138038

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

December 8, 1995

Ms. Linda M. Thomas, Site Manager
ecology & environment
Buffalo Corporate Center
368 Pleasantview Drive
Lancaster, NY 14086

Dear Ms. Thomas:

Enclosed you will find one copy of the analytical results and validation reports for the most recent sampling at the Saunders Supply Co. site. The reports contain the results for Total Hardness, Total Recoverable Petroleum Hydrocarbons, Arsenic, Chromium, Copper, and Pentachlorophenol for aqueous samples.

Marc Gutterman of the Army Corps of Engineers has previously sent a copy of the results for pentachlorophenol in sediment samples, soil borehole logs and gradation curves for selected geoprobe soil samples, borehole logs for the seven piezometers, and a map indicating the approximate sampling locations.

As I indicated previously, although the Superfund office was not closed down during the government-wide shutdown, our mailroom was shutdown and the 30% design was not received until after they reopened. We are trying to get comments to you on the design prior to the upcoming holidays.

The following is in response to the issues discussed at the September 20, 1995 meeting in your office and which are listed in the your letter of November 9th transmitting the 30% design documents.

- I am still working on the final disposition of the treated soils that do not meet cleanup levels for metals.

- We have decided it would be best to not use an afterburner at the site and to incinerate the condensate at an offsite location with the cost of offsite incineration becoming much more competitive.

- I believe you were to develop a rough cost estimate comparing chemical dehalogenation of the K001-sediments versus thermal desorption and offsite incineration of the condensate. You should also calculate the cost of offsite incineration of the sediments themselves since the state will not allow the sediments to be backfilled onsite. Of

course, this comparison should include offsite disposal of the sediments after dehalogenation or desorption treatment.

- Soil sampling along the other side of the fence will be undertaken as part of the confirmatory sampling during remedial action. We will use the information from the property boundary survey work to determine whether the sampling will be performed on Saunders' property or on private property. I understand that the Saunders' property line extends beyond the fence line on the southern side of the site.

- I have not heard from the state regarding the discharge location from the water treatment facility but will followup with them.

- The criteria and procedure for prequalification of bidders will come from Marc Gutterman of the Army Corps of Engineers.

- I have heard preliminary comments from the Virginia Department of Historic Resources regarding the Phase I Archaelogical Survey Report. I will address this in a separate letter. I have not received any information on the Potential Habitat Survey to date.

- Marc Gutterman will address the applicability of FAR, Part 52, Section 212-11.

- The issue of whether it is necessary to slipline the sewer after cleaning cannot be addressed until the state decides whether the line can be used to discharge treated wastewater. However, at this time I am inclined to not slipline the sewer if it is not used to discharge treated wastewater.

I realize that we are about one month behind the schedule that was formulated at the September 20th meeting. The schedule we developed at the meeting included EPA forwarding comments by November 30th on the design documents which were to be issued by October 30th. However, as I indicated previously, the design documents were caught in the government-wide shutdown and not received by me until much later. We are making every effort to submit comments on the design documents and to have closure on the issues addressed in your letter by December 21st.

Please do not hesitate to contact me if you have any questions on the above.

Sincerely,

Andrew Palestini

Andrew Palestini,
Remedial Project Manager

cc: Tom Modena, VDEQ
Marc Gutterman, COE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE
201 DEFENSE HIGHWAY
SUITE 200
ANNAPOLIS, MARYLAND 21401

DATE : December 5, 1995

SUBJECT: Region III Data QA Review

FROM : Cynthia E. Caporale C. Caporale
Region III ESAT RPO (3EP20)

TO : Andrew Palestini
Regional Project Manager (3HW24)

Attached is the inorganic data validation report for the Saunders Supply Site (DAS R3148, SDG No NSSO1) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me at (410) 573-2732.

Attachment

cc: Mark Gutterman, US Corps of Engineers, Norfolk, Va.

TID File: 03951128

Printed on Recycled Paper

Lockheed

Environmental Services Assistance Teams
Region 3
1419 Forest Drive, Suite 104
Annapolis, Maryland 21403

Phone: (410) 268-7705
Fax: (410) 268-8472

DATE: NOVEMBER 30, 1995

SUBJECT: INORGANIC DATA VALIDATION (IM1 LEVEL)
SITE: SAUNDERS SUPPLY
DAS R3148 SDG NSS01

FROM: HARI PRASAD HP — DATA REVIEWER
MAHBOOBEH MECANIC MM — SENIOR OVERSIGHT CHEMIST

TO: CYNTHIA E. CAPORALE
ESAT REGIONAL PROJECT OFFICER

THROUGH: DALE S. BOSHART DSB
ESAT TEAM MANAGER

OVERVIEW

DAS R3148 (SDG NSS01) consisted of thirteen (13) aqueous samples analyzed by the Lancaster Laboratories (LANCAS) for two (2) inorganic parameters as a Delivery of Analytical Services (DAS) project. The determination of Total Hardness and Total Recoverable Petroleum Hydrocarbons (TRPH) was performed for these samples according to Methods for Chemical Analysis of Water and Wastes (MCAWW) 130.2 and 418.1, respectively.

SUMMARY

Both parameters were successfully determined for all samples. All quality control (QC) criteria were met by the laboratory.

The data were validated according to the IM1 Level procedure, which includes the review of all QA/QC forms and excludes the review of the raw data.

NOTES

TRPH was not detected in any sample analyzed for this case.

Although twenty (20) samples were delivered to the laboratory, only thirteen (13) samples were analyzed per instruction from the client. See the phone log, dated 10/13/95, in Appendix C.

On the Form I for sample W9, the laboratory incorrectly reported the quantitation limit for Total Hardness as 1 mg/L, which has been corrected to 2 mg/L during the data validation. See raw data in Appendix C.

According to the DAS request, the Method Quantitation Limits for the Total Hardness and TRPH parameters are 10 mg/L and 1 mg/L, respectively. The Laboratory Quantitation Limits for these parameters are 1 mg/L and 0.3 mg/L, respectively.

The data were reviewed according to the Innovative Approaches For Validation of Inorganic Data (IM1 Level), September, 1992, in conjunction with the National Functional Guidelines for Evaluating Inorganic Analyses, with modifications for use within Region III.

ATTACHMENTS

APPENDIX A GLOSSARY OF DATA QUALIFIER CODES

APPENDIX B ANNOTATED FORM Is

APPENDIX C SUPPORT DOCUMENTATION

HP512A01.SAU

APPENDIX A

GLOSSARY OF QUALIFIER CODES

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[] = Analyte present. As values approach the IDL the quantitation may not be accurate.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

APPENDIX B

ANNOTATED FORM Is

Analysis Repo

Lancaster Laboratories
Where quality is a science.

IM1

DAS R3148

LLI Sample No. WW 2391874
Collected: 9/25/95 at 13:55

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

W19 Water Sample
Norfolk-Saunders Supply

W19-- SDG#: NSS01-01

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. SPO-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	186.	2.	mg/l
	This total hardness value is approximately equivalent to 11 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO USEPA, QAB ATTN: Mr. Greg Allen 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:08 D 0003 12 486100
286 0.00 00008300 ASR000

33

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL

Lancaster Laboratories
2425 New Holland Pike
PO. Box 12425
Lancaster PA 17605-2425

AR302461

Analysis Repo

Lancaster Laboratories
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IM1

DAS R3148

LLI Sample No. WW 2391875
Collected: 9/25/95 at 15:50

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

W11 Water Sample
Norfolk-Saunders Supply

W11-- SDG#: NSS01-02

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5PO-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	81.	2.	mg/l
	This total hardness value is approximately equivalent to 5 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	<0.3	0.3	mg/l

2 COPIES TO USEPA, OAB ATTN: Mr. Greg Allen 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:13 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

34

MEMBER ACIL

Lancaster Laboratories
2425 New Holland Pike
P.O. Box 12425
Lancaster PA 17605-2425

AR302462

Analysis Repo

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DAS R3148

Page: 1 of

Im1

LLI Sample No. WW 2391876
Collected: 9/27/95 at 11:00

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

W15 Water Sample
Norfolk-Saunders Supply

W15-- SDG#: NSS01-03

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5PD-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	33.	1.	mg/l
	This total hardness value is approximately equivalent to 2 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO USEPA, QAB
1 COPY TO Data Package Group

ATTN: Mr. Greg Allen 3ES32

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:19 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

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2425 New Holland Pike
PO Box 12425
Lancaster PA 17605-2425

AR302463

Analysis Repo

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DAS R3148

IM1

LLI Sample No. WW 2391877
Collected: 9/26/95 at 11:30

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

W8 Water Sample
Norfolk-Saunders Supply

W8--- SDG#: NSS01-04

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. SPO-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	72.	2.	mg/l
	This total hardness value is approximately equivalent to 4 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO USEPA, QAB ATTN: Mr. Greg Allen 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:23 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

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Lancaster PA 17605-2425

AR302464

Analysis Repo

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DAS R3148

LLI Sample No. WW 2391880
Collected: 9/26/95 at 16:45

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

W9 Water Sample
Norfolk-Saunders Supply

W9--- SDG#: NSS01-05

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5P0-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	35.	~~1~~ 2	mg/l
	This total hardness value is approximately equivalent to 2 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

IOP 11/30/95 (DV)

2 COPIES TO USEPA, QAB ATTN: Mr. Greg Allen 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:34 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL

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2425 New Holland Pike
P.O. Box 12425
Lancaster, PA 17605-2425

AR302465

Analysis Repo

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Im1

DAS R3148 Field Blank

LLI Sample No.. WW 2391881
Collected: 9/26/95 at 16:45

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

W9A Water Sample
Norfolk-Saunders Supply

W9A-- SDG#: NSS01-06

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5PO-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	<1.	1.	mg/l
	This total hardness value is approximately equivalent to <1 grain/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	<0.3	0.3	mg/l

2 COPIES TO USEPA, QAB ATTN: Mr. Greg Allen 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:39 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
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Group Leader, Water Quality

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Lancaster, PA 17605-2425

AR302466

Analysis Repo

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IM1

DAS R3148 Duplicate of W7B

LLI Sample No. WW 2391882
Collected: 9/26/95 at 13:40

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

W7 Water Sample
Norfolk-Saunders Supply

W7--- SDG#: NSS01-07

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5PO-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	66.	1.	mg/l
	This total hardness value is approximately equivalent to 4 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO USEPA, QAS ATTN: Mr. Greg Allen 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:45 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL

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2425 New Holland Pike
PO Box 12425
Lancaster PA 17605-2425

AR302467

Analysis Repo

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Im1
DAS R3148

Duplicate of W7

LLI Sample No. WW 2391883
Collected: 9/26/95 at 13:40

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5P0-952-NALX
Rel.

W7B Water Sample
Norfolk-Saunders Supply

W7B-- SDG#: NSS01-08

AS RECEIVED

CAT NO.	ANALYSIS NAME	RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	71	2.	mg/l
	This total hardness value is approximately equivalent to 4 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO USEPA, QAB
1 COPY TO Data Package Group

ATTN: Mr. Greg Allen 3ES32

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:52 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL

Lancaster Laboratories
2425 New Holland Pike
P.O. Box 12425
Lancaster, PA 17605-2425

AR302468

40

Analysis Repo

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Im1
DAS R3148

LLI Sample No. WW 2391884
Collected: 9/28/95 at 13:00

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

PZ1 Water Sample
Norfolk-Saunders Supply

PZ1-- SDG#: NSS01-09

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5P0-952-NALX
Rel.

AS RECEIVED

CAT NO.	ANALYSIS NAME	RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	134.	2.	mg/l
	This total hardness value is approximately equivalent to 8 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO USEPA, QAB
1 COPY TO Data Package Group

ATTN: Mr. Greg Allen 3ES32

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:26:00 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL

Lancaster Laboratories
2425 New Holland Pike
P.O. Box 12425
Lancaster, PA 17605-2425

AR302469

Analysis Report

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Im1

DAS R3148

LLI Sample No. WW 2391885
Collected: 9/28/95 at 14:30

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5P0-952-NALX
Rel.

PZ2 Water Sample
Norfolk-Saunders Supply

PZ2-- SDG#: NSS01-10

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	75.	2.	mg/l
	This total hardness value is approximately equivalent to 4 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO USEPA, QAB
1 COPY TO Data Package Group

ATTN: Mr. Greg Allen 3ES32

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:26:10 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

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2425 New Holland Pike
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Lancaster, PA 17605-2425

AR302470

Lancaster Laboratories Im1
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DAS R3148

LLI Sample No. WW 2391913
Collected: 9/29/95 at 13:00

Submitted: 9/30/95 Reported: 10/23/95
Discard: 10/31/95

PZ3 Water Sample
Norfolk-Saunders Supply

PZ3-- SDG#: NSS01-11

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5P0-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	81.	2.	mg/l
	This total hardness value is approximately equivalent to 5 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO US EPA, QAB ATTN: MR. Greg Allen, 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:26:34 D 0003 8 486109
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL

Lancaster Laboratories
2425 New Holland Pike
P.O. Box 12425
Lancaster, PA 17605-2425

Analysis Repo

Lancaster Laboratories
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Im)
DAS R3148 Equip. Blank

LLI Sample No. WW 2391914
Collected: 9/28/95 at 15:00

Submitted: 9/30/95 Reported: 10/23/95
Discard: 10/31/95

PZ2C Water Sample
Norfolk-Saunders Supply

PZ2C- SDG#: NSS01-12

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5PO-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	<1.	1.	mg/l
	This total hardness value is approximately equivalent to <1 grain/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	<0.3	0.3	mg/l

2 COPIES TO US EPA, QAB ATTN: MR. Greg Allen, 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:26:42 D 0003 8 486109
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL

Lancaster Laboratories
2425 New Holland Pike
PO. Box 12425
Lancaster, PA 17605-2425

AR302472

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Where quality is a science.

IM1
DAS R3148

LLI Sample No. WW 2391915
Collected: 9/28/95 at 16:20

Submitted: 9/30/95 Reported: 10/23/95
Discard: 10/31/95

PZ4 Water Sample
Norfolk-Saunders Supply

PZ4-- SDG#: HSS01-13*

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5P0-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	84.	1.	mg/l
	This total hardness value is approximately equivalent to 5 grains/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO US EPA, QAB
1 COPY TO Data Package Group

ATTN: MR. Greg Allen, 3ES32

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:26:50 D 0003 8 486109
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL

Lancaster Laboratories
2425 New Holland Pike
P.O. Box 12425
Lancaster, PA 17605-2425

WESTON [redacted]tics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page ___ of ___

Client: [illegible] Sucker Supply
Est. Final Prod. Sampling Date: 9-29-95
Work Order #: 5P0952NALX
Project Contact/Phone #: [illegible] / 801 473 9729
AD Project Manager: M. Gatterman
QC: Del TAT

Date Rec'd _____ Date Due _____
Account #

Refrigerator #																
#/Type Container	Liquid					Amb										
	Solid															
Volume	Liquid					1/2	1/2									
	Solid															
Preservatives																
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	TRPH	[illegible]		Metal	CN						

MATRIX CODES: B Soil; SE Sediment; SO Solid; SL Sludge; W Water; O Oil; A Air; DS Drum Solids; DL Drum Liquids; L EP/TCLP Leachate; WL Waste Liquid; X Other; F Filter

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only													
	W10			W	9/25/95	1555					X	X								
	W11			W	9/25/95	1555					X	X								
	W15			W	9/27/95	1100					X	X								
	W8	✓	✓	W	9/26/95	1320					X	X								
	W9			W	9/26/95	1451					X	X								
	W9A			W	9/26/95	1445					X	X								
	W7			W	9/26/95	1342					X	X								
	W7B			W	9/26/95	1340					X	X								
	W24			W	9/26/95	1300					X	X								
	W23			W	9/26/95	1430					X	X								

* FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # ____ 2) Ambient or Chilled 3) Received in Good Condition Y or N 4) Labels Indicate Properly Preserved Y or N 5) Received Within Holding Times Y or N

COC Tape was: 1) Present on Outer Package Y or N 2) Unbroken on Outer Package Y or N 3) Present on Sample Y or N 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[signature]		9/26/95	18:00				
					K. [illegible]	9-29-95	0935

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 361-596a

AR302474

METHODOLOGY SUMMARY/REFERENCE

0216 Total Hardness (water)

The concentration of calcium and magnesium ions is determined by titration with EDTA to a blue endpoint, in the presence of Eriochrome Black T indicator.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 130.2

****

1126 Total Petroleum Hydrocarbons (water)

The sample is extracted with trichlorotrifluoroethane in a separatory funnel. Silica gel is added. Petroleum hydrocarbons in the extract are quantitatively measured by an infrared spectrophotometer.

Reference: Methods for Chemical Analysis of Water and Wastes
USEPA 600/4-79-020, Method 418.1

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MCC 1575
2391913-20

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Custody Transfer Record/Lab Work Request

WESTON

Page ____ of ____

Client: Norfolk - Sander Supply
Est. Final Proj Sampling Date
Work Order #: 5P0952NALX
Project Contact/Phone #: Farmer/804 473-9729
AD Project Manager: M. Gutterman
QC: ✓ Del: TAT:
Date Rec'd: ____ Date Due: ____
Account #:

Refrigerator #					1 Alc										
#/Type Container	Liquid				1 Alc	1 Plastic									
	Solid														
Volume	Liquid				1L	250ml									
	Solid														
Preservatives					H_2SO_4	HNO_3									
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb	TRPH	Hardness		Metal	CN					

MATRIX CODES: S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only														
	PZ 3			W	7/29/95	1300					✓	✓									
	PZ 2C			W	7/28/95	1500					✓	✓									
	PZ 4			W	7/28/95	1620					✓	✓									
	PZ 4B			W	7/28/95	1640					✓	✓									
	PZ 6			W	7/29/95	1430					✓	✓									
	PZ 6A			W	7/29/95	1445					✓	✓									
	PZ 5			W	7/28/95	1730					✓	✓									
	PZ 7			W	7/29/	1830					✓	✓									

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]		7/29/95	2000				
					K. Martin	8-30-95	0950

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

AR302476

AR302476

PAGE 1 OF 1

EPA SAMPLE SHIPPING LOG

[AG / CORPS / WESTON]

(1) (REQUIRED FOR ALL SAMPLES SENT THROUGH THE CONTRACT LAB PROGRAM)

PROJECT SITE NAME: Saunders Supply Co. Site ; EPA PROJ. OFFICER: Andy Palestini
RAS NO. DSAS NO. R3148 ; TASK OR SET NO.
PROJECT SITE LEADER: Ed Dullaghan (WESTON) ; PHONE NO. (804) 473-9729
PROJECT SAMPLE COORDINATOR: Marc Guttierman (USACE) ; PHONE NO. (804) 441-7668

QC SAMPLE INFORMATION AND/OR COMMENTS	CONC. (LOW/MED./HIGH)	SAMPLE PHASE (AQ/SOL.)	TYPE OF REQUEST (ORG. DIO. OR INOR.) SAS	EPA SAMPLE NO.	ORGANICS OR INORGANICS: LAB NAME	DATE SHIPPED	DATA RECEIVED (XX-OUT ITEMS NOT REQUESTED): VOA	BNA	PEST	TCDD	METALS	CN
(2)	(3)	(4)	(5)	(6)	(7)	(8)	←			(9)		→
	Low	Aq	DAS	W19								
				W11								
				W15								
				W8								
				W9								
Field Blank				W9A								
				W7								
Field Duplicate				W7B								
				P21								
	Low	Aq	DAS	P22								

DAS REQUEST (DETAILS REQUIRED)
(10) DAS# R3148
(1) Total Recoverable Petroleum Hydrocarbons
(2) Hardness

LAB NAME	SAS REQUEST (ITEM #)	DATE SHIPPED	DATA REC'D
(11)	(12)	(13)	
Lancaster	(1) (2)	9/28/95	✓
			✓
			✓
			✓
			✓
			✓
			✓
			✓
Lancaster	(1) (2)	9/28/95	✓
			rec'd 11/3/95

TID: 03951108
SITE: Saunders Supply
DAS: R3148
Task monitor: SKI.

We just received these revised shipping logs for RSCC. Please include in the data validation report. Also, the Form I's for the field QC samples have been revised by the reviewer to include the information. The blanks are non-detects and don't impact the data. Thanks ESAT.

Rcd PFd 12/4/95

DEC - 1 1995

DEC 1 1995 RECEIVED

AR302477

AR302477

PAGE 1 OF 1

EPA SAMPLE SHIPPING LOG

IAG/CORPS/WESTON

(1) (REQUIRED FOR ALL SAMPLES SENT THROUGH THE CONTRACT LAB PROGRAM)

PROJECT SITE NAME: Saunders Supply Co. Site ; EPA PROJ. OFFICER: Andy Palestini
RAS NO. ; DSAS NO. R3148 ; TASK OR SET NO.
PROJECT SITE LEADER: Ed Dullaghan (WESTON) ; PHONE NO. (804) 473-9729
PROJECT SAMPLE COORDINATOR: Marc Gutterman (USACE) ; PHONE NO. (804) 441-7668

DSAS REQUEST (DETAILS REQUIRED)
(10) DAS# R3148
(1) Total Recoverable Petroleum Hydrocarbons
(2) Hardness

QC SAMPLE INFORMATION AND/OR COMMENTS	CONC. (LOW/MED./HIGH)	SAMPLE PHASE (AQ/SOL.)	TYPE OF REQUEST (ORG. DIO. OR INOR.) DSAS	EPA SAMPLE NO.	ORGANICS OR INORGANICS: LAB NAME	DATE SHIPPED	DATA RECEIVED (XX-OUT ITEMS NOT REQUESTED): VOA	BNA	PEST	TCDD	METALS	CN	LAB NAME	SAS REQUEST (ITEMIZE)	DATE SHIPPED	DATA REC'D
(2)	(3)	(4)	(5)	(6)	(7)	(8)	←			(9)		→	(11)	(12)	(13)	
	Low	Aq	DAS	PZ3									Lancaster	(1) (2)	9/29/95	✓
equip rinsate				PZ2C												✓
				PZ4												✓
field Duplicate				PZ4B												rec'd
				PZ6												11/3/95
field Blank				PZ6A												88
				PZ5												
	low	Aq	DAS	PZ7									Lancaster	(1) (2)	9/29/95	

DEC 1 1995
RECEIVED

FINAL SAMPLING: YES ☑ NO ☐ FINAL SHIPPING DATE: 9/29/95

REVISION

AR302478

DAS Number: R3148

RSCC Date: 07/07/95

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
DELIVERY OF ANALYTICAL SERVICES MASTER FORM

Site: Saunders Supply Company Site			Data Validation Level: IM1	
Latitude:	Longitude:		Altitude:	
Address: Chuckatuck, Virginia				
EPA Program: Superfund 5TFA03N 9P6			Type of Activity: RD	
EPA Account Number: 5TFA3ASNP6, ~~95-5T-3ASJ-TFA-2505-03P6U~~			PRP Lab: N/A	
Prepared by: Michael Aucoin			Phone Number: 610-832-1370	Fax No: 610-832-2110
EPA RPM: Andrew Palestini			Phone Number: 215-597-1286 (3HW24)	Fax No: 215-597-9890
Site Leader: Linda Smolarek			Phone Number: 716-684-8060	Fax No: 716-684-0844
EPA CO contact: Al Pinero, Jr.			Phone Number: 215-597-7697	Fax No: 215-597-5029
Contract Type: ARCS		Prime: Ecology & Environment, Inc.	Sub: N/A	

Concentration level:	Number of Samples:	Method Number:	Parameter:	Matrix:
LC	3	130.1	Hardness	Aq
lc	3	418.1	Total Recoverable Petroleum Hydrocarbons	AQ

Additional comments:				
Required TAT: Data packages due 35 days from receipt of last sample.			Carrier: FedEx	
Date Cancelled/Extended: N/A		Reason:		
Sampling Dates	From:07/24/95	To:08/10/95	Shipping Dates	From: 07/24/95 To: 08/10/95

Date forwarded to CRL:	*CRL Response:*	*CRL Initials:*
Date Entered in RSCC database: Tony Z 8/9/95	*Date Revision Entered:*	*Record Control No:* 14167, 14168
Number of Screens: 2	*Validator:*	*DAS Reviewer:*
Send additional data validation report to: Michael Aucoin,Ecology & Environment, Inc.,140 W. Germantown Pike,Suite 100, Plymouth Meeting, PA 19462		
DAS Contact:	*Method of request:*	*Date RSCC sent to RPOC:*
Date RPOC received from RSCC:	*Date sent to CO:*	*Date received by CO:*
Purchase Order No:	*Date of Solicitation:*	*Date Closed:*
DAS Lab I:	*Cost:*	*Date Awarded:*
DAS Lab II:	*Cost:*	*Date Awarded:*
Total Billable samples:		
Lab assignment forwarded to:		*Date forwarded:*

AR302479

1. Special/additional technical instructions: (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.)

Hardness;

Total Recoverable Petroleum Hydrocarbon (TRPH)

Parameter	Method	Detection Limit
Hardness	EPA 130.1	10 MG/L
TRPH	EPA 418.1	1 mg/L

Method Source- EPA, March 1983, "Methods for...Water and Wastes"

QC TYPE	FREQUENCY	ACCEPTANCE LIMITS

Tables for QC requirements and corrective actions are attached.
Contact James McKenzie, 215-597-3229, if problems occur.

2. QC requirements: (specify method specific criteria for matrix spikes, duplicates,calibration, dilutions, performance evaluation material, laboratory control samples, detection or quantitation limits, method blanks, surrogates, internal standards, etc.) Any additional QC not stipulated in the method requirements are considered to be billable items.

Request reviewer:

(Name) (Affiliation) (Date)

Lab assignment forwarded to:	Date forwarded:

1. Special/additional technical instructions: (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.)

	Detection Limit (mg/L)	METHOD
Hardness	10	EPA 130.1
TRPH	1	EPA 418.1

Method Source: EPA, March 1983, "Methods for Chemical Analysis of Water and Wastes"

2. QC requirements: (specified method criteria for matrix spikes, duplicates, calibration, dilutions, performance evaluation material, laboratory control samples, detection or quantitation limits, method blanks, surrogates, internal standards, are below. If any QC requirements fail, Please follow the corrective actions which are addressed for each specific parameter to be performed.

ANALYTICAL SPECIFICATIONS: TOTAL RECOVERABLE PETROLEUM HYDROCARBONS METHOD 418.1

QC PARAMETER	QC LIMITS	FREQUENCY
Method Blank	< CRDL	1 per 20 or every batch
Initial Calibration Blank (ICB)	< CRDL	Daily
Continuing Calibration Blank (CCB)	< CRDL	10% or every 2 hours and a final
Initial Calibration (Correlation Coefficient)	>0.995	After CCV,ICB,CCB,or Method Blank Failure (minimum of 3 concentration levels)
Continuing Calibration Verification (CCV), Standard (%R)	85-115%	1 per 10 samples, at end of SDG
Matrix Spike (mid level)	85-115%	1 per 20 or every batch

CORRECTIVE ACTIONS INFRARED SPECTROPHOTOMETRIC TECHNIQUES: (418.1)
If the QC limits are not met, apply the following corrective actions:

INSTRUMENT OPTIMIZATION PRIOR TO USE: The optical system of a instrument must be assessed to be perform according to manufacturer's specifications prior to use. Instrument may require additional adjustments of energy source, such as adjustment of source lamp positioning, and optimizing cell positions for maximum absorption. Scanning infrared spectrometers wavelength scan characteristics are to be determined prior to analysis. Non-scanning instruments must have the capability to measure peak absorbance at 2930 cm-1.

METHOD BLANK: If a method blank fails QC limits criteria, the source of contamination is to be determined, a new method blank must be reprocessed and reanalyzed. QC limits criteria must be met prior to analysis of samples. All associated samples with the failed blank must be reprocessed and reanalyzed.

INITIAL CALIBRATION BLANK: If an ICB fails QC limits criteria, the source of contamination is to be determined, a new ICB must be prepared and analyzed along with a new initial calibration.

CONTINUING CALIBRATION BLANK: If<CRDL QC limits of CCB are not met, the source of contamination is to be determined, a new CCB must be prepared and analyzed. QC limits criteria must be met prior to analysis of samples. All associated samples since the last compliant CCB must be reprocessed and reanalyzed.

INITIAL CALIBRATION: Instrument calibration criteria must be met for all cuvette pathlengths used in the determination prior to sample analysis. If criteria are not met, a new curve must be generated.

CONTINUING CALIBRATION VERIFICATION: Verification standards must be made from a solution that is independent of calibration standards. If calibration verification is not met, a new curve must be generated and all samples after the last compliant CCV sample must be reanalyzed.

MATRIX SPIKE: If the spikes are outside of QC limits, indicate results in the case narrative for samples associated with the failed matrix spikes.

ANALYTICAL SPECIFICATIONS: HARDNESS METHOD 130.1
DAS#:

QC PARAMETER	QC LIMITS	FREQUENCY
Method Blank	< CRDL	1 per 20 or every batch
Initial Calibration Blank (ICB)	< CRDL	Daily
Continuing Calibration Blank (CCB)	< CRDL	10% or every 2 hours and a final
Initial Calibration (Correlation Coefficient)	>0.995	After CCV,ICB,CCB,or Method Blank Failure (minimum of 3 concentration levels)
Continuing Calibration Verification (CCV) Standard (%R)	85-115%	1 per 10 samples, at end of SDG
Laboratory Duplicate	20% RPD	1 per 20 or every batch
Matrix Spike	75-125%	1 per 20 or every batch and matrix

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If the QC limits are not met, apply the following corrective actions:

INSTRUMENT OPTIMIZATION PRIOR TO USE: The optical system of a instrument must be assessed to be performing according to manufacturer's specifications prior to use. Instrument may require additional adjustments of energy source, such as adjustment of source lamp positioning, and optimizing cell positions for maximum absorption.

INITIAL CALIBRATION: Instrument calibration criteria must be met for all cuvette pathlengths used in the determination prior to sample analysis. If criteria are not met, a new curve must be generated.

INITIAL CALIBRATION BLANK: If a blank fails QC limits criteria, the source of contamination is to be determined, a new ICB must be prepared and analyzed along with a new initial calibration.

CONTINUING CALIBRATION VERIFICATION: Verification standards must be made from a solution that is independent of initial calibration standards. If calibration verification is not met, a new curve must be generated and all samples after the last compliant CCV sample must be reanalyzed.

METHOD BLANK: If a method blank fails QC limits criteria, the source of contamination is to be determined, a new method blank must be reprocessed and reanalyzed. QC limits criteria must be met prior to analysis of samples. All associated samples with the failed blank must be reprocessed and reanalyzed.

CONTINUING CALIBRATION BLANK: If<CRDL QC limits of CCB are not met, the source of contamination is to be determined, a new CCB must be prepared and analyzed. QC limits criteria must be met prior to analysis of samples. All associated samples since the last compliant CCB must be reprocessed and reanalyzed.

MATRIX SPIKE: If spikes are outside of QC limits, indicate results in the case narrative for samples associated with the failed matrix spikes.

DUPLICATE: If duplicate QC limits are not met, report results in the case narrative.

Contact James McKenzie, 215-597-3229, if problems occur.

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Quality Control Summary

Method Blank
Miscellaneous Wet Chemistry

Method Blank Analysis — Matrix: WATER

Method Blank Designation	Sample Number	Sample Code	Method	Analysis Date	Batch Number	Blank Result	Units	LOQ
Total Hardness	2391874	W19--	TI	10/10/95	952830803021600A	<LOQ	mg/l	1
	2391875	W11--						
	2391876	W15--						
	2391877 BKG	W8---						
	2391880	W9---						
	2391881	W9A--						
	2391882	W7---						
	2391883	W7B--						
	2391884	PZ1--						
	2391885	PZ2--						
	2391913	PZ3--						
	2391914	PZ2C-						
	2391915	PZ4--						
	2391878 SPK							
	2391879 DUP							
TPH	2391874	W19--	IR	10/19/95	952920605112600A	<LOQ	mg/l	0.[illegible]
	2391875	W11--						
	2391876	W15--						
	2391877	W8---						
	2391880	W9---						
	2391881	W9A--						
	2391882	W7---						
	2391883	W7B--						
	2391884	PZ1--						
	2391885	PZ2--						
	2391913	PZ3--						
	2391914	PZ2C-						
	2391915	PZ4--						
	2396519 BKG							
	2396519 SPK							
	2396517 BKG							
	2396517 DUP							

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

TI = Titration	ND = Not Detected
CO = Colorimetric	J = Estimated Value < LOQ
IR = Infrared Spectrophotometry	< = Less Than
OD = Oven Dried	LOQ = Limit of Quantitation
DI = Distillation	NA = Not Applicable
G = Gravimetric	M = Meter
U = Under Method Detection Limit	* = Out of Specification

AR302481

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Quality Control Summary

Matrix Spike Analysis
Miscellaneous Wet Chemistry

Sample Information | Matrix Spike Analysis | Matrix: WATER

Sample Number	Sample Code	Parameter	Meth	Analysis Date	Unspiked Desig.	Unspiked Result	LOQ	Spiked Desig.	Spike Added	Spiked Result	Units	Rec (%)	Acceptance Window (%)
2391874	W19--	Total Hardness	TI	10/10/95	BKG	72	2	SPK	80	153	mg/l	101	66.2 - 129.8
2391875	W11--												
2391876	W15--	TPH	IR	10/19/95	BKG	<LOQ	2.0	SPK	13.5	13.4	mg/l	99	20.4 - 150.0
2391877	W8---												
2391880	W9---												
2391881	W9A--												
2391882	W7---												
2391883	W7B--												
2391884	PZ1--												
2391885	PZ2--												
2391913	PZ3--												
2391914	PZ2C-												
2391915	PZ4--												

Comments: Sample results are rounded to be consistent with the limit of quantitation.

The limit of quantitation was raised for the matrix spike sample for the total hardness and total petroleum hydrocarbon analyses.

ABBREVIATION KEY

TI = Titration	ND = Not Detected
CO = Colorimetric	J = Estimated Value < LOQ
IR = Infrared Spectrophotometry	< = Less Than
OD = Oven Dried	LOQ = Limit of Quantitation
DI = Distillation	NA = Not Applicable
G = Gravimetric	M = Meter
U = Under Method Detection Limit	* = Out of Specification

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Quality Control Summary

Duplicate Analysis
Miscellaneous Wet Chemistry

Sample Information | Duplicate Analysis | Matrix: WATER

Sample Number	Sample Code	Parameter	Meth	Analysis Date	1st Dup Desig.	1st Dup Result	LOQ	2nd Dup Desig.	2nd Dup Result	Units	RPD (%)	Control Limit % </=
2391874	W19--	Total Hardness	TI	10/10/95	BKG	72	2	DUP	72	mg/l	0	10.29
2391875	W11--											
2391876	W15--	TPH	IR	10/19/95	BKG	0.6	0.3	DUP	0.6	mg/l	1	64.18
2391877	W6---											
2391880	W9---											
2391881	W9A--											
2391882	W7---											
2391883	W7A--											
2391884	PZ1--											
2391885	PZ2--											
2391913	PZ3--											
2391914	PZ2C-											
2391915	PZ4--											

Comments: Sample results are rounded to be consistent with the limit of quantitation.

The limit of quantitation was raised for the duplicate sample for the total hardness analysis.

ABBREVIATION KEY

TI = Titration	ND = Not Detected
CO = Colorimetric	J = Estimated Value < LOQ
IR = Infrared Spectrophotometry	< = Less Than
OD = Oven Dried	LOQ = Limit of Quantitation
DI = Distillation	NA = Not Applicable
G = Gravimetric	M = Meter
U = Under Method Detection Limit	* = Out of Specification

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Quality Control Summary

Laboratory Control Standard
Laboratory Control Standard Duplicate
Miscellaneous Wet Chemistry

Sample Information | Laboratory Control Standards | Matrix: WATER

Sample Number	Sample Code	Parameter	Analysis Date	True LCS/D Value	LCS Result	LCSD Result	LOQ	Units	LCS/D Acceptance Range	% RPD Result	% RPD Acceptance < / =
2391874	W19--	Total Hardness	10/10/95	40	40	40	1	mg/l	36.4 - 45.0	1	20
2391875	W11--										
2391876	W15--	TPH	10/19/95	12.0	11.9	12.0	2.0	mg/l	9.3 - 12.7	1	20
2391877	W8---										
2391880	W9---										
2391881	W9A--										
2391882	W7---										
2391883	W7B--										
2391884	PZ1--										
2391885	PZ2--										
2391913	PZ3--										
2391914	PZ2C-										
2391915	PZ4--										

Comments: LCS/LCSD results are rounded to be consistent with the limit of quantitation.

AR302487

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Raw Data Logbook
Total Hardness (Titrimetric)
Analysis #216

Batch #: 95283 | 080 | 302 | 1600A

Init./Emp.#: clm/803 Date: 10/10/95

EDTA Constant: .992 Std. Ref. (Book/Page): 14119 P25

Sample Number	Sample Vol.(ml)	D.F.	EDTA Titrant (ml)	Calc. Value (mg/l)	Calc. Value (grains/gal.)	LOQ (mg/l)	Comments
Blank	50	1	.02	<1 (TS)	—	1	
40mgl Std	↓	↓	2.02	40 (TS)	—	↓	+2 ml of 1000 mgl Std 100
40mgl Std	↓	↓	2.00	40 (TS)	—	↓	R= (TS) 1% 99
2389902	25	2	3.60	143	8	2	
2390344	↓	↓	2.70	107	6	↓	
2391874	↓	↓	4.68	186	11	↓	
2391875	↓	↓	2.04	81	5	↓	
2391876	50	1	1.64	33	2	1	
2391877 BK	25	2	1.82	72	4	2	
2391878 DUP	↓	↓	3.86	153 (TS)	9	↓	SA=80 rec. 101% +2 ml of 1000 mgl
2391879 dup	↓	↓	1.82	72 (TS)	4	↓	R=0%
2391880	50	1	1.74	35	2	1	
2391881	50	↓	.00	<1	<1	↓	
2391882	↓	↓	3.34	66	4	↓	
2391883	25	2	1.79	71	4	2	
2391884	↓	↓	3.31	131	8	↓	
2391885	↓	↓	1.90	75	4	↓	
2391913	25	2	2.04	81	5	2	
2391914	50	1	.00	<1	<1	1	
2391915	↓	↓	4.21	84	5	↓	
2391916	25	2	2.08	83	5	2	
2391917	↓	↓	1.58	63	4	↓	
2391918	50	1	.00	<1	<1	1	
2391919	25	2	2.22	88	5	2	

D.F. = Dilution Factor

Verified by: EF/605 Date: 10/12/95

1086 Rev. 12/14/93

AR302488

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601-5994

Raw Data Extraction Prep Logbook
Petroleum Hydrocarbons in Water
Analysis #1126, 4863

Batch No. 95292 060 511 2600A

Std. Ref. (Book/Page): 13,344 p6 Analysis #: 1126 Init./Emp #: SMC/605

Balance ID#: — D.F. = Dilution Factor 10/23

Prep Date	Prep Time	Sample Number	Sample Vol. (ml)	Prep D.F.	Final Vol of Extract (ml)	I.R. D.F.	Final D.F.	LOQ (mg/l)	Comments (Spk = ~~13.3767~~ #3CCC/ 13.3769)
10-19-95	1030	Blank	1000	1	100	1	1	0.3	(.1225)
		LCS 12mg/l	1000	1		5	5	2.0	(11.7034) (99%) +3ml of 4,000 mg/l Ind Std
		LCSD 12mg/l	1000	1		5	5	2.0	(100%) ↓ Rpd=1
		239 6519	905	1		1	1	0.3	(.0623)
	Spk	239 6519	890	1		5	5	2.0	SA=13.4831 (99%) +3ml of 4,000 mg/l Ind Std.
		239 6517	850	1		1	1	0.3	Some tph odor (.5871)
	Dup	239 6517	900	1		1	1	0.3	" " " (.5724) Rpd=1
	↓	239 6518	895	1		1	1	0.3	
	1230	239 1874	975	1		1	1	0.3	
		239 1875	975	1		1	1	0.3	
		239 1876	975	1		1	1	0.3	
		239 1877	975	1		1	1	0.3	
		239 1880	975	1		1	1	0.3	
		239 1881	975	1		1	1	0.3	
		239 1882	975	1		1	1	0.3	
	↓	239 1883	975	1		1	1	0.3	
	1500	239 1884	975	1		1	1	0.3	
		239 1885	975	1		1	1	0.3	
		239 1913	965	1		1	1	0.3	
		239 1914	975	1		1	1	0.3	
		239 1915	975	1		1	1	0.3	
		239 6416	1060	1		1	1	0.3	
		239 6417	1060	1		1	1	0.3	
↓	↓ R	239 9713	970	1	↓	1	1	0.3	10-23-95 MC/2A6 10/24
~~10/20/95~~	~~0900~~	~~239 9054~~ ~~2396367~~	~~945~~	~~1~~	~~↓~~				#3CCC/2A6 10/20/95
10/23/95	1000	2402926 #3CCC/2A6 10/23/95	975	1	100	1	1	0.3	

95

Verified by: MC/2A6 Date: 10/23/95

1201 Rev. 03/25/94 AR302489 Page: 14

In Reference to Case No(s):

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
Telephone Record Log

Date of Call: 10/13/95

Laboratory Name: Lancaster Laboratories Inc.

Lab Contact: Helen Simon

Region: III

Regional Contact: Mike Gutterman, COE

Call Initiated By: ✓ Laboratory ___ Region

In reference to data for the following sample number(s):

WI # 2391878-79 W8 MS & Dup.

Summary of Questions/Issues Discussed:

Only 1 liter of sample was submitted for analysis - we need a additional liter for MS & Dup. Do you want to resubmit sample or should we provide you with batch QC.

Which samples should be prioritized with regard to analyses - the PO will cover only 13 samples and 20 been submitted for analysis.

Summary of Resolution:

Mr. Gutterman instructed us to proceed with analysis using batch QC.

Helen Simon
Signature

10/13/95
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

AR302490

Analysis Repo

Lancaster Laboratories
Where quality is a science.

Im1

DAS R3148

LLI Sample No. WW 2391881
Collected: 9/26/95 at 16:45

Submitted: 9/29/95 Reported: 10/23/95
Discard: 10/31/95

W9A Water Sample
Norfolk-Saunders Supply

W9A-- SDG#: NSS01-06

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5P0-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	< 1.	1.	mg/l
	This total hardness value is approximately equivalent to <1 grain/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	< 0.3	0.3	mg/l

2 COPIES TO USEPA, QAB ATTN: Mr. Greg Allen 3ES32
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:25:39 D 0003 12 486100
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
P.O. Box 12425
Lancaster, PA 17605-2425

AR302491

Lancaster Laboratories
Where quality is a science.

IM1

DAS R3148

LLI Sample No. WW 2391914
Collected: 9/28/95 at 15:00

Submitted: 9/30/95 Reported: 10/23/95
Discard: 10/31/95

PZ2C Water Sample
Norfolk-Saunders Supply

PZ2C- SDG#: NSS01-12

Account No: 01375
EPA Region III
841 Chestnut Building
Philadelphia PA 19107-4414

P.O. 5P0-952-NALX
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0216	Total Hardness	<1.	1.	mg/l
	This total hardness value is approximately equivalent to <1 grain/gal. Water with a total hardness value of less than 10 grains/gallon is usually considered soft.			
1126	Petroleum Hydrocarbons	<0.3	0.3	mg/l

2 COPIES TO US EPA, QAB
1 COPY TO Data Package Group

ATTN: MR. Greg Allen, 3ES32

Questions? Contact your Client Services Representative
F. Bradley Ayars at (717) 656-2300
05:26:42 D 0003 8 486109
286 0.00 00008300 ASR000

Respectfully Submitted
Erik Frederiksen, BA
Group Leader, Water Quality

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster PA 17605-2425

U.S. EPA Region III
Office of Analytical Services and Quality Assurance
Annapolis, Maryland

ANALYTICAL REPORT

SAUNDERS SUPPLY COMPANY
SUPERFUND REMOVAL/REMEDIAL

Account # TFA03N9P6
Lab Request # REQ95212

November 20, 1995

U.S. EPA Region III
Office of Analytical Services
and Quality Assurance
Annapolis, Maryland

November 20, 1995

ANALYTICAL RESULTS: SAUNDERS SUPPLY COMPANY [REQ95212]

Dear Andrew Palestini (3HW41),

Enclosed is our analytical report for the above case. It is organized into several sections: Analytical Request and Sample Descriptions, Organic, Inorganic, and Microbiological Results. All data were reviewed by a peer and a laboratory manager.

Analytical Request and Sample Descriptions: (General)

Each laboratory assigned number, station, description, matrix, sample date and locational data is reported. A table summarizes the tests assigned to each sample. A glossary and qualifier code definition is provided.

Inorganic Results:

For requests assigned inorganic tests, results are grouped by service group, e.g., Metals. Sample results are reported; non-detects are provided with the actual quantitation limit. Method description and quality control protocols are described in analyst narratives.

Organic Results:

For the requested organic tests, results are grouped by service group, e.g., Volatile Organic Compounds. Only detected analytes are reported. Nominal Quantitation Limit (NQL) tables are provided for each service group. Specific information for the calculation of Actual Quantitation Limits (AQL) achieved for a given sample is included. Quality control values are provided in summary tables with acceptance criteria. Method description and quality control protocols are described in analyst narratives.

Microbiological Results:

For requests assigned microbiological tests, sample results and quality control values are incorporated into a single table. Method description and quality control protocols are described in analyst narratives.

If you have any questions we may be reached at 410-573-2600.

Approval for Release:

Frederick Dreist

cc: Bruce Salta (ECOLOGY & ENVIRONMENT)

U.S. EPA Region III
Office of Analytical Services
and Quality Assurance
Annapolis, Maryland

INORGANIC ANALYTICAL REPORT

SAUNDERS SUPPLY COMPANY
SUPERFUND REMOVAL/REMEDIAL

Account # TFA03N9P6
Lab Request # REQ95212

Signature
Inorganic Review: Peggy Jawodny 11/20/85
(date)

AR302495

QUALIFIER CODE AND GLOSSARY DEFINITIONS

Qualifier Codes:

<	=	Sample value is below the quantitation limit. Quantitation limit reported.
</=	=	Reported value is estimated. Sample was analyzed in duplicate, one value is equal to or above the quantitation limit and one below. Average of quantitation limit and detected value reported.
>	=	Sample value is above the quantitation range.
A	=	Quality control value is outside acceptance limits.
B	=	Not detected substantially above (10 times) the level reported in the laboratory or field blanks (includes field, trip, rinsate, and equipment blanks).
C	=	See report narrative for analyst's observations concerning this result.
D	=	Sample and duplicate values are below the quantitation limit. Quantitation limit reported.
E	=	Value exceeds a theoretically equivalent or greater value (e.g. dissolved > total, orthophosphate > total phosphorus). However, the difference is within the expected precision of the analytical techniques and is not statistically significant.
I	=	An interference exists which masks true response. See report narrative for explanation.
J	=	Analyte present. Reported value is estimated; concentration is outside the range for accurate quantitation.
K	=	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	=	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N	=	Presumptive evidence indicates the presence of the compound. Special methods and/or method modifications may be needed to confirm its presence or absence in future sampling efforts.
NA	=	Analysis was not requested.
Q	=	No analytical results. See report narrative for explanation.
R	=	Unreliable results. Analyte may or may not be present in the sample. Supporting data is necessary to confirm results.
T	=	Tentatively identified compound. Identified as a result of a library search using the EPA/NIH Mass Spectral Library. Authentic standards were not available to properly identify and quantitate the compound. The reported concentration is an estimate.
TD	=	Spike recovery too dilute for accurate quantitation.
UI	=	Not detected. Quantitation limit is estimated.
UL	=	Not detected. Quantitation limit is probably higher.

Glossary:

FD2	=	Field duplicate sample; two environmental samples taken at the same time and place under identical conditions and treated identically in the field and laboratory.
FRB	=	Field blank; a clean sample of the matrix of interest treated like a sample in the field and laboratory. (Exposed to sampling conditions)
LFM	=	Laboratory fortified blank; a known increment of target analyte made to an aliquot of clean sample matrix. The LFM is treated like a sample in the laboratory.
LRB	=	Laboratory reagent blank; an aliquot of reagent water or clean sample matrix treated like a sample in the laboratory.
MS/MSD	=	Matrix spike/matrix spike duplicate; a known increment of target analyte made to a sample before preparation or analysis.
MSA	=	Method of Standard Additions
RIN	=	Equipment/rinsate blank collected in the field to check the cleanliness of sampling devices.
RPD	=	Relative Percent Difference; the results for duplicate analyses are presented as the mean and the relative percent difference.

$$RPD = \frac{|Replicate1 - Replicate2|}{(Replicate1 + Replicate2)/2} \times 100$$

SAM	=	Sample; a portion of the whole or a single item of a group that is representative of the environmental properties conditions of interest,
TRP	=	Trip blank; a clean sample of the matrix of interest that is carried to the sampling site and transported to the laboratory for analysis without being exposed to sampling conditions.
()	=	Numbers in parentheses are analytical spike recoveries (e.g. post-digestion spikes).
[]	=	Numbers in brackets are matrix spike recoveries (e.g. pre-digestion spikes).

AR302496

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Section: GENERAL
Page: C4

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

TESTS REQUESTED

Inorganic Tests Assigned:	Sample No. 951002-														
	01	02	03	04	05	06	07	08							
Metals Analysis	X	X	X	X	X	X	X	X							

(X = test was requested)

AR302497

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Office of Analytical Services
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Annapolis, Maryland

Section: GENERAL
Page: C3

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

TESTS REQUESTED

Inorganic Tests Assigned:	Sample No. 950929-														
	01	02	03	04	05	06	07	08	09	10	11	12			
Metals Analysis	X	X	X	X	X	X	X	X	X	X	X	X			

(X = test requested)

AR302498

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Office of Analytical Services
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Annapolis, Maryland

Section: GENERAL
Page: C2

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

TESTS REQUESTED

Inorganic Tests Assigned:	Sample No. 950928-													
	16													
Metals Analysis	X													

(X = test was requested)

AR302499

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Annapolis, Maryland

Section: GENERAL
Page: C1

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

TESTS REQUESTED

Inorganic Tests Assigned:	Sample No. 950928-														
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Metals Analysis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(X = test requested)

AR302500

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Office of Analytical Services
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Annapolis, Maryland

Section: GENERAL
Page: B1

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

SAMPLE DESCRIPTIONS

Sample #	Station, Description	Matrix	Type	End Collection Date	End Collection Time	Latitude	Longitude
95092801	STA W19, W19	Water - Type Unspecified	GRAB	09/25/95	13:55		
95092802	STA W11, W11	Water - Type Unspecified	GRAB	09/25/95	15:50		
95092803	STA W15, W15	Water - Type Unspecified	GRAB	09/27/95	11:00		
95092804	STA W8, W8	Water - Type Unspecified	GRAB	09/26/95	11:30		
95092805	STA W9, WELL W9	Water - Type Unspecified	GRAB	09/26/95	16:45		
95092806	STA W9A, WELL W9	Water - Type Unspecified	GRAB	09/26/95	16:45		
95092807	STA W7, WELL W7	Water - Type Unspecified	GRAB	09/26/95	13:40		
95092808	STA W7B, WELL W7	Water - Type Unspecified	GRAB	09/26/95	13:40		
95092809	STA W19, W19	Dissolved Fraction of Aqueous Samples	GRAB	09/25/95	13:55		
95092810	STA W11, W11	Dissolved Fraction of Aqueous Samples	GRAB	09/25/95	15:50		
95092811	STA W15, W15	Dissolved Fraction of Aqueous Samples	GRAB	09/27/95	11:00		
95092812	STA W8, W8	Dissolved Fraction of Aqueous Samples	GRAB	09/26/95	11:30		
95092813	STA W9, WELL W9	Dissolved Fraction of Aqueous Samples	GRAB	09/26/95	16:45		
95092814	STA W9A, WELL W9	Dissolved Fraction of Aqueous Samples	GRAB	09/26/95	16:45		
95092815	STA W7, WELL W7	Dissolved Fraction of Aqueous Samples	GRAB	09/26/95	13:40		
95092816	STA W7B, WELL W7	Dissolved Fraction of Aqueous Samples	GRAB	09/26/95	13:40		
95092901	STA PZ1, PEIZOMETER PZ1	Water - Type Unspecified	GRAB	09/28/95	13:00		
95092902	STA PZ2, PEIZOMETER PZ2	Water - Type Unspecified	GRAB	09/28/95	14:30		
95092903	STA PZ2C, PEIZOMETER PZ2C	Water - Type Unspecified	GRAB	09/28/95	15:00		
95092904	STA PZ4, PEIZOMETER PZ4	Water - Type Unspecified	GRAB	09/28/95	16:20		
95092905	STA PZ4B, PEIZOMETER PZ4B	Water - Type Unspecified	GRAB	09/28/95	16:40		
95092906	STA PZ5, PEIZOMETER PZ5	Water - Type Unspecified	GRAB	09/28/95	17:30		
95092907	STA PZ1, PEIZOMETER PZ1	Dissolved Fraction of Aqueous Samples	GRAB	09/28/95	13:00		
95092908	STA PZ2, PEIZOMETER PZ2	Dissolved Fraction of Aqueous Samples	GRAB	09/28/95	14:30		
95092909	STA PZ2C, PEIZOMETER PZ2C	Dissolved Fraction of Aqueous Samples	GRAB	09/28/95	15:00		
95092910	STA PZ4, PEIZOMETER PZ4	Dissolved Fraction of Aqueous Samples	GRAB	09/28/95	16:20		
95092911	STA PZ4B, PEIZOMETER PZ4B	Dissolved Fraction of Aqueous Samples	GRAB	09/28/95	16:40		
95092912	STA PZ5, PEIZOMETER PZ5	Dissolved Fraction of Aqueous Samples	GRAB	09/28/95	17:30		
95100201	STA PZ3, PEIZOMETER PZ3	Water - Type Unspecified	GRAB	09/29/95	13:00		
95100202	STA PZ7, PEIZOMETER PZ7	Water - Type Unspecified	GRAB	09/29/95	15:30		
95100203	STA PZ6, PEIZOMETER PZ6	Water - Type Unspecified	GRAB	09/29/95	14:30		
95100204	STA PZ6A, PEIZOMETER PZ6A	Water - Type Unspecified	GRAB	09/29/95	14:45		
95100205	STA PZ3, PEIZOMETER PZ3	Dissolved Fraction of Aqueous Samples	GRAB	09/29/95	13:00		
95100206	STA PZ7, PEIZOMETER PZ7	Dissolved Fraction of Aqueous Samples	GRAB	09/29/95	15:30		

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Office of Analytical Services
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Annapolis, Maryland

Section: GENERAL
Page: B2

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

SAMPLE DESCRIPTIONS

Sample #	Station, Description	Matrix	Type	End Collection Date	End Collection Time	Latitude	Longitude
95100207	STA PZ6, PEIZOMETER PZ6	Dissolved Fraction of Aqueous Samples	GRAB	09/29/95	14:30		
95100208	STA PZ6A, PEIZOMETER PZ6A	Dissolved Fraction of Aqueous Samples	GRAB	09/29/95	14:45		

AR302502

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Section: INORGANIC
Page: A1

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

INORGANIC ANALYTICAL SAMPLE RESULTS

ANALYTES	Sample Number:	95092801			95092802			95092803			95092804		
		SAMPLE			SAMPLE			SAMPLE			SAMPLE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	(97)	D	<10	[90]		<10	(104)		<10	(107)	
Chromium		<10		D	<10	[104]		38			<10		
Copper		<25		D	<25	[98]		<25			34		

ANALYTES	Sample Number:	95092805			95092806			95092807			95092808		
		SAMPLE			FIELD BLANK			SAMPLE			FIELD DUPLICATE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	(94)		<10			114	[110]	2	121	(102)	
Chromium		68			< 10			39			36		
Copper		<25			< 25			<25			<25		

ANALYTES	Sample Number:	95092809			95092810			95092811			95092812		
		SAMPLE			SAMPLE			SAMPLE			SAMPLE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	(96)	D	<10	[92]		<10	(103)		<10	(97)	
Chromium		<10		D	<10	[105]		25			<10		
Copper		<25		D	<25	[93]		<25			<25		

ANALYTES	Sample Number:	95092813			95092814			95092815			95092816		
		SAMPLE			FIELD BLANK			SAMPLE			FIELD DUPLICATE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	(90)		<10			140 C	[116]	5	146 C	(101)	
Chromium		57			< 10			36			35		
Copper		<25			< 25			<25			<25		

R302503

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Annapolis, Maryland

Section: INORGANIC
Page: A2

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

INORGANIC ANALYTICAL SAMPLE RESULTS

ANALYTES	Sample Number:	95092901			95092902			95092903			95092904		
		SAMPLE			SAMPLE			SAMPLE			SAMPLE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	(108)	D	<10	(105)		<10	(105)		<10	(99)	
Chromium		<10		D	<10	(104)		<10			<10		
Copper		<25		D	<25	(102)		<25			<25		

ANALYTES	Sample Number:	95092905			95092906			95092907			95092908		
		SAMPLE			SAMPLE			SAMPLE			SAMPLE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	(98)		<10	(108)		<10	(108)	D	<10	(102)	
Chromium		<10			13			<10		D	<10	(106)	
Copper		<25			<25			<25		D	<25	(103)	

ANALYTES	Sample Number:	95092909			95092910			95092911			95092912		
		SAMPLE			SAMPLE			SAMPLE			SAMPLE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	(103)		<10	(94)		<10	(97)		<10	(96)	
Chromium		<10			<10			<10			<10		
Copper		<25			<25			<25			<25		

ANALYTES	Sample Number:	95100201			95100202			95100203			95100204		
		SAMPLE			SAMPLE			SAMPLE			SAMPLE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	[82]		<10	(98)		<10	(99)		<10	(105)	
Chromium		<10			<10	(104)		< 10			<10		
Copper		<25			<25	(98)		< 25			<25		

R302504

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Annapolis, Maryland

Section: INORGANIC
Page: A3

Facility: SAUNDERS SUPPLY COMPANY
Program: SUPERFUND REMOVAL/REMEDIAL

Account #: TFA03N9P6
Lab Request #: REQ95212

INORGANIC ANALYTICAL SAMPLE RESULTS

ANALYTES	Sample Number:	95100205 SAMPLE			95100206 SAMPLE			95100207 SAMPLE			95100208 SAMPLE		
Metals Analysis	Units:	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD	ug/L	% Rec	RPD
Arsenic		<10	[98]		<10	(96)		<10	(102)		<10	(104)	
Chromium		<10			<10	(106)		<10			<10		
Copper		<25			<25	(98)		<25			<25		

AR302505

METALS DETERMINATIONS

Analysts:

R.T. McClain	M.T. Wilkerson	J.L. Molnar	M.J. Chang
LESAT Chemist	LESAT Chemist	LESAT Chemist	LESAT Chemist

Methods:

Samples 950928-01 through 950928-16, 950929-01 through 950929-12, and 951002-01 through 951002-08 from Saunders Supply Company were prepared for analysis by acid digestion and analyzed by furnace atomic absorption spectroscopy and inductively coupled plasma optical emission spectrometry. The following are the digestion and analytical techniques and methods employed:

Digestion Methods

Method from CLP SOW 9/91 revision, p. D-5, A.1. for Furnace AAS (excluding antimony)
Method from CLP SOW 9/91 revision, p. D-5, A.2. for ICP-AES, Flame AAS, and antimony by Furnace AAS

Analytical Methods

EPA Method 206.2 and Internal SOP R3-QA132, arsenic by Furnace AAS (1)
EPA Method 200.7 and Internal SOP R3-QA132, chromium and copper by ICP-AES (1)

(1) 1979/83 EPA Manual of Methods for Chemical Analysis of Water and Wastes

Quality Control:

Samples analyzed in duplicate (method duplicates) are reported as the Mean and the Relative Percent Difference (RPD) of the two analytical values. Routine Quality Control (QC) performed includes preparation and analysis of audit materials; check standards; interference check samples (ICS--for ICP-AES only); method blanks; method spikes; analytical spikes; method duplicates; and analytical duplicates. Calibration standards for ICP-AES are prepared from NIST stock solutions. Calibration standards for Furnace AAS are prepared from Baker stock solutions. Method blanks are prepared with each analytical set and are acceptable if they are found to be below the quantification level for the sample set. Audit materials are analyzed at the beginning of each run to document proper instrument calibration. For ICP-AES the acceptable range is 90-110% recovery; for other techniques it is the 95% confidence interval generated using the True Values and algorithms from EMSL-Cincinnati. Check standards are analyzed periodically (generally a 1/10 frequency) throughout the run to document instrumental stability, and are acceptable at 90-110%. The ICS is obtained from EMSL-Las Vegas and is analyzed at the beginning of each ICP-AES run to document proper selection of analytical lines, background correction factors, and interelement correction factors; it is acceptable at 80-120% recovery. The remaining QC items are sample specific and are performed at a frequency of 1/10 samples for sample sets $\geq$ 10 and 1 per sample set for sample sets <10, except for analytical spikes for Furnace AAS which requires a passing analytical spike or successful Method of Standard Additions

for each sample. Acceptance limits for Precision (method and instrumental duplicates) are generated for each element/matrix/analytical procedure using a Shewhart Chart and the most recent 25 duplicate values. Acceptance limits for analytical spikes for Flame AAS and for ICP-AES are generated for 95% confidence intervals for each element/matrix/analytical procedure using the most recent 25 spike recoveries. Acceptance limits for analytical spikes for Furnace AAS are set at 85-115%. Acceptance limits for matrix spikes are 80-120% recovery; when matrix spikes fail an acceptable analytical spike must be prepared and analyzed.

NOTE: The qualifier code "C" was applied to the arsenic result for samples 950928-15 and 950928-16 because the value of the dissolved metal exceeds a theoretically equivalent or greater value than the total metal. The difference was outside the program limits. The original samples were reanalyzed without and with redigestion for both the total and the filtered samples. These analyses confirmed the previous analysis and the source of contamination appears to be with the original samples.

GC/MS EXTRACTABLE ANALYSIS

Analyst:

Jim Barron
Chemist

Method:

This report contains the GC/MS Extractable Analysis results of Superfund Removal/Remedial Program (TFA03N9P6) from the Saunders Supply Site, (09/25/95 through 09/29/95), samples 950928-01 through -08, 950929-01 through -06 and 951002-02 through -04. It was requested that the samples be screened for Pentachlorophenol (PCP) at a level of 1 ppb, with confirmatory analysis for samples exceeding this level. The samples were screened and then quatitated by SW-846 method 8041, "Phenols by Gas Chromatography, Capillary Column Technique." Since Pentachlorophenol can have a variation of +/- 50% at the 1 ppb level, the NQL was set at 0.5 ppb, that is confirmation was not done if the results were less than 0.5 ppb. The results are reported below.

The samples (listed below) were aqueous, supplied in one liter bottles. No QC samples were provided except for sample duplicates.

For each group of samples extracted, a method blank is prepared and examined for laboratory introduced contamination. All reported target compound values are qualified with a "B" if they are less than or equal to 10x the concentration determined in the field and/or laboratory blank.

Since additional sample for a matrix spike and duplicate (MS/MSD) was not provided, two aliquots of organic-free water were spiked with Pentachlorophenol at 100 ng/uL (in the extract). These spiked blanks (MS/MSD) were then carried through both extraction and GC/MS analysis. The recoveries of the Pentachlorophenol blank spikes were within the recommended quality control limits. The precision (RPD) of the two spikes was not within the quality control limits.

Discussion:

The samples were screened by Electron Capture/Gas Chromatography (EC/GC) using authentic pentachlorophenol standards. Samples, as listed below that did not have greater than 0.5 ppb Pentachlorophenol were set aside. Those exceeding 0.5 ppb were confirmed by EC/GC and Gas Chromatographic Mass Spectrometry (GC/MS). Sample 950928-03 had the highest concentration, and had several dilutions to be on scale for the EC/GC. Actually the 1:100 dilution had still been too concentrated, and the 1:1000 dilution was really too low for good quantitation by EC/GC. Since the blank spikes were going to be quantitated by GC/MS, it was felt it was simpler to also run 950928-03 by GC/MS also. Sample 950928-05 and 950928-06 were listed as duplicates, but did not compare. The other apparent duplicates gave similar results.

Pentachlorophenol Samples, Saunders Supply			
Sample/Station	date taken	date ext.	date analysed
950928-01, Sta. W19	9/25/95	09/28/95	10/20/95
950928-02, Sta. W11	9/25/95	09/28/95	10/30/95
950928-03, Sta. W15	9/27/95	09/28/95	11/03/95
950928-04, Sta. W8	9/26/95	09/28/95	10/30/95
950928-05, Sta. W9	9/26/95	09/28/95	10/30/95
950928-06, Sta. W9A	9/26/95	09/28/95	10/30/95
950928-07, Sta. W7	9/26/95	09/28/95	10/30/95
950928-08, Sta. W7B	9/26/95	09/28/95	10/30/95
950929-01, Sta. PZ1	9/28/95	09/29/95	10/30/95
950929-02, Sta. PZ2	9/28/95	09/29/95	10/20/95
950929-03, Sta. PZ2C	9/28/95	09/29/95	10/20/95
950929-04, Sta. PZ4	9/28/95	09/29/95	10/20/95
950929-05, Sta. PZ4B	9/28/95	09/29/95	10/20/95
950929-06, Sta. PZ5	9/28/95	09/29/95	10/20/95
951002-01, Sta. PZ3	9/28/95	10/09/95	10/20/95
951002-02, Sta. PZ7	9/28/95	10/09/95	10/20/95
951002-03, Sta. PZ6	9/28/95	10/09/95	10/20/95
951002-04, Sta. PZ6A	9/28/95	10/09/95	10/21/95

Pentachlorophenol Results				
Sample	NQL Dil. Factor	NQL ug/L	Conc., ug/L	Confirmed, GC/MS
950928-01	1.0	1.0	less than 0.5	N/A
950928-02	10	1.0	5.2 J *	No
950928-03	1000	1.0	47.0	Yes
950928-04	100	1.0	14.9 J *	Yes
950928-05	10	1.0	13.0 j *	Yes
950928-06	1.0	1.0	less than 0.5	N/A
950928-07	100	1.0	16.4 J *	Yes
950928-08	100	1.0	13.2 J *	Yes
950929-01	10	1.0	2.6 J *	No
950929-02	1.0	1.0	less than 0.5	N/A
950929-03	1.0	1.0	less than 0.5	N/A
950929-04	1.0	1.0	less than 0.5	N/A
950929-05	1.0	1.0	less than 0.5	N/A
950929-06	1.0	1.0	less than 0.5	N/A
951002-01	1.0	1.0	less than 0.5	N/A
951002-02	1.0	1.0	less than 0.5	N/A
951002-03	1.0	1.0	less than 0.5	N/A
951002-04	1.0	1.0	less than 0.5	N/A
9/28 LRB	1.0	1.0	less than 0.5	N/A
09/29 LRB	1.0	1.0	less than 0.5	N/A
10/02 LRB	1.0	1.0	less than 0.5	N/A

* The J value is used when the compound is identified and the quantitation is done, but the sample results are slightly outside the sample curve. In this case the after the samples dilutioned, they were below the lowest standard.

Pentachlorophenol Spike, 100 ppb				
Sample	Conc., ug/L	Recovery Limits	RPD	RPD Limit
Matrix Spike	19.8	9-103	109 A	50
Matrix Spike Dup.	66.8	9-103	---	---

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

AR302511

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

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: USACE - Saunders Supply

SAMPLERS: (Signature) Satta, Dullaghan

	STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Total Metals*	Dissolved Metals*	PCP				REMARKS
1	W19	09/25/95	1355		X	W19 95092802	3	X	X	X	95092809			Total + Dissolved Metals to be Analyzed only for Cr, As, Cu
2	W11	09/25/95	1550		X	W11 95092802	3	X	X	X	95092810			
3	W15	9/27/95	1100		X	W15 95092803	3	X	X	X	95092811			
4	W8	9/26/95	1130		X	W8 95092804	3	X	X	X	95092812			
					~~X~~ (MS)									

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Bruce Satta	9/27/95 1800				
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) Alice Jay Hall	Date / Time 9-28-95 0945	Remarks	

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AR302511

3-2957

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Philadelphia, Pennsylvania 19106

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: USACE-Saunders Supply

SAMPLERS: (Signature) Salta, Dullaghan

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Total Metals	Dissolved Metals	PCPs				REMARKS
W9	9/26/95	1645		X	well W9 95092805	3	X	X	X	95092813			Total and dissolved metals
W9A	9/26/95	1645		X	well W9 95092806	3	X	X	X	95092814			analyzed only for Cu, Ar,
W7	9/26/95	1340		X	well W7 95092807	3	X	X	X	95092815			Cr,
W7B	9/26/95	1310		X	well W7 95092808	3	X	X	X	95092816			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Brian Salta	9/27/95 1800				
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
		Alicia Jay Hall	9-28-95 0945	

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AR302512

3-24964

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Recipient's C

28 50 43741082 [illegible]

1 From

Date 9/27/95 [redacted]

Sender's Name Bruce Salta Phone (804)-473-9729

Company ROY F WESTON INC Dept./Floor Suite/Room

Address 293 INDEPENDENCE BLVD STE 109

City VIRGINIA BEACH State VA Zip 2 3 4 6 2

2 Your Internal Billing Reference Information 000 [illegible]

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☐ Dry Ice Dry Ice, 9, UN 1845 lb ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)
CA ☐ Cargo Aircraft Only

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Date 9/27 [redacted]

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Company ROY F [illegible] INC Dept./Floor Suite/Room

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City VIRGINIA BEACH State VA Zip 2 3 4 6 2

2 Your Internal Billing Reference Information [illegible]

3 To

Recipient's Name [illegible] Phone (301) 266-9180

Company US EPA Region III Dept./Floor Suite/Room

Address (To "HOLD" at FedEx location, print FedEx address here) 839 Bestgate Rd

City Annapolis State MD Zip

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☐ FedEx Overnight Freight ☐ FedEx 2Day Freight
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5 Packaging
☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other Packaging
*Declared value limit $500.

6 Special Handling
Does this shipment contain dangerous goods? ☐ No ☒ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)
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1	70	$ .00	$

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Office of Enforcement

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

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: USACE Saunders Supply

SAMPLERS: (Signature) B. Salto

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Total Metals *	Dissolved Metals *	PCP	REMARKS
PZ3	9/29/95	1300		X	Perimeter PZ3	3	X	X	X 9510020 1	* Total + Dissolved 9510020 5
PZ7	9/29/95	1530		X	Perimeter PZ7	3	X	X	X 9510020 2	Metals to be analyzed 9510020 6
PZ6	9/29/95	1430		X	Perimeter PZ6	3	X	X	X 9510020 3	for Cu, Cr, + Ar 9510020 7
PZ6A	9/29/95	1445		X	Perimeter PZ6A	3	X	X	X 9510020 4	9510020 8

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
B. Salto	9/29/95 1500				
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) Kathleen Klebasko	Date / Time 10/2/95 1350	Remarks If problems w/ samples please call E. Dullaghan (WESTON) 804-473-9729 or M. Gutterman 804-441-7668	

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3-24966

4R302514

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Date 9/29/95 [redacted]

Sender's Name E Salta Phone (804)-473-9729

Company ROY F WESTON INC Dept/Floor Suite/Room

Address 293 INDEPENDENCE [illegible] 109

City VIRGINIA BEACH State VA Zip 2 3 4 6 2

2 Your Internal Billing Reference Information 00060 P388613100100 10

3 To

Recipient's Name Receiving Phone (301) 266-9180

Company EPA Region III CRL Dept/Floor Suite/Room

Address (To "HOLD" at FedEx location print FedEx address here) 839 Bestgate Rd

City Annapolis State MD Zip 21401

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☐ [illegible]ovt. Overnight (user only) ☐ DESCRIPTION
☐ Fed[illegible]ght Freight ☐ FedEx 2Day Freight
(Fo[illegible]ges over 150 pounds. Call for delivery schedule.)
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5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other Packaging

*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☐ No ☒ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 III _____ x _____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

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

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: USACE - Saunders Supply

SAMPLERS: (Signature) B Salta, M Dullaghan

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Total Metals*	Dissolved Metals*	PCPs		REMARKS
PZ1	9/28/95	1300		X	Peizometer PZ 950929013		X	X	X	95092907	* Total and Dissolved
PZ2	9/28/95	1430		X	Peizometer PZ 950929023		X	X	X	95092908	Metals to be analyzed only
PZ2C	9/28/95	1500		X	Peizometer PZ 2C 950929033		X	X	X	95092909	for Cu, Cr, & Ar
PZ4	9/28/95	1620		X	Peizometer PZ 4 950929043		X	X	X	95092910	
PZ4B	9/28/95	1640		X	Peizometer PZ 4B 950929053		X	X	X	95092911	
PZ5	9/28/95	1730		X	Peizometer PZ 5 950929063		X	X	X	95092912	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Bruce Salta	9/28/95 2000				
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) Alice Fay Hall	Date / Time 9-29-95 10:40	Remarks: If problems w/ samples please call E. Dullaghan (WESTON) at 804 473-9729 or M. Gutterman (COE) at 804 441 7668	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

AR302516

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[illegible]et's Name [illegible] Phone 804-473-9729

[illegible]pany ROY [illegible] WESTON INC Dept./Floor Suite/Room

[illegible]ress 293 INDEPENDENCE BLVD STE 109

VIRGINIA BEACH State VA Zip 2[illegible]

Your Internal Billing Reference Information [illegible]

To

[illegible]ipient's Name [illegible] Phone [illegible]

[illegible]mpany [illegible] Dept./Floor Suite/Room

[illegible]ress (To "HOLD" at FedEx location, print FedEx address here) 229 [illegible]

[illegible]y [illegible] State [illegible] Zip [illegible]

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- [ ] Saturday (Not available at all locations) (Not available with FedEx First Overnight)

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- [ ] FedEx Standard Overnight (Next business afternoon)
- [ ] FedEx 2Day (Second business day)
- [ ] FedEx Govt. Overnight (Authorized user only)
- [ ] DESCRIPTION
- [ ] FedEx Overnight Freight
- [ ] FedEx 2Day Freight

(For packages over 150 pounds. Call for delivery schedule.)

- [ ] NEW FedEx First Overnight (Earliest next business morning delivery to select locations. Higher rates apply)

*Delivery commitment may be later in some areas.

5 Packaging

- [ ] FedEx Letter
- [ ] FedEx Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other Packaging

*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods?
- [ ] No
- [x] Yes (As per attached Shipper's Declaration)
- [ ] Yes (Shipper's Declaration not required)
- [ ] Dry Ice (Dry Ice, 9, UN 1845) (Dangerous Goods Shipper's Declaration not required)
- CA [ ] Cargo Aircraft Only

7 Payment

Bill to:
- [x] Sender (Accounting or cost will be billed)
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recipient FedEx Account No.

(Enter FedEx account no. or Credit Card no. below)

[redacted]

Total Packages	Total Weight	Total Declared Value	Total Charges
1	89	$ .00	$

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