51100

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skimmer PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION <i>Sample Tag #</i>	WATER PHENOLICS UG PHENOL/L MIN 74618	WATER CYANIDE UG CN/L MIN 74618	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR ⁶⁺ UG CR ⁶⁺ /L MIN 74618	WATER MERCURY UG HG/L MIN 74717
*86RA01544	5-95906'		X			
S45	20'		X			
S46	29'		X			
S47	38'		X			
S48	47'		X			
D48	56'		X			
S49	65'		X			
S50	74		X			
S51	83		X			
S52	92		X			
S53	5-97051'		X			
R53	5-97060'		X			
* MATRIX SPIKE						

For Samples to CRL

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

Circle # OHDO63963714
ACTIVITY # C51100

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skinner PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION Sample Tag #	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET101	TOTAL METALS WATER PB UG/L MET1101	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
* 86RA01544	5-95905						
86RA01545	19						
546	28						
547	37						
548	46						
048	55						
549	64						
8/25/86 ↓ 550	73						
↓ 551	82						
↓ 552	91						
553	5-96000						
↓ R53	5-97059						

*MATRIX SPIKE

For Samples to CRL

1986

FILE COPY

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	ANALYTES							REMARKS	
86RA02		Skinner Landfill					ABN	VOA	Pesticides/PCBs	11k tabs	Cyanide	Phenols	Nitroarbs		SA - Pesticides
SAMPLERS: (Signature) Laura Weyer		[Signature]													
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION									TAGS	
045	8/32			X	SL- 045 RW05-01P	1-12				X				5-95957	
						↓					X			5-95958	
						1-80cy						X		5-95959	
546					SL- 045 RW06-01	↓								5-95960	
						2-40ml								5-95962, 63	
						1-80cy								5-95961	
						1-12								5-95964	
						↓								5-95965	
						↓								5-95966	
						↓								5-95967	
						1-80cy								5-95968	
5453					SL-RW10-01	1-80cy	X							5-95994	
						2-40ml		X						5-95998, 99	
						1-80cy			X					5-95997	
						1-12				X				5-9596000	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)					
[Signature]		10/25/86 10:05		[Signature]											
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)					
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks							
								HAND DELIVERED CRL							

Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File

986

FILE COPY

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME					NO. OF CONTAINERS								REMARKS		
86RA01		Skinner Landfill							HBN VDA Pesticides/PCBS Metals Cyanide Mercury Nutrients SPB Pesticides							CASE 6339	
SAMPLERS: (Signature)																	
RW Laura Meyer J. [Signature]																	
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION												
545	8/22			X	SL-RW04-01	1-80oz		X								5-95934	
																5-95941	
546					SL-RW03-01	1-80oz	X									5-95942	
						2-40ml		X								5-95944, 45	
						1-80oz		X								5-95943	
						1-1L			X							5-95946	
										X						5-95947	
											X					5-95948	
												X				5-95949	
						1-80oz							X			5-95950	
D46					SL-RW05 DP	1-80oz	X									5-95951	
						2-40ml		X								5-95953, 54	
						1-80oz		X								5-95952	
						1-1L			X							5-95955	
						1-1L				X						5-95956	
Relinquished by: (Signature)			Date / Time			Received by: (Signature)			Relinquished by: (Signature)			Date / Time			Received by: (Signature)		
[Signature]			8/25/86 10:55														
Relinquished by: (Signature)			Date / Time			Received by: (Signature)			Relinquished by: (Signature)			Date / Time			Received by: (Signature)		
Relinquished by: (Signature)			Date / Time			Received for Laboratory by: (Signature)			Date / Time			Remarks					
												HAND DELIVERED CRL					

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

1986

FILE COPY

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	ABN VOA DETAILS CYANIDE METALS NUTRIENTS Pesticides/PCBs HAPs/Pesticides							REMARKS	
SAMPLERS: (Signature)														TAG #	
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION										
86RA01	Skinner Landfill													CAS-6337 SIF-3453	
545	8/22			X	SL-LW02-01	1-80mg									
546	8/22				SL-RW03-01	1-80mg	X							5-95924	
						2-40ml		X						5-95926, 27	
						1-1l			X					5-95928	
										X				5-95929	
											X			5-95930	
						1-80mg					X			5-95931	
												X		5-95925	
													X	5-95932	
547					SL-RW04-01	1-80mg	X							5-95933	
						2-40ml		X						5-95935, 34	
						1-1l			X					5-95937	
										X				5-95938	
											X			5-95939	
												X		5-95940	
Relinquished by: (Signature)			Date / Time			Received by: (Signature)			Relinquished by: (Signature)			Date / Time		Received by: (Signature)	
<i>[Signature]</i>			8/25 10:05												
Relinquished by: (Signature)			Date / Time			Received by: (Signature)			Relinquished by: (Signature)			Date / Time		Received by: (Signature)	
Relinquished by: (Signature)			Date / Time			Received for Laboratory by: (Signature)			Date / Time			Remarks			
												HAND DELIVERED CRL			

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

1986

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	ANALYTES							REMARKS	
86KAO1		Skinner Landfill					ABN	VOA	Pesticides	PCBS	Metals	Cyanide	Inorganics		Nutrients
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION								TAGS		
553	8/22			X	SL-RW10-53					X					5-97051
											X				5-97052
												X			5-97053
													X		5-97054
R53					SL-RW10-BK		X								5-97055
							X								5-97057, 58
								X							5-97056
									X						5-97059
										X					5-97060
											X				5-97061
												X			5-97062
													X		5-97063
Relinquished by: (Signature)			Date / Time			Received by: (Signature)			Relinquished by: (Signature)			Date / Time		Received by: (Signature)	
<i>[Signature]</i>			10/25/86 10:15												
Relinquished by: (Signature)			Date / Time			Received by: (Signature)			Relinquished by: (Signature)			Date / Time		Received by: (Signature)	
Relinquished by: (Signature)			Date / Time			Received for Laboratory by: (Signature)			Date / Time		Remarks				
											HAND DELIVERED (KL)				

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5-19191


1986

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS	ANALYTES							REMARKS
SAMPLERS: (Signature)					ABN	VOA	PESTICIDES/PCBs	METALS	CYANIDE	MINERALS	NUTRIENTS		STRENGTHS
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION							
486NA01					Skinner Landfill							CASE 6339
Gramer Meyer		C.G.										REMARKS S.F. 3453 TAGS
544	8/22			X	SL-RW01-501	1-80mg	X					5-95901, 11, 12
						2-40ml	X					5-95903, 04, 05, 13, 14, 15
						1-80mg		X				5-95905
						1-l			X			5-95906
									X			5-95907
										X		5-95908
										Y		5-95909
						1-80mg					X	5-95910, 5-97066, 67, 68
545					SL-RW02-01		X					5-95911
						2-40ml	X					5-95917, 18
						1-80mg		X				5-95916
						1-l			X			5-95911
										X		5-95920
											X	5-95921
											Y	5-95922
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)		
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)		
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks				
								HAND DELIVERED CRL				

Distribution: White — Accompanies Shipment; Pink — Coordinator Field File; Yellow — Laboratory File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 10-24-86
SUBJECT: Precision and Accuracy of Analyses for Data Set SF 3453
Site: SKINNER
FROM: Steve Parker, 
CRL QC Coordinator
TO: Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 9 (number) WATER (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limits.

Attachment

TRANSMITTED BY


OCT 24 1986

U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: SF 3453

Matrix: WATER

Site Name: SKINNER

Parameter	PRECISION			ACCURACY		
	RPD (R ¹)	Limit	Method of Quality Control	% Recovery % Bias	Limit	Method of Quality Control
As	0.1 - 2.3 µg/L	≤ 4 µg/L	DUPLICATE CONTROL STANDARDS	93-105%	70-110%	CONTROL STANDARD
Pb	1.8 µg/L	"	"	95-104%	"	"
Sb	1 µg/L	"	"	94-100%	"	"
Se	0.5 - 2.3 µg/L	"	"	90-104%	"	"
Tl	3.6 - 5.2 µg/L	5 µg/L	"	97 110-124% *	"	"
Cd	0.1 µg/L	≤ 0.2 µg/L	"	89-110%	"	"

COMMENT: * HIGH BIASES HOWEVER NONE OF THE SAMPLES WERE ABOVE THE
DETECTION LIMIT - DATA IS ACCEPTABLE FOR INTENDED USE.

QC FLAGS: _____

10/22/86
6TFA05WU73
10/24/86

note: matrix spike sample specified

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

Circle # OH D063963714
ACTIVITY # ~~65460~~ C51173

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skimmer PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION Sample Tag #	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET101	TOTAL METALS WATER PB UG/L MET101	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
* 86RA01544	5-95905		<12 ^{MS} ₁₀₋₁₀₋₈₆	<2 ^{JR} _{9/12}	<2 ^{JR} _{9/15}	<2 ^{RA0} _{9/16}	<20 ^{PM}
86RA01545	19		36 ^{MS} _{10/15/86}	3150	<2	18.6 ^{RA0} _{9/19}	<20
546	28		<12 ^{MS} ₁₀₋₁₀₋₈₆	8.0 ^{JR} _{9/15}	<2	<2 ^{RA0} _{9/19}	<40 ^{PM}
547	37		<2 ^{MS} ₁₀₋₁₀₋₈₆	5.9 ^{JR} ₉₋₁₅	<2 ^{JR} _{9/15}	<2 ^{RA0} _{9/18}	<20
548	46		<2 ^{MS} ₁₀₋₁₀₋₈₆	3.2 ^{JR} _{9/17}	<2 ^{JR} ₉₋₁₅	<2 ^{RA0} _{9/18}	<20
048	55		<2 ^{MS} ₁₀₋₁₀₋₈₆	5.5 ^{JR} _{9/17}	<2 ^{JR} ₉₋₁₅	<2 ^{RA0} _{9/18}	<20
549	64		<30 ^{MS} _{10/15/86}	4800	<2	5.3 ^{RA0} _{9/19}	<20
8/25/86 550	73						
551	82						
552	91						
553	5-96000		<12 ^{MS} ₁₀₋₁₀₋₈₆	36	<2	<2 ^{RA0} _{9/19}	<20
R53	5-97059		<2 ^{MS} ₁₀₋₁₀₋₈₆	<2 ^{JR} _{9/17}	<2 ^{JR} ₉₋₁₅	<2 ^{RA0} _{9/18}	<2
				A-QUL	A-QUL		PM
				9-25-86	9-25-86		10-8-86
				see new sheet			

For Samples to CRL

ENVIRONMENTAL PROTECTION AGENCY
FOR THE IFA: METALS

C51173
6TFA05WU73

10/22/86
10/24/86

DIVISION/BRANCH SF SAMPLING DATE 8/24/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
DU NUMBER Y905 DATASET NUMBER 3453 STUDY Skinner Landfill PRIORITY N CONTRACTOR N

CHL LUG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS IN WATER TOTAL ICAP UG/L MET111	TOTAL METALS IN WATER AS UG/L MET161	TOTAL METALS IN WATER CD UG/L MET181	TOTAL METALS IN WATER CH UG/L MET1101	TOTAL METALS IN WATER PR UG/L MET1191
86RA01544	^{tag #} 5-95905			✓ 1.6 MAR 9/24/86		
86RA01545	5-95919			✓ 1.1 MAR 9/25/86		
86RA01546	5-95928			✓ 9.9 9/25/86		
86RA01547	5-95937			✓ 0.6 MAR 9/24/86		
86RA01548	5-95946			✓ 1.8 MAR 9/24/86		
86RA01548	5-95955			✓ 1.8 MAR 9/24/86		
86RA01549	5-95964			✓ 5.2 MAR 9/25/86		
86RA01553	5-96000			✓ 1.7 MAR 9/24/86		
86RA01553	5-97059			50.1 MAR 9/24/86		

10/22/86
 2008
 10/24/86

ENVIRONMENTAL PROTECTION AGENCY
 FOR THE TEAM: METALS

Circle # OHDO63963714
 ACTIVITY # 25160
 C51173

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
 DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skinner PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION Sample Tag #	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET181	TOTAL METALS WATER PB UG/L MET1181	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
* 86RA01544	5-959 05			4.4			
86RA01545	19			3000			
546	28			7.711			
547	37			4.2			
548	46			4.4			
048	55			3.7			
549	64			3500			
8/25/86 550	73						
551	82						
552	91						
553	5-96000			7.2			
R53	5-97059			4.2			
				1			
				I.L			
				10.21.86			

For Samples to CRL

Jim
2/20/86

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: MS
DATE OF ANALYSIS ---: 10-10-1986
PARAMETER NAME ----: AS
DATA SET # -----: 3453, 3472

SAMPLE NO.	CONC.	R VALUE	SLOPE
AGC	22.8	.9977	.0121
S49 3453	1.545351	.9869149	8.930001E-03
S53	12.48991	.9860192	.00743
S47	1.141622E-02	.9999453	8.759999E-03
S48	.4057065	.9991139	9.119999E-03
D48	-.6139463	.9982859	9.610001E-03
R53	-.7298022	.9817994	.01151
S02 DIS 3472	81.41513	.9865091	.00106
AGC	23.93694	.9998119	9.829998E-03

101% TV=23.5

102%

S49

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.004	1.379999E-02	1.779999E-02	128.9855 %
10	.128	.1031	-2.490001E-02	-24.15132 %
20	.196	.1924	-3.599987E-03	-1.871095 %
30	.271	.2817	1.070002E-02	3.798373 %

S53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.083	9.279999E-02	9.799994E-03	10.56034 %
10	.189	.1671	-.0219	-13.10592 %
20	.227	.2414	1.440001E-02	5.965205 %
30	.318	.3157	-2.299994E-03	-.728538 %

S47

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	1.000061E-04	-8.999939E-04	-899.939 %
10	.086	.0877	1.699999E-03	1.938425 %
20	.176	.1753	-7.000119E-04	-.3993223 %
30	.263	.2629	-1.000166E-04	-3.804359E-02 %

S48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.007	3.700043E-03	-3.299958E-03	-89.18701 %
10	.093	9.490002E-02	1.900025E-03	2.002133 %

30 .282 .2773 -4.700005E-03 -1.694917 %

D48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	-5.900025E-03	-6.900025E-03	116.9491 %
10	.081	9.019999E-02	9.199984E-03	10.19954 %
20	.184	.1863	2.299994E-03	1.234565 %
30	.287	.2824	-4.599989E-03	-1.628891 %

*Jim
2/20/78*

R53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.005	-8.400025E-03	-3.400025E-03	40.47637 %
10	.082	.1067	.0247	23.14902 %
20	.261	.2218	-3.919998E-02	-17.67357 %
30	.319	.3369001	1.790005E-02	5.313164 %

S02 DIS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.072	6.510001E-02	-6.89999E-03	-10.59906 %
10	.08	.0757	-4.299999E-03	-5.680315 %
20	.057	.0863	.0293	33.95133 %
30	.115	9.689999E-02	-1.810002E-02	-18.67907 %

ADC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.236	.2353001	-6.999523E-04	-.2974722 %
10	.331	.3336001	2.600044E-03	.7793896 %
20	.435	.4319	-3.099978E-03	-.7177536 %
30	.529	.5302	1.20002E-03	.2263335 %

1
-0.005
-0.004
0.138
0.195

S49

10/11/2004

~~0.371~~
0.099
0.189
0.227
0.319
0.001
0.085
0.175
0.259
0.007
0.092
0.180

SC3

S47

S48

0.282
0.001
0.081
0.194
0.287
-0.005
0.082
0.251
0.319
0.072
0.080
0.057
0.115
0.236
0.391
0.485
0.529

D48

R53

S023472
Bio.

AQC

Jim
22 Oct 86

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: MS
DATE OF ANALYSIS --: 10-10-1986
PARAMETER NAME ----: AS
DATA SET # -----: 3453

SAMPLE NO.	CONC.	R VALUE	SLOPE
AQC	24.23	.999	9.029E-03 TV = 23.5 103%
BLANK	.1615981	.9977506	.01052 22
AQC	23.51486	.9999118	.0101
S07 SPK 2441	0.60264	.9895321	8.349998E-03
S44 1/6 3453	-0.5064669 212	.9997469	9.279999E-03
S46 1/6	-0.320091 212	.9977636	.00906
S45 1/6	0.547469 39	.9948301	8.110001E-03
DIG BLANK	1.121586	.9952136	.01061
AQC	23.80164	.9977135	.0121 101%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	1.700012E-03	3.700012E-03	217.6462 %
10	.106	.1069	9.000152E-04	.8419224 %
20	.225	.2121	-1.289998E-02	-6.082028 %
30	.309	.3173	8.300036E-03	2.615832 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.238	.2375	-5.000085E-04	-.2105299 %
10	.339	.3385	-4.999936E-04	-.1477086 %
20	.437	.4395	2.499968E-03	.568821 %
30	.542	.5405	-1.500011E-03	-.2775228 %

S07 SPK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.067	7.250003E-02	5.500026E-03	7.58624 %
10	.153	.156	3.000021E-03	1.92309 %
20	.262	.2395	-2.250001E-02	-9.394576 %
30	.309	.323	1.399997E-02	4.334357 %

S44 1/6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.004	-4.700012E-03	-7.000119E-04	14.89383 %
10	.089	8.809998E-02	-9.000227E-04	-1.021592 %
20	.177	.1809	3.899977E-03	2.155875 %
30	.276	.2737	-2.300024E-03	-.840345 %

S46 1/6

*Jim
2/20/77*

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-2.900025E-03	-9.000243E-04	31.03506 %
10	.092	8.769998E-02	-4.300028E-03	-4.903113 %
20	.167	.1783	1.129997E-02	6.337617 %
30	.275	.2689	-6.100029E-03	-2.268512 %

S45 1/6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.044	5.309998E-02	9.099975E-03	17.13744 %
10	.143	.1342	-8.80003E-03	-6.5574 %
20	.225	.2153	-.0097	-4.505342 %
30	.287	.2964	9.40001E-03	3.171394 %

DIG BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-1.190003E-02	-9.900024E-03	83.19331 %
10	.075	9.419998E-02	1.919998E-02	20.38214 %
20	.209	.2003	-8.700028E-03	-4.343499 %
30	.307	.3064	-6.0004E-04	-.1958355 %

ACC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.294	.2879999	-6.000132E-03	-2.08338 %
10	.407	.4089999	1.999885E-03	.4889696 %
20	.516	.53	1.399994E-02	2.641498 %
30	.661	.6509999	-1.000011E-02	-1.536115 %

JUN 22 04K

Begin Element - AS

-0.007
 0.000 AZ
 -0.002
 0.106
 0.225 - ~~AQC~~ Blank
 0.309
 0.248
 0.328 AQC
 0.475
 0.551
 0.236
 0.317 AQC
 0.424
 0.557
 0.236
 0.339 AQC
 0.487
 0.542

0.249

0.067
 0.159 S07 spike
 0.262 1/10 109000.98
 0.366
 -0.004
 0.089 S44
 0.177 1/6
 0.276
 -0.002
 0.092 S46
 0.167 1/6
 0.276
 0.044
 0.148 S45 1000 8.994
 0.225 1/6
 0.287
 -0.002
 0.075 Blank
 0.209 Dig
 0.307
 0.294
 0.407
 0.515 AQC
 0.551

44 1/6

PIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.004	-4.700012E-03	-7.000119E-04	14.89383 %
10	.089	8.809998E-02	-9.000227E-04	-1.021592 %
20	.177	.1809	3.899977E-03	2.155875 %
30	.276	.2737	-2.300024E-03	-.840345 %

Jim
22 out of

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: MS
DATE OF ANALYSIS ---: 10-10-1986
PARAMETER NAME ----: AS
DATA SET # -----: 3472 3453 3454

SAMPLE NO.	CONC.	R VALUE	SLOPE	
AQC	24.23035	.9994337	9.029999E-03	103% TV = 23.5
3472 S02 1/10	-.9561769 <i>L20</i>	.9987272	.00753	
3472 S02 1/10	.6437108 <i>L20</i>	.9999596	.00668	
3453 S49 1/6	2.956121 <i>L8</i>	.9871167	.00866	
3453 S53 1/6	1.272728 <i>L12</i>	.9995377	8.249998E-03	
3453 S45 1/10	10.14837	.9920996	6.739998E-03	
R53 3453	-4.566141E-02	.9994376	8.759999E-03	
3454 S01	1.666666	.9989302	.00774	
AQC	21.93953	.9989293	9.589996E-03	93%

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.216	.2188	2.799973E-03	1.279695 %
10	.311	.3091	-1.900017E-03	-.6146935 %
20	.404	.3993999	-4.600078E-03	-1.151747 %
30	.486	.4897	3.699929E-03	.7555501 %

3472 S02 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.003	-7.200012E-03	-4.200012E-03	58.33341 %
10	.061	6.809998E-02	7.099983E-03	10.42582 %
20	.145	.1434	-1.600027E-03	-1.115779 %
30	.22	.2187	-1.300022E-03	-.5944317 %

3472 S02 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	4.299988E-03	2.999874E-04	6.976471 %
10	.071	7.109999E-02	9.998679E-05	.1406284 %
20	.139	.1379	-1.100019E-03	-.7976931 %
30	.204	.2047	6.999821E-04	.3419551 %

3453 S49 1/6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.023	2.560001E-02	2.600005E-03	10.15627 %

20	.225	.1988	-.0262	-13.17907 %
30	.271	.2854	1.440001E-02	5.045552 %

3453 S53 1/6

*Jim
North*

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.013	.0105	-2.500001E-03	-23.80953 %
10	.091	9.299998E-02	1.999982E-03	2.150519 %
20	.172	.1755	3.499955E-03	1.994277 %
30	.261	.258	-3.000051E-03	-1.162811 %

3453 S45 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.076	.0684	-7.600002E-03	-11.11112 %
10	.131	.1358	4.799977E-03	3.534593 %
20	.19	.2032	1.319996E-02	6.496043 %
30	.281	.2705999	-1.040006E-02	-3.843333 %

R53 3453

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-3.999939E-04	-3.999939E-04	100 %
10	.084	.0872	3.200002E-03	3.669727 %
20	.18	.1748	-5.200014E-03	-2.974836 %
30	.26	.2624	2.399981E-03	.914627 %

3454 S01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.999999E-03	1.289999E-02	3.899994E-03	30.23253 %
10	9.399999E-02	9.029999E-02	-3.700003E-03	-4.097457 %
20	.172	.1677	-4.300013E-03	-2.564111 %
30	.241	.2451	4.099995E-03	1.672785 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.215	.2104	-4.599989E-03	-2.186306 %
10	.298	.3063	8.299977E-03	2.709754 %
20	.405	.4021999	-2.800077E-03	-0.6961904 %
30	.499	.4980999	-9.001195E-04	-0.1807106 %

0.005

Jim
2200H

0.000 *el*

-0.002
0.061 *3472*
0.145 *S02 1/10*
0.220

0.004
0.071 *3472*
0.139 *S02 1/10*
0.204

X 0.023 *3453*
0.102 *S49 1/6*
0.225

0.018 *553 1/6*
0.091
0.172
0.261

X 0.075 *S45 1/10*
0.131
0.130
0.281

-0.000
0.084 *R53*
0.120
0.250

0.009 *S01*
0.084 *3454*

0.172
0.241
0.215
0.288
0.405 *AQC*
0.499

	MEASURED			PER CENT
0	.004	4.299988E-03	2.999874E-04	6.976471 %
10	.071	7.109999E-02	9.998679E-05	.1406284 %
20	.139	.1379	-1.100019E-03	-.7976931 %
30	.204	.2047	6.999821E-04	.3419551 %

3453 S49 1/6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.023	2.560001E-02	2.600005E-03	10.15627 %
10	.103	.1122	9.200007E-03	8.199649 %

11/22/04

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: MS
DATE OF ANALYSIS --: 10-14-1986
PARAMETER NAME ----: AS
DATA SET # -----: 3453

SAMPLE NO.	CONC.	R VALUE	SLOPE
AQC	24.26161	.9993492	.01185
3453 545 1/15	2.393507 X15 = 36	.9997613	9.860001E-03
3554 502	1.137296	.9996622	.00976
3554 503	5.964276E-02	.9997512	.01006
3554 504	1.0939	.9962511	.01033
AQC	24.74878	.9972054	.01234

TV = 23.5 105% rec

105%

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.283	.2875001	4.500062E-03	1.565238 %
10	.414	.4060001	-7.999957E-03	-1.970432 %
20	.522	.5245	2.499998E-03	.476644 %
30	.642	.643	9.999871E-04	.155519 %

3453 545 1/15

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.021	2.359998E-02	2.599975E-03	11.01686 %
10	.126	.1222	-3.80002E-03	-3.109673 %
20	.221	.2208	-2.000183E-04	-9.058799E-02 %
30	.318	.3194	1.400024E-03	.4383293 %

3554 502

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.01	1.110001E-02	1.100007E-03	9.909964 %
10	.108	.1087	7.000044E-04	.6439783 %
20	.211	.2063	-4.69999E-03	-2.278231 %
30	.301	.3039	2.900005E-03	.9542627 %

3554 503

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	6.000061E-04	6.000061E-04	100 %
10	.1	.1012	1.199991E-03	1.185762 %
20	.206	.2018	-4.800012E-03	-2.081275 %
30	.3	.3024	2.399981E-03	.7936446 %

3554 -S04

*Jan
1968*

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.017	1.129999E-02	-5.700013E-03	-50.44264 %
10	.114	.1146	5.999878E-04	.5235497 %
20	.202	.2179	1.589997E-02	7.296912 %
30	.332	.3212	-.0108	-3.362393 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.295	.3053999	1.039991E-02	3.405341 %
10	.446	.4287999	-1.720011E-02	-4.011221 %
20	.549	.5521999	3.199875E-03	.5794778 %
30	.672	.6756	3.599942E-03	.5328511 %

Jan 1968

<u>0.287</u>
0.274
<u>0.417</u>
0.589
0.541
<u>0.213</u>
0.288
0.414
0.529
0.642

AQC

<u>0.221</u>	545
0.126	
<u>0.221</u>	
0.219	
<u>0.012</u>	549 <i>supposed</i>
0.219	<i>revenue</i>
0.488	
<u>0.322</u>	
0.010	
0.108	502
<u>0.211</u>	
0.301	
<u>0.000</u>	
0.100	503
0.206	
<u>0.300</u>	
0.017	504
0.114	
0.202	
<u>0.392</u>	
0.462	
0.284	

AQC

.296	AQC on
.446	revenue
.549	
.672	

0.523
0.639

Jan
22 1986

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: MS
DATE OF ANALYSIS --: 10-14-1986
PARAMETER NAME ----: AS
DATA SET # -----: 3453 3554

SAMPLE NO.	CONC.	R VALUE	SLOPE
BLANK	.2052221	.9996971	.01072
BLANK	-.4014593	.9996572	.01096

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	2.199982E-03	-8.000185E-04	-36.36478 %
10	.106	.1094	3.399998E-03	3.107859 %
20	.221	.2166	-.0044	-2.031394 %
30	.322	.3238	1.800031E-03	.5559081 %

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-4.399994E-03	-3.399994E-03	77.27269 %
10	.1	.1052	5.200014E-03	4.942978 %
20	.215	.2148	-1.999885E-04	-9.310451E-02 %
30	.326	.3244	-1.599997E-03	-.4932174 %

Jan
1900

Begin Element - AS
0.001
0.001

Begin Element - AS

0.009
0.105
0.221
0.329

BD

0.276
0.333
0.475
0.507

ADD

~~0.009~~
~~0.113~~

0.321
0.253
0.333
0.487

ADD

0.001
0.100
0.215
0.326

BD

0.276
0.323
0.422
0.523

ADD

0.001

Jan 20076

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: MS
DATE OF ANALYSIS --: 10-15-1986
PARAMETER NAME ----: AS
DATA SET # -----: 3453 3552

SAMPLE NO.	CONC.	R VALUE	SLOPE
BLANK	.3083653	.9997054	.01816
AQC	24.22621	.9990242	.0168
S28 3552	22.00002	.9981642	1.749999E-02
AQC	22.36383	.9983214	.01836
3453 S49 1/15	.933871	.9961549	.01467
AQC	23.78281	.9976959	.01676

TV=23.5 103% rec
95% rec
101% rec

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	5.599915E-03	5.999147E-04	10.71293 %
10	.184	.1872	3.19995E-03	1.709375 %
20	.377	.3688	-8.20002E-03	-2.223433 %
30	.546	.5504	4.400015E-03	.7994213 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.416	.4070001	-8.999884E-03	-2.211273 %
10	.562	.5750001	1.300007E-02	2.260882 %
20	.742	.743	1.000047E-03	.1345958 %
30	.916	.911	-4.999995E-03	-.5488469 %

S28 3552

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.386	.3850001	-9.998977E-04	-.2597136 %
10	.549	.5600001	1.100004E-02	1.964292 %
20	.754	.735	-1.900005E-02	-2.585042 %
30	.901	.9099999	8.999884E-03	.9889984 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.412	.4106	-1.400024E-03	-.3409702 %
10	.602	.5942	-7.799983E-03	-1.312687 %
20	.758	.7778	1.979995E-02	2.545635 %
30	.972	.9614001	-1.059987E-02	-1.102556 %

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.018	1.369989E-02	-4.300109E-03	-31.38791 %
10	.166	.1603999	-5.60008E-03	-3.491324 %
20	.283	.3071	2.409995E-02	7.847591 %
30	.468	.4538	-1.420003E-02	-3.129139 %

*no
work*

ADC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.41	.3985999	-1.140013E-02	-2.860045 %
10	.545	.5661999	2.119988E-02	3.74424 %
20	.742	.7338	-8.20005E-03	-1.117478 %
30	.903	.9014	-1.600027E-03	-.1775047 %

1000000

Begin Element - AS

0.007
0.000 AZ
-0.001
0.001

Begin Element - AE

-0.007
0.000 AZ
0.005
0.184
0.277 *BL*
0.546
0.875
0.869 *AGC*
0.742
0.916
0.779 *26 3552*
0.977 *527*
1.100 *30.9*
1.259
1.520 *527*
1.755
1.849 *89*
2.062
0.928 *528*
0.549
0.754
0.901
0.855
1.041 *48.4*
1.191 *529*
1.408
0.010
0.214
0.278 *549 3453*
0.256
0.425
0.592 *AGC*
0.751
0.901

549 3453

0.018
0.166
0.292
0.453
0.372
0.589 *AGC*
0.734
0.956
0.410
0.545
0.742

AGC

0.903

0.008
0.028
0.412
0.602 *AGC*
0.758
0.972

0	.412	.4106	-1.400024E-03	-1.3409702 %
10	.602	.5942	-7.799903E-03	-1.312687 %
20	.758	.7778	1.979995E-02	2.545635 %
30	.972	.9614001	-1.059997E-02	-1.102556 %

Skinner L. F

Y905C51173

Jun
22 0096

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: I.L
DATE OF ANALYSIS --: 10-21-1986
PARAMETER NAME ----: PB
DATA SET # -----: SF3453

SAMPLE NO.	CONC.	R VALUE	SLOPE
R. BL	-.9344907	.9994639	.01038
NBS 23.7	24.74543	.9994029	.01041 % Del - 4.2
PREP .BL	2.237818	.9993278	.01211
86RA01S44	4.35737	.9999807	.00638
86RA01S45 1:199			
	14.97238 3000	.9996995	.01267
86RA01S46	10.80292	.9992868	6.850001E-03
86RA01S47	4.221507	.9993745	6.230001E-03
86RA01S48	4.395278	.9978144	6.780001E-03
86RA01D48	3.714286	.9988996	.007
NBS 23.7	23.84131	.9999298	.01109 % Del - 0.6.
86R01S49 1:199	15.60675	.9993231	.01302
86RA91S53 1:2	23.64213	.9980443	7.880001E-03
86RA01R53	-.8381486	.9683612	.01038
PREP. BL	2.458333	.9999376	.012
86RA01S53 1:2	21.97789	.9968726	.00814
86RA01R53	6.024466E-02	.9986858	.01162
NBS 23.7	26.39581	.9986125	.01046

run

R. BL

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-8.000001E-03	-9.700012E-03	-1.700012E-03	17.52588 %
10	.089	9.409998E-02	5.099975E-03	5.419741 %
20	.203	.1979	-5.100027E-03	-2.577073 %
30	.3	.3016999	1.699925E-03	.5634488 %

NBS 23.7

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.262	.2576	-4.400015E-03	-1.70808 %
10	.356	.3617	5.699992E-03	1.57589 %
20	.464	.4658001	1.80006E-03	.3864448 %
30	.573	.5699001	-3.099978E-03	-.5439511 %

PREP .BL

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.028	2.709998E-02	-9.000264E-04	-3.321134 %
10	.143	.1482	5.199954E-03	3.508742 %
20	.277	.2693	-7.700056E-03	-2.859286 %
30	.387	.3903999	3.399938E-03	.8708859 %

86RA01S44

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.028	2.780002E-02	-1.999829E-04	-.7193625 %
10	.091	9.160002E-02	6.000176E-04	.655041 %
20	.156	.1554	-5.999804E-04	-.3860877 %
30	.219	.2192	2.000332E-04	9.125601E-02 %

86RA01545 1:199

*Jim
not*

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.187	.1897001	2.700061E-03	1.423331 %
10	.318	.3164001	-1.599938E-03	-.5056693 %
20	.448	.4431001	-4.899979E-03	-1.10584 %
30	.566	.5698	3.800035E-03	.6669067 %

86RA01546

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.076	.074	-1.999997E-03	-2.702698 %
10	.138	.1425	4.500017E-03	3.157906 %
20	.214	.211	-2.999991E-03	-1.421797 %
30	.279	.2795	4.999936E-04	.1788886 %

86RA01547

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.026	2.629999E-02	2.999865E-04	1.140634 %
10	.091	8.859999E-02	-2.400003E-03	-2.708808 %
20	.147	.1509	3.899992E-03	2.584488 %
30	.215	.2132	-1.800001E-03	-.844278 %

86RA01548

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.031	2.979999E-02	-1.200013E-03	-4.026891 %
10	.1	9.759998E-02	-2.400018E-03	-2.459036 %
20	.157	.1654	8.399978E-03	5.078585 %
30	.238	.2332	-4.800007E-03	-2.058322 %

86RA01D48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.026	.026	0	0 %
10	.093	.096	2.999999E-03	3.124999 %
20	.172	.166	-5.999998E-03	-3.614456 %
30	.233	.236	3.000006E-03	1.271189 %

NBS 23.7

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.264	.2644	4.000366E-04	.1512998 %
10	.377	.3753	-1.700014E-03	-.4529747 %
20	.484	.4862	2.199978E-03	.4524841 %

30 .598 :5970999 -9.000897E-04 -.1507436 %

86R01S49 1:199

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.204	.2032	-8.000434E-04	-.3937222 %
10	.328	.3334	5.400002E-03	1.619677 %
20	.472	.4636001	-8.399963E-03	-1.811899 %
30	.59	.5938001	3.800094E-03	.6399619 %

Jan 22/64

86RA91S53 1:2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.184	.1863	2.299979E-03	1.234557 %
10	.264	.2651	1.100004E-03	.4149392 %
20	.353	.3439	-9.099961E-03	-2.646106 %
30	.417	.4227	5.700022E-03	1.348479 %

86RA01R43

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.004	-8.699981E-03	-4.699982E-03	54.02289 %
10	.113	9.510001E-02	-1.789999E-02	-18.82228 %
20	.149	.1989	.0499	25.08798 %
30	.33	.3027	-2.730003E-02	-9.018841 %

PREP. BL

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.028	.0295	1.499999E-03	5.084744 %
10	.151	.1495	-1.499981E-03	-1.003331 %
20	.271	.2695	-1.499981E-03	-.5565791 %
30	.388	.3895	1.500011E-03	.3851118 %

86RA01S53 1:2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.18	.1789	-1.099989E-03	-.6148623 %
10	.253	.2603	7.30002E-03	2.804464 %
20	.353	.3417	-1.129997E-02	-3.306985 %
30	.418	.4231	5.099982E-03	1.205385 %

86RA01R53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.006	7.000427E-04	6.700043E-03	957.0905 %
10	.128	.1169	-1.109999E-02	-9.495289 %
20	.231	.2331	2.099976E-03	.9008906 %
30	.347	.3493	2.299965E-03	.6584496 %

NBS 23.7

SPIKE	MEASURED	CALC.	ERROR	PER CENT
-------	----------	-------	-------	----------

0	.27	.2761001	6.100029E-03	2.209355 %
10	.391	.3807	-1.030001E-02	-2.705545 %
20	.483	.4853	2.299935E-03	.4739203 %
30	.588	.5898999	1.899898E-03	.3220713 %

*Jan
2004*

-0.000 AZ

R.BL

(0.008
0.099
0.203
0.300
0.352
0.362
0.370
0.378
0.387
0.394
0.402
0.410
0.417
0.425
0.432
0.439
0.446
0.453
0.460
0.467
0.474
0.481
0.488
0.495
0.502
0.509
0.516
0.523
0.530
0.537
0.544
0.551
0.558
0.565
0.572
0.579
0.586
0.593
0.600
0.607
0.614
0.621
0.628
0.635
0.642
0.649
0.656
0.663
0.670
0.677
0.684
0.691
0.698
0.705
0.712
0.719
0.726
0.733
0.740
0.747
0.754
0.761
0.768
0.775
0.782
0.789
0.796
0.803
0.810
0.817
0.824
0.831
0.838
0.845
0.852
0.859
0.866
0.873
0.880
0.887
0.894
0.901
0.908
0.915
0.922
0.929
0.936
0.943
0.950
0.957
0.964
0.971
0.978
0.985
0.992
1.000

NBS
25.1

(0.232
0.335
0.434
0.523
0.612
0.701
0.790
0.879
0.968
1.057
1.146
1.235
1.324
1.413
1.502
1.591
1.680
1.769
1.858
1.947
2.036
2.125
2.214
2.303
2.392
2.481
2.570
2.659
2.748
2.837
2.926
3.015
3.104
3.193
3.282
3.371
3.460
3.549
3.638
3.727
3.816
3.905
3.994
4.083
4.172
4.261
4.350
4.439
4.528
4.617
4.706
4.795
4.884
4.973
5.062
5.151
5.240
5.329
5.418
5.507
5.596
5.685
5.774
5.863
5.952
6.041
6.130
6.219
6.308
6.397
6.486
6.575
6.664
6.753
6.842
6.931
7.020
7.109
7.198
7.287
7.376
7.465
7.554
7.643
7.732
7.821
7.910
8.000

Pulp.
B1

(0.142
0.277
0.387
0.493
0.591
0.686
0.779
0.871
0.962
1.052
1.141
1.230
1.319
1.408
1.497
1.586
1.675
1.764
1.853
1.942
2.031
2.120
2.209
2.298
2.387
2.476
2.565
2.654
2.743
2.832
2.921
3.010
3.099
3.188
3.277
3.366
3.455
3.544
3.633
3.722
3.811
3.900
3.989
4.078
4.167
4.256
4.345
4.434
4.523
4.612
4.701
4.790
4.879
4.968
5.057
5.146
5.235
5.324
5.413
5.502
5.591
5.680
5.769
5.858
5.947
6.036
6.125
6.214
6.303
6.392
6.481
6.570
6.659
6.748
6.837
6.926
7.015
7.104
7.193
7.282
7.371
7.460
7.549
7.638
7.727
7.816
7.905
7.994
8.083
8.172
8.261
8.350
8.439
8.528
8.617
8.706
8.795
8.884
8.973
9.062
9.151
9.240
9.329
9.418
9.507
9.596
9.685
9.774
9.863
9.952
10.041
10.130
10.219
10.308
10.397
10.486
10.575
10.664
10.753
10.842
10.931
11.020
11.109
11.198
11.287
11.376
11.465
11.554
11.643
11.732
11.821
11.910
12.000

S45
1.199

(0.319
0.448
0.568
0.679
0.781
0.874
0.967
1.060
1.153
1.246
1.339
1.432
1.525
1.618
1.711
1.804
1.897
1.990
2.083
2.176
2.269
2.362
2.455
2.548
2.641
2.734
2.827
2.920
3.013
3.106
3.199
3.292
3.385
3.478
3.571
3.664
3.757
3.850
3.943
4.036
4.129
4.222
4.315
4.408
4.501
4.594
4.687
4.780
4.873
4.966
5.059
5.152
5.245
5.338
5.431
5.524
5.617
5.710
5.803
5.896
5.989
6.082
6.175
6.268
6.361
6.454
6.547
6.640
6.733
6.826
6.919
7.012
7.105
7.198
7.291
7.384
7.477
7.570
7.663
7.756
7.849
7.942
8.035
8.128
8.221
8.314
8.407
8.500
8.593
8.686
8.779
8.872
8.965
9.058
9.151
9.244
9.337
9.430
9.523
9.616
9.709
9.802
9.895
9.988
10.081
10.174
10.267
10.360
10.453
10.546
10.639
10.732
10.825
10.918
11.011
11.104
11.197
11.290
11.383
11.476
11.569
11.662
11.755
11.848
11.941
12.034
12.127
12.220
12.313
12.406
12.499
12.592
12.685
12.778
12.871
12.964
13.057
13.150
13.243
13.336
13.429
13.522
13.615
13.708
13.801
13.894
13.987
14.080
14.173
14.266
14.359
14.452
14.545
14.638
14.731
14.824
14.917
15.010
15.103
15.196
15.289
15.382
15.475
15.568
15.661
15.754
15.847
15.940
16.033
16.126
16.219
16.312
16.405
16.498
16.591
16.684
16.777
16.870
16.963
17.056
17.149
17.242
17.335
17.428
17.521
17.614
17.707
17.800
17.893
17.986
18.079
18.172
18.265
18.358
18.451
18.544
18.637
18.730
18.823
18.916
19.009
19.102
19.195
19.288
19.381
19.474
19.567
19.660
19.753
19.846
19.939
20.032
20.125
20.218
20.311
20.404
20.497
20.590
20.683
20.776
20.869
20.962
21.055
21.148
21.241
21.334
21.427
21.520
21.613
21.706
21.799
21.892
21.985
22.078
22.171
22.264
22.357
22.450
22.543
22.636
22.729
22.822
22.915
23.008
23.101
23.194
23.287
23.380
23.473
23.566
23.659
23.752
23.845
23.938
24.031
24.124
24.217
24.310
24.403
24.496
24.589
24.682
24.775
24.868
24.961
25.054
25.147
25.240
25.333
25.426
25.519
25.612
25.705
25.798
25.891
25.984
26.077
26.170
26.263
26.356
26.449
26.542
26.635
26.728
26.821
26.914
27.007
27.100
27.193
27.286
27.379
27.472
27.565
27.658
27.751
27.844
27.937
28.030
28.123
28.216
28.309
28.402
28.495
28.588
28.681
28.774
28.867
28.960
29.053
29.146
29.239
29.332
29.425
29.518
29.611
29.704
29.797
29.890
29.983
30.076
30.169
30.262
30.355
30.448
30.541
30.634
30.727
30.820
30.913
31.006
31.099
31.192
31.285
31.378
31.471
31.564
31.657
31.750
31.843
31.936
32.029
32.122
32.215
32.308
32.401
32.494
32.587
32.680
32.773
32.866
32.959
33.052
33.145
33.238
33.331
33.424
33.517
33.610
33.703
33.796
33.889
33.982
34.075
34.168
34.261
34.354
34.447
34.540
34.633
34.726
34.819
34.912
35.005
35.098
35.191
35.284
35.377
35.470
35.563
35.656
35.749
35.842
35.935
36.028
36.121
36.214
36.307
36.400
36.493
36.586
36.679
36.772
36.865
36.958
37.051
37.144
37.237
37.330
37.423
37.516
37.609
37.702
37.795
37.888
37.981
38.074
38.167
38.260
38.353
38.446
38.539
38.632
38.725
38.818
38.911
39.004
39.097
39.190
39.283
39.376
39.469
39.562
39.655
39.748
39.841
39.934
40.027
40.120
40.213
40.306
40.399
40.492
40.585
40.678
40.771
40.864
40.957
41.050
41.143
41.236
41.329
41.422
41.515
41.608
41.701
41.794
41.887
41.980
42.073
42.166
42.259
42.352
42.445
42.538
42.631
42.724
42.817
42.910
43.003
43.096
43.189
43.282
43.375
43.468
43.561
43.654
43.747
43.840
43.933
44.026
44.119
44.212
44.305
44.398
44.491
44.584
44.677
44.770
44.863
44.956
45.049
45.142
45.235
45.328
45.421
45.514
45.607
45.700
45.793
45.886
45.979
46.072
46.165
46.258
46.351
46.444
46.537
46.630
46.723
46.816
46.909
47.002
47.095
47.188
47.281
47.374
47.467
47.560
47.653
47.746
47.839
47.932
48.025
48.118
48.211
48.304
48.397
48.490
48.583
48.676
48.769
48.862
48.955
49.048
49.141
49.234
49.327
49.420
49.513
49.606
49.699
49.792
49.885
49.978
50.071
50.164
50.257
50.350
50.443
50.536
50.629
50.722
50.815
50.908
51.001
51.094
51.187
51.280
51.373
51.466
51.559
51.652
51.745
51.838
51.931
52.024
52.117
52.210
52.303
52.396
52.489
52.582
52.675
52.768
52.861
52.954
53.047
53.140
53.233
53.326
53.419
53.512
53.605
53.698
53.791
53.884
53.977
54.070
54.163
54.256
54.349
54.442
54.535
54.628
54.721
54.814
54.907
55.000
55.093
55.186
55.279
55.372
55.465
55.558
55.651
55.744
55.837
55.930
56.023
56.116
56.209
56.302
56.395
56.488
56.581
56.674
56.767
56.860
56.953
57.046
57.139
57.232
57.325
57.418
57.511
57.604
57.697
57.790
57.883
57.976
58.069
58.162
58.255
58.348
58.441
58.534
58.627
58.720
58.813
58.906
59.000
59.093
59.186
59.279
59.372
59.465
59.558
59.651
59.744
59.837
59.930
60.023
60.116
60.209
60.302
60.395
60.488
60.581
60.674
60.767
60.860
60.953
61.046
61.139
61.232
61.325
61.418
61.511
61.604
61.697
61.790
61.883
61.976
62.069
62.162
62.255
62.348
62.441
62.534
62.627
62.720
62.813
62.906
63.000
63.093
63.186
63.279
63.372
63.465
63.558
63.651
63.744
63.837
63.930
64.023
64.116
64.209
64.302
64.395
64.488
64.581
64.674
64.767
64.860
64.953
65.046
65.139
65.232
65.325
65.418
65.511
65.604
65.697
65.790
65.883
65.976
66.069
66.162
66.255
66.348
66.441
66.534
66.627
66.720
66.813
66.906
67.000
67.093
67.186
67.279
67.372
67.465
67.558
67.651
67.744
67.837
67.930
68.023
68.116
68.209
68.302
68.395
68.488
68.581
68.674
68.767
68.860
68.953
69.046
69.139
69.232
69.325
69.418
69.511
69.604
69.697
69.790
69.883
69.976
70.069
70.162
70.255
70.348
70.441
70.534
70.627
70.720
70.813
70.906
71.000
71.093
71.186
71.279
71.372
71.465
71.558
71.651
71.744
71.837
71.930
72.023
72.116
72.209
72.302
72.395
72.488
72.581
72.674
72.767
72.860
72.953
73.046
73.139
73.232
73.325
73.418
73.511
73.604
73.697
73.790
73.883
73.976
74.069
74.162
74.255
74.348
74.441
74.534
74.627
74.720
74.813
74.906
75.000
75.093
75.186
75.279
75.372
75.465
75.558
75.651
75.744
75.837
75.930
76.023
76.116
76.209
76.302
76.395
76.488
76.581
76.674
76.767
76.860
76.953
77.046
77.139
77.232
77.325
77.418
77.511
77.604
77.697
77.790
77.883
77.976
78.069
78.162
78.255
78.348
78.441
78.534
78.627
78.720
78.813
78.906
79.000
79.093
79.186
79.279
79.372
79.465
79.558
79.651
79.744
79.837
79.930
80.023
80.116
80.209
80.302
80.395
80.488
80.581
80.674
80.767
80.860
80.953
81.046
81.139
81.232
81.325
81.418
81.511
81.604
81.697
81.790
81.883
81.976
82.069
82.162
82.255
82.348
82.441
82.534
82.627
82.720
82.813
82.906
83.000
83.093
83.186
83.279
83.372
83.465
83.558
83.651
83.744
83.837
83.930
84.023
84.116
84.209
84.302
84.395
84.488
84.581
84.674
84.767
84.860
84.953
85.046
85.139
85.232
85.325
85.418
85.511
85.604
85.697
85.790
85.883
85.976
86.069
86.162
86.255
86.348
86.441
86.534
86.627
86.720
86.813
86.906
87.000
87.093
87.186
87.279
87.372
87.465
87.558
87.651
87.744
87.837
87.930
88.023
88.116
88.209
88.302
88.395
88.488
88.581
88.674
88.767
88.860
88.953
89.046
89.139
89.232
89.325
89.418
89.511
89.604
89.697
89.790
89.883
89.976
90.069
90.162
90.255
90.348
90.441
90.534
90.627
90.720
90.813
90.906
91.000
91.093
91.186
91.279
91.372
91.465
91.558
91.651
91.744
91.837
91.930
92.023
92.116
92.209
92.302
92.395
92.488
92.581
92.674
92.767
92.860
92.953
93.046
93.139
93.232
93.325
93.418
93.511
93.604
93.697
93.790
93.883
93.976
94.069
94.162
94.255
94.348
94.441
94.534
94.627
94.720
94.813
94.906
95.000
95.093
95.186
95.279
95.372
95.465
95.558
95.651
95.744
95.837
95.930
96.023
96.116
96.209
96.302
96.395
96.488
96.581
96.674
96.767
96.860
96.953
97.046
97.139
97.232
97.325
97.418
97.511
97.604
97.697
97.790
97.883
97.976
98.069
98.162
98.255
98.348
98.441
98.534
98.627
98.720
98.813
98.906
99.000
99.093
99.186
99.279
99.372
99.465
99.558
99.651
99.744
99.837
99.930
100.023
100.116
100.209
100.302
100.395
100.488
100.581
100.674
100.767
100.860
100.953
101.046
101.139
101.232
101.325
101.418
101.511
101.604
101.697
101.790
101.883
101.976
102.069
102.162
102.255
102.348
102.441
102.534
102.627
102.720
102.813
102.906
103.000
103.093
103.186
103.279
103.372
103.465
103.558
103.651
103.744
103.837
103.930
104.023
104.116
104.209
104.302
104.395
104.488
104.581
104.674
104.767
104.860
104.953
105.046
105.139
105.232
105.325
105.418
105.511
105.604
105.697
105.790
105.883
105.976
106.069
106.162
106.255
106.348
106.441
106.534
106.627
106.720
106.813
106.906
107.000
107.093
107.186
107.279
107.372
107.465
107.558
107.651
107.744
107.837
107.930
108.023
108.116
108.209
108.302
108.395
108.488
108.581
108.674
108.767
108.860
108.953
109.046
109.139
109.232
109.325
109.418
109.511
109.604
109.697
109.790
109.883
109.976
110.069
110.162
110.255
110.348
110.441
110.534
110.627
110.720
110.813
110.906
111.000
111.093
111.186
111.279
111.372
111.465
111.558
111.651
111.744
111.837
111.930
112.023
112.116
112.209
112.302
112.395
112.488
112.581
112.674
112.767
112.860
112.953
113.046
113

RL	-0.001
S49 11199	0.204
	0.328
	0.472
	0.580
S53 1:1	0.184
	0.264
	0.353
R53	0.417
	-0.004
	0.113
	0.149
Prop Bl.	0.300
	0.028
	0.151
	0.271
S53 1:2	0.388
	0.180
	0.258
	0.353
R53	0.418
	0.008
	0.122
NBS	0.331
	0.347
	0.270
	0.381
	0.483
	0.588

~~retained #2.~~

*Jim
Roth*

Jan 22 1987

 * FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: I.L
 DATE OF ANALYSIS --: 10-21-1986
 PARAMETER NAME ----: PB
 DATA SET # -----: ~~3~~3453

SAMPLE NO.	CONC.	R VALUE	SLOPE
R. BL	5.328108E-02	.9999272	.01126
NBS 23.7	24.31117	.997613	8.419998E-03 % Dev - 2.5
PREP BL	2.877228	.9999448	.01067
86RA01S49 1:199	17.6817 <i>3540</i>	.9995408	.01087
86RA01S53 1:2	23.90694 <i>72</i>	.9998571	9.239998E-03
86RA01R53	.2136779	.9999636	.0117
NBS 23.7	22.52799	.9975171	8.939994E-03 % Dev - 5.1

R. BL

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	5.999451E-04	1.599945E-03	266.682 %
10	.115	.1132	-1.800038E-03	-1.59014 %
20	.227	.2258	-1.200005E-03	-.5314462 %
30	.337	.3384	1.399994E-03	.4137098 %

NBS 23.7

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.203	.2047	1.700014E-03	.8304904 %
10	.286	.2889	2.899975E-03	1.003799 %
20	.384	.3731	-1.090002E-02	-2.921475 %
30	.451	.4573	6.299943E-03	1.377639 %

PREP BL

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.031	3.070001E-02	-2.999865E-04	-.9771541 %
10	.138	.1374	-5.999953E-04	-.4366778 %
20	.242	.2441	2.099976E-03	.8602934 %
30	.352	.3508	-1.20002E-03	-.3420811 %

86RA01S49 1:199

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.189	.1922	3.20001E-03	1.664937 %
10	.307	.3009	-6.100029E-03	-2.027261 %
20	.407	.4096	2.599955E-03	.6347546 %
30	.518	.5183	2.999306E-04	5.786815E-02 %

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.222	.2209	-1.099974E-03	-.497951 %
10	.313	.3133	3.0002E-04	9.576124E-02 %
20	.403	.4057	2.699971E-03	.6655093 %
30	.5	.4981	-1.900047E-03	-.381459 %

*JVM
2/20/86*

86RA01R53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	2.500031E-03	5.000304E-04	20.00097 %
10	.121	.1195	-1.500003E-03	-1.255233 %
20	.235	.2365	1.499966E-03	.6342351 %
30	.354	.3534999	-5.00083E-04	-.1414662 %

NBS 20.7

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.208	.2014001	-6.599918E-03	-3.277019 %
10	.279	.2908	1.180002E-02	4.057778 %
20	.384	.3802	-3.800035E-03	-.9994831 %
30	.471	.4695999	-1.400083E-03	-.2981439 %

JM
2208H

Begin Element - PE

-0.009

0.000 AZ

R.BL (

-0.001

0.115

0.227

0.337

0.445

0.545

0.645

0.740

0.837

0.934

1.030

1.128

1.220

1.319

1.420

1.524

1.630

1.738

1.848

1.960

2.074

2.190

2.308

2.428

2.550

2.674

2.800

2.928

3.058

3.190

3.324

3.460

3.598

3.738

3.880

4.024

4.170

4.318

4.468

4.620

4.774

4.930

5.088

5.248

5.410

5.574

5.740

5.908

6.078

6.250

6.424

6.600

6.778

6.958

7.140

7.324

7.510

7.698

7.888

8.080

8.274

8.470

8.668

8.868

9.070

9.274

9.480

9.688

9.898

10.110

10.324

10.540

NBS

23.7

prep

BL

S49

1:199

S53

1:2

R53

NBS

23.7

Skinner L.F
 Y9M C5T173
 JN 9.15.86

220876

 * FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: JRT
 DATE OF ANALYSIS --: 09-17-1986
 PARAMETER NAME ----: SB
 DATA SET # -----: SF3453

SAMPLE NO.	CONC.	R VALUE	SLOPE
AQC	20.07972 (TV=20.3)	.9991988	8.780002E-03 $\Delta 1.1\%$
RBK	-.0225239	.9998631	8.880001E-03 < 2
S44	-.4622929	.9995739	8.220002E-03
S47	-.201909	.9996761	9.409998E-03
S48	-.1960785	.9415045	.01275 <i>uio</i>
S48	-.3971956	.9994382	8.559999E-03
D48	-.3221899	.9996328	.00838 $0.82L2$
R53	-.274722	.9994091	9.099999E-03 $L2$
S47DUP	-.2441601	.9995742	9.419998E-03 $0.84L2$
AQC	19.02778 (TV=20.3)	.9996899	8.639999E-03 $\Delta 6.3\%$

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.177	.1763	-7.000119E-04	-.3970572 %
10	.26	.2641	4.100025E-03	1.552452 %
20	.358	.3519001	-6.099969E-03	-1.733438 %
30	.437	.4397001	2.700061E-03	.6140688 %

RBK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	-2.000122E-04	-1.200012E-03	599.9696 %
10	.088	8.859999E-02	5.999953E-04	.6771956 %
20	.175	.1774	2.399996E-03	1.352873 %
30	.268	.2662	-1.800001E-03	-.6761836 %

S44

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-3.800049E-03	-2.800049E-03	73.68456 %
10	.074	7.839997E-02	4.39997E-03	5.612209 %
20	.161	.1606	-4.000068E-04	-.2490702 %
30	.244	.2428	-1.199991E-03	-.49423 %

S47

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	-1.899963E-03	-2.899964E-03	152.6326 %
10	.088	9.220001E-02	4.200012E-03	4.555327 %
20	.186	.1863	2.999753E-04	.1610173 %

S48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-.0025	-.0025	100 %
10	.077	.125	4.799999E-02	38.39999 %
10	.168	.125	-4.300002E-02	-34.40001 %
20	.255	.2525	-2.500028E-03	-.99011 %

JUN
2008

S48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-3.399994E-03	-3.399994E-03	100 %
10	.077	.0822	5.199991E-03	6.326025 %
20	.168	.1678	-2.000183E-04	-.1192004 %
30	.255	.2534	-1.600027E-03	-.6314236 %

D48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-2.699951E-03	-2.699951E-03	100 %
10	.077	8.110005E-02	4.100047E-03	5.055542 %
20	.165	.1649	-9.997189E-05	-6.062576E-02 %
30	.25	.2487001	-1.299962E-03	-.522703 %

R53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	-2.49997E-03	-3.499969E-03	140.0005 %
10	.085	8.850001E-02	3.500015E-03	3.954818 %
20	.176	.1795	.0035	1.949861 %
30	.274	.2705	-3.500015E-03	-1.293906 %

S47DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	-2.299988E-03	-3.299988E-03	143.4785 %
10	.088	.0919	3.899999E-03	4.243742 %
20	.184	.1861	2.099976E-03	1.128413 %
30	.283	.2803	-2.700031E-03	-.9632648 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.167	.1644	-2.59997E-03	-1.58149 %
10	.247	.2508	3.80002E-03	1.515159 %
20	.337	.3372	2.000034E-04	5.931298E-02 %
30	.425	.4236	-1.399994E-03	-.330499 %

SF 3453 SKINMAN L.F
SN 9-15-82

10/24/82

Begin Element - SB

0.003
0.000 AZ
0.001
0.088 RBK
0.175
0.258
~~0.001~~ 544
0.161
0.244
-0.001
0.088 547
0.186
0.286

0.077 54Y
0.168
0.255
0.000
0.077 D4Y
0.165
0.250
0.001 P53
0.085 547 BUP
0.176
0.274
0.001
0.088 547 BUP
0.184
0.282
0.167
0.247
0.337 AQC
0.425

10/22/86

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---:
DATE OF ANALYSIS --: 09-25-1986
PARAMETER NAME ----: S8
DATA SET # -----: SF3453

SAMPLE NO.	CONC.	R VALUE	SLOPE	limit	
BLK	-.167805	.9997283	.03516	≤ 2	
AQC	19.47939	.9995262	.03323	20.3 ± 10%	Rcd 98%
BLK-DIG	-6.904208E-02	.9992055	.03476		
S46	-4.273852E-02	.9999438	.0351		
S49	9.759524E-02	.9998761	.04201		
S53	-.5520493	.9983588	.04909		
S45	-.1692557	.9998491	3.603999E-02		
AQC	18.07097	.9989779	3.494002E-02		
BLK	-.8480743	.9965161	.03844	≤ 2	
AQC	20.36128	.9999256	3.459999E-02	20.3 ± 10%	Rcd 100%

BLK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.003	-5.900025E-03	-2.900025E-03	49.15275 %
10	.349	.3457	-3.300041E-03	-.9545968 %
20	.682	.6973	1.529998E-02	2.194174 %
30	1.058	1.0489	-9.100079E-03	-.8675832 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.652	.6473001	-4.699946E-03	-.7260845 %
10	.982	.9796	-2.399981E-03	-.244996 %
20	1.293	1.3119	1.889992E-02	1.440652 %
30	1.656	1.6442	-1.180017E-02	-.7176846 %

BLK DIG

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	-2.399902E-03	-8.399902E-03	350.0102 %
10	.323	.3452001	2.220005E-02	6.431067 %
20	.712	.6928	-1.920003E-02	-2.771367 %
30	1.035	1.0404	5.399943E-03	.5190257 %

S46

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.006	-1.500122E-03	4.499878E-03	-299.9675 %
10	.355	.3494999	-5.500108E-03	-1.573708 %
20	.703	.7004999	-2.500117E-03	-.3569047 %
30	1.048	1.0515	3.499985E-03	.3328564 %

49

*Sum
27 Oct 88*

PIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	4.099975E-03	-9.000245E-04	-21.95195 %
10	.417	.4241999	7.199914E-03	1.697293 %
20	.856	.8442999	-1.170015E-02	-1.385782 %
30	1.259	1.2644	5.399823E-03	.4270662 %

53

PIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.006	-.0271001	-.0211001	77.85986 %
10	.456	.4637999	7.799894E-03	1.681737 %
20	.907	.9546999	4.769987E-02	4.996321 %
30	1.48	1.4456	-3.440023E-02	-2.379651 %

45

PIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-6.099976E-03	-4.099975E-03	67.21298 %
10	.344	.3543	1.029995E-02	2.907128 %
20	.723	.7146999	-8.300126E-03	-1.161344 %
30	1.073	1.0751	2.099753E-03	.1953077 %

40

PIKE	MEASURED	CALC.	ERROR	PER CENT
0	.65	.6313999	-1.860011E-02	-2.945852 %
10	.952	.9808001	2.880001E-02	2.93638 %
20	1.332	1.3302	-1.799822E-03	-.1353046 %
30	1.688	1.679601	-8.399486E-03	-.5000884 %

44

PIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.006	-3.259998E-02	-2.659997E-02	81.59508 %
10	.338	.3518	1.379997E-02	3.922674 %
20	.684	.7362	.0521999	7.090451 %
30	1.16	1.1206	-3.939998E-02	-3.515972 %

40

PIKE	MEASURED	CALC.	ERROR	PER CENT
0	.701	.7045	3.500044E-03	.4968125 %
10	1.058	1.0505	-7.500053E-03	-.7139508 %
20	1.392	1.3965	4.499913E-03	.3222279 %
30	1.743	1.7425	-5.004406E-04	-.0287197 %

1.072

Jan 22/08

Begin Element - SB

0.001

0.000 AZ

-0.003

0.349

Blk

0.682

1.058

SF 3453

0.652

-0.982

AQC

1.293

1.656

0.006

0.323

Dig Blk

0.712

1.035

-0.006

0.355

S46

0.703

1.048

0.005

0.417

S49

0.856

1.259

-0.006

0.456

S53

0.907

1.181

-0.002

0.344

S45

0.723

1.073

0.650

0.952

1.332

1.688

-0.006

0.338

~~*AQC*~~
Blk

0.684

1.160

0.648

~~*X wrong copy*~~

1.016

0.701

AQC
new dilution, freshly made

1.058

1.392

1.743

MM
22 Oct 86

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: RAP
DATE OF ANALYSIS --: 09-18-1986
PARAMETER NAME ----: SE
DATA SET # -----: 3453

SAMPLE NO.	CONC.	R VALUE	SLOPE
BL	.1054329	.9993673	.01233
AQC	16.98671	.9974461	1.281001E-02
86RA01S47	.1234619	.9962046	.01215
S48	.7509141	.9969711	.01092
D48	-.7878261	.9977928	.01117
R56	2.799778E-06	.9992097	.0109
AQC	16.40244	.9961841	.01148

AQC TV=17.3
15.6-19.0

BL

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.004	1.299988E-03	5.299988E-03	407.6953 %
10	.131	.1246	-6.400019E-03	-5.136453 %
20	.251	.2479	-3.100008E-03	-1.250508 %
30	.367	.3712	4.199952E-03	1.131453 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.228	.2175999	-1.040015E-02	-4.779482 %
10	.335	.3456999	.0106999	3.095141 %
20	.464	.4738	9.799958E-03	2.068374 %
30	.612	.6019	-1.010001E-02	-1.678021 %

86RA01S47

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	1.500061E-03	-3.499939E-03	-233.3198 %
10	.109	.123	1.400003E-02	11.38214 %
20	.262	.2445	-1.750001E-02	-7.15747 %
30	.359	.3659999	6.99994E-03	1.912552 %

S48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	8.199981E-03	9.199982E-03	112.1952 %
10	.126	.1174	-8.600019E-03	-7.325401 %
20	.237	.2266	-1.040003E-02	-4.589598 %
30	.326	.3358	9.799987E-03	2.9184 %

D48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.005	-8.800019E-03	-3.800019E-03	43.18194 %
10	.104	.1029	-1.100004E-03	-1.069003 %
20	.201	.2146	1.360001E-02	6.337374 %
30	.335	.3263	-8.699983E-03	-2.666253 %

*JW
2/20/88*

R56

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	3.051758E-08	-1.99997E-03	-6553501 %
10	.11	.109	-9.999946E-04	-.9174262 %
20	.21	.218	7.999986E-03	3.669719 %
30	.332	.3269999	-5.000055E-03	-1.529069 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.197	.1883	-8.700013E-03	-4.620294 %
10	.298	.3031	5.099982E-03	1.682607 %
20	.402	.4179	1.589996E-02	3.804728 %
30	.545	.5327	-1.230007E-02	-2.309006 %

Begin Element - SE

-0.008
0.000 AZ
-0.004
0.131
0.251
0.367
0.228
0.335
0.464
0.512
0.005
0.105
0.252
0.359
-0.001
0.126
0.237
0.326
-0.005
0.104
0.201
0.335
0.002
0.110
0.210
0.282
0.197
0.298
0.402
0.545
-0.007

ARC
RS3
D48
S48
86RA61S47

D/S 3453

9-18-86

22044

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: RAP
DATE OF ANALYSIS --: 09-18-1986
PARAMETER NAME ----: SE
DATA SET # -----: 3421/3425/3453

SAMPLE NO.	CONC.	R VALUE	SLOPE
BL	3.246753E-02	.9991536	.0154
AQC	15.60472	.9979129	.01695 -90%
86FLO8DB6	-1.766277	.9938268	.01874
FLO9S11	-.6132059	.9971417	.01484
RU1	-1.662949	.9982086	.01792
RA01S44	-1.039884	.9985869	.01404
DUP DB6	-1.424149	.9990676	.01615
AQC	15.83488	.9881288	.01611
RERUN DB6	.2498291	.9955385	.01441
AQC	17.94424	.9997016	.01435

*M
2200H*
AQC TV = 17.3
15.6-19.0

BL

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.006	.0005	.0065	1300 %
10	.16	.1545	-5.500004E-03	-3.559873 %
20	.317	.3085	-8.50001E-03	-2.755271 %
30	.455	.4625	7.499993E-03	1.62162 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.277	.2645	-1.250002E-02	-4.725905 %
10	.421	.434	1.299995E-02	2.995381 %
20	.592	.6034999	1.149988E-02	1.905532 %
30	.785	.7729999	-1.200014E-02	-1.552412 %

86FLO8DB6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.021	-3.310004E-02	-1.210004E-02	36.55596 %
10	.155	.1543	-7.000417E-04	-.4536888 %
20	.304	.3417	3.769997E-02	11.03306 %
30	.554	.5291	-2.490008E-02	-4.70612 %

FLO9S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.021	-9.099975E-03	1.190003E-02	-130.7699 %
10	.15	.1393	-1.069997E-02	-7.681243 %
20	.302	.2877001	-1.429993E-02	-4.97043 %
30	.423	.4361	.0131	3.003898 %

RO1

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.018	-2.980005E-02	-1.180005E-02	39.59741 %
10	.138	.1494	1.139997E-02	7.630504 %
20	.316	.3286	1.259995E-02	3.834433 %
30	.52	.5078	-.0122	-2.402521 %

*Jim
20 Oct 66*

RA01S44

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.018	-1.459998E-02	3.400024E-03	-23.28788 %
10	.124	.1258	1.800031E-03	1.430867 %
20	.28	.2662	-1.379997E-02	-5.184058 %
30	.398	.4066001	8.600056E-03	2.115114 %

DUF DB6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.018	-.023	-5.000001E-03	21.73913 %
10	.137	.1385	1.499996E-03	1.083029 %
20	.288	.3	.012	3.999998 %
30	.47	.4615	-8.50001E-03	-1.841822 %

ADC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.279	.2551	-2.390003E-02	-9.368888 %
10	.37	.4162	4.619998E-02	11.10043 %
20	.598	.5773	-2.069998E-02	-3.585654 %
30	.74	.7384	-1.600027E-03	-.2166884 %

RERUN DB6 *DUE TO LOW FACTOR COEFF.*

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.012	3.600037E-03	1.560004E-02	433.33 %
10	.173	.1477	-2.529998E-02	-17.1293 %
20	.288	.2918	3.800005E-03	1.302264 %
30	.43	.4359	5.899936E-03	1.353507 %

ADC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.256	.2574999	1.499862E-03	.5824708 %
10	.406	.4009999	-5.000085E-03	-1.246904 %
20	.539	.5445	5.499959E-03	1.010094 %
30	.69	.688	-2.000034E-03	-.2907026 %

Begin Element - SE

D/S 3421/3425/3453

22086

0.010	AZ
-0.006	
0.160	BL
0.317	
<u>0.455</u>	
0.277	
0.421	AQC
0.592	
<u>0.785</u>	
-0.021	
0.155	86 FL08D86
0.304	
0.554	
<u>-0.021</u>	
0.150	
0.302	FL09S11
<u>0.422</u>	
-0.018	
0.128	
0.215	R01
<u>0.520</u>	
-0.015	
0.124	RA01S44
0.280	
<u>0.299</u>	
-0.018	
0.137	DUP
0.288	FL08D86
<u>0.470</u>	
-0.279	
0.370	AQC
0.598	
<u>0.740</u>	
<u>0.007</u>	BL
-0.012	
0.172	KERN
0.288	FL08D86
<u>0.430</u>	
-0.012	
0.203	
0.418	SM25S12 111 did
<u>0.558</u>	
0.256	
0.406	AQC
0.529	
<u>0.690</u>	
-0.000	BL

Nov
22 Oct 86

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: RAP
DATE OF ANALYSIS --: 09-19-1986
PARAMETER NAME ----: SE
DATA SET # -----: 3453/3472

3453D -

15-6-19.0

SAMPLE NO.	CONC.	R VALUE	SLOPE
BL	.115099	.9992111	.01477
AQC (7.3=TV)	18.00408	.9994909	.01468
86RA01S46	.3767834 $\chi^2=0.8$	.9994426	9.819999E-03
S49	2.655369 $\chi^2=5.3$	.9979303	.01239
S53	.4761963 $\chi^2=0.45$	.9998179	.01176
86CL10S01	8.09484 $\chi^2=16.2$	.9992076	.01181
AQC	16.9403	.9990324	.0134
86RA01S45	9.28911 $\chi^2=18.6$	.997838	.01055

BL

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	1.700012E-03	7.000122E-04	41.17689 %
10	.145	.1494	4.399985E-03	2.945104 %
20	.308	.2971	-1.090005E-02	-3.668816 %
30	.439	.4447999	5.79989E-03	1.303932 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.261	.2642999	3.299922E-03	1.248552 %
10	.412	.4110999	-9.000897E-04	-.2189467 %
20	.566	.5579	-8.100033E-03	-1.451879 %
30	.699	.7047	5.699933E-03	.8088453 %

86RA01S46

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	3.700012E-03	-1.299988E-03	-35.13469 %
10	.103	.1019	-1.099996E-03	-1.079486 %
20	.194	.2001	6.099999E-03	3.048475 %
30	.302	.2983	-3.699988E-03	-1.240358 %

S49

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.042	3.290003E-02	-9.099975E-03	-27.65948 %
10	.142	.1568	1.480001E-02	9.438782 %
20	.283	.2807	-2.299994E-03	-.8193781 %
30	.408	.4046	-3.399998E-03	-.8403356 %

S53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	5.600067E-03	6.00067E-04	10.71535 %
10	.126	.1232	-2.799973E-03	-2.272705 %
20	.237	.2408	3.79999E-03	1.578069 %
30	.36	.3584	-1.600057E-03	-.4464445 %

Jan 22 0 08h

86CL10S01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.097	9.560004E-02	-1.399964E-03	-1.464397 %
10	.216	.2137	-2.299994E-03	-1.076272 %
20	.323	.3318	8.79997E-03	2.652191 %
30	.455	.4499	-5.100072E-03	-1.133601 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.233	.227	-5.999998E-03	-2.643171 %
10	.35	.361	1.100001E-02	3.047094 %
20	.499	.4950001	-3.999978E-03	-.8080764 %
30	.63	.6290001	-9.999275E-04	-.158971 %

86RA01S45

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.1	9.800006E-02	-1.999937E-03	-2.040751 %
10	.207	.2035	-3.499985E-03	-1.719894 %
20	.296	.309	1.299995E-02	4.207105 %
30	.422	.4145	-7.500053E-03	-1.809422 %

JM
20/11/88

Begin Element - SE

~~-0.451
0.000 AZ
0.014
0.179
0.358
0.539
0.712
0.886
0.453
0.605
0.751
0.122
0.275~~

Begin Element - SE

0.004
0.000 AZ
0.001
0.145
0.308 0
0.489

0.261
0.412 AQL
0.566
0.689

0.111
0.247 86 RA01S45 (1:1 DIL) D/S 3453
0.367
0.119

0.005
0.102 S46 (1:1 DIL)
0.194
0.302

0.042
0.142 S49 (1:1 DIL)
0.283
0.408

0.005
0.126 S53 (1:1 DIL.)
0.227
0.336

0.097
0.216 86 CL10S01 (1:1 DIL) D/S 3472
0.323
0.455

0.233
0.350 AQL
0.499
0.630

0.006 BL
0.100
0.207 REPEAT
0.296 S45 (1:1 DIL)
0.095

-0.005 BL
0.422 NEW STD. ADD. FOR 30

10/11
220 of 2

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: PM
DATE OF ANALYSIS --: 10-07-1986
PARAMETER NAME ----: TL
DATA SET # -----: 3453

*all samples BSL
not affected by
high bias*

SAMPLE NO.	CONC.	R VALUE	SLOPE
BLK	.0238288	.9986663	.01679
QC 25	27.48211	.9971956	.01676 +9.9% limit ±10%
S47 1/10	0	.9998842	.0144
S48 1/10	2.889908E-02	.9999833	6.920001E-03
D48 1/10	-.2134091	.9998329	6.559999E-03 Dup limit Δ ± 2
R53 No dil.	3.281461E-06	.9998381	.0186
QC	31.07212	.9954182	1.483001E-02 +24% limit ±10%
Q	16.81884	.9999295	3.526999E-02 as Q.C.
GC	22.67529	.9852651	.01854

BLK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	4.000855E-04	-1.599915E-03	-399.8932 %
10	.174	.1683	-5.699963E-03	-3.386786 %
20	.32	.3362	1.620001E-02	4.818562 %
30	.513	.5040999	-8.900106E-03	-1.765544 %

QC 25

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.474	.4606	-1.340005E-02	-2.90926 %
10	.616	.6282	1.219994E-02	1.942047 %
20	.78	.7957999	1.579988E-02	1.985409 %
30	.978	.9633998	-1.460016E-02	-1.515483 %

S47 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	0	0	1.701412E+38 %
10	.146	.144	-1.999974E-03	-1.388871 %
20	.284	.2880001	4.000038E-03	1.388902 %
30	.434	.4320001	-1.999945E-03	-.4629501 %

S48 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	1.999817E-04	1.999817E-04	100 %
10	.07	6.939999E-02	-6.000102E-04	-.8645681 %
20	.138	.1386	6.000102E-04	.4329078 %
30	.208	.2078	-1.999885E-04	-9.624084E-02 %

Jim
22 Oct 88

D48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-1.399963E-03	-1.399963E-03	100 %
10	.062	6.420002E-02	2.200022E-03	3.426825 %
20	.13	.1298	-1.999885E-04	-.1540743 %
30	.196	.1954	-5.999953E-04	-.30706 %

R53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	6.103515E-08	-1.999939E-03	-3276701 %
10	.186	.186	0	0 %
20	.366	.372	5.999953E-03	1.612891 %
30	.562	.558	-4.000068E-03	-.7168581 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.448	.4607998	.0127998	2.777735 %
10	.635	.6091	-2.590007E-02	-4.252187 %
20	.744	.7574001	1.340002E-02	1.769213 %
30	.906	.9057001	-2.999306E-04	-3.311588E-02 %

Q

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.593	.5932002	2.00212E-04	3.375117E-02 %
10	.95	.9459001	-4.099906E-03	-.4334396 %
20	1.291	1.2986	7.59995E-03	.5852418 %
30	1.655	1.6513	-3.700018E-03	-.224067 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.426	.4203999	-5.600095E-03	-1.332088 %
10	.627	.6058	-2.120006E-02	-3.499515 %
20	.732	.7912	5.919993E-02	7.482297 %
30	1.009	.9765999	-3.240001E-02	-3.317634 %

AGC shows high bias
all samples BDL and
not affected.
Jan 2008

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: PM
DATE OF ANALYSIS --: 10-07-1986
PARAMETER NAME ----: TL
DATA SET # -----: 3453

AGC. limit ±1%

SAMPLE NO.	CONC.	R VALUE	SLOPE
QC 7V25	24.19585	.9988476	.01828 -3%
S45 1/10	.1323388	.9999546	.01738
S49 1/10	1228.469	6.215103E-02	2.296843E-04 error
S49 1/10	6.107923E-02	.9999981	1.800999E-02
S53 1/10	7.128124E-02	.9999813	9.819999E-03
S44 1/10	.321711	.9944192	3.729999E-03
S46 1/10	.2040816	.9647241	.00245
QC	29.43295	.9995238	.01693 +17%
QC	24.49433	.9993552	.01849 -2%
S44 1/20	-.1895754	.9992447	.00633
S46 1/20	.371224	.9993169	.00431
QC	29.31818	.9979941	.01716 +17%
BLANK dig R53 No del.	-.2028986	.9988542	.01725

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.453	.4423001	-1.069996E-02	-2.419163 %
10	.61	.6251	.0151	2.415614 %
20	.806	.8079001	1.900077E-03	.2351871 %
30	.997	.9907	-6.299973E-03	-6.359113 %

S45 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	2.300049E-03	1.300049E-03	56.52266 %
10	.179	.1761	-2.899975E-03	-1.646777 %
20	.348	.3499	1.900017E-03	.5430172 %
30	.524	.5237	-3.000498E-04	-5.729422E-02 %

S49 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	.28216	.28116	99.64559 %
140	.181	.2500042	6.900418E-02	27.60121 %
20	.362	.2775663	-8.443371E-02	-30.4193 %
30	.541	.2752695	-.2657306	-96.53471 %

S49 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
-------	----------	-------	-------	----------

0	.001	1.100037E-03	1.000365E-04	9.093926 %
10	.181	.1812	1.999736E-04	.1103607 %
20	.362	.3612999	-7.000864E-04	-.1937688 %
30	.541	.5413999	3.998876E-04	7.386177E-02 %

*Jim
2/08/88*

S53 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	6.999817E-04	-3.000184E-04	-42.86088 %
10	.099	9.889998E-02	-1.00024E-04	-.1011366 %
20	.196	.1971	1.099974E-03	.5580792 %
30	.296	.2953	-7.000566E-04	-.2370663 %

S44 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-1.199982E-03	-1.199982E-03	100 %
10	.031	3.610001E-02	5.100008E-03	14.12744 %
20	.08	.0734	-.0066	-8.991825 %
30	.108	.1107	2.699986E-03	2.439012 %

S46 1/10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	.0005	.0015	300 %
10	.021	.025	3.999997E-03	15.99999 %
20	.062	.0495	-.0125	-25.25253 %
30	.067	.074	6.999992E-03	9.45945 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.493	.4982998	5.299807E-03	1.063578 %
10	.672	.6675998	-4.400194E-03	-.6591065 %
20	.844	.8368998	-7.100165E-03	-.8483889 %
30	1	1.0062	6.199837E-03	.6161636 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.45	.4529	2.900034E-03	.6403255 %
10	.636	.6378	1.800001E-03	.2822203 %
20	.835	.8227	-1.229996E-02	-1.495072 %
30	1	1.0076	7.59995E-03	.7542626 %

S44 1/20

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-1.200012E-03	7.99988E-04	-66.66499 %
10	.061	6.209999E-02	1.099985E-03	1.771313 %
20	.13	.1254	-4.600019E-03	-3.668277 %
30	.186	.1887	2.699986E-03	1.430835 %

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	1.599976E-03	1.599976E-03	100 %
10	.046	4.469998E-02	-1.300022E-03	-2.908328 %
20	9.000001E-02	8.779998E-02	-2.200022E-03	-2.505721 %
30	.129	.1309	1.899988E-03	1.45148 %

*Jan
2008*

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.492	.5031	1.109997E-02	2.206314 %
10	.684	.6747	-9.299994E-03	-1.378389 %
20	.861	.8463001	-1.469994E-02	-1.736965 %
30	1.005	1.0179	1.290011E-02	1.267326 %

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	-.0035	-.0055	157.1429 %
10	.168	.169	1.000002E-03	.5917172 %
20	.327	.3415	1.449999E-02	4.245972 %
30	.524	.514	-1.000005E-02	-1.945535 %

MM
2200H

Begin Element - TL

-0.009
0.000 AZ
0.002
0.199
0.356
0.559
0.487
0.707
0.924,
0.970

Begin Element - TL

0.002
0.000 AE
0.002
0.174 BIK
0.320
0.513
0.474
0.515 AG.C
0.780
0.979
0.000
0.143 S417
0.284 1:10
0.434
0.000 S418
0.070 1:10
0.139 1:10
0.208
0.000
0.052 D48
0.130 1:10
0.196
0.002
0.186 R53
0.366 me dil.
0.562
0.449
0.635 G.C.
0.744
0.906
0.001 Bkmbz
0.425
0.627 G.C. load R
0.732
1.003
0.436
0.699 G.C. load R
0.744
1.040
0.436
0.692 Q.C.
1.005
0.437
0.625
0.931 G.C.

1.039	
0.453	Q.C.
0.610	OK
0.806	OK
0.997	
0.000	Bank
0.001	
0.179	S45
0.848	V10
0.524	
0.001	
0.191	S49
0.862	V10
2.541	
0.001	
0.099	S53
0.196	V10
0.296	
0.000	
0.031	S44
0.080	V10
0.109	
0.001	
0.021	S46
0.062	V10
0.067	
0.493	
0.572	Q.C.
0.844	
1.000	
0.450	
0.525	Q.C.
0.821	
1.000	
0.001	Bank
2.002	
0.061	S47
0.130	V10
0.185	
0.000	
0.046	S46
0.090	V10
0.129	
0.492	
0.684	Q.C.
0.951	
1.005	
0.002	
0.168	dyg.
0.327	Bank
0.524	

Jan 20th

NAME OF ANALYST ---: HNR
 DATE OF ANALYSIS ---: 09-25-1986
 PARAMETER NAME ---: CD
 DATA SET # ---: 3453

SAMPLE NO. CONCD. R VALUE SLOPE

R	2.145931E-02	.9999152	.233
AOC T.V. 0.78	.8916947	.9987866	.2336001 14.19% dv
NBS	1.204551	.9615742	.1454001 5nd cond.
NBS	.93698	.9935049	.1682 4.0% dv
NBS T.V. 1.0	.9637592	.9971714	.1628 4.0% dv
R53	4.44462E-02	.9999722	.225
S44	.0324675	.9893119	.154 Bad cond.
S47	.6309886	.9994227	.1335
S48	3.669818	.9902221	.1059999 Bad cond. reported
D48	3.098042	.9932144	.1223999 Bad cond. reported
S44	2.842403E-02	.9928461	.1548 Bad cond.
NBS T.V. 1.0	1.014429	.9994603	.1594.3.0 % dv
R	1.489355E-02	.9987601	.235
S48 X3	.5850551	.9977884	.1645999 1.8
D48 X3	.5961543	.9957112	.1664 1.8
S44	1.405228	.9688225	.1224 Bad cond.
S44 DIGESTED X10	1.602973	.996293	.1884 1.6
NBS T.V. 1.0	1.082782	.9997636	.1509999-8.0 % dv
R	4.32041E-02	.9980881	.2222
DIG BLK	.1861114	.9987556	.18
S49	2.594174	.998697	.3194002 Bad cond.
S49 X10	2.5846133	.9802238	.2399999 Bad cond.
S49	19.64419	.9180556	.1109997 Bad cond.
S53	1.710909	.9912741	.173 Bad cond.
NBS T.V. 1.0	1.016416	.9999861	.1462 -2.9% dv

To be deleted

12000

R	SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	.004	5.000019E-03	1.000019E-03	20.0003 %
.5	.5	.124	.1215	-2.499983E-03	-2.05759 %
1	1	.236	.238	2.000019E-03	.84034 %
1.5	1.5	.355	.3545	-4.999688E-04	-.141035 %

0	0	.204	.2082999	4.299934E-03	2.064295 %
.5	.5	.355	.351	-9.900063E-03	-3.045237 %
1	1	.4419	.4419	6.899963E-03	1.561429 %
1.5	1.5	.55	.5587	-1.259977E-03	-.2326789 %

PER CENT

0	.15	.1732	2.519998E-02	14.38355 %
.5	.224	.2479	-.0361	-14.56232 %
1	.324	.3206	-3.399968E-03	-1.060502 %
1.5	.375	.3933001	1.430005E-02	3.635913 %

Jan 22 1968

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.146	.1576	1.160002E-02	7.360417 %
.5	.256	.2417	-1.430002E-02	-5.916434 %
1	.332	.3258	-6.199986E-03	-1.903004 %
1.5	.401	.4099	8.899987E-03	2.171258 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.164	.1569	-7.099986E-03	-4.525166 %
.5	.227	.2383	1.130003E-02	4.741933 %
1	.321	.3197001	-1.299948E-03	-.4066147 %
1.5	.404	.4011001	-2.899945E-03	-.7229979 %

R53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.999999E-03	1.000004E-02	1.000038E-03	10.00035 %
.5	.124	.1225	-1.499966E-03	-1.224462 %
1	.235	.235	2.980232E-08	1.268184E-05 %
1.5	.347	.3475	5.000234E-04	.1438916 %

S44

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.01	4.999995E-03	-5.000005E-03	-100.0002 %
.5	.085	.082	-2.999999E-03	-3.658535 %
1	.138	.159	2.100001E-02	13.20756 %
1.5	.249	.236	-1.299998E-02	-5.508466 %

S47

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.087	8.430004E-02	-2.699956E-03	-3.202794 %
.5	.148	.1511	3.100008E-03	2.051627 %
1	.216	.2179	1.899988E-03	.8719539 %
1.5	.287	.2847	-2.300024E-03	-.8078765 %

48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.384	.3890001	5.000115E-03	1.285376 %
.5	.443	.4420001	-9.999573E-04	-.2262347 %
1	.500	.495	-1.300004E-02	-2.626271 %
1.5	.557	.5470000	-8.999584E-03	-1.642313 %

D48

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.377	.3792001	2.200067E-03	.5801864 %
.5	.437	.4404001	3.400028E-03	.7720317 %
1	.515	.5016	-1.340002E-02	-2.671455 %
1.5	.555	.5628	7.799924E-03	1.385914 %

S44

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.012	4.400039E-03	-7.599962E-03	-172.7249 %
.5	.078	8.180002E-02	3.80002E-03	4.6455 %
1	.144	.1592	1.520002E-02	9.547749 %
1.5	.248	.2366	-.0114	-4.818259 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.161	.1617	7.000119E-04	.4329078 %
.5	.24	.2414	1.400009E-03	.579954 %
1	.326	.3211	-4.900009E-03	-1.526007 %
1.5	.398	.4008	2.799988E-03	.6985998 %

R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.007	3.499985E-03	-3.500016E-03	-100.0009 %
.5	.121	.121	-2.235174E-08	-1.847252E-05 %
1	.228	.2385	1.049997E-02	4.402503 %
1.5	.363	.356	-7.000059E-03	-1.966309 %

S48 X3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.096	9.630003E-02	3.000274E-04	.3115549 %
.5	.184	.1786	-5.400002E-03	-3.023517 %
1	.251	.2609	9.899974E-03	3.794548 %
1.5	.348	.3432	-4.800052E-03	-1.398617 %

D48 X3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.098	9.920006E-02	1.200058E-03	1.209735 %
.5	.191	.1824	-8.599967E-03	-4.714894 %
1	.252	.2656	1.360002E-02	5.12049 %
1.5	.355	.3488	-6.199986E-03	-1.777519 %

S44

SPIKE	MEASURED	CALC.	ERROR	PER CENT
-------	----------	-------	-------	----------

	.17	.0784	.0044	5.03264E-7
1.5	.182	.1396	-3.039999E-02	-21.7765 %
		.2008	1.880004E-02	9.362566 %

S44 DIGESTED

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.04	3.020001E-02	-9.799994E-03	-32.45031 %
.5	.11	.1244	.0144	11.57556 %
1	.218	.2186	5.999953E-04	.2744718 %
1.5	.318	.3128	-5.199999E-03	-1.662404 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.162	.1635001	1.50007E-03	.9174737 %
.5	.242	.239	-2.999962E-03	-1.255214 %
1	.313	.3145	1.500011E-03	.4769509 %
1.5	.39	.39	0	0 %

R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	9.600019E-03	1.600019E-03	16.66683 %
.5	.129	.1207	-8.299991E-03	-6.876547 %
1	.22	.2318	1.179998E-02	5.090586 %
1.5	.348	.3429	-5.100042E-03	-1.487326 %

DIG BLK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.028	3.350005E-02	5.500052E-03	16.41804 %
.5	.131	.1235	-7.499956E-03	-6.072837 %
1	.215	.2135	-1.499981E-03	-.702567 %
1.5	.3	.3035	3.500015E-03	1.153217 %

S49

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.831	.7646998	-6.630021E-02	-8.670098 %
.5	.807	.9243999	.1173999	12.70012 %
1	1.12	1.0841	-.0359	-3.311502 %
1.5	1.259	1.2438	-1.519978E-02	-1.222044 %

S49 X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.134	.139	4.999981E-03	3.597109 %
.5	.252	.2689999	1.699999E-02	6.319679 %
1	.446	.3959999	-4.900009E-02	-12.280073 %
1.5	.702	.6339999	-6.699989E-02	-9.542718 %

M
2007

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	1.757	1.7365	-2.049983E-02	-1.160525 %
.5	1.749	1.792	4.299999E-02	2.399553 %
1	1.872	1.8475	-2.450013E-02	-1.326124 %
1.5	1.901	1.903	1.999617E-03	.1050771 %

S53

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.302	.296	-5.999983E-03	-2.027021 %
.5	.384	.3825	-1.500011E-03	-.3921596 %
1	.448	.469	2.099994E-02	4.477599 %
1.5	.569	.5555	-.0135001	-2.430261 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.149	.1486	-3.999919E-04	-.2691735 %
.5	.221	.2217	7.000119E-04	.3157473 %
1	.295	.2948	-2.000034E-04	-6.784376E-02 %
1.5	.368	.3679	-1.000166E-04	-2.718581E-02 %

Jan 14
2022

Begin Element - CD

o/s 3453
9/24/86

-0.104		
0.000	AZ	
0.004		
0.124		
0.236		
0.355	R	
0.204		
0.235		
0.435	ARC	1/10 dil of known to concentration
0.560		
0.150		
0.284		
0.324		
0.279		
0.146		
0.256		
0.322		
0.401		
0.164		
0.227		
0.321		
0.404		
0.009		
0.124		
0.225		
0.347		
0.010		
0.025		
0.198		
0.249		
0.097		
0.148		
0.216		
0.227		
0.394		
0.442		
0.509		
0.529		
0.977		
0.487		
0.515		
0.555		
0.012		
0.078		
0.144		
0.248		
0.161		
0.240		
0.326		
0.399		
0.007		
0.121		
0.228		
0.363		
0.096		
0.184		
0.251		
0.348		

R

ARC 1/10 dil of known to
concentration

NBS

1/20 dil.

NBS

NBS

RS3

S44

S47

S48

D48

S44

NBS

R

S48 X3
1/2 dil

0.098
0.191
0.252
0.355

D48
x 3
1.2 dil.

0.010
0.074
0.170
0.182

S44

diluted
sample

S44
1/10 dil.

0.040
0.110
0.218
0.318

0.152
0.242
0.313
0.390

NBS

0.008
0.129
0.220
0.349

R

0.028
0.131
0.215
0.300

diluted
Bik

0.831
0.807
1.120
1.253

S49

0.134
0.252
0.448
0.502

S49
1/10 dil.

1.757
1.742
1.872
1.901

R545
(To dilute)

0.302
0.384
0.448
0.569

S53
(To dilute)

0.149
0.221
0.295
0.368

NBS

yes
2022

 * FLAMELESS * CSC VERSION 1.00 *

*Jim
2/20/86*

NAME OF ANALYST ---: HNR
 DATE OF ANALYSIS --: 09-26-1986
 PARAMETER NAME ----: CD
 DATA SET # -----: 3453, 3455

SAMPLE NO.	CONC.	R VALUE	SLOPE
R	.1175772	.9722476	.2526
R	.0832095	.9709316	.2692
NBS TV. 1.0	.5081085	.9673834	.185
S45 X10	-9.803958E-03	.9764526	.255
S45X10	.5874852	.9816341	.3372
S49X10	.2261275	.9747735	.3414001
NBS	.6044156	.980885	.1676
R	.02508	.9997228	.1874 <.1
NBS	.8922344	.9991794	.1262 -119. dev
NBS (NEW PREPARED)			
	.9126984	.9994959	.126 -9% dev
S45X10	.1148522	.9996919	.2168
S46X10	.9908488	.9996624	.2403999
S49X10	.5244298	.9991334	.2456
NBS	.9010112	.9962246	.1384 -9.9% dev.
R	5.384616E-02	.9997526	.195 <.1
S11	8.928456E-03	.9992303	.1344
D11	-6.151627E-02	.99974	.1398
S12	1.701412E+38	1.498816E-07	0
R13	-4.773882E-02	.9993792	.199
S12X10	.93191	.9088232	.1968
S12X10	2.645924	.8629924	9.319997E-02
NBS	.8428764	.9991019	.1502 -15.7% dev.

Bad correlations

SF3453

R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-2.969999E-02	-2.869999E-02	96.63299 %
.5	.076	9.660001E-02	2.060001E-02	21.32506 %
1	.178	.2229	4.490002E-02	20.14357 %
1.5	.386	.3492001	-3.679997E-02	-10.53836 %

R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	-.0224	-.0284	126.7857 %
.5	.096	.1122	.0162	14.4385 %
1	.194	.2468	.0528	21.39384 %
1.5	.422	.3814	-4.059997E-02	-10.64498 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.116	9.400006E-02	-2.199994E-02	-23.40418 %
.5	.172	.1865	1.450004E-02	7.774817 %
1	.242	.2790001	3.700005E-02	13.26166 %
1.5	.401	.3715	-2.949995E-02	-7.340775 %

S46 X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.027	-2.50001E-03	-2.950001E-02	1179.996 %
.5	.099	.125	.026	20.8 %
1	.216	.2525	3.649999E-02	14.45544 %
1.5	.413	.3800001	-3.299993E-02	-8.684192 %

*Don
20/6/66*

S45X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.226	.1981	-.0279	-14.08379 %
.5	.351	.3667	1.569998E-02	4.281425 %
1	.483	.5353	5.230001E-02	9.770222 %
1.5	.744	.7039	-4.010004E-02	-5.696838 %

S49X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.112	7.719994E-02	-3.480007E-02	-45.07785 %
.5	.226	.2479	2.189998E-02	8.834202 %
1	.358	.4186	6.060002E-02	14.47683 %
1.5	.637	.5893001	-4.769999E-02	-8.094346 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.116	.1013	-1.469995E-02	-14.5113 %
.5	.176	.1851	9.10002E-03	4.916272 %
1	.243	.2689	2.590001E-02	9.631836 %
1.5	.373	.3527	-.0203	-5.755601 %

R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	4.699993E-03	2.699993E-03	57.44675 %
.5	.102	9.840001E-02	-3.599994E-03	-3.65853 %
1	.193	.1921	-8.999854E-04	-.4684984 %
1.5	.284	.2858001	1.800031E-03	.6298217 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.115	.1126	-2.400011E-03	-2.131449 %
.5	.174	.1757	1.699999E-03	.9675578 %
1	.235	.2388	3.79999E-03	1.591286 %
1.5	.305	.3019	-3.100008E-03	-1.026833 %

NBS (NEW PREPARE

SPIKE	MEASURED	CALC.	ERROR	PER CENT
-------	----------	-------	-------	----------

0	.114	.112	1.000000E-03	.8695734 %
.5	.181	.178	-2.999976E-03	-1.68538 %
1	.238	.241	3.000021E-03	1.244822 %
1.5	.305	.304	-9.999871E-04	-.3289431 %

*Jim
2/20/84*

S45X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.022	2.489996E-02	2.89996E-03	11.64644 %
.5	.136	.1333	-2.700031E-03	-2.02553 %
1	.245	.2417	-3.300026E-03	-1.36534 %
1.5	.347	.3501	3.099978E-03	.8854551 %

S46X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.242	.2382	-3.800005E-03	-1.5953 %
.5	.353	.3584	5.399972E-03	1.506689 %
1	.478	.4785999	5.999208E-04	.1253491 %
1.5	.601	.5987999	-2.200127E-03	-.3674227 %

S49X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.124	.1288	4.799962E-03	3.72668 %
.5	.261	.2516	-9.40004E-03	-3.736106 %
1	.37	.3744	4.399985E-03	1.17521 %
1.5	.497	.4972	2.000034E-04	4.022594E-02 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.119	.1247	5.69997E-03	4.570947 %
.5	.198	.1939	-4.10001E-03	-2.114497 %
1	.272	.2631	-8.900016E-03	-3.382751 %
1.5	.325	.3323	7.300049E-03	2.196825 %

R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	.0105	2.500001E-03	23.80953 %
.5	.112	.108	-4.000001E-03	-3.703704 %
1	.205	.2055	5.000085E-04	.2433131 %
1.5	.302	.303	1.000047E-03	.3300484 %

S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	1.199985E-03	-1.800016E-03	-150.0032 %
.5	6.800001E-02	6.839999E-02	3.999844E-04	.5847726 %
1	.131	.1356	4.600004E-03	3.392333 %
1.5	.206	.2028	-3.199995E-03	-1.577907 %

D11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.007	-8.599972E-03	-1.599972E-03	18.60439 %
.5	.06	6.130002E-02	1.300018E-03	2.120747 %
1	.129	.1312	2.200022E-03	1.676846 %
1.5	.203	.2011	-1.899988E-03	-.9447972 %

*Jim
2/20/78*

S12

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	1.612	1.67	5.800009E-02	3.473059 %
.5	1.689	1.67	-1.899993E-02	-1.137721 %
1	1.806	1.67	-.1359999	-8.143708 %
1.5	1.573	1.67	9.700012E-02	5.80839 %

R13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-8.000001E-03	-9.500027E-03	-1.500026E-03	15.78971 %
.5	.091	8.999999E-02	-1.00001E-03	-1.111122 %
1	.183	.1895	6.500006E-03	3.430082 %
1.5	.293	.289	-3.999978E-03	-1.384075 %

S12X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.133	.1833999	5.039992E-02	27.48088 %
.5	.366	.2818	-8.420006E-02	-29.87937 %
1	.363	.3802	1.719996E-02	4.523926 %
1.5	.462	.4786	1.659995E-02	3.46844 %

S12X10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.28	.2466001	-3.339994E-02	-13.54417 %
.5	.248	.2932001	4.520005E-02	15.41611 %
1	.33	.3398	9.800017E-03	2.884054 %
1.5	.408	.3864	-2.159998E-02	-5.590057 %

NBS

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.124	.1266	2.600029E-03	2.053735 %
.5	.203	.2017	-1.299977E-03	-.6445103 %
1	.282	.2768	-5.199999E-03	-1.878612 %
1.5	.348	.3519	3.899992E-03	1.108267 %

PFGIN DATA FILE: 3453A.DF

Begin Element - CD

0.024
0.000 AZ
-0.001
0.078
0.178 R
0.386

BEGIN DATA FILE: 3453A.DF

0.024

Begin Element - CD

-0.001
0.000 AZ
0.008
0.095
0.194 R
0.422

0.116
0.172
0.242 NBS
0.401

0.027
0.099
0.218 S 46 X 10
0.418

0.228
0.281
0.489 S 45 X 10
0.744

0.112
0.226
0.359 S 49 X 10
0.697

0.118
0.176
0.248 NBS
0.379

BEGIN DATA FILE: 3453A.DF

Begin Element - CD

-0.011
0.000 AZ
0.002
0.102
0.198 R
0.284

0.115
0.174
0.235 NBS
0.305

0.114
0.121
0.239
0.305
NEW
NBS

0.022
0.136
0.245
0.347
S 45 X 10

Begin Element - CD

-0.004	
0.000 AZ	
0.009	
0.112	
0.205	R
0.202	
0.003	
0.068	
0.131	
0.206	
-0.007	
0.060	
0.129	
0.203	
1.612	
1.689	
1.806	
1.573	
-0.008	
0.091	
0.183	
0.293	
0.123	
0.366	
0.363	
0.463	
0.280	
0.248	
0.330	
0.406	
0.124	
0.203	
0.282	
0.348	
NBS	

BEGIN DATA FILE: 3453E.DF

0.353	
0.478	
0.601	
0.134	
0.261	
0.370	
0.497	
0.119	
0.198	
0.272	
0.325	
NBS	

546 x 10

549 x 10

78022
Jan 08

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF 3453 CERCLIS No. OH D063963714

SMD Case No. _____ Site Name and Location: SKINNER

Name of Contractor or EPA Laboratory: CRL Data User: SF

No. of Samples: 9 Date Samples or Data Received: 10-24-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 10-24-86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 10-24-86

DATA USERS:

Please fill in the blanks below and return this form to: METALS
Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: _____ Date: 10-29-86

Q.A. review received by: Cathy Freeman Date: _____

Inorganic Data Complete [], Suitable for Intended Purposes [] [] if acceptable.
Organic Data Complete [], Suitable for Intended Purposes [] List problems below.
Dioxin Data Complete [], Suitable for Intended Purposes []
SAS Data Complete [], Suitable for Intended Purposes []

See Attached "Missing Data Request Form" []

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems.

Received by Data Management Coordinator, CRL for File: Date: 10/30/86

Signature: Griffin

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF 3453 CERCLIS No. 014D06396374

SMO Case No. _____ Site Name and Location: SKINNER

Name of Contractor or EPA Laboratory: CRL Data User: CDM

No. of Samples: 9 Date Samples or Data Received: 10-24-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 10/24/86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 10/24/86

DATA USERS:

METALS

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: WS Dumas Date: 10/30/86

Q.A. review received by: WS Dumas Date: 10/30/86

Inorganic Data Complete , Suitable for Intended Purposes if acceptable.
Organic Data Complete , Suitable for Intended Purposes List problems below.
Dioxin Data Complete , Suitable for Intended Purposes
SAS Data Complete , Suitable for Intended Purposes

See Attached "Missing Data Request Form"

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems.

Received by Data Management Coordinator, CRL for File: Date: 11/3/86

Signature: Maria Feliciano

RECEIVED

NOV 01 1986

US EPA CENTRAL REGIONAL LAB.
536 S. CLARK STREET
CHICAGO, ILLINOIS 60605

Run No. 544

Prep. by NIS 9/8/86 Date

Anal. by

Date

Beaker	Sample	Notes	No Data Set	Sample	Notes
1	SF3455		26	SF3484	RAO R01
2			27	SF3425	FL09506 DUF
3			28	SF3425	FL09506 SPIKE
4	SF3455		29	SF3484	FK09508 DUF
5	CD03472	GL10 R01	30	SF3484	FK10508 SPIKE
6			31	SF3453	RA01544
7			32		S45
8		R01	33		S46
9			34		S47
10	CD03472	GL10 S02	35		S48
11		BLANK	36		D48
12	SF3455	SMAS501 DUF	37		S49
13	SF3455	SMAS501 SPIKE	38		S53
14	SF3455	FL09506	39		R53
15			40		RA01544 DUF SPIKE
16			41	SF3453	RA01546 SPIKE DUF
17			42		BLANK
18			43		BLANK
19			44		BLANK
20			45		BLANK
21			46		
22	SF3484	FK10508	47		
23			48		
24			49		
25			50		

Jan 1987

Skinner insufficient sample
 for reanalysis
 due to split for Hg
 because fold
 did not preserve
 Ar Hg

DL1:[001,054]RUN544.BRN

10-SEP-86

10:44:29

PAGE 1

DATA SET : METALS1

ELEMENT	DET LIM	BLANK11	BLANK42	BLANK43
AG	6.000	1.720	-0.517	0.805
AL	80.	152.*	20.	141.*
B	80.0	19.4	19.6	94.9*
BA	6.00	-4.89	-8.82*	-7.05*
BE	1.000	-0.147	-0.085	0.025
CD	10.000	0.455	-0.716	-0.054
CU	6.00	-0.28	0.42	2.29
CR	8.00	-0.95	2.45	5.87
CO	6.00	4.12	3.65	5.86
FE	80.0	27.4	18.6	66.7
LI	10.00	-1.81	-5.63	-5.27
MN	5.000	0.215	-1.060	0.122
MO	15.00	-1.38	-1.17	3.81
NI	15.00	31.50*	3.46	2.44
PB	70.000	24.500	3.670	0.743
SN	40.00	9.48	-8.52	-7.57
SR	10.00	-0.16	-0.27	1.74
TI	25.000	-0.308	-2.370	0.386
V	5.00	1.07	0.91	3.22
Y	5.000	0.432	0.576	0.576
ZN	40.0	11.8	15.1	28.4
CA	0.500	0.184	0.097	0.185
CA	0.500	0.139	0.023	0.115
K	2.00	-1.26	-2.71	-2.41
MG	0.100	0.011	0.018	0.053
NA	1.000	1.080	0.265	0.458
AL	20.000	0.090	-0.089	0.038
FE	20.000	-0.147	-0.273	-0.237
ZN	20.000	-0.541	-0.870	-0.790

ug/l
 ↓
 mg/l

Sample comparison
 for all elements
 10/10/86

MS 9/10/86

All blanks ± detection limit
 except as starred

DATA SET : METALS1

ELEMENT	DET LIM	BLANK45
AG	6.000	-0.311
AL	80.0	15.5
B	80.0	18.2
BA	6.00	-7.86*
BE	1.000	0.118
CD	10.000	-0.970
CO	6.00	1.80
CR	8.00	2.92
CU	6.00	1.65
FE	80.0	12.2
LI	10.00	-5.42
MN	5.000	-0.958
MO	15.000	0.232
NI	15.00	-1.02
PB	70.0	22.2
SN	40.00	4.53
SR	10.000	-0.665
TI	25.00	-1.89
V	5.000	0.204
Y	5.000	0.719
ZN	40.00	2.28
CA	0.500	0.083
CA	0.500	0.013
K	2.00	-2.63*
MP	0.100	0.009
NA	1.000	0.134
AL	20.000	-0.084
FE	20.000	-0.219
ZN	20.000	-0.822

ug/l
 ↓
mg/l

*1001
 20 Sept 86*

M S 9/10/86

DATA SET : METALS1

SAMPLE ID : AQC.086

ELEMENT	TRUE	MEASURED	% DEV
AL	4760.00	4470.00	-6.07
B	1050.00	1010.00	-3.24
BA	1510.00	1490.00	-1.16
BE	728.00	697.00	-4.20
CD	425.00	405.00	-4.85
CO	972.00	955.00	-1.74
CR	1570.00	1520.00	-3.38
CU	1160.00	1130.00	-2.39
FE	3820.00	3670.00	-3.78
LI	808.000	802.000	-0.804
MN	1330.00	1270.00	-4.69
MO	811.00	776.00	-4.26
NI	1180.00	1110.00	-6.31
PB	2970.00	2880.00	-3.26
SN	2430.00	2310.00*	-4.92
SR	902.00	870.00	-3.47
TI	1200.00	1160.00	-3.20
V	744.00	703.00	-5.54
Y	784.00	755.00	-3.74
ZN	2800.00	2660.00*	-5.21
CA	12.4	13.7	10.1
CA	13.20	13.70	3.64
K	96.000	96.700	0.667
MG	5.21	5.03	-3.47
NA	18.500	18.500	0.258

ug/l

↓

mg/l

Jan 16/97

MS 9/10/86

All values ± 2σ except Sn + Zn

DATA SET : METALS1

SAMPLE ID : AQC.086

ELEMENT	TRUE	MEASURED	% DEV
AL	4760.000	4770.000	0.244
B	1050.000	1040.000	-0.274
BA	1510.00	1540.00	1.94
BE	728.000	730.000	0.299
CD	425.000	422.000	-0.854
CO	972.00	987.00	1.62
CR	1570.000	1570.000	0.189
CU	1160.000	1160.000	0.258
FE	3820.00	3990.00	4.52
LI	808.00	821.00	1.57
MN	1330.00	1310.00	-1.88
MO	811.000	807.000	-0.471
NI	1180.00	1140.00	-3.19
PB	2970.00	3060.00	2.98
SN	2430.000	2420.000	-0.351
SR	902.000	898.000	-0.454
TI	1200.000	1200.000	0.258
V	744.00	733.00	-1.56
Y	784.000	779.000	-0.659
ZN	2800.00	2850.00	1.57
CA	12.4	14.7	18.4%
CA	13.20	14.50	9.92
K	96.00	99.10	3.22
MG	5.210	5.260	0.981
NA	18.500	18.600	0.568

49/10
 ↓
mg/l
 ↓

*Non
 46 Sept 86*

M S 9/10/86

*All values ± 10% or 2σ except
 Ca*

DATA SET : METALS1

SAMPLE ID : AQC.086

ELEMENT	TRUE	MEASURED	% DEV
AL	4760.00	4560.00	-4.26
B	1050.000	1040.000	-0.399
BA	1510.00	1560.00	3.51
BE	728.00	719.00	-1.19
CD	425.00	416.00	-2.09
CO	972.00	988.00	1.71
CR	1570.000	1580.000	0.444
CU	1160.000	1160.000	0.600
FE	3820.000	3830.000	0.396
LI	808.00	824.00	2.00
MN	1330.00	1300.00	-2.26
MO	811.000	805.000	-0.707
NI	1180.00	1130.00	-4.02
PB	2970.00	3020.00	1.58
SN	2430.00	2380.00	-2.01
SR	902.000	910.000	0.924
TJ	1200.000	1200.000	-0.137
V	744.00	727.00	-2.30
Y	784.000	787.000	0.345
ZN	2800.00	2700.00	-3.79
CA	12.4	14.4	16.2
CA	13.20	14.00	5.68
K	96.000	96.500	0.441
MG	5.21	5.07	-2.68
NA	18.50	18.70	1.23

431P
 ↓
 mg/l

Jan
 96/9/86

MS 9/10/86

all values ± 10% or ± 2σ

DATA SET : METALS1

SAMPLE ID : AGC.086

ELEMENT	TRUE	MEASURED	% DEV
AL	4760.00	4560.00	-4.17
B	1050.000	1040.000	-0.328
BA	1510.00	1550.00	3.05
BE	728.000	721.000	-0.970
CD	425.000	422.000	-0.877
CO	972.00	991.00	1.99
CR	1570.00	1550.00	-1.06
CU	1160.000	1160.000	0.434
FE	3820.000	3840.000	0.572
LI	808.00	820.00	1.49
MN	1330.00	1300.00	-2.27
MO	811.000	803.000	-0.917
NI	1180.00	1150.00	-2.91
PR	2970.00	3020.00	1.38
SN	2430.00	2360.00	-2.77
SR	902.000	906.000	0.522
TI	1200.000	1200.000	-0.269
V	744.00	726.00	-2.46
Y	784.000	785.000	0.099
ZN	2800.00	2710.00	-3.45
CA	12.4	14.4	15.6
CH	13.20	14.00	5.77
K	96.000	95.500	-0.557
MG	5.21	5.06	-2.85
NA	18.500	18.500	-0.003

4910
 ↓
mg/l
 ↓

*Jim
 9/10/86*

AMS 9/10/86

All values ± 10% or ± 20

DL1:100

054]RUN544.BRN

10-SEP-86

10:58:03

PAGE 8

DATA SET : METALS1

SAMPLE ID : AQC.086

ELEMENT	TRUE	MEASURED	% DEV
AL	4760.00	4570.00	-4.04
B	1050.00	1030.00	-1.25
BA	1510.00	1550.00	2.50
BE	728.00	718.00	-1.31
CD	425.00	418.00	-1.64
CO	972.00	991.00	2.01
CR	1570.000	1570.000	-0.027
CU	1160.000	1150.000	-0.181
FE	3820.00	3900.00	2.20
LI	808.000	811.000	0.416
MN	1330.00	1300.00	-2.65
MO	811.00	798.00	-1.55
NI	1180.00	1150.00	-2.76
PB	2970.00	3040.00	2.32
SN	2430.00	2340.00	-3.53
SR	902.000	902.000	0.045
TI	1200.000	1190.000	-0.747
V	744.00	721.00	-3.17
Y	784.000	783.000	-0.160
ZN	2800.00	2750.00	-1.95
CA	12.4	14.4	15.7
CA	13.20	14.00	5.71
K	96.00	93.40	-2.78
MG	5.21	5.05	-3.11
NA	18.500	18.400	-0.399

mg/l
↓
mg/l
↓

*Nov
16 Sept 86*

DATA SET : METALS1

SAMPLE ID : AQC.0B6

ELEMENT	TRUE	MEASURED	% DEV
AL	4760.00	4560.00	-4.16
B	1050.000	1040.000	-0.397
BA	1510.00	1560.00	3.15
BE	728.00	719.00	-1.23
CD	425.00	417.00	-1.84
CO	972.00	990.00	1.93
CR	1570.000	1570.000	0.131
CU	1160.000	1160.000	0.128
FE	3820.00	3870.00	1.50
LI	808.00	816.00	1.01
MN	1330.00	1300.00	-2.49
MO	811.000	807.000	-0.419
NI	1180.00	1140.00	-3.55
PB	2970.00	3040.00	2.18
SN	2430.00	2360.00	-2.87
SR	902.000	907.000	0.637
TI	1200.000	1200.000	-0.402
V	744.00	725.00	-2.56
Y	784.000	787.000	0.321
ZN	2800.00	2720.00	-2.83
CA	12.4	14.4	16.0
CA	13.20	13.90	5.48
K	96.00	93.90	-2.25
MG	5.21	5.06	-2.96
NA	18.500	18.500	-0.052

49H

mg/l

Jim
16 Sept 86

MS 9/10/86

All values $\pm 10\%$ or ± 20

DATA SET : METALS1 SAMPLE ID : WP37810

ELEMENT	TRUE	MEASURED	% DEV
AG	48.00	50.70	5.64

DATA SET : METALS1 SAMPLE ID : WP37810

ELEMENT	TRUE	MEASURED	% DEV
AG	48.00	49.90	3.99

DATA SET : METALS1 SAMPLE ID : WP37810

ELEMENT	TRUE	MEASURED	% DEV
AG	48.00	50.70	5.64

DATA SET : METALS1 SAMPLE ID : WP37810

MS 9/10/86

ELEMENT	TRUE	MEASURED	% DEV
AG	48.00	50.40	4.91

DATA SET : METALS1 SAMPLE ID : WP37810

MS 9/10/86

ELEMENT	TRUE	MEASURED	% DEV
AG	48.00	52.40	9.19

DATA SET : METALS1 SAMPLE ID : WP37810

All values ± 10%

ELEMENT	TRUE	MEASURED	% DEV
AG	48.00	51.40	6.98

DATA SET : SF3425

SAMPLE ID : FL09S06

ELEMENT	Det Limit	SAMPLE	DUPLICATE	AVERAGE	R P D
AG	6.0	1.	0.	0.	118.
AL	50.0	15.7	10.5	13.1	39.5
B		498.00	484.00	491.00	2.99
BA		102.00	104.00	103.00	2.38
BE	1.0	-0.2	-0.2	-0.2	-20.1
CD	10.0	-1.	2.	0.	555.
CO	6.0	2.3	3.5	2.9	39.5
CR	5.0	3.3	5.0	4.1	41.7
CU	6.0	4.0	3.3	3.7	19.2
FE	30.0	217.0	260.0	239.0	18.0
LI	10.0	4.3	5.8	5.1	28.9
MN	5.0	9.3	13.5	11.4	37.1
MO		69.50	73.90	71.70	6.21
NI	15.0	2.6	4.5	3.6	51.5
PB	70.0	14.3	28.0	21.1	64.6
SN	40.0	-9.	7.	-1.	-1760.
SR		769.000	774.000	771.000	0.671
TI	25.0	0.6	1.6	1.1	93.8
V	5.0	1.	-0.	0.	308.
Y		0.79	0.72	0.76	9.54
ZN	40.0	167.0	205.0	186.0	20.8
CA		26.70	27.00	26.80	1.10
CA		24.60	25.10	24.80	1.81
K	2.0	-1.9	-1.6	-1.8	-17.9
MG		10.40	10.50	10.40	1.51
NA		121.000	121.000	121.000	0.206
AL	20.0	-0.1	-0.1	-0.1	-14.2
FE	20.0	-0.	0.	-0.	-1260.
ZN	20.0	-0.9	-0.7	-0.8	-23.7

Sum 1619.26

MS 9/10/86

All values $\pm 10\%$ or \pm detection limit

DATA SET : SF3453

SAMPLE ID : RA01S46

ELEMENT	Detection Limit	SAMPLE	DUPLICATE	AVERAGE	R F D
AG	6.0	-0.2	-0.6	-0.4	-95.4
AL	80.0	42.	7.	24.	144.
B	10.0	132.0	112.0	122.0	16.5
BA		48.00	45.70	46.80	5.01
BE	1.0	-0.1	-0.1	-0.1	-46.5
CU	10.0	0.	-0.	-0.	-426.
CO	6.0	1.	4.	2.	107.
CR	8.0	5.1	6.5	5.8	23.0
CU		37.70	37.00	37.30	1.81
FE	80.0	165.0	123.0	144.0	29.0
LI		6.19	5.67	5.93	8.69
MN	5.0	29.0	24.8	26.9	15.3
MO		3.58	3.72	3.65	3.84
NI	15.0	3.0	6.4	4.7	70.3
PB	70.0	24.4	30.4	27.4	21.8
SN	40.0	11.7	14.2	13.0	18.7
SR		209.00	205.00	207.00	1.87
TI	25.0	0.	0.	0.	197.
V		2.94	2.89	2.92	1.81
Y		0.90	0.97	0.94	8.01
ZN		298.00	281.00	289.00	5.72
CA		103.00	107.00	105.00	4.08
CA		77.70	76.10	76.90	2.00
K	2.0	3.0	2.4	2.7	21.9
MG		11.60	11.40	11.50	1.77
NA		11.50	11.10	11.30	3.51
AL	20.0	-0.	-0.	-0.	-154.
FE	20.0	-0.	-0.	-0.	-164.
ZN	20.0	-0.6	-0.8	-0.7	-18.8

16 Sept 86

MS 9/10/86 All values \pm 10% or \pm detection limit

DATA SET : SF3484

SAMPLE ID : FK10S08

ELEMENT	<i>Det Limit</i>	SAMPLE	DUPLICATE	AVERAGE	R P D
AG	<i>49/10</i> 6.0	-0.3	-0.6	-0.5	-53.0
AL	80.0	-33.4	-22.1	-27.8	-40.6
B	80.0	139.0	76.7	108.0	57.5
BA		192.000	194.000	193.000	0.983
BE	1.0	-0.2	-0.1	-0.2	-57.9
CI	10.0	0.	0.	0.	42500.
CO	6.0	4.	0.	2.	172.
CR	8.0	1.6	3.3	2.4	71.0
CU		7.72	7.02	7.37	9.52
FE		2530.000	2540.000	2530.000	0.397
LI		16.70	17.60	17.10	5.37
MN		81.90	84.90	83.40	3.64
MO		27.10	28.60	27.80	5.65
NI	15.0	0.	-0.	-0.	-53800.
PB	70.0	19.4	23.4	21.4	18.6
SN	40.0	-8.	21.	7.	443.
SR		4230.000	4250.000	4240.000	0.353
TI	25.0	2.3	3.3	2.8	36.5
V	5.0	1.	0.	1.	151.
Y		1.01	0.94	0.97	7.41
ZN	40.0	32.3	27.5	29.9	15.7
CA	<i>mg/l</i>	103.000	103.000	103.000	0.000
CA		78.70	79.60	79.20	1.16
K	2.0	-1.5	-1.0	-1.3	-35.0
MG		30.60	30.90	30.70	1.08
NA		13.200	13.200	13.200	0.307
AL		-0.07	-0.06	-0.06	-1.21
FE		2.43	2.49	2.46	2.66
ZN	20.0	-1.0	-0.8	-0.9	-12.2

Jan 16 Sept 86

MMS 9/10/86

All values ± 10% or ± detection limit

DATA SET : SF3455

SAMPLE ID : SM25511

ELEMENT	ADJUST	SAMPLE	DUPLICATE	AVERAGE	R P D
AG	48.0	2.7	1.5	2.1	54.8
AL	80.0	-21.4	-45.7	-33.5	-72.3
B	80.0	95.9	162.0	129.0	51.3
BA		82.80	86.30	84.60	4.15
BE	1.0	-0.4	-0.3	-0.3	-29.4
CD	10.0	-0.	-1.	-1.	-151.
CO	6.0	2.	0.	1.	134.
CR	8.0	7.6	4.6	6.1	48.5
CU		6.61	7.00	6.81	5.73
FE		786.00	766.00	776.00	2.52
LI	10.0	10.2	12.5	11.3	20.9
MM		205.00	211.00	208.00	2.72
MO	15.0	2.6	1.7	2.2	43.1
NI	15.0	2.8	1.4	2.1	66.7
PR	70.0	2.	16.	9.	163.
SN	40.0	20.	4.	12.	135.
SR	25.0	384.00	394.00	389.00	2.44
TI	5.0	-0.	1.	0.	259.
V	5.0	1.5	1.9	1.7	21.8
Y	5.0	0.8	0.6	0.7	27.0
ZN		559.00	535.00	547.00	4.51
CA		103.000	103.000	103.000	0.000
CA		95.90	98.30	97.10	2.49
K		-0.63	-0.69	-0.66	-8.67
MG		34.10	34.70	34.40	1.71
NA		18.400	18.600	18.500	0.709
AL		-0.0	-0.0	-0.0	-86.6
FE		0.816	0.820	0.818	0.455
ZN		-0.1	-0.1	-0.1	-39.1

M/S 9/10/86

Wm
Hedberg

DATA SET : SF3455

SAMPLE ID : SM25S11

*this set
is blank*

ELEMENT	SAMPLE	SPIKE	SPIKE ADDED	% RECOVERY
AG	2.7	51.1	50.0	96.9
AL	-21.4	618.0	800.0	79.9*
B	95.9	841.0	800.0	93.1
BA	82.8	270.0	200.0	93.4
BE	-0.4	8.3	10.0	87.0
CD	-0.2	20.5	25.0	82.7*
CO	2.1	92.1	100.0	90.0
CR	7.6	100.0	100.0	92.4
CU	6.6	53.5	50.0	93.9
FE	786.0	1460.0	800.0	84.8*
LI	10.2	63.1	54.0	98.1
MN	205.0	249.0	50.0	87.3
MO	2.6	96.8	100.0	94.1
NI	2.8	133.0	150.0	86.8
PB	1.7	756.0	800.0	94.3
SN	20.3	379.0	400.0	89.6
SR	384.0	1330.0	1000.0	94.9
TI	-0.1	90.9	100.0	91.0
V	1.5	45.8	50.0	88.7
Y	0.8	46.3	50.0	91.0
ZN	559.0	857.0	400.0	74.4*
CA	103.000	103.000	50.000	0.000
CA	95.9	140.0	50.0	88.9
K	-0.6	18.4	20.0	95.1
MG	34.1	54.4	25.0	81.1*
NA	18.4	64.8	50.0	92.7

43/10
↓
mg/l
↓

*Jan
16/9/86*

MS 9/12/86

SET PAPER TO TOP OF FORM AND
PRESS *RETURN TO CONTINUE!

DL1:001,054 IRUN544.BRN

10-SEP-86

13:04:41

PAGE 1

DATA SET : SF3425

SAMPLE ID : FL09S06

ELEMENT	SAMPLE	SPIKE	SPIKE ADDED	% RECOVERY
AG	0.8	50.2	50.0	98.9
AL	15.7	705.0	800.0	86.1
B	498.0	1270.0	800.0	96.8
BA	102.0	297.0	200.0	97.8
BE	-0.2	9.1	10.0	92.7
CD	-1.	25.	25.	105.
CO	2.3	95.7	100.0	93.4
CR	3.3	99.4	100.0	96.1
CU	4.0	50.3	50.0	92.5
FE	217.0	983.0	800.0	95.7
LI	4.	62.	54.	108.
MN	9.	65.	50.	111.
MO	70.	171.	100.	102.
NI	2.6	141.0	150.0	92.4
PB	14.	837.	800.	103.
SN	-8.7	387.0	400.0	99.0
SR	769.0	1750.0	1000.0	97.8
TI	0.6	94.0	100.0	93.4
V	1.1	44.7	50.0	87.2
Y	0.8	47.3	50.0	93.0
ZN	167.	601.	400.	109.
CA	27.	103.	50.	153.
CA	24.6	72.4	50.0	95.7
K	-2.	19.	20.	102.
MG	10.4	33.5	25.0	92.4
NA	121.0	170.0	50.0	97.6
AI				

*Jim
10/5/86*

49/10
↓
mg/l
↓

IN *DBPKPT* AT 39
FROM *QCPRC1* AT 146
FROM *.MAIN.* AT 32

All spike values 15%

MS 9/10/86

SET PAPER TO TOP OF FORM AND
PRESS *RETURN TO CONTINUE*

DL1:[001,054]RUN544.BRN

10-SEP-86

14:24:28

PAGE 1

DATA SET : SF3484

SAMPLE ID : FK10S08

ELEMENT	SAMPLE	SPIKE	SPIKE ADDED	% RECOVERY
AG	-0.3	49.4	50.0	99.6
AL	-33.4	679.0	800.0	89.1
B	139.0	877.0	800.0	92.3
BA	192.	397.	200.	103.
BE	-0.2	9.1	10.0	93.8
CD	-0.	25.	25.	104.
CO	3.7	95.8	100.0	92.1
CR	1.6	98.9	100.0	97.4
CU	7.7	52.7	50.0	89.9
FE	2530.	3330.	800.	100.
LI	17.	73.	54.	103.
MN	82.	140.	50.	115.
MO	27.	127.	100.	100.
NI	0.2	133.0	150.0	88.6
PB	19.	823.	800.	100.
SN	-8.0	380.0	400.0	96.9
SR	4230.	5330.	1000.	110.
TI	2.3	96.5	100.0	94.2
V	1.2	45.1	50.0	87.6
Y	1.0	49.1	50.0	96.1
ZN	32.3	405.0	400.0	93.3
CA	103.000	103.000	50.000	0.000
CA	78.7	129.	50.	100.
K	-1.	19.	20.	101.
MG	30.6	53.3	25.0	91.0
NA	13.2	62.5	50.0	98.7

4911
↓
mg/l
↓

*Am
16/9/86*

MS 9/12/86

All values ± 15%

DATA SET : SF3453

SAMPLE ID : RA01S44

ELEMENT	SAMPLE	SPIKE	SPIKE ADDED	% RECOVERY
AG	0.7	49.7	50.0	98.0
AL	-50.0	633.0	800.0	85.3
B	206.	1070.	800.	108.
BA	50.0	249.0	200.0	99.3
BE	-0.2	9.3	10.0	94.1
CD	1.4	22.3	25.0	83.5*
CO	2.0	97.8	100.0	95.8
CR	4.5	101.0	100.0	96.5
CU	3.4	50.8	50.0	74.7
FE	54.8	825.0	800.0	96.2
LI	26.	84.	54.	107.
MN	31.8	78.8	50.0	94.1
MO	3.4	98.9	100.0	95.5
NI	0.2	140.0	150.0	93.0
PB	8.	829.	800.	103.
SN	8.6	377.0	400.0	92.1
SR	1620.	2630.	1000.	102.
TI	-1.3	92.5	100.0	93.9
V	1.9	47.1	50.0	90.4
Y	1.2	48.5	50.0	94.7
ZN	103.0	461.0	400.0	89.6
CA	103.000	103.000	50.000	0.000
CA	97.	147.	50.	100.
K	-1.	19.	20.	100.
MG	27.0	49.8	25.0	91.3
NA	18.0	67.1	50.0	98.3

Cd done by b6677

Jim Heston

this spike requested by originator

MS 9/12/86

All values ± 15% except Cd

DATA SET : METALS1

ELEMENT	BLANK44	HIGHAQC	HIGHAQC	HIGHAQC
AG	6.00	6.00	6.00	6.00
AL	80.	94200.	96100.	98200.
B	89.1	80.0	80.0	80.0
BA	6.00	6.00	6.00	6.00
BE	1.00	1.00	2.17	1.00
CD	10.0	10.0	10.0	10.0
CO	6.00	6.00	8.42	6.00
CR	8.00	10.50	10.40	8.00
CU	6.00	6.00	9.30	6.00
FE	80.	96200.	99000.	101000.
LI	10.0	12.5	14.3	11.3
MN	5.0	16.0	23.3	17.2
MO	15.0	15.0	15.0	15.0
NI	15.0	15.0	15.0	15.0
PE	70.0	70.0	70.0	70.0
SN	40.0	40.0	40.0	40.0
SR	10.0	27.6	33.6	29.5
TI	25.0	25.0	25.0	25.0
V	5.00	5.00	5.69	5.00
Y	5.00	5.00	6.22	5.00
ZN	40.	89400.	91600.	93500.
CA	0.	103.	103.	103.
CA	0.	100.	103.	105.
K	2.00	2.00	2.00	2.00
MG	0.1	10.2	10.4	10.5
NA	1.00	1.00	1.00	1.00
AL	20.	102.	104.	106.
FE	20.0	95.3	97.3	99.5
ZN	20.	100.	102.	104.

4911
 ↓
 mg/L

10/2/86

ms 9/2/86

DATA SET : METALS1

ELEMENT	HIGHAQC	HIGHAQC	HIGHAQC
AG	6.00	6.00	6.00
AL	101000.	97700.	94100.
B	80.0	80.0	80.0
BA	6.00	6.00	6.00
BE	1.00	1.00	1.00
CD	10.0	10.0	10.0
CO	6.00	6.00	6.00
CR	8.00	8.00	8.00
CU	6.00	6.00	6.00
FE	104000.	102000.	95200.
LI	11.4	11.3	10.5
MN	17.4	15.9	14.7
MO	15.0	15.0	15.0
NI	15.0	15.0	15.0
PB	70.0	70.0	70.0
SN	40.0	40.0	40.0
SR	30.3	28.6	26.7
TI	25.0	25.0	25.0
V	5.00	5.00	5.00
Y	5.00	5.00	5.00
ZN	95500.	93700.	89100.
CA	103.	103.	103.
CA	107.0	105.0	99.1
K	2.00	2.00	2.00
MG	10.8	10.6	10.2
NA	1.00	1.00	1.00
AL	109.	105.	101.
FE	102.0	99.7	94.1
ZN	106.0	104.0	98.5

*Sum
9/6/86*

MS 9/12/86

2/9/86 9/18/86 AX

Y905 C5H73
6TFA05WU73

DATA SET : SF3453 *Skinner Landfill*

ELEMENT	RA01S44	RA01S45	RA01S46	RA01S47
AG	6.00	6.00	6.00	6.00
AL	80.0		80.0	80.0
B	206.	155.	132.	93.6
BA	50.0	633.	48.0	50.4
BE	1.00	2.00	1.00	1.00
CD	10.0	10.0	10.0	10.0
CO	6.00	81.2	6.00	6.00
CR	8.00	186.	8.00	8.00
CU	6.0	466.	37.7	10.5
FE	80.		165.	233.
LI	26.0	150.	10.0	12.5
MN	31.8	2390.	29.0	65.8
MO	15.0	15.0	15.0	15.0
NI	15.0	281.	15.0	15.0
PB	70.0	2870.	70.0	70.0
SN	40.0	55.0	40.0	40.0
SR	1620.	504.	209.	322.
TI	25.0	583.	25.0	25.0
V	5.00	178.	5.00	5.00
Y	5.00	81.9	5.00	5.00
ZN	103.	4910.	298.	858.
CA	97.3	219.	77.7	99.5
K	2.00	14.9	3.04	2.00
MG	27.0	58.0	11.6	18.0
NA	18.0	4.96	11.5	7.58
AL		98.2		
FE		160.		

See GFAA report

See GFAA report

mg/l
↓

M/S 9/12/86

16 Sept 86

TRANSMITTED BY

Driffin
SEP 27 1986

U.S. EPA CENTRAL
REGIONAL LAB

9/17/86 9/18/86 AS

DL115001

JRUN544.BRN

10-SEP-86

12:44:25

PAGE 10

DATA SET : SF3453 *Skinner Landfill*

ELEMENT	RA01S48	RA01D48	RA01S49	RA01R53
AG <i>mg/l</i>	6.00	6.00	6.00	6.00
AL	92.6	88.3		80.0
B	574.	528.	94.3	80.0
BA	120.	118.	592.	6.00
BE	1.00	1.00	1.00	1.00
CB	10.0	10.0	10.0	10.0
CD	6.00	6.00	34.6	6.00
CR	8.00	8.00	76.4	9.45
CU	7.49	7.43	157.	6.00
FE	335.	347.		80.0
LI	46.4	46.5	54.8	10.0
MN	298.	299.	4020.	5.00
MO	15.0	15.0	15.0	15.0
NI	15.0	15.0	79.0	15.0
PB	70.0	70.0	3270.	70.0
SN	40.0	40.0	41.7	40.0
SR	1340.	1340.	325.	10.0
TI	25.0	25.0	623.	25.0
V	5.00	5.00	91.3	5.00
Y	5.00	5.00	44.3	5.00
ZN	894.	887.	1410.	40.0
CA <i>mg/l</i>	97.7	97.4	155.	0.500
K	2.00	2.00	6.14	2.00
MG	26.8	26.7	33.6	0.100
NA	148.	148.	3.12	1.00
AL			45.0	
FE			91.7	

see GFAA report

see GFAA report

Jan 12/86

MS 9/14/86

9/19/86 9/18/86 AS

DATA SET : SF3453 *Skinner Landfill*

ELEMENT		RA01553
AG	<	6.00
AL		2650.
B		127.
BA		184.
BE	<	1.00
CD	<	10.0
CO		7.55
CR		10.2
CU		38.7
FE		19500.
LI		18.9
MN		667.
MO	<	15.0
NI		19.1
PB		71.4
SN	<	40.0
SR		340.
TI		69.1
V		11.7
Y		5.50
ZN		412.
CA		151.
K		62.7
MG		29.2
NA		11.4

mg/l
↓
mg/l
↓

*Just
165, 1/86*

MS 9/12/86

extra copy
 note: matrix spike sample specified

10/22/86
 6TFA05WU73
 Jun 70074
 10/24/86

ENVIRONMENTAL PROTECTION AGENCY
 FOR THE TEAM: METALS

Circle # OH D063963714
 ACTIVITY # ~~E5160~~ C51173

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
 DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skimmer PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION Sample Tag #	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET101	TOTAL METALS WATER PB UG/L MET1101	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
* 86RA01544	5-95905		<12 ^{MS} ₁₀₋₁₀₋₈₆	<2 ^{JR} _{9/12}	<2 ^{JR} _{9/15}	<2 ^{RA0} _{9/16}	<20 ^{PM}
86RA01545	19		36 ^{MS} _{10/15/86}	3150	<2	18.6 ^{RA0} _{9/19}	<20
546	28		<12 ^{MS} ₁₀₋₁₀₋₈₆	8.0 ^{JR} _{9/14}	<2	<2 ^{RA0} _{9/19}	<40 ^{PM}
547	37		<2 ^{MS} ₁₀₋₁₀₋₈₆	5.9 ^{JR} ₉₋₁₂	<2 ^{JR} _{9/15}	<2 ^{RA0} _{9/18}	<20
548	46		<2 ^{MS} ₁₀₋₁₀₋₈₆	3.2 ^{JR} _{9/17}	<2 ^{JR} ₉₋₁₅	<2 ^{RA0} _{9/18}	<20
048	55		<2 ^{MS} ₁₀₋₁₀₋₈₆	5.5 ^{JR} _{9/17}	<2 ^{JR} ₉₋₁₅	<2 ^{RA0} _{9/18}	<20
549	64		<230 ^{MS} _{10/15/86}	4800	<2	5.3 ^{RA0} _{9/19}	<20
8/25/86 ↓ 650	73						
↓ 651	82						
↓ 652	91						
553	5-96000		<12 ^{MS} ₁₀₋₁₀₋₈₆	36	<2	<2 ^{RA0} _{9/19}	<20
R53 ^{IV}	5-97059		<2 ^{MS} ₁₀₋₁₀₋₈₆	<2 ^{JR} _{9/17}	<2 ^{JR} ₉₋₁₅	<2 ^{RA0} _{9/18}	<2
				A-outlet	A-outlet		PM
				9-25-86	9-25-86		10-8-86
				see new sheet			

For Samples to CRL

X MATRIX SPIKE

C51173

ENVIRONMENTAL PROTECTION AGENCY
FOR THE IFAMS METALS

6TFA05WU73

10/22/86
10/22/86
10/22/86
10/22/86

SF

9/15/86

8/25/86

8/22/86

DIVISION/HWANCH	DIU NUMBER	Y905	DATASET NUMBER	3453	STUDY	Stenner Landfill	SAMPLING DATE	8/22/86	LAH ARRIVAL DATE	8/25/86	DUE DATE	9/15/86	CONTRACTOR	N	TOTAL METALS IN		TOTAL METALS IN		TOTAL METALS IN	
															WATER	AS	WATER	CH	WATER	PR
CHL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL ICAP	UG/L	MET111	TOTAL METALS IN WATER CD	UG/L	MET1A1	TOTAL METALS IN WATER CH	UG/L	MET1101	TOTAL METALS IN WATER PR	UG/L	MET1191							
86RA01544	tag# 5-95905				✓	1.6	HAZ 8/24/86													
86RA01545	5-95919				✓	1.1	HAZ 8/25/86													
86RA01546	5-95928				✓	9.9	8/25/86													
86RA01547	5-95937				✓	0.6	HAZ 8/24/86													
86RA01548	5-95946				✓	1.8	HAZ 8/24/86													
86RA01548	5-95955				✓	1.8	HAZ 8/24/86													
86RA01549	5-95964				✓	5.2	HAZ 8/25/86													
86RA01553	5-96000				✓	1.7	HAZ 8/24/86													
86RA01553	5-97059				✓	50.1	HAZ 8/24/86													

10/22/86
 220474
 8/19/86

Cercliff # OH D063963719
 ACTIVITY # 251100
 C51173

ENVIRONMENTAL PROTECTION AGENCY
 FOR THE TEAM: METALS

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
 DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skinner PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION Sample Tag #	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET101	TOTAL METALS WATER PS UG/L MET1101	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
* 86RA01544	5-95905			4.4			
86RA01545	19			3000			
546	28			11.711			
547	37			4.2			
548	46			4.4			
048	55			3.7			
549	64			3500			
8/25/86 550	73						
551	82						
552	91						
553	5-96000			72			
R53	5-97059			2.2			
				I.L.			
				10.21.86.			

TRANSMITTED BY
[Signature]
 OCT 24 1986
 U.S. EPA CENTRAL REGIONAL LAB

For Samples to CRL

*MATRIX SPIKE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 9/23/86

SUBJECT: Precision and Accuracy of Analyses for Data Set SF 3453
Site: SKINNER

FROM: Steve Parker, *SP*
CRL QC Coordinator

TO: Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 9 (number) WATER (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limits.

Attachment

TRANSMITTED BY

Preffen
SEP 24 1986

U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: SF 3453

Matrix: WATER

Site Name: SKINNER

Parameter	PRECISION		Method of Quality Control	ACCURACY		
	RPD ⑩	Limit		% Recovery % Bias	Limit	Method of Quality Control
ALKALINITY	7 mg/L	≤ 20 mg/L	DUPLICATE SAMPLE	98%	90-110%	CONTROL STANDARD
CHLORIDE	2 mg/L	≤ 13 mg/L	"	96%	89-106%	SPLITTED SAMPLE
SULFATE	0 mg/L	≤ 12 mg/L	"	101-103%	95-107%	CONTROL STANDARD

COMMENT: _____

QC FLAGS: _____

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: HNR
 PARAMETER NAME ----: S04
 DATE OF ANALYSIS --: 09-18-1986

DATA SET NUMBER ---: CDO 3483, SF 3453
 DU NUMBER -----: B304, 4905

DEGREE OF FIT : 3

EQUATION : CONCENTRATION = -5.17822E-01
 +4.97980E+00 * SIGNAL
 -4.27723E-02 * SIGNAL^2
 +2.68802E-04 * SIGNAL^3

COEFFICIENT OF DETERMINATION : .999709

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-0.518
2	+5.500	+25.000	+25.621
3	+11.000	+50.000	+49.442
4	+25.000	+100.000	+101.444
5	+51.000	+180.000	+177.857
6	+77.000	+250.000	+252.046
7	+90.500	+300.000	+299.078

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION
BLK	+0.000	-0.518
BLK	+0.000	-0.518
CS1	+11.500	+51.502
CS2	+27.500	+109.670
CS1	+11.000	+49.442
CS2	+25.500	+103.111
S06	+20.000	+84.119
S06 dup	+20.500	+85.908
S06 SPK	+46.000	+164.210
S44	+20.000	+84.119
S45	+7.000	+32.337
S46	+6.000	+27.879
S47	+13.500	+59.575
S48	+8.000	+36.720
S49	+10.500	+47.365
S53	+6.000	+27.879
R53	+0.000	-0.518
D48	+8.000	+36.720
S06 (1:100)	+0.000	-0.518
BLK	+0.000	-0.518
S05 (1:50)	+52.500	+181.226
CS1	+12.000	+53.545
CS2	+25.000	+101.444
S06 1:100	+21.500	+89.447
S44 1:8	+1.500	+6.856
BLK	+0.000	-0.518

54
] old ac's limits CS-1 (50.5 ± 6.0)
 CS-2 (101 ± 6.0)
] now freshly prepared
 ave = 86.49 ≈ 86.5
 S06
 $\% \text{ Rec spike} = \frac{(164 - 86.5) \times 100}{100} = 78\%$
 Limit = 98 ± 9%
 Spike recovery was low
~~due to spike recovery~~
 @ Nature of that sample had high Cl-
 This sample matrix (high brine) resulted in interferences for several analytes.
 x50 = 9096.3
 x8 = 54.8

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: HNR DATA SET NUMBER ---: SF 3453 CDD 3483
 PARAMETER NAME ----: CL DU NUMBER -----: B 304 Y 905
 DATE OF ANALYSIS --: 09-19-1986

DEGREE OF FIT : 2

EQUATION : CONCENTRATION = -2.10736E+00
 +2.13188E+00 * SIGNAL
 -7.72953E-04 * SIGNAL^2

COEFFICIENT OF DETERMINATION : .9985306

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-2.108
2	+13.000	+25.000	+25.476
3	+26.300	+50.000	+53.426
4	+49.500	+100.000	+101.526
5	+58.200	+120.000	+119.349
6	+71.000	+150.000	+145.359
7	+99.300	+200.000	+201.966

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION
BLK	+0.000	-2.108 *
CS1	+25.000	+50.706
CS2	+48.000	+98.442
R53	+0.000	-2.108 *
S44 1:20	+1.000	+0.023
BLK	+0.000	-2.108
S45	+2.000	+2.153 *
S46	+2.500	+3.217 *
S47 1:50	+0.500	-1.042
BLK	+0.000	-2.108
S48 1:100	+2.000	+2.153
S49 1:10	+0.000	-2.108
BLK	+0.000	-2.108
S53 1:10	+1.500	+1.088
D48 1:100	+1.500	+1.088
S45SPK	+48.000	+98.442 *
CS1	+26.500	+53.844
CS2	+49.000	+100.498
BLK	+0.000	-2.108
S49 1:10	+2.000	+2.153
S47 1:10	+0.500	-1.042
S48 1:10	+15.500	+30.751 * 308
S53 1:1	+5.500	+9.594
D48 1:10	+15.500	+30.751 * 308

≤ 3 limits CS1 50.5 ± 6.0
 CS2 100 ± 6.5
 7% Rec Spk: → limit 97 ± 8
 $(\frac{98.4 - 2.2}{100}) \times 100 = 96.2\%$
 duplicate ≤ 1.6

S49	+0.000		-2.108	carry over from S48
S47	+6.000		+10.656 *	
S44	+19.200		+38.538 *	
S53	+10.500		+20.192 *	
S49	+0.000		-2.108	
S49	+0.000		-2.108 *	
S06 1:100,000	+0.000		-2.108	
BLK	+0.000		-2.108	
S05 1:100	+0.000 15.2		-2.108	30.118 Error entry 301
BLK	+0.000		-2.108	
BLK	+0.000		-2.108	
S06	+2.000		+2.153	
S05 1:100 (duplicate)	+15.200	451.6	+30.118	301
BLK	+0.000		-2.108	
S05 1:10	+0.000		-2.108	OFF scale
BLK	+0.000		-2.108	
S06 1:100,000	+0.000		-2.108	OFF scale
S05 DUP 1:100	+16.500		+32.858	
CS1	+25.700		+52.171	
CS2	+48.200		+98.853	
S06 1:100	+0.000		-2.108	OFF scale
CS1	+25.000		+50.706 *	
CS2	+47.500		+97.413 *	
S06	+16.500		+32.858 *	328,580
BLK	+0.000		-2.108	
BLK	+0.000		-2.108	
S06 1:1000	+0.000		-2.108	OFF scale

* Reported values

OFFICE							FILE NO.			
SUBJECT SF 3453										
COMPUTATION Alkalinity										
COMPUTED BY Walter H. Roldan			CHECKED BY		DATE 9/4/86		PAGE OF PAGES			
(1) Sample no.	(2) pH of sample	(3) Vol. of sample taken ml	(4) Observations	(5) ml of 0.2N H ₂ SO ₄ used	(6) Alkalinity = $\frac{A \times 1000}{ml \text{ of sample taken}}$ mg/L	(7)	(8)	(9) Initial reading ml	(10) Final reading ml	
BIK	6.33	100ml		0.2		2.0		0	0.2	
CS-1	10.09	|		2.1		21.0		0	2.1	
CS-2	10.56			9.8		98		2.1	11.9	
86RA01544	7.50			28.4		284		11.9	40.3	
86RA01545	7.44			11.6		116		0	11.6	
86RA01546	7.48			16.9		169		6.0	22.9	
86RA01547	7.41			23.9		239		22.9	46.75	
86RA01548	7.51			25.0		250		0	24.95	
86RA01549	7.06			A LOT OF particles	26.8		268		24.95 to 50.00 plus	0 1.7
86RA01553	7.25			A lot of particles	53.7		537		1.7 to 50 plus	0 5.4
86RA01553	5.68				0.2		2.0		0	0.15
86RA01548	7.48			26.7		257		0.15	25.8	
86RA01545 (dup)	7.58			15		150		25.8	40.8	
CS-1	10.09			2.1		21.0		0	2.1	
CS-2	10.60			9.9		98		0	9.9	
check pid 300 mg/l	10.89	100ml		29		290		0	29	
*										

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

9/23/86

SUBJECT:

Precision and Accuracy of Analyses for Data Set

Site:

SF 3453

SKINNER

FROM:

Steve Parker,
CRL QC Coordinator

SP

TO:

Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 9 (number) WATER (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limits.

Attachment

TRANSMITTED BY

Preffer
SEP 24 1986

U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: SF 3453

Matrix: WATER

Site Name: SKINNER

Parameter	PRECISION			ACCURACY		
	<u>RPD</u> R ¹	Limit	Method of Quality Control	<u>Recovery</u> % Bias	Limit	Method of Quality Control
CN	1 mg/L	≤ 10 mg/L	DUPLICATE CONTROL	92%	75-125%	SPIKED SAMPLE

COMMENT: _____

QC FLAGS: _____

9/17/86
 all ok P-PP
 Cerclis # OHDO639631
 ACTIVITY # C51100

ENVIRONMENTAL PROTECTION AGENCY
 FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH Superfund SAMPLE DATE 8/22/86 LAB ARRIVAL DATE 8/25/86 DUE DATE 9/15/86
 DU NUMBER Y905 DATA SET NUMBER 3453 STUDY Skimmer PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION Sample Tag #	WATER PHENOLICS UG PHENOL/L MIN 74018	WATER CYANIDE UG CN/L MIN 74019	WATER GROSS ALPHA P CI/L MIN 76020	WATER CR ⁶⁺ UG CR ⁶⁺ /L MIN 74616	WATER MERCURY UG HG/L MIN 74717
* 96RA01544	5-95906'		X K5			
	S45 20'		X 5 *			
	S46 29'		X K5			
	S47 38'		X K5			
	S48 47'		X K5			
	D48 56'		X K5			
	S49 65'		X 27 *			
S50	74		X			
S51	83		X			
S52	92		X			
	S53 5-97051'		X K5 *			
	R53 5-97060'		X K5			
			9-3-86			
			B.A. Plano			
		* DISTILLED	MANUALLY	THE		
		OTHERS ARE	SCREENED	USING		
		AUTO-UV	METHOD #	335.3		

36
 7/11
 9/2/86

For samples

* MATRIX CORRS

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: RAP
PARAMETER NAME ----: CN
DATE OF ANALYSIS --: 09-03-1986

DATA SET NUMBER ---: 3453/3455
DU NUMBER -----: Y306/Y905

AUTO-UV SCREENING

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +5.48851E-01
+5.05830E-01 * SIGNAL

COEFFICIENT OF DETERMINATION : .9961444

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	+0.548
2	+10.000	+5.000	+5.607
3	+19.000	+10.000	+10.159
4	+44.000	+25.000	+22.805
5	+99.500	+50.000	+50.878

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION
BL	+0.000	+0.548 - LIMIT (± 5)
AGC <i>Fv=20.0</i>	+45.500	+23.564 - LIMIT (20.0 ± 5)
B6RA01S44 <i>D/s 3453</i>	+1.500	+1.307
S46	+0.000	+0.548
S47	+0.000	+0.548
S48	+0.000	+0.548
R53	+0.000	+0.548
D48	+0.000	+0.548
B6SM25S11 <i>D/s 3455</i>	+0.000	+0.548
S12	+0.000	+0.548
R13	+0.000	+0.548
D11	+0.000	+0.548
DUP S47	+0.000	+0.548 - <i>A ± 5</i>
SPK S46 <i>(+20)</i>	+36.500	+19.011 <i>70 REC=18.5 (20 ± 5)</i>
BL	+0.000	+0.548
AGC	+43.500	+22.552

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: RAF
 PARAMETER NAME ----: CN
 DATE OF ANALYSIS --: 09-03-1986

DATA SET NUMBER ---: 3436/3453
 DU NUMBER -----: D220/Y905

MANUAL DISTILLATION

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +1.22194E+00
 +2.12006E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9964272

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	+1.221
2	+8.000	+25.000	+18.182
3	+25.000	+50.000	+54.253
4	+48.500	+100.000	+104.044
5	+92.500	+200.000	+197.327

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION
BL	+0.000	+1.221 - LIMIT = (±5)
ACC [TV=100]	+52.500	+112.525 - LIMIT = (100 ± 15)
DIST ACC [TV=100]	+48.000	+102.984 - LIMIT = (100 ± 15)
DIST BL	+0.500	+2.281 - LIMIT = (±8)
B6RA01S45	+2.000	+5.462
S49	+12.000	+26.662
S53	+0.500	+2.281
B6EG09S11	+0.750	+2.811
D12	+0.750	+2.811
SPK S53 [+100]	+45.000	+96.624 - REL = 97.7 (100 ± 15)
DUP S49	+12.000	+26.662 - Δ(±15)
BL	+0.000	+1.221
DIST ACC	+47.500	+101.924
ACC	+53.000	+113.585

96-620

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 9/23/86
SUBJECT: Precision and Accuracy of Analyses for Data Set SF 3453
Site: SKINNER
FROM: Steve Parker, *SP*
CRL QC Coordinator
TO: Data User: _____

The Region V Central Regional Laboratory has completed its analyses of 9 (number) WATER (matrix type) samples for the parameters listed on the attached sheet. The discrete values reported on the result forms should be considered to be of the precision and accuracy levels listed.

PRECISION is a measure of reproducibility or the closeness with which individual measurements of the same property, under similar conditions agree with each other. It is expressed as the relative percent difference (RPD) or the absolute concentration difference (R') between duplicate analyses. The limit acceptable at the time of analysis is stated. QC data within these limits indicate that the analysis was in control for that set of data.

ACCURACY is a measure of the closeness of an individual measurement to the expected value. It can be expressed as percent recovery of a known spike or standard concentration, or as percent bias which is the deviation from the true value. The limits applicable at the time of analysis are stated. A 95% confidence interval means that 95% of the time, percent recovery will fall between those limits.

Attachment

TRANSMITTED BY

Driffa
SEP 24 1986

U.S. EPA CENTRAL
REGIONAL LAB

PRECISION AND ACCURACY STATEMENT

Data Set: SF 3453

Matrix: WATER

Site Name: SKINNER

Parameter	PRECISION			ACCURACY		
	RPD (R)	Limit	Method of Quality Control	% Recovery % Bias	Limit	Method of Quality Control
NO ₃	0.0 mg/L	≤ 0.1 mg/L	DUPLICATE SAMPLE	95%	95-105%	SPIKED SAMPLE
NH ₃	0-06 mg/L	≤ 0.5 mg/L	DUPLICATE CONTROL	100%	90-110%	"

COMMENT: _____

QC FLAGS: _____

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: RAP DATA SET NUMBER ---: 3407/3453
 PARAMETER NAME ----: N03 DU NUMBER -----: Y306/Y905
 DATE OF ANALYSIS --: 09-03-1986

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = +3.29318E-02
 +1.07919E-01 * SIGNAL

COEFFICIENT OF DETERMINATION : .9999569

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	+0.032
2	+9.000	+1.000	+1.004
3	+18.000	+2.000	+1.975
4	+36.500	+4.000	+3.971
5	+92.500	+10.000	+10.015

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION
BL	+0.000	+0.032
AQC [TV=2.0]	+17.500	+1.921
B65B41801	+2.500	+0.302
S02	+2.500	+0.302
S03	+1.500	+0.194
S04	+0.500	+0.086
D04	+0.500	+0.086
B6RA01S44	+2.000	+0.248
S45	+37.000	+4.025
S46	+40.000	+4.349
S47	+3.500	+0.410
S48	+5.500	+0.626
S49	+14.000	+1.543
S53	+0.000	+0.032
R53	+0.000	+0.032
D4B	+5.500	+0.626
DUP S01	+2.000	+0.248
SPK S44 (2.0)	+20.000	+2.191
BL	+0.000	+0.032
AQC	+18.000	+1.975

limit = (± 0.1)
limit = (2.0 ± 0.1)

Δ (± 0.1)
90 REC = 1.9 (2.0 ± 0.1) 95%

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ----: RAP DATA SET NUMBER ----: 3407/3453
 PARAMETER NAME ----: NH3 DU NUMBER -----: Y306/Y905
 DATE OF ANALYSIS --: 09-03-1986

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -3.39398E-02
 +1.06644E-01 * SIGNAL

COEFFICIENT OF DETERMINATION : .999957

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-0.034
2	+10.000	+1.000	+1.032
3	+19.000	+2.000	+1.992
4	+38.000	+4.000	+4.018
5	+94.000	+10.000	+9.990

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION
BL	+0.000	-0.034-LIMIT (1.05)
AQC [7.0]	+75.500	+8.017-LIMIT (8.0 ± 0.5)
86SB41S01	+0.000	-0.034
S02	+0.000	-0.034
S03	+0.000	-0.034
S04	+0.000	-0.034
D04	+0.000	-0.034
86RA01S44	+0.000	-0.034
S45	+0.000	-0.034
S46	+0.000	-0.034
S47	+0.000	-0.034
S48	+0.000	-0.034
S49	+0.500	+0.019
S53 [1.50 dil]	+5.000	+0.499x5.0 = 24.95
R53	+0.000	-0.034
D48	+5.500	+0.552 - 0.034x5.0 = 2.26
DUP S01	+0.000	-0.034 - 1.0 (1.05)
SPK S44 [5.0]	+47.000	+4.978 - 9.0 R6C = 5.0 (5.0 ± 0.05)
BL	+0.000	-0.034
AQC	+76.000	+8.071

WRONG ENTRY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

Constantelos
Sandra
Sylvia ✓
Ran

DATE 26 Sept 86

SUBJECT: Priority and/or Special Sample(s)/Data Set(s) Missing Due Dates

FROM: Flynn Jirka *[Signature]*

TO: Curtis Ross, Director
Central Regional Laboratory

Data Set Name Skinner Landfill PARAMETERS As, Cd, Tl
Data Set Number SF 3453

Laboratory Section: Inorganic Organic
Section Team: M/N Metals Toxics
General Organic Biology
Asbestos

The above subject sample(s)/Data Set(s) will not be completed by the due date on 15 Sept 86, due to the following reasons.....

Multiple priorities during August delayed all analyses - These priorities were Neal's Well, American Steel Foundry, Universal that Clinton oil wayne waste oil. In addition, these samples have been difficult and required reanalysis

I project that the subject samples will be completed by the following date of 7 Oct 86.

Assumptions..... *no instrument breakdown*

cc: S. Griffin
Affected Team Leader, *[Signature]*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 12 Sept 86

SUBJECT: Priority and/or Special Sample(s)/Data Set(s) Missing Due Dates

FROM: Flynn Jirka

TO: Curtis Ross, Director
Central Regional Laboratory

Data Set Name Skinner LF PARAMETERS As, Cd, Pb, Sb, Se, Ti
Data Set Number SF3453

Laboratory Section: Inorganic Organic
Section Team: M/N Metals Toxics
General Organic Biology
Asbestos

The above subject sample(s)/Data Set(s) will not be completed by the due date on 15 Sept 86, due to the following reasons.....

Multiple priorities in August have backed up all analyses. Three of these samples will require extra work for AA.

priority 1 (Neale well, American Steel, Clinton oil, Wayne waste oil)

I project that the subject samples will be completed by the following date of 26 Sept 86.

Assumptions.....

no priorities interfere

cc: S. Griffin
Affected Team Leader,

John

RECEIVED

OCT 14 1986

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

Program
Support Section

CRL Data Set No. SF 3453 CERCLIS No. _____

SMO Case No. _____ Site Name and Location: Skinner L.I.

Name of Contractor or EPA Laboratory: CRL Data User: SF

No. of Samples: 9 Date Samples or Data Received: 10-9-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 10-9-86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 10-9-86

DATA USERS:

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: Joseph J. Weiss, Jr. Date: 10-16-86

Q.A. review received by: CRL Date: _____

Inorganic Data Complete [], Suitable for Intended Purposes [] [] if acceptable.
 Organic Data Complete [], Suitable for Intended Purposes [] List problems below.
 Dioxin Data Complete [], Suitable for Intended Purposes []
 SAS Data Complete [], Suitable for Intended Purposes []

See Attached "Missing Data Request Form" []

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems.

Received by Data Management Coordinator, CRL for File: Date: 10/17/86

Signature: M.A.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF 3453 CERCLIS No.

SMO Case No. Site Name and Location: SKINNER LANDFILL

Name of Contractor or EPA Laboratory: CRL Data User: SF

No. of Samples: 9 Date Samples or Data Received: 9-24-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 9-24-86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 9-24-86

DATA USERS:

PCB/PEST, NO₃, NH₃, CN

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL ALKALINITY
SULFATE
CHLORIDE

Data received by: Joseph T. Heiss, Jr. Date: 09-29-86

Q.A. review received by: CRL Date: _____

Inorganic Data Complete [], Suitable for Intended Purposes [] [] if acceptable.
Organic Data Complete [], Suitable for Intended Purposes [] List problems below.
Dioxin Data Complete [], Suitable for Intended Purposes []
SAS Data Complete [], Suitable for Intended Purposes []

See Attached "Missing Data Request Form" []

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems.

Received by Data Management Coordinator, CRL for File: Date: 10/2/86

Signature: Griffin

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF 3453 CERCLIS No. _____

SMD Case No. _____ Site Name and Location: Skinner L.I.

Name of Contractor or EPA Laboratory: _____ Data User: CDM

No. of Samples: 9 Date Samples or Data Received: 10-9-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 10-9-86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 10-9-86

DATA USERS: ABN

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: WJ Dewar Date: 10/13/86

Q.A. review received by: WJ Dewar Date: 10/13/86

Inorganic Data Complete [], Suitable for Intended Purposes [] [] if acceptable.
Organic Data Complete [], Suitable for Intended Purposes [] List problems below.
Dioxin Data Complete [], Suitable for Intended Purposes []
SAS Data Complete [], Suitable for Intended Purposes []

See Attached "Missing Data Request Form" []
PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems.

Received by Data Management Coordinator, CRL for File: Date: 10/17/86

Signature: S Griffin

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF3453 CERCLIS No. _____

SMO Case No. _____ Site Name and Location: SKINNER LANDFILL

Name of Contractor or EPA Laboratory: CRL Data User: CDM

No. of Samples: 9 Date Samples or Data Received: 9-24-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 9-24-86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 9-24-86

DATA USERS:

CN, PCB/PEST, NO₃, NH₃
ALKALINITY, SULFATE, CHLORIDE

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: WJ Dewar Date: 10/1/86

Q.A. review received by: WJ Dewar Date: 10/1/86

Inorganic Data Complete , Suitable for Intended Purposes if acceptable.
Organic Data Complete , Suitable for Intended Purposes List problems below.
Dioxin Data Complete , Suitable for Intended Purposes
SAS Data Complete , Suitable for Intended Purposes

See Attached "Missing Data Request Form"

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems.

Received by Data Management Coordinator, CRL for File: Date: 10/9/86

Signature: Griffin

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF 3453 CERCLIS No. _____

SMO Case No. _____ Site Name and Location: Skinner land fill

Name of Contractor or EPA Laboratory: CRL Data User: CDM

No. of Samples: 9 Date Samples or Data Received: 9-19-86

1. Have chain-of-custody records been received? YES NO _____
2. Have Traffic Reports or packing lists been received? YES NO _____
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES _____ NO _____
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO _____

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 9-22-86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 9-22-86

DATA USERS: METALS

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: W.D. Duman Date: 9/29/86

Q.A. review received by: W.D. Duman Date: 9/29/86

Inorganic Data Complete , Suitable for Intended Purposes if acceptable.
Organic Data Complete , Suitable for Intended Purposes List problems below.
Dioxin Data Complete , Suitable for Intended Purposes
SAS Data Complete , Suitable for Intended Purposes

See Attached "Missing Data Request Form"

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems: Excellent Quality Control Summary Statement - Very Helpful!

Received by Data Management Coordinator, CRL for File: Date: 9/10/86

Signature: Griffin

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF 3453 CERCLIS No. OHD-063-963-714

SMO Case No. Site Name and Location: SKINNER

Name of Contractor or EPA Laboratory: CRL Data User: SF

No. of Samples: 9 Date Samples or Data Received: 9-10-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 9-11-86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 9-11-86

DATA USERS:

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: Joseph T. Weiss, Jr. Date: 09-15-86

Q.A. review received by: CRL Date: _____

Inorganic Data Complete [], Suitable for Intended Purposes [] [] if acceptable.
Organic Data Complete [], Suitable for Intended Purposes [] List problems below.
Dioxin Data Complete [], Suitable for Intended Purposes []
SAS Data Complete [], Suitable for Intended Purposes []

See Attached "Missing Data Request Form" []

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems.

Received by Data Management Coordinator, CRL for File: Date: 9/16/86

Signature: Griffin

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF 3453 CERCLIS No. _____
SMO Case No. _____ Site Name and Location: Skinner Landfill
Name of Contractor or EPA Laboratory: CRL Data User: SF
No. of Samples: 9 Date Samples or Data Received: 9-19-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9
Checked by: Sylvia Griffin Date: 9-22-86
Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 9-22-86

DATA USERS:

METALS

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: Joseph T. Weiss, Jr. Date: 09-24-86

Q.A. review received by: CRL Date: _____

Inorganic Data Complete [], Suitable for Intended Purposes [] [] if acceptable.
Organic Data Complete [], Suitable for Intended Purposes [] List problems below.
Dioxin Data Complete [], Suitable for Intended Purposes []
SAS Data Complete [], Suitable for Intended Purposes []

See Attached "Missing Data Request Form" []

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your uses.
Other problems.

Received by Data Management Coordinator, CRL for File: Date: 9/26/86

Signature: Griffin

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD/Central Regional Laboratory
DATA TRACKING FORM FOR CONTRACT SAMPLES

CRL Data Set No. SF 3453 CERCLIS No. OH D-063-963-714
SMO Case No. — Site Name and Location: SKINNER
Name of Contractor or EPA Laboratory: CRL Data User: CDM
No. of Samples: 9 Date Samples or Data Received: 9-10-86

1. Have chain-of-custody records been received? YES NO
2. Have Traffic Reports or packing lists been received? YES NO
3. If no, are Traffic Report or packing list numbers written on the chain-of-custody record? YES NO
4. If no, which Traffic report or packing list numbers are missing?

Are basic data forms in? YES NO

Number of samples claimed: 9 Number of samples received: 9

Checked by: Sylvia Griffin Date: 9-11-86

Received by Contract Project Management Section: _____ Date: _____

Review Started: _____ Reviewer Signature: _____

Total time spent on review: _____ Date review completed: _____

Copied (xeroxed) by: _____ Date: _____

Mailed to Data User by: Sylvia Griffin Date: 9-11-86

DATA USERS:

VOAs

Please fill in the blanks below and return this form to: Sylvia Griffin, Data Management Coordinator, Region V, 5SCRL

Data received by: J. Line Date: 9/16/86

Q.A. review received by: J. Line Date: 9/16/86

Inorganic Data Complete [], Suitable for Intended Purposes [] [] if acceptable.
Organic Data Complete [], Suitable for Intended Purposes [] List problems below.
Dioxin Data Complete [], Suitable for Intended Purposes []
SAS Data Complete [], Suitable for Intended Purposes []

See Attached "Missing Data Request Form" []

PROBLEMS: Please indicate reasons (if any) why data are not suitable for your use.
Other problems.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CENTRAL REGIONAL LABORATORY
536 SOUTH CLARK STREET (5SCRL)
CHICAGO, ILLINOIS 60605

(METALS BY ICP)
(WATER)

DATE: 9/19/86

CRL DATA SET NUMBER: SF 3453

SUBJECT: QUALITY CONTROL SUMMARY STATEMENT FOR SKINNER LANDFILL

FROM: STEVE PARKER, CRL QC COORDINATOR SP
(312 353 3805)

TO: DATA USER:

The Region V Central Regional Laboratory (CRL) has completed analysis of the samples submitted for metals analysis using inductively coupled plasma emission spectroscopy. The analysis was performed using the CRL's "Standard Operating Procedure for the Analysis of Metals in Water Using Inductively Coupled Plasma Emission Spectroscopy", Method 200.7 DNS (INDUCTIVELY COUPLED PLASMA, DIGESTED). The method is the CRL's implementation of USEPA method 200.7 and is approved for NPDES and SDWA samples.

Metals that have been indicated as being of primary interest, by the site investigators will be reported. Metals that are of secondary interest may be deleted from the report without comment. The routine controls designed into the run in which the samples were analyzed are listed below and were met unless noted otherwise.

The following metals are primary or secondary drinking water parameters with maximum contaminant levels as indicated:

Primary:	Maximum Contaminant Level (MCL)
Barium - Ba	1 milligram per liter
Cadmium - Cd	0.010 milligrams per liter
Chromium - Cr	0.05 milligrams per liter
Lead - Pb	0.05 milligrams per liter
Silver - Ag	0.05 milligrams per liter

Secondary:	Maximum Contaminant Level (MCL)
Copper - Cu	1 milligram per liter
Iron - Fe	0.3 milligrams per liter
Manganese - Mn	0.05 milligrams per liter
Zinc - Zn	5 milligrams per liter

SAMPLE HANDLING

The samples were properly preserved by acidification to a pH < 2 with concentrated or 1:1 nitric acid. The samples were shipped and stored at 4 C or room temperature in high density polyethylene containers. The analysis was completed within 6 months of the date of sampling.

METHOD DETECTION LIMIT

The Method Detection Limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined in a given matrix containing the analyte. The CRL periodically monitors the analytical system by determining the MDL in deionized distilled water and has calculated them to be as indicated in the enclosed tables. The MDL for this site can only be determined by studying samples from the different matrixes at this site and is determined only upon request as outlined in the site's project plan.

METHOD BIAS

Bias is defined as the difference between the population mean and the true or reference value or as estimated from sample statistics, the difference between the sample average and the reference value. The CRL has not detected any significant method bias in deionized distilled water. To monitor for any systematic bias, the CRL analyzes a control sample at the beginning and end of the run. The expected value and the control values for each element are listed in an enclosed table. Indications of potential bias can be determined from spiked samples from this site. Samples to be spiked must be chosen based on information about the site and the investigation's objectives. Unless requested by the field, a spike will not necessarily be run with each data set.

METHOD PRECISION

Precision is defined as the degree of mutual agreement among individual measurements made under prescribed conditions. The long term precision for the method can be inferred from the control limits for the control standard. The precision of the data for this site must be determined from the results of replicate or co-located samples designed into the sampling plan. Unless requested by the field, replicate samples will not necessarily be run with each data set. When replicate samples are analyzed, they are evaluated in two ways depending upon whether they contain a large amount, when compared to the method detection limit, of the parameter being analyzed or whether the amount is relatively close to the method detection limit. In the case where there is a large amount of material, we typically find that the results are in agreement to 10% relative percent difference. At lower levels, we typically find the results to be within \pm MDL of the average value or below the detection limit for the parameter.

CONTAMINATION

Laboratory blanks are analyzed within each analytical run along with any field blanks that have been submitted. The laboratory blank is expected to be within \pm MDL of zero.

Site: SKINNER LANDFILL
 Data Set Number: SF 3453

The following laboratory control samples were examined for precision and bias information:

- Undigested Blank(s).
- Digested Blank(s).
- Analytical Quality Control Sample(s).
- The blanks were within the method detection limit of zero for each element listed unless indicated otherwise.
- The Analytical Quality Control Sample (AQC) results were within the expected control limits unless indicated otherwise.

ELEMENT	MDL	AQC SAMPLE	
		EXPECTED	CONTROL LIMITS
SILVER - Ag	6 ug/L	168 ug/L	150 - 185 ug/L
** ALUMINUM - Al	80 ug/L	4760 ug/L	4280 - 5250 ug/L
** BARIUM - Ba	6 ug/L	1510 ug/L	1360 - 1660 ug/L
BERYLLIUM - Be	1 ug/L	728 ug/L	655 - 800 ug/L
** BORON - B	80 ug/L	1050 ug/L	945 - 1155 ug/L
CADMIUM - Cd	10 ug/L	425 ug/L	380 - 470 ug/L
COBALT - Co	6 ug/L	972 ug/L	875 - 1070 ug/L
* CHROMIUM - Cr	8 ug/L	1570 ug/L	1410 - 1730 ug/L
COPPER - Cu	6 ug/L	1160 ug/L	1040 - 1280 ug/L
IRON - Fe	80 ug/L	3820 ug/L	3440 - 4200 ug/L
LITHIUM - Li	10 ug/L	808 ug/L	725 - 890 ug/L
MANGANESE - Mn	5 ug/L	1330 ug/L	1200 - 1460 ug/L
MOLYBDENUM - Mo	15 ug/L	811 ug/L	730 - 890 ug/L
* NICKEL - Ni	15 ug/L	1180 ug/L	1060 - 1300 ug/L
LEAD - Pb	70 ug/L	2970 ug/L	2670 - 3270 ug/L
TIN - Sn	40 ug/L	2430 ug/L	2190 - 2670 ug/L
STRONTIUM - Sr	10 ug/L	902 ug/L	810 - 990 ug/L
TITANIUM - Ti	25 ug/L	1200 ug/L	1080 - 1320 ug/L
VANADIUM - V	5 ug/L	744 ug/L	670 - 820 ug/L
YTTRIUM - Y	5 ug/L	784 ug/L	700 - 860 ug/L
ZINC - Zn	40 ug/L	2800 ug/L	2500 - 3100 ug/L
CALCIUM - Ca	0.5 mg/L	13.2 mg/L	12.0 - 14.5 mg/L
MAGNESIUM - Mg	0.1 mg/L	5.2 mg/L	4.7 - 5.7 mg/L
** POTASSIUM - K	2 mg/L	96	86 - 106 mg/L
SODIUM - Na	1 mg/L	18.5 mg/L	16.6 - 20.4 mg/L

OBSERVATION/DEVIATIONS:

* FIELD BLANK REPORT INDICATED CHROMIUM AT DL.
** MINOR SPORADIC LAB BLANK CONTAMINATION
OF NO IMPACT ON DATA VALIDITY. JUST OVER DL
FROM ZERO.

Site: SKINATER LANDFILL
Data Set Number: 2F 3453

The following samples were examined for precision and bias information:

Duplicate: RA 01 546
Spike: RA 01 544

- The spike recoveries were within the control limits for each element unless indicated otherwise.
- The duplicate results were acceptable.

ELEMENT	MDL	SAMPLE SPIKE		
		EXPECTED	CONTROL LIMITS	
SILVER - Ag	6 ug/L	50 ug/L	42 -	58 ug/L
ALUMINUM - Al	80 ug/L	800 ug/L	680 -	920 ug/L
BARIUM - Ba	6 ug/L	200 ug/L	170 -	230 ug/L
BERYLLIUM - Be	1 ug/L	10 ug/L	8 -	12 ug/L
BORON - B	80 ug/L	800 ug/L	680 -	920 ug/L
CADMIUM - Cd	10 ug/L	25 ug/L	21 -	29 ug/L
COBALT - Co	6 ug/L	100 ug/L	85 -	115 ug/L
CHROMIUM - Cr	8 ug/L	100 ug/L	85 -	115 ug/L
COPPER - Cu	6 ug/L	50 ug/L	42 -	58 ug/L
IRON - Fe	80 ug/L	800 ug/L	680 -	920 ug/L
LITHIUM - Li	10 ug/L	54 ug/L	46 -	62 ug/L
MANGANESE - Mn	5 ug/L	50 ug/L	42 -	58 ug/L
MOLYBDENUM - Mo	15 ug/L	100 ug/L	85 -	115 ug/L
NICKEL - Ni	15 ug/L	150 ug/L	128 -	172 ug/L
LEAD - Pb	70 ug/L	800 ug/L	680 -	920 ug/L
TIN - Sn	40 ug/L	400 ug/L	340 -	460 ug/L
STRONTIUM - Sr	10 ug/L	1000 ug/L	850 -	1150 ug/L
TITANIUM - Ti	25 ug/L	100 ug/L	85 -	115 ug/L
VANADIUM - V	5 ug/L	50 ug/L	42 -	58 ug/L
YTTRIUM - Y	5 ug/L	50 ug/L	42 -	58 ug/L
ZINC - Zn	40 ug/L	400 ug/L	340 -	460 ug/L
CALCIUM - Ca	0.5 mg/L	50 mg/L	42 -	58 mg/L
MAGNESIUM - Mg	0.1 mg/L	25 mg/L	21 -	29 mg/L
POTASSIUM - K	2 mg/L	20 mg/L	17 -	23 mg/L
SODIUM - Na	1 mg/L	50 mg/L	42 -	58 mg/L

OBSERVATION/DEVIATIONS:

ANALYST: _____
TEAM LEADER: _____
SECTION CHIEF: _____

ENVIRONMENTAL PROTECTION AGENCY, REGION V BASIC DATA FORM:

Form # 4

SF3453

Group #: _____

Data Set: SF3345

Sample Type: Water

ISTD-Conc.: _____

Sample #	Sample Amount	Final Volume ML	Solvent Extract. CH ₂ Cl ₂	Dilution with Hexane			Vol. Conc. Extr.	Volume to	
				1 st.	2 nd.	3 rd.		Pest.	Toxic
86R\$01\$01	2440	10	X6760				10		
D01	2420								
\$02	2420								
\$03	2420								
\$04	2420								
R04	2450								
\$05	2350								
\$06	2420								
\$07	2420								
86RA01\$44	2420	10							
\$45	2420	10							
\$46	2420	10							
\$47	2420	10							
\$48	2420	10							

Date Extracted: 8/19/86

Chemist: *Alchan K...*

Toxic Ext. Received by Gen. Org. Ext. " "

Analytical Condition:

P.T.O. For FLORISIL cleanup

GC Conditions:

1.95%

- Column 1) 3X-2100 on Supercoport 10 x 1/8"
- 2) 1.5X SP-2250/ SP-2401 "

MS Conditions:

Mass Range: _____ to _____

T1 _____ Hold _____ Min.

Scan Cycle: _____

T2 _____ Min.

High Voltage: _____

Rate: _____ C

Confirmation: _____

Carrier Gas: _____; Flow rate: _____

Operator & Date: _____

GC Operator & Date: _____

Sample Clean-up and Remarks:

2ml of Dibutyl chlorodate surrogate .65⁻ µg/ml was added to all samples + 1ml to the PCB spike cleanup special port spike + dup. 1ml of PCB 1242 and/or ~~2.03~~ 2.03 µg/ml was added to the PCB spike. 1ml of sp. port spike was added to special port spike + dup

FLORISIL CLEAN UP

	VOL. OF CONC. $\frac{\text{EXTRACT}}$	VOL. used for clean up
86 RA01	\$ 45 - 100 ML	10%
	- \$ 49. - 10 ML	100%
	- \$ 53 - 10 ML	10%

NOTE: FLORISIL

\$ 45 (10%), \$ 49 (100%), \$ 53 (10%) with 6% Ethyl alm. - 94% COLUMN (30 x 1 cm) and 2 Fractions (6% Ethyl alm. - 94% m-hexane, 50% eth - 50% n-hexane) were collected.

10% \$ 45 - 6% →	CONC. VOL.	F.V
	5 ML	5 ML x 10 = 50 ML.

\$ 45 - 50% → 10 ML 100 ML

\$ 49 - 6% → 10 ML 10 ML

\$ 49 - 50% → 10 ML 10 ML

\$ 53 - 6% → 10 ML 100 ML
 .5 ML → 10 ML. ← 2000 ML

\$ 53 - 50% → 10 ML 100 ML

ENVIRONMENTAL PROTECTION AGENCY, REGION V BASIC DATA FORM:

Form # 4

Group #: _____

Data Set: _____

Sample Type: _____

ISTD-Conc.: _____

Sample #	Sample Amount	Final Volume	Solvent Extract.	Dilution with Hexane			Vol. Conc. Extr.	Volume to	
				1 st.	2 nd.	3 rd.		Pest.	Toxic
* 86RA01 \$49	2420		CH ₂ Cl ₂ x60x6					10	
\$53	2420		↓						
R53	2420		↓						
\$44 PCB Spic	1000		CH ₂ Cl ₂ x60x3						
\$44 PCB Spic Dup	1000		↓						
\$44 Pst Spic	1000	100	↓	1-10					
\$44 Pst Spic Dup	1000	100	↓	1-10					
* \$44 special Pst Spic	1000		↓						
\$44 sp. Pst Spic Dup	1000		↓						
Metal Blank	1000	10	↓						
86RA01D48	2420		↓						

Date Extracted: _____

Chemist: _____

Toxic Ext. Received by
Gen. Org. Ext. " "

Analytical Condition:

GC Conditions:

1.95%

Column 1) 3% 2100 on Supercoport 10 x 1/8"
2) 1.5% SP-2250/ SP-2401 "

MS Conditions:

Mass Range: _____ to _____

T1 _____ Hold _____ Min.

Scan Cycle: _____

T2 _____ Min.

High Voltage: _____

Rate: _____ C

Confirmation: _____

Carrier Gas: _____; Flow rate: _____

Operator & Date: _____

GC Operator & Date: _____

Sample Clean-up and Remarks:

* \$49, \$45 had sludge at the bottom of the water hence a thick emulsion was formed the top extract was decanted and \$53 had a thick yellow emulsion that was centrifuged.

+ SPECIAL Pesticide Spk In SKINNER Sample

478	95	① #1279.	HEXACHLORO NORBORADIENE	641 Ng/mL
193	221	② #1250	OCTACHLORO CYCLOPENTENE	620 Ng/mL
		③ #1278	HEPTACHLORO NORBORENE	810 Ng/mL
603	127	④	CHLOR DENE	720 Ng/mL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 9/16/86

SUBJECT: SF-3453 (SKINNER LAND FILL)

FROM: Chacko Joseph

TO: G. Frye

SF-3453 CONSISTS OF 9 WATER SAMPLES, WHICH WERE EXTRACTED FOR PESTICIDE ANALYSIS. SAMPLES #49, #45, #53 HAD SLUDGE IN THE BOTTLE + GAVE BAD EMULSION ON SHAKING. THESE 3 SAMPLES SHOWED PRESENCE OF ORG. COMPOUNDS AND WERE SENT THROUGH FLORISIL COLUMN (30x1um) AND ELUTED WITH 6% ETHER (94% n-hexane) + 50% ether. THESE THREE SAMPLES WERE ANALYZED ON CAP. GC FOR SPECIFIC PESTICIDES.

SAMPLE PREP: K. GUNTER, Mrs. Khan, T.C. Joseph.

G.C. : T.C. Joseph.

Q.C: SPIKE RECOVERY IS SATISFACTORY. Spl. pesticide Spk A ~~is~~ SHOWED ~~an~~ UNEXPECTED result: ~~spk~~ spl. pest. spk gave LOW values for recovery, where as spl. pest spk Dup gave values which are higher than the amount added. Actually, in both cases, 1 ml of 5% spk solution is added. For spk. recovery, Average of the duplicate analysis is used.

Results: Sample #48, D48 showed trace amount Dieldrin 1254
SAMPLE #53 showed β -BHC, δ -BHC, and Hexachlorobenzene.