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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

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95-PCA-096

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Mr. David Lundstrom
Section Manager
200 Area
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336

Mr. Joseph J. Witczak
Unit Supervisor
Regulatory and Technical Support
Nuclear Waste Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dears Messrs. Lundstrom and Witczak:

SUBMITTAL OF VALIDATED DATA FOR THE 300 AREA SOLVENT EVAPORATOR CONCRETE SAMPLING (T-3-1)

Enclosed are two data validation packages for the 300 Area Solvent Evaporator (300 ASE), submitted by the U.S. Department of Energy, Richland Operations (RL) and the Westinghouse Hanford Company (WHC). The 300 ASE is an interim status tank treatment facility, which was located in the 300 Area of the Hanford Site from 1975 to 1986. The 300 ASE is being closed under the Resource Conservation and Recovery Act. The data packages include inorganic and organic analyses on concrete samples collected at the 300 ASE in April 1994. The inorganic analyses were performed by TMA Laboratory and Skinner and Sherman Laboratory. The organic analyses were performed by the WHC.

Data validation activities were performed in accordance with Level D as defined in Data Validation Procedures for Chemical Analysis (WHC-SD-EN-Spp-002) and Data Validation Procedures for Radiochemical Analysis (WHC-SD-EN-Spp-001). Level D validation includes evaluation and qualification of results based on analytical holding times, method blank results, matrix spikes and duplicates, surrogate recoveries, and analytical method blanks.

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Should you have any questions, please contact Ms. E. M. Mattlin, RL, on (509) 376-2385 or Mr. F. A. Ruck III, WHC, on (509) 376-9876.

Sincerely,

James E. Rasmussen, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy

EAP:EMM

Enclosures:
1. Volatile Organics Data Validation Summary for Data Package
2. Data Validation Report for 300 Area Solvent Evaporator

cc w/encl:
Admin. Record
EDMC, H6-08
D. Duncan, EPA
R. Cordts, Ecology
F. Ruck III, WHC
D. Sherwood, EPA

cc w/o encl:
B. Burke, CTUIR
W. Dixon, WHC
R. Jim, YIN
D. Powaukee, NPT
S. Price, WHC

MEMORANDUM

TO: 300 Area Solvent Evaporator Project QA Record September 26, 1994

FR: Susan Manchester, Golder Associates Inc. SMM for S.M.

RE: VOLATILE ORGANICS DATA VALIDATION SUMMARY FOR DATA PACKAGE: R5185-222-093 (943-1610.003, Filename R5185-V.300)

INTRODUCTION

This memo presents the results of data validation on data package R5185-222-093 prepared by the 222-S Analytical laboratory. A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
R5185	04/27/94	Concrete	See Note 1
R5186	04/27/94	Concrete	
R5197	04/28/94	Concrete	
R5187	04/27/94	Concrete	
R5188	04/27/94	Concrete	
R5189	04/27/94	Concrete	
R5190	04/27/94	Concrete	
R5191	04/28/94	Concrete	
R5192	04/28/94	Concrete	
R5193	04/27/94	Concrete	
R5194	04/27/94	Concrete	
R5195	04/27/94	Concrete	
R5196	04/28/94	Concrete	
R5200	04/27/94	Concrete	
R5201	04/27/94	Concrete	
R5198	05/02/94	Concrete	
R5199	05/02/94	Concrete	

Note 1. All samples were analyzed for volatile organics using CLP protocol.

Data validation was conducted in accordance with the WHC statement of work (WHC 1994) and validation procedures (WHC 1993). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Revised page 9 for RWA 9/26/94

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Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of seventeen samples were validated in this data package with a total of 561 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data as estimated.

Laboratory Blanks

- Acetone, benzene, toluene and 2-butanone were detected in the laboratory blanks. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

Internal Standards

- The areas of all three internal standards (bromochloromethane, 1,4-difluorobenzene and chlorobenzene-d5) associated with sample B0BQR5 were less than the associated lower control limit. Therefore, as summarized and supported in Attachments 2 and 5, all associated sample results have been qualified as estimated (UJ).

TENTATIVELY IDENTIFIED COMPOUNDS

Tentatively identified compounds (TICs) reported by the laboratory were evaluated during validation and qualified as follows:

- Tentatively identified compounds (TICs) were identified in the samples and determined to be valid, therefore TICs have been qualified as presumptive and valid (JN).

REFERENCES

WHC 1993, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

WHC 1994, Validation of 300 Area Solvent Evaporator Data, Statement of Work, Environmental and Waste Characterization Analytical Data Validation, Task Order MSH-SWV-315905, August 10, 1994, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UJN - Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: R5185-222-093	VALIDATOR:	DATE: September 7, 1994	PAGE 1 OF 1
COMMENTS: VOLATILE ORGANICS			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
ACETONE	U	B0BQQ1, B0BQQ2 B0BQQ3, B0BQQ5 B0BQQ6, B0BQQ9 B0BQR0, B0BQR1 B0BQR2, B0BQR3 B0BQR4, B0BQR5 B0BQR6, B0BQR7	DETECTED IN ASSOCIATED LABORATORY BLANKS
BENZENE	U	B0BQQ2	DETECTED IN ASSOCIATED LABORATORY BLANK
TOLUENE	U	B0BQQ9	DETECTED IN ASSOCIATED LABORATORY BLANK
2-BUTANONE	U	B0BQR0 B0BQR1 B0BQR2	DETECTED IN ASSOCIATED LABORATORY BLANK
ALL COMPOUNDS	UJ	B0BQR5	THE AREA OF ALL THREE INTERNAL STANDARDS ARE LESS THAN THE LOWER CONTROL LIMIT

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: R5185-222-093

	Samp#	B08QQ1		B08QQ2		B08QQ3		B08QQ4		B08QQ5		B08QQ6	
	Date	4-27-94		4-27-94		4-28-94		4-27-94		4-27-94		4-27-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	CONCRETE		CONCRETE		CONCRETE		CONCRETE		CONCRETE		CONCRETE	
	Comments	FIELD BLANK		---		DUPLICATE		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
BROMOMETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
VINYL CHLORIDE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
CHLOROETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
METHYLENE CHLORIDE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
ACETONE	UG/KG	11.000	U	19.000	U	21.000	U	17.000	U	14.000	U	17.000	U
CARBON DISULFIDE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
1,1-DICHLOROETHENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
1,1-DICHLOROETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
CHLOROFORM	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
1,2-DICHLOROETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
2-BUTANONE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
1,1,1-TRICHLOROETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
CARBON TETRACHLORIDE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
BROMODICHLOROMETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
1,2-DICHLOROPROPANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
TRICHLOROETHENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
DIBROMOCHLOROMETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
1,1,2-TRICHLOROETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
BENZENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
BROMOFORM	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
4-METHYL-2-PENTANONE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
2-HEXANONE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
TETRACHLOROETHENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
TOLUENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
CHLOROBENZENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
ETHYLBENZENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
STYRENE	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U
XYLENES (TOTAL)	UG/KG	11.000	U	19.000	U	17.000	U	17.000	U	14.000	U	17.000	U

Validated Data Summary, Data Package: R5185-222-093

	Samp#	B08Q07		B08Q08		B08Q09		B08Q10		B08Q11		B08Q12	
	Date	4-27-94		4-28-94		4-28-94		4-27-94		4-27-94		4-27-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	CONCRETE		CONCRETE		CONCRETE		CONCRETE		CONCRETE		CONCRETE	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
BROMOMETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
VINYL CHLORIDE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
CHLOROETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
METHYLENE CHLORIDE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
ACETONE	UG/KG	14.000	U	39.000	B	37.000	U	43.000	U	74.000	U	35.000	U
CARBON DISULFIDE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
1,1-DICHLOROETHENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
1,1-DICHLOROETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
CHLOROFORM	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
1,2-DICHLOROETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
2-BUTANONE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
1,1,1-TRICHLOROETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
CARBON TETRACHLORIDE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
BROMODICHLOROMETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
1,2-DICHLOROPROPANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
TRICHLOROETHENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
DIBROMOCHLOROMETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
1,1,2-TRICHLOROETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
BENZENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
BROMOFORM	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
4-METHYL-2-PENTANONE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
2-HEXANONE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
TETRACHLOROETHENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	0.100	J	13.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
TOLUENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	0.600	J	13.000	U
CHLOROBENZENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
ETHYLBENZENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
STYRENE	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	11.000	U	13.000	U
XYLENES (TOTAL)	UG/KG	14.000	U	16.000	U	13.000	U	15.000	U	0.100	J	13.000	U

Validated Data Summary, Data Package: R5185-222-093

	Samp#	B0BQR3		B0BQR4		B0BQR5		B0BQR6		B0BQR7	
	Date	4-28-94		4-27-94		4-27-94		5-2-94		5-2-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	CONCRETE		CONCRETE		CONCRETE		CONCRETE		CONCRETE	
	Comments	---		---		---		TRIP BLANK		EQUIP BLANK	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
BROMOMETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
VINYL CHLORIDE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
CHLOROETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
METHYLENE CHLORIDE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
ACETONE	UG/KG	29.000	U	31.000	U	54.000	UJ	12.000	U	8.000	U
CARBON DISULFIDE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
1,1-DICHLOROETHENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
1,1-DICHLOROETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
CHLOROFORM	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
1,2-DICHLOROETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
2-BUTANONE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
1,1,1-TRICHLOROETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
CARBON TETRACHLORIDE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
BROMODICHLOROMETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
1,2-DICHLOROPROPANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
TRICHLOROETHENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
DIBROMOCHLOROMETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
1,1,2-TRICHLOROETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
BENZENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
BROMOFORM	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
4-METHYL-2-PENTANONE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
2-HEXANONE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
TETRACHLOROETHENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
TOLUENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
CHLOROBENZENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
ETHYLBENZENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
STYRENE	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U
XYLENES (TOTAL)	UG/KG	13.000	U	18.000	U	15.000	UJ	11.000	U	9.000	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BOB921
R5185
Field Blank

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5185

Sample wt/vol: 4.370 (g/mL) G Lab File ID: >AE06E

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11.	U
74-83-9	Bromomethane	11.	U
75-01-4	Vinyl Chloride	11.	U
75-00-3	Chloroethane	11.	U
75-09-2	Methylene Chloride	11.	U
67-64-1	Acetone	11 ~~2.~~	~~JB~~
75-15-0	Carbon Disulfide	11.	U
75-35-4	1,1-Dichloroethene	11.	U
75-34-3	1,1-Dichloroethane	11.	U
540-59-0	1,2-Dichloroethene (total)	11.	U
67-66-3	Chloroform	11.	U
107-02-2	1,2-Dichloroethane	11.	U
78-93-3	2-Butanone	11.	U
71-55-6	1,1,1-Trichloroethane	11.	U
56-23-5	Carbon Tetrachloride	11.	U
75-27-4	Bromodichloromethane	11.	U
78-87-5	1,2-Dichloropropane	11.	U
10061-01-5	cis-1,3-Dichloropropene	11.	U
79-01-6	Trichloroethene	11.	U
124-48-1	Dibromochloromethane	11.	U
79-00-5	1,1,2-Trichloroethane	11.	U
71-43-2	Benzene	11.	U
10061-02-6	trans-1,3-Dichloropropene	11.	U
75-25-2	Bromoform	11.	U
108-10-1	4-Methyl-2-pentanone	11.	U
591-78-6	2-Hexanone	11.	U
127-18-4	Tetrachloroethene	11.	U
79-34-5	1,1,2,2-Tetrachloroethane	11.	U
108-88-3	Toluene	11.	U
108-90-7	Chlorobenzene	11.	U
100-41-4	Ethylbenzene	11.	U
100-42-5	Styrene	11.	U
133-02-7	Xylene (total)	11.	U

Q

Verified
agm 9/07/94

FORM I VOA 3/90

~~12~~

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B0B001
R5185

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5185

Sample wt/vol: 4.370 (g/mL) G Lab File ID: >AE06E

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	20.13	8.	~~J~~
2.	Unknown	21.77	10.	~~J~~
3.				
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WHC-SD-WM-DP-068, REV. 0

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BOB002
R5186

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5186

Sample wt/vol: 2.630 (g/mL) G Lab File ID: >AE06F

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	19.	U	
74-83-9	Bromomethane	19.	U	
75-01-4	Vinyl Chloride	19.	U	
75-00-3	Chloroethane	19.	U	
75-09-2	Methylene Chloride	19.	U	
67-64-1	Acetone	19 ~~5.~~	~~JB~~	J
75-15-0	Carbon Disulfide	19.	U	
75-35-4	1,1-Dichloroethene	19.	U	
75-34-3	1,1-Dichloroethane	19.	U	
540-59-0	1,2-Dichloroethene (total)	19.	U	
67-66-3	Chloroform	19.	U	
107-02-2	1,2-Dichloroethane	19.	U	
78-93-3	2-Butanone	19.	U	
71-55-6	1,1,1-Trichloroethane	19.	U	
56-23-5	Carbon Tetrachloride	19.	U	
75-27-4	Bromodichloromethane	19.	U	
78-87-5	1,2-Dichloropropane	19.	U	
10061-01-5	cis-1,3-Dichloropropene	19.	U	
79-01-6	Trichloroethene	19.	U	
124-48-1	Dibromochloromethane	19.	U	
79-00-5	1,1,2-Trichloroethane	19.	U	
71-43-2	Benzene	19 ~~.09~~	~~J~~	J
10061-02-6	trans-1,3-Dichloropropene	19.	U	
75-25-2	Bromoform	19.	U	
108-10-1	4-Methyl-2-pentanone	19.	U	
591-78-6	2-Hexanone	19.	U	
127-18-4	Tetrachloroethene	19.	U	
79-34-5	1,1,2,2-Tetrachloroethane	19.	U	
108-88-3	Toluene	19.	U	
108-90-7	Chlorobenzene	19.	U	
100-41-4	Ethylbenzene	19.	U	
100-42-5	Styrene	19.	U	
133-02-7	Xylene (total)	19.	U	

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JM 9/07/94

FORM I VOA 3/90

~~26~~

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
R5186

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5186

Sample wt/vol: 2.630 (g/mL) G Lab File ID: >AE06F

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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WHC-SD-WM-DP-068, REV. 0

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sgm 9/07/94

FORM I VOA-TIC 3/90

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dup of B8B2Q2

EPA SAMPLE NO.

B8B2Q3

R5197

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5197

Sample wt/vol: 2.917 (g/mL) G Lab File ID: >AE090

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	17.	U	
74-83-9	Bromomethane	17.	U	
75-01-4	Vinyl Chloride	17.	U	
75-00-3	Chloroethane	17.	U	
75-09-2	Methylene Chloride	17.	U	
67-64-1	Acetone	21.	~~B~~	3
75-15-0	Carbon Disulfide	17.	U	
75-35-4	1,1-Dichloroethene	17.	U	
75-34-3	1,1-Dichloroethane	17.	U	
540-59-0	1,2-Dichloroethene (total)	17.	U	
67-66-3	Chloroform	17.	U	
107-02-2	1,2-Dichloroethane	17.	U	
78-93-3	2-Butanone	17.	U	
71-55-6	1,1,1-Trichloroethane	17.	U	
56-23-5	Carbon Tetrachloride	17.	U	
75-27-4	Bromodichloromethane	17.	U	
78-87-5	1,2-Dichloropropane	17.	U	
10061-01-5	cis-1,3-Dichloropropene	17.	U	
79-01-6	Trichloroethene	17.	U	
124-48-1	Dibromochloromethane	17.	U	
79-00-5	1,1,2-Trichloroethane	17.	U	
71-43-2	Benzene	17.	U	
10061-02-6	trans-1,3-Dichloropropene	17.	U	
75-25-2	Bromoform	17.	U	
108-10-1	4-Methyl-2-pentanone	17.	U	
591-78-6	2-Hexanone	17.	U	
127-18-4	Tetrachloroethene	17.	U	
79-34-5	1,1,2,2-Tetrachloroethane	17.	U	
108-88-3	Toluene	17.	U	
108-90-7	Chlorobenzene	17.	U	
100-41-4	Ethylbenzene	17.	U	
100-42-5	Styrene	17.	U	
133-02-7	Xylene (total)	17.	U	

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~~262~~ Agm 9/07/94

FORM I VOA 3/90

WHC-SD-WM-DP-068, REV. 0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BCB293
R5197

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5197

Sample wt/vol: 2.917 (g/mL) G Lab File ID: >AE090

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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Verified
sgm 9/07/94

FORM I VOA-TIC 3/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BORQ4
R5187

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5187

Sample wt/vol: 2.932 (g/mL) G Lab File ID: >AE06G

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	17.	U
74-83-9	Bromomethane	17.	U
75-01-4	Vinyl Chloride	17.	U
75-00-3	Chloroethane	17.	U
75-09-2	Methylene Chloride	17.	U
67-64-1	Acetone	17.	U
75-15-0	Carbon Disulfide	17.	U
75-35-4	1,1-Dichloroethene	17.	U
75-34-3	1,1-Dichloroethane	17.	U
540-59-0	1,2-Dichloroethene (total)	17.	U
67-66-3	Chloroform	17.	U
107-02-2	1,2-Dichloroethane	17.	U
78-93-3	2-Butanone	17.	U
71-55-6	1,1,1-Trichloroethane	17.	U
56-23-5	Carbon Tetrachloride	17.	U
75-27-4	Bromodichloromethane	17.	U
78-87-5	1,2-Dichloropropane	17.	U
10061-01-5	cis-1,3-Dichloropropene	17.	U
79-01-6	Trichloroethene	17.	U
124-48-1	Dibromochloromethane	17.	U
79-00-5	1,1,2-Trichloroethane	17.	U
71-43-2	Benzene	17.	U
10061-02-6	trans-1,3-Dichloropropene	17.	U
75-25-2	Bromoform	17.	U
108-10-1	4-Methyl-2-pentanone	17.	U
591-78-6	2-Hexanone	17.	U
127-18-4	Tetrachloroethene	17.	U
79-34-5	1,1,2,2-Tetrachloroethane	17.	U
108-88-3	Toluene	17.	U
108-90-7	Chlorobenzene	17.	U
100-41-4	Ethylbenzene	17.	U
100-42-5	Styrene	17.	U
133-02-7	Xylene (total)	17.	U

FORM I VOA 3/90

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BJBQ04
R5187

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5187

Sample wt/vol: 2.932 (g/mL) G Lab File ID: >AE06G

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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WHC-SD-WM-DP-068, REV. 0

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BDBQQ5
R5188

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5188

Sample wt/vol: 3.447 (g/mL) G Lab File ID: >AE06J

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	14.	U
67-64-1	Acetone	14 ~~10.~~	~~JB~~
75-15-0	Carbon Disulfide	14.	U
75-35-4	1,1-Dichloroethene	14.	U
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-02-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	14.	U
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	14.	U
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	14.	U
108-90-7	Chlorobenzene	14.	U
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
133-02-7	Xylene (total)	14.	U

Q

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FORM I VOA 3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B0BQQS
R5188

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5188

Sample wt/vol: 3.447 (g/mL) G Lab File ID: >AE06J

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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WHC-SD-WM-DP-068, REV. 0

Verified
sgm 9/07/94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
R5189

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5189

Sample wt/vol: 3.000 (g/mL) G Lab File ID: >AE06K

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	17.	U
74-83-9	Bromomethane	17.	U
75-01-4	Vinyl Chloride	17.	U
75-00-3	Chloroethane	17.	U
75-09-2	Methylene Chloride	17.	U
67-64-1	Acetone	17 ~~4.~~	~~JB~~
75-15-0	Carbon Disulfide	17.	U
75-35-4	1,1-Dichloroethene	17.	U
75-34-3	1,1-Dichloroethane	17.	U
540-59-0	1,2-Dichloroethene (total)	17.	U
67-66-3	Chloroform	17.	U
107-02-2	1,2-Dichloroethane	17.	U
78-93-3	2-Butanone	17.	U
71-55-6	1,1,1-Trichloroethane	17.	U
56-23-5	Carbon Tetrachloride	17.	U
75-27-4	Bromodichloromethane	17.	U
78-87-5	1,2-Dichloropropane	17.	U
10061-01-5	cis-1,3-Dichloropropene	17.	U
79-01-6	Trichloroethene	17.	U
124-48-1	Dibromochloromethane	17.	U
79-00-5	1,1,2-Trichloroethane	17.	U
71-43-2	Benzene	17.	U
10061-02-6	trans-1,3-Dichloropropene	17.	U
75-25-2	Bromoform	17.	U
108-10-1	4-Methyl-2-pentanone	17.	U
591-78-6	2-Hexanone	17.	U
127-18-4	Tetrachloroethene	17.	U
79-34-5	1,1,2,2-Tetrachloroethane	17.	U
108-88-3	Toluene	17.	U
108-90-7	Chlorobenzene	17.	U
100-41-4	Ethylbenzene	17.	U
100-42-5	Styrene	17.	U
133-02-7	Xylene (total)	17.	U

Q 3

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FORM I VOA 3/90

WHC-SD-WM-DP-068, REV. 0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BCB296
R5189

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5189

Sample wt/vol: 3.000 (g/mL) G Lab File ID: >AE06K

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Verified
Sgm 9/07/94

FORM I VOA-TIC 3/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
R5190

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5190

Sample wt/vol: 3.457 (g/mL) G Lab File ID: >AE06L

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	14.	U
67-64-1	Acetone	14.	U
75-15-0	Carbon Disulfide	14.	U
75-35-4	1,1-Dichloroethene	14.	U
75-34-3	1,1-Dichloroethane	14.	U
540-59-0	1,2-Dichloroethene (total)	14.	U
67-66-3	Chloroform	14.	U
107-02-2	1,2-Dichloroethane	14.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	14.	U
56-23-5	Carbon Tetrachloride	14.	U
75-27-4	Bromodichloromethane	14.	U
78-87-5	1,2-Dichloropropane	14.	U
10061-01-5	cis-1,3-Dichloropropene	14.	U
79-01-6	Trichloroethene	14.	U
124-48-1	Dibromochloromethane	14.	U
79-00-5	1,1,2-Trichloroethane	14.	U
71-43-2	Benzene	14.	U
10061-02-6	trans-1,3-Dichloropropene	14.	U
75-25-2	Bromoform	14.	U
108-10-1	4-Methyl-2-pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	14.	U
79-34-5	1,1,2,2-Tetrachloroethane	14.	U
108-88-3	Toluene	14.	U
108-90-7	Chlorobenzene	14.	U
100-41-4	Ethylbenzene	14.	U
100-42-5	Styrene	14.	U
133-02-7	Xylene (total)	14.	U

Verified
agm 9/07/94

FORM I VOA 3/90

~~118~~ 024

WHC-SD-WM-DP-068. REV 0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
608007
R5190

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5190

Sample wt/vol: 3.457 (g/mL) G Lab File ID: >AE06L

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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WHC-SD-WM-DP-068, REV. 0

Verified
sgm 9/07/94

FORM I VOA-TIC 3/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BOBQQ8
R5191

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5191

Sample wt/vol: 3.216 (g/mL) G Lab File ID: >AE06M

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	16.	U
74-83-9	Bromomethane	16.	U
75-01-4	Vinyl Chloride	16.	U
75-00-3	Chloroethane	16.	U
75-09-2	Methylene Chloride	16.	U
67-64-1	Acetone	39.	B
75-15-0	Carbon Disulfide	16.	U
75-35-4	1,1-Dichloroethene	16.	U
75-34-3	1,1-Dichloroethane	16.	U
540-59-0	1,2-Dichloroethene (total)	16.	U
67-66-3	Chloroform	16.	U
107-02-2	1,2-Dichloroethane	16.	U
78-93-3	2-Butanone	16.	U
71-55-6	1,1,1-Trichloroethane	16.	U
56-23-5	Carbon Tetrachloride	16.	U
75-27-4	Bromodichloromethane	16.	U
78-87-5	1,2-Dichloropropane	16.	U
10061-01-5	cis-1,3-Dichloropropene	16.	U
79-01-6	Trichloroethene	16.	U
124-48-1	Dibromochloromethane	16.	U
79-00-5	1,1,2-Trichloroethane	16.	U
71-43-2	Benzene	16.	U
10061-02-6	trans-1,3-Dichloropropene	16.	U
75-25-2	Bromoform	16.	U
108-10-1	4-Methyl-2-pentanone	16.	U
591-78-6	2-Hexanone	16.	U
127-18-4	Tetrachloroethene	16.	U
79-34-5	1,1,2,2-Tetrachloroethane	16.	U
108-88-3	Toluene	16.	U
108-90-7	Chlorobenzene	16.	U
100-41-4	Ethylbenzene	16.	U
100-42-5	Styrene	16.	U
133-02-7	Xylene (total)	16.	U

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agm 9/07/94

FORM I VOA 3/90

~~137~~ 026

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BDR008
R5191

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5191

Sample wt/vol: 3.216 (g/mL) G Lab File ID: >AE06M

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Verified
AJM 9/07/94

FORM I VOA-TIC 3/90

027

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BOBQQ9
R5192

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5192

Sample wt/vol: 3.897 (g/mL) G Lab File ID: >AE09F

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	13.	U
74-83-9	Bromomethane	13.	U
75-01-4	Vinyl Chloride	13.	U
75-00-3	Chloroethane	13.	U
75-09-2	Methylene Chloride	13.	U
67-64-1	Acetone	37.	~~B~~
75-15-0	Carbon Disulfide	13.	U
75-35-4	1,1-Dichloroethene	13.	U
75-34-3	1,1-Dichloroethane	13.	U
540-59-0	1,2-Dichloroethene (total)	13.	U
67-66-3	Chloroform	13.	U
107-02-2	1,2-Dichloroethane	13.	U
78-93-3	2-Butanone	13.	U
71-55-6	1,1,1-Trichloroethane	13.	U
56-23-5	Carbon Tetrachloride	13.	U
75-27-4	Bromodichloromethane	13.	U
78-87-5	1,2-Dichloropropane	13.	U
10061-01-5	cis-1,3-Dichloropropene	13.	U
79-01-6	Trichloroethene	13.	U
124-48-1	Dibromochloromethane	13.	U
79-00-5	1,1,2-Trichloroethane	13.	U
71-43-2	Benzene	13.	U
10061-02-6	trans-1,3-Dichloropropene	13.	U
75-25-2	Bromoform	13.	U
108-10-1	4-Methyl-2-pentanone	13.	U
591-78-6	2-Hexanone	13.	U
127-18-4	Tetrachloroethene	13.	U
79-34-5	1,1,2,2-Tetrachloroethane	13.	U
108-88-3	Toluene	13 ~~.03~~	~~J~~
108-90-7	Chlorobenzene	13.	U
100-41-4	Ethylbenzene	13.	U
100-42-5	Styrene	13.	U
133-02-7	Xylene (total)	13.	U

Q

Verified
bgm 9/07/94

FORM I VOA 3/90

~~156~~ 028

WHC-SD-WM-DP-068, REV. 0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBQQ9
R5192

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5192

Sample wt/vol: 3.897 (g/mL) G Lab File ID: >AE09F

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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WHC-SD-WM-DP-068, REV. 0

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sgm 9/07/94

FORM I VOA-TIC 3/90

~~157~~ pmwilk 8/23/94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
B08QR0
R5193

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5193

Sample wt/vol: 3.249 (g/mL) G Lab File ID: >AE09G

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

WHC-SD-WM-DP-068, REV. 0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	15.	U	
74-83-9	Bromomethane	15.	U	
75-01-4	Vinyl Chloride	15.	U	
75-00-3	Chloroethane	15.	U	
75-09-2	Methylene Chloride	15.	U	
67-64-1	Acetone	43.	~~B~~	U
75-15-0	Carbon Disulfide	15.	U	
75-35-4	1,1-Dichloroethene	15.	U	
75-34-3	1,1-Dichloroethane	15.	U	
540-59-0	1,2-Dichloroethene (total)	15.	U	
67-66-3	Chloroform	15.	U	
107-02-2	1,2-Dichloroethane	15.	U	
78-93-3	2-Butanone	15 ~~3~~	~~J~~	U
71-55-6	1,1,1-Trichloroethane	15.	U	
56-23-5	Carbon Tetrachloride	15.	U	
75-27-4	Bromodichloromethane	15.	U	
78-87-5	1,2-Dichloropropane	15.	U	
10061-01-5	cis-1,3-Dichloropropene	15.	U	
79-01-6	Trichloroethene	15.	U	
124-48-1	Dibromochloromethane	15.	U	
79-00-5	1,1,2-Trichloroethane	15.	U	
71-43-2	Benzene	15.	U	
10061-02-6	trans-1,3-Dichloropropene	15.	U	
75-25-2	Bromoform	15.	U	
108-10-1	4-Methyl-2-pentanone	15.	U	
591-78-6	2-Hexanone	15.	U	
127-18-4	Tetrachloroethene	15.	U	
79-34-5	1,1,2,2-Tetrachloroethane	15.	U	
108-88-3	Toluene	15.	U	
108-90-7	Chlorobenzene	15.	U	
100-41-4	Ethylbenzene	15.	U	
100-42-5	Styrene	15.	U	
133-02-7	Xylene (total)	15.	U	

Verified
agm 9/07/94

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBQRO
R5193

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5193

Sample wt/vol: 3.249 (g/mL) G Lab File ID: >AE09G

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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WHC-SD-WM-DP-068, REV. 0

Verified
AGM 9/07/94

FORM I VOA-TIC 3/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
B0BQR1
R5194

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5194

Sample wt/vol: 4.676 (g/mL) G Lab File ID: >AE09H

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

WHC-SD-WM-DP-068, REV. 0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	11.	U	
74-83-9	Bromomethane	11.	U	
75-01-4	Vinyl Chloride	11.	U	
75-00-3	Chloroethane	11.	U	
75-09-2	Methylene Chloride	11.	U	
67-64-1	Acetone	74.	~~B~~	U
75-15-0	Carbon Disulfide	11.	U	
75-35-4	1,1-Dichloroethene	11.	U	
75-34-3	1,1-Dichloroethane	11.	U	
540-59-0	1,2-Dichloroethene (total)	11.	U	
67-66-3	Chloroform	11.	U	
107-02-2	1,2-Dichloroethane	11.	U	
78-93-3	2-Butanone	11 ~~7.~~	~~J~~	U
71-55-6	1,1,1-Trichloroethane	11.	U	
56-23-5	Carbon Tetrachloride	11.	U	
75-27-4	Bromodichloromethane	11.	U	
78-87-5	1,2-Dichloropropane	11.	U	
10061-01-5	cis-1,3-Dichloropropene	11.	U	
79-01-6	Trichloroethene	11.	U	
124-48-1	Dibromochloromethane	11.	U	
79-00-5	1,1,2-Trichloroethane	11.	U	
71-43-2	Benzene	11.	U	
10061-02-6	trans-1,3-Dichloropropene	11.	U	
75-25-2	Bromoform	11.	U	
108-10-1	4-Methyl-2-pentanone	11.	U	
591-78-6	2-Hexanone	11.	U	
127-18-4	Tetrachloroethene	.1	J	
79-34-5	1,1,2,2-Tetrachloroethane	11.	U	
108-88-3	Toluene	.6	J	
108-90-7	Chlorobenzene	11.	U	
100-41-4	Ethylbenzene	11.	U	
100-42-5	Styrene	11.	U	
133-02-7	Xylene (total)	.1	J	

Verified
sgm 9/07/94

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBQR1
R5194

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5194

Sample wt/vol: 4.676 (g/mL) G Lab File ID: >AE09H

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	20.14	15.	J
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Verified
sgm 9/07/94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BQBQR2
R5195

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5195

Sample wt/vol: 3.840 (g/mL) G Lab File ID: >AE09I

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	13.	U	
74-83-9	Bromomethane	13.	U	
75-01-4	Vinyl Chloride	13.	U	
75-00-3	Chloroethane	13.	U	
75-09-2	Methylene Chloride	13.	U	
67-64-1	Acetone	35.	~~B~~	3
75-15-0	Carbon Disulfide	13.	U	
75-35-4	1,1-Dichloroethene	13.	U	
75-34-3	1,1-Dichloroethane	13.	U	
540-59-0	1,2-Dichloroethene (total)	13.	U	
67-66-3	Chloroform	13.	U	
107-02-2	1,2-Dichloroethane	13.	U	
78-93-3	2-Butanone	13 ~~4.~~	~~J~~	3
71-55-6	1,1,1-Trichloroethane	13.	U	
56-23-5	Carbon Tetrachloride	13.	U	
75-27-4	Bromodichloromethane	13.	U	
78-87-5	1,2-Dichloropropane	13.	U	
10061-01-5	cis-1,3-Dichloropropene	13.	U	
79-01-6	Trichloroethene	13.	U	
124-48-1	Dibromochloromethane	13.	U	
79-00-5	1,1,2-Trichloroethane	13.	U	
71-43-2	Benzene	13.	U	
10061-02-6	trans-1,3-Dichloropropene	13.	U	
75-25-2	Bromoform	13.	U	
108-10-1	4-Methyl-2-pentanone	13.	U	
591-78-6	2-Hexanone	13.	U	
127-18-4	Tetrachloroethene	13.	U	
79-34-5	1,1,2,2-Tetrachloroethane	13.	U	
108-88-3	Toluene	13.	U	
108-90-7	Chlorobenzene	13.	U	
100-41-4	Ethylbenzene	13.	U	
100-42-5	Styrene	13.	U	
133-02-7	Xylene (total)	13.	U	

FORM I VOA WHC-SD-WM-DP-068, REV. 0 3/90

Verified
~~223~~ AGM 9/07/94

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOB022
R5195

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5195

Sample wt/vol: 3.840 (g/mL) G Lab File ID: >AE09I

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
R5196

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5196

Sample wt/vol: 3.996 (g/mL) G Lab File ID: >AE09M

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	13.	U	
74-83-9	Bromomethane	13.	U	
75-01-4	Vinyl Chloride	13.	U	
75-00-3	Chloroethane	13.	U	
75-09-2	Methylene Chloride	13.	U	
67-64-1	Acetone	29.	~~B~~	U
75-15-0	Carbon Disulfide	13.	U	
75-35-4	1,1-Dichloroethene	13.	U	
75-34-3	1,1-Dichloroethane	13.	U	
540-59-0	1,2-Dichloroethene (total)	13.	U	
67-66-3	Chloroform	13.	U	
107-02-2	1,2-Dichloroethane	13.	U	
78-93-3	2-Butanone	13.	U	
71-55-6	1,1,1-Trichloroethane	13.	U	
56-23-5	Carbon Tetrachloride	13.	U	
75-27-4	Bromodichloromethane	13.	U	
78-87-5	1,2-Dichloropropane	13.	U	
10061-01-5	cis-1,3-Dichloropropene	13.	U	
79-01-6	Trichloroethene	13.	U	
124-48-1	Dibromochloromethane	13.	U	
79-00-5	1,1,2-Trichloroethane	13.	U	
71-43-2	Benzene	13.	U	
10061-02-6	trans-1,3-Dichloropropene	13.	U	
75-25-2	Bromoform	13.	U	
108-10-1	4-Methyl-2-pentanone	13.	U	
591-78-6	2-Hexanone	13.	U	
127-18-4	Tetrachloroethene	13.	U	
79-34-5	1,1,2,2-Tetrachloroethane	13.	U	
108-88-3	Toluene	13.	U	
108-90-7	Chlorobenzene	13.	U	
100-41-4	Ethylbenzene	13.	U	
100-42-5	Styrene	13.	U	
133-02-7	Xylene (total)	13.	U	

Verified

FORM I VOA 3/90

~~243~~ AGM 9/07/94

WHC-SD-WM-DP-068, REV. 0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
R5196

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5196

Sample wt/vol: 3.996 (g/mL) G Lab File ID: >AE09M

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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Verified
sgm 9/07/94

FORM I VOA-TIC 3/90

~~244~~ 037

WHC-SD-WM-DP-068, REV. 0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BOBQR4
R5200

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5200

Sample wt/vol: 2.842 (g/mL) G Lab File ID: >AE09J

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	18.	U
74-83-9	Bromomethane	18.	U
75-01-4	Vinyl Chloride	18.	U
75-00-3	Chloroethane	18.	U
75-09-2	Methylene Chloride	18.	U
67-64-1	Acetone	31.	~~B~~
75-15-0	Carbon Disulfide	18.	U
75-35-4	1,1-Dichloroethene	18.	U
75-34-3	1,1-Dichloroethane	18.	U
540-59-0	1,2-Dichloroethene (total)	18.	U
67-66-3	Chloroform	18.	U
107-02-2	1,2-Dichloroethane	18.	U
78-93-3	2-Butanone	18.	U
71-55-6	1,1,1-Trichloroethane	18.	U
56-23-5	Carbon Tetrachloride	18.	U
75-27-4	Bromodichloromethane	18.	U
78-87-5	1,2-Dichloropropane	18.	U
10061-01-5	cis-1,3-Dichloropropene	18.	U
79-01-6	Trichloroethene	18.	U
124-48-1	Dibromochloromethane	18.	U
79-00-5	1,1,2-Trichloroethane	18.	U
71-43-2	Benzene	18.	U
10061-02-6	trans-1,3-Dichloropropene	18.	U
75-25-2	Bromoform	18.	U
108-10-1	4-Methyl-2-pentanone	18.	U
591-78-6	2-Hexanone	18.	U
127-18-4	Tetrachloroethene	18.	U
79-34-5	1,1,2,2-Tetrachloroethane	18.	U
108-88-3	Toluene	18.	U
108-90-7	Chlorobenzene	18.	U
100-41-4	Ethylbenzene	18.	U
100-42-5	Styrene	18.	U
133-02-7	Xylene (total)	18.	U

Q

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FORM I VOA 3/90

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B0BQR4
R5200

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5200

Sample wt/vol: 2.842 (g/mL) G Lab File ID: >AE09J

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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WHC-SD-WM-DP-068, REV. 0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BQBQRS
R5201

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5201

Sample wt/vol: 3.255 (g/mL) G Lab File ID: >AE09S

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	15.	U	U
74-83-9	Bromomethane	15.	U	U
75-01-4	Vinyl Chloride	15.	U	U
75-00-3	Chloroethane	15.	U	U
75-09-2	Methylene Chloride	15.	U	U
67-64-1	Acetone	54.	B	
75-15-0	Carbon Disulfide	15.	U	U
75-35-4	1,1-Dichloroethene	15.	U	U
75-34-3	1,1-Dichloroethane	15.	U	U
540-59-0	1,2-Dichloroethene (total)	15.	U	U
67-66-3	Chloroform	15.	U	U
107-02-2	1,2-Dichloroethane	15.	U	U
78-93-3	2-Butanone	15.	U	U
71-55-6	1,1,1-Trichloroethane	15.	U	U
56-23-5	Carbon Tetrachloride	15.	U	U
75-27-4	Bromodichloromethane	15.	U	U
78-87-5	1,2-Dichloropropane	15.	U	U
10061-01-5	cis-1,3-Dichloropropene	15.	U	U
79-01-6	Trichloroethene	15.	U	U
124-48-1	Dibromochloromethane	15.	U	U
79-00-5	1,1,2-Trichloroethane	15.	U	U
71-43-2	Benzene	15.	U	U
10061-02-6	trans-1,3-Dichloropropene	15.	U	U
75-25-2	Bromoform	15.	U	U
108-10-1	4-Methyl-2-pentanone	15.	U	U
591-78-6	2-Hexanone	15.	U	U
127-18-4	Tetrachloroethene	15.	U	U
79-34-5	1,1,2,2-Tetrachloroethane	15.	U	U
108-88-3	Toluene	15.	U	U
108-90-7	Chlorobenzene	15.	U	U
100-41-4	Ethylbenzene	15.	U	U
100-42-5	Styrene	15.	U	U
133-02-7	Xylene (total)	15.	U	U

Verified
sgm 9/07/94

FORM I VOA 3/90

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B0R0R5
R5201

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5201

Sample wt/vol: 3.255 (g/mL) G Lab File ID: >AE09S

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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Verified
sgm 9/07/94

FORM I VOA-TIC 3/90

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BOBQR6
R5198
Trip Blank

WHC-SD-WM-DP-068, REV.0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5198

Sample wt/vol: 4.454 (g/mL) G Lab File ID: >AE09P

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	Q
74-87-3	Chloromethane	11.	U	
74-83-9	Bromomethane	11.	U	
75-01-4	Vinyl Chloride	11.	U	
75-00-3	Chloroethane	11.	U	
75-09-2	Methylene Chloride	11.	U	
67-64-1	Acetone	12.	~~B~~	3
75-15-0	Carbon Disulfide	11.	U	
75-35-4	1,1-Dichloroethene	11.	U	
75-34-3	1,1-Dichloroethane	11.	U	
540-59-0	1,2-Dichloroethene (total)	11.	U	
67-66-3	Chloroform	11.	U	
107-02-2	1,2-Dichloroethane	11.	U	
78-93-3	2-Butanone	11.	U	
71-55-6	1,1,1-Trichloroethane	11.	U	
56-23-5	Carbon Tetrachloride	11.	U	
75-27-4	Bromodichloromethane	11.	U	
78-87-5	1,2-Dichloropropane	11.	U	
10061-01-5	cis-1,3-Dichloropropene	11.	U	
79-01-6	Trichloroethene	11.	U	
124-48-1	Dibromochloromethane	11.	U	
79-00-5	1,1,2-Trichloroethane	11.	U	
71-43-2	Benzene	11.	U	
10061-02-6	trans-1,3-Dichloropropene	11.	U	
75-25-2	Bromoform	11.	U	
108-10-1	4-Methyl-2-pentanone	11.	U	
591-78-6	2-Hexanone	11.	U	
127-18-4	Tetrachloroethene	11.	U	
79-34-5	1,1,2,2-Tetrachloroethane	11.	U	
108-88-3	Toluene	11.	U	
108-90-7	Chlorobenzene	11.	U	
100-41-4	Ethylbenzene	11.	U	
100-42-5	Styrene	11.	U	
133-02-7	Xylene (total)	11.	U	

Verified

FORM I VOA 3/90

~~283~~ agm 9/07/94

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBQR6
R5198

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5198

Sample wt/vol: 4.454 (g/mL) G Lab File ID: >AE09P

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. WHC-SD-WM-DP-068, REV. 0 Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	20.15	11.	~~J~~
2.	Unknown	21.81	10.	~~J~~
3.				
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Verified
sgm 9/07/94

FORM I VOA-TIC ~~284~~ 3/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BOBQR7
R5199
Equipment blank

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5199

Sample wt/vol: 5.274 (g/mL) G Lab File ID: >AE09Q

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	9.	U
74-83-9	Bromomethane	9.	U
75-01-4	Vinyl Chloride	9.	U
75-00-3	Chloroethane	9.	U
75-09-2	Methylene Chloride	9.	U
67-64-1	Acetone	8.	~~JB~~
75-15-0	Carbon Disulfide	9.	U
75-35-4	1,1-Dichloroethene	9.	U
75-34-3	1,1-Dichloroethane	9.	U
540-59-0	1,2-Dichloroethene (total)	9.	U
67-66-3	Chloroform	9.	U
107-02-2	1,2-Dichloroethane	9.	U
78-93-3	2-Butanone	9.	U
71-55-6	1,1,1-Trichloroethane	9.	U
56-23-5	Carbon Tetrachloride	9.	U
75-27-4	Bromodichloromethane	9.	U
78-87-5	1,2-Dichloropropane	9.	U
10061-01-5	cis-1,3-Dichloropropene	9.	U
79-01-6	Trichloroethene	9.	U
124-48-1	Dibromochloromethane	9.	U
79-00-5	1,1,2-Trichloroethane	9.	U
71-43-2	Benzene	9.	U
10061-02-6	trans-1,3-Dichloropropene	9.	U
75-25-2	Bromoform	9.	U
108-10-1	4-Methyl-2-pentanone	9.	U
591-78-6	2-Hexanone	9.	U
127-18-4	Tetrachloroethene	9.	U
79-34-5	1,1,2,2-Tetrachloroethane	9.	U
108-88-3	Toluene	9.	U
108-90-7	Chlorobenzene	9.	U
100-41-4	Ethylbenzene	9.	U
100-42-5	Styrene	9.	U
133-02-7	Xylene (total)	9.	U

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FORM I VOA 3/90

WHC-SD-WM-DP-068, REV. 0

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BOBQR7
R5199

WHC-SD-WM-DP-068, REV. 0

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) SOIL Lab Sample ID: R5199

Sample wt/vol: 5.274 (g/mL) G Lab File ID: >AE09Q

Level: (low/med) LOW Date Received: 05/02/94

% Moisture: not dec. Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	20.13	11.	~~J~~
2.	Unknown	21.79	9.	~~J~~
3.				
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Verified
AGM 9/07/94

FORM I VOA-TIC 3/90

~~308~~

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

P.O. Box 1970 Richland, WA 99352

SDG NARRATIVE - Concrete Samples
July 27,1994

VOLATILE ORGANICS

Lab Sample Number	Customer ID
R5185	BOBQQ1
R5186	BOBQQ2
R5187	BOBQQ4
R5188	BOBQQ5
R5189	BOBQQ6
R5190	BOBQQ7
R5191	BOBQQ8
R5192	BOBQQ9
R5193	BOBQR0
R5194	BOBQR1
R5195	BOBQR2
R5196	BOBQR3
R5197	BOBQQ3
R5198	BOBQR6
R5199	BOBQR7
R5200	BOBQR4
R5201	BOBQR5

The initial GC/MS calibration and continuing calibration met all protocols for RCRA analysis. All mass spectral tuning requirements were met for all standards, blanks and samples. The method blank met all applicable protocols and requirements. All internal standards and system monitoring compounds retention times and peak areas met all protocols except for area counts on samples R5200 Matrix Spike Duplicate and R5201 which were out low. All system monitoring compound recoveries were within the required limits. The sample holding time was not exceeded. The samples were run using procedure LA-523-435. Samples were extracted into water by sonication and had a pH of about 12.

All target compound concentration were below the practical quantitation limit (PQL). Acetone was the only target compound detected, the highest concentration was 74 PPB with a PQL of 430 PPB. All concentration&s reported on the forms are PPB of targets in the concrete. Concentrations given in the GC/MS quant reports are in PPB of targets in the water after extraction. Ethyl acetate and petroleum naphtha were treated as library search compounds and neither were detected in any sample.

K.B. WEHNER
Manager
Organic Chemistry

Hanford Operations and Engineering Contractor for the US Department of Energy

C (concrete coring)
B (bottled)

TABLE II : TARE WEIGHTS

CONCRETE SAMPLES FOR VOLATILE ORGANICS ANALYSIS

BY LA-523-435 PROCEDURE WHC-SD-WM-DP-068, REV. 0

VIAL NO.	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME
1	BOBQQ1	4-27-94	1025
2	BOBQQ2	Coring - 4-27-94 B - 4-29-94	0955-1022 1330
3	BOBQQ4	C - 4-27-94 B - 4-29-94	0955-1022 1340
4	BOBQQ5	C - 4-27-94 B - 4-29-94	0955-1022 1351
5	BOBQQ6	C - 4-27-94 B - 4-29-94	1245-1325 1358
6	BOBQQ7	C - 4-27-94 B - 4-29-94	1245-1325 1358
7	BOBQQ8	C - 4-28-94 B - 4-29-94	0842-1028 1415
8	BOBQQ9	C - 4-28-94 B - 4-29-94	0842-1028 1425
9	BOBQRO	C - 4-27-94 B - 4-29-94	1342-1450 1440
10	BOBQR1	C - 4-27-94 B - 4-29-94	1342-1450 1446
11	BOBQR2	C - 4-27-94 B - 4-29-94	1342-1450 1455
12	BOBQR3	C - 4-28-94 B - 4-29-94	1045-1125 1504
13	BOBQQ3	C - 4-28-94 B - 4-29-94	0955-1022 1330
14	BOBQR6	5-2-94	0840
15	BOBQR7	5-2-94	0856
16	—	—	—
17	—	—	—
18	—	—	—
19	—	—	—
20	—	—	—

SAMPLES SUBMITTED BY: Jonathan G. Lucas 5-2-94

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: Jon Lucas

Company Contact: Jon Lucas

Telephone: 509-376-2789

Project Designation/Sampling Locations: 300 Area Solvent Evap. RCRA Closure

Collection Date: 4-27 & 28-94, 5-2-94

Ice Chest No.: RM253

Field Logbook No.: EFL-1095

Bill of Lading/Airbill No.: 520 302 440

Offsite Property No.: W94-0-0573-3

Method of Shipment: ~~Emery~~ Burlington JL 5-13-94

Shipped to: TMA/NORCAL

Possible Sample Hazards/Remarks: ——

Sample Identification

BOBQR1
BOBQR2
BOBQR3
BOBQR4
BOBQR5

Each sample consists of one ziplock bag of concrete rubble.

BOBQQ1
BOBQQ2

Each sample consists of (1) 250 ml P, (1) 125 ml P, & (1) 60 ml glass.

[ ] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
Jonathan S. Lucas	5-13-94	1318			

Final Sample Disposition

Disposal Method: | Disposed by: | Date/Time:

Comments:

A-6000-407 (12/92) WEF061

048A

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 300 Area Solvent Evap.		DATA PACKAGE: RS185-222-093	
VALIDATOR: sgm	LAB: 222-S	DATE: 9	07 94
CASE:		SDG: RS185-222-093	

ANALYSES PERFORMED

☒ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☐ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX Concrete			
B0BQQ1	B0BQQ7	B0BQR2	B0BQR4
B0BQQ2	B0BQQ8	B0BQR3	B0BQR5
B0BQQ4	B0BQQ9	B0BQQ3	
B0BQQ5	B0BQR0	B0BQR6	
B0BQQ6	B0BQR1	B0BQR7	

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . sgm 9/7/94 . . . ~~Yes~~ (No) N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments: No qual. is required for absence of tech. verification documentation.

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

Is the GC/MS tuning/performance check acceptable? . . . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

Are continuing calibrations acceptable? . . . . . Yes No N/A

Comments:

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . . Yes No N/A

Are field/trip blank results acceptable? See last page of chkl . . . . . Yes No N/A

Comments: Acetone was detected in the assoc. lab blanks. Therefore, assoc. results < (10) x respective blank conc. have been qualified as undetected (U). Benzene, toluene & 2-butanone were also detected in the assoc. lab blanks & sample results have been qual. according to the rule above.

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . Yes No N/A

Are surrogate/System Monitoring Compound recoveries acceptable? Yes No N/A

Were MS/MSD samples analyzed? . . . . . Yes No N/A

Are MS/MSD results acceptable? . . . . . Yes No N/A

Comments:

051

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

Are MS/MSD RPD values acceptable? . . . . . Yes No N/A

Are field duplicate RPD values acceptable? . . . . . Yes No N/A

Are field split RPD values acceptable? . . . . . Yes No N/A

Comments: Sample B0B003 is identified as a field dup of Sample B0B002. All TCL results are reported and qualified as nondetects in both samples, therefore RPDs could not be calculated. TICs were also not present in either sample.

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . Yes No N/A

Are internal standard areas acceptable? . . . . . Yes No N/A

Are internal standard retention times acceptable? . . . . . Yes No N/A

Comments: All three IS areas were less than the lower control limit for sample B0B0R5 and B0B0R4MSD. Therefore, all sample results for B0B0R5 have been qualified as estimated (UJ). No qual is required for B0B0R4MSD since it is a lab QC sample only.

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . Yes No N/A

Is compound quantitation acceptable? . . . . . Yes No N/A

Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are all results supported in the raw data? . . . . . Yes No N/A

Do results meet the CRQLs? . . . . . Yes No N/A

Has the laboratory properly identified and coded all TIC? . . . Yes No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

Comments (attach additional sheets as necessary):

Field/Trip Blanks

Sample B0BQQ1 is identified as a field blank. All TCL results and TICs are nondetects and no TICs were present.

Sample B0BQR6 is identified as a trip blank. All TCL results are nondetects, however two TICs identified as unknowns were detected. No qualification is required for field/trip blanks.

Sample B0BQR7 is identified as an equipment blank, as as B0BQR6, all TCL results are nondetects, however two TICs identified as unknowns were detected. No qualification is required for field blanks.

9/07/94

Benzene was detected in VBLK06 and Toluene in VBLK08 at concentrations which were below reporting levels. These results were used to qualify associated sample results with similar concentrations to the blank as undetected (u)

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK06

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) WATER Assoc. with B0BQQ1 Lab Sample ID: VBLK06

Sample wt/vol: 5 (g/mL) ML B0BQQ2 Lab File ID: >AE06D

B0BQQ4

Level: (low/med) LOW B0BQQ5 Date Received:

% Moisture: not dec. B0BQQ6 Date Analyzed: 5/06/94

GC Column: DB-624 ID: 0.53 (mm) B0BQQ7 Dilution Factor: 1

B0BQQ8

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	1.	JB
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	0.05 ~~10.~~	~~U~~
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U

FORM I VOA 3/90

9/07/94

054

WHC-SD-WM-DP-068, REV. 0

6/6/94

QUANT REPORT

Operator ID: JOY
Output File: ^AE06D::D2
Data File: >AE06D::D5
Name: VBLK06
Misc: 10UL OF ISTD & SMC

Quant Rev: 7
Quant Time: 940506 10:26
Injected at: 940506 09:54
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10

WHC-SD-WM-DP-068, REV. 0

Last Qcal Time: 940506 09:09

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.05	128.0	123419	50.00	UG/L	84
8)	ACETONE	2.48	43.0	215	.964	UG/L	48
12)	2-BUTANONE No Det 5-11-94	5.87	43.0	325	.801	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.20	65.0	165740	47.05	UG/L	94
16)	*1,4-DIFLUOROBENZENE	8.26	114.0	475929	50.00	UG/L	90
20)	BENZENE No Det 5-11-94	7.23	78.0	302	.0467	UG/L	100
29)	*CHLOROBENZENE-d5	13.89	117.0	388421	50.00	UG/L	96
31)	TOLUENE-d8	11.03	98.0	424219	51.91	UG/L	96
39)	BROMOFLUOROBENZENE	16.47	95.0	308665	49.96	UG/L	95

* Compound is ISTD

9/7/94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK08

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R5185

Matrix: (soil/water) WATER Assoc. w/ 8B8Q9 Lab Sample ID: VBLK08

Sample wt/vol: 5 (g/mL) ML 8B8Q0 Lab File ID: >AE09D

Level: (low/med) LOW 8B8Q1 Date Received:

% Moisture: not dec. 8B8Q2 8B8Q3 Date Analyzed: 5/09/94

GC Column: DB-624 ID: 0.53 (mm) 8B8Q3 8B8Q6 Dilution Factor: 1

Soil Extract Volume: (uL) 8B8Q7 8B8Q4 8B8Q5 Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
74-87-3	Chloromethane	10.	U	
74-83-9	Bromomethane	10.	U	
75-01-4	Vinyl Chloride	10.	U	
75-00-3	Chloroethane	10.	U	
75-09-2	Methylene Chloride	10.	U	
67-64-1	Acetone	10.	JB	MQL=100
75-15-0	Carbon Disulfide	10.	U	
75-35-4	1,1-Dichloroethene	10.	U	
75-34-3	1,1-Dichloroethane	10.	U	
540-59-0	1,2-Dichloroethene (total)	10.	U	
67-66-3	Chloroform	10.	U	
107-02-2	1,2-Dichloroethane	10.	U	
78-93-3	2-Butanone	1 ~~10.~~	~~U~~ J	MQL=10
71-55-6	1,1,1-Trichloroethane	10.	U	
56-23-5	Carbon Tetrachloride	10.	U	
75-27-4	Bromodichloromethane	10.	U	sgm 9/7/94
78-87-5	1,2-Dichloropropane	10.	U	
10061-01-5	cis-1,3-Dichloropropene	10.	U	
79-01-6	Trichloroethene	10.	U	
124-48-1	Dibromochloromethane	10.	U	
79-00-5	1,1,2-Trichloroethane	10.	U	
71-43-2	Benzene	10.	U	
10061-02-6	trans-1,3-Dichloropropene	10.	U	
75-25-2	Bromoform	10.	U	
108-10-1	4-Methyl-2-pentanone	10.	U	
591-78-6	2-Hexanone	10.	U	
127-18-4	Tetrachloroethene	10.	U	
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	
108-88-3	Toluene	0.5 ~~10.~~	~~U~~ J	MQL=0.5
108-90-7	Chlorobenzene	10.	U	
100-41-4	Ethylbenzene	10.	U	sgm 9/7/94
100-42-5	Styrene	10.	U	
133-02-7	Xylene (total)	10.	U	

FORM I VOA sgm 9/07/94 3/90

056

WHC-SD-WM-DP-068, REV. 0

QUANT REPORT

Operator ID: JOY 6/6/94
Output File: ^AE09D::D2
Data File: >AE09D::D5
Name: VBLK08
Misc: 10UL OF ISTD & SMC

Quant Rev: 7
Quant Time: 940509 10:28
Injected at: 940509 09:56
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10

WHC-SD-WM-DP-068, REV. 0

Last Qcal Time: 940509 08:27

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.08	128.0	114052	50.00	UG/L	83
8)	ACETONE	2.53	43.0	2718M	9.84	UG/L	85
~~12)~~	~~2-BUTANONE~~	5.88	43.0	451M	1.19	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.24	65.0	158163	45.76	UG/L	94
16)	*1,4-DIFLUOROBENZENE	8.28	114.0	451662	50.00	UG/L	89
29)	*CHLOROBENZENE-d5	13.93	117.0	376156	50.00	UG/L	94
31)	TOLUENE-d8	11.05	98.0	394221	47.50	UG/L	95
~~32)~~	~~TOLUENE~~	11.19	91.0	427	.0470	UG/L	92
39)	BROMOFLUOROBENZENE	16.49	95.0	295015	47.05	UG/L	97

* Compound is ISTD

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: WHC PAL Contract: WHC-SD-WM-DP-068, REV. 0

Lab Code: Case No.: SAS No.: SDG No.: R5185

Lab File ID (Standard): >AE09B Date Analyzed: 5/09/94

Instrument ID: 70 2 Time Analyzed: 8:27

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	115656.	6.08	452565.	8.29	367593.	13.91
	UPPER LIMIT	231312.	6.58	905130.	8.79	735186.	14.41
	LOWER LIMIT	57828.	5.58	226282.	7.79	183797.	13.41
	EPA SAMPLE NO.						
01	VBLK08	114052.	6.08	451662.	8.28	376156.	13.93
02	R5192	108482.	6.10	428986.	8.31	340013.	13.92
03	R5193	108734.	6.10	424536.	8.30	353012.	13.92
04	R5194	103938.	6.10	457618.	8.29	379579.	13.94
05	R5195	110429.	6.09	440295.	8.29	363543.	13.92
06	R5200	110635.	6.11	447820.	8.30	373429.	13.92
07	R5200MS	107994.	6.11	444395.	8.32	363422.	13.92
08	R5200MSD	53620.*	6.12	221795.*	8.32	171083.*	13.92
09	R5196	110498.	6.12	440957.	8.30	372561.	13.92
10	R5197	111109.	6.11	446799.	8.32	374263.	13.93
11	R5198	108299.	6.13	441832.	8.33	370123.	13.95
12	R5199	113468.	6.09	458079.	8.29	386329.	13.93
13	R5201 RRQRS	52837.*	6.02	218637.*	8.26	168627.*	13.93
14	agm 9/7/94						
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

agm 9/07/94

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits

Los Alamos Technical Associates, Inc.

8633 Gage Blvd. / Kennewick, WA 99336 / Telephone (509) 783-4369 / FAX (509) 783-9661

August 23, 1994

INFORMATION ONLY COPY

AUG 1994
RECEIVED
TQO

Karl Pool
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Dear Karl,

Attached is the data validation report for analytical results for 300A Solvent Evaporator (SDG B0BQQ1-TMA-759). The package was received by Los Alamos Technical Associates on July 18, 1994. Validation of this package began on July 26th, and was completed on August 10, 1994.

If you have any questions, please let me know.

Sincerely,

Janet M. Jones
Senior Environmental Engineer

cc: Chris Haecker, LATA
VW402.25 file

RECEIVED
AUG 23 1994
VALIDATION DOCUMENTATION
SDLA

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TQD

DATA VALIDATION REPORT
for
300A Solvent Evaporator
SDG B0BQQ1-TMA-759
LATA VW402.25

RECEIVED
AUG 23 1994
VALIDATION DOCUMENTATION
SDLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

August 23, 1994

Table of Contents

Data Validation Narrative 2
- INTRODUCTION 2
- ANALYSES REQUESTED 2
- DATA QUALITY OBJECTIVES 2
- MAJOR DEFICIENCIES (REJECTED DATA) 3
- MINOR DEFICIENCIES 3
- REFERENCES 5
- DATA VALIDATION APPLIED QUALIFIERS 6
- LABORATORY APPLIED QUALIFIERS 7

Data Qualification Summary 9

Data Summary Tables 11

Sample Results 17

Checklist 66

Laboratory Case Narratives 113

Chain-of-Custody Information 117

VEDD Printout 124

300A Solvent Evaporator
Data Validation Narrative

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INTRODUCTION

All samples in Sample Delivery Group (SDG) BOBQQ1-TMA-759 were validated at level "D" as defined in the Data Validation Procedures for Chemical Analysis (WHC-SD-EN-SPP-002) and/or Data Validation Procedures for Radiochemical Analyses (WHC-SD-EN-SPP-001).

The data package was received by Los Alamos Technical Associates (LATA) on July 18, 1994. Validation began on July 26, 1994 and was completed on August 10, 1994.

The chemical analyses were performed by TMA. The radiochemical analyses were performed by TMA.

ANALYSES REQUESTED

Two (2) soil samples numbered BOBQQ1 and BOBQR7 were collected on April 27, 1994 and May 2, 1994, respectively. Fourteen (14) other (concrete) samples numbered BOBQQ2, BOBQQ3, BOBQQ4, BOBQQ5, BOBQQ6, BOBQQ7, BOBQQ8, BOBQQ9, BOBQR0, BOBQR1, BOBQR2, BOBQR3, BOBQR4, and BOBQR5 were collected on April 27-28, 1994. All samples were collected by WHC and transferred to TMA for analysis. The following determinations were performed:

Metals:	ICP-TAL (+ Zirconium)	Method 6010
	AA Metals (Lead)	Method 7421
Anions (Br)		Method 300.0
Total Uranium		Method EA-01C

With consent from Technical Representative the lab proceeded with the analyses. All data were reported for the above sample with the HEIS Number that was entered on the Sample Analysis Request/sample container. The Record of Disposition is included in the chain of custody section.

DATA QUALITY OBJECTIVES

The data quality objectives for 300A Solvent Evaporator are specified in *The 300 Area Solvent Evaporator Analytes and Performance Standards* (DOE/RL 88-08, Rev. 3A). Precision, accuracy, and detection limit requirements for the project have been derived from the Third Edition of SW-846 (EPA, 1992). Maximum holding times are listed in the 3rd Edition, Final Update I of SW-846 (EPA, July 1992).

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The primary objective of the data validation effort was to ensure these data quality objectives were met, and that the data are usable and defensible. This was accomplished through a detailed examination of the data package to recreate the analytical process and verify that proper and acceptable analytical techniques had been applied. The data package was checked for correct submission of required deliverables, correct transcription of raw data to the summary forms, and for proper calculation of a number of parameters. Data qualifiers are assigned to any results that have been determined to be deficient. These are discussed below.

Precision	Goals for precision were met with the exception of those items discussed under "MINOR DEFICIENCIES".
Accuracy	Goals for accuracy were met.
Sample Result Verification	All sample results were supported in the raw data.
Detection Limits	Detection limit goals were met for all sample results as specified in the work plan.
Completeness	The data package was complete for all requested analyses. This results in a completeness of 100% which meets the work plans objectives.

Data qualifiers are assigned to any results that have been determined to be deficient. These are discussed below.

MAJOR DEFICIENCIES (REJECTED DATA)

The following major deficiencies resulted in the qualification of the results as unusable.

- No major deficiencies were observed.

MINOR DEFICIENCIES

INFORMATION ONLY COPY

The following minor deficiencies were discovered. These minor shortcomings are not expected to significantly affect the overall quality of the data.

METALS

- Matrix spike and/or matrix spike duplicate recoveries were outside acceptance criteria for all samples for cadmium, lead, nickel, antimony, barium, chromium, cobalt, copper, manganese, and zinc. The results for the analytes were qualified as estimated (J/UJ/BJ).

- The serial dilution percent difference is outside acceptance criteria for all concrete samples for chromium, nickel, iron, manganese, magnesium, sodium, and zinc. The results for these anlaytes were qualified estimated (J/UJ).

- The serial dilution percent differences is outside acceptance criteria for the soil samples for iron. The results were qualified estimated (J).

- There was no laboratory control standard for zirconium in this batch number. The results were qualified estimated (J/UJ).

- Sample results for samples BOBQQ1, and BOBQR7 were qualified non-detect (U) for barium, cadmium, chromium, vanadium, copper, magnesium, and zinc due to positive calibration blank contamination.

- Sample results for samples BOBQQ2, BOBQQ4, BOBQR0, and BOBQR3 were qualified non-detect (U) for antimony due to positive preparation blank contamination.

- Sample results for samples BOBQQ1, and BOBQR7 were qualified estimated (UJ) for cobalt and sodium due to negative calibration blank contamination.

INFORMATION ONLY COPY

REFERENCES

EPA July 1992, *Test Methods for Evaluating Solid Waste (SW-846)*, Third Edition; U.S. Environmental Protection Agency, Washington, D.C.

WHC 1993, *Data Validation Procedures for Chemical Analyses*, WHC-SD-EN-SPP-002, Rev. 2, Westinghouse Hanford Company, Richland, Washington.

WHC 1993, *Data Validation Procedures for Radiochemical Analyses*, WHC-SD-EN-SPP-001, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

DOE/RL 1991, *The 300 Area Solvent Evaporator Analytes and Performance Standards*, DOE-RL-88-08, Rev. 3A, U. S. Department of Energy-Hanford, Richland, Washington.

DATA VALIDATION APPLIED QUALIFIERS

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows.

U- Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ- Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a QC deficiency identified during data validation, the associated quantitation limit is an estimate.

J- Indicates the compound or analyte was analyzed for and detected. The associated concentration is an estimate, but the data are usable for decision making purposes.

BJ- Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R- Indicates the compound or analyte was analyzed for, detected, and due to an identified QC deficiency the data are unusable.

UR- Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data are unusable due to an identified QC deficiency.

JN- Indicates a tentatively identified compound (TIC) that has been determined to be valid in terms of identification and quantitation.

UJN- Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

NJ- Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific application (i.e., usable for decision making purposes).

N- Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision making purposes).

LABORATORY APPLIED QUALIFIERS

Qualifiers which may be applied by the laboratory in compliance with applicable requirements are as follows.

Organic Data Qualifiers

U- Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

J- Indicates an estimated value. This flag is used when estimating concentrations of tentatively identified compounds (TICs) or when the presence of a TCL compound is confirmed at a concentration of less than the CRQL but greater than the IDL.

N- Indicates presumptive evidence of a compound. This flag is used only by the laboratory for TIC results when the identification is based on a mass spectral library search.

P- This flag is used for pesticide/Aroclor target analytes when there is greater than 25% difference for detected values between the quantitation and confirmation GC columns. The lower of the two concentrations is reported on the report form and the result is flagged with a "P".

C- This flag applies to pesticide results where the identification has been confirmed by GC/MS. This flag should not be used by the laboratory if GC/MS confirmation was attempted but unsuccessful, in which case, the laboratory should use an "X" flag as defined below. The "X" flag is then defined in the SDG narrative.

B- This flag applies to results in which the analyte was detected in both the sample and the associated blank. The combination of the "B" flag with the "U" flag ("BU" or "UB") is expressly prohibited in the analytical SOW.

E- This flag identifies compounds whose concentrations exceed the calibrated range of the GC/MS instrument.

D- This flag identifies compounds identified in an analysis at a secondary dilution factor.

A- Indicates a TIC which is a suspected aldol-condensate product.

X- This is a non-specific flag used to properly define the results. If used, this flag must be properly defined within the body of the SDG.

LABORATORY APPLIED QUALIFIERS

Inorganic Qualifiers

U- Indicates the analyte was analyzed for but not detected in the sample.

B- Indicates the analyte concentration is less than the CRDL but greater than the IDL.

E- Indicates the value reported is estimated due to the presence of interference.

M- Indicates duplicate injection precision criteria were not met during graphite furnace (GFAA) analysis.

N- Indicates spiked sample recovery was not within the control limits.

S- Indicates the reported value was determined by the Method of Standard Additions (MSA).

W- Indicates post-digestion spike for GFAA analysis is outside control limits and the sample absorbance is less than 50% of the spike absorbance.

*- Indicates duplicate analysis was not within control limits.

+- Indicates the correlation coefficient (r) for the MSA was less than 0.995.

Data Qualification Summary

DATA QUALIFICATION SUMMARY

SDG: B0BQQ1-TMA-759			
Analyte	**Qualifier**	**Samples Affected**	**Reasons**
Zirconium	J/UJ	All	No Laboratory Control Standard run
Cadmium Lead Nickel	J/UJ	All	Matrix spike 30 - 75% recovery
Antimony Barium Chromium Cobalt Copper Manganese Zinc	J/UJ/BJ	All	Matrix spike/matrix spike duplicate 30 - 75% recovery
Cobalt Sodium	UJ	B0BQQ1, B0BQR7	Negative calibration blank contamination
Barium Cadmium Chromium Copper Magnesium Vanadium Zinc	U	B0BQQ1, B0BQR7	Positive calibration blank contamination
Antimony	U	B0BQQ2, B0BQQ4, B0BQR0, B0BQR3	Positive preparation blank contamination
Chromium Iron Magnesium Manganese Sodium Zinc Nickel	J/UJ/BJ	BOBQQ2, QQ3, QQ4, QQ5, QQ6, QQ7, QQ8, QQ9, QR0, BOBQR1, QR2, QR3, QR4, QR5	Serial dilution %D>10
Iron	J	QQ1, QR7	Serial dilution %D>10

entered by: CMD
date: 9/28/94

QTMA759.XLS, DQS TMA759

checked by:
date: 9-28-94

00001D

Data Summary Tables

METALS DATA SUMMARY

FILE #:VW402.25		HEIS #:	B0BQQ1		B0BQQ2		B0BQQ3		B0BQQ4	
		Date:	27-Apr-94		27-Apr-94		27-Apr-94		27-Apr-94	
		Matrix:	SOIL		OTHER		OTHER		OTHER	
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q
Aluminum	7429-90-5	mg/kg	73.7		6790		8420		8460	
Antimony	7440-36-0	mg/kg	1.4	UJ	3.1	UJ	1.5	UJ	1.9	UJ
Barium	7440-39-3	mg/kg	0.4	UJ	244	J	256	J	217	J
Beryllium	7440-41-7	mg/kg	0.04	U	0.36	B	0.39	B	0.33	B
Cadmium	7440-43-9	mg/kg	0.11	UJ	1.0	J	0.11	UJ	0.55	UJ
Calcium	7440-70-2	mg/kg	17.3	U	115000		119000		103000	
Chromium	7440-47-3	mg/kg	0.34	UJ	12.0	J	15.0	J	12.3	J
Cobalt	7440-48-4	mg/kg	0.21	UJ	6.6	J	11.7	J	16.2	J
Copper	7440-50-8	mg/kg	0.59	UJ	17.4	J	25.9	J	24.2	J
Iron	7439-89-6	mg/kg	112	J	11600	J	17400	J	14900	J
Lead	7439-92-1	mg/kg	0.44	UJ	2.4	J	3.5	J	5.1	J
Magnesium	7439-95-4	mg/kg	6.8	UJ	2920	J	3050	J	3400	J
Manganese	7439-96-5	mg/kg	0.55	UJ	175	J	184	J	266	J
Nickel	7440-02-0	mg/kg	0.64	UJ	9.0	J	9.7	J	9.5	J
Potassium	7440-09-7	mg/kg	7.6	U	774		665		797	
Silver	7440-22-4	mg/kg	0.35	U	0.36	U	0.36	U	0.38	U
Sodium	7440-23-5	mg/kg	20.3	UJ	410	BJ	317	BJ	495	BJ
Vanadium	7440-62-2	mg/kg	0.22	U	39.2		37.2		38.7	
Zinc	7440-66-6	mg/kg	2.7	UJ	65.4	J	49.3	J	58.2	J
Zirconium	7440-67-7	mg/kg	8.6	UJ	25.7	J	29.3	J	26.0	J

FILE #:VW402.25		HEIS #:	B0BQQ5		B0BQQ6		B0BQQ7		B0BQQ8	
		Date:	27-Apr-94		27-Apr-94		27-Apr-94		28-Apr-94	
		Matrix:	OTHER		OTHER		OTHER		OTHER	
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q
Aluminum	7429-90-5	mg/kg	8430		7040		8940		7940	
Antimony	7440-36-0	mg/kg	1.5	UJ	1.5	UJ	1.6	UJ	1.6	UJ
Barium	7440-39-3	mg/kg	224	J	212	J	246	J	177	J
Beryllium	7440-41-7	mg/kg	0.39	B	0.33	B	0.36	B	0.40	B
Cadmium	7440-43-9	mg/kg	0.30	UJ	0.40	UJ	0.15	UJ	0.16	UJ
Calcium	7440-70-2	mg/kg	103000		94600		114000		89900	
Chromium	7440-47-3	mg/kg	13.2	J	12.0	J	13.0	J	11.8	J
Cobalt	7440-48-4	mg/kg	6.4	J	12.8	J	5.9	J	16.4	J
Copper	7440-50-8	mg/kg	18.4	J	60.2	J	19.8	J	16.2	J
Iron	7439-89-6	mg/kg	13800	J	12700	J	12700	J	14100	J
Lead	7439-92-1	mg/kg	3.5	J	5.0	J	3.4	J	3.3	J
Magnesium	7439-95-4	mg/kg	3280	J	3170	J	3450	J	3170	J
Manganese	7439-96-5	mg/kg	173	J	162	J	175	J	191	J
Nickel	7440-02-0	mg/kg	8.3	J	10.1	J	7.6	J	8.6	J
Potassium	7440-09-7	mg/kg	657		756		689		1250	
Silver	7440-22-4	mg/kg	0.38	U	0.37	U	0.38	U	0.39	U
Sodium	7440-23-5	mg/kg	326	BJ	571	J	372	BJ	849	J
Vanadium	7440-62-2	mg/kg	36.7		39.0		35.7		40.2	
Zinc	7440-66-6	mg/kg	41.8	J	63.7	J	39.9	J	37.7	J
Zirconium	7440-67-7	mg/kg	25.5	J	21.6	J	23.0	J	22.5	J

Shaded areas indicate
changes by the validator
40225TBL.XLS

entered by: CMB
date: 9/28/94

checked by: [illegible]
date: 5-26-94

METALS DATA SUMMARY

FILE #:VW402.25		HEIS #:	B0BQQ9		B0BQR0		B0BQR1		B0BQR2	
		Date:	28-Apr-94		27-Apr-94		27-Apr-94		27-Apr-94	
		Matrix:	OTHER		OTHER		OTHER		OTHER	
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q
Aluminum	7429-90-5	mg/kg	7720		8570		7790		7310	
Antimony	7440-36-0	mg/kg	1.5	UJ	1.7	UJ	1.5	UJ	1.6	UJ
Barium	7440-39-3	mg/kg	163	J	117	J	165	J	151	J
Beryllium	7440-41-7	mg/kg	0.35	B	0.32	B	0.34	B	0.35	B
Cadmium	7440-43-9	mg/kg	0.11	UJ	0.12	UJ	0.11	UJ	0.12	UJ
Calcium	7440-70-2	mg/kg	78300		89200		100000		73300	
Chromium	7440-47-3	mg/kg	10.5	J	12.8	J	14.8	J	10.1	J
Cobalt	7440-48-4	mg/kg	6.8	J	7.1	J	9.7	J	12.2	J
Copper	7440-50-8	mg/kg	16.2	J	33.2	J	42.6	J	38.3	J
Iron	7439-89-6	mg/kg	12900	J	13900	J	13800	J	15600	J
Lead	7439-92-1	mg/kg	3.4	J	3.9	J	4.8	J	3.2	J
Magnesium	7439-95-4	mg/kg	3230	J	4710	J	4330	J	3720	J
Manganese	7439-96-5	mg/kg	178	J	189	J	258	J	198	J
Nickel	7440-02-0	mg/kg	6.1	J	7.6	J	10.6	J	7.3	J
Potassium	7440-09-7	mg/kg	1070		817		955		941	
Silver	7440-22-4	mg/kg	0.36	U	0.39	U	0.51	B	0.38	U
Sodium	7440-23-5	mg/kg	514	J	655	J	744	J	524	J
Vanadium	7440-62-2	mg/kg	34.5		34.5		36.3		37.8	
Zinc	7440-66-6	mg/kg	31.3	J	47.3	J	47.2	J	55.0	J
Zirconium	7440-67-7	mg/kg	26.2	J	18.3	J	90.8	J	43.4	J

FILE #:VW402.25		HEIS #:	B0BQR3		B0BQR5		B0BQR7		B0BQR4	
		Date:	28-Apr-94		28-Apr-94		2-May-94		28-Apr-94	
		Matrix:	OTHER		OTHER		SOIL		OTHER	
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q
Aluminum	7429-90-5	mg/kg	6850		8220		82.5		8060	
Antimony	7440-36-0	mg/kg	3.4	UJ	1.5	UJ	1.5	UJ	1.5	UJ
Barium	7440-39-3	mg/kg	200	J	227	J	0.45	UJ	203	J
Beryllium	7440-41-7	mg/kg	0.30	B	0.31	B	0.04	U	0.33	B
Cadmium	7440-43-9	mg/kg	0.14	UJ	0.12	UJ	0.11	UJ	1.1	J
Calcium	7440-70-2	mg/kg	79000		96300		17.5	U	97100	
Chromium	7440-47-3	mg/kg	12.0	J	9.4	J	0.62	UJ	16.4	J
Cobalt	7440-48-4	mg/kg	6.4	J	6.1	J	0.21	UJ	7.2	J
Copper	7440-50-8	mg/kg	15.9	J	15.1	J	0.57	UJ	29.3	J
Iron	7439-89-6	mg/kg	14700	J	12900	J	162	J	13300	J
Lead	7439-92-1	mg/kg	3.2	J	4.1	J	0.46	UJ	3.1	J
Magnesium	7439-95-4	mg/kg	3380	J	3550	J	8.0	UJ	3710	J
Manganese	7439-96-5	mg/kg	170	J	194	J	0.65	UJ	215	J
Nickel	7440-02-0	mg/kg	9.7	J	6.8	J	0.64	UJ	9.6	J
Potassium	7440-09-7	mg/kg	738		839		19.1	B	1520	
Silver	7440-22-4	mg/kg	0.37	U	0.38	U	0.36	U	0.37	U
Sodium	7440-23-5	mg/kg	324	UJ	500	UJ	15.3	UJ	769	J
Vanadium	7440-62-2	mg/kg	38.6		34		0.30	J	36.5	
Zinc	7440-66-6	mg/kg	28.9	J	51.1	J	2.8	UJ	43.1	J
Zirconium	7440-67-7	mg/kg	12.9	J	22.3	J	8.7	UJ	18.7	J

Shaded areas indicate
changes by the validator
40225TBL.XLS

entered by: [illegible]
date: 9-26-94

checked by: [illegible]
date: 9/28/94

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FOR PAGINATION PURPOSES

GENERAL CHEMISTRY DATA SUMMARY TABLE

FILE #:VW402.25		HEIS #:	B0BQQ1		B0BQQ2		B0BQQ3		B0BQQ4	
		Date:	27-Apr-94		27-Apr-94		27-Apr-94		27-Apr-94	
		Matrix:	SOIL		OTHER		OTHER		OTHER	
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q
Bromide	24959-67-9	mg/kg	2.5	U	8.7	U	9.4	U	9.3	U

FILE #:VW402.25		HEIS #:	B0BQQ5		B0BQQ6		B0BQQ7		B0BQQ8	
		Date:	27-Apr-94		27-Apr-94		27-Apr-94		28-Apr-94	
		Matrix:	OTHER		OTHER		OTHER		OTHER	
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q
Bromide	24959-67-9	mg/kg	9.0	U	9.5	U	8.5	U	9.7	U

FILE #:VW402.25		HEIS #:	B0BQQ9		B0BQR0		B0BQR1		B0BQR2	
		Date:	28-Apr-94		27-Apr-94		27-Apr-94		27-Apr-94	
		Matrix:	OTHER		OTHER		OTHER		OTHER	
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q
Bromide	24959-67-9	mg/kg	9.7	U	9.7	U	9.7	U	9.6	U

FILE #:VW402.25		HEIS #:	B0BQR3		B0BQR4		B0BQR5		B0BQR7	
		Date:	28-Apr-94		28-Apr-94		28-Apr-94		2-May-94	
		Matrix:	OTHER		OTHER		OTHER		SOIL	
Constituent	CAS #	Units	Results	Q	Results	Q	Results	Q	Results	Q
Bromide	24959-67-9	mg/kg	8.7	U	9.4	U	9.3	U	2.5	U

Shaded areas indicate changes by the validator.
40225TBL.XLS, TBLGNC

RADCHEM DATA SUMMARY TABLE

FILE #:VW402.25		HEIS #:	B0BQQ1			B0BQQ2			B0BQQ3			B0BQQ4		
		Date:	27-Apr-94			27-Apr-94			27-Apr-94			27-Apr-94		
		Matrix:	SOIL			OTHER			OTHER			OTHER		
Constituent	CAS #	Units	Results	Q	MDA	Results	Q	MDA	Results	Q	MDA	Results	Q	MDA
Total Uranium	7440-61-1	pCi/g	0.20		0.004	5.8		0.04	6.1		0.04	4.4		0.04

FILE #:VW402.25		HEIS #:	B0BQQ5			B0BQQ6			B0BQQ7			B0BQQ8		
		Date:	27-Apr-94			27-Apr-94			27-Apr-94			28-Apr-94		
		Matrix:	OTHER			OTHER			OTHER			OTHER		
Constituent	CAS #	Units	Results	Q	MDA	Results	Q	MDA	Results	Q	MDA	Results	Q	MDA
Total Uranium	7440-61-1	pCi/g	2.2		0.4	16.0		0.4	2.2		0.04	3.5		0.04

FILE #:VW402.25		HEIS #:	B0BQQ9			B0BQR0			B0BQR1			B0BQR2		
		Date:	28-Apr-94			27-Apr-94			27-Apr-94			27-Apr-94		
		Matrix:	OTHER			OTHER			OTHER			OTHER		
Constituent	CAS #	Units	Results	Q	MDA	Results	Q	MDA	Results	Q	MDA	Results	Q	MDA
Total Uranium	7440-61-1	pCi/g	16.0		0.4	1.9		0.04	8.0		0.04	8.5		0.04

FILE #:VW402.25		HEIS #:	B0BQR3			B0BQR4			B0BQR5			B0BQR7		
		Date:	28-Apr-94			28-Apr-94			28-Apr-94			2-May-94		
		Matrix:	OTHER			OTHER			OTHER			SOIL		
Constituent	CAS #	Units	Results	Q	MDA	Results	Q	MDA	Results	Q	MDA	Results	Q	MDA
Total Uranium	7440-61-1	pCi/g	1.3		0.04	5.9		0.04	9.7		0.04	0.16		0.004

shaded area means a change by the validator

entered by: MAP date: 8/23/94 TMA758.XLS checked by: JM 8/23/94

Sample Results (Form I's)

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 808QQ1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 808QQ1

Matrix (soil/water): SOIL Lab Sample ID: S40516S-01 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 99.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	73.7			P	
7440-36-0	Antimony	1.4	~~U~~	N	P	UJ
7440-39-3	Barium	0.40	~~B~~	N	P	UJ
7440-41-7	Beryllium	0.04	~~U~~		P	U - lab qualifier
7440-43-9	Cadmium	0.11	~~U~~	N	P	UJ
7440-70-2	Calcium	17.3	~~U~~		P	U
7440-47-3	Chromium	0.34	~~B~~	NE	P	UJ
7440-48-4	Cobalt	0.21	~~U~~	N	P	UJ
7440-50-8	Copper	0.59	~~B~~	N	P	UJ
7439-89-6	Iron	112		E	P	J
7439-92-1	Lead	0.44	~~U~~	N	F	~~U~~ J
7439-95-4	Magnesium	6.8	~~B~~	E	P	UJ
7439-96-5	Manganese	0.55	~~B~~	NE	P	UJ
7440-02-0	Nickel	0.64	~~U~~	NE	P	UJ
7440-09-7	Potassium	7.6	~~U~~		P	U
7440-22-4	Silver	0.35	~~U~~		P	U
7440-23-5	Sodium	20.3	~~B~~	E	P	UJ
7440-62-2	Vanadium	0.22	~~U~~		P	U
7440-66-6	Zinc	2.7	~~U~~	NE	P	UJ
7440-67-7	Zirconium	8.6	~~U~~		P	UJ

The qualifier should be a (J) 9/21/94

Color Before: WHITE Clarity Before: Texture: FINE

Color After: WHITE Clarity After: Artifacts: YES

Comments:
SAND

7-27-94

002

FORM I - IN ILM02.1

SAMPLE NUMBER:

808002

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B08Q01

Matrix (soil/water): SOIL Lab Sample ID: S405165-03 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 96.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	6790			P	
7440-36-0	Antimony	3.1	B	N	P	UJ
7440-39-3	Barium	244		N	P	J
7440-41-7	Beryllium	0.36	B		P	UB= Lab qual 7-28-94
7440-43-9	Cadmium	1.0	B	N	P	J
7440-70-2	Calcium	115000			P	
7440-47-3	Chromium	12.0		NE	P	J
7440-48-4	Cobalt	6.6	B	N	P	J
7440-50-8	Copper	17.4		N	P	J
7439-89-6	Iron	11600		E	P	J
7439-92-1	Lead	2.4		N	F	J
7439-95-4	Magnesium	2920		E	P	J
7439-96-5	Manganese	175		NE	P	J
7440-02-0	Nickel	9.0		NE	P	J
7440-09-7	Potassium	774			P	
7440-22-4	Silver	0.36	B		P	U
7440-23-5	Sodium	410	B	E	P	B BJ 8/23/94
7440-62-2	Vanadium	39.2			P	
7440-66-6	Zinc	65.4		NE	P	J
7440-67-7	Zirconium	25.7			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7-21-94 Artifacts: YES

Comments:
GRAVEL

003

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 80BQQ3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 80BQQ1

Matrix (soil/water): SOIL Lab Sample ID: S405165-04 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 97.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8420			P	
7440-36-0	Antimony	1.5	B	N	P	UJ
7440-39-3	Barium	256		N	P	J
7440-41-7	Beryllium	0.39	B		P	UB= Lab qual [illegible] 9-28-94
7440-43-9	Cadmium	0.11	B	N	P	UJ
7440-70-2	Calcium	119000			P	
7440-47-3	Chromium	15.0		NE	P	J
7440-48-4	Cobalt	11.7	B	N	P	J
7440-50-8	Copper	25.9		N	P	J
7439-89-6	Iron	17400		E	P	J
7439-92-1	Lead	3.5		N	F	J
7439-95-4	Magnesium	3050		E	P	J
7439-96-5	Manganese	184		NE	P	J
7440-02-0	Nickel	9.7		N	P	J
7440-09-7	Potassium	665			P	
7440-22-4	Silver	0.36	B		P	U
7440-23-5	Sodium	317	B	E	P	~~ZT~~ BJ [illegible] 8/23/94
7440-62-2	Vanadium	37.2			P	
7440-66-6	Zinc	49.3		NE	P	J
7440-67-7	Zirconium	29.3			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: Artifacts: YES

Comments:
GRAVEL

[illegible] 7-27-94

004

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 808Q04

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 808Q1

Matrix (soil/water): SOIL Lab Sample ID: S405165-05 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 94.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8460			P	
7440-36-0	Antimony	1.9	~~B~~	N	P	UJ
7440-39-3	Barium	217		N	P	J
7440-41-7	Beryllium	0.33	~~B~~		P	~~U~~ B=Lab qual 9-28-94
7440-43-9	Cadmium	0.55	~~B~~	N	P	UJ
7440-70-2	Calcium	103000			P	
7440-47-3	Chromium	12.3		NE	P	J
7440-48-4	Cobalt	16.2		N	P	J
7440-50-8	Copper	24.2		N	P	J
7439-89-6	Iron	14900		E	P	J
7439-92-1	Lead	5.1		N	P	J
7439-95-4	Magnesium	3400		E	P	J
7439-96-5	Manganese	266		NE	P	J
7440-02-0	Nickel	9.5		N	P	J
7440-09-7	Potassium	797			P	
7440-22-4	Silver	0.38	~~B~~		P	U
7440-23-5	Sodium	495	~~B~~	E	P	~~J~~ BJ 8/23/94
7440-62-2	Vanadium	38.7			P	
7440-66-6	Zinc	58.2		NE	P	J
7440-67-7	Zirconium	26.0			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7.27.94 Artifacts: YES

Comments:
GRAVEL

005

SAMPLE NUMBER:

B0BQQ5

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Matrix (soil/water): SOIL Lab Sample ID: S405165-06 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 94.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8430			P	
7440-36-0	Antimony	1.5	~~U~~	N	P	UJ
7440-39-3	Barium	224		N	P	J
7440-41-7	Beryllium	0.39	~~B~~		P	~~J~~ B lab qualifier 9-25-94
7440-43-9	Cadmium	0.30	~~B~~	N	P	UJ
7440-70-2	Calcium	103000			P	
7440-47-3	Chromium	13.2		NE	P	J
7440-48-4	Cobalt	6.4	~~U~~	N	P	J
7440-50-8	Copper	18.4		N	P	J
7439-89-6	Iron	13800		E	P	J
7439-92-1	Lead	3.5		N	P	J
7439-95-4	Magnesium	3280		E	P	J
7439-96-5	Manganese	173		NE	P	J
7440-02-0	Nickel	8.3		NE	P	J
7440-09-7	Potassium	657			P	
7440-22-4	Silver	0.38	~~U~~		P	U
7440-23-5	Sodium	326	~~B~~	E	P	~~J~~ BJ 8/23/94
7440-62-2	Vanadium	36.7			P	
7440-66-6	Zinc	41.8		NE	P	J
7440-67-7	Zirconium	25.5			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7-27-94 Artifacts: YES

Comments:
GRAVEL

006

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B0BQQ6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Matrix (soil/water): SOIL Lab Sample ID: S405165-07 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 96.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7040			P	
7440-36-0	Antimony	1.5		N	P	UJ
7440-39-3	Barium	212		N	P	J
7440-41-7	Beryllium	0.33	B		P	B lab qualifier 9.28.94
7440-43-9	Cadmium	0.40	B	N	P	UJ
7440-70-2	Calcium	94600			P	
7440-47-3	Chromium	12.0		NE	P	J
7440-48-4	Cobalt	12.8		N	P	J
7440-50-8	Copper	60.2		N	P	J
7439-89-6	Iron	12700		E	P	J
7439-92-1	Lead	5.0		N	P	J
7439-95-4	Magnesium	3170		E	P	J
7439-96-5	Manganese	162		NE	P	J
7440-02-0	Nickel	10.1		NE	P	J
7440-09-7	Potassium	756			P	
7440-22-4	Silver	0.37	U		P	U
7440-23-5	Sodium	571		E	P	J
7440-62-2	Vanadium	39.0			P	
7440-66-6	Zinc	63.7		NE	P	J
7440-67-7	Zirconium	21.6			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7.27.94 Artifacts: YES

Comments:
GRAVEL

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 808Q07

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 808Q01

Matrix (soil/water): SOIL Lab Sample ID: S405165-08 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 94.5

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8940			P	
7440-36-0	Antimony	1.6	~~B~~	N	P	UJ
7440-39-3	Barium	246		N	P	J
7440-41-7	Beryllium	0.36	~~B~~		P	~~J~~ B lab qualifier. 9-28-94
7440-43-9	Cadmium	0.15	~~B~~	N	P	UJ
7440-70-2	Calcium	114000			P	
7440-47-3	Chromium	13.0		NE	P	J
7440-48-4	Cobalt	5.9	~~B~~	N	P	J
7440-50-8	Copper	19.8		N	P	J
7439-89-6	Iron	12700		E	P	J
7439-92-1	Lead	3.4		N	P	J
7439-95-4	Magnesium	3450		E	P	J
7439-96-5	Manganese	175		NE	P	J
7440-02-0	Nickel	7.6		NE	P	J
7440-09-7	Potassium	689			P	
7440-22-4	Silver	0.38	~~B~~		P	U
7440-23-5	Sodium	372	~~B~~	E	P	~~J~~ BJ 8/23/94
7440-62-2	Vanadium	35.7			P	
7440-66-6	Zinc	39.9		NE	P	J
7440-67-7	Zirconium	23.0			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: Artifacts: YES

Comments:
GRAVEL

7-27-94

008

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 808008

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 808001

Matrix (soil/water): SOIL Lab Sample ID: S405165-09 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 93.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7940			P	
7440-36-0	Antimony	1.6	~~B~~	N	P	UJ
7440-39-3	Barium	177		N	P	J
7440-41-7	Beryllium	0.40	~~B~~		P	UB lab qualifier 9-28-94
7440-43-9	Cadmium	0.16	~~B~~	N	P	~~UJ~~ BJ 9-28-94
7440-70-2	Calcium	89900			P	
7440-47-3	Chromium	11.8		NE	P	J
7440-48-4	Cobalt	16.4		N	P	J
7440-50-8	Copper	16.2		N	P	J
7439-89-6	Iron	14100		E	P	J
7439-92-1	Lead	3.3		N	P	J
7439-95-4	Magnesium	3170		E	P	J
7439-96-5	Manganese	191		NE	P	J
7440-02-0	Nickel	8.6		NE	P	J
7440-09-7	Potassium	1250			P	
7440-22-4	Silver	0.39	~~B~~		P	U
7440-23-5	Sodium	849		E	P	J
7440-62-2	Vanadium	40.2			P	
7440-66-6	Zinc	37.7		NE	P	J
7440-67-7	Zirconium	22.5			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: Artifacts: YES

7-27-94

Comments:
GRAVEL

009

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B0BQQ9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Matrix (soil/water): SOIL Lab Sample ID: S405165-10 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 97.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7720			P	
7440-36-0	Antimony	1.5	~~U~~	N	P	UJ
7440-39-3	Barium	163		N	P	J
7440-41-7	Beryllium	0.35	~~U~~		P	~~U~~ B lab qualifier 7-28-94
7440-43-9	Cadmium	0.11	~~U~~	N	P	UJ
7440-70-2	Calcium	78300			P	
7440-47-3	Chromium	10.5		NE	P	J
7440-48-4	Cobalt	6.0	~~U~~	N	P	J
7440-50-8	Copper	16.2		N	P	J
7439-89-6	Iron	12900		E	P	J
7439-92-1	Lead	3.4		N	P	J
7439-95-4	Magnesium	3230		E	P	J
7439-96-5	Manganese	178		NE	P	J
7440-02-0	Nickel	6.1		NE	P	J
7440-09-7	Potassium	1070			P	
7440-22-4	Silver	0.36	~~U~~		P	U
7440-23-5	Sodium	514		E	P	J
7440-62-2	Vanadium	34.5			P	
7440-66-6	Zinc	31.3		NE	P	J
7440-67-7	Zirconium	26.2			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7-27-94 Artifacts: YES

Comments:
GRAVEL

010

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 80BQR0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 80BQQ1

Matrix (soil/water): SOIL Lab Sample ID: S405165-11 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 92.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8570			P	
7440-36-0	Antimony	1.7	B	N	P	UJ
7440-39-3	Barium	117		N	P	J
7440-41-7	Beryllium	0.32	B		P	UB lab qualifier 7-28-94
7440-43-9	Cadmium	0.12	U	N	P	UJ
7440-70-2	Calcium	89200			P	
7440-47-3	Chromium	12.8		NE	P	J
7440-48-4	Cobalt	7.1	B	N	P	J
7440-50-8	Copper	33.2		N	P	J
7439-89-6	Iron	13900		E	P	J
7439-92-1	Lead	3.9		N	P	J
7439-95-4	Magnesium	4710		E	P	J
7439-96-5	Manganese	189		NE	P	J
7440-02-0	Nickel	7.6		NE	P	J
7440-09-7	Potassium	817			P	
7440-22-4	Silver	0.39	U		P	U
7440-23-5	Sodium	655		E	P	J
7440-62-2	Vanadium	34.5			P	
7440-66-6	Zinc	47.3		NE	P	J
7440-67-7	Zirconium	18.3			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: Artifacts: YES

Comments:
GRAVEL

7-27-94

011

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 808QR1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 808QQ1

Matrix (soil/water): SOIL Lab Sample ID: S405165-12 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 94.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7790			P	
7440-36-0	Antimony	1.5		N	P	UJ
7440-39-3	Barium	165		N	P	J
7440-41-7	Beryllium	0.34	B		P	B lab qualifier
7440-43-9	Cadmium	0.11		N	P	UJ
7440-70-2	Calcium	100000			P	
7440-47-3	Chromium	14.8		NE	P	J
7440-48-4	Cobalt	9.7		N	P	J
7440-50-8	Copper	42.6		N	P	J
7439-89-6	Iron	13800		E	P	J
7439-92-1	Lead	4.8		N	F	J
7439-95-4	Magnesium	4330		E	P	J
7439-96-5	Manganese	258		NE	P	J
7440-02-0	Nickel	10.6		N	P	J
7440-09-7	Potassium	955			P	
7440-22-4	Silver	0.51	B		P	B
7440-23-5	Sodium	744		E	P	J
7440-62-2	Vanadium	36.3			P	
7440-66-6	Zinc	47.2		NE	P	J
7440-67-7	Zirconium	90.8			P	J

Ag = B lab qualifier

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7-27-94 Artifacts: YES

Comments:
GRAVEL

012

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08QR2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B08Q01

Matrix (soil/water): SOIL Lab Sample ID: S405165-13 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 93.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7310			P	
7440-36-0	Antimony	1.6	~~U~~	N	P	UJ
7440-39-3	Barium	151		N	P	J
7440-41-7	Beryllium	0.35	B		P	B lab qualifier
7440-43-9	Cadmium	0.12	~~U~~	N	P	UJ
7440-70-2	Calcium	73300			P	
7440-47-3	Chromium	10.1		NE	P	J
7440-48-4	Cobalt	12.2	~~U~~	N	P	J
7440-50-8	Copper	38.3		N	P	J
7439-89-6	Iron	15600		E	P	J
7439-92-1	Lead	3.2		SN	F	J
7439-95-4	Magnesium	3720		E	P	J
7439-96-5	Manganese	198		NE	P	J
7440-02-0	Nickel	7.3		NE	P	J
7440-09-7	Potassium	941			P	
7440-22-4	Silver	0.38	~~U~~		P	U = lab qualifier
7440-23-5	Sodium	524	B	E	P	~~J~~ BJ 8/23/94
7440-62-2	Vanadium	37.8			P	
7440-66-6	Zinc	55.0		NE	P	J
7440-67-7	Zirconium	43.4			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7.27.94 Artifacts: YES

Comments:
GRAVEL

013

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B0BQR3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Matrix (soil/water): SOIL Lab Sample ID: S405165-14 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 95.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	6850			P	
7440-36-0	Antimony	3.4	B	N	P	UJ
7440-39-3	Barium	200		N	P	J
7440-41-7	Beryllium	0.30	B		P	~~J~~ D lab qualifier 9-27-94
7440-43-9	Cadmium	0.14	B	N	P	UJ
7440-70-2	Calcium	79000			P	
7440-47-3	Chromium	12.0		NE	P	J
7440-48-4	Cobalt	6.4	B	N	P	J
7440-50-8	Copper	15.9		N	P	J
7439-89-6	Iron	14700		E	P	J
7439-92-1	Lead	3.2		N	P	J
7439-95-4	Magnesium	3380		E	P	J
7439-96-5	Manganese	170		NE	P	J
7440-02-0	Nickel	9.7		NE	P	J
7440-09-7	Potassium	738			P	
7440-22-4	Silver	0.37	U		P	U
7440-23-5	Sodium	324	B	E	P	~~J~~ BJ 8/23/94
7440-62-2	Vanadium	38.6			P	
7440-66-6	Zinc	28.9		NE	P	J
7440-67-7	Zirconium	12.9			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7-27-94 Artifacts: YES

Comments:
GRAVEL

014

FORM I - IN ILM02.1

000030

SAMPLE NUMBER:

B0BQR5

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Matrix (soil/water): SOIL Lab Sample ID: S40S165-16 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 95.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8220			P	
7440-36-0	Antimony	1.5		N	P	UJ
7440-39-3	Barium	227		N	P	J
7440-41-7	Beryllium	0.31	B		P	B lab qualifier
7440-43-9	Cadmium	0.12	B	N	P	UJ
7440-70-2	Calcium	96300			P	
7440-47-3	Chromium	9.4		NE	P	J
7440-48-4	Cobalt	6.1		N	P	J
7440-50-8	Copper	15.1		N	P	J
7439-89-6	Iron	12900		E	P	J
7439-92-1	Lead	4.1		N	F	J
7439-95-4	Magnesium	3550		E	P	J
7439-96-5	Manganese	194		NE	P	J
7440-02-0	Nickel	6.8		NE	P	J
7440-09-7	Potassium	839			P	
7440-22-4	Silver	0.38			P	U
7440-23-5	Sodium	500	B	E	P	BJ 8/23/94
7440-62-2	Vanadium	34.0			P	
7440-66-6	Zinc	51.1		NE	P	J
7440-67-7	Zirconium	22.3			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: 7-27-94 Artifacts: YES

Comments:
GRAVEL

015

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B08QR7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B08QQ1

Matrix (soil/water): SOIL Lab Sample ID: S405165-02 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 99.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	82.5			P	
7440-36-0	Antimony	1.5	~~U~~	N	P	UJ
7440-39-3	Barium	0.45	~~B~~	N	P	UJ
7440-41-7	Beryllium	0.04	~~U~~		P	U lab qual Be 9-28-94
7440-43-9	Cadmium	0.11	~~U~~	N	P	UJ
7440-70-2	Calcium	17.5	~~U~~		P	U
7440-47-3	Chromium	0.62	~~B~~	NE	P	UJ
7440-48-4	Cobalt	0.21	~~U~~	N	P	UJ
7440-50-8	Copper	0.57	~~B~~	N	P	UJ
7439-89-6	Iron	162		E	P	J
7439-92-1	Lead	0.46	~~U~~	N	F	~~U~~J the qualifier should be a (J) AF 9/21/94
7439-95-4	Magnesium	8.0	~~B~~	E	P	UJ
7439-96-5	Manganese	0.65	~~B~~	NE	P	UJ
7440-02-0	Nickel	0.64	~~U~~	N E	P	UJ
7440-09-7	Potassium	19.1	~~B~~		P	U
7440-22-4	Silver	0.36	~~U~~		P	U
7440-23-5	Sodium	15.3	~~B~~	E	P	UJ
7440-62-2	Vanadium	0.30	~~B~~		P	U
7440-66-6	Zinc	2.8	~~U~~	NE	P	UJ
7440-67-7	Zirconium	8.7	~~U~~		P	UJ

Color Before: WHITE Clarity Before: Texture: FINE

Color After: WHITE Clarity After: Artifacts: YES

Comments:
SAND

7-27-94

016

FORM I - IN ILM02.1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08QR4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B08Q01

Matrix (soil/water): SOIL Lab Sample ID: S405165-15 S

Level (low/med): LOW Date Received: 05/19/94

% Solids: 96.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8060			P	
7440-36-0	Antimony	1.5	UJ	N	P	UJ
7440-39-3	Barium	203		N	P	J
7440-41-7	Beryllium	0.33	B		P	B lab qualifier
7440-43-9	Cadmium	1.1	U	N	P	J
7440-70-2	Calcium	97100			P	
7440-47-3	Chromium	16.4		NE	P	J
7440-48-4	Cobalt	7.2		N	P	J
7440-50-8	Copper	29.3		N	P	J
7439-89-6	Iron	13300		E	P	J
7439-92-1	Lead	3.1		N	P	J
7439-95-4	Magnesium	3710		E	P	J
7439-96-5	Manganese	215		NE	P	J
7440-02-0	Nickel	9.6		NE	P	J
7440-09-7	Potassium	1520			P	
7440-22-4	Silver	0.37	U		P	U
7440-23-5	Sodium	769		E	P	J
7440-62-2	Vanadium	36.5			P	
7440-66-6	Zinc	43.1		NE	P	J
7440-67-7	Zirconium	18.7			P	J

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: GREY Clarity After: Artifacts: YES

Comments:
GRAVEL

7-27-94

017

000009

Received: 05/16/94

TMA Inc. REPORT
Results by Sample

Work Order # A4-05-039

SAMPLE ID B0BQ01 FRACTION 01A TEST CODE WCCLPS NAME Anions in Solids
Date & Time Collected 04/27/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<2.5	mg/Kg.	2.5

No Qualifier AT 9/21/94

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0BQQ2 FRACTION 03A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<8.7	mg/Kg	8.7

No qualifier AS 9/21/94

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039 000012

Received: 05/16/94

Results by Sample

SAMPLE ID B0B003 FRACTION 04A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.4	mg/Kg	9.4

No qualifier AJ 9/21/94

FORM I

MW 7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0B004 FRACTION 05A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.3	mg/Kg	9.3

No qualifier 9/21/94

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94 Results by Sample

SAMPLE ID B0BQQ5 FRACTION 06A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.0	mg/Kg	9.0

No qualifier 9/21/94

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0BQQ6 FRACTION 07A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.5	mg/Kg	9.5

~~U~~ No qualifier JT 9/21/94

FORM I

MW 7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94 Results by Sample

SAMPLE ID B0BQQ7 FRACTION 08A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<8.5	mg/Kg	8.5

No qualifier 9/21/94

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0B008 FRACTION 09A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/28/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.7	mg/Kg	9.7

~~U~~ No qualifier 9/21/94 AT

FORM I

MW 7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0BQQ9 FRACTION 10A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/28/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.7	mg/Kg	9.7

No qualifier AS 9/21/94

FORM I

mo 7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID BOBORO FRACTION 11A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.7	mg/Kg	9.7

No qualifier 9/21/94 KF

FORM I

pmo 7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0BOR1 FRACTION 12A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

No qualifier 9/21/94 AT

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.7	mg/Kg.	9.7

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94 Results by Sample

SAMPLE ID B0BQR2 FRACTION 13A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/27/94 Category

No qualifier 9/21/94 AJ

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.6	mg/Kg	9.6

U5

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0BQR3 FRACTION 14A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/28/94 Category

No qualifier 9/21/94

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<8.7	mg/Kg	8.7

FORM I

7-26-94

Received: 05/16/94

TMA Inc. REPORT
Results by Sample

Work Order # A4-05-039

SAMPLE ID B0B0R4 FRACTION 15A TEST CODE WCCLPS NAME Anions in Solids
Date & Time Collected 04/28/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.4	mg/Kg	9.4

No qualifier 9/21/94

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0BQR5 FRACTION 16A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 04/28/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<9.3	mg/Kg	9.3

UJ No qualifier 9/21/94

FORM I

7-26-94

TMA Inc. REPORT Work Order # A4-05-039

Received: 05/16/94

Results by Sample

SAMPLE ID B0BQR7 FRACTION 02A TEST CODE WCCLPS NAME Anions in Solids

Date & Time Collected 05/02/94 Category

ANIONS AND WET CHEMISTRY - SOLIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Bromide	300.0	<2.5	mg/Kg	2.5

No qualifier 9/21/94

FORM I

MW 7-26-94

N405062-01

TMA NORCAL
SAMPLE DELIVERY GROUP 7378

DATA SHEET

808001

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	HBN-SVV-069262
Lab sample id	N405062-01	Client sample id	808001
Dept sample id	7378-001	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	0.9	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.20	0.041	0.004	0.1		U_T

pw 7-26-94

Lab id	TMAN
Protocol	VHC-HASM
Version	Ver 1.0
Form	DVO-DS
Version	2.30
Report date	06/23/94

N405062-03

TMA NORCAL
SAMPLE DELIVERY GROUP 7378

DATA SHEET

B08QQ2

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-03	Client sample id	B08QQ2
Dept sample id	7378-003	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	3.3	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	5.6	1.2	0.04	0.1		U_T

MW 7-26-94

DATA SHEETS
Page 2
SUMMARY DATA SECTION
Page 13

01 19

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

H405062-04

B0BQQ3

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	HBH-SVV-069262
Lab sample id	H405062-04	Client sample id	B0BQQ3
Dept sample id	7378-004	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	2.9	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	6.1	1.2	0.04	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-05

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

B08004

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-05	Client sample id	B08004
Dept sample id	7378-005	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	4.9	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	4.4	0.90	0.04	0.1		U_T

pw
7-26-94

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.30
Report date 06/23/94

N405062-06

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

B08QQ5

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-06	Client sample id	B08QQ5
Dept sample id	7378-006	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	7.6	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	2.2	0.48	0.4	0.1		U_T

7-26-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-07

TMA NORCAL
SAMPLE DELIVERY GROUP 7378

DATA SHEET

B08QQ6

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-07	Client sample id	B08QQ6
Dept sample id	7378-007	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	3.3	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	16	3.3	0.4	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-08

TMA NORCAL
SAMPLE DELIVERY GROUP 7378

DATA SHEET

B08QQ7

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-08	Client sample id	B08QQ7
Dept sample id	7378-008	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	6.6	Chain of custody id	PFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	2.2	0.45	0.04	0.1		U_T

pew 7-26-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-09

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

B08Q08

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-09	Client sample id	B08Q08
Dept sample id	7378-009	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/28/94
% moisture	7.3	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	3.5	0.71	0.04	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	VHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-10

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

B08Q09

SDG	7378	Client	Westinghouse Hanford
Contact	W. Joseph Verville	Contract	MBM-SVV-069262
Lab sample id	N405062-10	Client sample id	B08Q09
Dept sample id	7378-010	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/28/94
% moisture	7.7	Chain of custody id	ETL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	16	3.5	0.4	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	WNC-HASM
Version	Ver 1.0
Form	DVO-DS
Version	2.30
Report date	06/23/94

N405062-11

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

B08QR0

SDG	7378	Client	Westinghouse Hanford
Contact	M. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-11	Client sample id	B08QR0
Dept sample id	7378-011	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	4.3	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.9	0.39	0.04	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-12

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

B0BQR1

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-12	Client sample id	B0BQR1
Dept sample id	7378-012	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	7.0	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	8.0	1.6	0.04	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	WHC-MASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-13

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

B0B0R2

SDG	7378	Client	Westinghouse Hanford
Contact	W. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-13	Client sample id	B0B0R2
Dept sample id	7378-013	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/27/94
% moisture	7.3	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	8.5	1.7	0.04	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	WNC-NASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-14

TMA NORCAL
SAMPLE DELIVERY GROUP 7378

DATA SHEET

B0B0R3

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MBH-SVV-069262
Lab sample id	N405062-14	Client sample id	B0B0R3
Dept sample id	7378-014	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/28/94
% moisture	5.8	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	1.3	0.26	0.04	0.1		U_T

RW 7-26-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-15

TMA NORCAL
SAMPLE DELIVERY GROUP 7378

DATA SHEET

B0BQR4

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	MSH-SVV-069262
Lab sample id	N405062-15	Client sample id	B0BQR4
Dept sample id	7378-015	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/28/94
% moisture	6.4	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	5.9	1.2	0.04	0.1		U_T

pw 7-30-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-16

TMA NORCAL

SAMPLE DELIVERY GROUP 7378

DATA SHEET

B0BQR5

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	HBN-SVV-069262
Lab sample id	N405062-16	Client sample id	B0BQR5
Dept sample id	7378-016	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	04/28/94
% moisture	5.3	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	9.7	2.0	0.04	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

N405062-02

TMA NORCAL
SAMPLE DELIVERY GROUP 7378

DATA SHEET

B0BQR7

SDG	7378	Client	Westinghouse Hanford
Contact	N. Joseph Verville	Contract	HBH-SVV-069262
Lab sample id	N405062-02	Client sample id	B0BQR7
Dept sample id	7378-002	Location/Matrix	300 AREA SOLVENT EVAP. SOLID
Received	05/16/94	Collected	05/02/94
% moisture	0.4	Chain of custody id	EFL-1095

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.16	0.031	0.004	0.1		U_T

MW 7-26-94

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.30
Report date	06/23/94

Checklists

LATA INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	(D)	E

PROJECT: 300A SOLV EVAP	SDG: BOBQQ1-TMA-759	
VALIDATOR: M Webb	LATA NO.: VW401.402.25	DATE: 7-27-94
SAF NO.: 94-126	LAB: TMA	CASE: U4-05-060
QAPP REFERENCE:	SAP REFERENCE:	

If there is no QAPP or SAP reference, contact the WHC Technical Representative.
If the document(s) are not provided, default to the Method acceptance criteria.

ANALYSES PERFORMED

☐ CLP/ICP	☐ CLP/GFAA	☐ CLP/Hg	☐ CLP/CN	☐	☐
☒ SW-846/ICP	☒ SW-846/GFAA	☐ SW-846/Hg	☐ SW-846/CN	☐	☐

SAMPLES/MATRIX BOBQQ1, BOBQR7 (Sand)
BOBQQ2-BOBQQ9; BOBQR0-BOBQR5 (Concrete)

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments:

2. HOLDING TIMES *(see HOLDING TIME SUMMARY form)*

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments:

8/23/94 MW

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS *(see CALIBRATION DATA SUMMARY form)*

Were initial calibrations performed on all instruments? ..... (Yes) No N/A

Are initial calibrations acceptable? ..... (Yes) No N/A

★ Recalculate the correlation coefficient (r) of the standard curves for atomic absorption and cyanide analyses.

Correlation Coefficient (r)

$$r = \frac{N \sum x_i y_i - \sum x_i \sum y_i}{[N \sum x_i^2 - (\sum x_i)^2]^{1/2} \; [N \sum y_i^2 - (\sum y_i)^2]^{1/2}}$$

Are ICP interference checks acceptable? ..... (Yes) No N/A

Were ICV and CCV checks performed on all instruments? ..... (Yes) No N/A

Are ICV and CCV checks acceptable? ..... (Yes) No N/A

★ Recalculate at least one ICV and CCV recovery for each method.

★

ICV/CCV Recovery

$$\%R = \frac{\text{observed value}}{\text{true value}} \times 100$$

Comments:

4. BLANKS *(see BLANK AND SAMPLE DATA SUMMARY form)*

Were ICB and CCB checks performed for all applicable analyses? ..... (Yes) No N/A

Are ICB and CCB results acceptable? ..... Yes (No) N/A

Were preparation blanks analyzed? ..... (Yes) No N/A

Are preparation blank results acceptable? ..... Yes (No) N/A

Comments: Pos. Cal Blank contamination Ba, Cr, Co, Mg, V, Zn B0BQQ1, B0BQR7 qualified as U; + Prep Blk contamination Sb B0BQQ2, QQ4, QR0, QR3 qualified as U; - Cal Blk contamination Co, Na B0BQQ1, QR7 qualified as UT; ~~+ prep blk contamination Pb B0BQQ1, QR7 qual as U~~ + Cal Blk contamination B0BQQ1, QR7 qual as U

8/23/94

5. ACCURACY *(see ACCURACY DATA SUMMARY form)*

Were spike samples analyzed? ..... (Yes) No N/A

Are all spike sample recoveries acceptable? ..... Yes (No) N/A

Were laboratory control samples (LCS) analyzed? ..... (Yes) No N/A

Are all LCS recoveries acceptable? ..... Yes (No) N/A

★

Spike Recovery

$$\%R = \frac{SSR - SR}{SA} \times 100$$

where:
SSR = spiked sample result
SR = sample result
SA = spike added

Comments: MS <75>30% Cd, Pb, Ni.
MS & MSD <75% >30% Sb, Ba, Cr, Co, Cu, Mn, Zn
analytics qualified as J/UJ

LCS for ZR not done Zr data qualified as J/UJ
~~LCS %R < 80% Sb, Cr, Fe Results qual. as estimated (J/UJ)~~ AJ 9/21/9

6. PRECISION *(see PRECISION DATA SUMMARY form)*

Were laboratory duplicates analyzed? ..... (Yes) No N/A

Are all duplicate RPD values acceptable? ..... (Yes) No N/A

★

Relative Percent Difference

$$RPD = \frac{|OS - D|}{\left(\frac{OS + D}{2}\right)} \times 100$$

where:
OS = sample concentration (original sample/MS)
D = duplicate concentration (duplicate sample/MSD)

Comments:

8/23/94 [illegible]

6. PRECISION (continued) *(see PRECISION DATA SUMMARY form)*

Were ICP serial dilution samples analyzed? ..... (Yes) No N/A

Are all ICP serial dilution %D values acceptable? ..... Yes (No) N/A

★

$$\%D = \frac{|I - S|}{I} \times 100$$

where:
I = analyte concentration before dilution
S = analyte concentration after serial dilution

Comments: Cr, Fe, Mn, Mg, Na, Zn, ~~Al~~ AJ 9/21/94 %D > 10% results qual. as estimated (J/UJ) for samples BOBQQ2, QQ3, QQ4, QQ5, QQ6, QQ7 QQ8, QQ9 QR0, Fe ~~=~~ AJ 9/21/94 %D > 10% qualify as estimated (J) for samples BOBQQ1 and BOBQQ7. AJ 9/21/94 AJ 9/21/94

7. FIELD QC SAMPLES

Were field QC samples (field/trip blanks, duplicates, splits, performance audit) identified? (Yes) No N/A

Are field/trip blank results acceptable? ... BOBQQ1, BOBQR7 ..... Yes (No) N/A

Are field duplicate RPD values acceptable? ..... Yes (No) N/A

Are field split RPD values acceptable? ..... Yes No (N/A)

Are performance audit sample results acceptable? ..... Yes No (N/A)

Comments: BOBQQ1 had detected ~~Al~~, ~~Fe~~, (Pb) & ~~Zn~~ detected at a positive concentration. BOBQR7 had ~~Al~~, ~~Fe~~, (Pb) and ~~Zn~~ detected at a positive concentration.

	Al	Ba	Na	Co	Co	Cu (J)	Fe (J)	Pb (J)	Mg
BOBQQ2	6790	244	115000	12	6.6	17.4	11600	24	2920
BOBQQ3	8420	256	119000	15	11.7	25.9	17400	3.5	3050
%RPD	21.4	4.8	1.7	22.2	<5000	~~[illegible]~~ 39.3	40	37.3	4.36

	Mn	Ni	K	Na	Be	V	Zn	Zn
QQ2	175	9	774	410	.36	39.2	65.4	25.7
QQ3	184	9.7	665	317	.39	37.2	49.3	29.3
%RPD	5	7	15	25.6	9	5	28	13

8/23/94

** Cu, Fe, Pb RPD > 35%

8. FURNACE AA QUALITY CONTROL

Were duplicate injections performed as required? ..... Yes No N/A

Are all duplicate injection %RSD values acceptable? ..... Yes No N/A

Were analytical spikes performed as required? ..... Yes No N/A

Are all analytical spike recoveries acceptable? ..... Yes ~~No~~ N/A AT 9/21/94

Was MSA performed as required? ..... Yes No N/A

Are all MSA results acceptable? ..... Yes No N/A

Comments:

B: B QR2 analytical spike 121.1%

MSA done R OK

~~B: B QR2 Pb qualifiers were omitted (J) because analytical spike~~ AT 9/21/94

LATA INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION SUMMARY

BOBQQ1 – TM17 – 759

MAJOR DEFICIENCIES:

None

MINOR DEFICIENCIES:

1. Cd, Pb, Ni, quant. estimated (J/UJ) all samples MS & 75% > 30%
2. Sb, Ba, Cr, Co, Cu, Mn, Zn " " " " MS & MSD < 75 > 30% AT 9/21/94
3. Cr, Fe, Mn, Mg, Na, Zn, Ni " " " all concrete samples Serial Dil. % D > 10%
4. Sb, Cr, Fe " " " " LCS < 80%
5. Br " " " " NO LCS with batch.
6. Ba, Cr, V, Cu, Mg, Zn " U BOBQQ1, QR7 + Cal Blk Cont.
7. Sb – quant U BOBQQ2, 4, RD, QR3 + Prep Blk Cont.
8. Co, Na " UJ (est) BOBQQ1, QR7 – Cal Blk Cont.
9. ~~Pb~~ ~~" U " " + Prep Blk Cont.~~ AT 9/21/94
10. Cd " U " " + Cal Blk Cont.
11. ~~Pb~~ ~~" J (est.) BOBQQ2 Analytical Spk > 115%.~~ AT 9/21/94
12. Fe " J BOBQQ1, QR7 Serial dilution % D > 10%

COMMENTS:

BOBQQ1, BOBQR7 Field QC blanks. ~~Al, Fe~~, Pb, & ~~Zn~~ detected in them. AT 9/21/94

BOBQQ2, BOBQQ3 Field dups
RPD > 35% Cu, Fe, Pb

No qualifiers assigned based on field QC

8/23/94

BLANK AND SAMPLE DATA SUMMARY

SDG: BOBQQ1 - TM4 - 759	VALIDATOR: [illegible]	DATE: 7. 27- 94	PAGE 1 OF 1
COMMENTS: INORGANIC ANALYSES			

FIELD SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
	Ba cal	2.0				1.0		BOBQQ1 BOBQQ7	U
	Cr	3.8				19.0			
	Cu	4.8				2.4			
	Mg	46.9				23.45			
	V	~~23.45~~ 3.8				1.9			
	Zn	13.7				6.85			
	Sb prep	1.521 mg/kg				7.6		BOBQQ2, 4 BOBQR0, QR4	U
	Co cal	-2.6				~~13~~ 5.2		BOBQQ1, QR7	UJ
	Na	-190				38			
	~~Pb prep~~	~~237~~				~~1.185~~		~~BOBQQ1, QR7~~	~~U~~ AJ 9/21/94
	Cd cal	1.5				.75			
omit Cu ✓	Cu cal	494.1				247		BOBQQ1, QR7	U
already qual as U	Ag	4.2 mg/L				2.1 mg/L		BOBQR1	U AJ 9/21/94

000074

PNO-DVP-014, R1

ACCURACY DATA SUMMARY

SDG: P2056G1 - TMH - 759	VALIDATOR: MWebb	DATE: 7. 27. 94	PAGE 1 OF 1
COMMENTS: INORGANIC ANALYSES			

FIELD SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER
	~~Sb LCS~~	~~75.8~~	~~All samples~~	~~J/UJ~~
	~~Cr~~	~~78.7~~		
	~~Fe~~	~~78.5~~		
	Zr NO LCS	—		J/UJ
	~~Pb Amb spike~~	~~121.1~~	~~BOBQR2~~	~~J~~
	Cd MS	73.8	All Samples	J/UJ
	Pb MS	72.9		
	Ni MS	69.4		
	Sb MS / MSD	40.0 / 42.6	All Samples	J/UJ
	Ba	73.7 / 72.1		
	Cr	59.7 / 73.4		
	Co	64.5 / 69.0		
	Cu	55.5 / 50.1		
	Mn	45.3 / 42.9		
	Zn	56.0 / 60.4		

AJ 9/21/94

AJ 9/21/9

PNO-DVF-014, R1

000075

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9

ICP SERIAL DILUTIONS

SAMPLE NUMBER:

B0BQQ1L

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M	IDL
Aluminum	751.07		807.45	B	7.5		P	
Antimony	14.70	U	73.50	U			P	
Barium	4.05	B	6.75	B	66.7		P	1.2
Beryllium	0.40	U	2.00	U			P	
Cadmium	1.10	U	5.50	U			P	
Calcium	176.20	U	2375.55	B			P	
Chromium	3.43	B	12.50	U	100.0		P	2.5
Cobalt	2.10	U	10.50	U			P	
Copper	6.06	B	18.00	U	100.0		P	3.6
Iron	1145.40		1512.85		32.1	E	P	9.9
Lead							NR	
Magnesium	68.98	B	125.00	U	100.0		P	~~0.9~~ 25.0
Manganese	5.65	B	12.85	B	127.4		P	0.9
Nickel	6.50	U	32.50	U			P	
Potassium	77.20	U	386.00	U			P	
Silver	3.60	U	18.00	U			P	
Sodium	206.83	B	197.00	U	100.0		P	39.4
Vanadium	2.20	U	11.00	U			P	
Zinc	27.11		60.50	B	123.2		P	7.1
Zirconium	88.00	U	440.00	U			P	

7.27.94

037

FORM IX - IN ILM02.1

000076

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9

ICP SERIAL DILUTIONS

SAMPLE NUMBER: 80BQQ3L

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 80BQQ1

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M	IDL
Aluminum	83437.00		81570.00		2.2		P	
Antimony	14.70	U	73.50	U			P	
Barium	2530.90		2457.65		2.9		P	
Beryllium	3.86	B	3.25	B	15.8		P	0.4
Cadmium	1.10	U	5.50	U			P	
Calcium	1181050.00		1184700.00		0.3		P	
Chromium	148.59		178.60		20.2	E	P	
Cobalt	115.88		126.90	B	9.5		P	
Copper	256.92		262.70		2.2		P	
Iron	171950.00		203345.00		18.3	E	P	
Lead							NR	
Magnesium	30199.00		33969.00		12.5	E	P	
Manganese	1819.00		2073.55		14.0	E	P	
Nickel	95.62		140.85	B	47.3		P	6.5
Potassium	6582.40		6185.00	B	6.0		P	
Silver	3.60	U	18.00	U			P	
Sodium	3141.50	B	2596.45	B	17.3	E	P	
Vanadium	368.08		404.50		9.9		P	
Zinc	488.03		590.75		21.0	E	P	
Zirconium	290.14		440.00	U	100.0		P	88.0

7-27-94

038

FORM IX - IN ILM02.1

000077

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7

LABORATORY CONTROL SAMPLE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-02-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B08QQ1

Solid LCS Source: ENV RES ASSOC

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				4780.0	4685.8		2150.0	6690.0	98.0
Antimony				29.8	22.6		13.0	130.0	75.8
Barium				247.0	234.6		173.0	321.0	95.0
Beryllium				87.7	75.7		53.0	132.0	86.3
Cadmium				79.1	67.2		40.0	126.0	85.0
Calcium				2370.0	2043.8		1660.0	3320.0	86.2
Chromium				66.2	52.1		30.0	93.0	78.7
Cobalt				23.5	19.8		13.0	35.0	84.3
Copper				34.8	34.5		17.0	52.0	99.1
Iron				9030.0	7088.4		5420.0	12640.0	78.5
Lead				101.0	98.0		45.0	146.0	97.0
Magnesium				2090.0	1933.3		1150.0	3140.0	92.5
Manganese				157.0	136.1		110.0	220.0	86.7
Nickel				168.0	140.6		84.0	261.0	83.7
Potassium				2740.0	2470.0		1640.0	3560.0	90.1
Silver				88.1	77.7		44.0	123.0	88.2
Sodium				333.0	348.1	B	183.0	499.0	104.5
Vanadium				119.0	108.9		83.0	160.0	91.5
Zinc				246.0	210.7		135.0	369.0	85.7
Zirconium					80.5		0.0	0.0	

No LCS for Zr.

7-27-94

035

FORM VII - IN

ILM02.1

000078

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5A

SPIKE SAMPLE RECOVERY

SAMPLE NUMBER: 808Q03MSD

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: 808Q01

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 97.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	21.5020		1.4842	U	50.48	42.6	N	P
Barium	75-125	401.0925		255.5381		201.93	72.1	N	P
Beryllium	75-125	4.5890		0.3897	B	5.05	83.2		P
Cadmium	75-125	3.9327		0.1111	U	5.05	77.9		P
Calcium									NR
Chromium	75-125	29.8308		15.0027		20.19	73.2	N	P
Cobalt	75-125	46.5126		11.7001		50.48	69.0	N	P
Copper	75-125	38.5907		25.9405		25.24	50.1	N	P
Iron									NR
Lead	75-125	5.2663		3.4696		2.06	87.2		F
Magnesium									NR
Manganese	75-125	205.3169		183.6595		50.48	42.9	N	P
Nickel	75-125	48.3825		9.6545		50.48	76.7		P
Potassium									NR
Silver	75-125	4.5102		0.3635	U	5.05	89.3		P
Sodium									NR
Vanadium	75-125	76.0920		37.1640		50.48	77.1		P
Zinc	75-125	79.7470		49.2751		50.48	60.4	N	P
Zirconium	75-125	198.9156		29.2946		201.93	84.0		P

Comments:

MW 7-27-94

031

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SA

SPIKE SAMPLE RECOVERY

SAMPLE NUMBER:

B0BQQ3MS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 97.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	20.1985		1.4842	U	50.48	40.0	N	P
Barium	75-125	404.3436		255.5381		201.93	73.7	N	P
Beryllium	75-125	4.4648		0.3897	B	5.05	80.7		P
Cadmium	75-125	3.7267		0.1111	U	5.05	73.3	N	P
Calcium									NR
Chromium	75-125	27.0643		15.0027		20.19	59.7	N	P
Cobalt	75-125	44.2590		11.7001		50.48	64.5	N	P
Copper	75-125	39.9497		25.9405		25.24	55.5	N	P
Iron									NR
Lead	75-125	4.9716		3.4696		2.06	72.9	N	F
Magnesium									NR
Manganese	75-125	206.5386		183.6595		50.48	45.3	N	P
Nickel	75-125	44.6922		9.6545		50.48	69.4	N	P
Potassium									NR
Silver	75-125	4.2750		0.3635	U	5.05	84.7		P
Sodium									NR
Vanadium	75-125	75.5881		37.1640		50.48	76.1		P
Zinc	75-125	77.5237		49.2751		50.48	56.0	N	P
Zirconium	75-125	200.4705		29.2946		201.93	84.8		P

Comments:

7-27-94

030

FORM V (Part 1) - IN

ILM02.1

000080

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3
BLANKS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B080Q1

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	20.9	U	20.9	U	20.9	U	20.9	U	2.090	U	P
Antimony	14.7	U	14.7	U	14.7	U	14.7	U	1.521	B	P
Barium	1.2	U	1.2	U	1.2	U	1.2	U	0.120	U	P
Beryllium	0.4	U	0.4	U	0.4	U	0.4	U	0.040	U	P
Cadmium	1.1	U	1.1	U	1.5	B	1.2	B	0.110	U	P
Calcium	176.2	U	176.2	U	176.2	U	176.2	U	17.620	U	P
Chromium	2.5	U	2.5	U	2.5	U	2.5	U	0.250	U	P
Cobalt	2.1	U	-2.6	B	2.1	U	2.9	B	0.210	U	P
Copper	3.6	U	3.6	U	3.6	U	3.6	U	0.360	U	P
Iron	9.9	U	9.9	U	9.9	U	9.9	U	0.990	U	P
Lead	1.5	U	1.5	U	1.5	U	1.5	U	0.237	B	F
Magnesium	25.0	U	25.0	U	25.0	U	25.0	U	2.500	U	P
Manganese	0.9	U	0.9	U	0.9	U	0.9	U	0.090	U	P
Nickel	6.5	U	6.5	U	6.5	U	6.5	U	0.650	U	P
Potassium	77.2	U	77.2	U	77.2	U	77.2	U	7.720	U	P
Silver	3.6	U	3.6	U	3.6	U	3.6	U	0.360	U	P
Sodium	-68.4	B	-51.3	B	-131.0	B	-190.0	B	3.940	U	P
Vanadium	2.2	U	2.2	U	2.2	U	2.2	U	0.220	U	P
Zinc	7.1	U	7.1	U	7.1	U	7.1	U	0.710	U	P
Zirconium	88.0	U	88.0	U	88.0	U	88.0	U	8.800	U	P

7-27-94

7-27-94

024

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3
BLANKS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			20.9	U	20.9	U	20.9	U			P
Antimony			20.7	B	14.7	U	14.7	U			P
Barium			2.0	B	1.5	B	1.2	U			P
Beryllium			0.4	U	0.4	U	0.4	U			P
Cadmium			1.1	U	1.1	U	1.1	U			P
Calcium			ok 749.4	B	649.5	B	693.0	B			P
Chromium			3.8	B	2.5	U	2.5	U			P
Cobalt			2.1	U	2.1	U	2.1	U			P
Copper			4.8	B	3.6	U	3.6	U			P
Iron			9.9	U	14.6	B ok	9.9	U			P
Lead			1.5	U	1.5	U					F
Magnesium			46.9	B	25.0	U	25.0	U			P
Manganese			0.9	U	0.9	U	0.9	U			P
Nickel			6.7	B ok	6.5	U	6.5	U			P
Potassium			77.2	U	77.2	U	77.2	U			P
Silver			4.2	B	3.6	U	3.6	U			P
Sodium			-78.7	B	-45.4	B	-61.3	B			P
Vanadium			3.8	B	2.2	U	2.2	U			P
Zinc			13.7	B	11.2	B	12.1	B			P
Zirconium			88.0	U	88.0	U	88.0	U			P

mw 7-27-94

025

WESTINGHOUSE/HANFORD

3
BLANKS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N4-05-060SAS No.: SDG No.: B0BQQ1

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			20.9	U							P
Antimony			14.7	U							P
Barium			1.6	B							P
Beryllium			0.4	U							P
Cadmium			1.1	U							P
Calcium			494.1	B							P
Chromium			2.5	U							P
Cobalt			2.1	U							P
Copper			3.6	U							P
Iron			9.9	U							P
Lead	1.5	U	1.5	U	1.5	U					F
Magnesium			25.0	U							P
Manganese			0.9	U							P
Nickel			6.5	U							P
Potassium			77.2	U							P
Silver			3.6	U							P
Sodium			-79.1	B							P
Vanadium			2.2	U							P
Zinc			10.2	B							P
Zirconium			88.0	U							P

7-27-94

LINEAR REGRESSION ANALYSIS

Analysis: Inorganic (metals/CN)
Constituent: Pb
SDG: BOBQQ1-TMA-759

Calibration Date: 13-Jun-94

Date: 27-Jul-94
Validator: MC Webb

Concentration	Absorbance
0.00	0.000
3.00	0.019
50.00	0.222
100.00	0.402

r 0.9987	r^2 0.9973
slope 248.2509	x intercept -1.5632
1/slope 0.0040	y intercept 0.0067

LINEAR REGRESSION ANALYSIS

Analysis: Inorganic (metals/CN)
Constituent:
SDG: BOBQQ1-TMA-759

Calibration Date: 8-19-94 MW

Date: 27-Jul-94
Validator: MC Webb

Concentration	Absorbance

r #DIV/0!	r^2 #DIV/0!
slope #DIV/0!	x intercept #DIV/0!
1/slope #DIV/0!	y intercept #DIV/0!

PERCENT RECOVERY (ICV/CCV)

Analysis: Inorganic (metals/CN)
SDG: BOBQQ1-TMA-759

Date: 27-Jul-94
Validator: MC Webb

Constituent	Observed Value O	True Value A	%R
Pb	25.95	25.00	103.8%
ICP (Al)	2017.60	2000.00	100.9%
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
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			#DIV/0!

000085

PERCENT RECOVERY (LCS)

Analysis: Metals
SDG: BOBQQ1-TMA-759

Date: 27-Jul-94
Validator: MC Webb

Constituent	Observed value	True value	%R
	OLCS	ALCS	
Pb	98.00	101.00	97.0%
ICP (Al)	4685.80	4780.00	98.0%
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
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			#DIV/0!
			#DIV/0!

PERCENT DIFFERENCE (ICP SERIAL DILUTION)

Analysis: ICP
SDG: BOBQQ1-TMA-759
Sample ID: see below

Date: 27-Jul-94
Validator: MC Webb

Constituent	Analyte Concentration before Dilution I	Analyte Concentration after Serial Dilution S	%D
Al BOBQQ1	751.07	807.45	7.5%
MW 8-15-94			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
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			#DIV/0!

000087

RELATIVE PERCENT DIFFERENCE

Analysis: Inorganic (metals/CN)
SDG: BOBQQ1-TMA-759
Sample ID: see below

Date: 27-Jul-94
Validator: MC Webb

Constituent	Original (Sample) concentration OS	Duplicate concentration D	RPD
Pb BOBQQ1	2.16	2.22	2.4%
ICP (Al) BOBQR7	154.39	144.10	6.9%
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
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MJ
8-19-94

MATRIX SPIKE RECOVERY (MS)

Analysis: Inorganic (metals/CN)
SDG: BOBQQ1-TMA-759
Sample ID: see below

Date: 27-Jul-94
Validator: MC Webb

Constituent	Spike Sample Result SSR	Sample Result SR	Spike Added SA	%R
Pb BOBQQ1	2.16	0.44	1.91	90.3%
ICP (Sb) BOBQQ1	44.68	1.44	49.07	88.1%
				#DIV/0!
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MW
8-19-94

000085

INORGANICS RESULTS CALCULATION, SOIL

Analysis: Inorganic (metals/CN)
SDG: BOBQQ1-TMA-759
Sample ID: see below

Date: 27-Jul-94
Validator: MC Webb

Constituent	Concentration off Calibration Curve CONCS	Run Dilution Factor DFS	Final Volume (mL) VOL	Weight of Sample (g) WS	Dry Weight Conversion (decimal) SS	Concentration (mg/Kg)
Pb (BOBQQ1)	4.56	1.00	100.00	1040.00000	0.999	0.4389
Al (BOBQQ1)	0.75	1.00	100.00	1.02	0.999	73.71
						#DIV/0!
						#DIV/0!
						#DIV/0!
						#DIV/0!
						#DIV/0!
						#DIV/0!
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						#DIV/0!

000090

LATA GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 300A SOLV EVAP		SDG: BOBQQ1 TMA 759
VALIDATOR: MWEBB	LATA NO: VW401.402.25	DATE: 7-26-94
SAF NO.: 94-126	LAB: TMA	CASE: N4-05-060
QAPP REFERENCE:		SAP REFERENCE:

If there is no QAPP or SAP reference, contact the WHC Technical Representative.
If the document(s) are not provided, default to the Method acceptance criteria.

ANALYSES PERFORMED

☐ Alkalinity 310.1	☐ Chloride 325.3	☐ pH 9040/150.1	☐ TOC 9060/415.1	☐ TDS 160.1 ☐ TSS 160.2	☐
☒ Anions 300.0 Br	☐ Chromium+6 7196	☐ Phenols 9065/420.1	☐ TOX 9020/9022	☐ Sulfate 375.4	☐
☐ Ammonia 350.3	☐ COD 410.1	☐ Phosphorus 365.2	☐ TKN 351.3	☐ Sulfide 9030/376.1	☐
☐ BOD 405.1	☐ Nitrate+Nitrite 353.2	☐ Oil & Grease 413.1	☐ TPH 9070/418.1	☐	☐

SAMPLES/MATRIX BOBQQ2 – BOBQQ9 (Concrete)

MW ~~BOBQQ0~~ BOBQR0 – BOBQR5 (concrete)

BOBQQ1 & BOBQR7 (sand)

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments:

2. HOLDING TIMES *(see HOLDING TIME SUMMARY form)*

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments: Sampled 4-27/4-28 analyzed w/i 27 28 days OK

8/23/94 MWP

3. INSTRUMENT CALIBRATION *(see CALIBRATION DATA SUMMARY form)*

Was initial calibration performed for all applicable analyses? . . . . . 4-28-94 Yes ~~No~~ N/A

Are initial calibration results acceptable? . . . . . 4-28-94 Yes ~~No~~ N/A

Was a calibration check performed for all applicable analyses? . . . . . Yes No N/A

Are calibration check results acceptable? . . . . . Yes No N/A

★ For methods requiring a calibration curve (three standards and a blank) use the following equation for correlation coefficient (r).

Correlation Coefficient (r)

$$r = \frac{N \sum x_i y_i - \sum x_i \sum y_i}{[N \sum x_i^2 - (\sum x_i)^2]^{1/2} [N \sum y_i^2 - (\sum y_i)^2]^{1/2}}$$

★ For methods requiring ICV/CCV or a calibration check standard, calculate recovery as follows:

Recovery

$$\%R = \frac{\text{observed value}}{\text{true value}} \times 100$$

Comments: Initial Calibration done on 4-28-94 (TC)
Samples Run on 5-24-94
~~Does not meet acceptance criteria. Results are qualified to estimated (UJ)~~ AJ 9/21/94

PNO-DVF-013, R1

8/23/94 MLP

4. BLANKS *(see BLANK AND SAMPLE DATA SUMMARY form)*

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . . . . . Yes No N/A

Comments:

5. ACCURACY *(see ACCURACY DATA SUMMARY form)*

Were spike samples analyzed at the required frequency? . . . . . Yes No N/A

Are all spike recoveries acceptable? . . . . . Yes No N/A

★

Spike Recovery

$$\%R = \frac{SSR - SR}{SA} \times 100$$

where:
SSR = spiked sample result
SR = sample result
SA = spike added

Were LCS analyses performed at the required frequency? . . . . . Yes No N/A

Are all LCS recoveries acceptable? . . . . . Yes No N/A

★

Recovery

$$\%R = \frac{\text{observed value}}{\text{true value}} \times 100$$

Comments:

8/23/94 mup

6. PRECISION *(see PRECISION DATA SUMMARY form)*

Were laboratory duplicate samples analyzed at the required frequency? ..... (Yes) No N/A

Are all duplicate RPD values acceptable? ..... (Yes) No N/A

★

Relative Percent Difference

$$RPD = \frac{|OS - D|}{\left(\frac{OS + D}{2}\right)} \times 100$$

where:
OS = sample concentration (original sample/MS)
D = duplicate concentration (duplicate sample/MSD)

Comments:

7. FIELD QC SAMPLES

Were field QC samples (field/trip blanks, duplicates, splits, performance audit) identified? Yes No N/A

Are field/trip blank results acceptable? ..... (Yes) No N/A

Are field duplicate RPD values acceptable? ..... (Yes) No N/A

Are field split RPD values acceptable? ..... ~~Yes~~ No (N/A)

Are performance audit sample results acceptable? ..... Yes No (N/A)

Comments:

B0BQQ2 & B0BQQ3 are dup. OK

B0BQQ1 & B0B0R7 are blks OK both (U)

8/23/04 MG

8. ANALYTE QUANTITATION

Was analyte quantitation performed properly? ..... Yes No N/A

Are results calculated properly? ..... Yes No N/A

★ For methods with calibration curves:

General Chemistry Results Calculation, water sample

Concentration (µg/L) = CONCW × DfW

where:

CONCW = concentration off calibration curve (µg/L)

DfW = dilution factor (if any)

or

General Chemistry Results Calculation, soil sample

$$\text{Concentration (mg/Kg)} = \frac{(\text{CONCS} \times \text{DfS} \times \text{VOL})}{(\text{WS} \times \text{SS})}$$

where:

CONCS = concentration off calibration curve (mg/L)

VOL = volume of final extract (ml)

WS = weight of sample (g)

DfS = dilution factor (if any)

SS = dry weight conversion [(100 - %moisture) × 100]

★ For all other results calculations, see the analytical method.

Comments: No calc - not detected in any samples. except for QC (water)

9. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? ..... Yes No N/A

Are results supported in the raw data? ..... Yes No N/A

Do results meet the CRDLs? ..... Yes No N/A

Comments:

8/23/94 mg

LATA GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

VALIDATION SUMMARY BOB001-TMA-757 WET

MAJOR DEFICIENCIES:

MINOR DEFICIENCIES:

1. IC was not calibrated daily as required, results in qualified as tentative (UJ) (i) AJ 9/21/94

COMMENTS:

8/23/94

CALIBRATION DATA SUMMARY

SDG: BUB001-DMA-759	VALIDATOR: MWebb	DATE: 7-27-94	PAGE 1 OF 1
COMMENTS: GENERAL CHEMISTRY ANALYSES			
CALIB. TYPE: (INITIAL) CONTINUING	INSTRUMENT:		

CALIB. DATE	COMPOUND	RF/CF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
~~4-28-94~~	~~Bi~~			~~all~~	~~UJ~~
	L→ Samples from due 5-24-94				

NJ 9/21/94

PNO-DVF-013, R1

000097

LINEAR REGRESSION ANALYSIS

Analysis: General Chemistry
Constituent: Anions (Br)
SDG: BOBQQ1-TMA-759

Calibration Date: 28-Apr-94

Date: 27-Jul-94
Validator: MC Webb

Concentration	Absorbance
0.00	0.000
1.25	5528.000
2.50	12811.000
5.00	25874.000
10.00	53649.000
20.00	114239.000

r 0.9995	r^2 0.9990
slope 0.0002	x intercept 0.2982
1/slope 5738.5732	y intercept -1672.8857

LINEAR REGRESSION ANALYSIS

Analysis: General Chemistry
Constituent:
SDG: BOBQQ1-TMA-759

Calibration Date: MW 8-15-94

Date: 27-Jul-94
Validator: MC Webb

Concentration	Absorbance

r #DIV/0!	r^2 #DIV/0!
slope #DIV/0!	x intercept #DIV/0!
1/slope #DIV/0!	y intercept #DIV/0!

000098

PERCENT RECOVERY (ICV/CCV)

Analysis: General Chemistry
SDG: BOBQQ1-TMA-759

Date: 27-Jul-94
Validator: MC Webb

Constituent	Observed Value O	True Value A	%R
Anion Br	4.75	5.00	95.0%
Anion Br	4.79	5.00	95.9%
Anion Br	9.66	10.00	96.6%
			#DIV/0!
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			#DIV/0!

MATRIX SPIKE RECOVERY (MS)

Analysis: General Chemistry
SDG: BOBQQ1-TMA-759
Sample ID: See below

Date: 27-Jul-94
Validator: MC Webb

Constituent	Spike Sample Result SSR	Sample Result SR	Spike Added SA	%R
Anion Br BOBQQ1	92.57	0.00	98.00	94.5%
Anion Br BOBQR0	178.83	0.00	200.00	89.4%
				#DIV/0!
				#DIV/0!
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				#DIV/0!
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8-29-94

PERCENT RECOVERY (LCS)

Analysis: General Chemistry
SDG: BOBQQ1-TMA-759

Date: 27-Jul-94
Validator: MC Webb

Constituent	Observed value	True value	%R
	OLCS	ALCS	
Anion Br	9.51	10.00	95.1%
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
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			#DIV/0!
			#DIV/0!

RELATIVE PERCENT DIFFERENCE

Analysis: General Chemistry
SDG: BOBQQ1-TMA-759
Sample ID: See below

Date: 27-Jul-94
Validator: MC Webb

Constituent	Original (Sample) concentration OS	Duplicate concentration D	RPD
Anion Br (1)	0.00	0.00	NC
Anion Br (2)	0.00	0.00	NC
			#DIV/0!
(1) BOBQQ2 and BOBQQ3 (field dup)			#DIV/0!
(2) BOBQQ1 and BOB QR7 (field blank)			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
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			#DIV/0!

8-19-94

LATA RADIOCHEMISTRY DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	(D)	E

~~PROJECT:~~ SDG BOBQQ1 - TMA - 759	~~SDG:~~ Project 300A SOLV EVAP	
VALIDATOR: MWebb	LATA NO.: ~~VW401.~~ 402.25	DATE: 9-26-94
SAF NO.: 94-126	LAB: TMA	CASE: M4-05-062-7378
QAPP REFERENCE:	SAP REFERENCE:	

If there is no QAPP or SAP reference, contact the WHC Technical Representative.
If the document(s) are not provided, default to the Method acceptance criteria.

ANALYSES PERFORMED

☐ Gross Alpha ☐ Gross Beta	☐ Strontium-89 ☐ Strontium-90	☐ Technetium-99	☐ Isotopic Anal. Alpha Spec.	☐ Gamma Spectroscopy	☐ Iodine-129
☒ Total Uranium (KPA)	☐ Radium-226 ☐ Radium-228	☐ (LSC) Liquid Scintillation	☐	☐	☐

SAMPLES/MATRIX BOBQQ2, BOBQQ3, BOBQQ4, BOBQQ5, BOBQQ6, BOBQQ7, BOBQQ8, BOBQQ9, BOBQR0, BOBQR1, BOBQR2, BOBQR3, BOBQR4, BOBQR5 } Concrete
BOBQQ1 & BOBQR7 (sand)

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification forms present? ..... (Yes) No N/A
Compliance screening form present? ..... Yes (No) N/A
Is a case narrative present? ..... (Yes) No N/A
Were all analyses requested reported? ..... (Yes) No N/A
Are all results supported in the raw data? ..... (Yes) No N/A
Comments:

2. CHAIN-OF-CUSTODY/HOLDING TIMES

Are sample holding times acceptable? ..... (Yes) No N/A
Are samples preserved correctly? ..... Yes No (N/A)
Was the pH of the sample checked prior to analysis? ..... Yes No (N/A)
Comments: No pers. for solid samples.

8/23/94 MWP

3. INITIAL CALIBRATION

Instruments/detectors calibrated within one year of sample analysis? ..... 7-26-94 ..... Yes No N/A

Initial calibration acceptable? ..... yes ..... Yes No N/A

Standards NIST traceable? ..... Yes No N/A

Standards Expired? ..... Yes No N/A

Comments:

4. CONTINUING CALIBRATION

Background checked at proper frequency? ..... Yes No N/A

Background check acceptable? ..... Yes No N/A

Efficiency checked at proper frequency? ..... Yes No N/A

Efficiency check acceptable? ..... Yes No N/A

Calibration check standards NIST traceable? ..... Yes No N/A

Calibration check standards expired? ..... Yes No N/A

Comments: CCV check 98%

NIST Trac. OR

std not expired 7-26-94

5. BLANKS *(see BLANK AND SAMPLE DATA SUMMARY form)*

Method blank analyzed? ..... Yes No N/A

Method blank results acceptable? ..... Yes No N/A

Analytes detected in method blank? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments:

6. MATRIX SPIKES *(see ACCURACY DATA SUMMARY form)*

Matrix spike analyzed? . . . . . Yes No N/A

Spike recoveries acceptable? . . . . . Yes No N/A

Spike source traceable? . . . . . Yes No N/A

Spike source expired? . . . . . Yes No N/A

Transcription/Calculation Errors? . . . . . Yes No N/A

★

Spike Recovery

$$\%R = \frac{SSR - SR}{SA} \times 100$$

where:
SSR = spiked sample result
SR = sample result
SA = spike added

Comments:_____

7. LABORATORY CONTROL SAMPLES *(see ACCURACY DATA SUMMARY form)*

LCS analyzed? . . . . . Yes No N/A

LCS recoveries acceptable? . . . . . Yes No N/A

LCS traceable? . . . . . Yes No N/A

Transcription/Calculation Errors? . . . . . Yes No N/A

★

Recovery

$$\%R = \frac{\text{observed value}}{\text{true value}} \times 100$$

Comments:_____

8. CHEMICAL RECOVERY *(see ACCURACY DATA SUMMARY form)*

Chemical carrier added? . . . . . Yes No N/A

Chemical recovery acceptable? . . . . . Yes No N/A

Tracer added? . . . . . Yes No N/A

Tracer recovery acceptable? . . . . . Yes No N/A

Standards traceable? . . . . . Yes No N/A

Standards expired? . . . . . Yes No N/A

Transcription/Calculation errors? . . . . . Yes No N/A

★

Alpha Spec Tracer Recovery

$$\frac{A.1 - B.1}{(2.22)(E.1)(T.1)}$$

where:
- A.1 = gross counts per minute
- B.1 = background counts per minute of tracer
- 2.22 = conversion factor, dpm/pCi
- E.1 = detector efficiency
- T.1 = activity (pCi) of tracer added to sample (can be determined by taking dpm of tracer added divided by 2.22)

Comments:

9. DUPLICATES *(see PRECISION DATA SUMMARY form)*

Duplicates Analyzed? . . . . . Yes No N/A

RPD Values Acceptable? . . . . . Yes No N/A

Transcription/Calculation Errors? . . . . . Yes No N/A

★

Relative Percent Difference

$$RPD = \frac{|OS - D|}{\left(\frac{OS + D}{2}\right)} \times 100$$

where:
- OS = sample concentration (original sample/MS)
- D = duplicate concentration (duplicate sample/MSD)

Comments: #19 dup of #3 RPD = 12.7%
6.586 5.799

8/23/94

10. FIELD QC SAMPLES

Field blank(s) identified? ..... (Yes) No N/A

Field blank results acceptable? ..... Yes (No) N/A

Analytes detected in field blank(s)? ..... (Yes) No N/A

Field duplicate sample(s) identified? ..... BOBQ02 & BOBQ03 ..... (Yes) No N/A

Field duplicate RPD values acceptable? ..... (Yes) No N/A

Field split sample(s) identified? ..... Yes (No) N/A

Field split RPD values acceptable? ..... Yes No (N/A)

Performance audit sample(s) identified? ..... Yes (No) N/A

Performance audit sample results acceptable? ..... Yes No (N/A)

Comments: #3 (4) BOBQ03 dup #2 (3) BOBQ02 BOBQ03 6.1 µg/g BOBQ02 5.8 µg/g RPD 5%

#1 BOBQ01 field blk. BOBQ01 0.2 µg/g

#2 BOBQR7 Equip blk. BOBQR7 0.16 µg/g

BOBQ01 & BOBQR7 (blanks) both have activity slightly > RDL (.1 µg/g)

11. DETECTION LIMITS (LEVELS D & E)

MDA's meet required detection limits? ..... Yes (No) N/A

Transcription/calculation errors? ..... Yes (No) N/A

★

Minimum Detectable Activity (MDA)

$$\frac{4.66 \times \sqrt{(B.2)(T.2)}}{2.22(E.2)(I.2)(R.2)(D.2)(V.2)(Y.2)(T.2)}$$

where:

- B.2 = background counts per minute (cpm) or the reported standard deviation of the background (S) cpm
- T.2 = counting time for associated sample
- 2.22 = conversion dpm/pCi
- E.2 = detector efficiency
- I.2 = ingrowth correction factor (if applicable or 1)
- R.2 = carrier recovery factor (if applicable or 1)
- D.2 = decay factor (if applicable or 1)
- Y.2 = chemical yield factor (if applicable or 1)
- V.2 = sample volume in liters or grams

Comments: MDA's for (100 a) BOBQ05 & BOBQ06, BOBQ09 > .1 (RDL)

All were 1/100 dilutions

8/23/94 MJP

Results Calculation Equations

Gross α/β and Tritium

$$\frac{(A.3 - B.3) \times C.3}{(2.22)(E.3)(V.3)}$$

where:

A.3 = gross counts per minute
B.3 = background counts per minute
C.3 = activity of α fraction in β channel*
2.22 = conversion factor, dpm/pCi
E.3 = detector efficiency
V.3 = sample volume, liters or grams

*if for calculation of gross β, otherwise substitute 1

Strontium (total)

$$\frac{A.4 - B.4}{(2.22)(E.4)(I.4)(D.4)(R.4)(V.4)}$$

where:

A.4 = gross counts per minute
B.4 = background counts per minute
2.22 = conversion factor, dpm/pCi
E.4 = detector efficiency
I.4 = ingrowth correction factor
R.4 = carrier recovery factor
D.4 = strontium decay factor
V.4 = sample volume, liters or grams

Strontium-90 (corrected for Sr-89)

$$\frac{A.5 - B.5}{(2.22)(Y.5)(E.5)(I.5)(D.5)(R.5)(V.5)}$$

where:

A.5 = gross counts per minute
B.5 = background counts per minute
Y.5 = yttrium-90 yield factor
2.22 = conversion factor, dpm/pCi
E.5 = detector efficiency
I.5 = ingrowth correction factor
R.5 = strontium-89 yield factor
D.5 = strontium decay factor
V.5 = sample volume, liters or grams

8/23/95 MJP

Results Calculation Equations, continued

Technetium-99

$$\frac{A.6 - B.6}{(2.22)(E.6)(R.6)(V.6)}$$

where:

A.6 = gross counts per minute
B.6 = background counts per minute
2.22 = conversion factor, dpm/pCi
E.6 = detector efficiency
R.6 = carrier recovery factor
V.6 = sample volume, liters or grams

Alpha Spec Isotopes

$$\frac{A.7 - B.7}{(2.22)(E.7)(R.7)(V.7)}$$

where:

A.7 = gross counts per minute for isotope
B.7 = background counts per minute for detector
2.22 = conversion factor, dpm/pCi
E.7 = detector efficiency
R.7 = tracer recovery factor
V.7 = sample amount, liters or grams

Gamma Spec Isotopes

$$\frac{A.8}{(2.22)(B.8)(D.8)(E.8)(V.8)(T.8)}$$

where:

A.8 = peak area for isotope
D.8 = decay factor for isotope
2.22 = conversion factor, dpm/pCi
B.8 = abundance factor for isotope
E.8 = efficiency factor for isotope
V.8 = sample amount, liters or grams
T.8 = live time (minutes)

8/23/94 MMP

Results Calculation Equations, continued

Total Uranium by Laser Fluorometry

$$\frac{(W.9 - I.9)(R.9)(D.9)}{U.9 - W.9}$$

where:

W.9 = sample reading with Fluran
I.9 = initial sample reading
R.9 = concentration of uranium standard after dilution with sample (µg/L)
D.9 = dilution factor
U.9 = sample reading with uranium standard

Radium-226 by Radon Emanation

$$D = \frac{COUNT}{(2.22)(CAL)(VOL)} \times \frac{1}{1 - e^{-\lambda t_1}} \times \frac{1}{e^{-\lambda t_2}} \times \frac{t_3}{1 - e^{-\lambda t_3}}$$

where:

COUNT = net count rate, cpm
CAL = calibration constant of the de-emanation system and the scintillation cell in counts per minutes/disintigrations per minute of radon-222
VOL = sample aliquot in liters
t_1 = the elapsed time in days between the first and second de-emanations, and λ is the decay constant for radon-222 (0.181 d^{-1})
t_2 = the time interval in hours between the second de-emanation and counting, and λ is the decay constant of radon-222 (0.00755hr^{-1})
t_3 = the counting time in minutes, and λ is the decay constant of radon-222 (1.26×10^{-4} min^{-1})
2.22 = conversion factor, dpm/pCi

8/23/94 MJD

CALCULATION SUMMARY

SDG: BOBQQ1- THA-759	VALIDATOR: MWCbb	DATE: 7-26-96	PAGE 1 OF 1

COMMENTS: RADIOCHEMICAL ANALYSES

✓ MS Calc 7378-3 (BOBQQ2) 1.552 spike added

100 (Spiked µg/L - Unspiked µg/L)/1.552 = %R MS.

100 (9.0635 - 7.24962)/1.552 = 92.9%

✓ Result Calc - no calc needed from print out.

✓ MDA - calc mean 0.051 based on blank range monitor.

✓ RL calc (MDA)(Vol) = (0.051)(.02) = < 0.00102 µg/L

✓ Spike #17 (reading)(Vol/SA)

(LCS) (37.825)(.02/1) = .756

added .6506

%R = found/added = .756/.6506 = 116.3%

✓ CCV 100(.96149 found/.9762 added) = 98.5%

All R2 terms > .98

✓ RPD = $\frac{|OS - D|}{\frac{|OS+D|}{2}} \times 100$ BOBQQ2

OS = 5.795 D = 6.586

RPD = 12.7%

PNO-DVF-015, R1

BOBQQ1 - TH4 - 759
MWebb

LATA RADIOCHEMISTRY DATA VALIDATION CHECKLIST

VALIDATION SUMMARY

VW402.25

MAJOR DEFICIENCIES:

None

MINOR DEFICIENCIES:

None

COMMENTS:

Field duplicate RPD 5% (BOBQQ2 & BOBQQ3)
Field blank (BOBQQ1 & BOBQR7) both contain activity > RDL (.1 $\frac{uCi}{g}$)
There is no qualification of data based on field QC.

MDA's for BOBQQ5, BOBQQ6, & BOBQQ7 > RDL (.1 $\frac{uCi}{g}$) due to having been diluted 1:100. Activity > RDL

Cover Letter (pg 1) does not match COC or Case narrative
Samples rec'd 5-16-94 U-Total (only) for rad analyses

8/23/94 MJP

Laboratory Case Narratives

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

JUN 1994
RECEIVED
SOLA

June 16, 1994

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Sixteen soil samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on May 19, 1994 from TMA/Norcal. The samples were analyzed for the ICP CLP plus lead and zirconium. The analyses were performed under TMA/Skinner and Sherman work order S405165.

Methodology
The samples were prepared and analyzed according to SW846 and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The matrix spike recoveries for sample B0BQQ3 exceeded control limit requirements for antimony, barium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, and zinc.
The matrix spike duplicate recoveries for sample B0BQQ3 exceeded the control limit requirements for antimony, barium, chromium, cobalt, copper, manganese, and zinc exceeded the control limit requirements.
The ICP serial dilution for sample B0BQQ1 for iron exceeded the control limit requirements.
The ICP serial dilution for sample B0BQQ3 for chromium, iron, magnesium, manganese, sodium and zinc exceeded the control limit requirements.
Please feel free to call if there are any questions concerning this package.

Respectfully submitted,
TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

000006

GENERAL CHEMISTRY RESULTS

CASE NO. 05-039

Sample #s:

B0BQQ1	B0BQQ2	B0BQQ3	B0BQQ4
B0BQQ5	B0BQQ6	B0BQQ7	B0BQQ8
B0BQQ9	B0BQR0	B0BQR1	B0BQR2
B0BQR3	B0BQR4	B0BQR5	B0BQR7

CASE NARRATIVE

Since two types of matrices (soil and concrete) were submitted, TMA/ARLI performed two sets of QC. Both matrices were prepared in the same manor, therefore only one LCS and Blank was prepared and analyzed with the samples.

No other problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 6/21/94

Maureen Parrish

000115

TMA/Norcal
Report N4-05-062-7378
Sample Delivery Group 7378

Westinghouse Hanford Company
P.O. MBH-SVV-069262

Case Narrative **June 23, 1994**

1.0 GENERAL

TMA/Norcal Sample Delivery Group 7378 is comprised of sixteen soil samples delivered under Field Logbook No. EFL-1095. There were no unique ID's to identify the Chain-of-Custody documents, however, the project designation was 300 Area Solvent Evaporation RCRA Closure.

Each sample consisted of a ziploc bag of concrete rubble.

2.0 ANALYSIS NOTES

2.1 Total Uranium Analyses

The MDA's for samples B0BQQ5, B0BQQ6, B0BQQ9 were greater than the RDL due to dilutions performed on the samples to achieve an accurate response from the laser phosphorimeter (KPA). All of the samples contained uranium activity much greater than the RDL.

Chain-of-Custody Information

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

Collector Von Lucas Date 5-13-94

Company Contact Von Lucas Telephone (509) 376-2789

Sample Number	*	Date Collected	Time Collected	Number and Type of Containers/Analysis Requested
BOBQQ1	X	4-27-94	1025	Matrix-sand. Each sample consists of
~~BOBQR6~~		~~5-2-94~~		the following - (1) plastic 250 ml [ICP metals
~~BOBQR5~~		5-2-94	0856	- TAL, include Zr (6010), and AA metals (Pb) 7421],
BOBQR7	↓			(1) plastic 125 ml [IC Anions - Br (EPA 300.0)],
				(1) glass 60 ml [Total U (EA-01C)]
BOBQQ2	X	4-27-94	0955-1020	Each sample consists of a plastic
BOBQQ3				ziplock bag of concrete rubble.
BOBQQ4				Analyze each for the following:
BOBQQ5			↓	
BOBQQ6			1245-1325	• ICP Metals - TAL (include Zr), 6010
BOBQQ7		↓	↓	• AA Metals (Pb), 7421
BOBQQ8		4-28-94	0842-1028	• IC Anions (Br), EPA 300.0
BOBQQ9		↓	↓	• Total U, EA-01C
BOBQR0		4-27-94	1342-1450	
BOBQR1				
BOBQR2		↓	↓	
BOBQR3		4-28-94	1045-1125	
BOBQR4				
BOBQR5	↓	↓	↓	

*Type of Sample: A = Air; DL = Drum Liquids; DS = Drum Solids; L = Liquid; O = Oil; S = Soil; SE = Sediment; SL = Sludge; SO = Solid; T = Tissue; W = Water; WI = Wipe; X = Other

Field Information —

Special Handling and/or Storage Cool 4°C

Possible Sample Hazards —

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator Jon Lucas

Company Contact Jon Lucas

Telephone 509-376-2789

Project Designation/Sampling Locations 300 Area Solvent Evap. RCRA Closure

Collection Date 4-27 & 28-94

Ice Chest No. RM 136

Field Logbook No. EFL-1095

Bill of Lading/Airbill No. 520302440

Offsite Property No. W94-0-0573-3

Method of Shipment ~~Emery~~ Burlington JRS-13-94

Shipped to TMA/NORCAL

Possible Sample Hazards/Remarks —

Sample Identification

BOBQQ2
BOBQQ3
BOBQQ4
BOBQQ5
BOBQQ6
BOBQQ7
BOBQQ8
BOBQQ9
BOBQRQ

Each sample consists of a ziplock bag of concrete rubble.

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
Jonathan G. Lucas	5-13-94	1318	Kermit Blum K. Blum	5-16-94	0800 *

Final Sample Disposition

Disposal Method: | Disposed by: | Date/Time:

Comments: * Received @ TMA/NORCAL 5-14-94; opened 5-16-94 · KB

A-6000-407 (12/92) WEF061

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: Jon Lucas

Company Contact: Jon Lucas

Telephone: 509-376-2789

Project Designation/Sampling Locations: 300 Area Solvent Evap. RCRA Closure

Collection Date: 4-27 & 28-94, 5-2-94

Ice Chest No.: RM 253

Field Logbook No.: EFL-1095

Bill of Lading/Airbill No.: 520 302 440

Offsite Property No.: W94-0-0573-3

Method of Shipment: ~~Emery~~ Burlington JL 5-13-94

Shipped to: TMA / NORCAL

Possible Sample Hazards/Remarks: —

Sample Identification

BOBQR1
BOBQR2
BOBQR3 } Each sample consists of one ziplock
BOBQR4 } bag of concrete rubble.
BOBQR5

BOBQQ1 } Each sample consists of (1) 250 ml P,
BOBQQ7 } (1) 125 ml P, and (1) 60 ml glass.

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
Jonathan E. Lucas / Jonathan E. Lucas	5-13-94	1318	Kermit Blum K. Blum	5-16-94	0800 **
		54			

Final Sample Disposition

Disposal Method: | Disposed by: | Date/Time:

Comments: * BOBQQ1 & BOBQR7 each consist of one 60-ml glass bottle, one 250 ml plastic bottle, and one 500 ml plastic bottle.

** Received @ TMA/NORCAL 5-14-94; opened 5-16-94 · KB

A-6000-407 (12/92) WEF061

000120

"Saturday Delivery"

Contractor Westinghouse Hanford Co.	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W94-0-0573-3

PART I – TO BE COMPLETED BY ORIGINATOR

Department Field Characterization Project	Section N/A		Unit N/A
The following items are to be shipped from	☑ Contractor	☐ Vendor	
82 5-13-94 Routing ~~Emery~~ Burlington	☑ Contractor	☐ Vendor	
Shipped to TMA/Norcal 2030 Wright Ave. Richmond, CA 94804	Off-site Custodian Robert Fox		
	Full Title Sample Receipt		

Quantity	Description (include Serial and any Government Tag Numbers)	Original Cost
2	Polyicechest (RM 13C, RM 253) containing ziplock bags of concrete rubble packed in vermiculite and blue ice.	
Weight (RM 253) → 72 lbs	Sample Numbers – B0BQQ1 thru B0BQQ9, B0BQRØ thru B0BQR5, and B0BQR7.	
Weight (RM 13C) → 84 lbs		

☐ Classified ☑ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Program not available on-site.

Bill of Lading # 520302440

RECEIVED

MAY 13 1994

PROPERTY RECORDS

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release [signature]		RM Survey No. #761	Date 5-13-94
Location of Property (Area & Bldg.) 300 Area Solvent Evaporator	Contact Jonathan G. Lucas		Phone 509-376-2789
Date Ready for Shipment 5-13-94	Cost Code to be Charged K345C	Org. Code 8B420	Approximate Date This Property will be Returned N/A
Originated By Jonathan G. Lucas	Date 5-12-94	Authorized By Jonathan G. Lucas [signature]	Date 5-12-94
Signature and Name of Property Control	Custodian Date	Property Management Approval [signature]	Date 5/13/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient [signature]	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date 5-13-94	55			

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

000121

001 001

BURLINGTON AIR EXPRESS

CORPORATE SUPPORT GROUP
18200 VON KARMAN AVE.
IRVINE, CA 92715

520 302 440
AIRBILL NUMBER

ORIGIN	DEST. SORT CODE
3-94	

SHIPPER'S REFERENCE NO.: 5C 8b420 W94-0-0573#3
SHIPPER'S ACCOUNT NO.: 741-4-4192
DEPT./FLOOR
JONATHAN LUCAS
DEPT OF ENERGY C/O WESTINGHOUSE
(OR NAME) HANFORD CO
PHONE NO.
INGHOUSE SHIPPING DEPT (509) 376-6665
ADDRESS
STEVENS DR
CITY: RICHLAND STATE: WA ZIP (REQUIRED): 99352

2 CONSIGNEE'S REFERENCE NO.
CONSIGNEE'S ACCOUNT NO.
COMPANY: TMA/NORCAL
DEPT./FLOOR
TO (CONSIGNEE NAME): TMA/NORCAL ROBERT FOX
PHONE NO.
ACCURATE STREET ADDRESS (BURLINGTON CANNOT DELIVER TO A P.O. BOX): 2030 WRIGHT AVE
CITY: RICHMOND STATE: CA ZIP (REQUIRED): 94804

3 C.O.D.
$
CONSIGNEE'S CHECK O.K. MARK IF APPLICABLE ☐
BURLINGTON AIR EXPRESS WILL COLLECT CONSIGNEE'S CHECK (IF AVAILABLE ONLY TO THE SHIPPER FOR THE VALUE OF THE GOODS IN THE AIRBILL SHOWN ABOVE.

DECLARED VALUE
$

LIMIT OF LIABILITY
LIABILITY IS AGREED AND UNDERSTOOD TO BE $50.00 OR $.50 PER POUND, WHICHEVER IS GREATER, UNLESS A HIGHER VALUE IS DECLARED AND APPLICABLE CHARGES PAID. SEE REVERSE SIDE OF AIRBILL, PARAGRAPH 8, FOR DECLARED VALUE LIMITATIONS.

1-800-CALL-BAX
FOR INFORMATION OR THE BAX OFFICE NEAREST YOU

BILLING INFORMATION
PREPAID (SHIPPER) $ _____ CASH RECEIVED (PAID IN ADVANCE)
COLLECT (CONSIGNEE)
3RD PARTY (ACCT. NO. OR BILLING ADDRESS REQ'D.)
NO.
NAME
ADDRESS
STATE ZIP

520 302 440
AIRBILL NUMBER

5 SERVICE REQUESTED
☐ OVERNIGHT (NEXT BUSINESS DAY)
☐ SECOND DAY
☐ NEXT FLIGHT OUT
☐
CHECK BELOW IF PACKAGE IS:
☐ LETTER
☐ G.O.H. (GARMENT ON HANGER)

6 HANDLING INFORMATION (* SPECIAL RATE MAY APPLY)
☐ HOLD AT BAX ☐ *DANGEROUS GOODS ☒ *SATURDAY DELIVERY ☐ *SPECIAL DELIVERY ☐ *CONVENTION ☐ *GOVERNMENT SHIPMENT

SPECIAL INSTRUCTIONS / ADDITIONAL REFERENCE INFORMATION:

NO. OF PCS.	WEIGHT	LENGTH	WIDTH	HEIGHT	DESCRIPTION
1	72				COOLER RM 253 SAMPLES
1	84				COOLER RM 136 SAMPLES
TOTAL PCS. 2	TOTAL WT. 156				

_____ SKID(S) SAID TO CONTAIN _____ NO. OF PIECES

RATE QUOTE NUMBER

RECEIVED BY BAX AT ☒ SHIPPER'S DOOR ☐ BAX TERMINAL

OUTSIDE CARRIER:
CHARGES ADVANCED $
PRO NUMBER
CARRIER NAME

7 SIGNATURE OF SHIPPER
X [signature] 5/17/94

TIME/DATE OF PICK-UP: 2:00 5/18/94
DRIVER NO.

RELEASE SIGNATURE (SIGNING AUTHORIZES BAX TO DELIVER SHIPMENT WITHOUT A DELIVERY SIGNATURE AS PER CONDITIONS ON REVERSE OF THIS PAGE.)
X

SIGNED FOR BAX
X [signature]

NON-NEGOTIABLE AIRBILL SUBJECT TO TERMS AND CONDITIONS OF CONTRACT ON REVERSE SIDE.

CONSIGNEE COPY

OCC 56

000122

OFFICE OF SAMPLE MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0118
Record of Disposition No.

DATE: 5/17/94	LABORATORY: TMA
PROJECT TITLE/NO.: 300 Area Solvent Evaporator Concrete/ SAF# 94-126	NCR NO.: 051972

SAMPLE IDENTIFICATION NUMBERS:

B0BQR7

DESCRIPTION OF EVENT:

Although the Sample Analysis Request and sample container were correctly identified with HEIS Number B0BQR7, the incorrect HEIS number (B0BQQ7) was entered on the Chain-of-Custody.

The sampling date and time for B0BQR7 (5/2/94 at 08:56) as entered on the Sample Analysis Request was matched by the laboratory with the corresponding sample label for positive identification. Therefore, traceability was maintained for B0BQR7.

DISPOSITION OF SAMPLES:

With consent from the Technical Representative, proceed with the analysis. Report all data for the above sample with the HEIS Number entered on the Sample Analysis Request/sample container.

APPROVAL SIGNATURES:

W. E. Strohben/ W. E. Strohben — 5/17/94
OSM Project Coordinator (Print/Sign Name) — Date

J. G. Lucas/ Jonathan G. Lucas — 5-20-94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

VEDD Printout

VALIDATION ELECTRONIC DELIVERABLE SGD BOBQQ1-TMA-759

Thursday, September 22, 1994

HEIS-SN	Form	FormNr	LabCode	ConstID	Media	Value	ConcFlag	Qual	CountErr	Units
B0BQQ1	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ3	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ4	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ5	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ6	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ1	NCLP	NA	TMA	7440-39-3	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQQ3	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQQ4	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQQ5	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQQ6	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQQ2	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQQ3	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQQ4	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQQ5	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQQ6	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQQ1	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-43-9	SS			J		
B0BQQ3	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQQ4	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQQ5	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQQ6	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQQ1	NCLP	NA	TMA	7440-47-3	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQQ3	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQQ4	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQQ5	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQQ6	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQQ1	NCLP	NA	TMA	7440-48-4	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQQ3	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQQ4	NCLP	NA	TMA	7440-48-4	SS			J		

Entered by: CMS

Checked by: AJ

000125

HEIS-SN	Form	FormNr	LabCode	ConstID	Media	Value	ConcFlag	Qual	CountErr	Units
B0BQQ5	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQQ6	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQQ1	NCLP	NA	TMA	7440-50-8	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQQ3	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQQ4	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQQ5	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQQ6	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQQ1	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ2	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ3	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ4	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ5	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ6	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ1	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ2	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ3	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ4	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ5	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ6	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ1	NCLP	NA	TMA	7439-95-4	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQQ3	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQQ4	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQQ5	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQQ6	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQQ1	NCLP	NA	TMA	7439-96-5	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQQ3	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQQ4	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQQ5	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQQ6	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQQ1	NCLP	NA	TMA	7440-02-0	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQQ3	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQQ4	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQQ5	NCLP	NA	TMA	7440-02-0	SS			J		

Entered by: CMO

Checked by: AT

000126

HEIS-SN	Form	FormNr	LabCode	ConstID	Media	Value	ConcFlag	Qual	CountErr	Units
B0BQQ6	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQQ1	NCLP	NA	TMA	7440-23-5	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-23-5	SS			BJ		
B0BQQ3	NCLP	NA	TMA	7440-23-5	SS			BJ		
B0BQQ4	NCLP	NA	TMA	7440-23-5	SS			BJ		
B0BQQ5	NCLP	NA	TMA	7440-23-5	SS			BJ		
B0BQQ6	NCLP	NA	TMA	7440-23-5	SS			J		
B0BQQ1	NCLP	NA	TMA	7440-66-6	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQQ3	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQQ4	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQQ5	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQQ6	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQQ1	NCLP	NA	TMA	7440-67-7	SS			UJ		
B0BQQ2	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQQ3	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQQ4	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQQ5	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQQ6	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQQ7	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ8	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ9	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQR0	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQR1	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQR2	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQQ7	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQQ8	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQQ9	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQR0	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQR1	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQR2	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQQ7	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQQ8	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQQ9	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQR0	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQR1	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQR2	NCLP	NA	TMA	7440-41-7	SS			U		

Entered by: CMS

Checked by:

000127

HEIS-SN	Form	FormNr	LabCode	ConstID	Media	Value	ConcFlag	Qual	CountErr	Units
B0BQQ7	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQQ8	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQQ9	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQR0	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQR1	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQR2	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQQ7	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQQ8	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQQ9	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQR0	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQR1	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQR2	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQQ7	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQQ8	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQQ9	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQR0	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQR1	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQR2	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQQ7	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQQ8	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQQ9	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQR0	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQR1	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQR2	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQQ7	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ8	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ9	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQR0	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQR1	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQR2	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQQ7	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ8	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ9	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQR0	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQR1	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQR2	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQQ7	NCLP	NA	TMA	7439-95-4	SS			J		

Entered by: CMO

Checked by: AJ

HEIS-SN	Form	FormNr	LabCode	ConstID	Media	Value	ConcFlag	Qual	CountErr	Units
B0BQQ8	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQQ9	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQR0	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQR1	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQR2	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQQ7	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQQ8	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQQ9	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQR0	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQR1	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQR2	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQQ7	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQQ8	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQQ9	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQR0	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQR1	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQR2	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQR1	NCLP	NA	TMA	7440-22-4	SS			U		
B0BQQ7	NCLP	NA	TMA	7440-23-5	SS			BJ		
B0BQQ8	NCLP	NA	TMA	7440-23-5	SS			J		
B0BQQ9	NCLP	NA	TMA	7440-23-5	SS			J		
B0BQR0	NCLP	NA	TMA	7440-23-5	SS			J		
B0BQR1	NCLP	NA	TMA	7440-23-5	SS			J		
B0BQR2	NCLP	NA	TMA	7440-23-5	SS			BJ		
B0BQQ7	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQQ8	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQQ9	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQR0	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQR1	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQR2	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQQ7	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQQ8	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQQ9	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQR0	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQR1	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQR2	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQR3	NCLP	NA	TMA	7440-36-0	SS			UJ		

Entered by: CMR

Checked by: AJ

000129

HEIS-SN	Form	FormNr	LabCode	ConstID	Media	Value	ConcFlag	Qual	CountErr	Units
B0BQR5	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQR7	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-36-0	SS			UJ		
B0BQR3	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQR5	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQR7	NCLP	NA	TMA	7440-39-3	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-39-3	SS			J		
B0BQR3	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQR5	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQR4	NCLP	NA	TMA	7440-41-7	SS			U		
B0BQR3	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQR5	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQR7	NCLP	NA	TMA	7440-43-9	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-43-9	SS			J		
B0BQR3	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQR5	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQR7	NCLP	NA	TMA	7440-47-3	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-47-3	SS			J		
B0BQR3	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQR5	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQR7	NCLP	NA	TMA	7440-48-4	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-48-4	SS			J		
B0BQR3	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQR5	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQR7	NCLP	NA	TMA	7440-50-8	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-50-8	SS			J		
B0BQR3	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQR5	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQR7	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQR4	NCLP	NA	TMA	7439-89-6	SS			J		
B0BQR3	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQR5	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQR7	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQR4	NCLP	NA	TMA	7439-92-1	SS			J		
B0BQR3	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQR5	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQR7	NCLP	NA	TMA	7439-95-4	SS			UJ		

000130

Entered by: CMD

Checked by: AJ

HEIS-SN	Form	FormNr	LabCode	ConstID	Media	Value	ConcFlag	Qual	CountErr	Units
B0BQR4	NCLP	NA	TMA	7439-95-4	SS			J		
B0BQR3	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQR5	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQR7	NCLP	NA	TMA	7439-96-5	SS			UJ		
B0BQR4	NCLP	NA	TMA	7439-96-5	SS			J		
B0BQR3	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQR5	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQR7	NCLP	NA	TMA	7440-02-0	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-02-0	SS			J		
B0BQR7	NCLP	NA	TMA	7440-09-7	SS			U		
B0BQR3	NCLP	NA	TMA	7440-23-5	SS			BJ		
B0BQR5	NCLP	NA	TMA	7440-23-5	SS			BJ		
B0BQR7	NCLP	NA	TMA	7440-23-5	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-23-5	SS			J		
B0BQR7	NCLP	NA	TMA	7440-62-2	SS			U		
B0BQR3	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQR5	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQR7	NCLP	NA	TMA	7440-66-6	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-66-6	SS			J		
B0BQR3	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQR5	NCLP	NA	TMA	7440-67-7	SS			J		
B0BQR7	NCLP	NA	TMA	7440-67-7	SS			UJ		
B0BQR4	NCLP	NA	TMA	7440-67-7	SS			J		

000131

Entered by: CMS

Checked by: AT

HEIS-SN	Form	FormNr	LabCode	ConstID	Media	Value	ConcFlag	Qual	CountErr	Units
B0BQR7	NCLP	NA	TMA	24959-67-9	SS			UJ		

000132

Entered by: gm 8/23/94

Checked by: MLP 8/23/94

END OF PACKAGE