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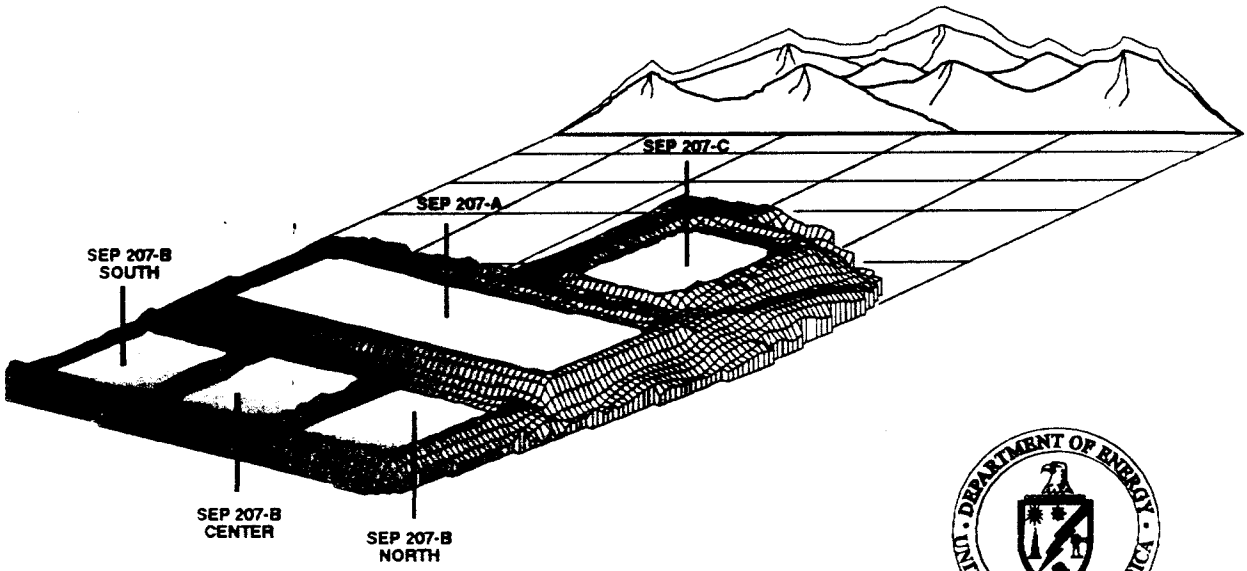
OU4 Solar Evaporation Ponds Interim Measure/Interim Remedial Action Environmental Assessment Decision Document

U.S. Department of Energy
Rocky Flats Plant
Golden, Colorado

May 1994

Revision: Draft Proposed

Part II
Volume 4 - Appendices H through L



DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
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ADMIN RE

000035880

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OU4 IM/IRA EA DECISION DOCUMENT

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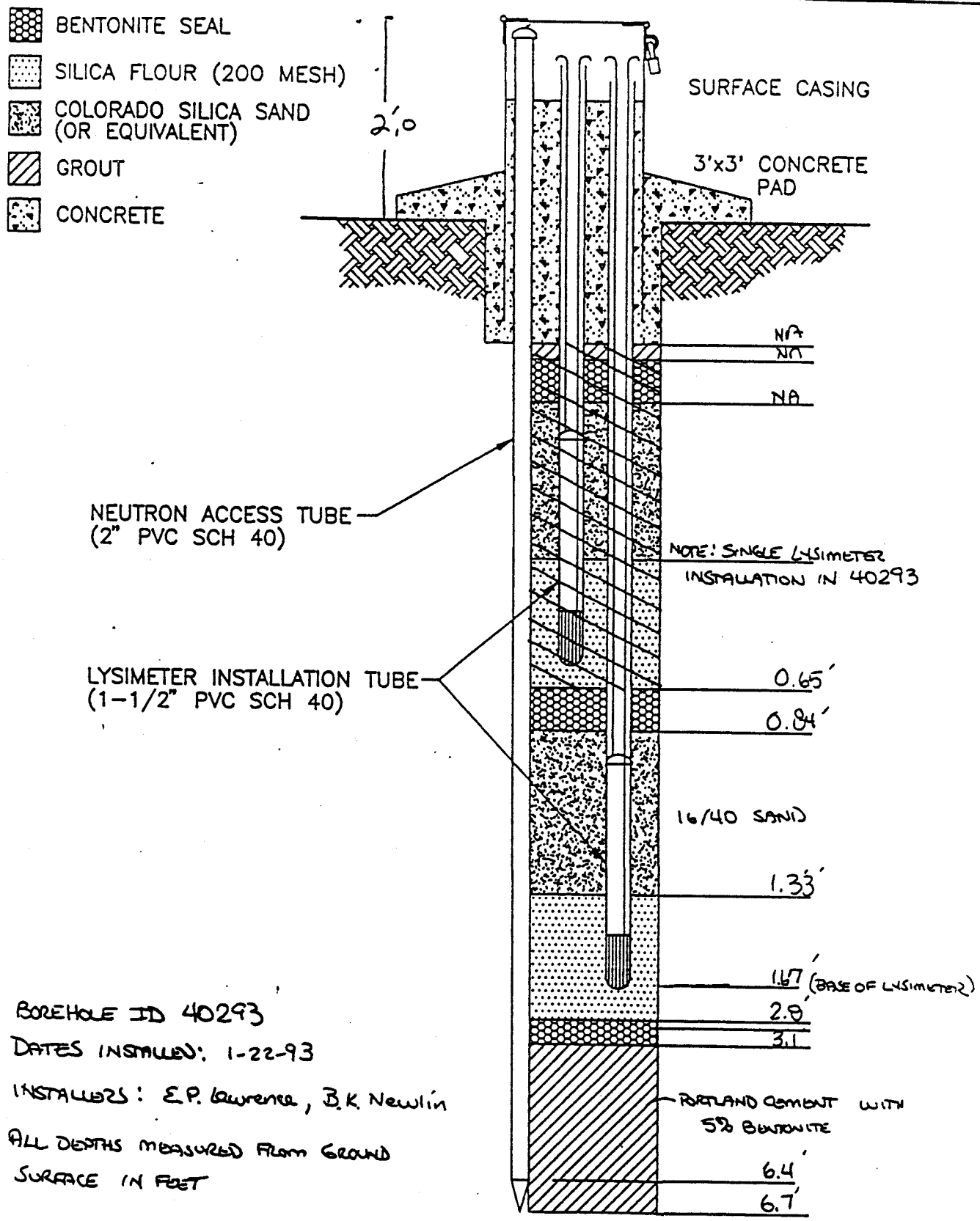
APPENDIX II.H

LYSIMETER AND NEUTRON ACCESS TUBE COMPLETION DETAILS



BOREHOLE ID 40293

DATES INSTALLED: 1-22-93

INSTALLERS: E.P. Lawrence, B.K. Newlin

ALL DEPTHS MEASURED FROM GROUND SURFACE IN FEET

SINGLE LYSIMETER
40293

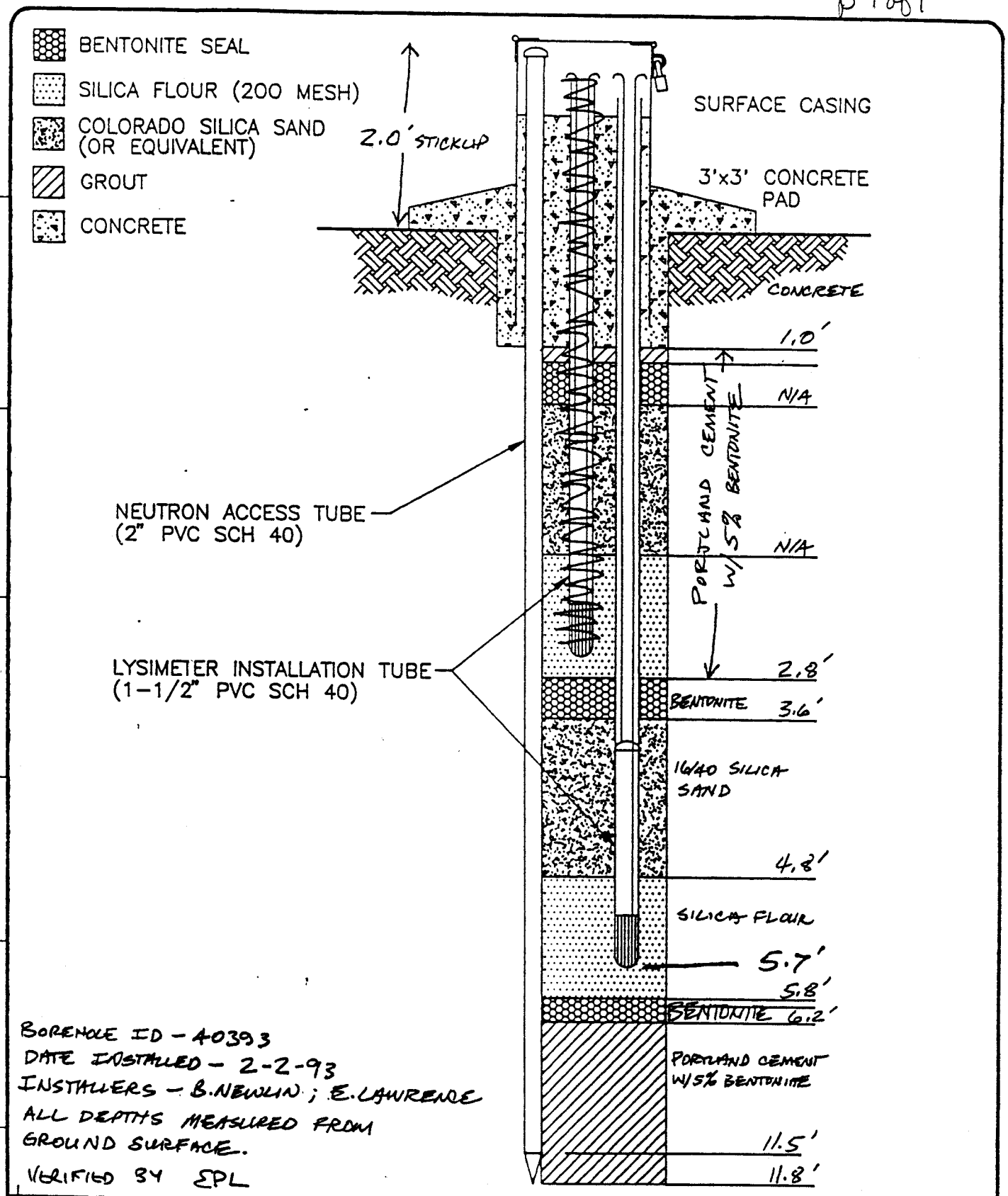
VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE
2

DRAFTER: JDM | APPROVED: LJP | CHECKED: EPL | DRAWING: RFPWELL2 | FILE: | PRJCT NO.: C0272.25 | DWG DATE: 05FEB93

p 1 of 1



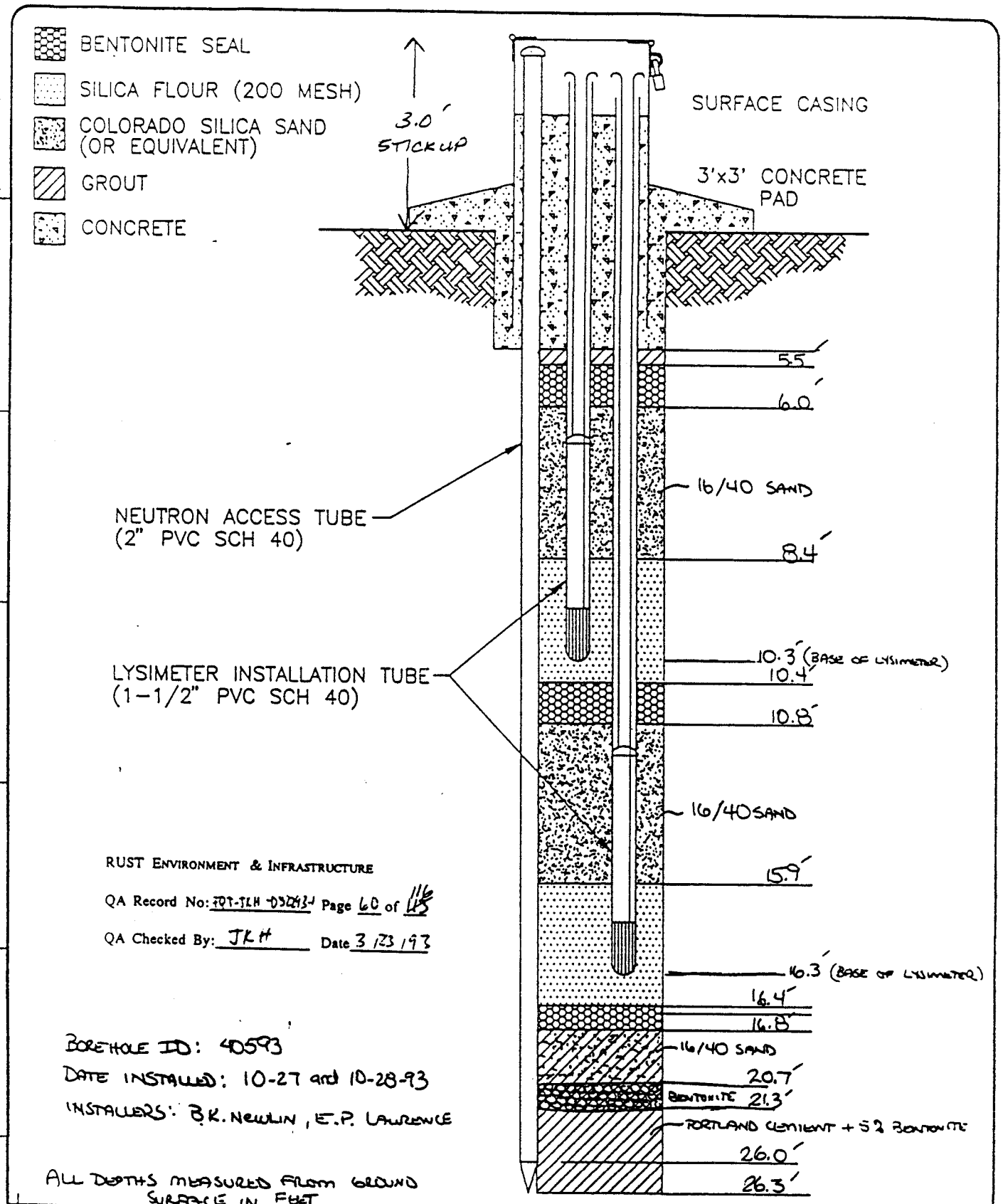
BOREHOLE ID - 40393
DATE INSTALLED - 2-2-93
INSTALLERS - B. NEWLIN ; E. LAWRENCE
ALL DEPTHS MEASURED FROM GROUND SURFACE.
VERIFIED BY EPL

40393
SINGLE LYSIMETER INSTALLATION

VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4
U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE **2**

verified JKH 2/19/93



RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No: RFT-TLH-032434 Page 60 of 116

QA Checked By: JKH Date 3/23/93

BOREHOLE ID: 40593

DATE INSTALLED: 10-27 and 10-28-93

INSTALLERS: B.K. NEWLIN, E.P. LAWRENCE

ALL DEPTHS MEASURED FROM GROUND SURFACE IN FEET

40593

DOUBLE LYSIMETER INSTALLATION

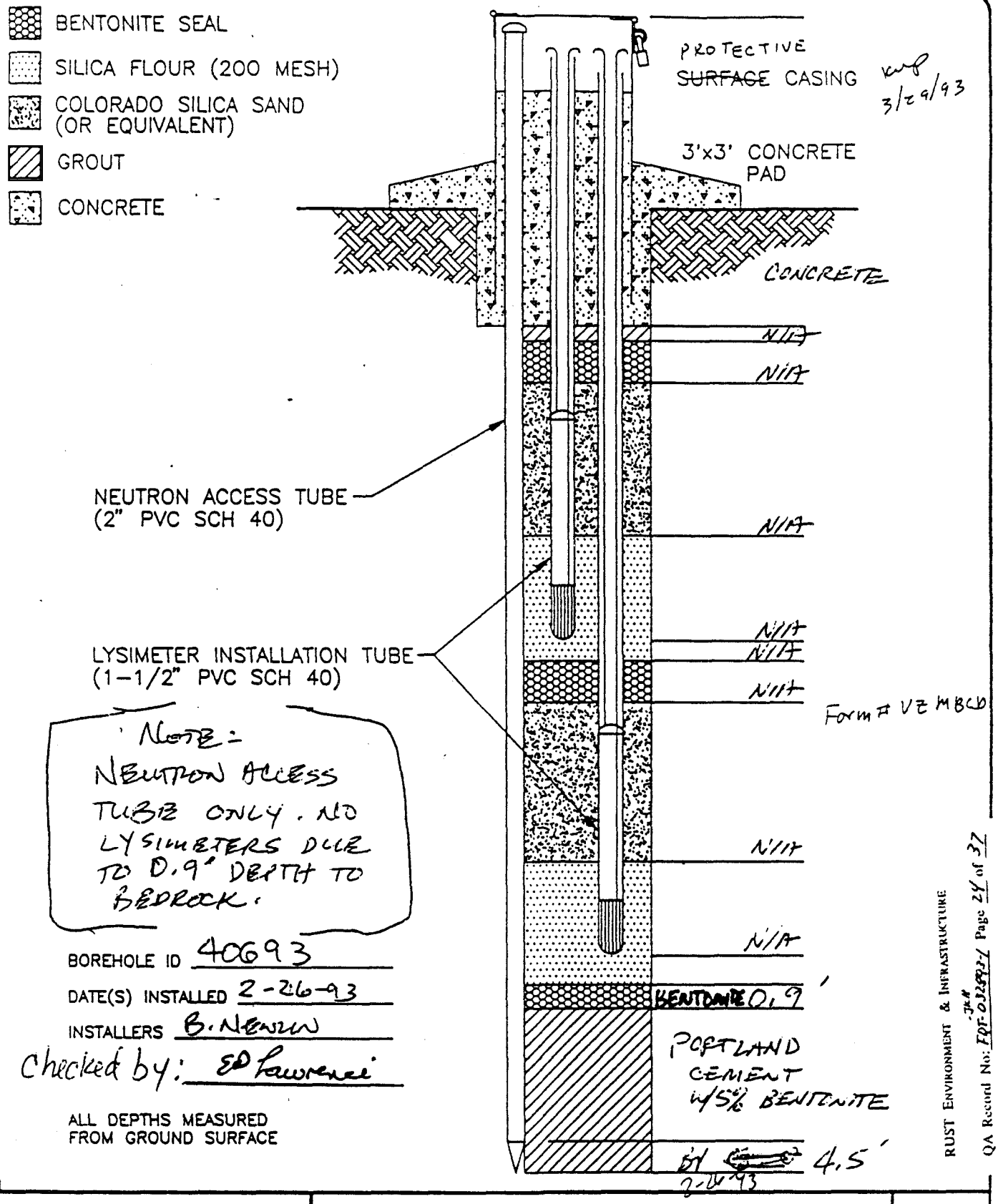
VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM SOLAR PONDS - OU4

U.S. DEPARTMENT OF ENERGY

ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE 2

DRAFTER: JDM | APPROVED: LJP | CHECKED: EPL | DRAWING: RFPWELL2 | FILE: | PRJCT NO.: C0272.25 | DWG DATE: 05FEB93



NOTE: NEUTRON ACCESS TUBE ONLY. NO LYSIMETERS DUE TO 0.9' DEPTH TO BEDROCK.

BOREHOLE ID 40693

DATE(S) INSTALLED 2-26-93

INSTALLERS B. NEWLIN

Checked by: ED Lawrence

ALL DEPTHS MEASURED FROM GROUND SURFACE

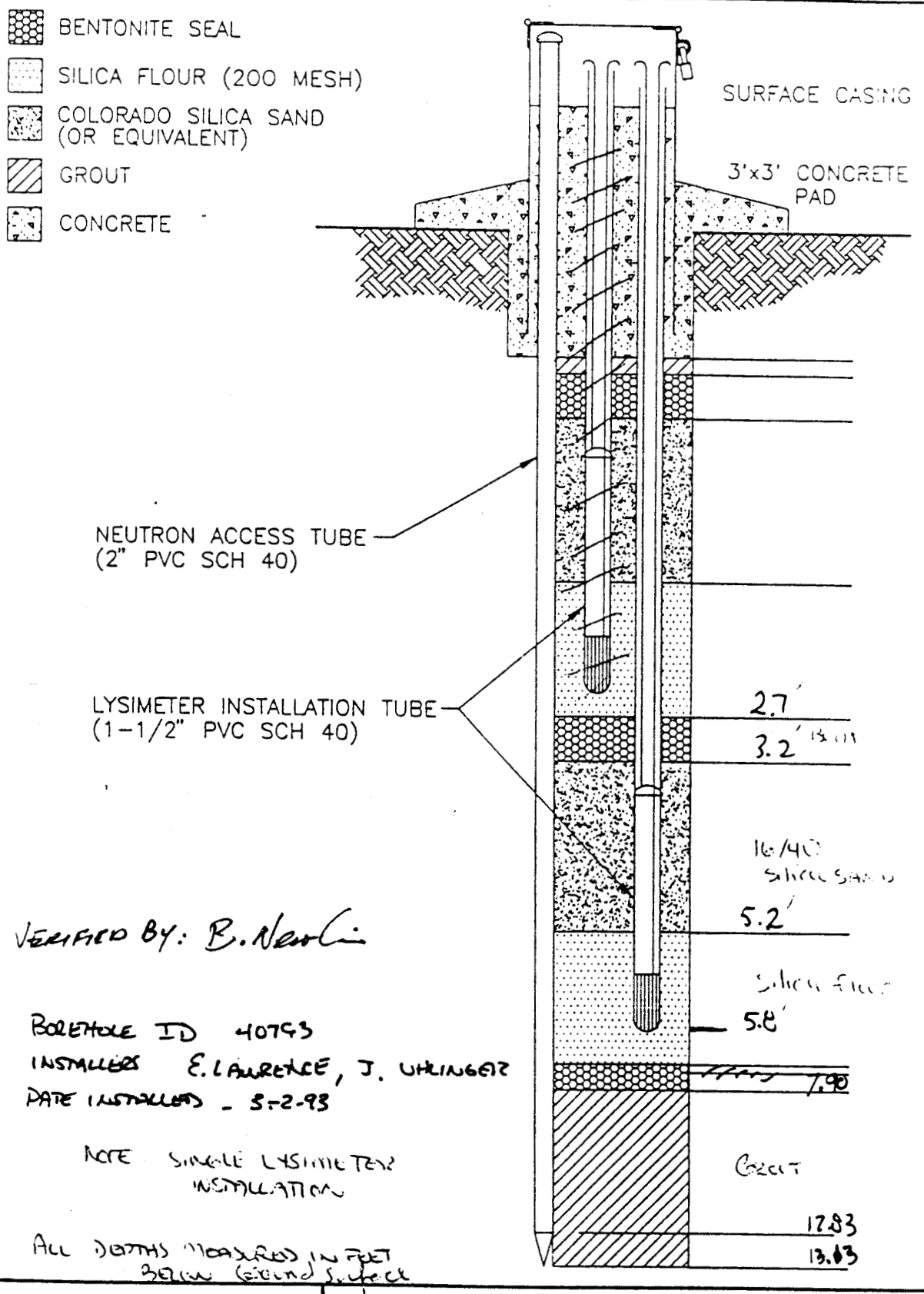
RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No: FQT-032893-1 Page 24 of 37

QA Checked By: JKH EL Date 3/11/93

40693	VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM SOLAR PONDS - OU4 U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT, GOLDEN, COLORADO	FIGURE

DRAFTER: APPROVED: LJP CHECKED: EPL DRAWING: FILE: PRJCT NO.: C0272.25 E. 16FEB93



VERIFIED BY: B. Newlin

BOREHOLE ID 40793
INSTALLERS E. LAWRENCE, J. UHLINGER
DATE INSTALLED - 5-2-93

NOTE SINGLE LYSIMETER INSTALLATION

ALL DEPTHS MEASURED IN FEET BELOW GROUND SURFACE

40793

VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4
U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE 2

DRAFTER: JDM | APPROVED: LJP | CHECKED: EPL | DRAWING: KFPWELL2 | FILE: | PRJCT NO.: CO272.25 | DATE: 05FEB93

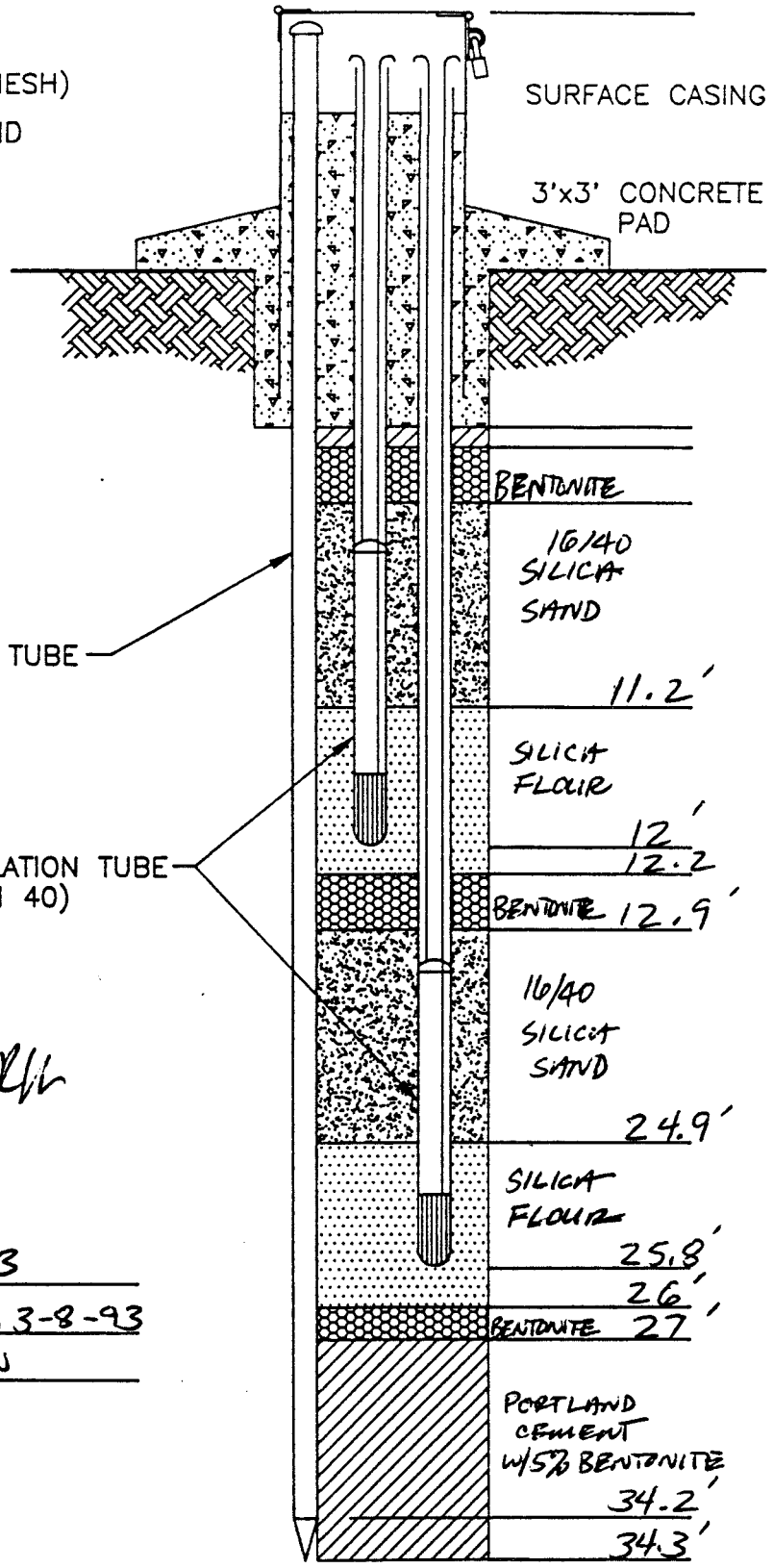
BENTONITE SEAL

SILICA FLOUR (200 MESH)

COLORADO SILICA SAND (OR EQUIVALENT)

GROUT

CONCRETE



NEUTRON ACCESS TUBE (2" PVC SCH 40)

LYSIMETER INSTALLATION TUBE (1-1/2" PVC SCH 40)

VERIFIED BY: [illegible]
BKN, 3/8/93

BOREHOLE ID 40993

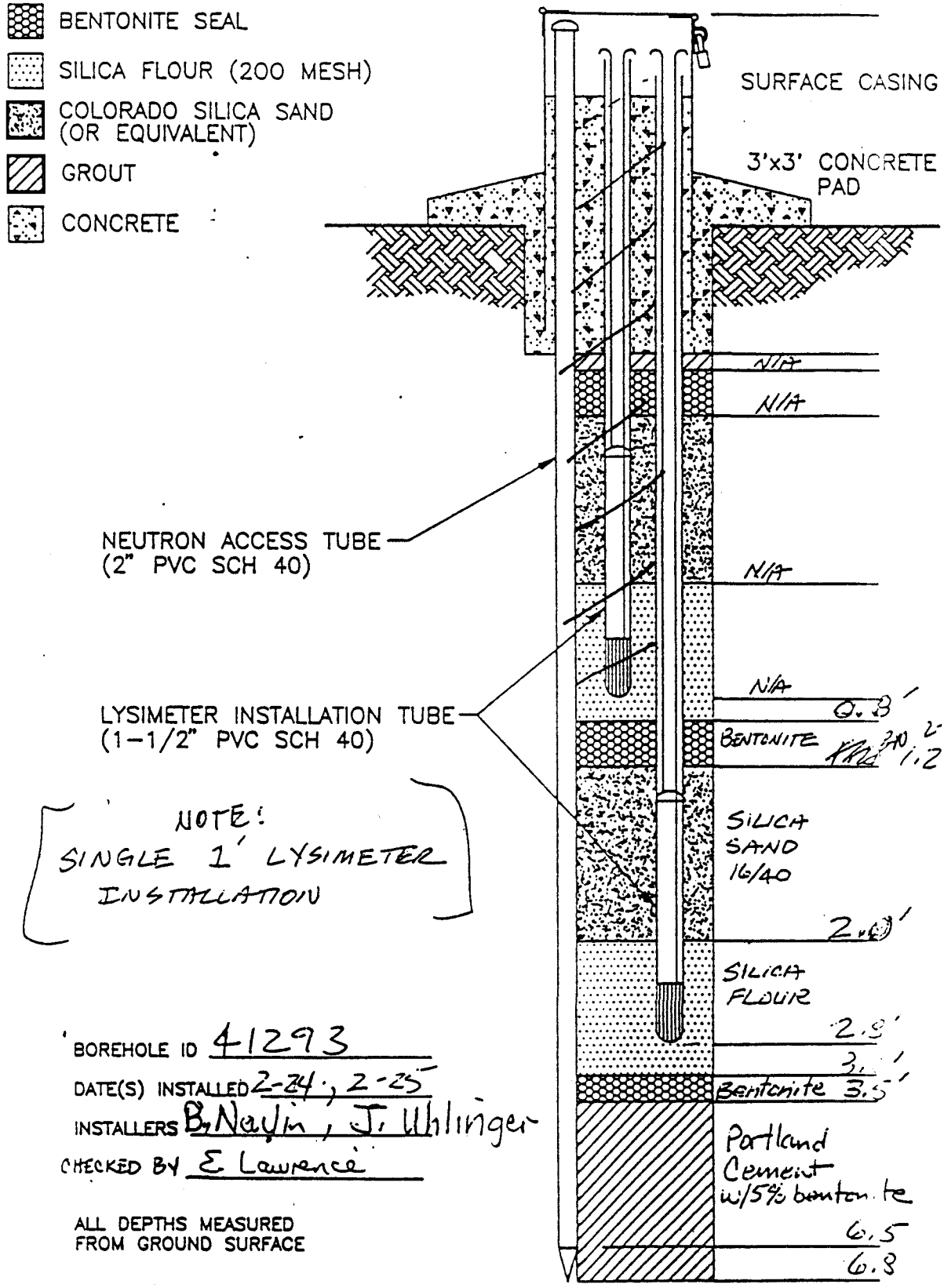
DATE(S) INSTALLED 3-5; 3-8-93

INSTALLERS B. NEWLIN

ALL DEPTHS MEASURED FROM GROUND SURFACE

40993	**VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM SOLAR PONDS - OU4** U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT, GOLDEN, COLORADO	FIGURE

DRAFTER: | APPROVED: LJP | CHECKED: EPL | DRAWING: 2LL2 | FILE: | PRJCT NO.: CO272.25 | DATE: 16FEB93



NOTE:
SINGLE 1' LYSIMETER INSTALLATION

BOREHOLE ID 41293
DATE(S) INSTALLED 2-24, 2-25
INSTALLERS B. Naylin, J. Uhlinger
CHECKED BY E Lawrence

ALL DEPTHS MEASURED FROM GROUND SURFACE

RUST ENVIRONMENT & INFRASTRUCTURE
QA Record No: FQT-JKH-031493 Page 34 of 53
QA Checked By: JKH Date 3/17/93

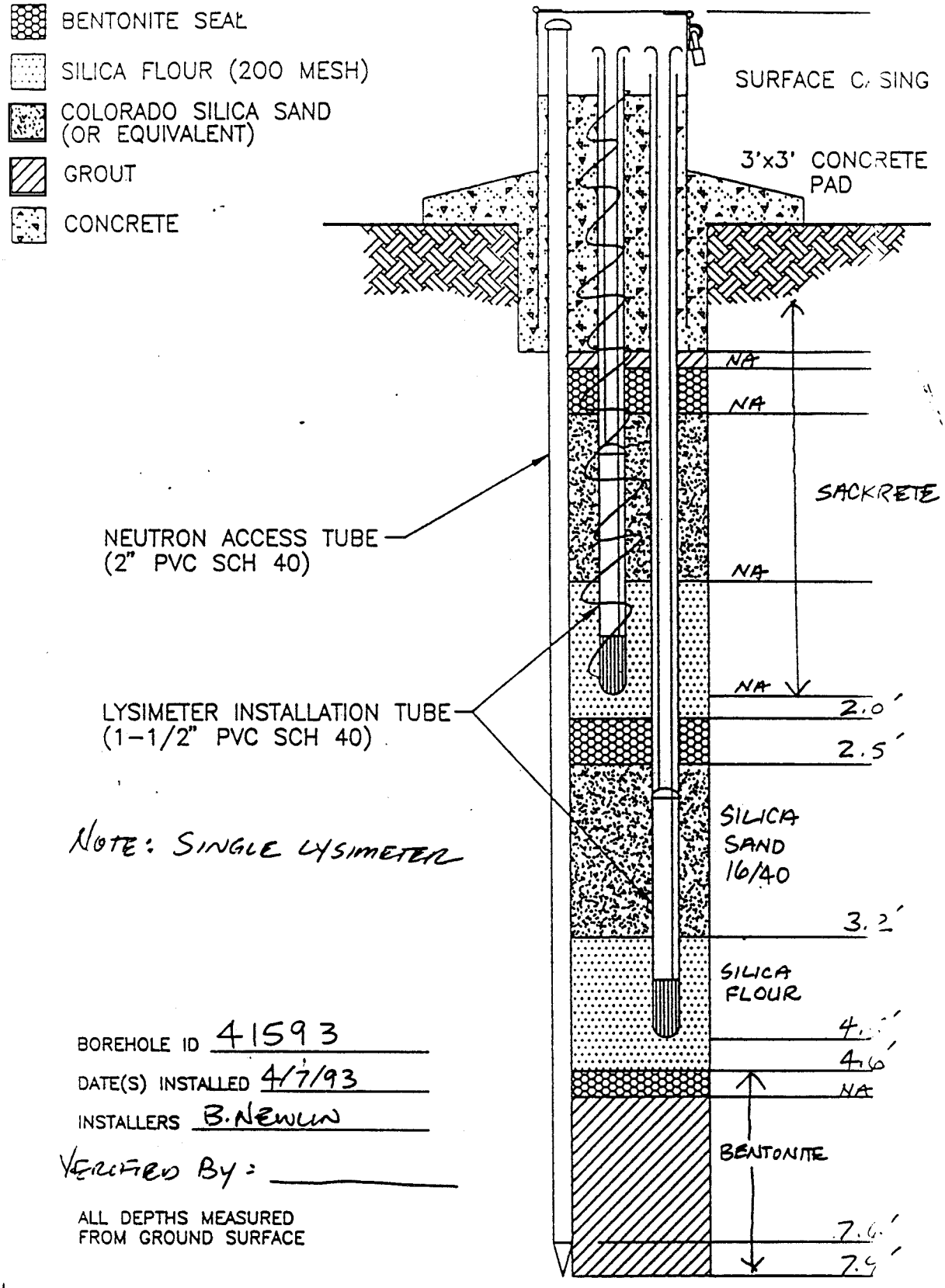
DRAFTER: JDM | APPROVED: LJP | CHECKED: EPL | DRAWING: RFPWELL2 | FILE: | PRJCT NO.: C0272.25 | DWG DATE: 16FEB93

41293

VADOSE ZONE MONITORING BOREHOLE
CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4 # VZMBCD1

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE



BOREHOLE ID 41593

DATE(S) INSTALLED 4/7/93

INSTALLERS B. NEWLIN

VERIFIED BY: _____

ALL DEPTHS MEASURED FROM GROUND SURFACE

RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No. _____ Page ___ of ___

QA Checked By: _____ Date ___/___/___

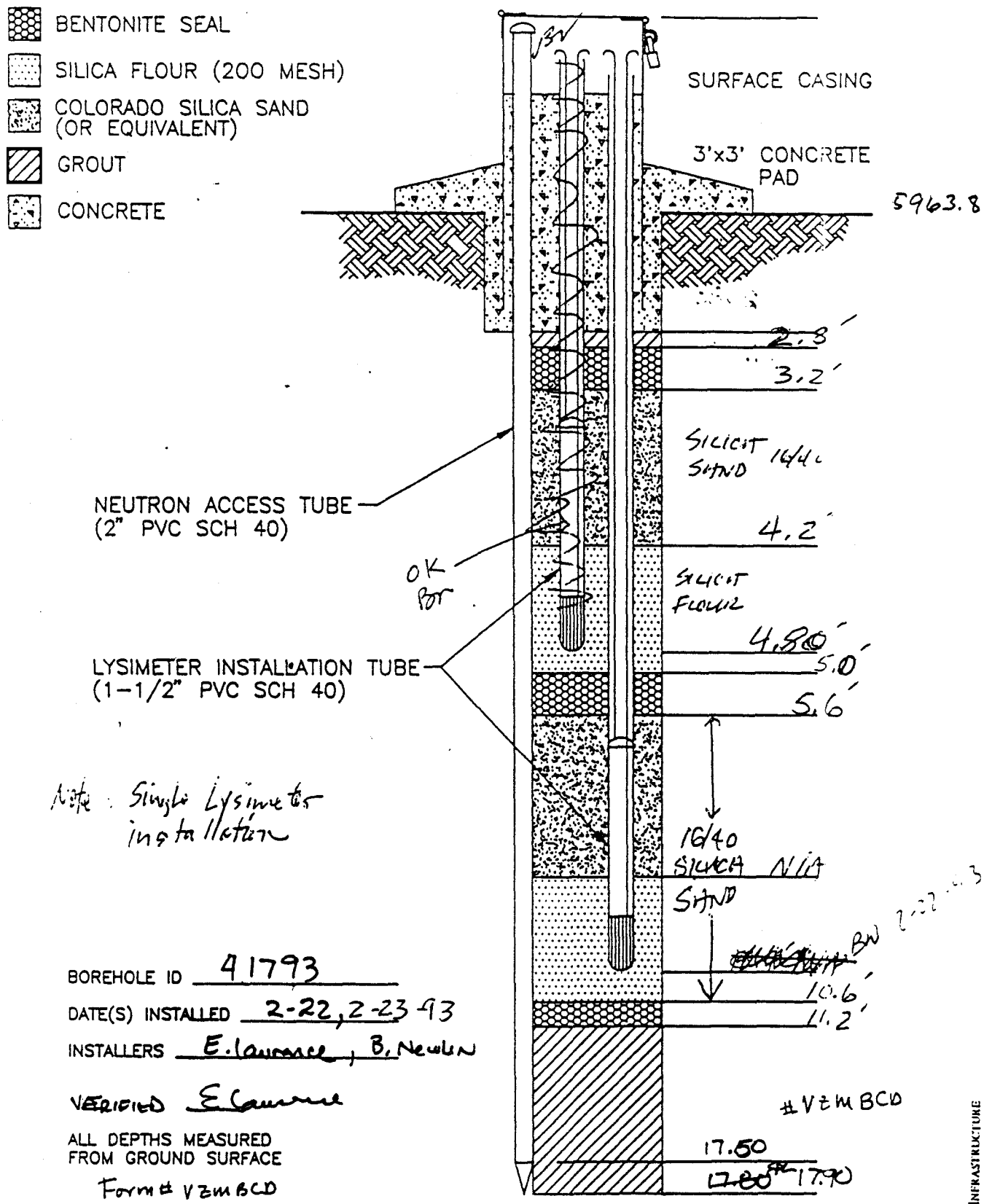
DRAFTER: JDM | APPROVED: LJP | CHECKED: EPL | DRAWING: RFPWELL2 | FILE: | PRJCT NO.: C0272.25 | DWG DATE: 16FEB93

41593

VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE



Note: Single Lysimeter installation

BOREHOLE ID 41793

DATE(S) INSTALLED 2-22, 2-23-93

INSTALLERS E. Lawrence, B. Newlin

VERIFIED E. Lawrence

ALL DEPTHS MEASURED FROM GROUND SURFACE

Form # VZMBCD

41793

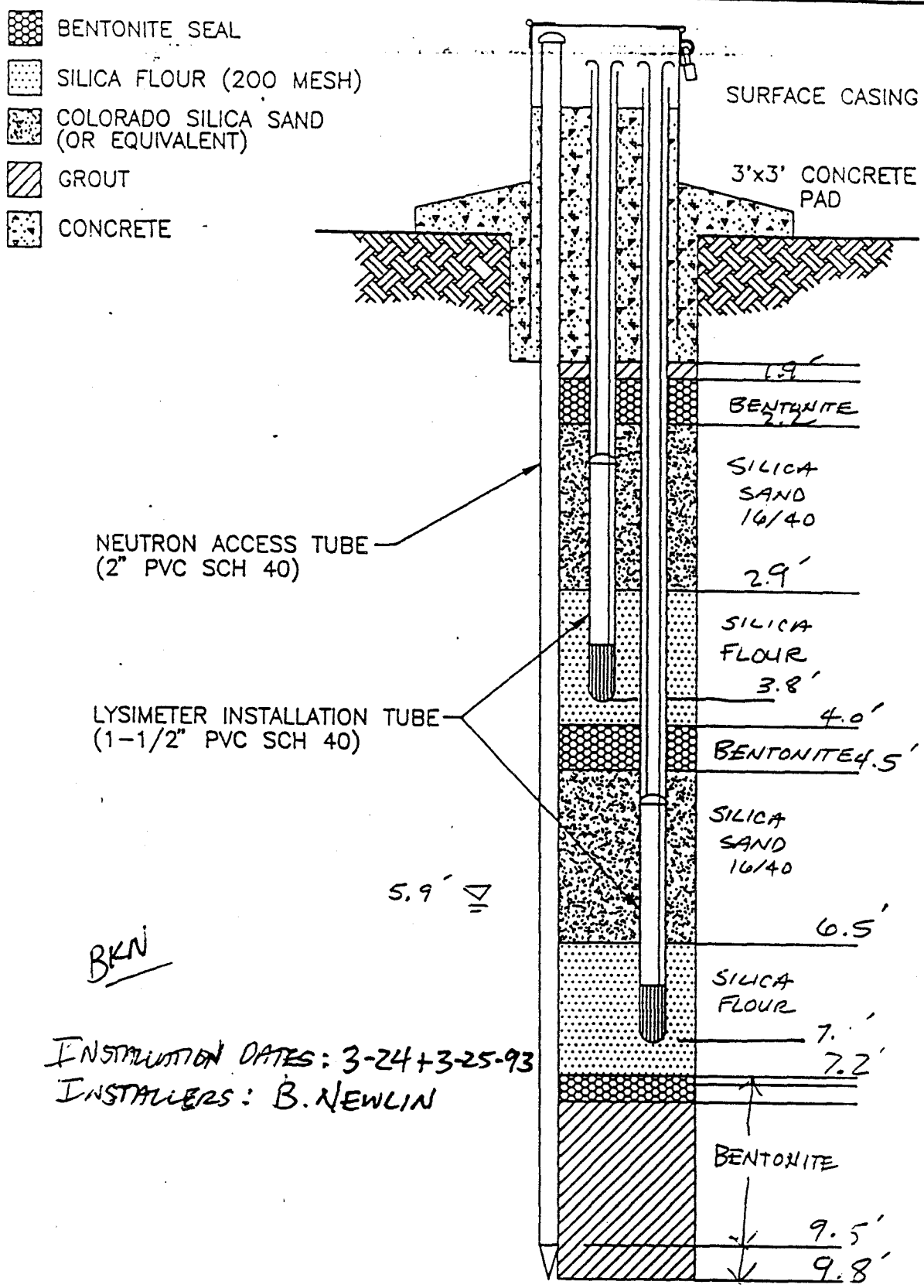
VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM SOLAR PONDS - OU4

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

DRAFTER: JL | APPROVED: LJP | CHECKED: EPL | DRAWING: R... LL2 | FILE: | PROJCT NO.: CO272.25 | DWG: 16FEB93

RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No: [illegible] Page [illegible] of 63



BKN

INSTALLATION DATES: 3-24+3-25-93
INSTALLERS: B. NEWLIN

DRAFTER: JDM | APPROVED: LJP | CHECKED: EPL | DRAWING: RFPWELL2 | FILE: | PRJCT NO.: CO272.25 | DWG DATE: 05FEB93

RUST ENVIRONMENT & INFRASTRUCTURE
QA Record No: FQF-JK4-0788/ Page 38 of 52
QA Checked By: NK Date: 4/20/93

BOREHOLE ID 42493

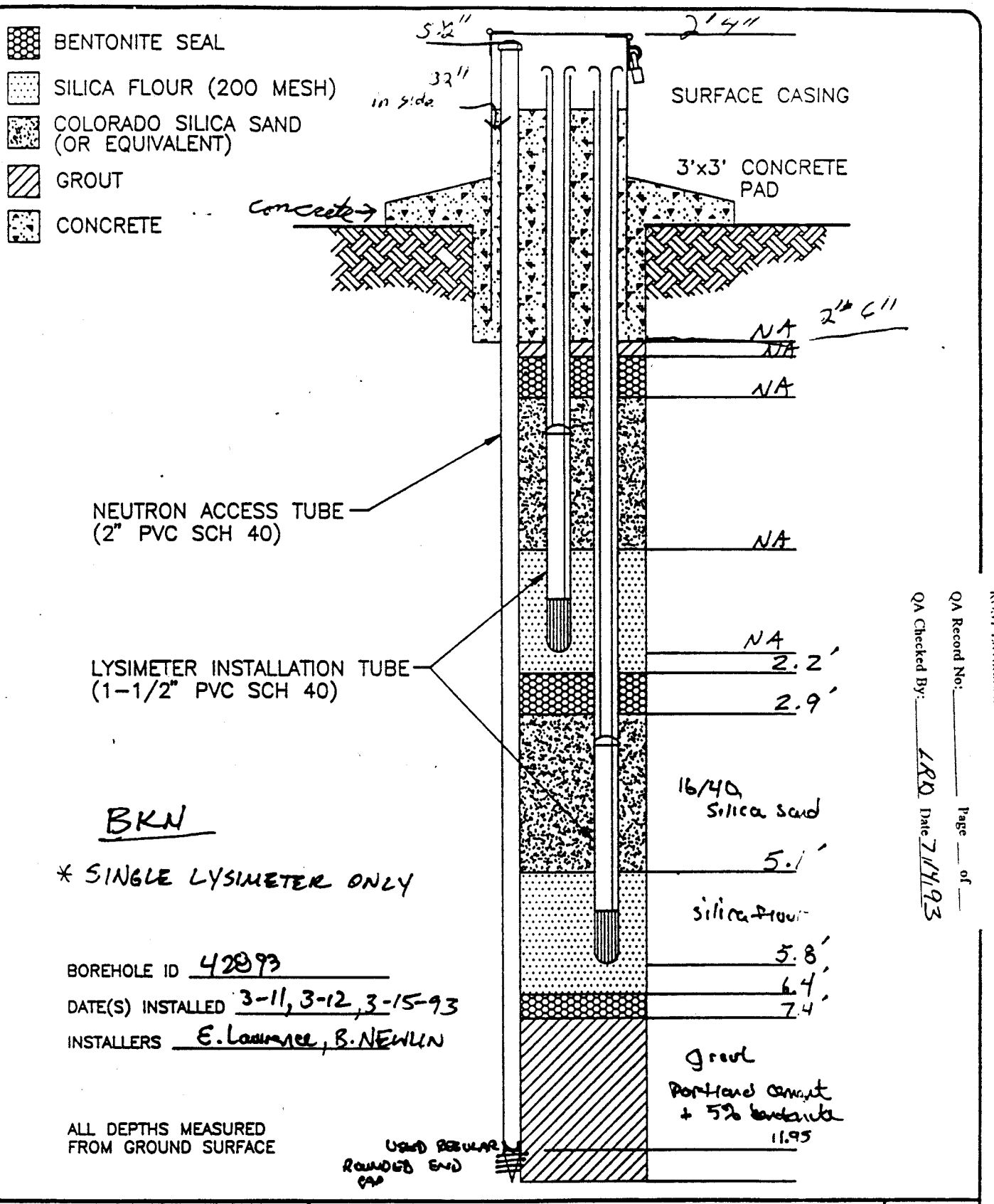
Form # VZMBCO

VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4
U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE 2

TMU

Verified by [illegible]



BKN

* SINGLE LYSIMETER ONLY

BOREHOLE ID 42893

DATE(S) INSTALLED 3-11, 3-12, 3-15-93

INSTALLERS E. Lawrence, B. NEWLIN

ALL DEPTHS MEASURED FROM GROUND SURFACE

RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No: _____ Page ___ of ___

QA Checked By: LRO Date 7/14/93

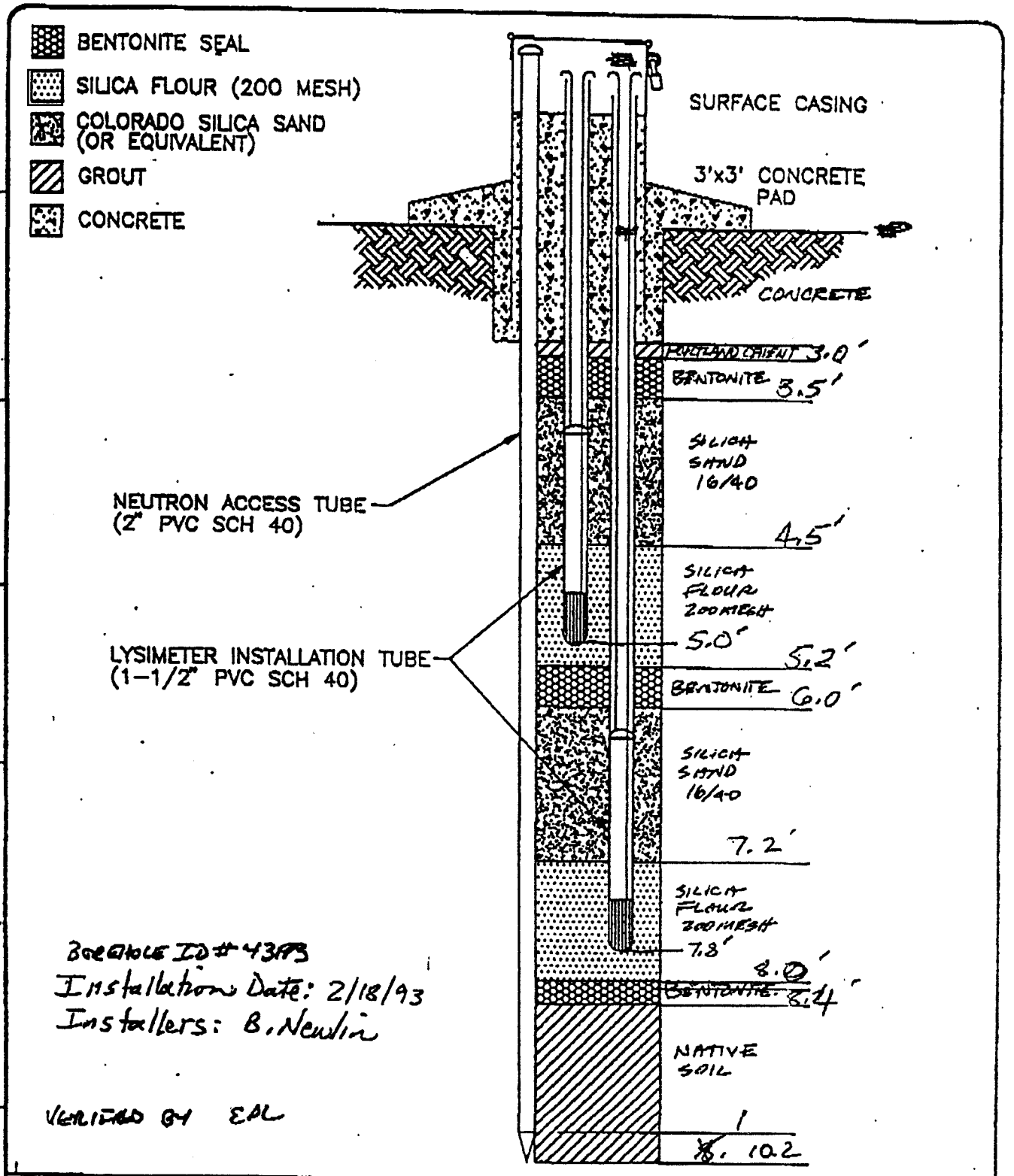
DRAFTER: | APPROVED: LJP | CHECKED: EPL | DRAWING: WELL2 | FILE: | PRJCT NO.: CO272.25 | DATE: 16FEB93

42893

VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE



DRAFTER: JDM | APPROVED: LJP | CHECKED: EPL | DRAWING: RFPVELL2 | FILE: | PROJECT NO.: C0272.25 | DWG DATE: 05FEB93

43193

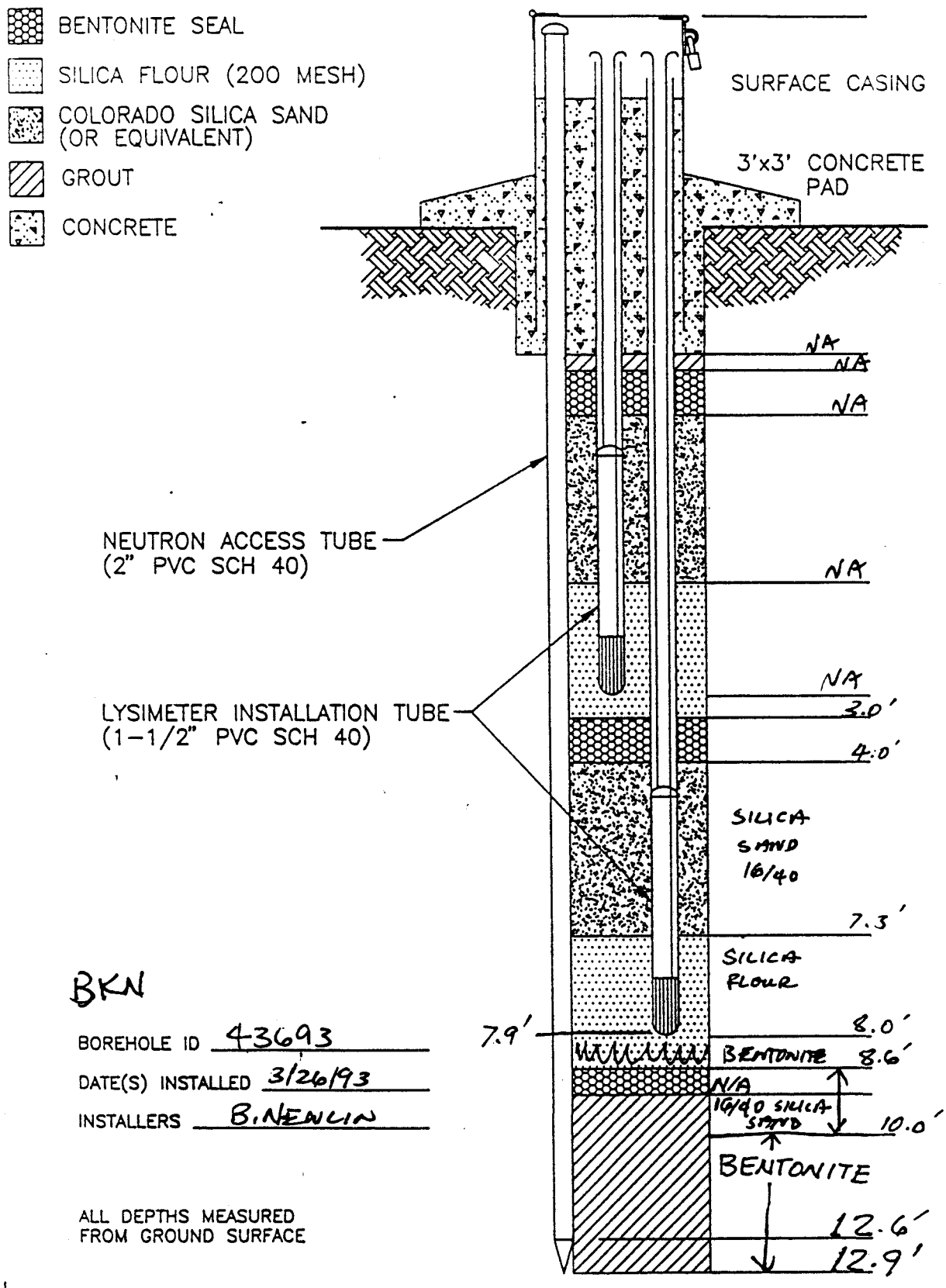
VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4
U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE 2

RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No:_____ Page ___ of ___

QA Checked By: LRD Date 7/15/93



BKN

BOREHOLE ID 43693

DATE(S) INSTALLED 3/26/93

INSTALLERS B. NENLIN

ALL DEPTHS MEASURED FROM GROUND SURFACE

RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No: _____ Page ___ of ___

QA Checked By: KRO Date 7/23/93

DRAFTER: | APPROVED: LJP | CHECKED: EPL | DRAWING: RFWELL2 | FILE: | PRJCT NO.: CO272.25 | DWG DATE: 16FEB93

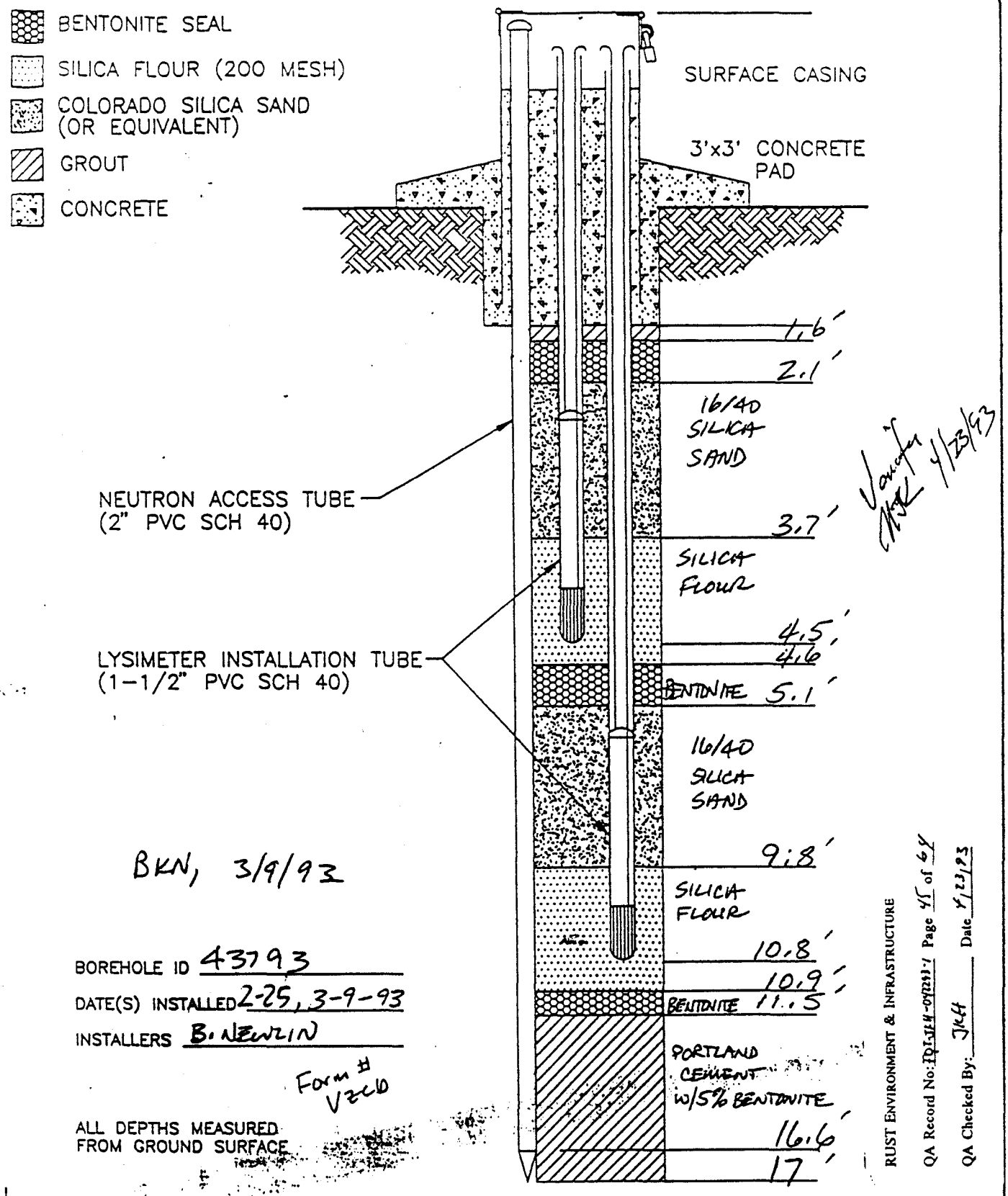
43693

VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM SOLAR PONDS - OU4

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

TMM 4-2-93

FIGURE



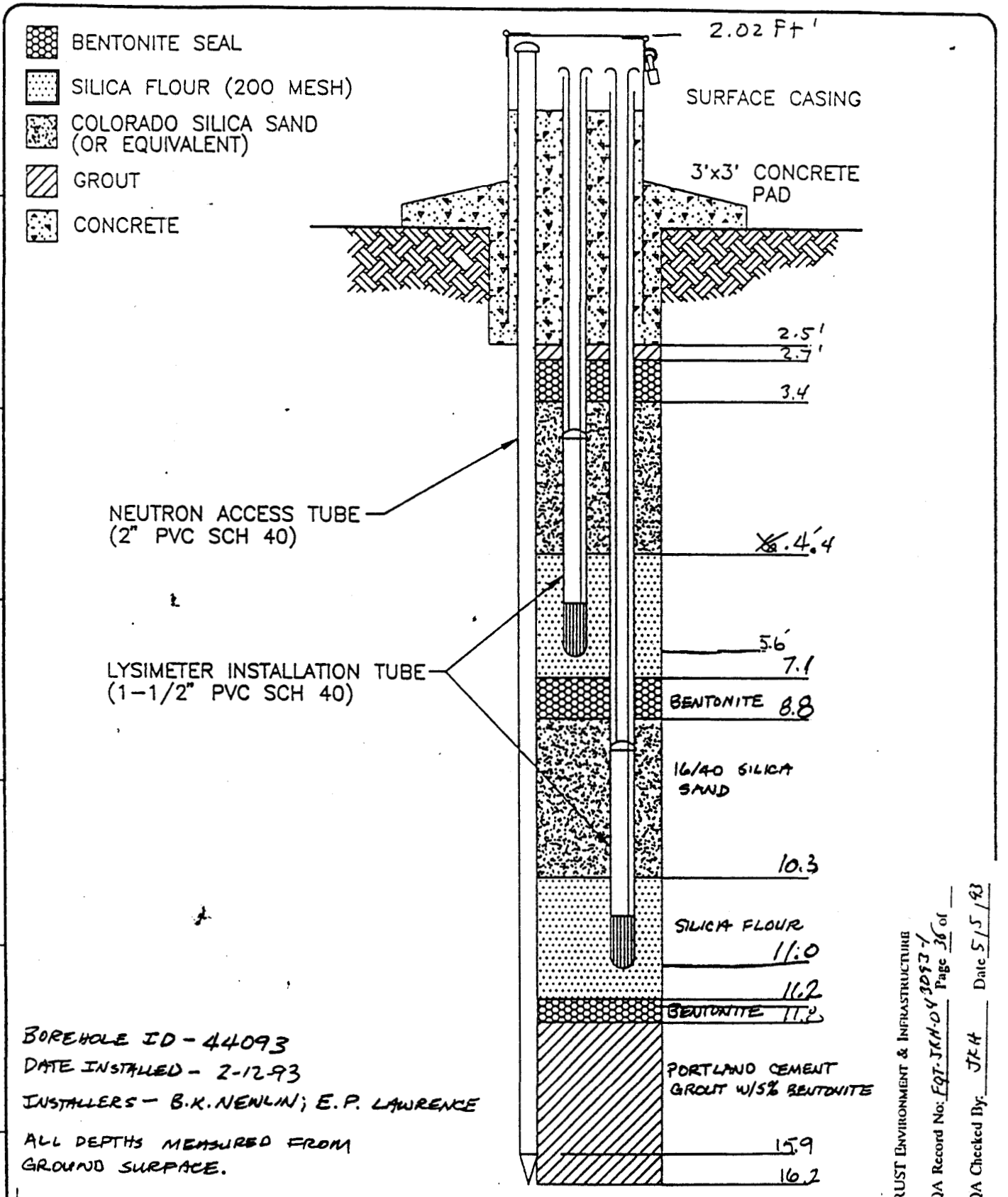
DRAFTER: JSM | APPROVED: LJP | CHECKED: EPL | DRAWING: K...WELL2 | FILE: | PRJCT NO.: CO272.25 | DWG DATE: 16FEB93

43793

VADOSE ZONE MONITORING BOREHOLE
CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE



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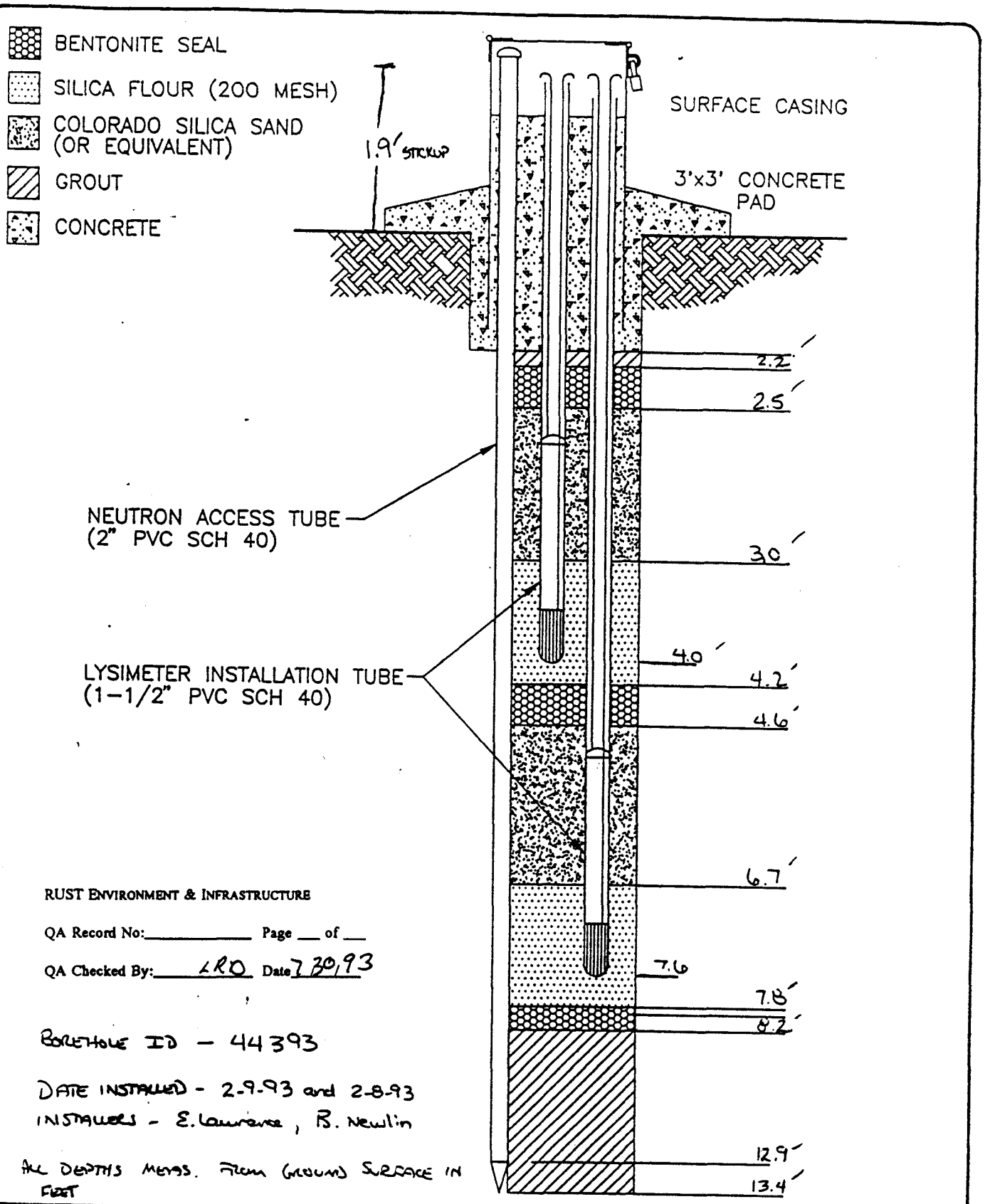
RUST ENVIRONMENT & INFRASTRUCTURE
QA Record No: FQT-JKH-04 3053-1 Page 36 of
QA Checked By: JKH Date 5/5/93

44093

VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4
U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE 2



RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No:_____ Page ___ of ___

QA Checked By: LRO Date 7 30 93

BOREHOLE ID - 44393

DATE INSTALLED - 2-9-93 and 2-8-93

INSTALLERS - E. Lawrence, R. Newlin

ALL DEPTHS MEASS. FROM GROUND SURFACE IN FEET

DRAFTER: JDM | APPROVED: LJP | CHECKED: EPL | DRAWING: RFPWELL2 | FILE: | PRJCT NO.: C0272.25 | DWG DATE: 05FEB93

44393

VADOSE ZONE MONITORING BOREHOLE CONSTRUCTION DIAGRAM
SOLAR PONDS - OU4

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT, GOLDEN, COLORADO

FIGURE 2

APPENDIX II.I

BOREHOLE LITHOLOGIC LOGS

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 20	GROUND ELEVATION (FT) 5897 39	PROJECT NUMBER OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751569	AREA BUFFER ZONE	CASING DIAMETER (IN)	GEOLOGIST C D MURRAY	40093
EAST	2085093	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/14/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BORING PLUGGED AND ABANDONED RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY K R MIYOSHI AND J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION* OR ROCK TYPE	DESCRIPTION
		0% 50% 100%	0% 100%	0 85/1 00	5897	0			SW	Silty Sand with some gravel and trace clay (0 0-3 1') Yellowish brown (10 YR 5/6) Poorly graded sand, v f g to c g, sub-angular to sub-rounded, no caliche, pred quartz and feldspar Low plasticity fines, no visible bedding, moist Sandy zone at 3 0-3 1' 7% Gravel, 54% Sand, 35% Silt, 4% Clay No recovery (0 85-1 0'), (1 5-2 0'), (2 8-3 0')
	BH0168ME			0 50/1 00	5896	1				
	BH0167ME			0 80/1 00	5895	2				
				1 20/1 20	5894	3			ML	Silt with some clay (3 1-6 4') Brownish yellow (10 YR 6/6), poorly graded, low plasticity fines, no visible bedding, moist, reworked bedrock Some Fe-oxide staining, friable 90% Silt, 10% Clay No Recovery (4 8-6 0')
	BH0169ME				5893	4				
				0 60/1 80	5892	5				
				1 00/1 00	5891	6			SW	Gravelly Sand with some silt (6 4-6 9') Red (2 5 YR 4/6), well graded sand, v f g to c g, sub-angular to sub-rounded, pred quartz and feldspar, low plasticity fines, no visible bedding, moist 29% Gravel, 56% Sand, 15% Silt, 1% Clay
				0 90/1 00	5890	7			ML	Clayey Silt with some sand (6 9-8 4') Yellowish brown (10 YR 5/4), poorly graded sand, pred quartz, no visible bedding, moist, very stiff, some organic material, roots, trace of pebbles 9% Sand, 73% Silt, 18% Clay No Recovery (7 9-8 0')
				0 70/1 00	5889	8			CLAYEY SILTSTONE	Top of Bedrock at 8 4' Clayey Siltstone (8 4-14 2') Brown (10 YR 5/3) to light yellowish brown (2 5 Y 6/4) Trace of fine sand, low plasticity fines, high amount of organic material (roots), mottled appearance, massive bedding, some Fe-oxide staining, moist 60% Silt, 40% Clay No Recovery (8 7-9 0')
	BH0170ME					9				
				1 20/1 20	5888	10				
	BH0171ME									

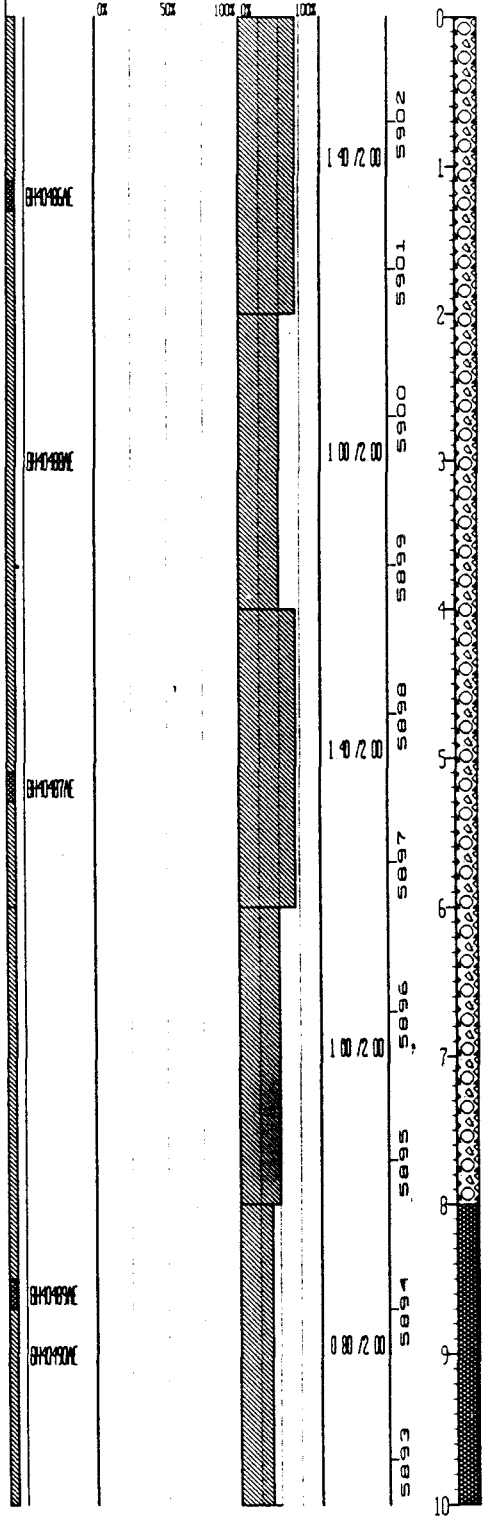
STATE PLANE COORDINATE	TOTAL DEPTH (FT) 14 20	GROUND ELEVATION (FT) 5897 39	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER	
NORTH 751569	AREA BUFFER ZONE	CASING DIAMETER (IN)	GEOLOGIST C D MURRAY	40093	
EAST 2085093	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/14/93		

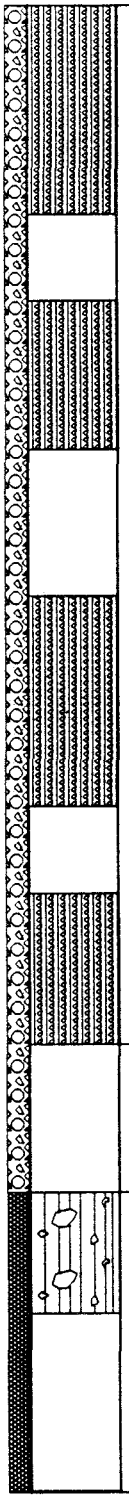
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BORING PLUGGED AND ABANDONED RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY K R MIYOSHI AND J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		0% 50% 100%	0% 100%	2 00 /2 00	5897	10				
					5896	11				
				2 20 /2 00	5895	12				
					5894	13				
					5893	14				Total Depth Drilled 14 20
					5892	15				
					5891	16				
					5890	17				
					5889	18				
					5888	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 26 00	GROUND ELEVATION (FT)	5902 70	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751566	AREA BUFFER ZONE	CASING DIAMETER (IN)	1 00	GEOLOGIST	J C EVANS	40193
EAST	2085406	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/06/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING RIG GEOLOGY BY J C EVANS (AE) CORE LOGGING BY C D MURRAY (AE) BORING COMPLETED AS PIEZOMETER.

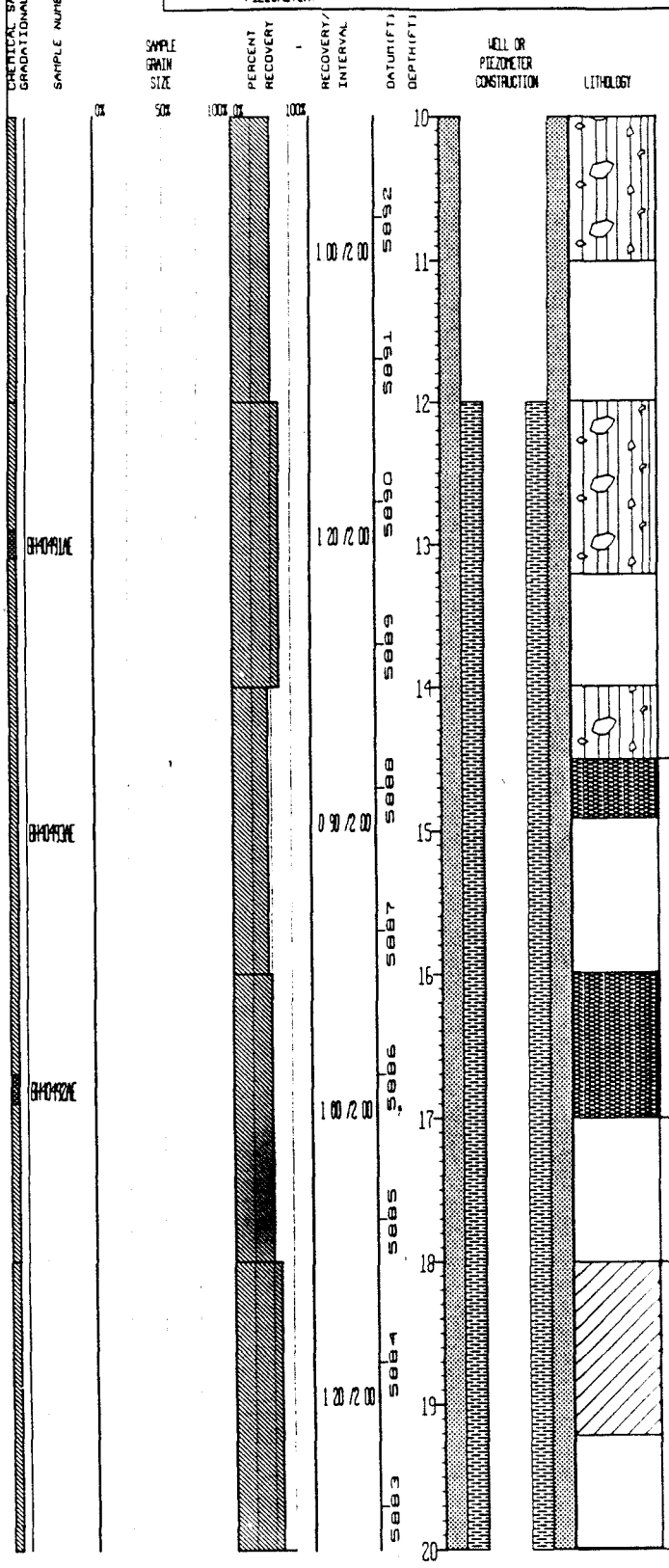




UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Gravelly Sand with some silt and trace clay (0 0-7 0') Light gray (5 Y 6/1) Gravel 1-5 cm common, rounded, fractured by drlg. Sand f g. to c g., moderately graded, quartz common with trace of hornblend Calcite cement with a silt matrix, moist Gravel 30%, Sand 45%, Silt 20%, Clay 5% No recovery (1 4-2 0'), (3 0-4 0), (5 4-6 0')
NO RECOVERY	No recovery (7 0-8 0')
GM	Sandy Gravel with some silt and clay (8 0-14 5') Light olive brown (2.5 Y 5/4) Gravel 1-5 cm., common rounded and fractured by drlg. Sand f g to c g, moderately graded, sub-angular to sub-rounded Pred quartz, trace of hornblend, calcite and argillaceous cement, moist Gravel 55%, Sand 28%, Silt 10%, Clay 7% No recovery (8 8-10 0'), (11 0-12 0'), (13 2-14 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 26 00	GROUND ELEVATION (FT) 5902 70	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	751566	AREA BUFFER ZONE	CASING DIAMETER (IN) 1 00	GEOLOGIST J C EVANS	40193
EAST	2085406	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/06/93	

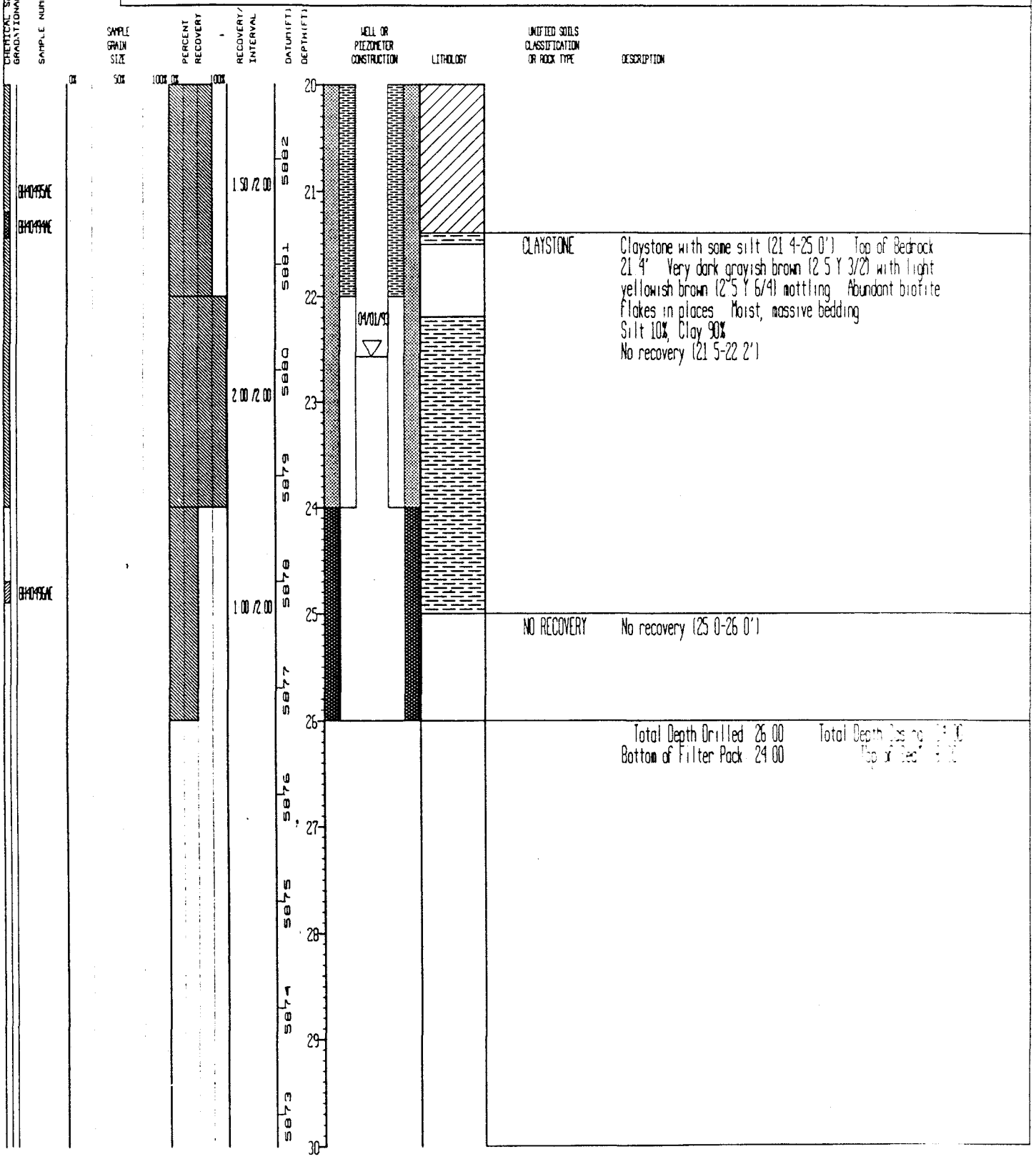
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING RIG GEOLOGY BY J C EVANS (AE) CORE LOGGING BY C D MURRAY (AE) BORING COMPLETED AS PIEZOMETER



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
1	Organic Clay with some sand and trace of silt (14 5-17 0') Black (2 5 Y N2/0), roots common, massive bedding Sand poorly graded Abundant quartz, sub-rounded Clay, low plasticity, moist Sand 15%, Silt 5%, Clay 80% No recovery (14 9-16 0')
NO RECOVERY	No recovery (17 0-18 0')
1	Sandy Clay with some silt (18 0-21 4') Light olive brown (2.5 Y 5/4) Reworked Claystone, slump material Sand f g poorly graded, sub-angular to angular Quartz, hornblend common argillaceous cement, low plasticity fines Sand 41%, Silt 9%, Clay 50% No recovery (19 2-20 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 26 00	GROUND ELEVATION (FT)	5902 70	PROJECT NUMBER	OU1-RFI/RI	LOG OF BORING NUMBER
NORTH	751566	AREA BUFFER ZONE	CASING DIAMETER (IN)	1 00	GEOLOGIST	J C EVANS	40193
EAST	2085406	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/06/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING RIG GEOLOGY BY J C EVANS (AE) CORE LOGGING BY C D MURRAY (AE) BORING COMPLETED AS PIEZOMETER



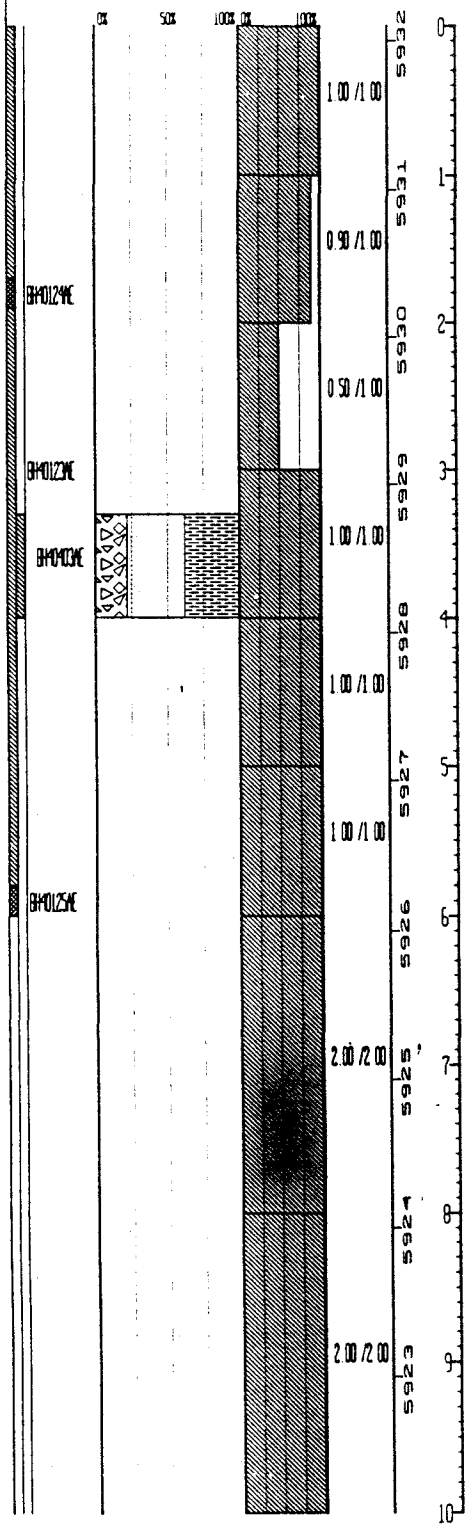
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 6 20	GROUND ELEVATION (FT) 5901 90	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	751520	AREA BUFFER ZONE	CASING DIAMETER (IN) 2 00	GEOLOGIST K R MIYOSHI	40293
EAST	2084904	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/20/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI (TE), CORE LOGGING BY J C EVANS (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				1 20 /1 20	5901	0			CL	Sandy Clay with abundant silt and trace gravel (0 0-1 2') Yellowish brown (10 YR 5/6) to dark yellowish brown (10 YR 4/4) Clay is soft, moist, low plasticity fines Sand moderately to well graded, angular to sub-rounded, pred quartz, trace dark rock fragments, interval is sandier and rooted at top Gravel angular, to 2 cm in length 2% Gravel, 29% Sand, 28% Silt, 41% Clay
	GH0118AE					1				
	GH0119AE			1 00 /1 00	5900	2			ML	Clayey Silt with some sand and trace gravel (1 2-2 9') Very dark gray (10 YR 3/1) to dark yellowish brown (10 YR 4/6), very stiff to hard, low plasticity fines Sand moderately graded, v f g to f g, sub-rounded, pred quartz, trace well rounded, frosted medium quartz grains Gravel sub-rounded, to 4 cm in length, moist, no visible bedding 2% Gravel, 19% Sand, 47% Silt, 32% Clay
				1 00 /1 00	5899	3				
				0 80 /1 00	5898	4			CL	Silty Clay with some gravel and trace sand (2 9-6 2') Grayish brown (10 YR 5/2) Low plasticity fines, with mottled limonite staining, no visible bedding, moist, trace scattered gravel, angular to sub-rounded, up to 2 cm in length 6% Gravel, 1% Sand, 28% Silt, 65% Clay No recovery (4 0-4 2')
				2 00 /2 00	5897	5				
	GH0120AE				5896	6				
					5895	7				Total depth drilled 6 2' Vadose Zone Monitoring Borehole Construction Listed Below Bentonite 0 65' to 0 84' Silica Sand 0 84' to 1 33' Silica Flour 1 33' to 2 8' Bottom Porous Cup 1 67' Bentonite 2 8' to 3 1' Portland Cement 3 1' to 6 7' Total Depth Neutron Access Tube 6 4'
					5894	8				
					5893	9				
					5892	10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 00	GROUND ELEVATION (FT) 5932 10	PROJECT NUMBER 0U4-RFI/RI	LOG OF BORING NUMBER
NORTH	751256	AREA Buffer Zone	CASING DIAMETER (IN) 2 00	GEOLOGIST C D MURRAY	40393
EAST	2085447	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/29/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY C D MURRAY AND K R MIYOSHI



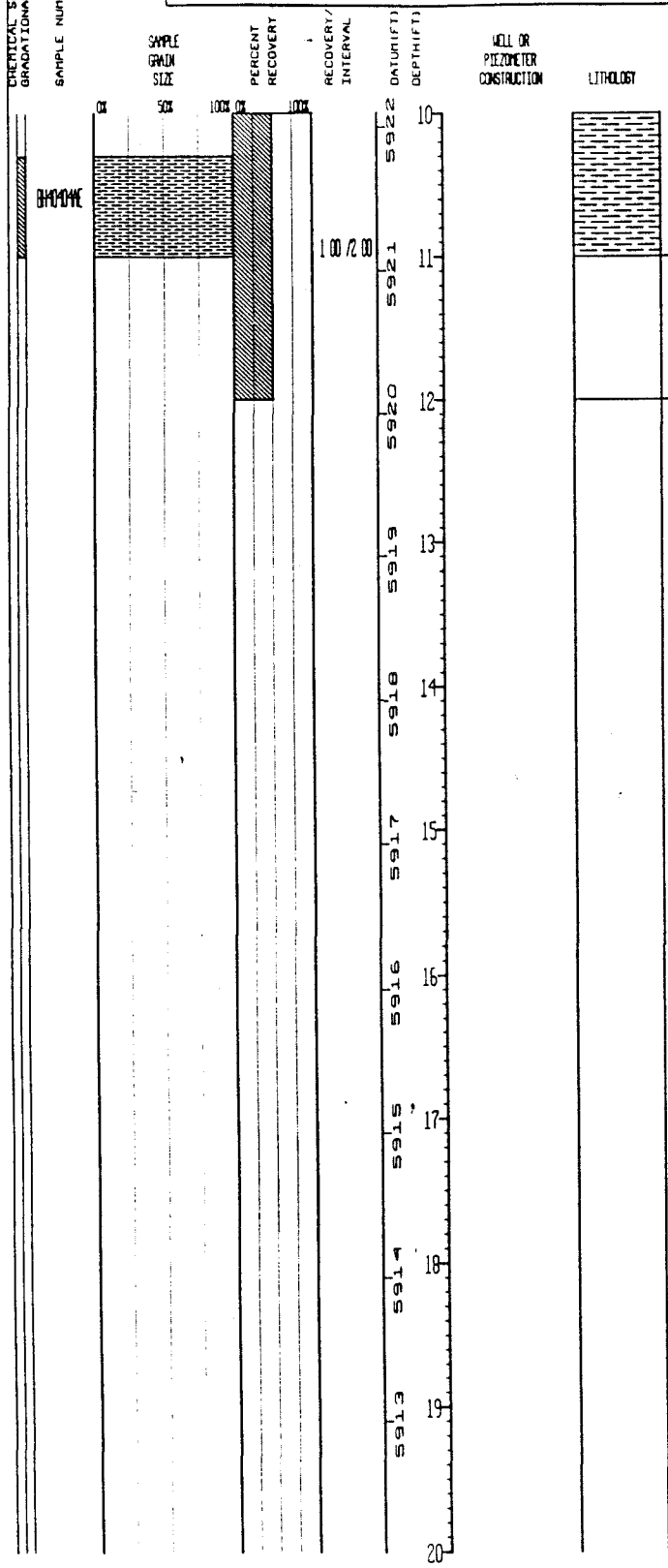
WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
OL	Organic Silt with abundant sand, some gravel and trace clay (0'0-0 6') Dark brown (10 YR 3/3) soil zone Poorly graded sand, v f g to m g., sub-angular to sub-rounded, pred quartz/feldspar, low plasticity fines, common roots/organic material, no visible bedding, moist 17% Gravel, 27% Sand, 54% Silt, 3% Clay
ML	Sandy Silt with some gravel and trace of clay (0 6-6 0') Yellowish brown (10 YR 5/6) Well graded sand, v f g to c g., sub-angular, pred quartz and feldspar, no caliche, low plasticity fines, slight horiz bedding Trace of pebble size gravel scattered throughout Reworked bedrock, moist 13% Gravel, 40% Sand, 42% Silt, 5% Clay No recovery (1 9-2 0'), (2 5-3 0')
SANDY SILTSTONE	Top of Bedrock at 6 0' Sandy Siltstone with a trace of clay (6 0-6 4') Olive yellow (2 5 Y 6/6), well sorted sand, v f g, sub-angular, pred quartz, argilloceous cement, no caliche, moist Some Fe-oxide staining, no visible bedding 49% Sand, 56% Silt, 3% Clay
CLAYSTONE	Claystone with a trace of silt (6 4-11 0') Light olive brown (2 5 Y 5/6) Very stiff, caliche present in fractures, some Fe-oxide staining, faint horiz bedding, clay nodules present throughout Caliche filled fractures at 7 6' (10 degrees), moist 5% Silt, 95% Clay

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 00	GROUND ELEVATION (FT)	5932 10	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	751256	AREA Buffer Zone	CASING DIAMETER (IN)	2 00	GEOLOGIST	C D MURRAY	40393
EAST	2085447	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/29/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY C D MURRAY AND K R MIYOSHI



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (11 0-12 0')
	Total depth drilled 12 0' Vadose Zone Monitoring Borehole Construction Listed Below Portland Cement 1 0' to 2 8' Bentonite 2 8' to 3 6' Silica Sand 3 6' to 4 8' Silica Flour 4 8' to 5 8' Bottom Porous Cup 5 7' Bentonite 5 8' to 6 2' Portland Cement 6 2' to 11 8' Total Depth Neutron Access Tube 11 5'
	Total Depth Drilled 12 00

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 8 00		GROUND ELEVATION (FT)	5883 64	PROJECT NUMBER	014-RFI/RI
NORTH	751541	AREA BUFFER ZONE		CASING DIAMETER (IN)		GEOLOGIST	K R MIYOSHI
EAST	2085711	LOCATOR NUMBER	M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/08/93

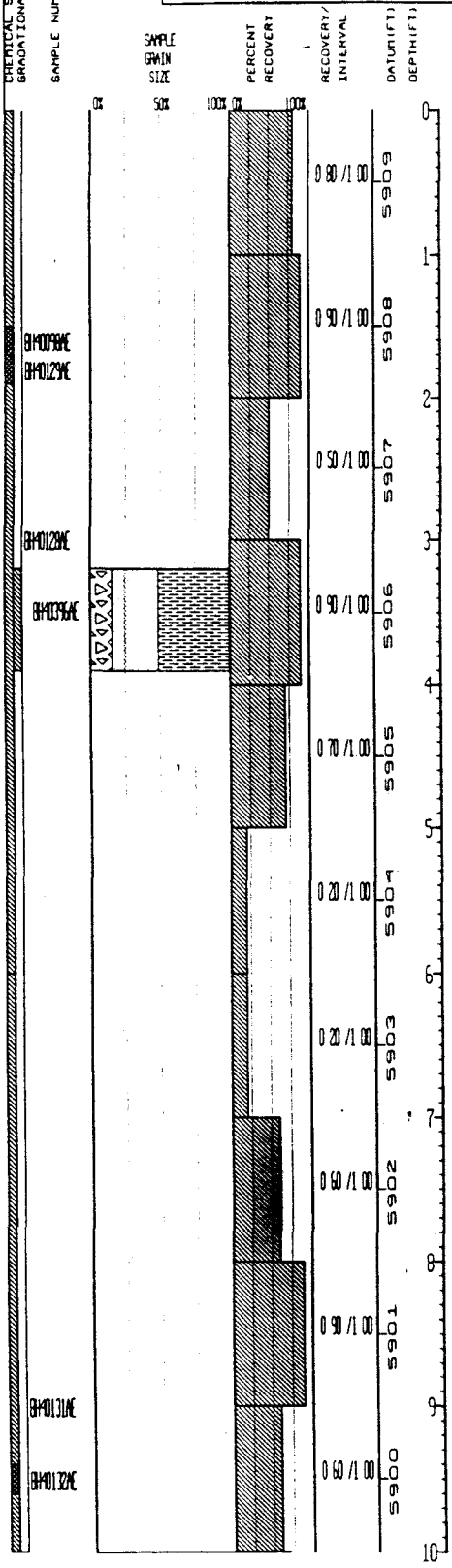
LOG OF BORING NUMBER **40493**

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K R MIYOSHI (TE), CORE LOGGING BY J C. EVANS (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	BH0461AE			0 90 /2 00	5883	0			CL	Silty Clay with trace sand (0 0-4 7') Dark yellowish brown (10 YR 3/4) to olive brown (2 5 Y 4/3), very stiff to hard, low to medium plasticity fines, plant roots throughout interval, sand well sorted, well-rounded, pred f g , trace m g frosted quartz grains Top 0 5' of interval contains organic soil and trace gravel to 5 cm in length, dry to moist, no visible bedding 5% Sand, 38% Silt, 57% Clay No recovery (0 9-2 0'), (3 0-4 0')
					5882	1				
					5881	2				
	BH0462AE			1 00 /2 00	5880	3				
					5879	4				
	BH0463AE			1 00 /2 00	5878	5			CLAYEY SANDSTONE	Clayey Sandstone with some silt (4 7-5 0') Yellow (10 YR 7/6) to brownish yellow (10 YR 6/6), pred v f g to f g , sub-rounded to rounded, trace very well-rounded, frosted m g quartz grains, approx 20% visible porosity, approx 5-10% argillaceous cement, moderately friable, moist 58% Sand, 17% Silt, 25% Clay
						6			NO RECOVERY	No recovery (5 0-6 0')
				0 90 /2 00	5877	7			CLAYSTONE	Claystone with some silt (6 0-6 4') Dark gray (10 YR 4/1) to black (10 YR 2/1), very stiff to hard, parallel bedding at 15 degrees to horiz carbonaceous material and limonite staining along bedding planes, moist 10-20% Silt, 80-90% Clay
					5876	8			CLAYEY SANDSTONE	Clayey Sandstone with some silt (6 4-6 9') Same as reference interval (4 7-5 0') above
									NO RECOVERY	No recovery (6 9-8 0)
					5875	9				Total Depth Drilled 8 00
					5874	10				

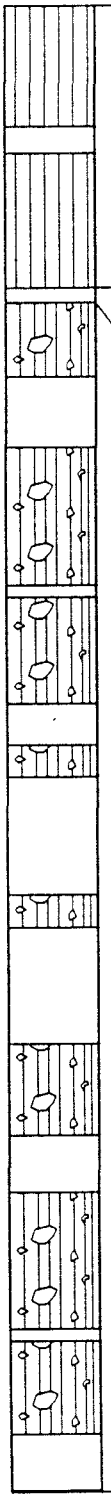
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 26 00	GROUND ELEVATION (FT)	5909 50	PROJECT NUMBER	0U4-RFI/RI	LOG OF BORING NUMBER
NORTH	751491	AREA BUFFER ZONE	CASING DIAMETER (IN)	2 00	GEOLOGIST	K R MIYOSHI	40593
EAST	2085558	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/26/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND A NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS .



WELL OR PIEZOMETER CONSTRUCTION

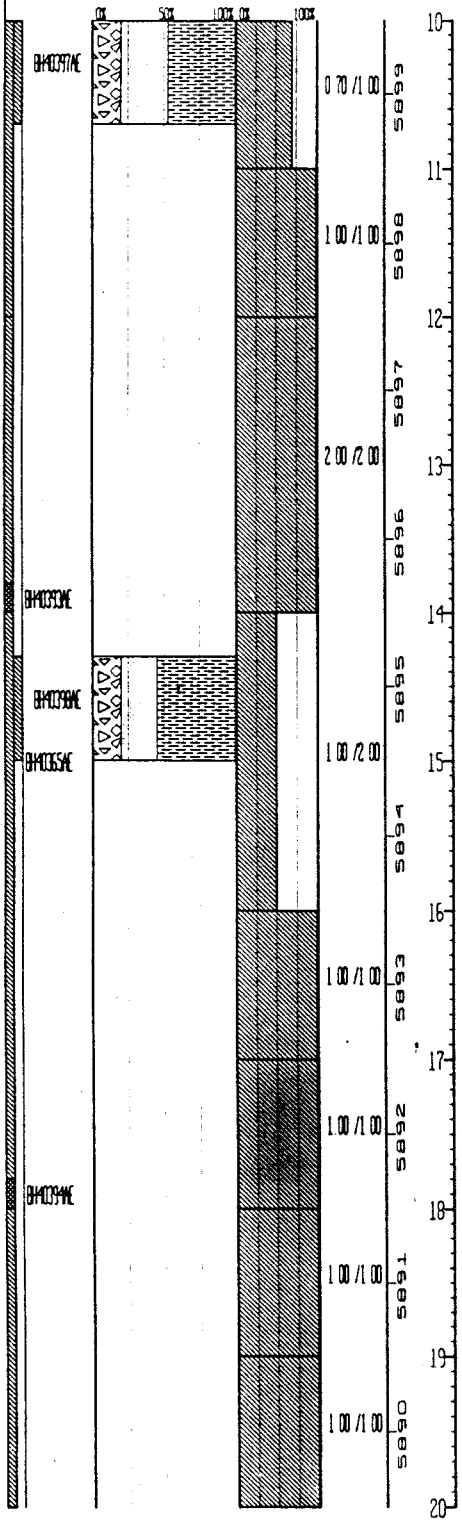
LITHOLOGY

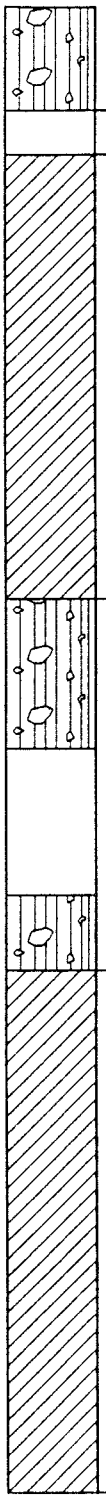


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Clayey Silt with some sand and gravel (0 0-1 9') Light brownish gray (10 YR 6/2) with scattered brownish yellow (10 YR 6/8) mottling. Scattered white (10 YR 8/1) calichegrains Stiff, moist, sand and gravel poorly graded, sub-angular to rounded Abundant grass roots from (0 0-0 3') Low plasticity fines 6% Gravel, 6% Sand, 53% Silt, 35% Clay No recovery (0 8-1 0')
NO RECOVERY	No recovery (1 9-2 0')
GM	Silty Gravel with some sand and clay (2 0-10 7') Matrix light yellowish brown (10 YR 6/4), scattered caliche grains, sand poorly graded, v f to m g , sub-angular to sub-rounded, dry, low plasticity fines, pred quartz/feldspar, no visible bedding, some reworked bedrock, pebble sized quartzite/lithic fragments 50% Gravel, 20% Sand, 21% Silt, 9% Clay No recovery (2 5-3 0'), (3 9-4 0'), (4 7-5 0'), (5 2-6 0') No recovery (6 2-7 0'), (7 6-8 0'), (8 9-9 0'), (9 6-10 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 26 00	GROUND ELEVATION (FT)	5909 50	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751491	AREA BUFFER ZONE	CASING DIAMETER (IN)	2 00	GEOLOGIST	K R MIYOSHI	40593
EAST	2085558	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/26/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND A NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS

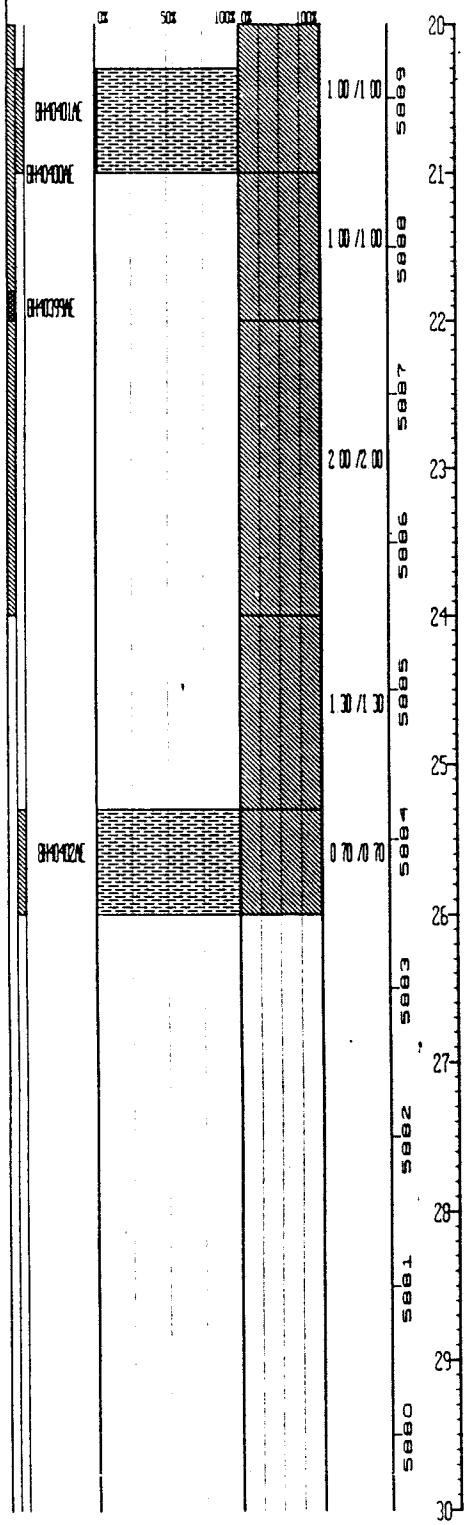




UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (10 7-11 0')
CL	Silty Clay (11 0-14 0') Mottled grayish brown (10 YR 5/2) and light yellowish brown (10 YR 6/4) with dark brown (10 YR 3/3) laminiations from 12 5-14 0' Stiff with crude horiz bedding, moist, trace sand and gravel 30% Silt, 70% Clay
GM	Silty Gravel with some sand and trace clay (14 0-16 5') Matrix yellowish brown (10 YR 5/4), sand poorly graded, v f to m g sub-angular to sub-rounded, low plasticity fines, no caliche pred quartz/feldspar, crude horiz bedding, dry 41% Gravel 19% Sand, 38% Silt, 2% Clay No recovery (15 0-16 0')
CL	Silty Clay with some sand (16 5-21 0') Olive brown (2 5 Y 4/3) grading to grayish brown (2 5 Y 5/2) at base Soft, plant roots throughout interval, no visible bedding Sand poorly graded, sub-angular to sub-rounded, pred quartz trace rounded gravel, trace caliche, moist 13% Sand, 26% Silt, 61% Clay

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 26 00	GROUND ELEVATION (FT) 5909 50	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	751491	AREA BUFFER ZONE	CASING DIAMETER (IN) 2 00	GEOLOGIST K R MIYOSHI	40593
EAST	2085558	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/26/93	

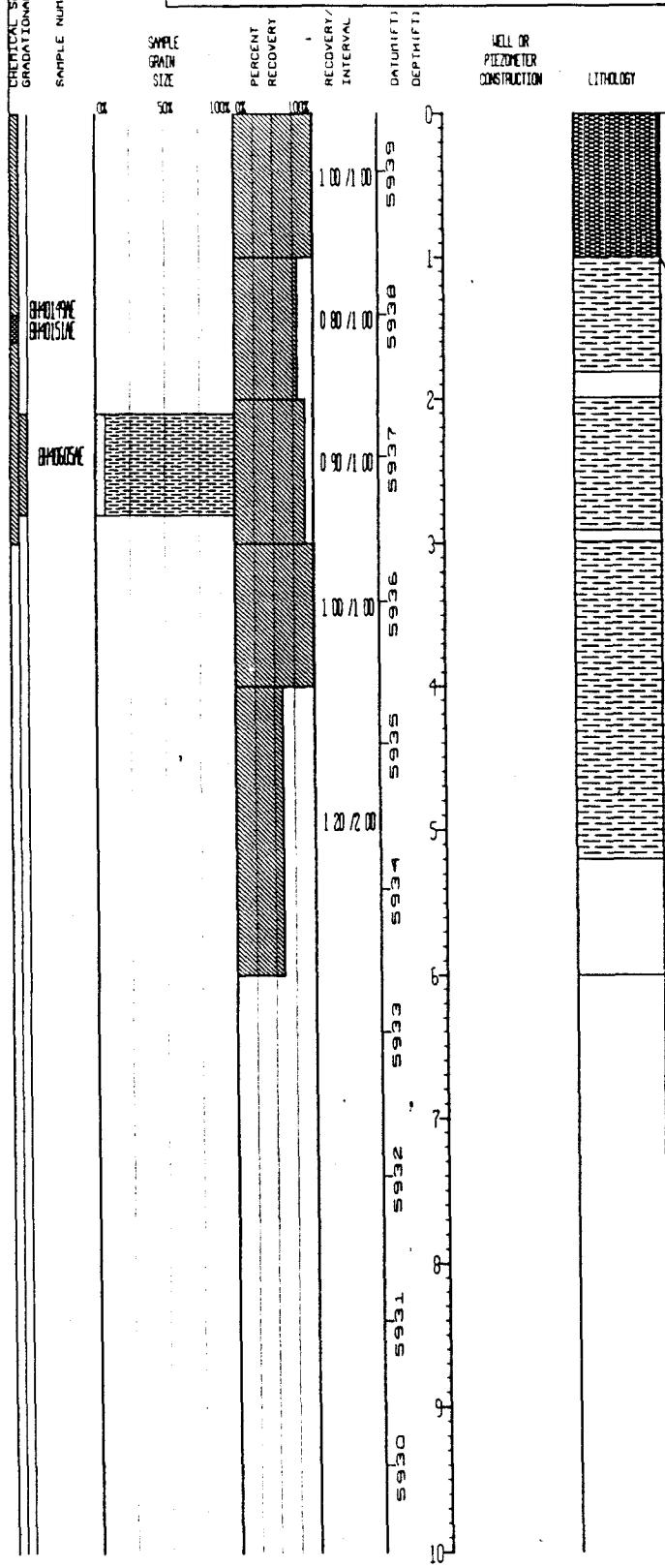
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND A NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SILTY CLAYSTONE	Top of Bedrock at 21 0' Silty Claystone at (21 0-26 0') Light olive brown (2 5 Y 5/4) No sand present, predominately quartz, med plasticity fines, moist, approx 2% porosity, argilloceous cement, no caliche, some Fe-oxide staining, some organic material, some crude bedding toward bottom, small friable zone at 24 0' 20% Silt, 80% Clay
	Total depth drilled 26 0' Vadose Zone Monitoring Borehole Construction Listed Below Bentonite 5 5' to 6 0' Silica Sand 6 0' to 8 4' Silica Flour 8 4' to 10 4' Bottom of Porous Cup 10 3' Bentonite 10 4' to 10 8' Silica Sand 10 8' to 15 9' Silica Flour 15 9' to 16 4' Bottom Porous Cup 16 3' Bentonite 16 4' to 16 8' Silica Sand 16 8' to 20.7' Bentonite 20 7' to 21 3' Portland Cement 21 3' to 26 3' Total Depth Neutron Access Tube 26 0'

STATE PLANE COORDINATE	TOTAL DEPTH (FT) 6 00	GROUND ELEVATION (FT) 5939 40	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH 751206	AREA PA, Around Ponds	CASING DIAMETER (IN)	GEOLOGIST K R MIYOSHI	40693
EAST 2084477	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/26/93	

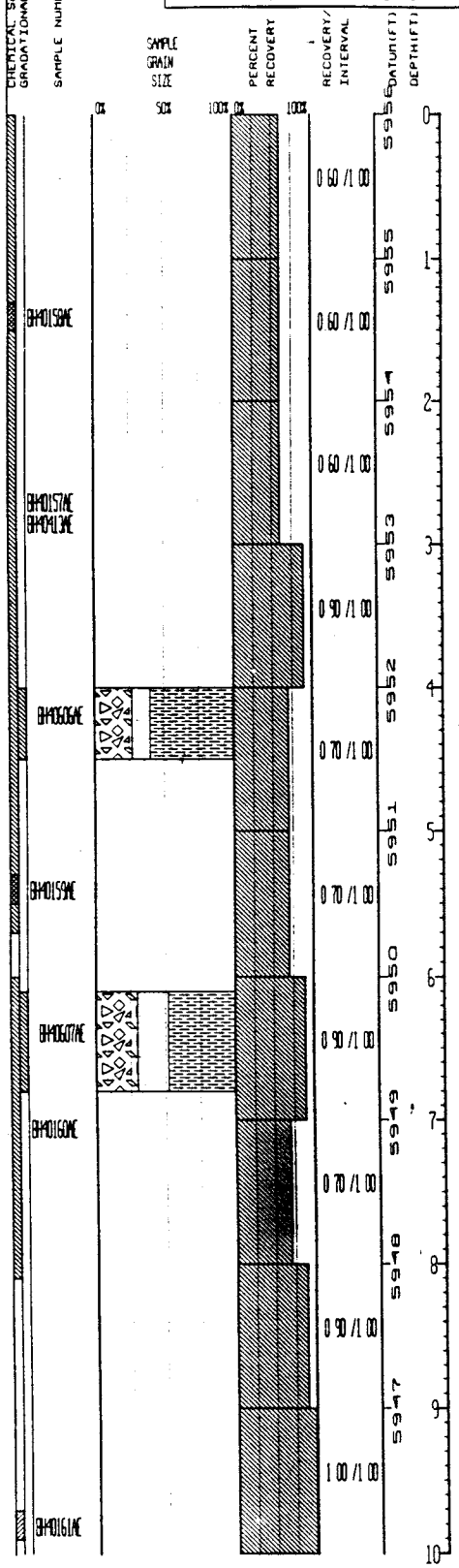
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY C D MURRAY

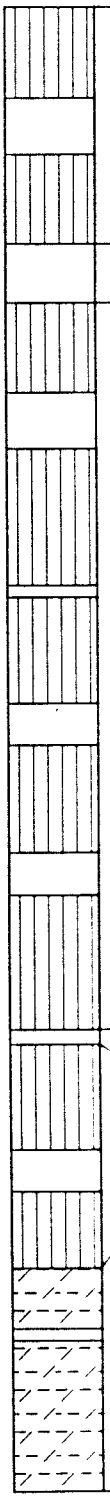


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
OL	Organic Silt with abundant sand and trace of clay (0 0-1 0') Dark brown (10 YR 3/3) poorly graded sand, v.f.g., sub-angular to rounded, pred. quartz, caliche present, abundant root material, low plasticity fines, soil zone, no visible bedding, moist 37% Sand, 60% Silt, 3% Clay
CLAYSTONE	Top of bedrock at 1 0' Claystone (1 0-5 2') Light olive brown (2 5 Y 5/3), stiff, no visible bedding, moist 100% Clay No recovery (1 8-2 0'), (2 9-3 0')
NO RECOVERY	No recovery (5 2-6 0')
	Total depth drilled 6 0' Vadose Zone Monitoring Borehole Construction Total Depth Neutron Access Tube 4 5'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 00	GROUND ELEVATION (FT) 5956 00	PROJECT NUMBER 014 RFI/RI	LOG OF BORING NUMBER
NORTH	751089	AREA BUFFER ZONE	CASING DIAMETER (IN) 2 00	GEOLOGIST K R MIYOSHI	40793
EAST	2084627	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/02/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS





UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Sandy Silt with some gravel and trace clay (0 0-1 6') Very dark grayish brown (10 YR 3/2) Sand v f g , poorly graded, sub-angular, pred. quartz, low plasticity fines, moist, trace (5%) plant roots 12% Gravel, 31% Sand, 55% Silt, 3% Clay No recovery (0 6-1 0')
NO RECOVERY	No recovery (1 6-2 0')
ML	Sandy Silt with some clay and trace gravel (2 0-6 9') Dark yellowish brown (10 YR 4/6) Sand f g to c g., poorly graded, sub-angular to sub-rounded, low plasticity fines, pred quartz, trace (5%) caliche, moist 5% Gravel, 28% Sand, 60% Silt, 7% Clay No recovery (2.6-3.0'), (3 9-4.0'), (4.7-5.0'), (5.7-6.0').
NO RECOVERY	No recovery (6 9-7 0')
?	Gravelly Silt with some clay and sand (7 0-8 5') Brownish yellow (10 YR 6/6) Gravel poorly graded, sub-angular, pred c g , up to 6 cm in length Sand poorly graded, pred f g , low plasticity fines, dry abundant (30%) caliche 30% Gravel, 11% Sand, 36% Silt, 23% Clay No recovery (7 7-8 0')
SILTY CLAYSTONE	Top of Bedrock at 8 5' Silty Claystone with some sand (8 5-12 1') Light yellowish brown (2 5 Y 6/4) with olive yellow (2,5 Y 6/8) Fe-oxide staining Sand v f g to f g , well sorted, angular to sub-rounded, bedding consists of alternating sandy and clayey layers up to 0 4' thick, caliche present as fracture filling at 8 5', 9 2', and 10 1' 17% Sand, 20% Silt, 63% Clay No recovery (8 9-9 0'), (11 6-12 0')

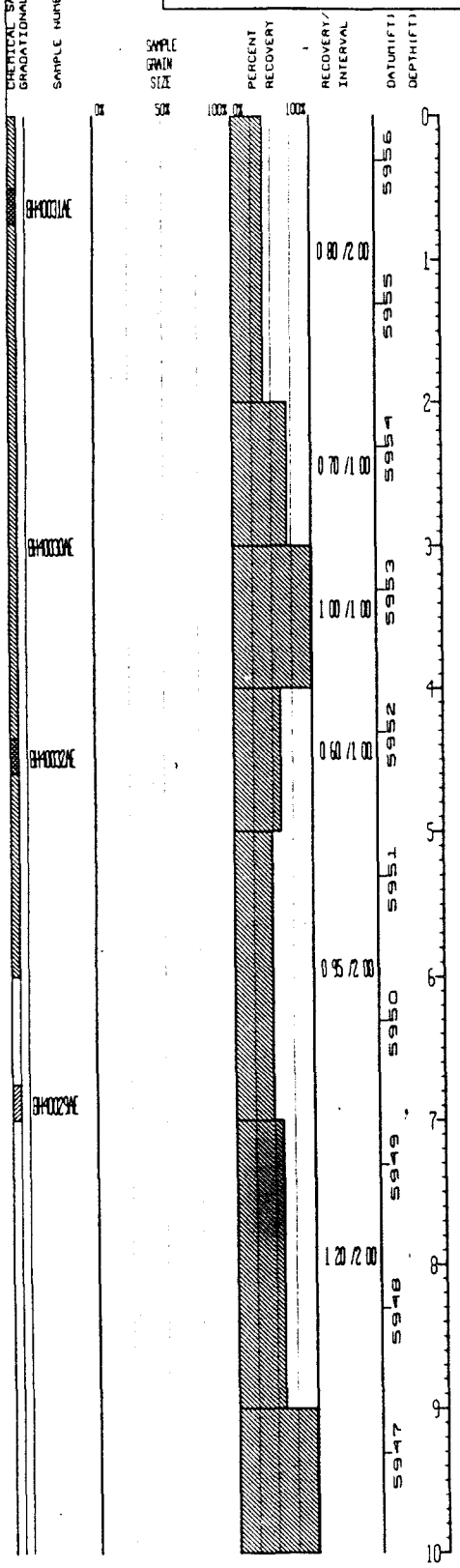
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 00	GROUND ELEVATION (FT)	5956 00	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751089	AREA BUFFER ZONE	CASING DIAMETER (IN)	2 00	GEOLOGIST	K R MIYOSHI	40793
EAST	2084627	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/02/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C. EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRADN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		0% 50%	100% 0% 100%	1 60 /2 00	5946	10				
					5945	11				
					5944	12				
				1 00 /1 00	5943	13			SILTY CLAYSTONE	Silty Claystone (12 1-13 0') Olive yellow (2 5 Y 6/6), non-friable, argilliaceous cement, dry, no visible bedding, possibly bioturbated, trace Mg-oxide at 12 5' 30% Silt, 70% Clay
					5942	14				Total depth drilled 13.0'
					5941	15				Vadose Zone Monitoring Borehole Construction Listed Below Bentonite 2 7'-3 2' Silica Sand 3 2'-5 2' Silica Flour 5 2'-7 9' Bottom Porous Cup 5 8' Grout 7 9'-13 13' Total Depth Neutron Access Tube 12 83'
					5940	16				Note Boring drilled to 12 0', poor recovery from [illegible] Moved rig 3" to the west, drilled to 6 0', resumed sampling from 6 0" to 13 0' Note Boring drilled to 12.0', poor recovery from [illegible] Moved rig 3" to west, drilled to 6 0', resumed sampling from 6 0'-13 0'
					5939	17				
					5938	18				
					5937	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 11 20	GROUND ELEVATION (FT)	5956 31	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751078	AREA N OF POND 2078 N	CASING DIAMETER (IN)		GEOLOGIST	C D MURRAY	40893
EAST	2085100	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	12/15/92	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORE BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Gravelly Sand with some silt and clay (0 0-0 5') Very dark gray (5 YR 3/1) Gravel, angular, Sand f g to c g, poorly graded, grass and root fragments common, moist Gravel 25%, Sand 46%, Silt 15%, Clay 14%
GM	Sandy Gravel with some silt and a trace of clay (0 5-4 6') Very dark grayish brown (10 YR 3/2) Gravel 1-5 cm (fractured by drlg), subrounded Sand, f g to c g, rounded to angular, moderately graded, quartz and feldspar common, moist Gravel 63%, Sand 28%, Silt 6%, Clay 3% No recovery (0 8-2 0'), (2 7-3 0')
NO RECOVERY	No recovery (4 6-6 3')
CLAYSTONE	Claystone with some silt (6 3-9 0') Top of Bedrock at 6 3' Light olive gray (5 YR 3/2) with light olive brown (5 Y 5/6) mottling, mod friable, massive bedding Moist Silt 10%, Clay 90% No recovery (7 0-7 8')
CLAYSTONE	Claystone with trace silt (9 0-11 2') Brownish gray (5YR 4/1) Moderately friable, massive bedding, moist Caliche present in some fractures Clay 95%, Silt 5%

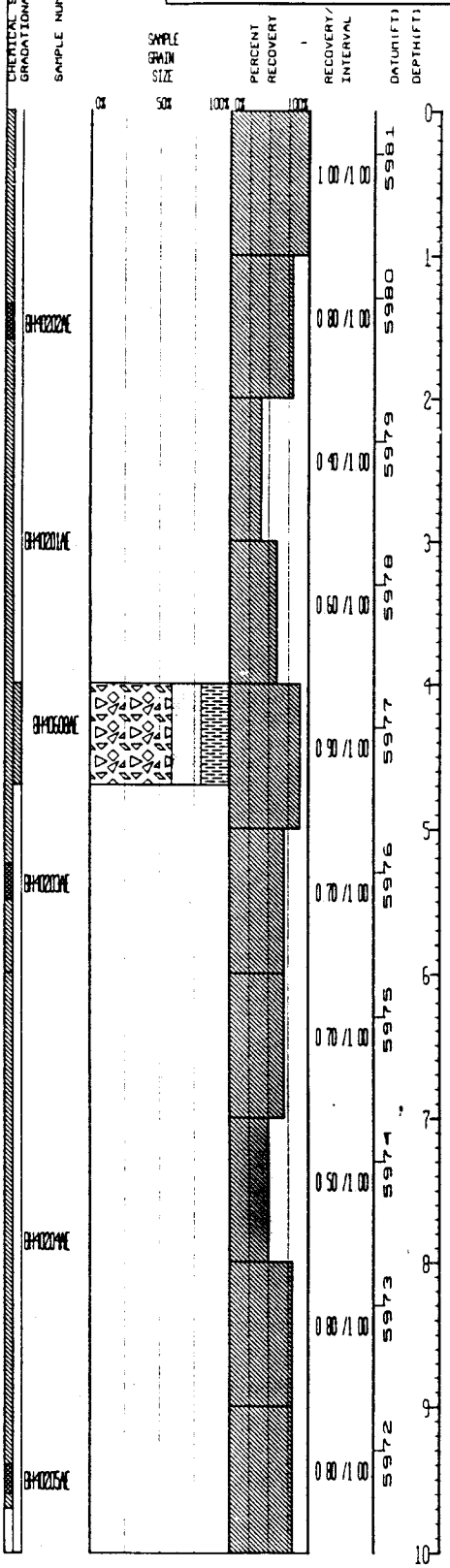
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 11 20	GROUND ELEVATION (FT) 5956 31	PROJECT NUMBER OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751078	AREA N OF POND 2078 N	CASING DIAMETER (IN)	GEOLOGIST C D MURRAY	40893
EAST	2085100	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 12/15/92	

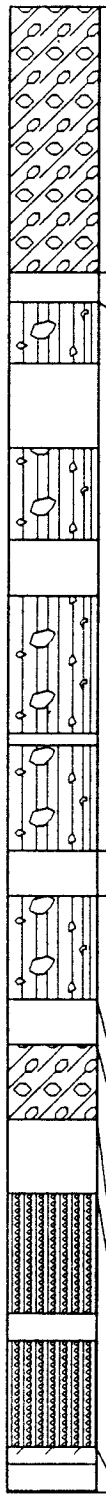
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORE BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				2 20 /2 20	5946	10				
					5945	11				Total Depth Drilled 11 20
					5944	12				
					5943	13				
					5942	14				
					5941	15				
					5940	16				
					5939	17				
					5938	18				
					5937	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 34 50	GROUND ELEVATION (FT)	5981 30	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750962	AREA NW CORNER POND 207C	CASING DIAMETER (IN)	2 00	GEOLOGIST	C D MURRAY	40993
EAST	2084436	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/23/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY CORE LOGGING BY C D MURRAY AND J C EVANS (AE)

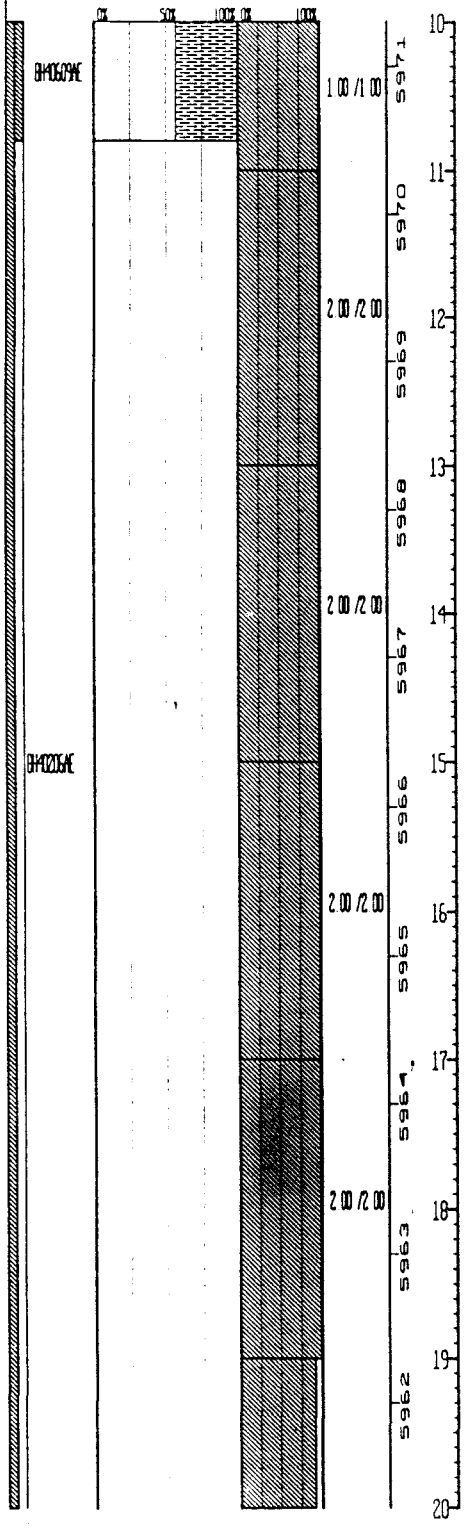




UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GC	Sandy Gravel with some clay and trace silt (0 0-1 8') Matrix dark yellowish brown (10 YR 3/4), moist Gravel 10 cm. diameter common, 5 cm present Angular to sub-rounded, quartz and metamorphic grains common Sand f g to c g common, angular to sub-rounded, quartz and hornblend common Biotite present Gravel 56%, Sand 22%, Silt 3%, Clay 19%
NO RECOVERY	No recovery (1 8-2 0')
GM	Silty Sandy Gravel with trace clay (2 0-5 7') Matrix very dusky red (2 5 YR 2 5/2) Gravel and cobbles rounded to angular, (broken by drilling), commonly > 5 cm in diameter Sand f g to c g, very angular to sub-rounded, quartz and metamorphic grains abundant F g biotite common, moist Low plasticity Gravel 67%, Sand 15%, Silt 15%, Clay 3% No recovery (2 4-3 0'), (3 6-4 0'), (4 9-5 0')
NO RECOVERY	No recovery (5 7-6 0')
GM	Sandy Gravel with some silt and trace clay (6 0-6 7') Matrix dark brown (7 5 YR 3/4), slightly moist Cobbles and gravel, very angular and broken by drilling 10 cm-30 cm diameter Sand f g to c g, very angular to sub-angular, quartz and feldspar grains, clear quartz common, low plasticity fines Gravel 52%, Sand 29%, Silt 14%, Clay 5%
NO RECOVERY	No recovery (6 7-7 0')
GC	Sandy Gravel with some clay and trace silt (7 0-7 5') Matrix strong brown (7 5 YR 4/6) Cobbles and Gravel, 10-50 cm Sand very angular to sub-angular, quartz common, abundant f g., med. plasticity fines, moist Gravel 61%, Sand 20%, Silt 6%, Clay 13%
NO RECOVERY	No recovery (7 5-8 0')
SM	Gravelly Sand with some silt (8 0-9 7') Yellowish brown (10 YR 5/6), moist, very angular to sub-angular, f g to c g, quartz and metamorphics common, moist Gravel 32%, Sand 48%, Silt 20% No recovery (8 8-9 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 34 50	GROUND ELEVATION (FT)	5981 30	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750962	AREA NW CORNER POND 207C	CASING DIAMETER (IN)	2 00	GEOLOGIST	C D MURRAY	40993
EAST	2084436	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/23/93	

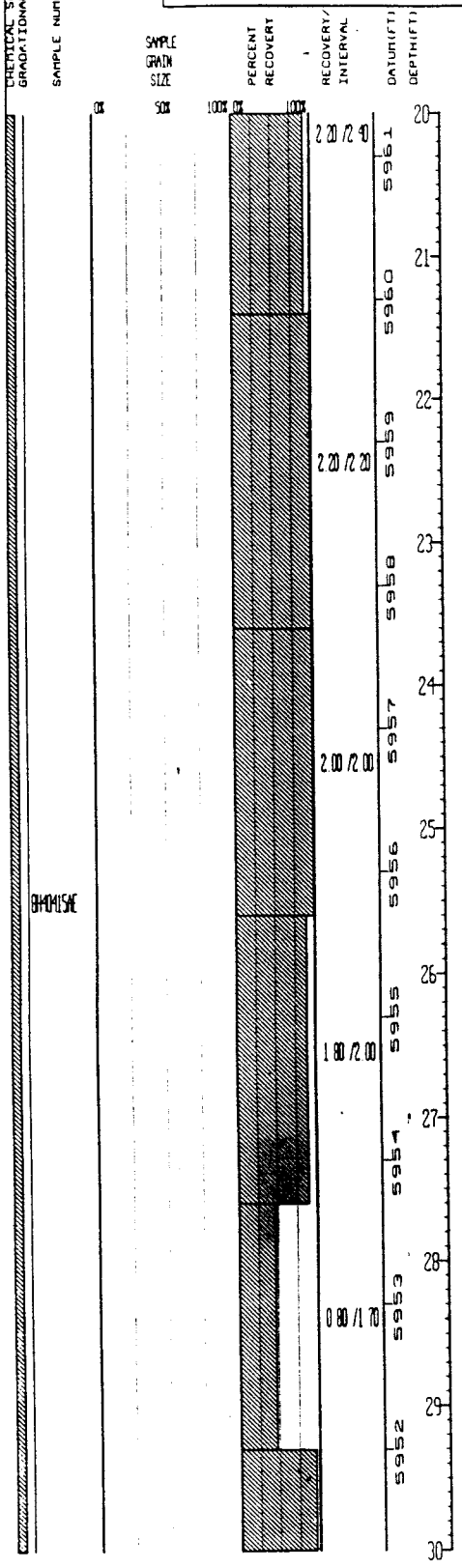
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY CORE LOGGING BY C D MURRAY AND J C EVANS (AE)



LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	SILTY SANDSTONE	Silty Sandstone with some clay (9 7-11 5') Top of Bedrock 9 7' Mottled light gray (10 YR 7/1) and brownish yellow (10 YR 6/8) Sand moderately to well sorted, sub-angular to rounded, v f g to f g quartz frosted, approx 15% porosity, approx 10% argillaceous cement, highly friable, faint horiz bedding moist Sand 43%, Silt 40%, Clay 17% No recovery (9 8-10 0')
	CLAYSTONE	Claystone with trace of sand (11 5-12 5') Light yellowish brown (2 5 Y 6/3) F g to v f g, well sorted, sub-rounded, frosted quartz grains Clay med plasticity, moist Fine Sand 3%, V F Sand 2%, Clay 95%
	SILTY SANDSTONE	Silty Sandstone with some clay (12 5-15 9') White (10 YR 8/1) to very pale brown (10 YR 7/3) Sand moderately to well sorted, v f g to m g, sub-angular to rounded, frosted quartz grains Trace of dark minerals Approx 10% porosity, 10-15% argillaceous cement, highly friable, moist Slight horiz bedding Sand 58%, Silt 34%, Clay 8%
	CLAYSTONE	Claystone with trace of sand (15 9-16 2') Same as reference interval 11 5-12 5' above
	SILTY SANDSTONE	Silty Sandstone with some clay (16 2-18 4') Same as reference interval 12 5-15 9' above
	SANDSTONE	Sandstone with some silt and trace clay (18 4-19 2') Very pale brown (10 YR 7/3), sand well sorted, v f g to m g, well rounded, frosted quartz grains, highly friable, 20-25% visible porosity, 2-3% argillaceous cement, no visible bedding, moist M g Sand 4%, V F g Sand 89%, Silt 6%, Clay 1%
	SILTY SANDSTONE	Silty Sandstone with some clay (19 2-21 2') Same as reference interval 12 5-15 9' above

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 34 50	GROUND ELEVATION (FT)	5981 30	PROJECT NUMBER	904 RFI/RI	LOG OF BORING NUMBER
NORTH	750962	AREA NW CORNER POND 207C	CASING DIAMETER (IN)	2 00	GEOLOGIST	C D MURRAY	40993
EAST	2084436	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/23/93	

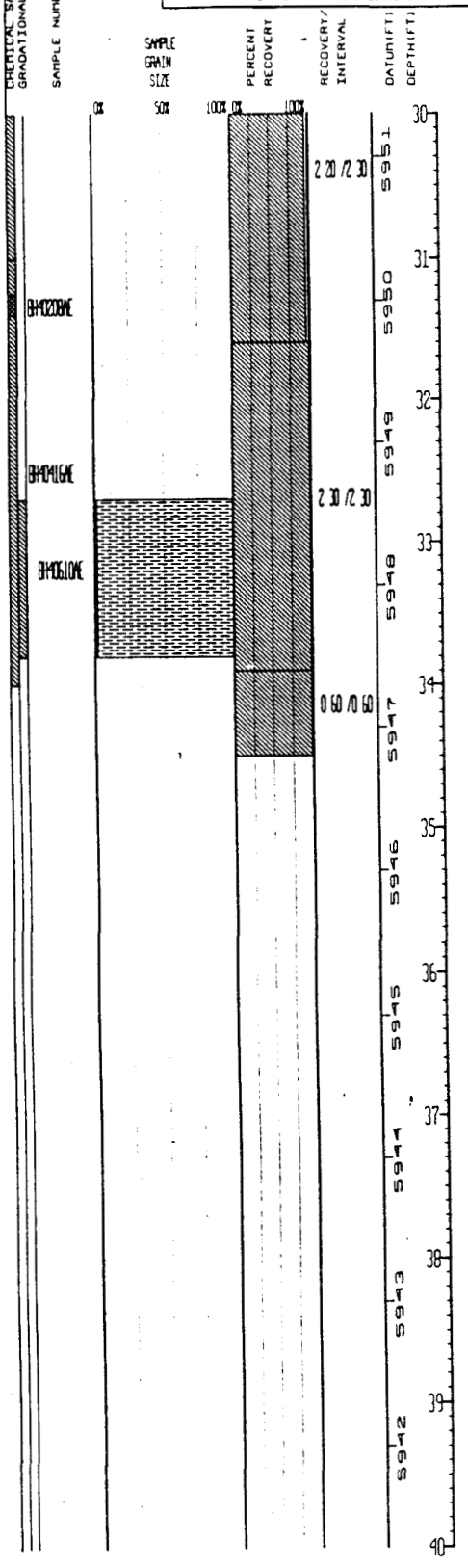
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY CORE LOGGING BY C D MURRAY AND J C EVANS (AE)



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (21 2-21 4')
SILTY SANDSTONE	Silty Sandstone with some clay (21 4-21 6') Same as reference interval 12 5-15 9' above
CLAYSTONE	Claystone with trace of sand (21 6-21 9') Same as refrence interval 11 5-12 5' above
SILTY SANDSTONE	Silty Sandstone with some clay (21 9-24 0') Same as refrence interval 12 5-15 9'
CLAYSTONE	Claystone with trace sand (24 0-25 0') Grayish brown (2 5 Y 5/2) Sand v f g to f g frosted quartz, well rounded Argillaceous cement, massive bedding Poor visible porosity, moist F g Sand 1%, V f g Sand 3%, Clay 96%
SANDSTONE	Sandstone with some silt and clay (25 0-25 6') Grayish yellow (10 YR 6/8), fine quartz sand, well sorted sub-angular to rounded, 20-30% visible porosity, some clay cement, very friable, moist, no apparent bedding Sand 66%, Silt 17%, Clay 17%
CLAYSTONE	Claystone with some sand (25 6-26 5') Light gray (2 5 N/6), v f g to f g white quartz sand, angular to sub-angular, trace of dark minerals, wet, massive bedding Sand 23%, Clay 77%
SANDSTONE	Sandstone with some silt and clay (26 5-27 4') Same as refrence interval 25 0-25 6' above
NO RECOVERY	No recovery (27 4-27 6')
CLAYSTONE	Claystone with some sand (27 6-28 4') Same as reference interval 25 6-26 5' above
NO RECOVERY	No recovery (28 4-29 3')
CLAYSTONE	Claystone with trace sand (29 3-34 5') Light [illegible] (2 5 Y 5/4) Sand v f g to f g, angular [illegible] some frosted, trace of dark minerals, wet [illegible] planar bedding with white sand and yellow [illegible] on surface F g Sand 1%, V f g Sand 3%, Clay 4% No recovery (31 5-31 6')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 34 50	GROUND ELEVATION (FT)	5981 30	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	750962	AREA NW CORNER POND 207C	CASING DIAMETER (IN)	2 00	GEOLOGIST	C D MURRAY	40993
EAST	2084436	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/23/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY CORE LOGGING BY C D MURRAY AND J C EVANS (AE)



WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE

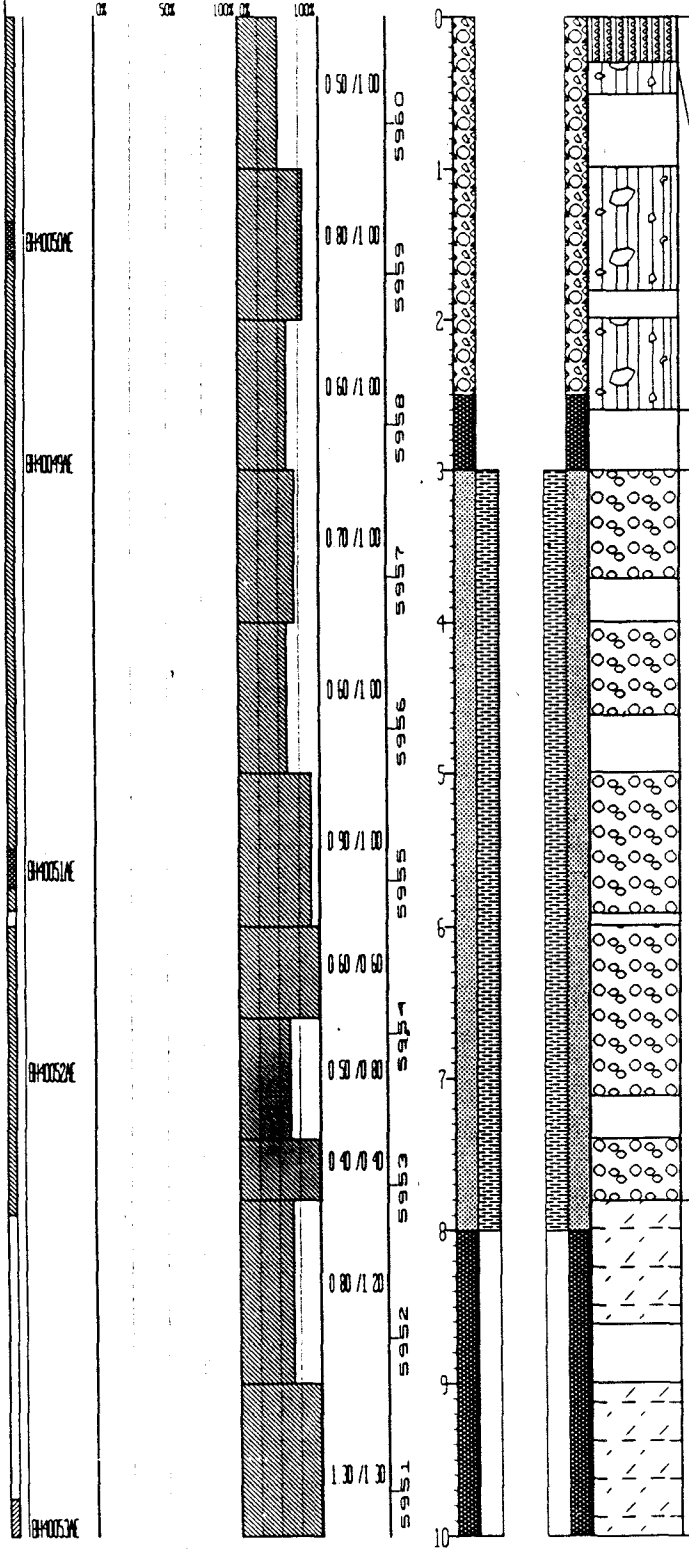
DESCRIPTION

Total depth drilled 34 5'
Vadose Zone Monitoring Borehole Construction Listed Below
Silica Sand Base of sand at 11 2'
Silica Flour 11 2' to 12 2'
Bottom Porous Cup 12 0'
Bentonite 12 2" to 12 9'
Silica Sand 12 9' to 24 9'
Silica Flour 24 9' to 26 0'
Bottom Porous Cup 25 8'
Bentonite 26 0" to 27 0'
Portland Cement 27 0' to 34 3'
Total Depth Neutron Access Tube 34 2'

Total Depth Drilled 34 50

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 60	GROUND ELEVATION (FT) 5960 70	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	751044	AREA PA, NE OF POND 207A	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	41193
EAST	2084873	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/28/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY, CORELOGGING BY J C EVANS

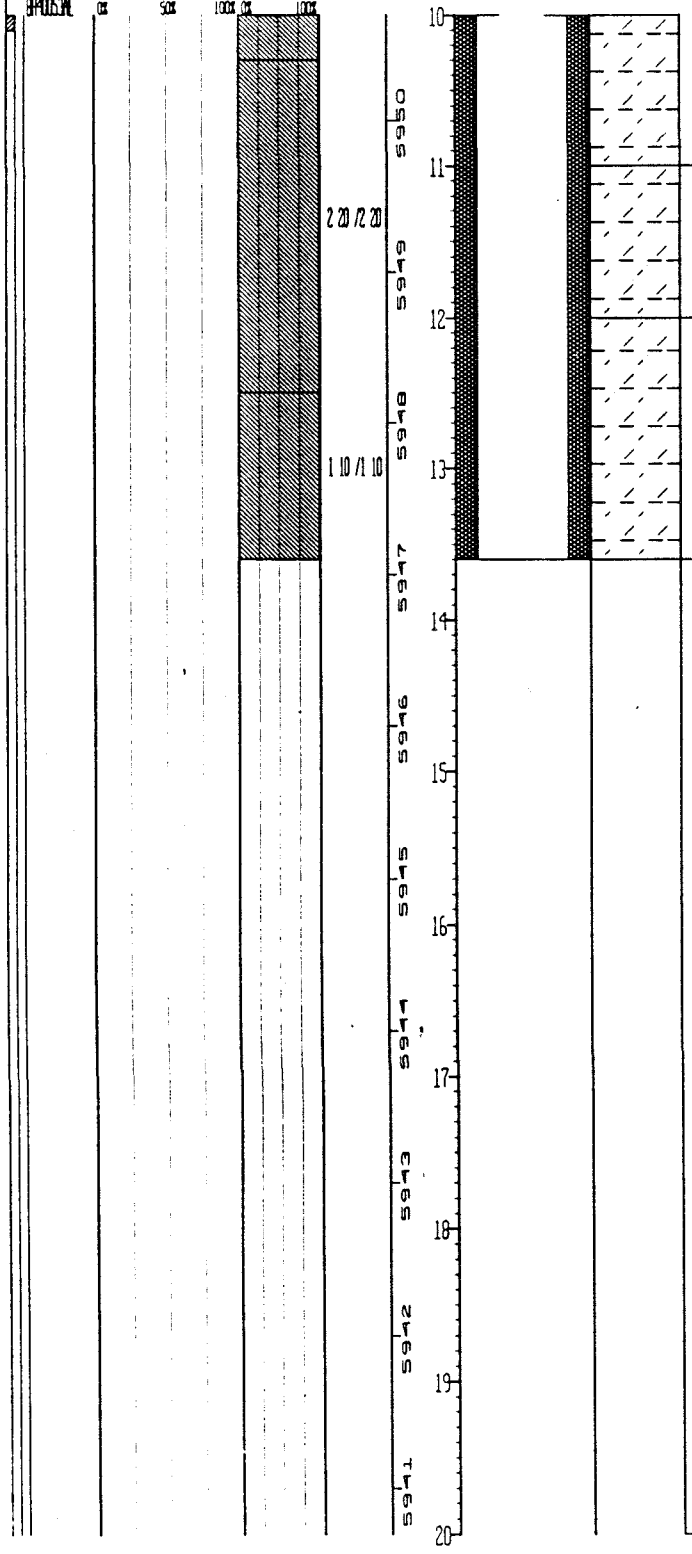


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Silty Sand with some gravel and clay (0 0-0 3') Light brownish gray (10 YR 6/2) to brown (10 YR 4/3) Sand f g to c g, well graded Gravel f g, low plasticity fines With abundant plant roots and organic matter from 0 0-0 1' 21% Gravel, 36% Sand, 30% Silt, 13% Clay
GM	Silty Gravel with some sand and trace clay (0 3-2 6') Matrix dark brown (10 YR 3/3) Gravel c g, up to 7 cm in length, poorly graded, sub-rounded Sand same as above, moist, 67% Gravel, 13% Sand, 18% Silt, 2% Clay No recovery (0 5-1 0'), (1 8-2 0')
NO RECOVERY	No recovery (2 6-3 0')
GW/gm	Sandy Gravel with some silt and trace clay (3 0-7 8') Matrix brownish yellow (10 YR 6/6) Gravel pred c g, well graded, sub-rounded to angular (drilling fractured), pred gray quartz, some metamorphic rock fragments, sand poorly graded, trace (5%) caliche, moist 74% Gravel, 18% Sand, 6% Silt, 2% Clay No recovery (3 7-4 0'), (4 6-5 0'), (5 9-6 0'), (7 1-7 4')
CLAYEY SILTSTONE	Top of Bedrock at 7 8' Clayey Siltstone with some sand (7 8-11 0') Light gray (10 YR 7/1) Slightly friable, crude horiz bedding Sand v f g to f g with scattered Mg-oxide staining, trace Fe-oxide staining, moist 8% Sand, 70% Silt, 22% Clay No recovery (8 6-9 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 60	GROUND ELEVATION (FT)	5960 70	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	751044	AREA PA, NE OF POND 207A	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	41193
EAST	2084873	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/28/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH | GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/INTERVAL | DATUM(FT) | DEPTH(FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION

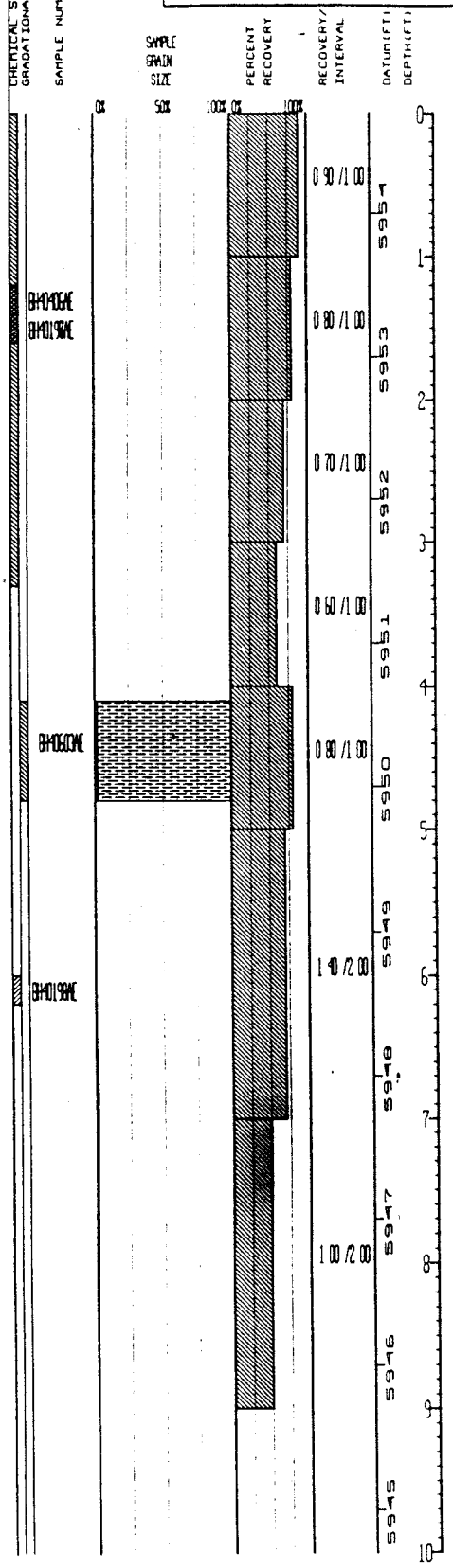


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CLAYEY SILTSTONE	Clayey Siltstone with some sand (11 0-12 0') Yellow (10 YR 7/6) Slightly to moderately friable, with discontinuous, thin, clay laminations, moist 21% Sand, 47% Silt, 32% Clay
CLAYEY SILTSTONE	Clayey Siltstone with some sand (12 0-13 6') Same as reference interval 7 8-11 0' above With chaotic bedding possibly due to soft sediment deformation

Total Depth Drilled 13 60 Total Depth Casing 10 00
Bottom of Filter Pack 8 00 Top of Seal 2 50

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 9 00	GROUND ELEVATION (FT) 5954 70	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	751047	AREA PA, N of Pond 2078	CASING DIAMETER (IN) 2 00	GEOLOGIST K R MIYOSHI	41293
EAST	2085182	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/23/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI CORE LOGGING BY C D MURRAY (AE)



WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

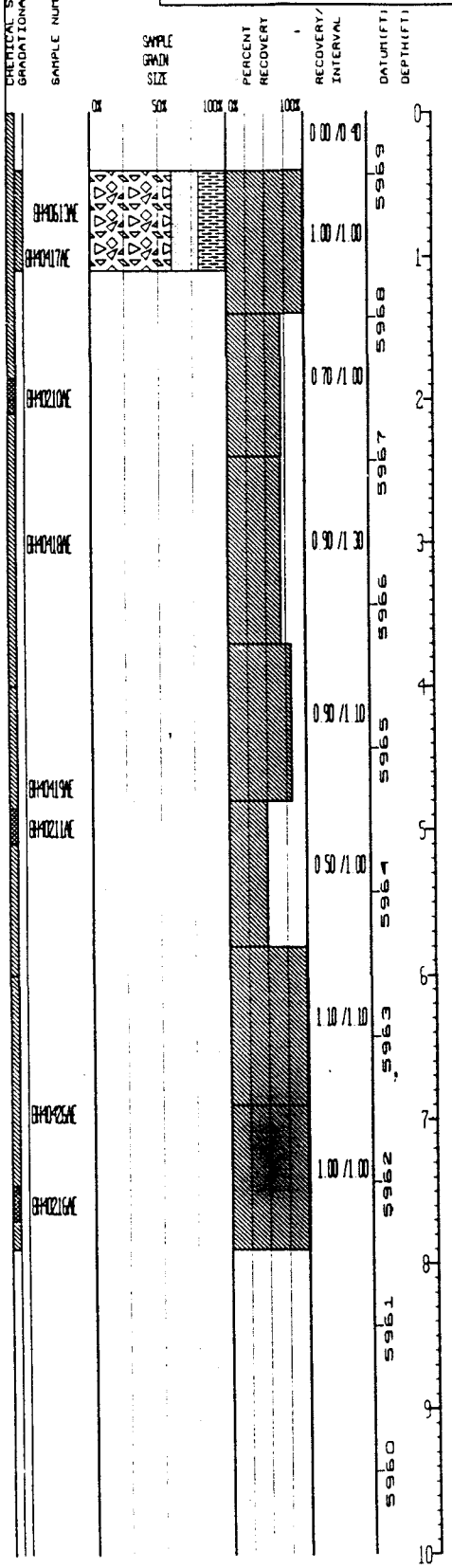
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Silty Sand with some gravel (0 0-0 4') Very dark brown (10 YR 2/2) Poorly graded Gravel sub-rounded quartz and granitic rock fragments Sand c g to f g, pred m g and f g sand, angular to sub-rounded, quartz, granitic and metamorphic rock fragments Common mica and root material Moist Gravel 9%, Sand 61%, Silt 30%
GP	Sandy Gravel with trace silt and clay (0 4-3 3') Dark grayish brown (10 YR 4/2) poorly graded gravel and cobbles, angular to sub-rounded, 5-60 mm common, broken by drilling Granitic and metamorphic rock fragments Sand c g to f g, very angular to sub-angular quartz and granitic rock fragments Caliche present and roots Low plasticity clay Moist, no bedding Gravel 84%, Sand 12%, Silt 1%, Clay 3% No recovery (0 9-1 0'), (1 8-2 0'), (2 7-3 0')
CLAYSTONE	Claystone with some fine sand (3 3-8 0') Top of Bedrock at 3 3' Olive (5 Y 4/4) to dark gray (5 Y 4/1) with olive yellow (2 5 Y 6/6), Fe-oxide staining F g to v f g sand, rounded to well rounded quartz, non friable, very stiff Moist, massive bedding F g Sand 3%, V f g Sand 3%, Clay 94% No recovery (3 6-4 0'), (4 8-5 0'), (6 4-7 0')
NO RECOVERY	No recovery (8 0-9 0')

Total depth drilled 9 0'

Vadose Zone Monitoring Borehole Construction Listed Below
Bentonite 0 8' to 1 2' Silica Sand 1 2' to 2 0'
Silica Flour 2 0' to 3 0' Bottom Porous Cup 2 8'
Bentonite 3 0' to 3 5' Portland Cement 3 5' to 6 8'
Total Depth Neutron Access Tube 6 8'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 7 90	GROUND ELEVATION (FT)	5969 43	PROJECT NUMBER	0U4-RFI/RI	LOG OF BORING NUMBER
NORTH	750922	AREA PA, INSIDE POND 207A	CASING DIAMETER (IN)	2 00	GEOLOGIST	C D MURRAY	41593
EAST	2084771	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	04/06/93	

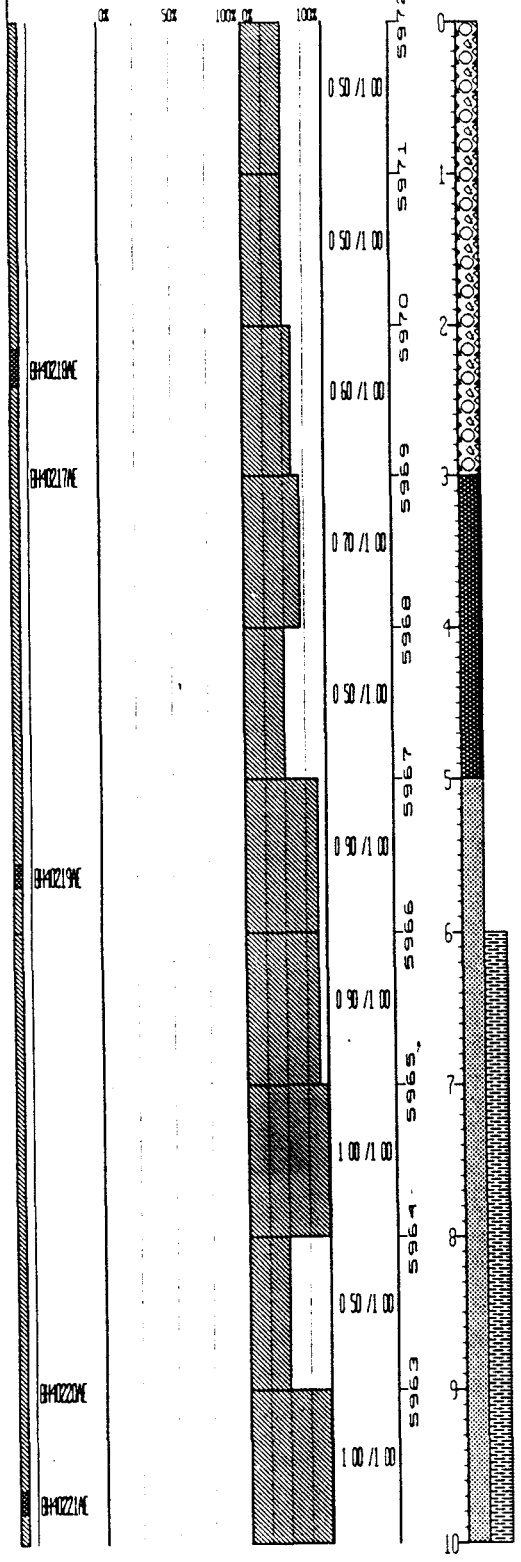
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	Asphalt (0 0-0 4')
	No recovery (0 4-2 4') All soil used for analytical samples
ML	Clayey Silt with some sand and trace gravel (2 4-2 9') Yellowish brown (5 YR 4/6) Sand poorly graded, pred v f g to f g, sub-angular, trace sub-rounded gravel Low plasticity fines, no visible bedding, moist 2% Gravel, 23% Sand, 45% Silt, 30% Clay
ML	Sandy Silt with some gravel and clay (2 9-3 3') Light gray (10 YR 7/1) to white (10 YR 8/1), stiff, slightly friable Sand f g to c g, moderately graded, sub-angular Gravel rounded, fine grained with some (20%) caliche "clast" 10% Gravel, 39% Sand, 41% Silt, 10% Clay
NO RECOVERY	No recovery (3 3-3 7')
GM	Sandy Gravel with some silt and trace clay (3 7-4 [illegible]) Brownish yellow (10 YR 6/6) Sand well graded f g to c g, sub-angular Gravel rounded, pred coarse [illegible] cm in length, some caliche 80% Gravel, 10% Sand, 6% Silt, 4% Clay
SM	Silty Sand with some gravel and clay (4 4-5 3') Light gray (2 5 Y 7/2) Sand pred m g, moderately graded sub-rounded, pred quartz Gravel rounded, pred fine [illegible] up to 3 cm in length at base of interval "clast" no visible bedding, with 10% caliche 17% Gravel, 46% Sand, 26% Silt, 11% Clay No recovery (4 7-4 8') (5 3-5 8')
SANDY SILTSTONE	Top of Bedrock at 5 9' Sandy Siltstone (5 3-[illegible]) Light yellowish brown (10 YR 6/4) Sand v f g to f g [illegible] sorted, angular, pred quartz, slightly friable [illegible] caliche-filled fractures, trace Fe-oxide staining, no visible bedding, pred argillaceous cement 17% Sand, 79% Silt, 4% Clay
	Total depth drilled 7 9'
	Vadose Zone Monitoring Borehole Construction [illegible] Bentonite 2 0-2 5', Silica Sand 2 5'-3 2' Silica Flour 3 2'-4 6', Bottom Porous Cup [illegible] Bentonite 4 6'-7 9', Total Depth Neutron Access Tube [illegible]

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 19 60	GROUND ELEVATION (FT)	5972 00	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750866	AREA PA, BETWEEN PONDS	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	41693
EAST	2084912	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/22/93	

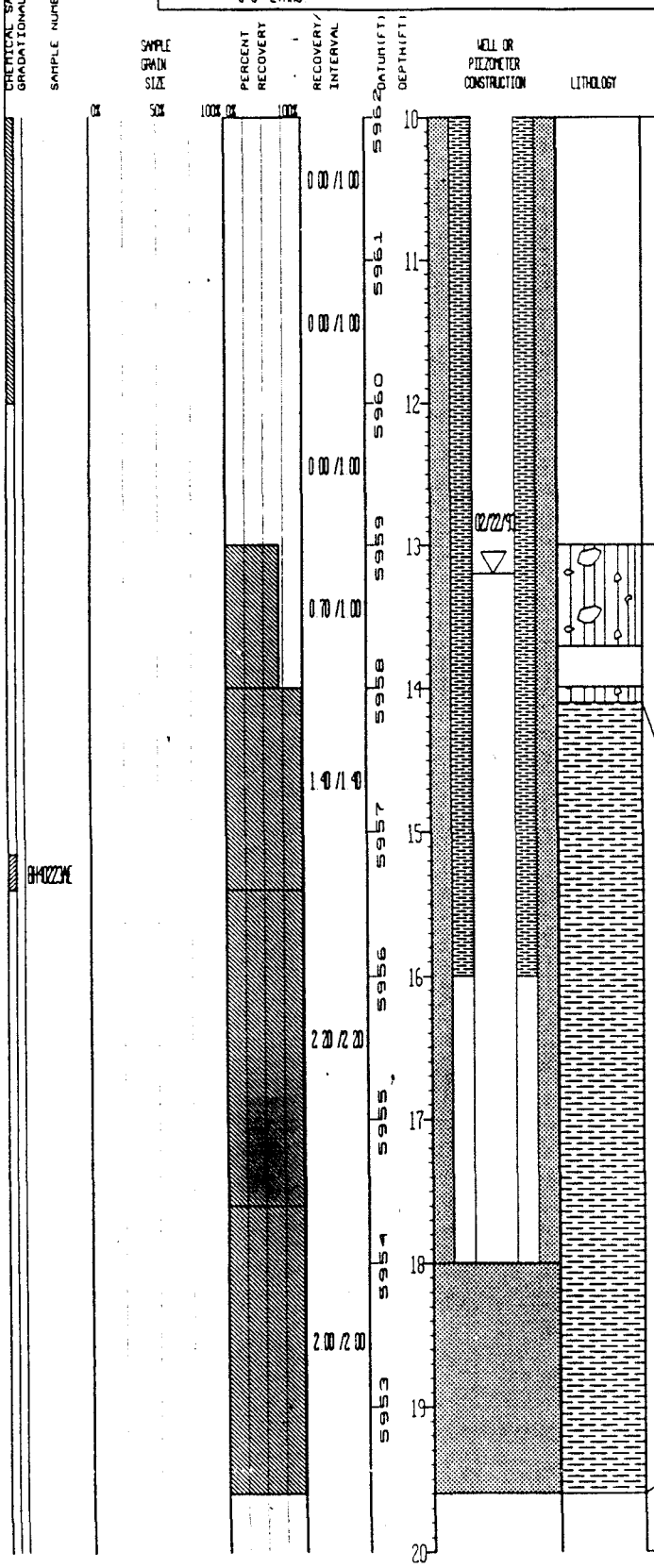
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GC	Sandy Gravel with some clay and silt (0 0-4 5') Matrix yellowish brown (10 YR 4/4) Gravel sub-rounded to angular (drilling fractured), well graded, coarse grained, up to 6 cm in length, pred gray quartzite Sand well graded, f g to c g, moist 58% Gravel, 20% Sand, 9% Silt, 13% Clay No recovery (0 5-1 0'), (1 5-2 0'), (2 6-3 0'), (3 7-4 0')
NO RECOVERY	No recovery (4 5-5 0')
GM	Silty Gravel with some clay and sand (5 0-5 9') Matrix reddish brown (5 YR 4/4) Gravel finer grained than above, up to 4 cm in length Sand poorly graded, sub-angular, v f g to c g, no visible bedding, moist 66% Gravel, 7% Sand, 16% Silt, 11% Clay
NO RECOVERY	No recovery (5 9-6 0')
CL	Sandy Clay with some gravel and silt (6 0-8 5') White (10 YR 8/1) to light gray (10 YR 7/1), soft, friable Sand pred c g Gravel pred f g, rare clasts up to 6 cm Dry, abundant caliche, especially 6 5-7 5' 7% Gravel, 22% Sand, 7% Silt, 64% Clay No recovery (6 9-7 0')
NO RECOVERY	No recovery (8 5-9 0')
GM	Sandy Gravel with some silt and clay (9 0-10 0') Matrix pale yellow (2 5 Y 7/4) Gravel rounded, well graded, c g, up to 6 cm in length Sand well graded, v f g to c g, sub-angular, pred quartz, abundant caliche 60% Gravel, 15% Sand, 15% Silt, 10% Clay

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 19 60	GROUND ELEVATION (FT)	5972 00	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750866	AREA PA, BETWEEN PONDS	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	41693
EAST	2084912	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/22/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS

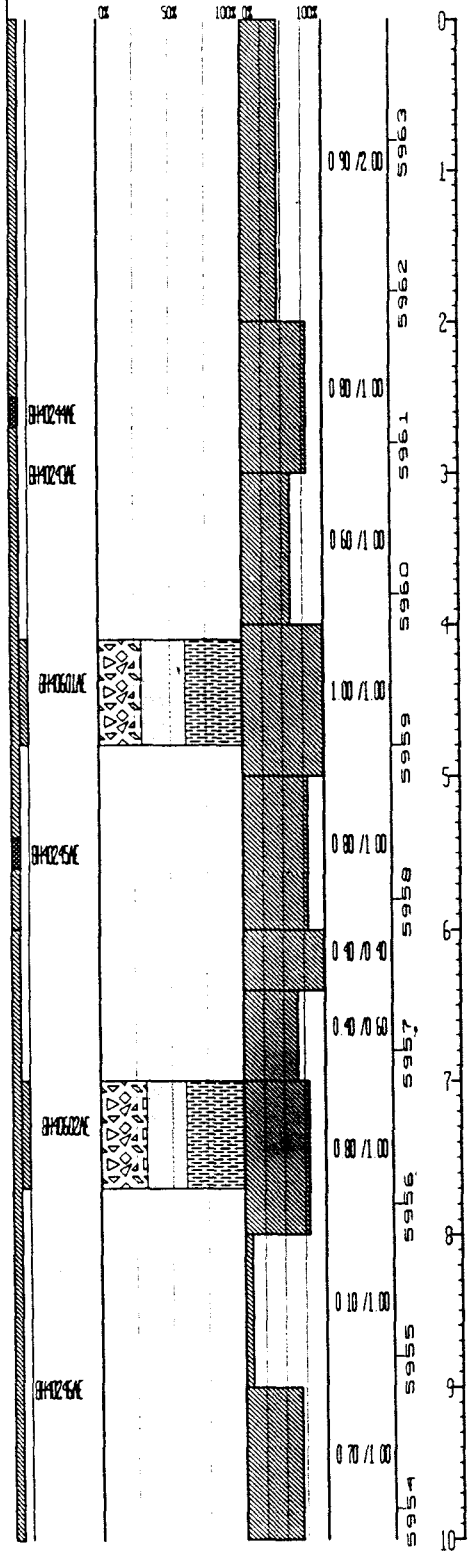


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (10 0-13 0') Drillers report drilling on large cobbles
GM	Sandy Gravel with some silt and trace clay (13 0-14 1') Matrix yellowish brown (10 YR 5/6) Gravel rounded to angular (drilling fractured), up to 3 cm Sand well graded, v f g to c g, sub-angular, pred quartz, slightly calcareous, low plasticity fines, wet, note in-situ metal fragment 58% Gravel, 31% Sand, 10% Silt, 1% Clay No recovery (13 7-14 0')
CLAYSTONE	Claystone with some silt (14 1-19 6') Top of Bedrock at 14 1' Olive brown (2 5 Y 4/3) with yellowish brown (10 YR 5/6) mottling, stiff, saturated, no visible bedding, extensive fractures with Mg-oxide and Fe-oxide coatings, wet 10% Silt, 90% Clay

Total Depth Drilled 19 60 Total Depth Casing 18 00
Bottom of Filter Pack 18 00 Top of Seal 3 00

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 00	GROUND ELEVATION (FT)	5963 80	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750897	AREA C, 207 B N POND, PA	CASING DIAMETER (IN)	2 00	GEOLOGIST	K R MIYOSHI	41793
EAST	2085228	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/22/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY K R MIYOSHI, C D MURRAY, AND J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Sandy Silt with some gravel and clay (0 0-0 9') Dark brown (10 YR 3/3), sand well graded, sub-angular to sub-rounded, f g to c g, pred quartz Gravel sub-rounded, up to 4 cm in length Trace plant roots, low plasticity fines, no visible bedding, moist 21% Gravel, 27% Sand, 42% Silt, 10% Clay
NO RECOVERY	No recovery (0 9-2 0')
GM/gw	Sandy Gravel with some silt and trace clay (2 0-3 6') Matrix dark brown (7 5 YR 4/3) Gravel sub-rounded to angular (drilling fractured), well graded, up to 6 cm in length, pred gray quartzite Sand f g to c g, well graded, angular to sub- angular, low plasticity fines, no visible bedding, moist 73% Gravel, 18% Sand, 8% Silt, 1% Clay No recovery (2 8-3 0')
NO RECOVERY	No recovery (3 6-4 0')
GC	Clayey Gravel with some sand and silt (4 0-7 8') Matrix very pale brown (10 YR 7/3) Gravel rounded to sub-rounded, coarse, up to 4 cm in length, gray quartzite Sand f g to c g, well graded, sub-angular to sub-rounded Medium plasticity fines, moist, abundant caliche (especially 6 3-6 8') 48% Gravel, 17% Sand, 14% Silt, 21% Clay No recovery (5 8-6 0'), (6 8-7 0')
NO RECOVERY	No recovery (7 8-8 0')
GW	Gravel with some sand and trace silt and clay (8 0-10 4') Matrix pale yellow (2 5 Y 7/2) Gravel coarse, up to 7 5 cm in length, well graded, rounded to sub-rounded, pred gray quartzite Sand f g to c g, well graded, low plasticity fines, with trace (5%) caliche, wet 85% Gravel, 10% Sand, 2% Silt, 3% Clay No recovery (8 1-9 0'), (9 7-10 0')

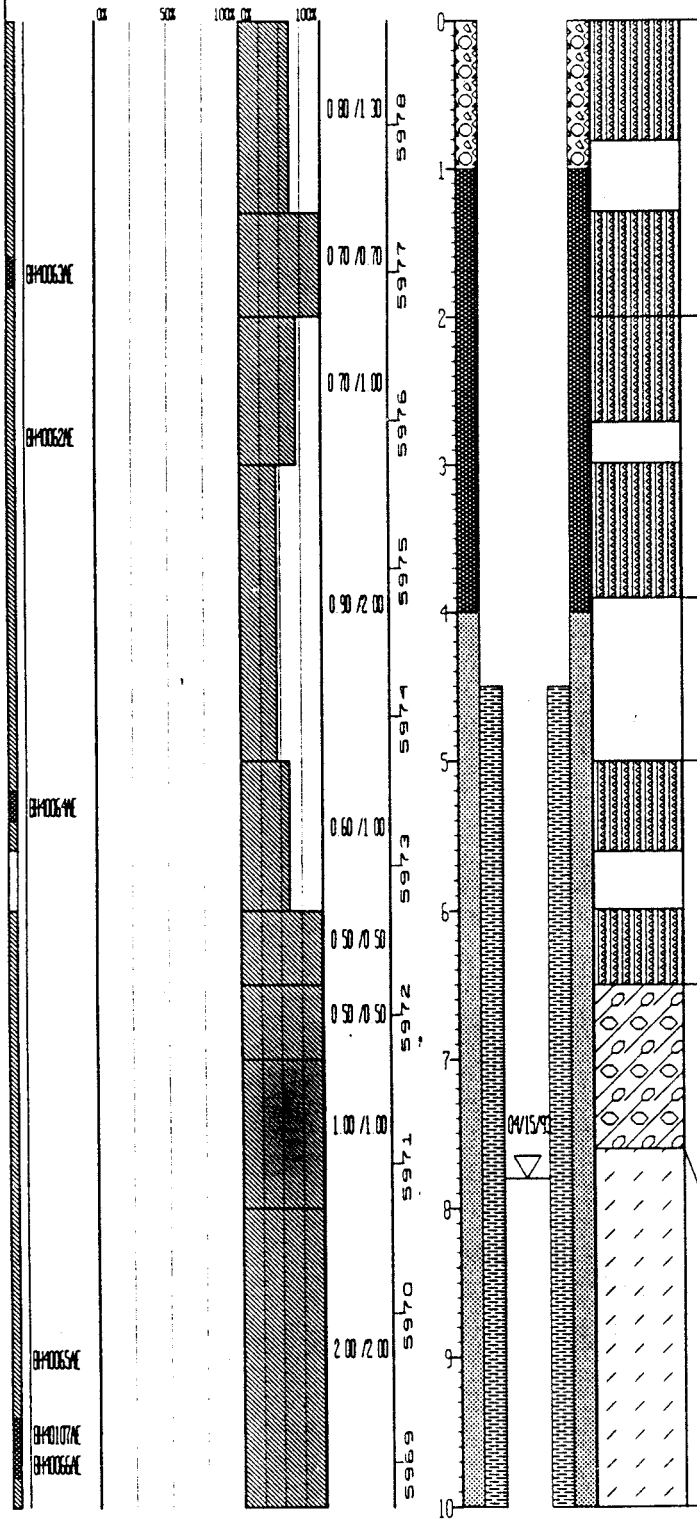
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 00	GROUND ELEVATION (FT) 5963 80	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	750897	AREA E, 207 B N POND, PA	CASING DIAMETER (IN) 2 00	GEOLOGIST K R MIYOSHI	41793
EAST	2085228	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/22/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY K R MIYOSHI, C D MURRAY, AND J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 40 /1 00	5953	10–11			NO RECOVERY	No recovery (10 4-14 0') Driller reports very difficult drilling on cobbles Driller estimate Top of Bedrock at 12 3'
				0 00 /1 00	5952	11–12				
				0 00 /1.00	5951	12–13				
				0 00 /1 00	5950	13–14				
				0 10 /1 00	5949	14–15			CLAYEY SILTSTONE	Clayey Sandy Siltstone (14 0-16 2') Light yellowish brown (2 5 Y 6/3), sand well sorted, v f g to f g, sub-angular Medium stiff, non-friable, moist 12% Sand, 53% Silt, 35% Clay No recovery (14 1-16 0')
				0 00 /1 00	5948	15–16				
				0 20 /2 00	5947	16–17			NO RECOVERY	No recovery (16 2-18 0')
					5946	17–18				Total depth drilled 18 00'
					5945	18–19				Vadose Zone Monitoring Borehole Construction Listed Below Bentonite 2 8-3 2' Silica Sand 3 2-4 2' Silica Flour 4 2'-5 0' Bottom Porous Cup 4 8' Bentonite 5 0'-5 6' Silica Sand 5 6'-10 6' Silica Flour Not Installed Bottom Porous Cup Not Installed Bentonite 10 6'-11 2' Grout 11 2'-17 9' Total Depth Neutron Access Tube 17 5'
					5944	19–20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 20 00	GROUND ELEVATION (FT)	5978 70	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750873	AREA SOLAR PONDS/PA	CASING DIAMETER (IN)	1 00	GEOLOGIST	J C EVANS	41993
EAST	2084283	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/13/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING, BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY J C EVANS, (AE)

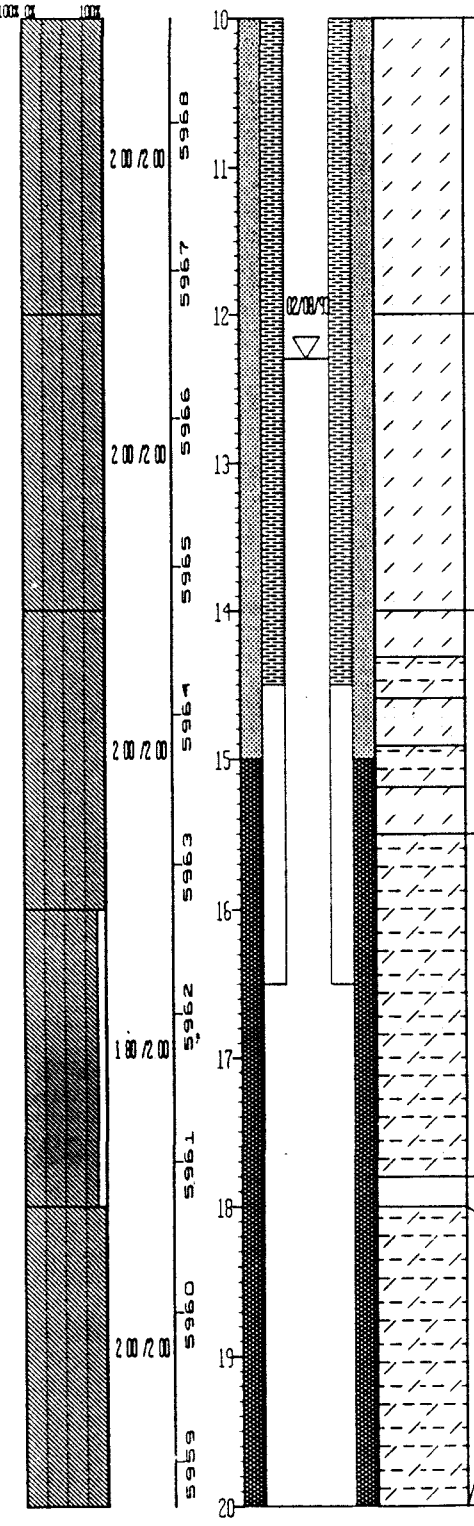


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Gravelly Sand with some silt and trace clay (0 0-2 0') Brown (7 5 YR 5/2) to gray (5 YR 5/1) Gravel well graded, granules to 5 5 cm, angular (drilling fractured) to sub-angular Sand moderately to well graded, f g to c g, angular to sub-angular, pred quartz, trace granitic rock fragments, interval moist, no visible bedding, low plasticity fines 39% Gravel, 43% Sand, 14% Silt, 4% Clay No recovery (0 8-1 3')
SM	Gravelly Sand with some silt and trace clay (2 0-3 9') Brown (7 5 YR 5/2) to reddish brown (2 5 YR 5/3) Gravel well graded, granules to 6 cm, angular to sub-angular Sand moderately to well graded, f g to c g, sub-angular to sub-rounded, pred quartz, interval moist, no visible bedding low plasticity fines 40% Gravel, 51% Sand, 7% Silt, 2% Clay No recovery (2 7-3 0')
NO RECOVERY	No recovery (3 9-5 0')
SM	Gravelly Sand with some silt and trace clay (5 0-6 5') Brownish yellow (10 YR 6/8) to reddish-brown (5 YR 5/4) gravel and sand same as reference interval 0 0-3 9' interval moist, no visible bedding 32% Gravel, 56% Sand, 8% Silt, 4% Clay No recovery (5 6-6 0')
GC	Sandy Gravel with some silt and clay (6 5-7 6') olive brown (2 5 Y 5/13) matrix and light gray granules Gravel well-graded, granules to to sub-angular Sand moderately graded, pred sub-angular to sub-rounded, interval moist, no visible bedding, low plasticity fines 49% Gravel, 32% Sand, 9% Silt, 10% Clay
SILTY SANDSTONE	Silty Sandstone with some clay (7 6-10 0') 7 6'. Light gray (10 YR 7/2) to brownish yellow mottled Sand pred f g, well sorted, angular to sub-rounded, approx 5% well-rounded, frosted grains, approx 20% visible porosity, approx argillaceous cement, non-calcareous (no HCl reaction) friable, pred quartz, moist, horiz bedding 73% Sand, 14% Silt, 13% Clay

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 20 00	GROUND ELEVATION (FT)	5978 70	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750873	AREA SOLAR PONDS/PA	CASING DIAMETER (IN)	1 00	GEOLOGIST	J C EVANS	41993
EAST	2084283	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/13/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING, BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY J C EVANS, (AE)

CHEMICAL SAMPLE DEPTH | GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION



SILTY SANDSTONE Silty Sandstone with some clay (10 0-12 0') Light gray (5 YR 7/1) to brownish yellow (10 YR 6/8) mottled Sand pred f g, well sorted, sub-angular to sub-rounded, approx 2-3% well rounded, frosted m g quartz grains, approx 20% visible porosity, approx 5% argillaceous cement, non-calcareous (no HCl reaction), very friable, pred quartz, trace black (N2.1) grains, moist, horiz bedding 70% Sand, 21% Silt, 9% Clay

SILTY SANDSTONE Silty Sandstone with some clay (12 0-14 0') Same as reference interval 7 6-10 0', with dark brown (7 5 Y 4/4) clay filed vertical fractures, faint horiz bedding 74% Sand, 21% Silt, 5% Clay

SILTY SANDSTONE Silty Sandstone with some clay (14 0-15 5') Yellowish brown (10 YR 5/6) to light gray (5 YR 7/1) Sand f g, well sorted, sub-angular to sub-rounded, approx 10% visible porosity, approx 15% argillaceous cement, slightly friable, pred quartz, moist, faint horiz bedding, faint healed vertical fractures 62% Sand, 27% Silt, 11% Clay

SILTY CLAYSTONE Silty Claystone with some sand (15 5-17 8') Yellowish brown (10 YR 5/6) to light olive gray (5 Y 6/2), mottled, faint horiz bedding, alternating clay rich and silty zones throughout interval, moist, firm to very firm 11% Sand, 27% Silt, 62% Clay

NO RECOVERY No recovery (17 8-18 0')

SILTY CLAYSTONE Silty Claystone with some sand (18 0-20 0') Brownish yellow (1 YR 6/8) to light gray (10 YR 6/1), mottled, clay rich zones, (gray) alternate with silt and sand rich zones (brownish yellow) in this interval, moist, firm to very firm, trace scattered carbonaceous material 10% Sand, 27% Silt, 63% Clay

Total Depth Drilled 20 00	Total Depth Casing 16 50
Bottom of Filter Pack 15 00	Top of Seal 1 00

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 10 00	GROUND ELEVATION (FT) 5976 70	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	750982	AREA BLDG 788	CASING DIAMETER (IN)	GEOLOGIST C D MURRAY	42093
EAST	2084543	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/08/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		0% 50% 100%	0% 100%	1 20 /1 00	5965	0			SM	Gravelly Sand with some silt (0 0-1 2') Strong brown (7 5 YR 4/6) Gravel 5-10 mm common, sub-angular to sub-rounded quartz Sand c g to f g, angular to sub-angular quartz grains and broken sandstone Trace of dark minerals and mica Moist Construction fill Gravel 22%, Sand 58%, Silt 20%
	BH0104NE			0 30 /1 00	5965	1			GM	Sandy Gravel with some silt and trace clay (1 2-2 3') Dark brown (7 5 YR 4/4) Poorly graded Gravel angular, broken by drlg, quartz and metamorphic material Sand c g to f g, angular to sub-angular quartz and granitic rock fragments No visible bedding Moist Gravel 52%, Sand 31%, Silt 14%, Clay 3%
				0 30 /1 00	5965	2				No recovery (1 5-2 0')
	BH0108NE BH0110NE			0 70 /1 00	5965	3			NO RECOVERY	No recovery (2 3-3 0')
				1 00 /1 00	5965	4			CL	Sandy Clay with some silt and trace gravel (3 0-4 8') Reddish brown (5 YR 4/4) Gravel 5-10 mm common, angular to sub-angular quartz and metamorphic rock fragments Sand c g to f g, (pred f g), v angular to sub-angular, quartz and feldspar with some metamorphics and trace of mica Clay low plasticity Moist No visible bedding Gravel 5%, Sand 35%, Silt 12%, Clay 48%
				0 90 /1 00	5965	5				No recovery (3 7-4 0')
	BH0114NE			1 00 /1 00	5965	6			SANDY CLAYSTONE	Sandy Claystone with some silt (4 8-9 8') Top of Bedrock at 4 8' Light gray (2 5 Y 7/2) with olive yellow (2 5 Y 6/8) staining, and white caliche Sand f g to v f g well sorted, angular to sub-rounded, quartz with 1% dark minerals Some grains are frosted Very stiff, claystone is moist, caliche is dry and occurs along fractures No visible bedding Fractures occur at 20 degree and 30 degree angle to horizontal Sand 23%, Silt 19%, Clay 58%
				1 00 /1 00	5965	7				
				1 00 /1 00	5965	8				
				1 80 /2 00	5965	9				
					5965	10			NO RECOVERY	No recovery (9 8-10 0')
										Total Depth Drilled 10 00

STATE PLANE COORDINATE	TOTAL DEPTH (FT) 31 30	GROUND ELEVATION (FT) 5971 03	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH 750876	AREA Pond 207A	CASING DIAMETER (IN)	GEOLOGIST K R MIYOSHI	42193
EAST 2084701	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/31/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED REG GEOLOGY BY K R MIYOSHI (TE) CORE LOGGING BY J C EVANS AND C D MURRAY (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 00 /0 50	5971	0				Asphalt (0 0-0 5')
	GH0425NE			0 70 /1 00	5970	1			ML	Gravelly Silt with some clay and sand (0 5-3 7') Matrix dark reddish brown (2 5 YR 2 5/4) Gravel sub-rounded, well graded, up to 6 cm in diameter Sand well graded, angular to sub-rounded, f g to c g ; pred quartz, dry, low plasticity fines, no visible bedding 30% Gravel, 15% Sand, 39% Silt, 16% Clay No recovery (1 2-1 5'), (2 2-2 5'), (2 8-2 9')
	GH0435NE			0 70 /1 00	5969	2				
				0 30 /0 40						
	GH0425NE				5968	3				
	GH0455NE			0 80 /1 10						
					5967	4			NO RECOVERY	No recovery (3 7-4 0')
				0 80 /1 70	5966	5			GM	Sandy Gravel with some silt and trace clay (4 0-7 4') Matrix light olive brown (2 5 Y 5/4) Gravel rounded to angular (drilling fractured), well graded, up to 7 cm in diameter, pred gray quartzite Sand well graded, sub-angular, f g to c g , low plasticity fines, white caliche present at 7 0', dry 49% Gravel, 25% Sand, 21% Silt, 5% Clay No recovery (4 8-5 7'), (6 5-6 8')
	GH0427NE									
					5965	6				
	GH0437NE			0 80 /1 10						
	GH0428NE									
				0 60 /0 60	5964	7				
	GH0456NE			0 20 /0 20					CLAYEY SANDSTONE	Clayey Sandstone with some silt (7 4-10 0') Top of Bedrock at 7 4' Light gray (10 YR 7/2) to light yellowish brown (10 YR 6/4) Sand v f g to f g , sub-angular to sub-rounded, well sorted Trace well rounded, frosted, m g quartz grains Approx 5-10% visible porosity, 10% argillaceous cement moderately friable, some thin horiz (ripple) bedding, some vertical, healed, caliche-filled fractures at 8 5', moist 47% Sand, 21% Silt, 32% Clay
	GH0432NE				5963	8				
				2 30 /2 30	5962	9				
	GH0490NE					10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 31 30	GROUND ELEVATION (FT)	5971 03	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750876	AREA Pond 207A	CASING DIAMETER (IN)		GEOLOGIST	K R MIYOSHI	42193
EAST	2084701	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/31/93	

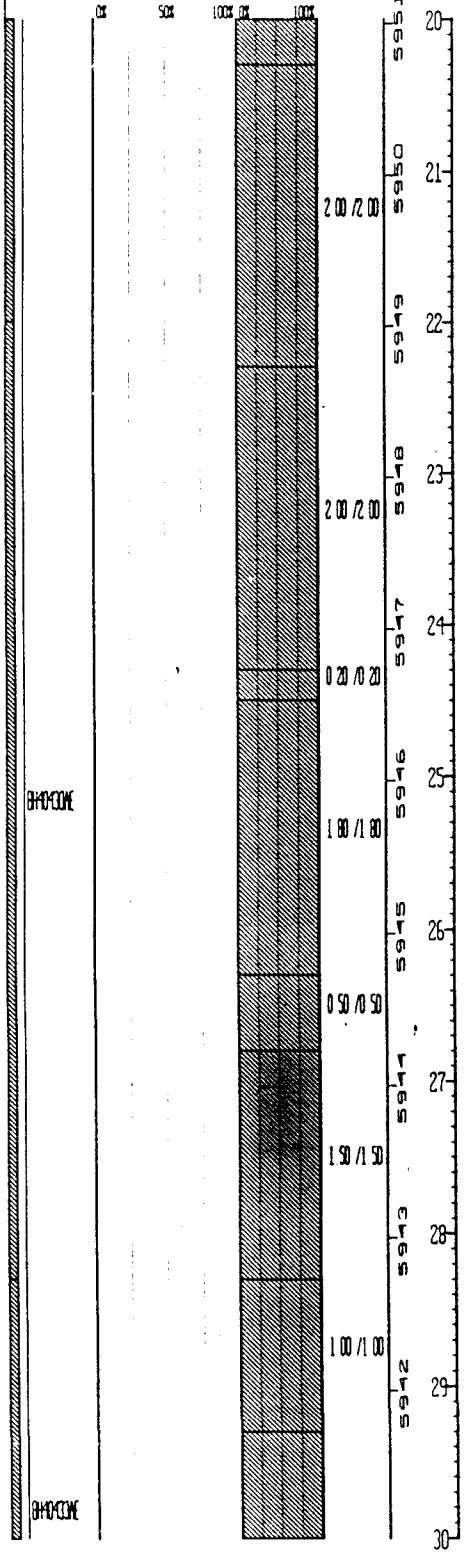
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K R MIYOSHI (TE) CORE LOGGING BY J C EVANS AND C D MURRAY (AE)

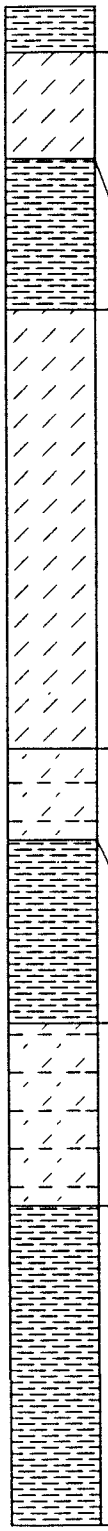
CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				2 10 /2 60	5960	11			SANDY CLAYSTONE	Sandy Claystone with some silt (10 0-15 4') Yellowish brown (10' YR 5/8) to light gray 10 YR 6/1) Sand v f g to f g , sub-angular to sub-rounded, well sorted, pred quartz, slightly friable, argillaceous cement, abundant thin horiz laminations (possible ripples) Sand content increases upward, moist 25% Sand, 23% Silt, 52% Clay No recovery (12 0-12 5'), (13 9-14 2')
	GH0086AC			1 10 /1 70	5958	13				
				1 20 /1 20	5956	15				
				0 90 /0 90	5955	16			CLAYSTONE	Claystone with some silt (15 4-20 3') Olive brown (2 5 Y 4/3) with olive yellow (2 5 Y 6/8) mottling/laminations Soft to med stiff, horiz laminated, moist, non-friable 10% Silt, 90% Clay
				2 00 /2 00	5953	18				
	GH0091AC			2 00 /2 00	5952	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 31 30	GROUND ELEVATION (FT)	5971 03	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750876	AREA Pond 207A	CASING DIAMETER (IN)		GEOLOGIST	K R MIYOSHI	42193
EAST	2084701	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/31/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K R MIYOSHI (TE) CORE LOGGING BY J C EVANS AND C D MURRAY (AE)

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE
PERCENT RECOVERY
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE
DESCRIPTION



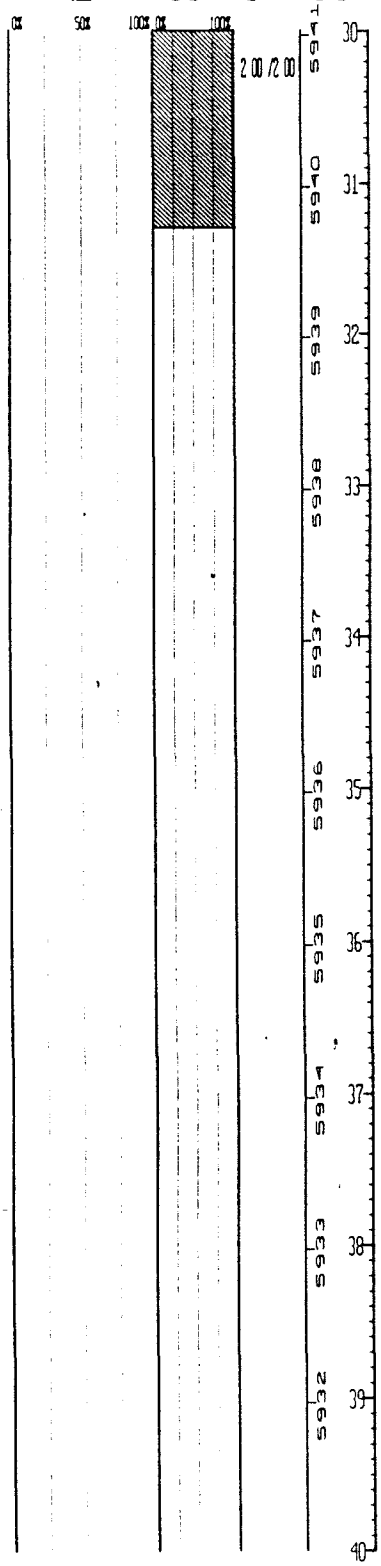


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SILTSTONE	Siltstone with some clay and trace of sand (20 3-21 0') Light brownish gray (2 5 Y 6/2) Sand v f g, subangular to subrounded, pred quartz, with some feldspar and trace of mica, well sorted, somewhat friable, moist, no apparent bedding 2% V f g Sand, 88% Silt, 10% Clay
CLAYSTONE	Claystone (21 0-22 0') Same as reference interval (15 4-20 3')
SILTSTONE	Siltstone with some clay and trace of sand (22 0-24 9') Light brownish gray (2 5 Y 6/2) Moist Same as reference interval (20 3-21 0')
CLAYEY SILTSTONE	Clayey Siltstone with some sand (24 9-25 5') [illegible] yellowish brown (2 5 Y 6/4) Sand v f g, subangular well sorted Med stiff, slightly friable, faint horiz bedding, moist 9% Sand, 64% Silt, 27% Clay
CLAYSTONE	Claystone with some silt (25 5-26 7') Same as reference interval 15 4'-20 3'
CLAYEY SILTSTONE	Clayey Siltstone with trace sand (26 7-27 9') [illegible] brown (2 5 Y 4/3) and light olive brown (2 5 Y 5/6) [illegible] v f g, well sorted, horiz laminations marked by [illegible] suspect manganese nodule at 27 4' Stiff, [illegible] moist 5% Sand, 57% Silt, 38% Clay
CLAYSTONE	Claystone with some silt (27 9-31 3') Same as reference interval 15 4'-20 3'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 31 30	GROUND ELEVATION (FT)	5971 03	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	750876	AREA Pond 207A	CASING DIAMETER (IN)		GEOLOGIST	K R MIYOSHI	42193
EAST	2084701	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/31/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K R MIYOSHI (TE) CORE LOGGING BY J C EVANS AND C D MURRAY (AE)

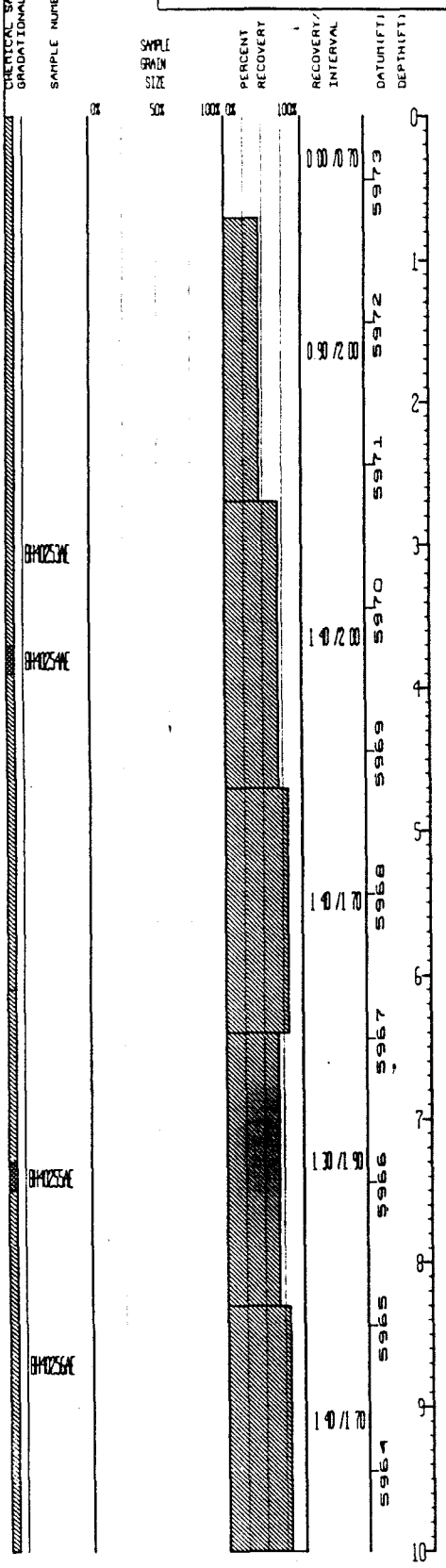
CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE
DESCRIPTION



Total Depth Drilled 31 30

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 80	GROUND ELEVATION (FT) 5973 44	PROJECT NUMBER 004-RFT/RI	LOG OF BORING NUMBER
NORTH	750797	AREA 207B NORTH/CENTER	CASING DIAMETER (IN)	GEOLOGIST K R MIYOSHI	42293
EAST	2085093	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 04/15/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY KERRY MIYOSHI, CORE LOGGING BY J C EVANS



WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	Asphalt (0 0-0 7')
	Surficial soil samples (0 5-0 7')
GM	Silty Gravel with some sand and trace clay (0 7-5 5') Matrix brown (10 YR 5/3) Gravel pred c g , well graded, sub-rounded Sand f g to c g., well graded, pred quartz, no visible bedding, moist 77% Gravel, 10% Sand, 12% Silt, 1% Clay No recovery (1 6-2 7'), (4 1-4 7')
GM	Silty Gravel with some sand and trace clay (5 5-7 5') Matrix dark yellowish brown (10 YR 4/4) and reddish brown (2 5 YR 4/2) Gravel slightly finer than above, Sand same as above, with some (10%) caliche, moist 76% Gravel, 10% Sand, 13% Silt, 1% Clay No recovery (6 1-6 4')
GW/gm	Sandy Gravel with trace silt and clay (7 5-10 3') Matrix dark brown (7 5YR 3/2) Gravel f g to c g , up to 7 cm in length, well graded, angular, pred gray quartzite, moist 73% Gravel, 15% Sand, 5% Silt, 3% Clay No recovery (7 7-8 3'), (9 7-10 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12.80	GROUND ELEVATION (FT)	5973.44	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750797	AREA 207B NORTH/CENTER	CASING DIAMETER (IN)		GEOLOGIST	K R MIYOSHI	42293
EAST	2085093	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8.00	DATE DRILLED	04/15/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED. RIG GEOLOGY BY KERRY MIYOSHI, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	BH40257AE			1.30/1.30	5963	10			GM	Silty Gravel with some sand and trace clay (10.3-11.9') Matrix dark yellowish brown (10YR 4/6) with some reddish brown (2.5YR 4/3). Gravel 1-4 cm, angular. Sand f.g. to c.g., well graded, no visible bedding. 60% Gravel, 14% Sand, 23% Silt, 3% Clay
				0.60/0.60	5962	11				
	BH40258AE			0.90/0.90	5961	12			GC	Clayey Gravel with some sand and silt (11.9-12.8') Matrix very pale brown (10YR 7/3). Gravel and sand same as above reference interval (7.5-10.3'), with some (20%) caliche, dry. 58% Gravel, 12% Sand, 12% Silt, 18% Clay
					5960	13				Total depth drilled 12.8' Note: Bedrock not encountered. Auger refusal at 12.8' Material is fill material, placed during pond berm construction
					5959	14				
					5958	15				
					5957	16				
					5956	17				
					5955	18				
					5954	19				
						20				

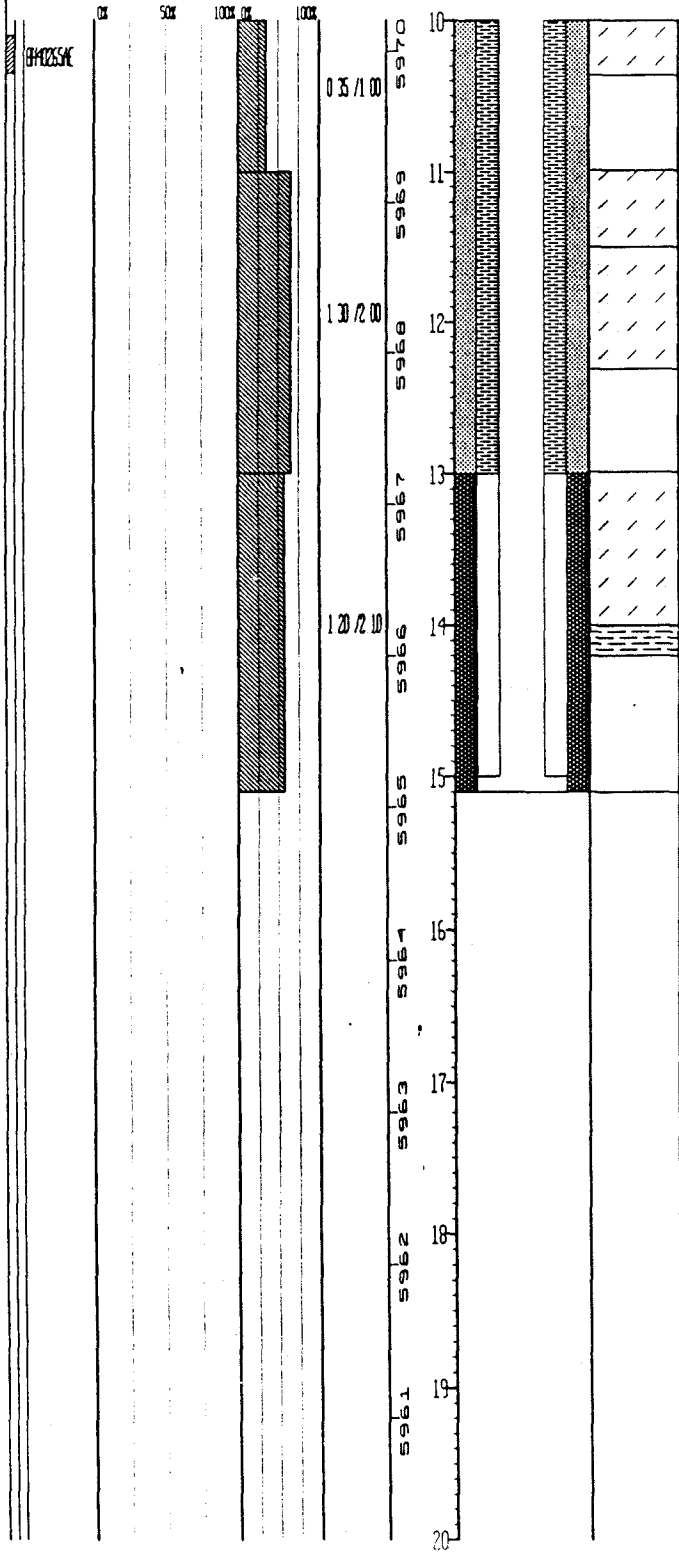
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 15 10	GROUND ELEVATION (FT) 5980 20	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750804	AREA PA, WEST OF 207C	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	42393
EAST	2084286	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/27/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORE BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY (AE) CORE LOGGING BY J C EVANS AND C D MURRAY

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		0% 50% 100%	0% 100%	0 70 / 1 00	5980	0			SM	Gravelly Sand with some silt and clay (0 0-0 7') Brown (10 YR 5/3) with scattered black (N/2) asphalt pieces Sand well graded, f g to c g, angular to sub-rounded, pred quartz grains with approx 20% metamorphic and igneous rock fragments Gravel well graded, angular to sub-rounded, clasts to 4 cm No visible bedding, slightly calcareous, dry to moist, low plasticity fines 39% Gravel, 43% Sand, 11% Silt, 7% Clay
	BH1052AE			0 40 / 1 00	5979	1				
									NO RECOVERY	No recovery (0 7-1 0')
				0 50 / 1 00	5978	2			GC	Sandy Gravel with some silt and clay (1 0-4 3') Matrix dark reddish brown (2 5 YR 3/3), scattered yellow (2 5 YR 3/3) limonite staining Gravel well graded, angular (drilling fractured) to sub-rounded, clasts to 5cm, pred granite rock fragments Sand moderately graded, sub-angular to sub-rounded, pred quartz No visible bedding, moist, low plasticity fines, non-calcareous 54% Gravel, 28% Sand, 9% Silt, 9% Clay No recovery (1 4-2 0'), (2 5-3 0'), (3 7-4 0')
	BH1051AE			0 70 / 1 00	5977	3				
				0 70 / 1 00	5976	4	01/27/93			
				1 00 / 1 00	5975	5			SW	Sandy Gravel with some silt and trace clay (4 3-5 4') Light olive (2 5 Y 5/4) to dark brown (7 5 YR 4/3) Gravel well graded, sub-rounded to angular, clasts to 4 5 cm, pred metamorphic rock fragments Sand moderately graded, sub-angular to sub-rounded, pred quartz No visible bedding, non-plastic fines 49% Gravel, 44% Sand, 6% Silt, 1% Clay No recovery (4 7-5 0')
	BH1053AE			1 10 / 1 10	5974	6			SW	Sand with trace gravel and silt (5 4-8 1') Light olive brown (2 5 Y 5/4) Sand well graded, f g to c g, angular to sub-rounded, c g sand pred angular metamorphic and igneous rock fragments, f g and m g sand pred sub-angular to sub-rounded quartz grains Gravel increases towards base of interval, saturated Non-plastic fines 4% Gravel, 20% C g Sand, 42% M g Sand, 30% F g Sand (92% Total Sand), 4% Silt
	BH1054AE			1 00 / 1 00	5973	7				
					5972	8	04/08/93		NO RECOVERY	No recovery (8 1-10 0') Top of Bedrock est at 8 1'
				0 00 / 1 90	5971	9				
						10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT)	15 10	GROUND ELEVATION (FT)	5980 20	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750804	AREA PA, WEST OF 207C		CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	42393
EAST	2084286	LOCATOR NUMBER	L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/27/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORE BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY (AE) CORE LOGGING BY J C. EVANS AND C D MURRAY



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SILTY SANDSTONE	Silty sandstone with some clay and trace gravel (10 0-11 5') Light gray (10 YR 7/1) to brownish yellow (10 YR 6/8) V f g to f g, very well to well sorted, sub-angular to rounded, pred quartz, trace dark rock fragments, approx %5 very well rounded, frosted quartz grains Interval moist to wet, approx 3% visible porosity, approx 20% argillaceous cement, non-calcareous, very friable, core too broken to determine bedding, approx 3% well-rounded gravel at top of interval 3% Gravel, 51% Sand, 23% Silt, 23% Clay No recovery (10 35-11 0')
SILTY SANDSTONE	Silty Sandstone with some clay (11 5-14 0') Brownish yellow (10 YR 6/6) to light brownish gray (10 YR 6/2) V f g to f g, very well to well sorted, sub-angular to rounded, approx 10% very well rounded, frosted quartz grains Interval moist to wet, approx 10% visible porosity, approx 15% argillaceous cement, slightly calcareous, very friable, bedding indeterminate 55% Sand, 32% Silt, 13% Clay No recovery (12 3-13 0')
CLAYSTONE	Claystone with some silt and trace sand (14 0-14 2') Dark brown (10 YR 4/3) to gray (10 YR 5/1), mottled Core too broken to determine bedding, stiff to very stiff, non-friable, non-calcareous, moist 1% V f g Sand, 24% Silt, 75% Clay
NO RECOVERY	No recovery (14 2-15 1')

Total Depth Drilled 15 10 Total Depth Casing 15 00
Bottom of Filter Pack 13 00 Top of Seal [illegible]

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 10 20	GROUND ELEVATION (FT)	5971 66	PROJECT NUMBER	044-RFI/RI	LOG OF BORING NUMBER
NORTH	750762	AREA PA, POND 207A	CASING DIAMETER (IN)	2 00	GEOLOGIST	K R MIYOSHI	42493
EAST	2084681	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/23/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED WITH 2 LYSIMETERS AND SINGLE NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI (TE) CORE LOGGING BY J C EVANS (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% – 50% – 100%)	PERCENT RECOVERY (0% – 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 00 /0 50		0				Asphalt (0 0-0 5')
					5971				SM	Gravelly Sand with some silt and trace clay (0 5-0 9') Light brown (7 5 YR 6/3) Sand f g to c g, well graded, sub-angular, Gravel f g, dry 38% Gravel, 46% Sand, 14% Silt, 2% Clay
	BH1039AE			1 00 /1 30		1				
					5970				GM/gw	Silty Gravel with trace clay and sand (0 9-2 2') Reddish brown (2 5 YR 4/3) Gravel c g, up to 6 cm, well graded, sub-angular, dry, no visible bedding 85% Gravel, 5% Sand, 6% Silt, 4% Clay No recovery (1 5-1 8')
	BH1039AE					2				
	BH1112AE			0 90 /0 90						
	BH1113AE									
	BH1203AE				5969				GM/gw	Sandy Gravel with some silt and trace clay (2 6-4 5') Light gray (2 5 Y 7/2) Gravel pred c g, some as above Sand f g to c g, well graded, sub-angular, dry, abundant caliche 2 6-2 7' 75% Gravel, 14% Sand, 4% Silt, 7% Clay No recovery (3 8-4 1')
	BH1040AE					3				
				1 10 /1 40	5968					
						4				
				0 90 /0 90	5967				GM	Sandy Gravel with some silt and trace clay (4 5-5 5') Light gray (2 5 Y 7/2) Gravel pred f g, mod graded Sand same as above, dry 44% Gravel, 41% Sand, 11% Silt, 4% Clay
	BH1204AE					5				
				0 50 /0 50						
				0 50 /0 50	5966				GM/gw	Sandy Gravel with some silt and trace clay (5 5-6 6') Gravel c g, same as reference interval (2 6-4 5') above
	BH1041AE					6				
				0 60 /1 00	5965				NO RECOVERY	No recovery (6 6-7 0')
						7			SM	Gravelly Sand with some silt and trace clay (7 0-8 1') Brownish yellow (10 YR 6/6) Sand moderately graded, f g to c g, sub-rounded, pred quartz, wet 16% Gravel, 67% Sand, 15% Silt, 2% Clay
				1 00 /1 00	5964				SANDY SILTSTONE	Top of Bedrock at 8 1' Sandy Siltstone with some clay (8 1-8 9') Light gray (10 YR 7/1) Sand v f g to f g, well sorted, rounded, approx 2-3% visible porosity, approx 20% argillaceous cement, slightly friable, no visible bedding, with vertical, caliche-filled fractures from 8 3-8 7', moist 39% Sand, 49% Silt, 12% Clay
						8				
				1 00 /1 00	5963					
						9			SANDY SILTSTONE	Sandy Siltstone interbedded with Clayey Siltstone (8 9-10 2') Light gray (10 YR 7/1) with reddish yellow (7 5 YR 6/8) Fe-oxide staining Sandy siltstone same as above, silty claystone visually estimated as 30% Silt, 70% Clay With caliche-filled vertical fractures, trace Mg-oxide coating on fractures
	BH1046AE									
				1 20 /1 20	5962					
	BH1209AE					10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 10 20	GROUND ELEVATION (FT) 5971 66	PROJECT NUMBER 014-9FT/RI	LOG OF BORING NUMBER
NORTH	750762	AREA PA, POND 207A	CASING DIAMETER (IN) 2 00	GEOLOGIST K R MIYOSHI	42493
EAST	2084681	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/23/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED WITH 2 LYSIMETERS AND SINGLE NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI (TE) CORE LOGGING BY J C EVANS (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
					5961	10				Total depth drilled 10 2'
					5960	11				Vadose Zone Monitoring Borehole Construction Listed Below Bentonite 1 9'-2 2' Silica Sand 2 2'-2 9' Silica Flour 2 9'-4 0' Bottom Porous Cup 3 8' Bentonite 4 0'-4 5' Silica Sand 4 5'-6 5' Silica Flour 6 5'-7 2' Bottom Porous Cup 7 1' Bentonite 7 2'-9 8' Total Depth Neutron Access Tube 9 5'
					5959	12				
					5958	13				
					5957	14				
					5956	15				
					5955	16				
					5954	17				
					5953	18				
					5952	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 80	GROUND ELEVATION (FT)	5969 81	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	750748	AREA PA, POND 207A	CASING DIAMETER (IN)		GEOLOGIST	K R MIYOSHI	42593
EAST	2084826	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	12 00	DATE DRILLED	03/26/93	

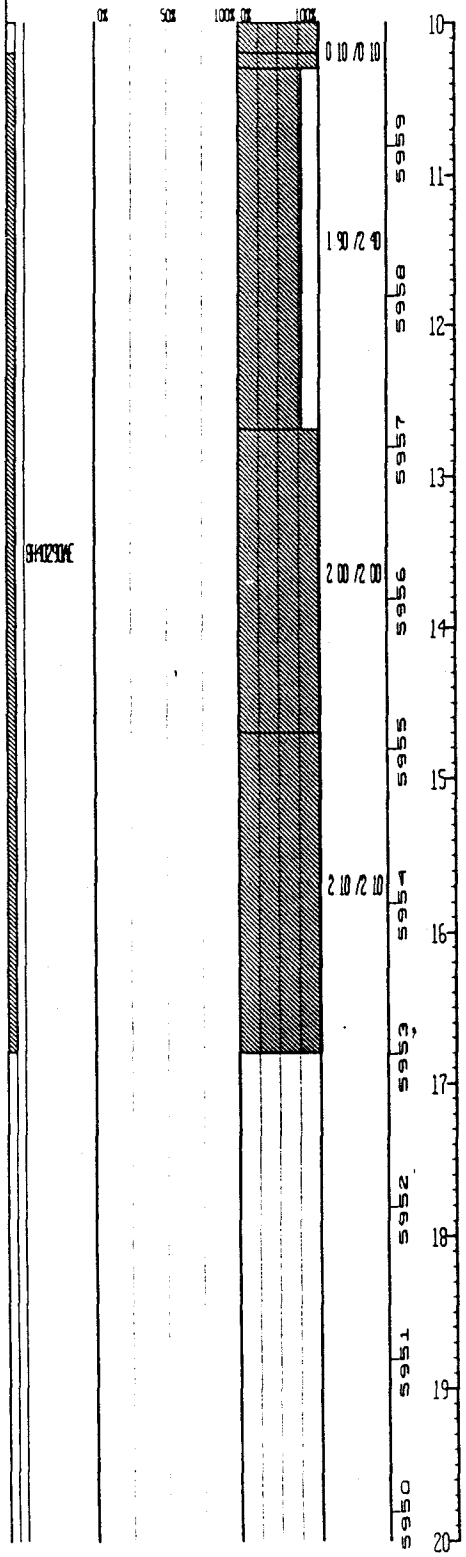
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K R MIYOSHI, CORELOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
										Asphalt (0 0-0 5')
				0 00/0 50					GW/gm	Sandy Gravel with some silt and trace clay (0 5-0 9') Dark brown (7 5 YR 4/2) Gravel f g, angular Sand f g to c g, moist 73% Gravel, 20% Sand, 6% Silt, 1% Clay
	GH0146NE			1 00/1 00	5969	1				
				0 50/0 50	5968				GM	Silty Gravel with some silt and clay (0 9-2 0') Dark reddish brown (2 5 YR 3/4) Gravel c g, rounded to angular (drilling fractured), well graded Sand f g to c g, well graded, sub-angular to sub-rounded, pred quartz, dry 65% Gravel, 14% Sand, 13% Silt, 8% Clay
	GH0291NE									
	GH0147NE					2				
				1 00/1 00	5967				GW/gm	Sandy Gravel with some silt and trace clay (2 0-7 6') Brownish yellow (10 YR 6/6) Gravel up to 7 cm in length, pred gray quartzite, same as interval (0 9-2 0') above 74% Gravel, 18% Sand, 6% Silt, 2% Clay No recovery (5 8-5 9')
	GH0148NE					3				
	GH0158NE			0 60/0 60						
				0 70/0 70	5966	4				
				0 80/0 80	5965	5				
	GH0292NE			0 70/0 80	5964					
	GH0149NE			0 30/0 30		6				
				0 10/0 10	5963					
	GH0159NE			1 00/1 10		7				
					5962				NO RECOVERY	No recovery (7 6-8 0')
	GH0151NE			0 10/0 10		8			SILTY CLAYSTONE	Top of Bedrock at 8 0' Silty Claystone (8 0-12 2') Grayish brown (10 YR 5/2) with yellowish brown (10 YR 5/8) staining Non-friable, no visible bedding, with abundant caliche at 8 3', from 8 9-9 7', at 10 3', and 11 4' Trace Mg-oxide staining on microfractures, dry 30% Silt, 70% Clay No recovery (8 8-8 9')
				0 70/0 80	5961					
	GH0150NE					9				
				1 30/1 30	5960					
	GH0294NE					10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 80	GROUND ELEVATION (FT) 5959 81	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	750748	AREA PA, POND 207A	CASING DIAMETER (IN)	GEOLOGIST K R MIYOSHI	42593
EAST	2084826	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 12 00	DATE DRILLED 03/26/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH | GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE (0% 50% 100%) | PERCENT RECOVERY (0% 100%) | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION

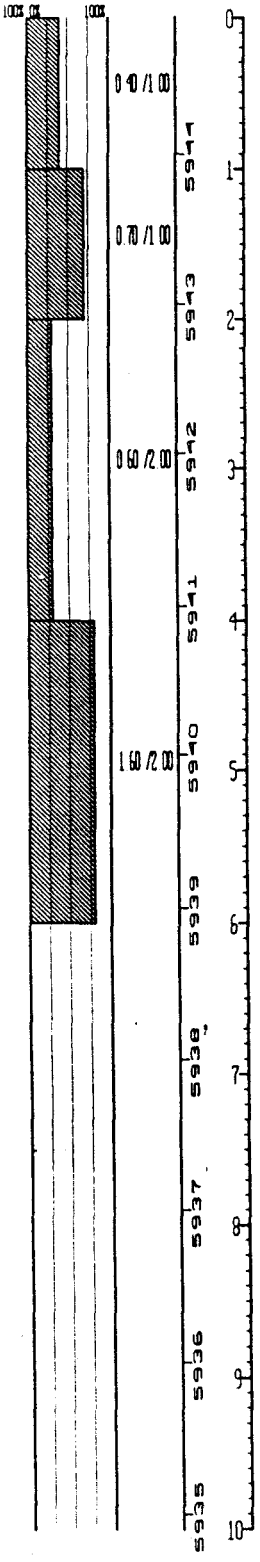


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (12 2-12 7')
SANDY SILTSTONE	Sandy Siltstone with some clay (12 7-12 9') Light gray (10 YR 7/1) with yellowish brown (10 YR5/6) staining Sand v f g , sub-rounded, well sorted Faint horizontal bedding Mg-oxide staining on microfractures Fractures at 0 and 90 degrees, dry 21% Sand, 63% Silt, 16% Clay
SILTY CLAYSTONE	Silty Claystone with some sand (12 9-15 2') Light gray (10 YR 7/1) with yellowish brown (10 YR 5/6) staining Slightly friable, no visible bedding Sand v f g,, sub-rounded, well sorted, Fe-oxide filled fracture at 14 1' Mg-oxide coating on microfractures throughout interval Note grout chips at 14 8' 10% Sand, 30% Silt, 60% Clay
SANDY SILTSTONE	Sandy Siltstone with some clay (15 2-16 8') Same as reference interval (12 7-12 9') above
	Total Depth Drilled 16 80

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 6 00	GROUND ELEVATION (FT)	5944 90	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	751154	AREA PA, N OF POND 207A	CASING DIAMETER (IN)		GEOLOGIST	C D MURRAY	42693
EAST	2084649	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/03/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY AND CORE LOGGING BY CLAUDE MURRAY (AE)

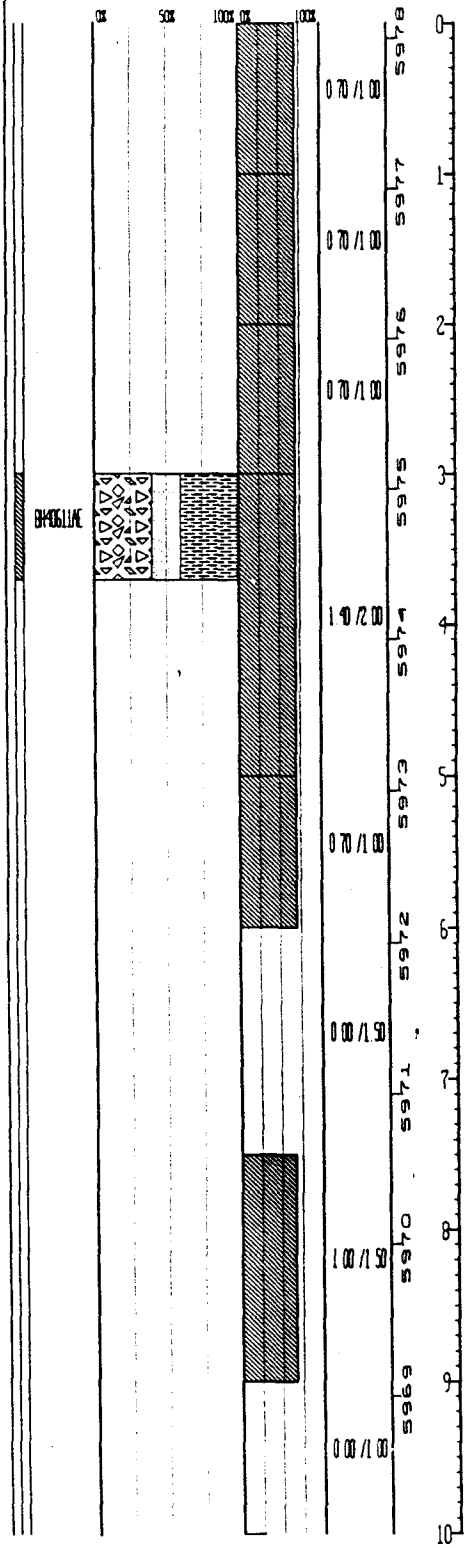
CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
OL	Organic Silt with abundant sand and some clay (0 0-0 4') Black (10 YR 2/1) Pred f g sand, angular to sub-rounded, quartz with granitic and metamorphic grains Wood and plant material common Low plasticity clay Moist No bedding 40% Sand, 45% Silt, 15% Clay
NO RECOVERY	No recovery (0 4-1 0')
SILTSTONE	Top of Bedrock at 1 0' Siltstone with some sand and clay (1 0-2 6') Pale olive (5 Y 6/3) with yellowish brown (10 YR 5/8) Fe-oxide staining Caliche marbleing present Sand f g to v f g, sub-angular to rounded, well sorted, pred quartz with trace of mica and dark minerals, argillaceous cement Moist Massive bedding 62% Silt, 17% Sand, 21% Clay No recovery (1 7-2 0')
NO RECOVERY	No recovery (2 6-4 0')
CLAYSTONE	Claystone with some sand and silt (4 0-5 6') Light olive brown (2 5 Y 5/4) with olive yellow (2 5 Y 6/8) staining Sand f g to v f g, well sorted, sub-rounded to rounded quartz with trace of dark minerals, moist, no visible bedding 18% Sand, 12% Silt, 70% Clay
NO RECOVERY	No recovery (5 6-6 0')
	Total Depth Drilled 6 00

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12.00	GROUND ELEVATION (FT)	5978.10	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750612	AREA PA, S POND 207C	CASING DIAMETER (IN)	2.00	GEOLOGIST	K.R. MIYOSHI	42893
EAST	2084452	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8.00	DATE DRILLED	03/04/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K.R. MIYOSHI, CORE LOGGING BY K.R. MIYOSHI AND K.W. PACHECO



WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GW	Sandy Gravel with some silt and trace clay (0.0-2.4') Matrix dark yellowish brown (10 YR 4/4), sand well graded, angular to sub-angular, low plasicity fines, trace of caliche, pred quartz/feldspar/lithic fragments, gravel to 30 mm, moist, no visible bedding 55% Gravel, 28% Sand, 15% Silt, 2% Clay No recovery (0.7-1.0'), (1.7-2.0')
GW	Sandy Gravel with some silt and trace clay (2.4-4.4') Matrix brown (7.5 YR 5/4), sand well graded, angular to sub-angular low plasticity fines, no caliche, pred quartz/feldspar/lithic fragments with red clay, gravel to 30 mm, moist, no visible bedding 74% Gravel, 17% Sand, 7% Silt, 2% Clay No recovery (2.7-3.0')
NO RECOVERY	No recovery (4.4-5.0')
GC	Clayey Gravel with some sand and silt (5.0-5.7') Matrix white (10 YR 8/2), sand poorly graded, angular to sub-rounded, moderate to high plasticity fines, abundant caliche, pred quartz/caliche, no visible bedding, some Fe-oxide staining 52% Gravel, 13% Sand, 7% Silt, 28% Clay
NO RECOVERY	No recovery (5.7-7.5')
SANDY CLAYSTONE	Top of Bedrock estimated at 7.2' Sandy Claystone with trace silt (7.5-10.5') Pale yellow (2.5 YR 7/4), sand well sorted, sub-angular, v.f.g. to f.g. sand, high plasticity fines, mildly calcareous, pred quartz, moist to wet, some Fe-oxide staining, no visible bedding, soft 30% Sand, 3% Silt, 67% Clay No recovery (8.5-10.0')

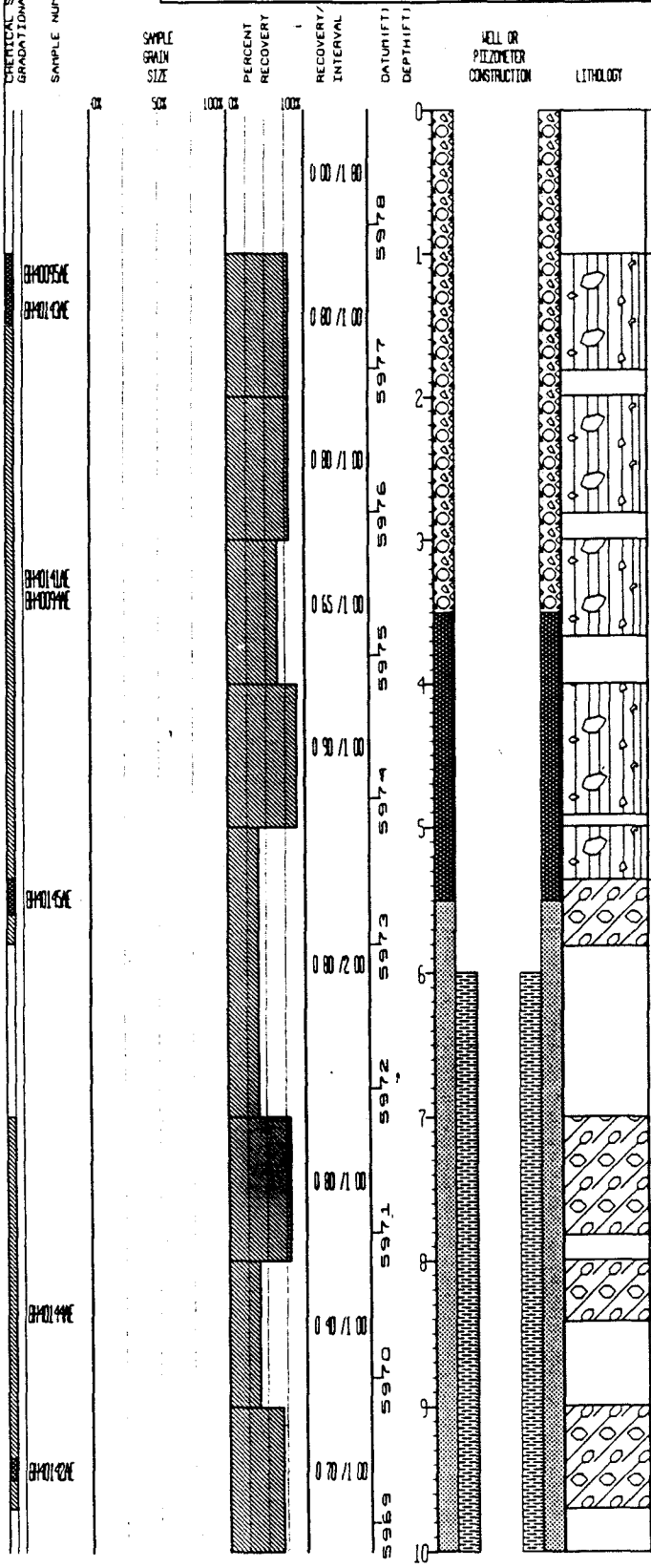
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 00	GROUND ELEVATION (FT)	5978 10	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	750612	AREA PA, S POND 207C	CASING DIAMETER (IN)	2 00	GEOLOGIST	K R MIYOSHI	42893
EAST	2084452	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/04/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY K R MIYOSHI AND K W PACHECO

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
					5968	10				
				0 50 /2 00	5967	11			NO RECOVERY	No recovery (10 5-12 0')
					5966	12				Total Depth Drilled 12 00 Vadose Zone Monitoring Borehole Construction Listed Below Bentonite 2 2' to 2'9' Silica Sand 2 9' to 5 1' Silica Flour 5 1' to 6 4' Bottom Porous Cup 5 8' Bentonite 6 4' to 7 4' Portland Cement 7 4' to 11 95' Total Depth Neutron Access Tube 11 95'
					5965	13				
					5964	14				
					5963	15				
					5962	16				
					5961	17				
					5960	18				
					5959	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 40		GROUND ELEVATION (FT)	5978 80	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750747	AREA SE POND 207C		CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	42993
EAST	2084552	LOCATOR NUMBER	L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/20/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORE RIG GEOLOGY BY C D MURRAY (AE) CORE LOGGING BY J C EVANS (AE) WELL COMPETED AS A PIEZOMETER

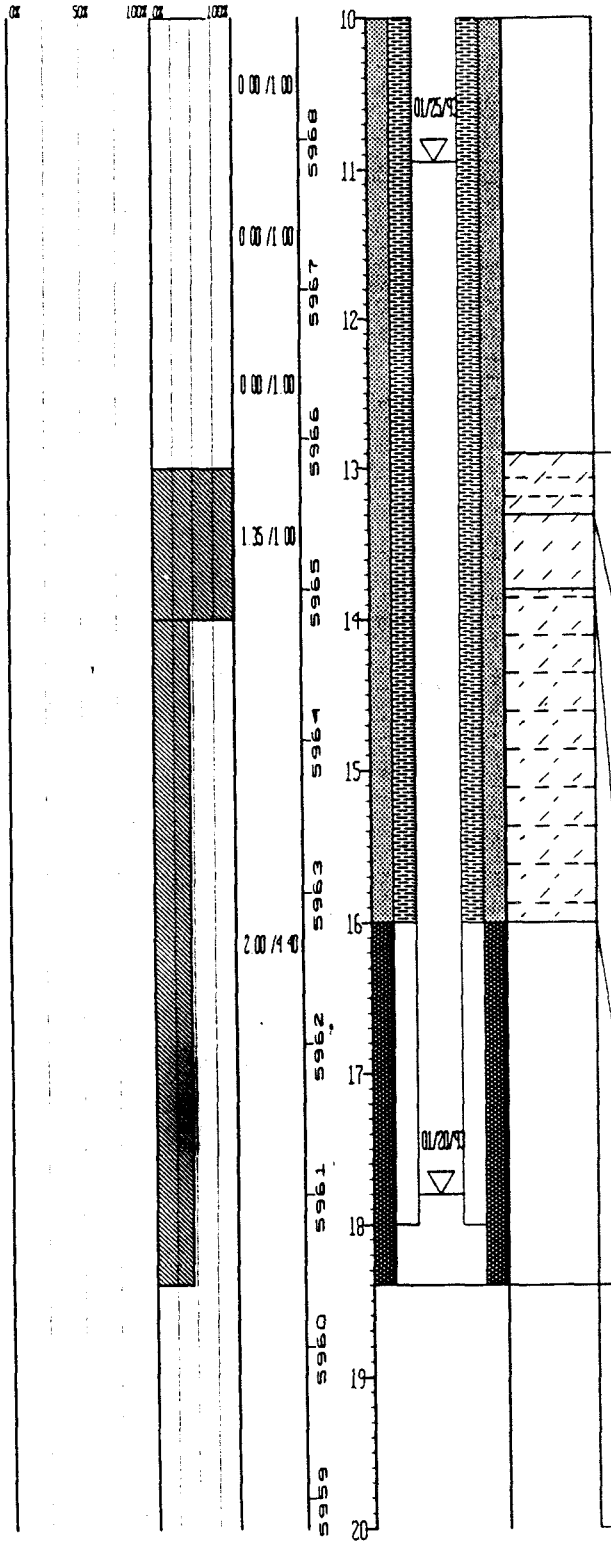


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (0 0-1 0')
GM	Sandy Gravel with some silt and clay (1 0-5 35') Matrix yellow brown (10 YR 5/4) to dark brown (10 YR 3/3) Gravel well graded, angular to sub-rounded, clasts to 6 cm Sand well graded, angular to sub-angular, pred quartz, trace black (N/2) grains - possible cinders, no apparent bedding, moist, low plasticity fines 54% Gravel, 27% Sand, 11% Silt, 8% Clay No recovery (1 8-2 0'), (2 8-3 0'), (3 65-4 0'), (4 9-5 0')
GC	Sandy Gravel with some silt and clay (5 35-9 7') Matrix light gray (2.5 Y 7/2) to white (10 YR 8/1) Gravel well graded, angular (drilling fractured) to sub-rounded, clasts to 7 cm Sand moderately graded, sub-angular to rounded, pred. quartz, trace granitic rock fragments, low plasticity fines, interval cemented with calcium carbonate (caliche), interval dry 40% Gravel, 39% Sand, 8% Silt, 13% Clay No recovery (5 8-7 0'), (7 8-8 0'), (8 4-9 0')
NO RECOVERY	No recovery (9 7-12 9') Drillers report "pushing large cobble" from 10 0-12 9'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 40	GROUND ELEVATION (FT) 5978 80	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	750747	AREA SE POND 207C	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	42993
EAST	2084552	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/20/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORE RIG GEOLOGY BY C D MURRAY (AE) CORE LOGGING BY J C EVANS (AE) WELL COMPETED AS A PIEZOMETER

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE
DESCRIPTION



SILTY CLAYSTONE Silty Claystone with some sand (12 9-13 3') Top of Bedrock at 12 9' Light gray (5Y 6/1) to strong brown (7 5 YR 5/8), mottled, stiff to very stiff, with scattered white (5 Y 8/1) calcium carbonate (caliche) nodules, no visible bedding, moist 10% Sand, 27% Silt, 63 % Clay

SILTY SANDSTONE Silty Sandstone with some clay (13 3-13 8') Light yellowish brown (10 YR 6/1) Sand well sorted, pred v f g to f g, trace m g to c g., pred rounded, trace well rounded and frosted, pred quartz, highly friable, approx 25% visible porosity, 2-3% argillaceous cement, non-calcareous, no visible bedding, saturated, (initial water level estimated) Clay occurs pred as discrete clay clasts 79% Sand, 15% Silt, 6% Clay

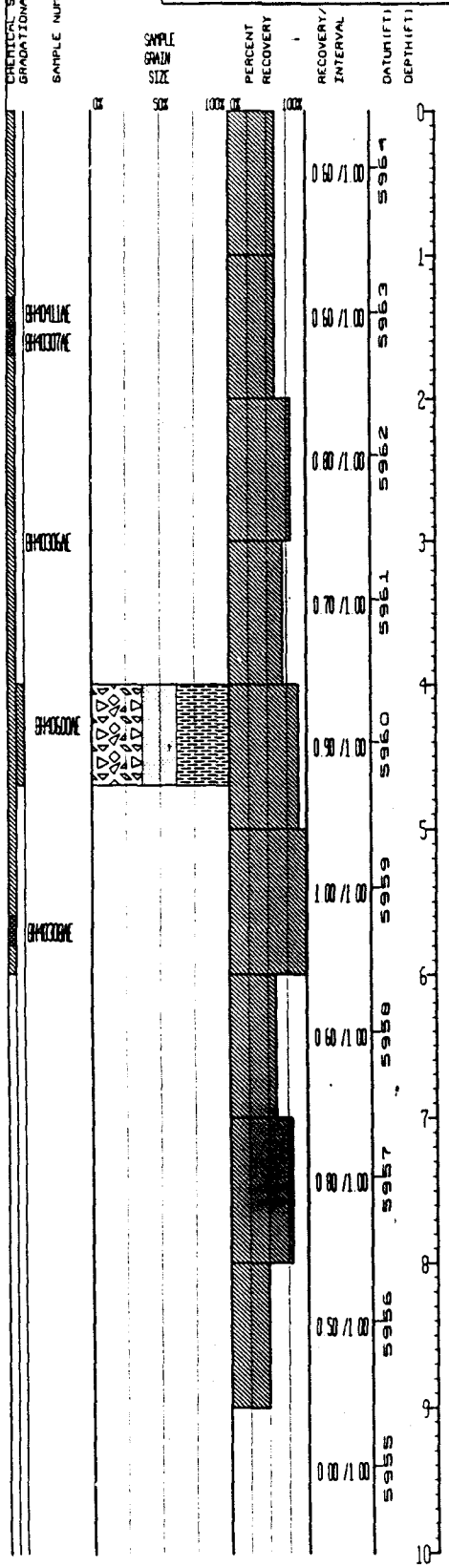
CLAYEY SILTSTONE Clayey Siltstone with some sand (13 8-16 0') Brownish yellow (10 YR 6/6) to light brownish gray (10 YR 6/2), non-friable, very stiff to hard, horizontal bedding, dry to moist, black (N/2) carbonaceous material, non-calcareous, sand well sorted, v f g, rounded 14% Sand, 60% Silt, 26% Clay

NO RECOVERY No recovery (16 0-18 4')

Total Depth Drilled 18 40 — Total Depth Casing 18 00
Bottom of Filter Pack 16 00 — Top of Seal 3 50

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 00	GROUND ELEVATION (FT) 5964 40	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	750704	AREA PA, E OF B POND	CASING DIAMETER (IN) 2 00	GEOLOGIST K R MIYOSHI	43193
EAST	2085229	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/15/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY KERRY MIYOSHI, CORE LOGGING BY K R MIYOSHI AND K W PACHECO



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GW	Sandy Gravel with some silt and trace clay (0 0-1 6') Dark yellowish brown (10 YR 4/4) Sand well graded, sub-angular to angular, v f g to c g, low plasticity fines, pred quartz feldspar, moist, horiz bedding, some organic material, caliche nodules 63% Gravel, 24% Sand, 12% Silt, 1% Clay No recovery (0 6-1 0')
NO RECOVERY	No recovery (1 6-2 0')
GM	Sandy Gravel with some silt and trace clay (2 0-3 7') Strong brown (7 5 YR 4/6) Poorly graded, angular to sub-angular, v f g to c g, low plasticity fines, pred quartz/feldspar, moist, no visible bedding 65% Gravel, 17% Sand, 14% Silt, 4% Clay No recovery (2 8-3 0')
NO RECOVERY	No recovery (3 7-4 0')
GM	Sandy Gravel with some silt and clay (4 0-5 5') Yellowish brown (10 YR 5/8) Sand poorly graded, v f g to c g angular to sub-angular, low plasticity fines, highly calcerous, pred quartz, moist, no visible bedding 36% Gravel, 36% Sand, 20% Silt, 8% Clay No recovery (4 9-5 0')
SM	Gravelly Sand with some silt and trace clay (5 5-6 5') Yellowish brown (10 YR 5/8) Sand poorly graded, v f g to c g, angular to sub-angular, low plasticity fines highly calcerous, quartz/feldspar, moist, no visible bedding 36% Gravel, 55% Sand, 8% Silt, 1% Clay No recovery (6 6-7 0'), (7 8-8 0')
NO RECOVERY	No recovery (10 0-16 0') Top of Bedrock est noted at 10 5' Drillers report "pushing large cobble into top of bedrock"

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 00	GROUND ELEVATION (FT) 5964 40	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750704	AREA PA, E OF B POND	CASING DIAMETER (IN) 2 00	GEOLOGIST K R MIYOSHI	43193
EAST	2085229	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/15/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY KERRY MIYOSHI, CORE LOGGING BY K R MIYOSHI AND K W PACHECO

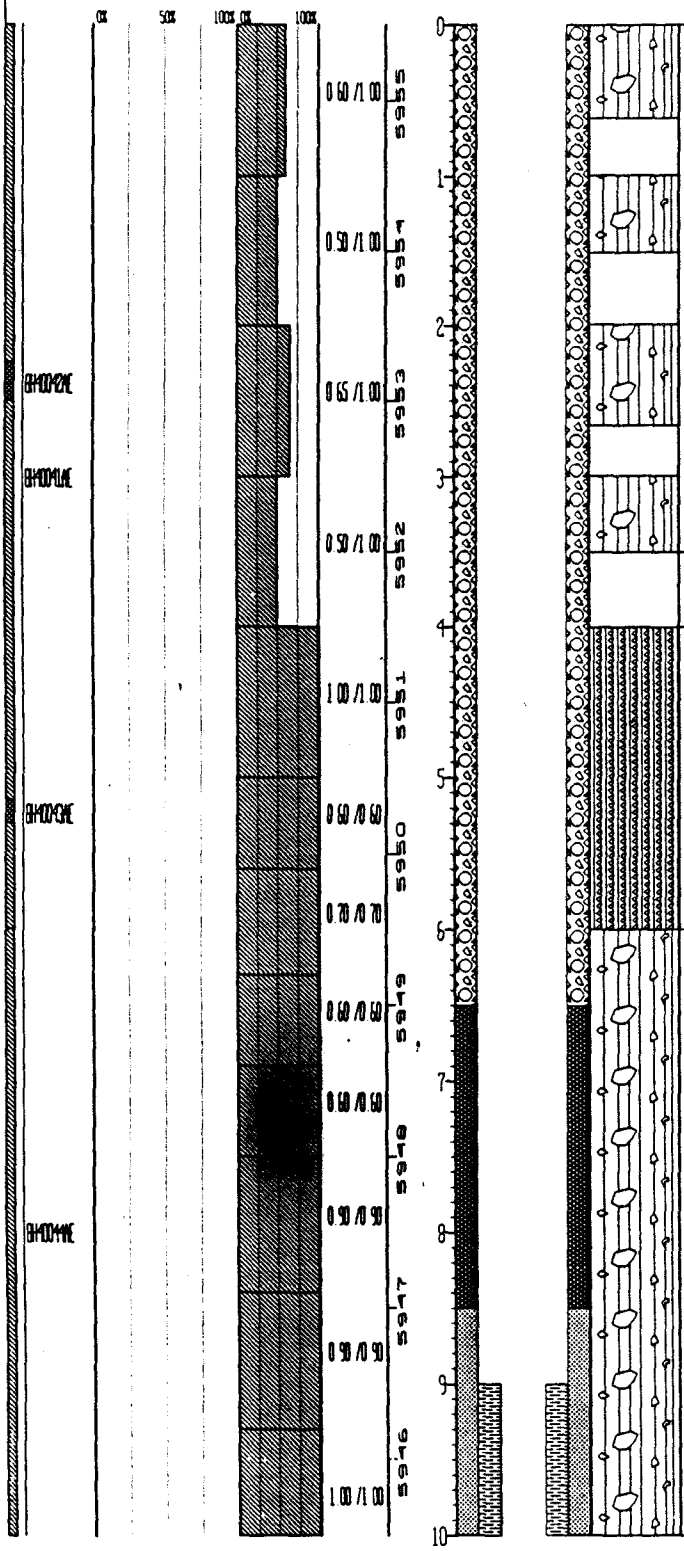
CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
0%		50% 100%	0% 100%	0 00 /1 00	5951	10				
				0 00 /1 00	5953	11				
					5952	12				
				0 00 /2 00	5951	13				
					5950	14				
				0 00 /2 00	5949	15				
					5948	16				
					5947	17				
					5946	18				
					5945	19				
						20				

Total depth drilled 16 0'

Vadose Zone Monitoring Borehole Construction Listed Below
Bentonite 3 0' to 3 5'
Silica Sand 3 5' to 4 5'
Silica Flour 4 5' to 5 2'
Bottom Porous Cup 5 0'
Bentonite 5 2' to 6 0'
Silica Sand 6 0' to 7 2'
Silica Flour 7 2' to 8 0'
Bottom Porous Cup 7 8'
Native Soil 8 0' to 10 2'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 40	GROUND ELEVATION (FT)	5955 50	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750825	AREA N CORNER PA	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	43293
EAST	2085753	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/02/93	

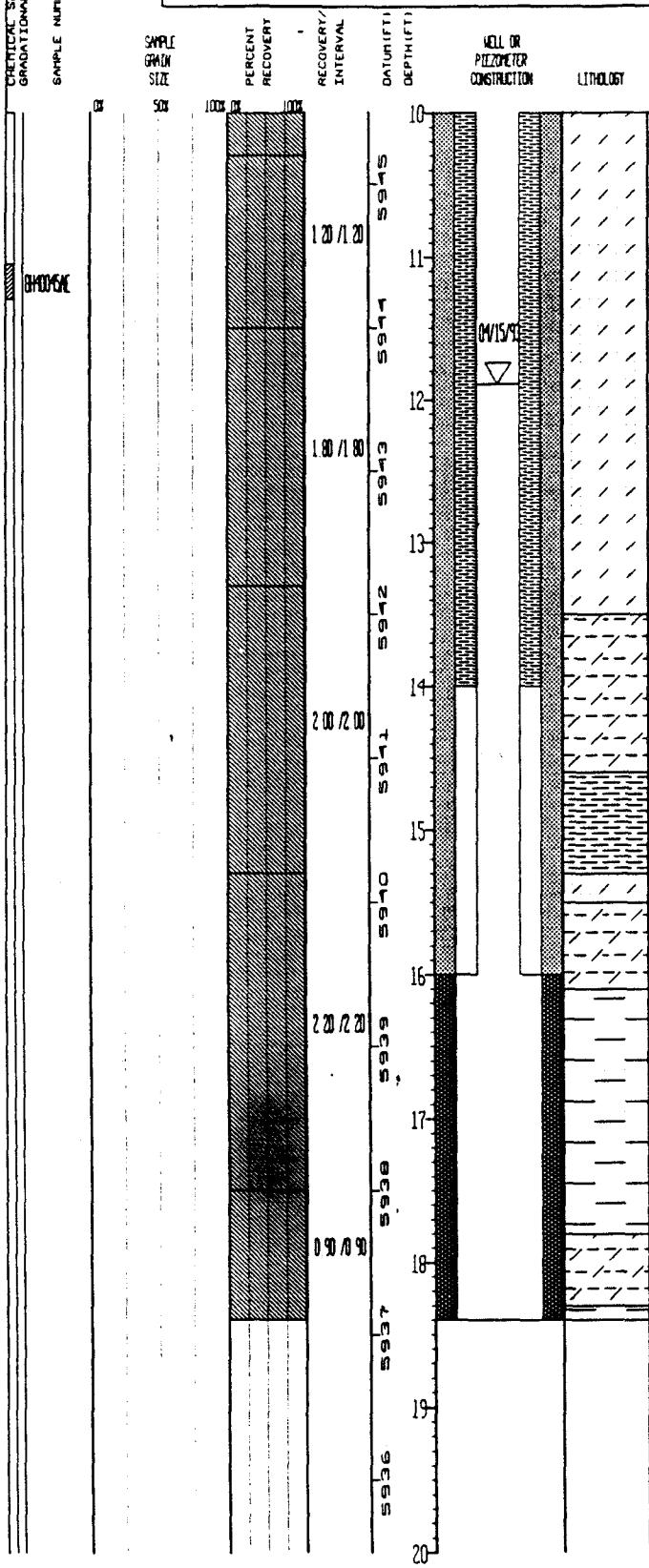
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY CORE LOGGING BY J C EVANS.



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GM	Sandy Gravel with some silt and clay (0 0-3 5') Matrix reddish brown (2 5 YR 4/3) to dark reddish brown (2.5 YR 3/4) Gravel rounded, some angular (drilling fractured), well graded, up to 5 cm in length, sand angular to sub angular, well graded, v f g to v c g, pred quartz, low plasticity fines, no visible bedding, moist, interval consists of alternating clayey and gravelly layers 37% Gravel, 30% Sand, 20% Silt, 13% Clay No recovery (0 6-1 0'), (1.5-2 0'), (2.65-3 0')
NO RECOVERY	No recovery (3 6-4 0')
SM	Gravelly Sand with some silt and clay (4 0-6 0') Light olive gray (5 Y 6/2) Sand moderately graded, angular to sub-rounded, f g to c g., pred. quartz Gravel angular to sub-rounded, pred granitic rock fragments Low to med plasticity fines, moist, abundant white (5 Y 8/1) caliche From 4 0 to 5 0' 27% Gravel, 35% Sand, 23% Silt, 15% Clay
GM	Sandy Gravel with some silt and trace clay (6 0-10 0') Matrix strong brown (7 5 YR 5/8) Gravel well graded, sub-rounded to angular, up to 7 cm in length, pred dark gray (7 5 YR 1/4) quartz pebbles Sand well graded, pred quartz, dry to moist. 60% Gravel, 27% Sand, 9% Silt, 4% Clay

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 40	GROUND ELEVATION (FT)	5955 50	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750825	AREA N CORNER PA	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	43293
EAST	2085753	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/02/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SILTY SANDSTONE	Silty Sandstone with some clay (10 0-13 5') Top of Bedrock at 10 0' Brownish yellow (10 YR 6/8) to light gray (10 YR 7/1), mottled Sand v f g to f g, sub-rounded to rounded, well sorted, trace well-rounded, frosted m g to c g quartz grains, approx 10% visible porosity, approx 15% yellow brown argillaceous cement, faint, thin horiz. bedding, moist to saturated 56% Sand, 31% Silt, 13% Clay
SILTY CLAYSTONE	Silty Claystone with some sand (13 5-14 6') Brownish yellow (10 YR 6/6), very stiff, sand well sorted, rounded, faint horiz bedding 21% Sand, 24% Silt, 55% Clay
CLAYSTONE	Claystone with some silt (14 6-15 3') Very dark grayish brown (10 YR 3/2) to yellowish brown (10 YR 5/8), mottled, very stiff, moist, no visible bedding 20% Silt, 80% Clay
SILTY SANDSTONE	Silty Sandstone (15 3-15 5') Same as reference interval (10 0-13 5') above
SILTY CLAYSTONE	Silty Claystone (15 5-16 1') Same as reference interval (13 5-14 6') above
CLAYEY SANDSTONE	Clayey Sandstone with some silt (16 1-17 8') Same as reference interval (10 0-13 5') above 47% Sand, 21% Silt, 32% Clay
SILTY CLAYSTONE	Silty Claystone (17 8-18 3') Same as reference interval (13 5-14 6') above
CLAYEY SANDSTONE	Clayey Sandstone (18 3-18 4') Same as reference interval (10 0-13 5') above

Total Depth Drilled 18 40 Total Depth Casing 16 00
Bottom of Filter Pack 16 00 Top of Seal 6 50

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 60	GROUND ELEVATION (FT) 5972 46	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	750563	AREA PA, Inside Pond 207A	CASING DIAMETER (IN)	GEOLOGIST K R MIYOSHI	43393
EAST	2084680	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/18/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K R MIYOSHI, CORELOGGING BY J C EVANS

CRITICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
										Asphalt (0 0-0 5')
	BH10510AE			0 00 /0 50	5972	0			SM	Gravelly Sand with some silt and trace clay (0 5-0 8') Dark yellowish brown (10 YR 4/4) Sand v f g to c g, poorly graded, angular to sub-angular, pred. quartz, moist 18% Gravel, 61% Sand, 17% Silt, 4% Clay
				0 70 /1 00		1				
	BH10511AE			0 80 /0 80	5971	2			GW	Sandy Gravel with trace silt and clay (0 8-3 3') Matrix pale yellow (2 5 YR 7/4) Gravel c g, up to 7 cm in length, well graded, sub-angular Sand well graded, pred quartz, abundant caliche from 0 8-1 2' Dry 84% Gravel, 10% Sand, 4% Silt, 2% Clay No recovery (1 2-1 5'), (2 8-2 9')
	BH10525AE									
				0 50 /0 60	5970	3				
	BH10512AE									
	BH10550AE			1.00 /1 30	5969	4			GM	Sandy Gravel with some silt and clay (3 3-4 8') Matrix light yellowish brown (2 5 Y 6/3) Gravel pred f g, Sand same as above, dry 53% Gravel, 29% Sand, 9% Silt, 9% Clay No recovery (3 9-4 2')
				0 60 /0 80	5968	5				
									NO RECOVERY	No recovery (4 8-5 0')
	BH10526AE			0 70 /1 10	5967	6			SILTY CLAYSTONE	Top of Bedrock at 5 0' Silty Claystone with some sand (5' 0-11 8') Olive yellow (2' 5 YR 6/6) with reddish yellow (7 5 YR 6/8) Fe-oxide staining Slightly friable Sand v f g to f g, well sorted, sub-angular to sub-rounded, argillaceous cement, moist, crude, thin horizontal bedding, ironstone concretions at 7 7', 8 5', and 11 0' Abundant caliche from 5 0-5 5' 7% Sand, 37% Silt, 56% Clay No recovery (5 7-6 1'), (7 8-8 1'), (9 6-10 1')
	BH10517AE				5966	7				
				1.70 /2 00						
	BH10551AE				5965	8				
					5964	9				
				1 50 /2 00						
	BH10531AE				5963	10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 60	GROUND ELEVATION (FT)	5972 46	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750563	AREA PA, Inside Pond 207A	CASING DIAMETER (IN)		GEOLOGIST	K R MIYOSHI	43393
EAST	2084680	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/18/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K R MIYOSHI, CORELOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	BH4032A4E			1 90 /2 00	5962	10				
					5961	11				
				1 50 /1 50	5960	12			SILTY CLAYSTONE	Silty Claystone with trace sand (11 8-13 6') Light gray (2 5 Y N7) Non-friable, dry, no visible bedding-possibly bioturbated, trace (2%) Mg-oxide staining 3% Sand, 29% Silt, 68% Clay No recovery (12 0-12 1')
					5959	13				
					5958	14				Total Depth Drilled 13 60
					5957	15				
					5956	16				
					5955	17				
					5954	18				
					5953	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 11 30	GROUND ELEVATION (FT) 5973 48	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750602	AREA PA, B POND (S AND C)	CASING DIAMETER (IN)	GEOLOGIST K W PACHECO	43493
EAST	2085097	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 04/21/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K W PACHECO, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 00 /0 50	5973	0				Asphalt (0 0-0 5')
				0 00 /0 30						Soil to analytical sample (0 5-0 8')
				1 30 /1 70	5972	1			GM	Sandy Gravel with some silt and trace clay (0 8-4 0') Matrix very pale brown (10 YR 7/3) Gravel pred c g, up to 7 cm in length, sub-rounded Sand f g to c g, with some (20%) caliche in matrix and as coating on gravel, moist 68% Gravel, 14% Sand, 12% Silt, 5% Clay No recovery (2 1-2 5')
	BH0020NE					2				
	BH0057NE BH0019NE				5971	3				
				1 50 /2 00	5970	4				
					5969				NO RECOVERY	No recovery (4 0-4 5')
	BH0021NE			1 00 /2 00	5968	5			SW/gm	Sandy Gravel with trace silt and clay (4 5-7 5') Matrix dark brown (7 5 YR 4/3) Gravel same as above Sand well graded, f g to c g, sub-angular, trace (5%) caliche, moist, no visible bedding 83% Gravel, 10% Sand, 5% Silt, 2% Clay No recovery (5 5-6 5')
				1 00 /1 00	5967	6				
				0 70 /1 00	5966	7			GM	Sandy Gravel with some silt and clay (7 5-9 5') Matrix reddish brown (5 YR 4/4) Gravel pred 1-4 cm, well graded, sub-rounded to angular (drilling fractured), pred gray quatrzite Sand same as above, moist 53% Gravel, 25% Sand, 13% Silt, 9% Clay No recovery (8 2-8 5')
	BH0022NE				5965	8				
				1 00 /1 00		9				
				0 80 /0 80	5964	10			GM	Sandy Gravel with some silt and trace clay (9 5-10 7') Same as reference interval 0 8-4 0' above, with some (10%) caliche

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 11 30	GROUND ELEVATION (FT)	5973 48	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750602	AREA PA, B POND (S AND C)	CASING DIAMETER (IN)		GEOLOGIST	K W PACHECO	43493
EAST	2085097	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	04/21/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY K W PACHECO, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	BH40323AE			1.00 / 1.00	5963	10				
						11			CL	Sandy Clay with some silt (10 7-11 3') White (2 5 Y N8/) Sand pred m g, moderately graded, sub-angular, no visible bedding, dry Abundant (80%) caliche, low plasticity fines 23% Sand, 8% Silt, 69% Clay
					5962					
						12				Total depth drilled 11 3'
					5961					Note Bedrock not encountered Auger refusal at 11 3' Material is fill material, placed during pond berm construction
						13				
					5960					
						14				
					5959					
						15				
					5958					
						16				
					5957					
						17				
					5956					
						18				
					5955					
						19				
					5954					
						20				

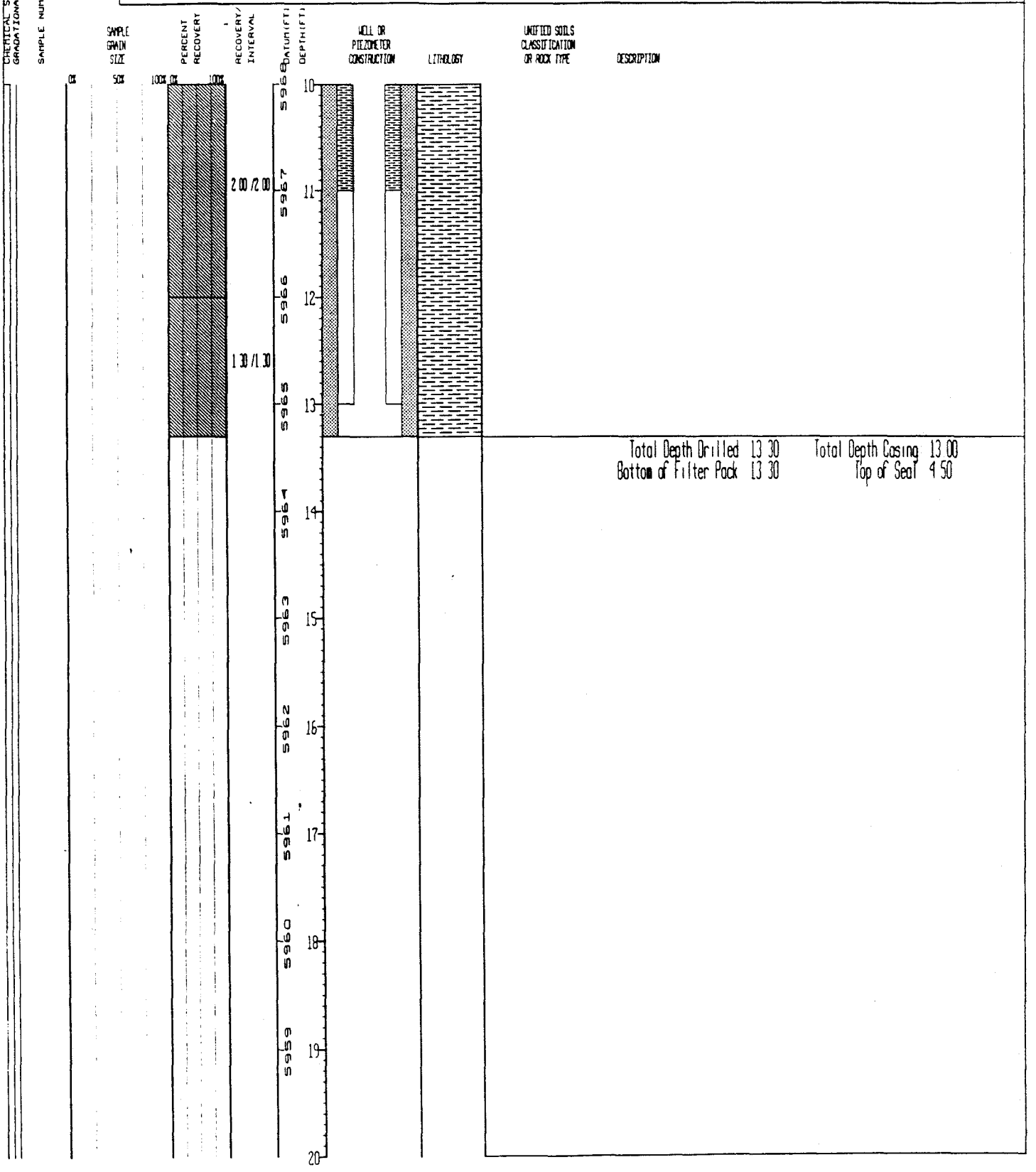
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 30	GROUND ELEVATION (FT) 5978 00	PROJECT NUMBER 0U4-RFI/RI	LOG OF BORING NUMBER
NORTH	750612	AREA PA, E OF BLDG 779	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	43593
EAST	2084455	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/26/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 00 /1 00	5978	0			NO RECOVERY	No recovery (0 0-1 0')
	GH0181NE			0 80 /1 00	5977	1			GM	Sandy Gravel with some silt and trace clay (1 0-1 8') Matrix very dark brown (10 YR 2/2) Gravel 10-40 cm well rounded Sand f g to c g, very angular to sub-rounded, abundant quartz, common metamorphics Mod graded, moist, low plasticity fines 74% Gravel, 17% Sand, 7% Silt, 2% Clay
				0 80 /1 00	5976	2			NO RECOVERY	No recovery (1 8-2 0')
	GH0180NE			1 20 /2 00	5975	3			GC	Clayey Gravel with some sand and trace silt (2 0-2 8') Matrix dark reddish brown (5 YR 3/4), poorly graded Gravel 10-30 cm, abundant rounded to angular (broken by drilling) Sand f g to c g very angular to angular, quartz abundant Dark minerals common Trace of biotite clay Medium plasticity, moist 82% Gravel, 7% Sand, 1% Silt, 10% Clay
					5974	4			NO RECOVERY	No recovery (2 8-3 0')
	GH0182NE			0 40 /0 50	5973	5			GM	Sandy Gravel with some silt and trace clay (3 0-6 2') Matrix very pale brown to yellowish brown (10 YR 5/8) Gravel sub-round to angular (drilling fractured), cobbles to 7 cm, pred gray (10 YR 6/1) quartz Sand moderately to well sorted, v f g to c g, angular to sub-angular, low plasticity fines, moist, no apparent bedding 53% Gravel, 25% Sand, 18% Silt, 4% Clay No recovery (4 2-5 0'), (5 4-6 0')
				0 00 /0 50	5972	6				
				0 20 /1 00	5971	7			NO RECOVERY	No recovery (6 2-7 0')
				1 00 /1 00	5970	8			CLAYSTONE	Top of Bedrock 7 0' Claystone with trace of f g sand (7 0-13 3') Light gray (10 YR 6/1) with yellowish brown (10 YR 5/8) staining and mottling White caliche filled vertical and horiz fractures abundant from (7 0-12 4') Sandy lag at (7 0-7 1') carbonized plant material present Med plasticity, no apparent bedding Moist Fine sand sub-angular to sub-rounded, well sorted, frosted and pitted quartz trace of dark minerals V f g sand sub-angular to angular with a trace of biotite 2% Fine Sand, 3% Very Fine Sand, (5% Total Sand), 95% Clay
				2 00 /2 00	5969	9				
	GH0187NE					10				

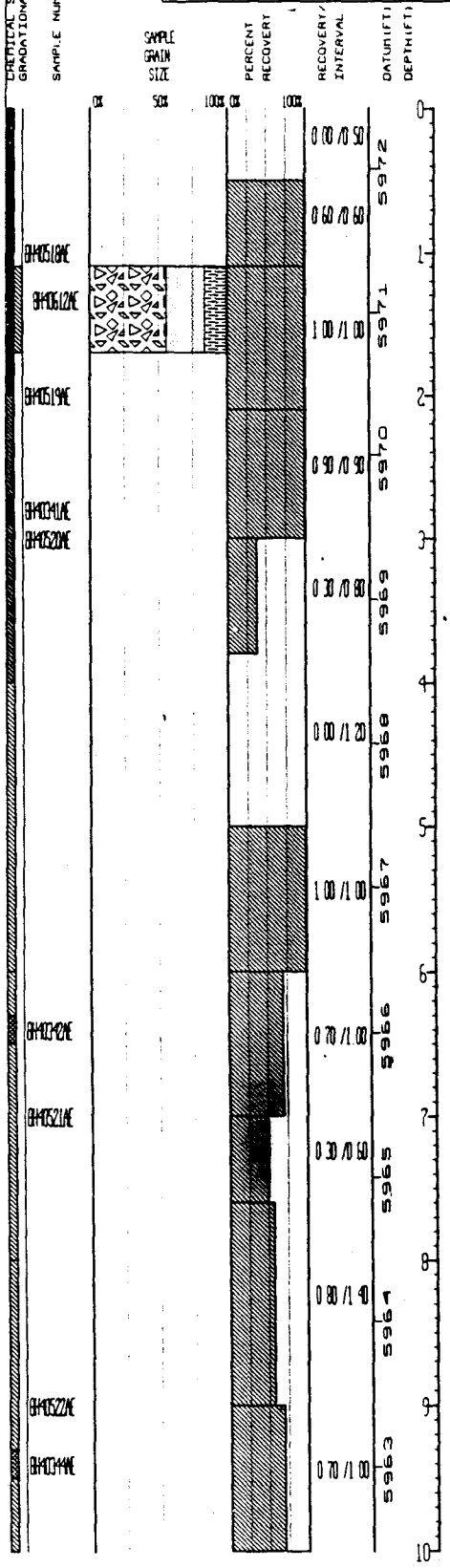
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 30	GROUND ELEVATION (FT)	5978 00	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	750612	AREA PA, E OF BLDG 779	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	43593
EAST	2084455	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/26/93	

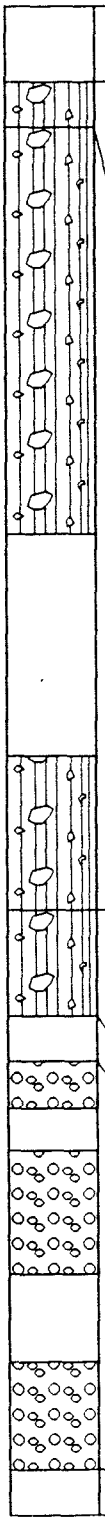
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY



STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 00	GROUND ELEVATION (FT)	5972 42	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	750521	AREA PA, POND 207A	CASING DIAMETER (IN)	2 00	GEOLOGIST	K R MIYOSHI	43693
EAST	2084727	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/24/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS





UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	Asphalt (0 0-0 5')
GM	Sandy Gravel with some silt and clay (0 5-0 8') Matrix yellowish brown (10 YR 5/4) Gravel f g, poorly graded, sub-rounded Sand well graded, dry 51% Gravel, 25% Sand, 15% Silt, 10% Clay
GM	Sandy Gravel with some silt and clay (0 8-6 0') Matrix very pale brown (10 YR 7/4) Gravel pred c g, up to 7 cm in length, rounded to angular (drilling fractured), well graded, pred gray quartzite Sand well graded, f g, to c g, sub-rounded, dry, abundant caliche from 0 8-1 1' 70% Gravel, 15% Sand, 9% Silt, 6% Clay No recovery (3 5-5 0')
GM	Sandy Gravel with some silt and trace clay (6 0-6 7') Matrix yellowish brown (10 YR 6/4) Gravel f g, poorly graded, angular Sand same as above, dry 60% Gravel, 27% Sand, 9% Silt, 4% Clay
NO RECOVERY	No recovery (6 7-7 0')
GW	Sandy Gravel with trace silt and clay (7 0-9 7') Same as reference interval 0 8-6 0' above 90% Gravel, 6% Sand, 2% Silt, 2% Clay No recovery (7 3-7 6'), (8 4-9 0')
NO RECOVERY	No recovery (9 7-10 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 00	GROUND ELEVATION (FT)	5972 42	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750521	AREA PA, POND 207A	CASING DIAMETER (IN)	2 00	GEOLOGIST	K R MIYOSHI	43693
EAST	2084727	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/24/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS LYSIMETER/NEUTRON ACCESS TUBE RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 80 /0 80	5962	10			SILTY CLAYSTONE	Top of Bedrock at 10 0' Claystone (10 0-13 0') Light gray (10 YR 7/1) and yellow (10 YR 7/6) Non-friable, dry, with crude horizontal bedding, ironstone concretions present from 10 0-10 4', Mg-oxide coating on microfractures from 11 2-11 6' 10% Silt, 90% Clay
	BH4056AE BH4052AE			1 20 /1 20	5961	11				
				1 00 /1 00	5960	12				
	BH4034AE					13				Total depth drilled 13 0'
					5959					Vadose Zone Monitoring Borehole Construction Listed Below Bentonite 3 0' to 4 0' Silica Sand 4 0' to 7 3' Silica Flour 7 3' to 8 0' Bottom Porous Cup 7 9' Bentonite 8 0' to 8 6' Silica Sand 8 6' to 10 0' Bentonite 10 0' to 12 9' Total Depth Neutron Access Tube 12 6'
					5958	14				
					5957	15				
					5956	16				
					5955	17				
					5954	18				
					5953	19				
						20				

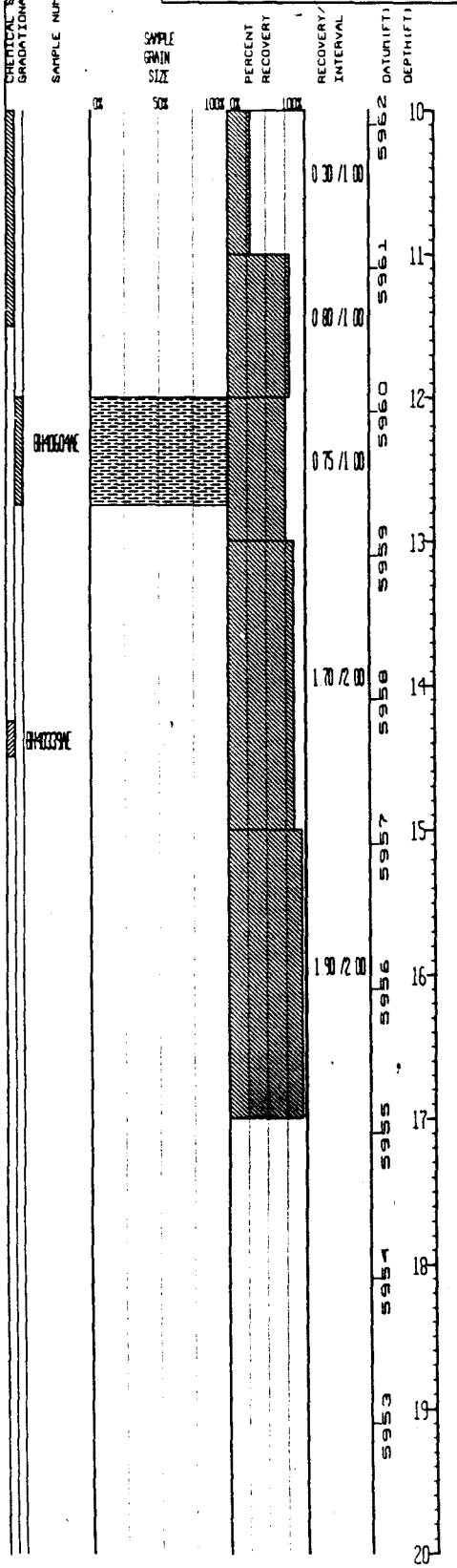
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 17 00	GROUND ELEVATION (FT)	5972 10	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	750688	AREA PA, E OF POND 207A	CASING DIAMETER (IN)	2 00	GEOLOGIST	C D MURRAY	43793
EAST	2084908	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/23/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS 2 LYSIMETERS AND NEUTRON ACCESS TUBE RIG GEOLOGST BY C D MURRAY, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 50 /1 00	5972	0			GM/gw	Gravel with some sand and silt and trace clay (0 0-3 7') Grayish brown (10 YR 5/2) Gravel c g , up to 5 cm in length, sub-rounded, poorly graded Sand f g to c g , moderately graded, sub-angular, pred quartz, moist 81% Gravel, 12% Sand, 6% Silt, 1% Clay No recovery (0 5-1 0'), (1 6-2 0'), (2 7-3 0')
	BH0003AE			0 60 /1 00	5971	1				
				0 70 /1 00	5970	2				
	BH0003BE			0 70 /1 00	5969	3				
									NO RECOVERY	No recovery (3 7-4 0')
				0 50 /1 00	5968	4			GM	Sandy Gravel with some silt and trace clay (4 0-5 5') Dark reddish brown (2 5 YR 3/4) Gravel c g , up to 7 cm in length Sand same as above, moist 72% Gravel, 15% Sand, 10% Silt, 3% Clay No recovery (4 5-5 0'), (5 7-6 0')
	BH0003AE			0 70 /1 00	5967	5				
				0 60 /1 00	5966	6				
									NO RECOVERY	No recovery (6 6-7 0')
				0 80 /1 00	5965	7			GM	Sandy Gravel with some silt and trace clay (7 0-7 5') Yellowish brown (10 YR 5/6) Gravel same as above f g to c g , well graded, sub-angular to sub-rounded pred quartz, moist 66% Gravel, 21% Sand, 8% Silt, 5% Clay No recovery (7 8-8 0'), (8 8-9 0')
				0 80 /1 00	5964	8				
	BH0003AE									
	BH0003AE			0 60 /0 60	5963	9			GM	Sandy Gravel with some silt and trace clay (9 0-9 5') Same as reference interval (7 0-9 5') above 62% Gravel, 23% Sand, 9% Silt, 6% Clay No recovery (10 3-11 0')
				0 40 /0 40		10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 17 00	GROUND ELEVATION (FT)	5972 10	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750688	AREA PA, E OF POND 207A	CASING DIAMETER (IN)	2 00	GEOLOGIST	C D MURRAY	43793
EAST	2084908	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/23/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS 2 LYSIMETERS AND NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS



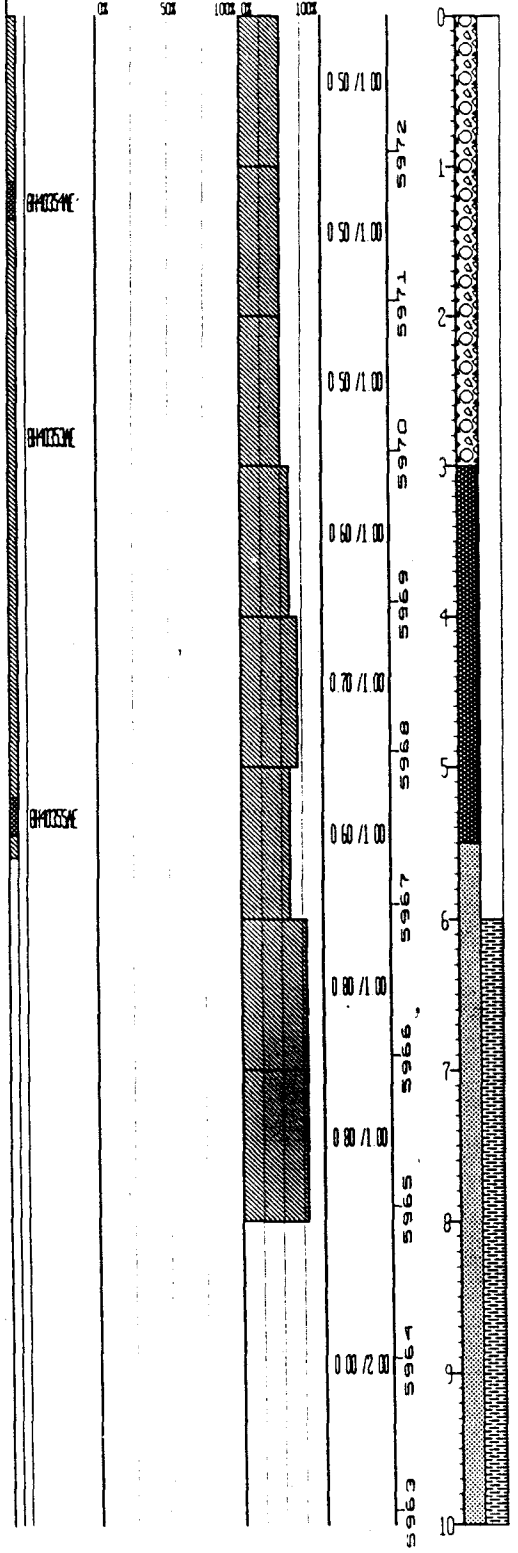
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CLAYSTONE	Top of Bedrock at 11 3' Claystone with some silt and trace sand (11 3-16 9') Light gray (10 YR 7/1) and brownish yellow (10 YR 6/8), grading to gray (10 YR 5/1) from 15 8 to 16 9' Non-friable, no visible bedding - possibly bioturbated, with caliche nodules and fractures filling from 14 1-14 7' Mg-oxide coating on microfractures from 15 0-16 9' 11% Sand, 4% Silt, 85% Clay. No recovery (11 8-12 0'), (12 75-13 0'), (14 7-15 0')
NO RECOVERY	No recovery (16 9-17 0')

Total depth drilled 17 0'

Vadose Zone Monitoring Borehole Construction Listed Below
Bentonite 1 6'-2 1'
Silica Sand 2 1'-3 7'
Silica Flour 3 7'-4 6'
Bottom Porous Cup 4 5'
Bentonite 4 6'-5 1'
Silica Sand 5 1'-9 8'
Silica Flour 9 8'-10 9'
Bottom Porous Cup 10 8'
Bentonite 10 9'-11 5'
Grout 11 5'-17 0'
Total Depth Neutron Access Tube 16 6'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 50	GROUND ELEVATION (FT) 5972 90	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750486	AREA PA, SE of Pond 207A	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	43993
EAST	2084908	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/10/93	

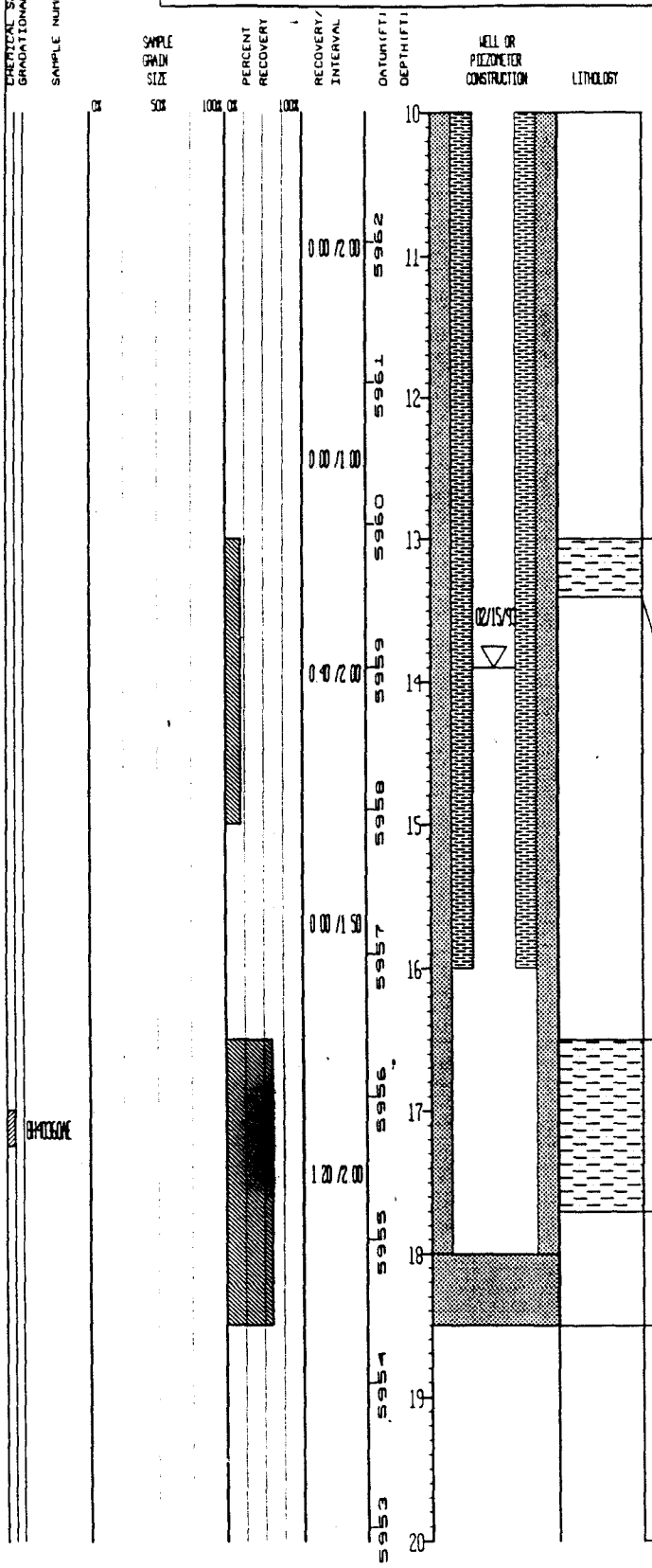
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GM	Sandy Gravel with some silt and trace clay (0 0-1 35') Matrix reddish brown (5 YR 5/4) Gravel pred f g, some c g, angular, well-graded Sand f g to c g, well graded, angular, dry 52% Gravel, 35% Sand, 8% Silt, 5% Clay No recovery (0 5-1 0')
GM	Sandy Gravel with some silt and trace clay (1 35-3 6') Matrix dark reddish brown (2 5 YR 3/3) to red (2 5 YR 5/8) Gravel f g to c g, up to 5 5 cm in length, sub-rounded Sand sub-rounded, same as above, pred quartz 72% Gravel, 16% Sand, 8% Silt, 4% Clay No recovery (1 5-2 0'), (2 5-3 0')
NO RECOVERY	No recovery (3 6-4 0')
GC	Clayey Gravel with some sand and trace silt (4 0-5 6') Matrix white (5 YR 8/1) Gravel up to 7 cm in length, dry, with abundant (30%) caliche 67% Gravel, 6% Sand, 3% Silt, 24% Clay No recovery (4 7-5 0')
NO RECOVERY	No recovery (5 6-6 0')
SM	Interbedded Silty Sand with some clay and Sandy Gravel with some silt and clay (6 0-7 8') Sm Silty Sand with some clay (6 0-6 6') Light gray (2 5 Y 7/2) Sand f g, poorly graded, pred quartz, sub-angular to sub-rounded, low plasticity fines, caliche abundant from 6 0-6 1' 55% Sand, 27% Silt, 18% Clay Gm Sand Gravel with some silt and clay (6 6-7 8') Gravel c g, sand same as above, moist 66% Gravel, 17% Sand, 10% Silt, 7% Clay Note large metamorphic/granitic rock fragment from 7 6-7 8' No recovery (6 8-7 0')
NO RECOVERY	No recovery Drillers report very hard drilling on large cobbles from (8 0-13 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 50	GROUND ELEVATION (FT) 5972 90	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750486	AREA PA, SE of Pond 207A	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	43993
EAST	2084908	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/10/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS

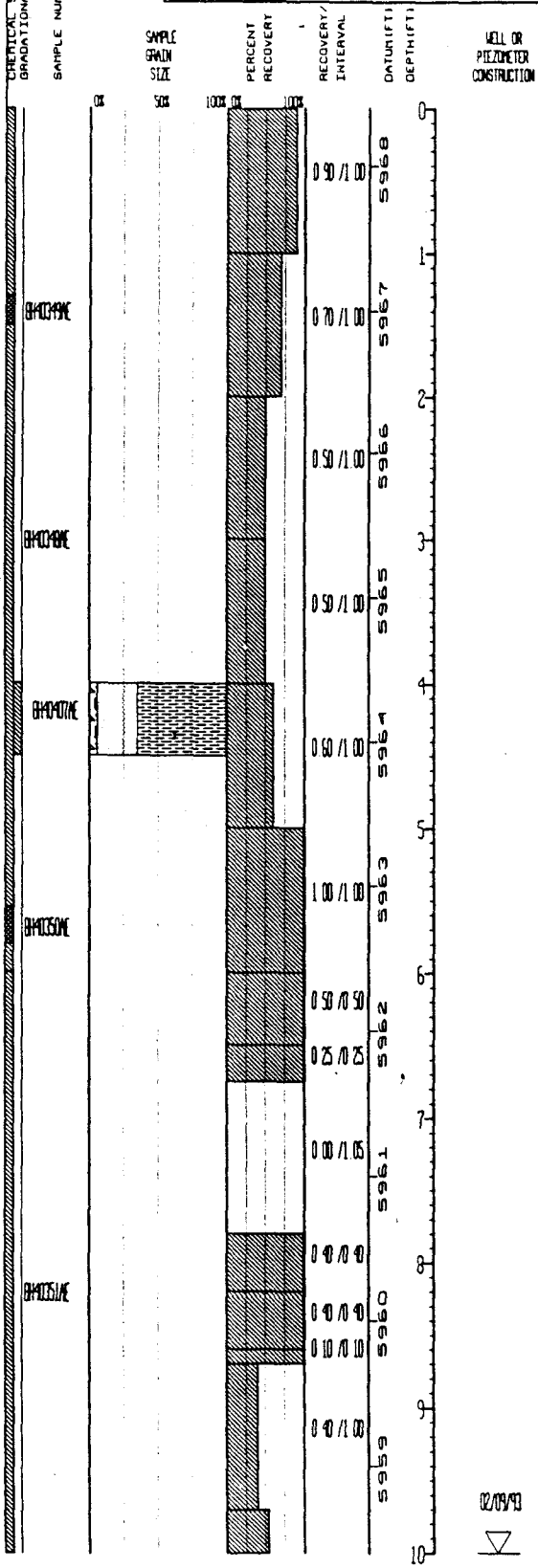


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SANDY CLAYSTONE	Top of Bedrock estimated at 13 0' Sandy Claystone with some silt (13 0-13 4') Light olive brown (2'5 Y 5/3) Sand v f g to f g, well sorted, sub-angular, non-friable, no visible bedding, moist 20% Sand, 16% Silt, 64% Clay
NO RECOVERY	No recovery (13 4-16 5')
SANDY CLAYSTONE	Sandy Claystone with some silt (16 5-17 7') Olive (5 Y 5/6) Sand same as above, non-friable, saturated, no visible bedding, samples distorted due to difficult drilling conditions 13% Sand, 9% Silt, 78% Clay
NO RECOVERY	No recovery (17 7-18 5')

Total Depth Drilled 18 50 Total Depth Casing 0 00
Bottom of Filter Pack 18 00 Top of Seal 3 00

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 30	GROUND ELEVATION (FT)	5968 40	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750463	AREA PA, east of ponds	CASING DIAMETER (IN)	2 00	GEOLOGIST	J C EVANS	44093
EAST	2085223	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	02/09/93	

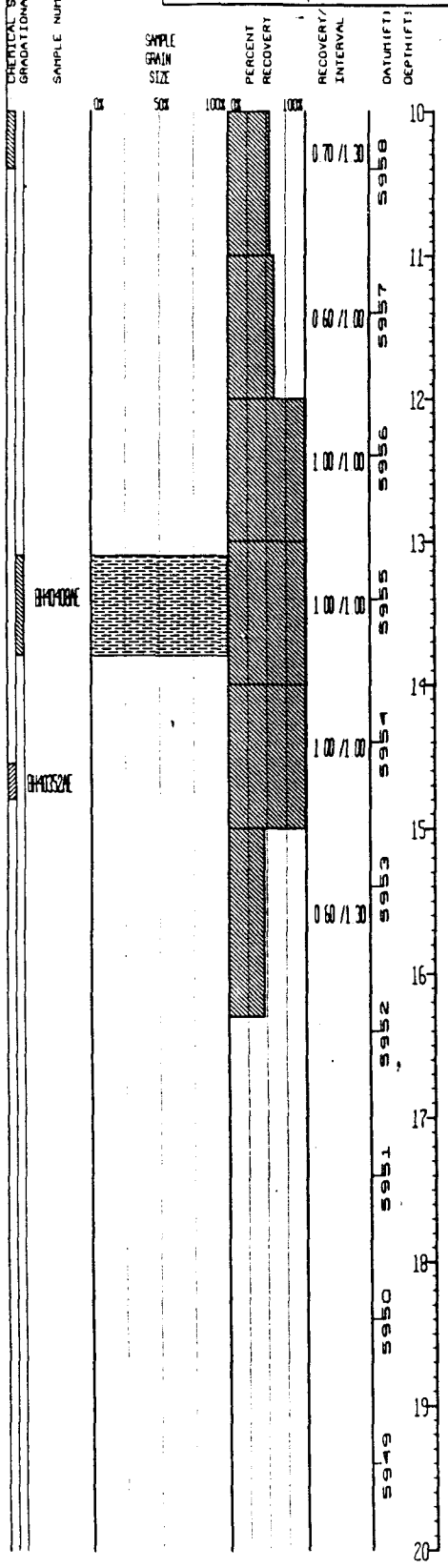
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND ONE NEUTRON ACCESS TUBE RIG GEOLOGY BY J C EVANS, CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Sandy Silt with some clay and gravel (0 0-0 9') Pale brown (10 YR 6/3), very stiff, low plasticity fines Sand well graded, v f g to c g, sub-angular to rounded, pred quartz, trace (3%) scattered white caliche grains, dry 12% Gravel, 31% Sand, 34% Silt, 22% Clay
NO RECOVERY	No recovery (0 9-1 0')
SM	Silty Sand with some clay and trace gravel (1 0-1 5') Very pale brown (10 YR 7/3) Sand v f g to f g, mod. graded, angular to sub-rounded, pred quartz, low plasticity fines, dry, no visible bedding 2% Gravel, 70% Sand, 20% Silt, 8% Clay
GM	Silty Gravel with some sand and trace clay (1 5-3 5') Reddish brown (5 YR 5/3) to dark red (2 5 YR 3/6) Gravel rounded to angular (drilling fractured), up to 7 cm in length, well graded, pred gray quartzite Sand m g to f g, moderately sorted, angular to sub-rounded, low plasticity fines, moist 78% Gravel, 7% Sand, 11% Silt, 4% Clay No recovery (1 7-2 0'), (2 5-3 0')
NO RECOVERY	No recovery (3 5-4 0')
GW/gw	Sandy Gravel with some silt and trace clay (4 0-6 0') Brownish yellow (10 YR 6/6) Gravel rounded to sub-rounded, well graded, up to 7 cm in length Sand well graded, f g to c g, sub-angular to rounded, pred quartz, low plasticity fines, caliche abundant (40%) from 4 5 to 4 8') 76% Gravel, 16% Sand, 7% silt, 1% Clay No recovery (4 6-5 0')
GM	Sandy Gravel with some silt and trace clay (6 0-6 5') Brownish yellow (10 YR 6/8) Gravel well graded, pred fine grained, sub-angular, gray quartzite and metamorphic rock fragments Sand well graded, f g to c g 63% gravel, 27% Sand, 9% Silt, 1% Clay
GW/gw	Sandy Gravel (6 5-10 4') Same as reference interval (4 0-6 0') above No recovery (6 75-7 8'), (9 1-9 7')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 30	GROUND ELEVATION (FT) 5968 40	PROJECT NUMBER 0U4-RFI/RI	LOG OF BORING NUMBER
NORTH	750463	AREA PA, east of ponds	CASING DIAMETER (IN) 2 00	GEOLOGIST J C EVANS	44093
EAST	2085223	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/09/93	

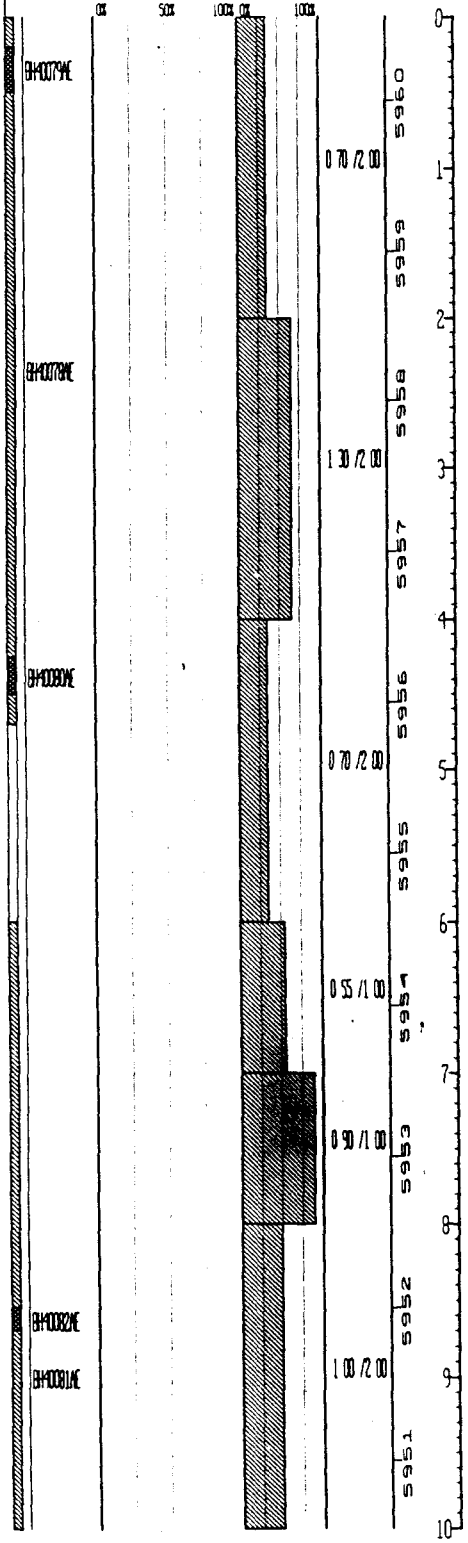
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS TWO LYSIMETERS AND ONE NEUTRON ACCESS TUBE RIG GEOLOGY BY J C EVANS, CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (10 4-11 0')
CL	Sandy Clay with some silt and trace gravel (11 0-11 4') Light gray (10 YR 7/1) to white (10 YR 8/1) Soft, low plasticity fines Sand pred m g, also v f g to c g, sub-angular, moderately sorted, wet, with abundant (40%) caliche 4% Gravel, 36% Sand, 18% Silt, 42% Clay
CLAYSTONE	Claystone (11 4-15 6') Top of Bedrock at 11 4' Light gray (10 YR 6/1) to gray (10 YR 5/1) with yellow (10 YR 7/6) staining Very stiff to stiff, moist, non-friable, no visible bedding, Fe-oxide and manganese coating on scattered fractures from 12 5-15 6' Healed, Fe-oxide filled, vertical fractures at 14 5' and 15 2' Highly fractured from 14 0-15 6' 10% Silt, 90% Clay No recovery (11 6-12 0')
NO RECOVERY	No recovery (15 6-16 3')
	Total depth drilled 16 3' Vadose Zone Monitoring Borehole Construction [illegible] Bentonite 2 7'-3 4' Silica Sand 3 4'-4 4' Silica Flour 4 4'-7 1' Bottom Porous Cup 5 6' Bentonite 7 1'-8 8' Silica Sand 8 8'-10 3' Silica Flour 10 3'-11 2' Bottom Porous Cup 11 0' Bentonite 11 2'-11 8' Grout 11 8'-16 2' Total Depth Neutron Access Tube 15 9'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 50 40	GROUND ELEVATION (FT) 5960 55	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750435	AREA E OF 2078 S	CASING DIAMETER (IN)	GEOLOGIST JCE/KWP	44193
EAST	2085601	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/30/93	

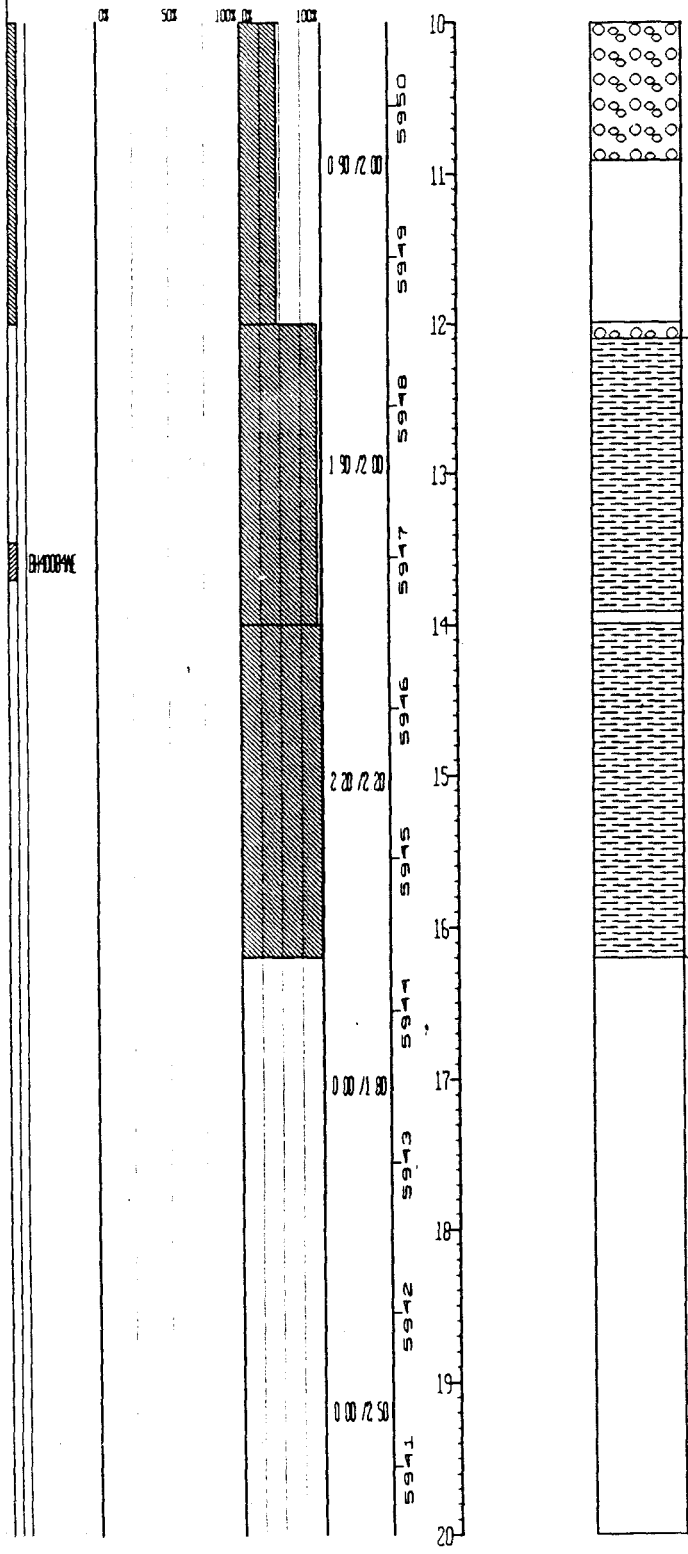
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J C EVANS (AE) AND K W PACHECO (TE), CORE LOGGING BY C D MURRAY (AE) DRILLED TO 16 2' ON 12-21-92 DRILLED TO 50 4' ON 3-31-93



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GM	Sandy Gravel with some silt and trace of clay (0 0-0 7') Matrix very dark grayish brown (10 YR 3/2) Gravel 1-2 cm sub-rounded Sand f g to c g, angular to sub-rounded, moderately graded, abundant quartz and common hornblend and biotite, moist 62% Gravel, 26% Sand, 10% Silt, 2% Clay
NO RECOVERY	No recovery (0 7-2 0')
GW	Sandy Gravel with trace of silt and clay (2 0-12 1') Matrix dark reddish brown (2 5 YR 3/4) to brownish yellow (10 YR 6/6) Gravel 1-5 cm (fractured by drilling) Sand f g to c g, moderately graded, angular to sub-rounded, quartz common with trace of hornblend and biotite, argillaceous cement Moist, fair porosity 64% Gravel, 30% Sand, 3% Silt, 3% Clay No recovery (3 3-4 0'), (4 7-6 0'), (6 55-7 0'), (7 9-8 0') No recovery (9 0-10 0'), (10 9-12 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 50 40	GROUND ELEVATION (FT)	5960 55	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750435	AREA E OF 2078 S	CASING DIAMETER (IN)		GEOLOGIST	JCE/KWP	44193
EAST	2085601	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/30/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J C EVANS (AE) AND K W PACHECO (TE), CORE LOGGING BY C D MURRAY (AE) DRILLED TO 16 2' ON 12-21-92 DRILLED TO 50 4' ON 3-31-93

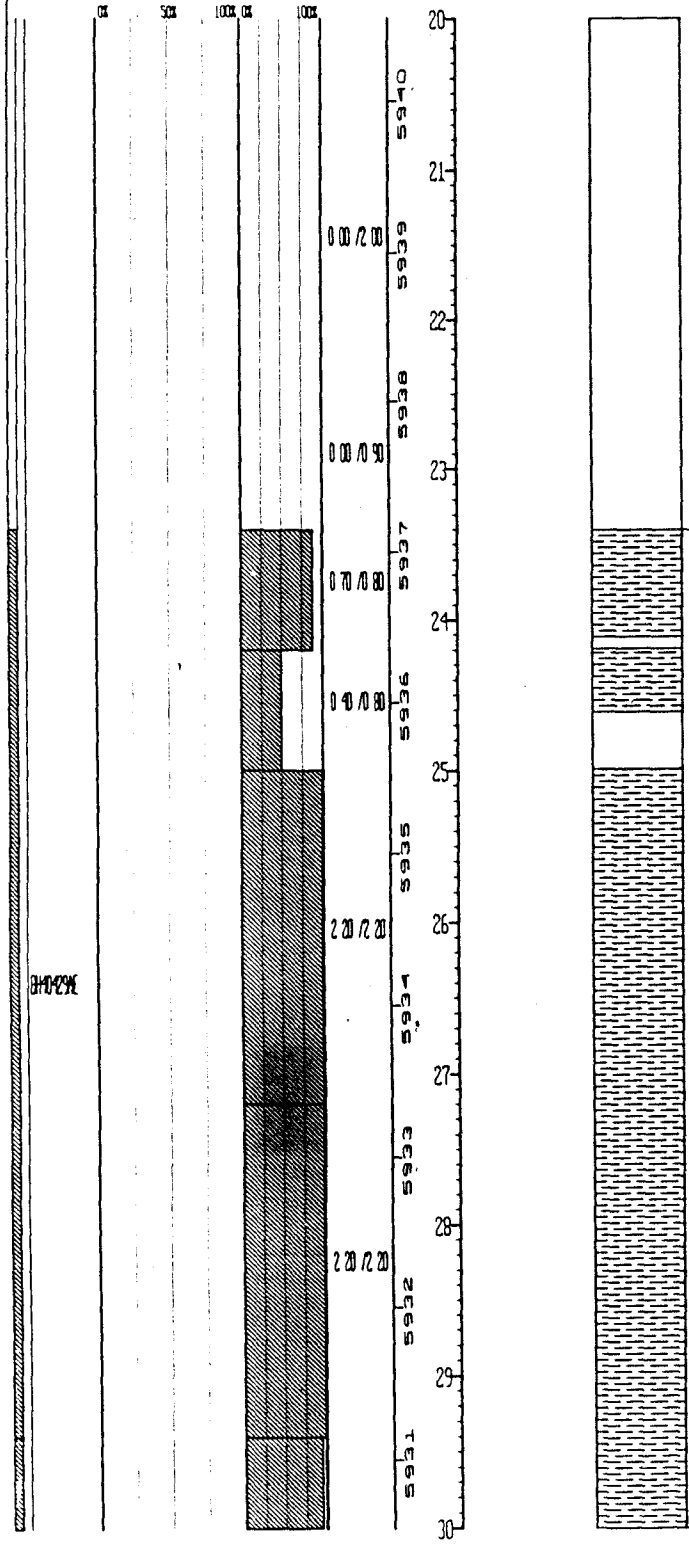


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CLAYSTONE	Top of Bedrock at 12 1' Claystone with abundant sand (12 1-16 2') Grayish brown (10 YR 5/2) with light yellowish brown (10 YR 6/4), mottling and staining Trace of gravel scattered throughout Sand, f g to m g common, rounded to sub-angular, quartz abundant Moist 27% Sand, 73% Clay No recovery (13 9-14 0')
NO RECOVERY	No recovery (16 2-23 4') Note Wood plug blocking barrel from 16 2-23 4'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 50 40	GROUND ELEVATION (FT)	5960 55	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750435	AREA E OF 2078 S	CASING DIAMETER (IN)		GEOLOGIST	JCE/KWP	44193
EAST	2085601	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/30/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J C EVANS (AE) AND K W PACHECO (TE), CORE LOGGING BY C D MURRAY (AE) DRILLED TO 16 2' ON 12-21-92 DRILLED TO 50 4' ON 3-31-93

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE (0% 50% 100%) | PERCENT RECOVERY (0% 100%) | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION



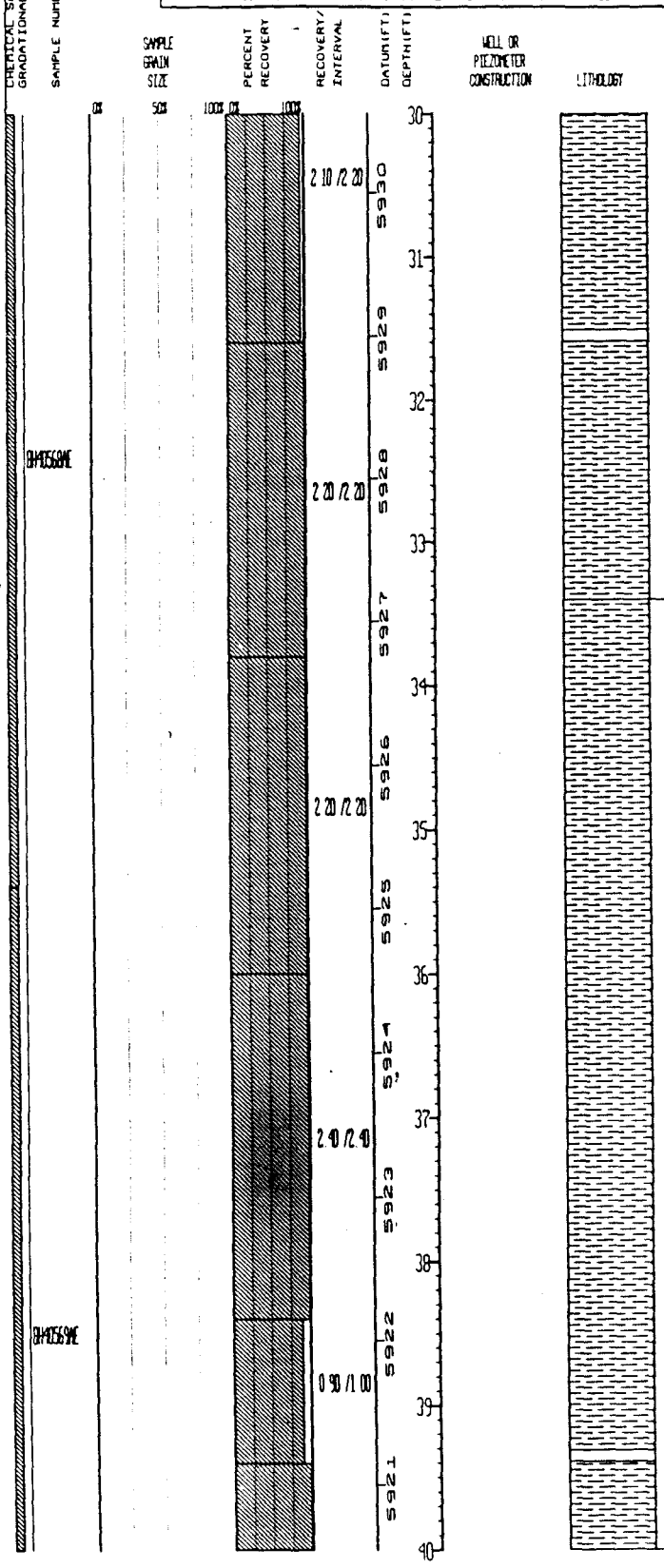
BH40429AE

CLAYSTONE

Claystone with some silt and trace of v f g sand (23 4-33 4') Gray (5 Y 5/1) to dark olive gray (5 Y 3/2), with light olive brown (2 5 Y 5/6) staining along fractures, slickenslides V f g sand sub-rounded to rounded, quartz Fractures common at 20-30 degrees from horiz , very poor porosity, very stiff, non-friable, no bedding, moist 1% Sand, 10% Silt, 89% Clay
No recovery (24 1-24 2'), (24 6-25 0'), (31 5-31 6')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 50 40		GROUND ELEVATION (FT)	5960 55	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750435	AREA E OF 207B S		CASING DIAMETER (IN)		GEOLOGIST	JCE/KWP	44193
EAST	2085601	LOCATOR NUMBER	M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/30/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J C EVANS (AE) AND K W PACHECO (TE), CORE LOGGING BY C D MURRAY (AE) DRILLED TO 16 2' ON 12-21-92 DRILLED TO 50 4' ON 3-31-93



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CLAYSTONE	Claystone with some silt and trace of v f g sand (33 4-40 0') Gray (5 Y 5/1) to dark olive gray (5 Y 3/2) with light olive brown (2 5 Y 5/6) staining along fractures V f g sand, sub-rounded to rounded quartz with a trace of mica Non-friable, moist, no bedding Fractures common from 10 to 40 degrees 1% Sand, 10% Silt, 89% Clay No recovery (39 3-39 4')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 50 40	GROUND ELEVATION (FT) 5960 55	PROJECT NUMBER 0U4-RFI/RI	LOG OF BORING NUMBER
NORTH	750435	AREA E OF 2078 S	CASING DIAMETER (IN)	GEOLOGIST JCE/KWP	44193
EAST	2085601	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/30/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J C EVANS (AE) AND K W PACHECO (TE), CORE LOGGING BY C D MURRAY (AE) DRILLED TO 16 2' ON 12-21-92 DRILLED TO 50 4' ON 3-31-93

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		0% 50%	100% 0% 100%			40			SILTY CLAYSTONE	Silty Claystone with trace of v f g sand (40 0-50 4') Dark gray (2 5 Y N4) with olive yellow (2 5 Y 6/8) staining on fractures and slickensides Very friable in areas, very stiff, moist, very faint horiz bedding Some vertical 90 degrees fractures, and common 30-50 degrees fractures and slickenslides throughout 2% Sand, 39% Silt, 59% Clay
				2 20 /2 20	5920	41				
					5919	42				
				2 20 /2 20	5918	43				
					5917	44				
	GHCOSTONE			2 20 /2 20	5916	45				
					5915	46				
					5914	47				
				2 20 /2 20	5913	48				
					5912	49				
	GHCOOSTONE			2 20 /2 20	5911	50				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 50 40	GROUND ELEVATION (FT)	5960 55	PROJECT NUMBER	044-RFI/RI	LOG OF BORING NUMBER
NORTH	750435	AREA E OF 2078 S	CASING DIAMETER (IN)		GEOLOGIST	JCE/KWP	44193
EAST	2085601	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/30/93	

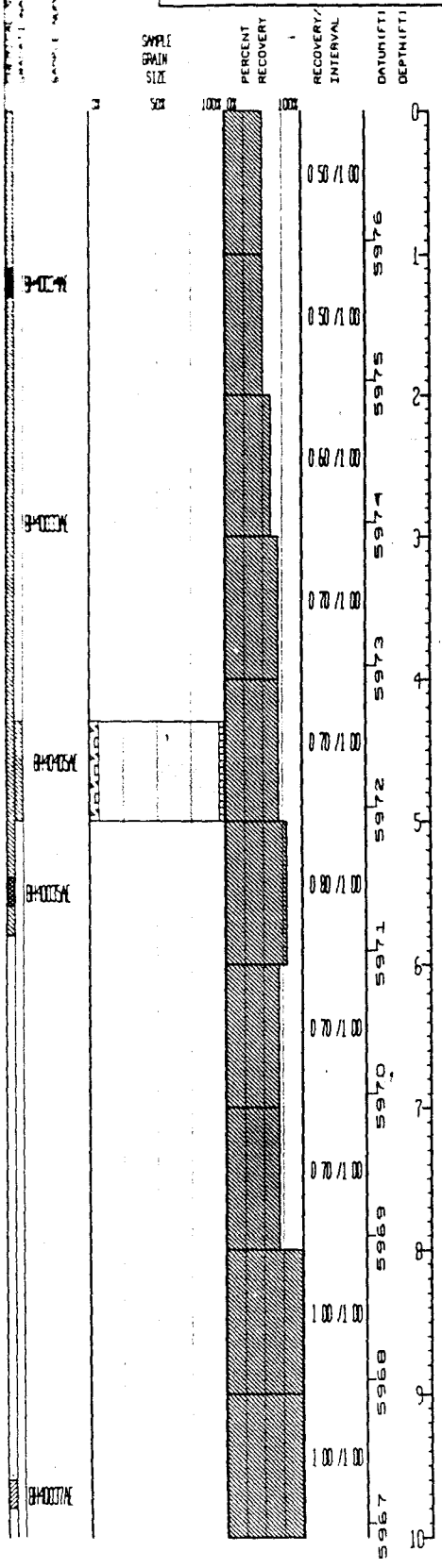
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J C EVANS (AE) AND K W PACHECO (TE), CORE LOGGING BY C D MURRAY (AE) DRILLED TO 16 2' ON 12-21-92 DRILLED TO 50 4' ON 3-31-93

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		0% 50%	100% 0%	100%	5910 5909 5908 5907 5906 5905 5904 5903 5902 5901	50 51 52 53 54 55 56 57 58 59 60				Total depth taped at 50 2', but measured core indicates 50 4', discrepency due to hole cave in at bottom of hole

Total Depth Drilled 50 40

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 00	GROUND ELEVATION (FT) 5976 90	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750286	AREA PA, S OF POND 207A	CASING DIAMETER (IN) 2 00	GEOLOGIST C D MURRAY	44393
EAST	2084665	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/08/93	

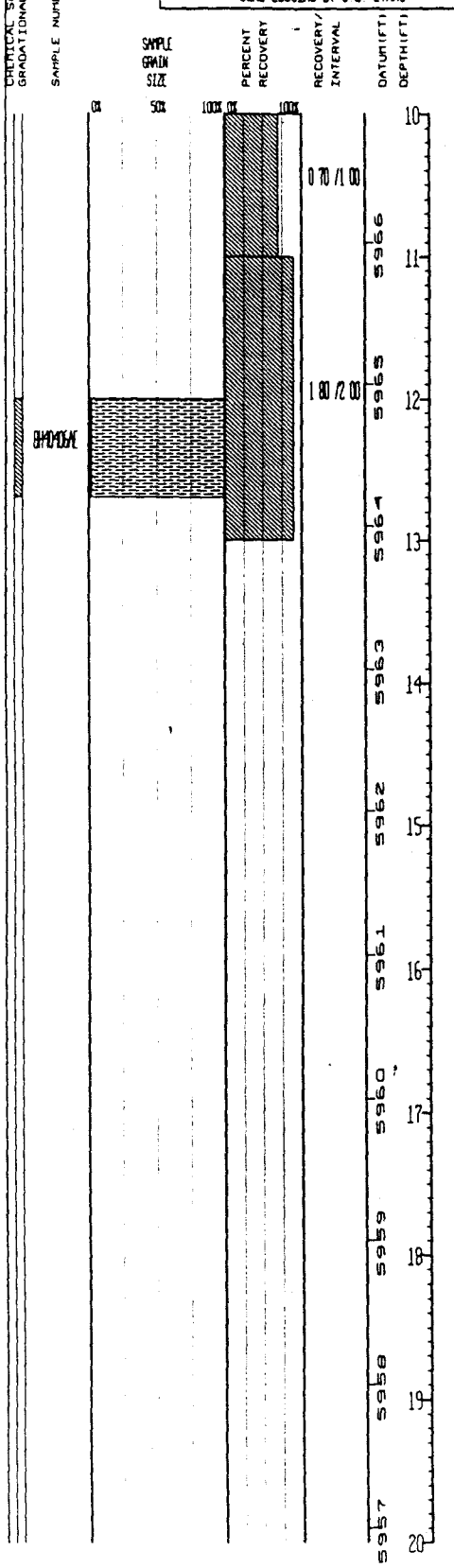
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS 2 LYSIMETERS AND NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GM	Sandy Gravel with some silt and trace clay (0 0-5 8') Matrix pale brown (10 YR 6/3) Gravel f g to c g, well graded, subrounded, some up to 7 cm in length Sand f g to c g, sub-angular to sub-rounded, moist, trace (3%) caliche throughout interval, possible fill material 64% Gravel, 24% Sand, 8% Silt, 4% Clay No recovery (0 5-1 0'), (1 5-2 0'), (2 6-3 0'), (3 7-4 0') No recovery (4 8-5 0')
NO RECOVERY	No recovery (5 8-6 0')
GW	Sandy Gravel with trace silt and clay (6 0-7 5') Matrix strong brown (7 5 YR 5/6) Gravel pred 1 0-4 0 cm in length, sub-angular, poorly graded, pred gray quartzite Sand same as reference interval 0 0-5 8' above, moist 74% Gravel, 21% Sand, 4% Silt, 1% Clay No recovery (6 7-7 0')
CLAYSTONE	Top of Bedrock at 7 5' Claystone with trace sand and silt (7 5-12 8') Light gray (10 YR 7/1) to grayish brown (10 YR 5/2) with brownish yellow (10 YR 6/8) Non-friable, with thin horizontal bedding, core very fractured at 8 2-8 6', 9 2-9 6', and 11 3-11 7' Caliche present from 8 5-8 7' Trace Mg-oxide staining 5% Sand, 5% Silt, 90% Clay No recovery (7 7-8 0'), (10 7-11 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 13 00	GROUND ELEVATION (FT) 5976 90	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750286	AREA PA, S OF POND 207A	CASING DIAMETER (IN) 2 00	GEOLOGIST C D MURRAY	44393
EAST	2084665	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 02/08/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS 2 LYSIMETERS AND NEUTRON ACCESS TUBE RIG GEOLOGY BY C D MURRAY, CORE LOGGING BY J C EVANS



WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		NO RECOVERY	No recovery (12 8-13 0')

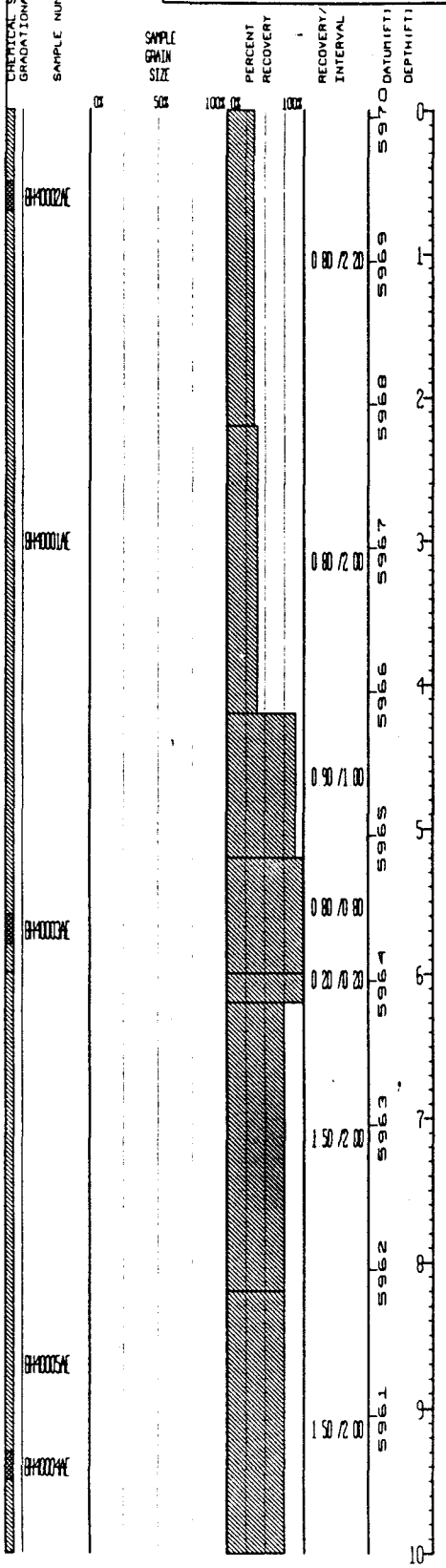
Total depth drilled 13 0'

Note Borehole 44393 originally drilled to 12 0', abandoned, moved 3' south and redrilled This log represents redrilled core Sample BHM0405AE (4 3-5 0') taken from original borehole

Vadose Zone Monitoring Borehole Construction Listed Below
Bentonite 2 2'-2 5'
Silica Sand 2 5'-3 0'
Silica Flour 3 0'-4 2'
Bottom Porous Cup 4 0'
Bentonite 4 2'-4 6'
Silica Sand 4 6'-6 7'
Silica Flour 6 7'-7 8'
Bottom Porous Cup 7 6'
Bentonite 7 8'-8 2'
Grout 8 2'-13 4'
Total Depth Neutron Access Tube 12 9'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 20	GROUND ELEVATION (FT) 5970 05	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750305	AREA SOLAR PONDS/PA	CASING DIAMETER (IN)	GEOLOGIST C D MURRAY	44593
EAST	2085199	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 12/14/92	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORE BOREHOLE PLUGGED AND ABANDONED. RIG GEOLOGY BY C D MURRAY (AE) CORE LOGGING BY J C EVANS (AE)



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Gravelly Sand with some silt and trace clay (0 0-0 8') Brown (7 5 YR 5/2) Sand f g to c g, angular Gravel 0 6-1 3 cm, sub-rounded Gravel 29%, Sand 62%, Silt 7%, 2% Clay
NO RECOVERY	No recovery (0 8-2 2')
SM	Gravelly Sand with some silt and trace clay (2 2-2 5') Very dark grayish brown (10 YR 3/2) Sand f g to c g, sub-angular, feldspathic Gravel 0 6-1 3 cm, sub-rounded to angular Gravel 35%, Sand 55%, Silt 10%
SM	Gravelly Sand with some silt and trace clay (2 5-4 5') Dark reddish brown (2 5 YR 3/3) Gravel 0 6-1 3 cm angular to sub-angular Sand f g to c g, feldspathic, angular, poorly sorted Gravel 22%, Sand 66%, Silt 6%, Clay 2% No recovery (3 0-4 2')
SP	Sand with some gravel, trace of silt and clay (4 5-5 1') Yellowish brown (10 YR 5/6) Gravel, rounded, moderately graded Sand sub-angular poorly graded Gravel 8%, Sand 86%, Silt 4%, Clay 2%
NO RECOVERY	No recovery (5 1-5 2')
SP	Sand with some silt and trace clay (5 2-5 9') Strong brown (7 5 YR 5/6) Sand poorly graded, sub-angular to very angular, very calcareous (caliche) Abundant quartz and feldspar, trace of biotite and hornblend Sand 92%, Silt 7%, Clay 1%
GM	Sandy Gravel with some clay and silt (5 9-6 2') Strong brown (7 5 YR 4/6) Gravel 1-4 cm, fractured by drilling, sub-rounded to sub-angular Sand moderately graded, sub-angular to very-angular Abundant quartz, and feldspar, trace biotite, hornblend, calcite cement Gravel 44%, Sand 46%, Silt 5%, Clay 5%
SW	Gravelly Sand with trace silt and clay (6 2-9 5') Mod graded, strong brown (7 5 YR 5/6) Gravel mod graded, rounded, 1-3 cm diameter, fractured by drilling Sand f g, to c g, well-graded, sub-rounded to angular Quartz and feldspar abundant with trace of biotite and hornblend $CaCO_3$ common Gravel 29%, Sand 67%, Silt 3%, Clay 1% No recovery (7 7-8 2')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 20	GROUND ELEVATION (FT) 5970 05	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750305	AREA SOLAR PONDS/PA	CASING DIAMETER (IN)	GEOLOGIST C D MURRAY	44593
EAST	2085199	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 12/14/92	

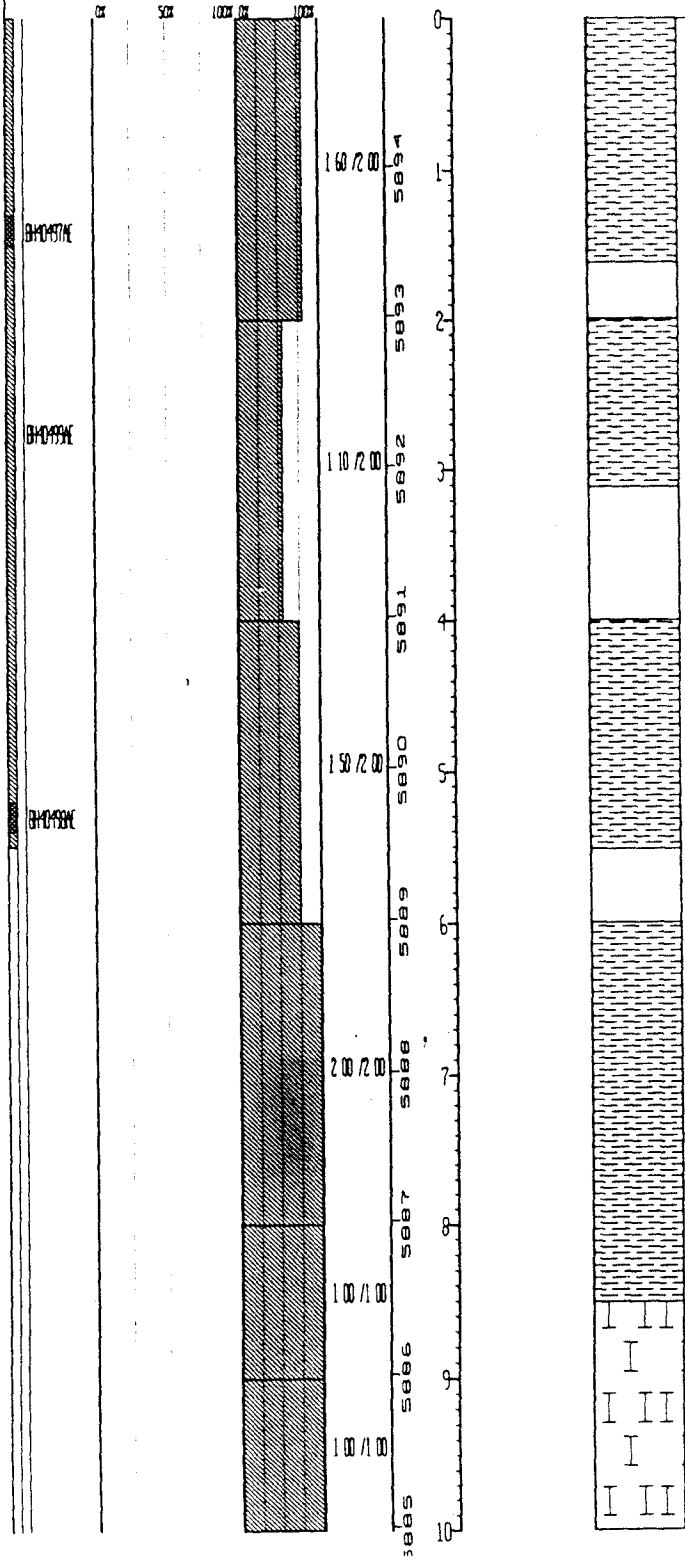
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORE BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY C D MURRAY (AE) CORE LOGGING BY J C EVANS (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
					5960	10	12/14/92 ▽			
				1 60 /2 00	5959	11			NO RECOVERY	No recovery (9 7-10 2')
					5958	12			SM	Sand with some gravel and silt with trace clay (10 2-11 4') Gravel poorly graded, 1-3 cm sub-rounded Sand mod graded, sub-angular to angular, f g to c g Abundant quartz and feldspar Some biotite and hornblend Abundant calcite cement Gravel 12%, Sand 78%, Silt 8%, Clay 2%
				2 00 /2 00	5957	13			CLAYSTONE	Claystone with some sand and silt (11 4-14 2') Top of Bedrock 11 4' Light olive gray (5 Y 5/2) to dusky yellow (5 Y 6/4) and light olive brown (5 Y 5/6) mottled Bedding appears massive, well-sorted, calcite present, non-friable, moist Sand moderately sorted, sub-rounded, clear fractured quartz grains with trace of dark metamorphic grains Trace of scattered fine gravel Sand 9%, Silt 10%, Clay 81% No recovery (11 8-12 2')
	BH0006AC				5956	14				
					5955	15				Total Depth Drilled 14 20
					5954	16				
					5953	17				
					5952	18				
					5951	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 00	GROUND ELEVATION (FT)	5894 97	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751480	AREA Buffer Zone	CASING DIAMETER (IN)		GEOLOGIST	J C EVANS	44693
EAST	2085999	LOCATOR NUMBER N11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/21/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BORING PLUGGED AND ABANDONED RIG GEOLOGY BY J C EVANS (AE), CORE LOGGING BY C D MURRAY (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE (0% 50% 100%) | PERCENT RECOVERY (0% 100%) | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CLAYSTONE	Claystone (0 0-8 5') Olive (5 Y 5/3) to light olive brown (2 5 Y 5/6) mottling and staining Massive bedding, moist Clay 100% No recovery (1 6-2 0'), (3 1-4 0'), (5 5-6 0')
IRONSTONE	Ironstone (8 5-10 0') Dark reddish brown (2 5 YR 4), leaf imprints, hard to very hard, dry

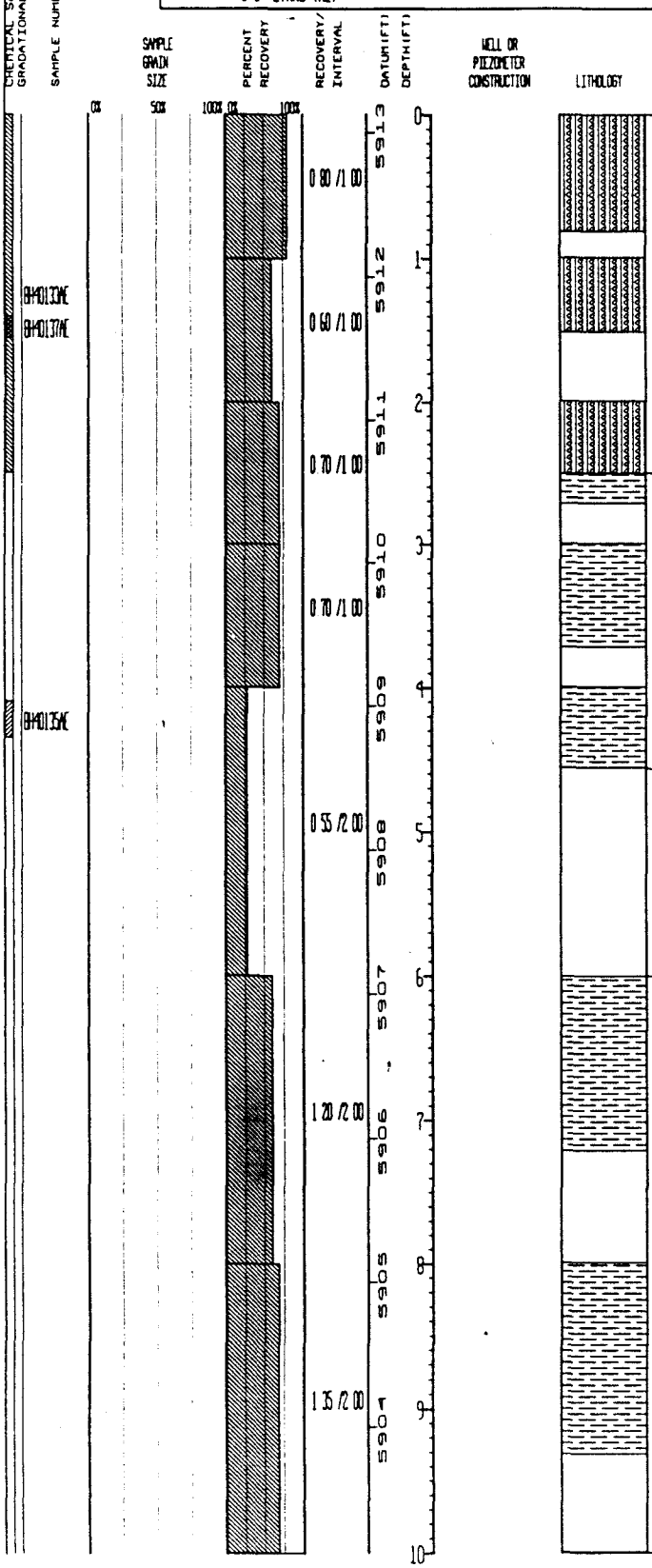
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 00	GROUND ELEVATION (FT)	5894 97	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751480	AREA Buffer Zone	CASING DIAMETER (IN)		GEOLOGIST	J C EVANS	44693
EAST	2085999	LOCATOR NUMBER N11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/21/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BORING PLUGGED AND ABANDONED RIG GEOLOGY BY J C EVANS (AE), CORE LOGGING BY C D MURRAY (AE)

SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
0% 50% 100%	0% 100%			10			CLAYSTONE	Claystone with some sand (10 0-14 0') Light olive gray (5 Y 6/2) Massive bedding, core broken up from 10 0 to 11 3' Probably from drlg Leaf imprint at 13 8' Sand f g, well sorted, mostly quartz with trace of dark metamorphic minerals, angular to sub-angular Trace sub-horiz limonite coated fractures and vertical, mineral coated (manganese) fractures from 12 2-12 8' Sand 13%, Clay 87% No recovery (11 3-12 0')
		1 30 /2 00	5884	11				
			5883	12				
		2 00 /2 00	5882	13				
			5881	14				Total Depth Drilled 14 00
			5880	15				
			5879	16				
			5878	17				
			5877	18				
			5876	19				
			5875	20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 00	GROUND ELEVATION (FT)	5913 13	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751198	AREA Buffer Zone	CASING DIAMETER (IN)		GEOLOGIST	C D MURRAY	44793
EAST	2086072	LOCATOR NUMBER N11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/12/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BORING PLUGGED AND ABANDONED RIG GEOLOGY BY C D MURRAY (AE), CORE LOGGING BY J C EVANS (AE)



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Silty Sand with some clay and gravel (0 0-2 5') Dark yellowish brown (10 YR 4/4), low to medium plasticity fines Sand and gravel well graded, sub-angular to sub-rounded, pred quartz, no visible bedding, abundant roots 8% Gravel, 41% Sand, 31% Silt, 20% Clay No recovery (0 8-1 0'), (1 5-2 0')
CLAYSTONE	Claystone with some silt (2 5-4 55') Top of bedrock at 2 5' Yellowish-brown (10 YR 5/4) to dark gray (10 YR 4/1), mottled with scattered white (5 YR 8/1) calcium carbonate (caliche) from 3 5 to 4 55', very stiff to hard, no visible bedding, interval dry, interval is highly weathered bedrock 20% Silt, 80% Clay No recovery (2 7-3 0'), (3 7-4 0')
NO RECOVERY	No recovery (4 55-6 0')
CLAYSTONE	Top of Bedrock at 6 0' Claystone with some silt (6 0-12 0') Mottled light grayish brown (2 5 Y 6/2) and olive yellow (2 5 Y 6/8) from 6 0 to 8 9' and dark olive gray (5 Y 3/2) from 8 9 to 12 0' Core becomes less weathered with depth, medium stiff to stiff, trace carbonaceous material, some vertical, anastomosing, limonite-filled fractures at 11 5', moist, faint horizontal bedding 10-20% Silt, 80-90% Clay No recovery (7 2-8 0'), (9 3-10 0')

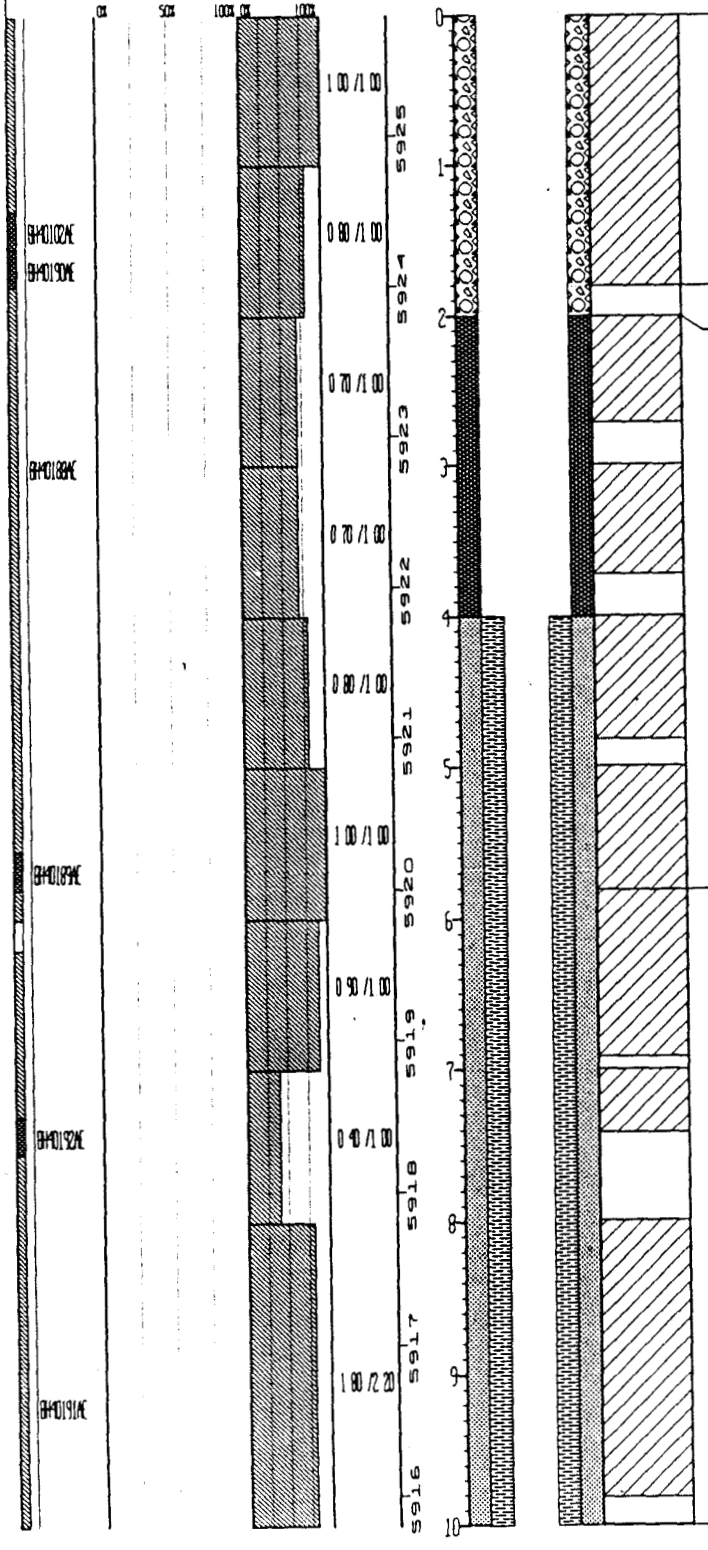
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 00	GROUND ELEVATION (FT) 5913 13	PROJECT NUMBER OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751198	AREA Buffer Zone	CASING DIAMETER (IN)	GEOLOGIST C D MURRAY	44793
EAST	2086072	LOCATOR NUMBER N11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/12/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BORING PLUGGED AND ABANDONED RIG GEOLOGY BY C D MURRAY (AE), CORE LOGGING BY J C EVANS (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				2 00 /2 00	5903	10				
					5902	11				
					5901	12				Total Depth Drilled 12 00
					5900	13				
					5899	14				
					5898	15				
					5897	16				
					5896	17				
					5895	18				
					5894	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 20 20	GROUND ELEVATION (FT)	5925 80	PROJECT NUMBER	044-RFI/RI	LOG OF BORING NUMBER
NORTH	751341	AREA Buffer Zone	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	44893
EAST	2085490	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/15/93	

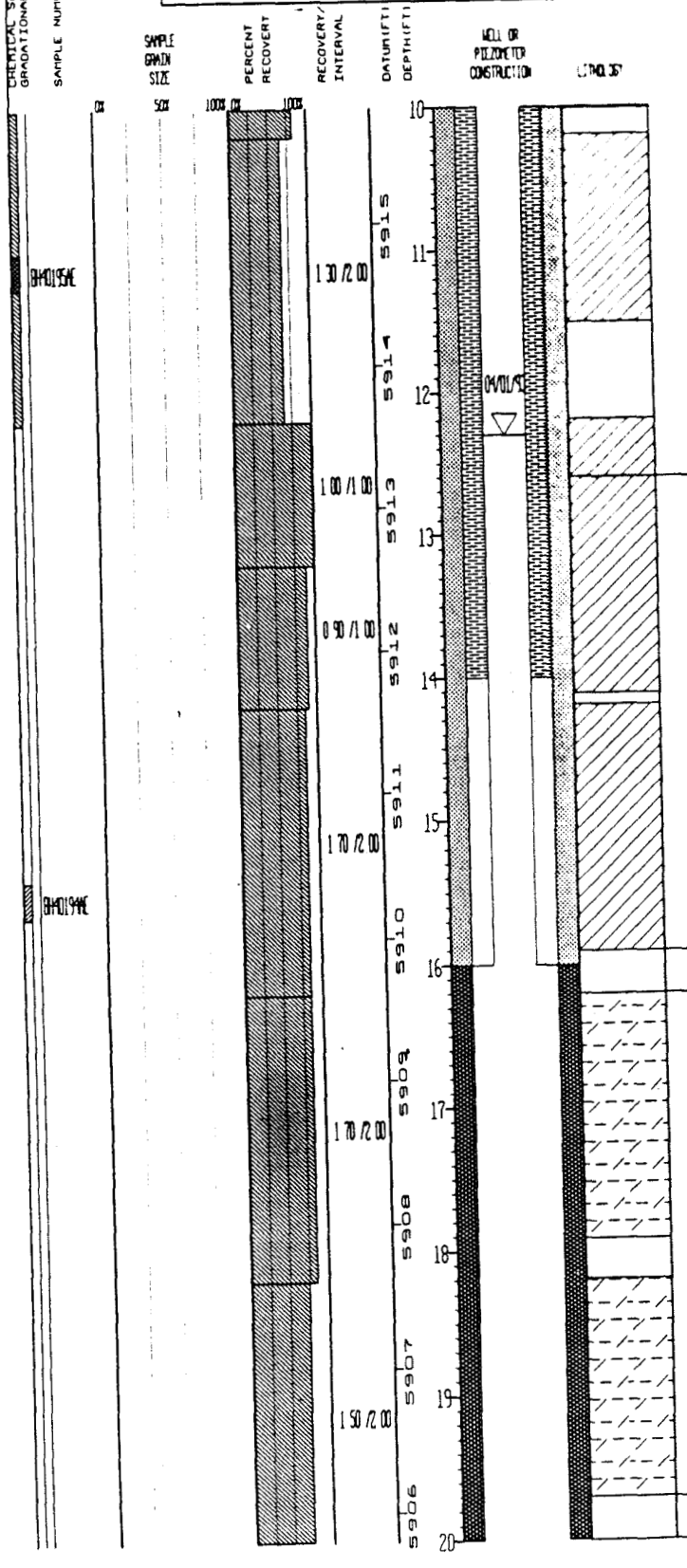
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING RIG GEOLOGY BY C D MURRAY (AE), CORE LOGGING BY J C EVANS (AE) BOREHOLE COMPLETED AS A PIEZOMETER



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CL	Silty Clay with some sand and gravel (0 0-1 8') Very dark grayish brown (10 YR 3/2) to brown (10 YR 5/3) Clay is soft, saturated at top, hard and dry in lower part of interval, mottled, roots present throughout interval Sand and gravel poorly graded, angular, pred quartz, gravel to 5 cm low to medium plasticity fines 9% Gravel, 15% Sand, 23% Silt, 53% Clay
NO RECOVERY	No recovery (1 8-2 0')
CL	Gravelly Clay with some sand and silt (2 0-5 8') Grayish brown (2 5 Y 5/3) to olive yellow (2 5 Y 6/8) Clay is stiff to hard, dry to moist, trace plant roots Gravel well graded, sub-angular to angular (drilling fractured), pred quarzite Gravel occurs pred in distinct layers (2 2' to 2 7') and also scattered throughout interval low to medium plasticity fines 24% Gravel, 22% Sand, 22% Silt, 32% Clay No recovery (2 7-3 0'), (3 7-4 0'), (4 8-5 0')
CL	Sandy Clay with abundant silt and trace gravel (5 8-12 6') Brownish yellow (10 YR 6/8) sandy intervals with light olive brown (2 5 Y 5/3) clayey intervals Clay very stiff to hard, moist, low plasticity fines Sand moderately graded, sub-rounded, pred quartz, with trace well-rounded, frosted, m g quartz grains Gravel rounded, up to 6 cm in length, no visible bedding, trace plant roots at 9 8' Interval consists pred of clay with approx 4 sandy/gravelly layers ranging from 0 1-0 4' thick 2% Gravel, 33% Sand, 26% Silt, 39% Clay No recovery (6 9-7 0'), (7 4-8 0'), (9 8-10 2'), (11 5-12 2')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 20 20	GROUND ELEVATION (FT)	5925 80	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751341	AREA Buffer Zone	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	44893
EAST	2085490	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/15/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING RIG GEOLOGY BY C D MURRAY (AE), CORE LOGGING BY J C EVANS (AE) BOREHOLE COMPLETED AS A PIEZOMETER



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CL	Silty Clay (12 6-15 9') Olive brown (2 5 Y 4/3) at top of interval to light olive brown (2 5 Y 5/2) at base, very stiff to hard, low plasticity fines, plant roots throughout interval, no visible bedding, moist, scattered traces of white (2 5 Y N/8) calcium carbonate (caliche) from approx 14 0 to 15 9', trace brownish yellow (10 YR 6/8) limonite staining at 15 3' 30%-40% Silt, 60%-70% Clay No recovery (14 1-14 2')
NO RECOVERY	No recovery (15 9-16 2')
SILTY CLAYSTONE	Silty Claystone with trace sand (16 2-19 7') Top of Bedrock at 16 2' Light gray (5 Y 7/1) to light yellowish brown (2 5 Y 6/3), very stiff to hard, no visible bedding, limonite-filled, sub-horozontal, (10 degrees) fractures between 18 2' and 19 0' Sand very well sorted, sub-angular to rounded, pred quartz, interval dry to moist 2% Sand, 20% Silt, 78% Clay No recovery (17 9-18 2')
NO RECOVERY	No recovery (19 7'-20 2')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 20 20	GROUND ELEVATION (FT)	5925 80	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751341	AREA Buffer Zone	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	44893
EAST	2085490	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/15/93	

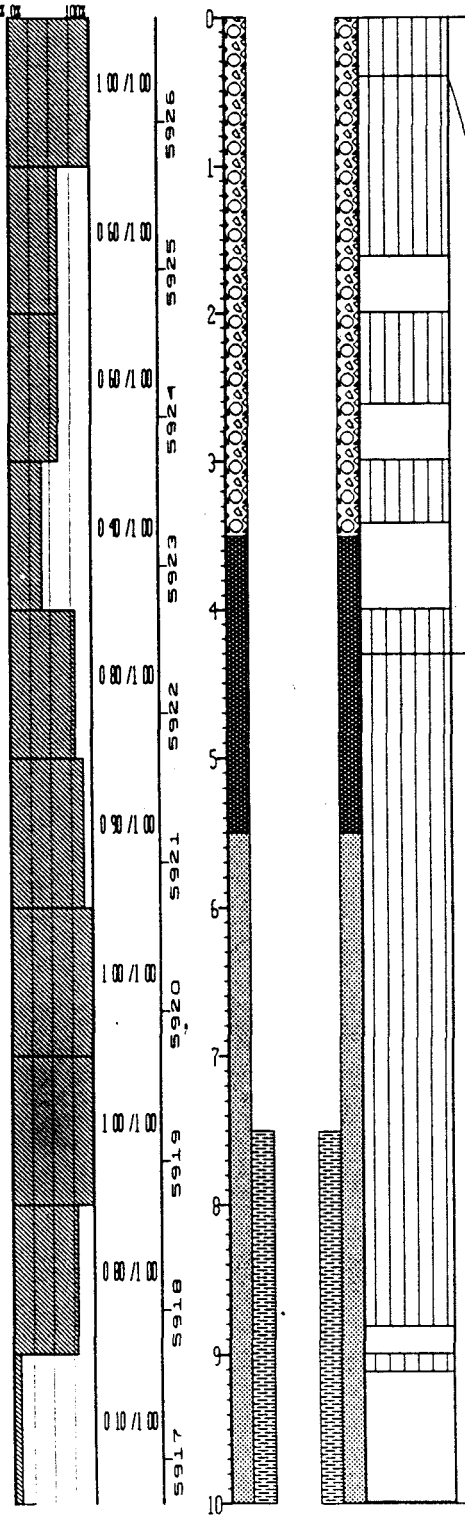
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING RIG GEOLOGY BY C D MURRAY (AE), CORE LOGGING BY J C EVANS (AE) BOREHOLE COMPLETED AS A PIEZOMETER

SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/ INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
50%	100% 0%	100%	5905	20				Total Depth Drilled 20 20 Bottom of Filter Pack 16 00 Total Depth Casing 16 00 Top of Seal 2 00
			5904	21				
			5903	22				
			5902	23				
			5901	24				
			5900	25				
			5899	26				
			5898	27				
			5897	28				
			5896	29				
				30				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 00	GROUND ELEVATION (FT) 5926 70	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	751332	AREA BUFFER ZONE	CASING DIAMETER (IN) 1 00	GEOLOGIST K R MIYOSHI	44993
EAST	2085514	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/19/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER. RIG GEOLOGY BY K R MIYOSHI CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (CL 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE
DESCRIPTION

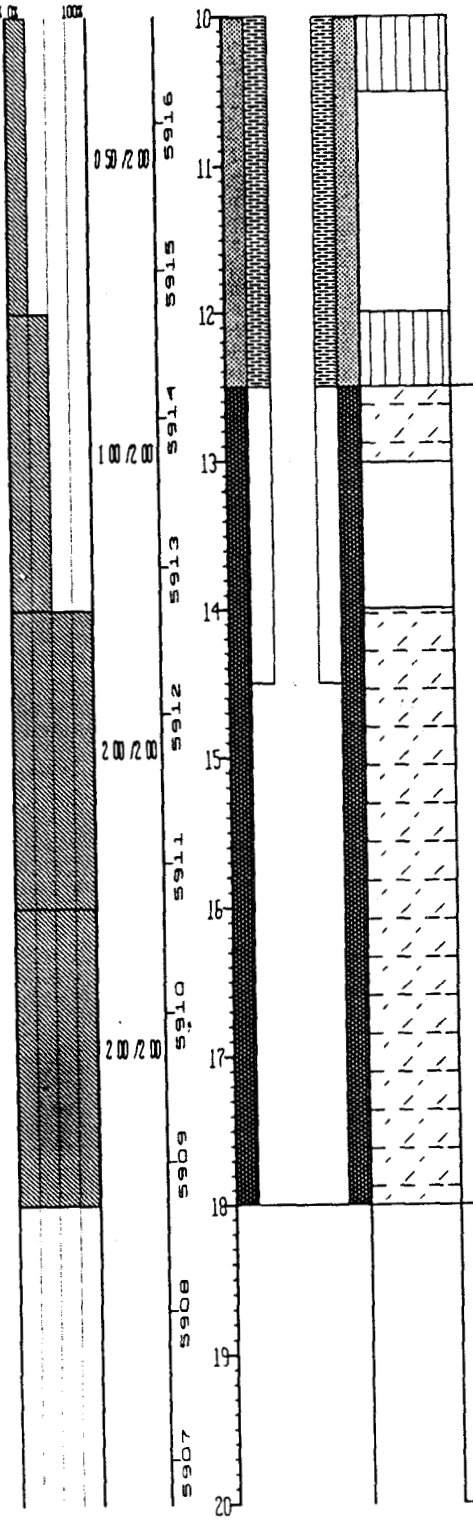


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Sandy Clayey Silt with some gravel (0 0-0 4') Brown (10 YR 4/3) Sand v f g, sub-angular Gravel f g, low plasticity fines, with approx 20% plant roots, moist 10% Gravel, 15% Sand, 60% Silt, 15% Clay
ML	Clayey Silt with some sand and trace gravel (0 4-4 3') Mottled light gray (10 YR 6/1) and brownish yellow (10 YR 6/8) Gravel f g Sand pred f g, pred quartz, low plasticity fines, plant roots from 0 4-2 4' Soil appears reworked 5% Gravel, 7% Sand, 53% Silt, 35% Clay No recovery (1 6-2 0'), (2 6-3 0'), (3 4-4 0')
ML	Sandy Silt with some gravel and clay (4 3-12 5') Color same as reference interval (0 4-4 3') above Gravel sub-rounded, up to 9 cm in length Sand pred f g, no visible bedding, moist Soil is very mixed (probably reworked) Gravel is more abundant from 3 4-4 8' and 6 0-7 0', borderline gm/ml 21% Gravel, 26% Sand, 37% Silt, 16% Clay No recovery (8 8-9 0'), (9 1-10 0'), (10 5-12 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 00	GROUND ELEVATION (FT)	5926 70	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	751332	AREA BUFFER ZONE	CASING DIAMETER (IN)	1 00	GEOLOGIST	K R MIYOSHI	44993
EAST	2085514	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/19/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY BY K R MIYOSHI CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH | GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE (0% 50% 100%) | PERCENT RECOVERY (0% 100%) | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION



CLAYEY SILTSTONE Top of Bedrock at 12 5'. Clayey Siltstone with some sand (12 5-18 0') Light yellowish brown (2 5 Y 6/3) with brownish yellow (10 YR 6/8), Fe-oxide staining, non to slightly friable Sand v f g to f g., well sorted, sub-rounded, no visible porosity, argillaceous cement, no visible bedding, plant roots from 14 0-14 9' Fe-oxide coating on abundant microfractures, trace black Mg-oxide staining 10% Sand, 63% Silt, 27% Clay
No recovery (13 -14 0')

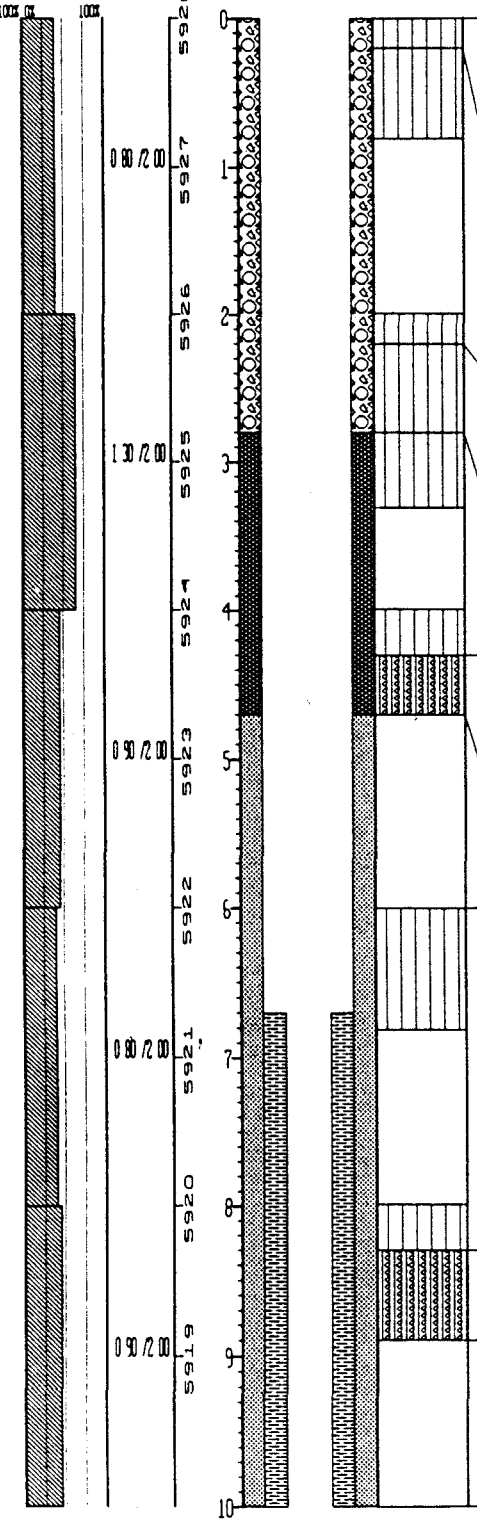
Total Depth Drilled 18 00 Total Depth Casing 14 50
Bottom of Filter Pack 12.50 Top of Seal 3 50

Note Analytical samples not collected from 44993 Soil characterized by samples collected from 44893

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 00	GROUND ELEVATION (FT)	5928 00	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751315	AREA BUFFER ZONE, N OF PA	CASING DIAMETER (IN)	1 00	GEOLOGIST	K R MIYOSHI	45093
EAST	2085545	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	04/05/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY BY K R MIYOSHI CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE
PERCENT RECOVERY
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY

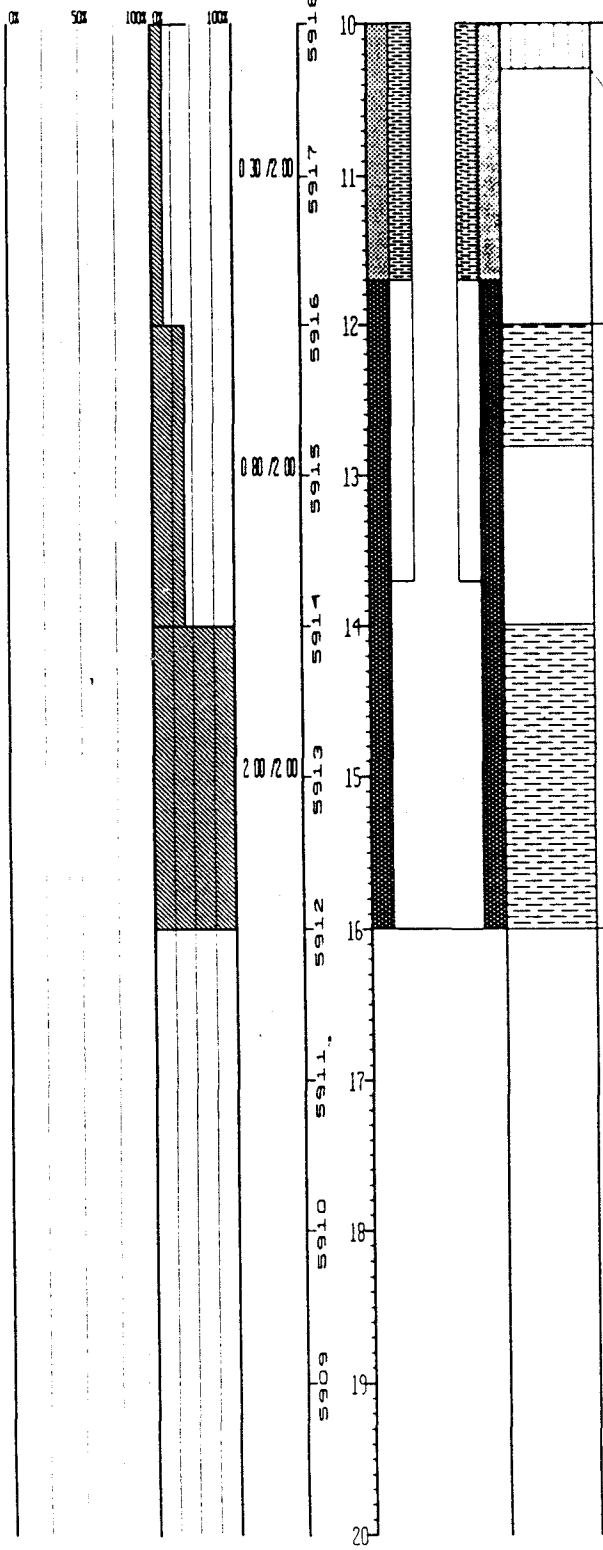


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Sandy Clayey Silt with trace gravel (0 0-0 2') Grayish brown (10 YR 5/2) Sand f g , pred quartz, abundant (20%)plant roots, no visible bedding, dry. 3% Gravel, 17% Sand, 64% Silt, 17% Clay
ML	Sandy Silt with some clay and gravel (0 2-2 2') Mottled light yellowish brown (10 YR 6/4) and light gray (10 YR 6/1) Sand pred v f g to f g Gravel up to 5 cm in length, low plasticity fines, dry, no visible bedding (an irregular mixture), possibly fill material 11% Gravel, 26% Sand, 44% Silt, 19% Clay No recovery (0 8-2 0')
ML	Sandy Silt with some clay and gravel (2 2-2 8') Reddish brown (5 YR 5/4) Sand f g to c g , sub-rounded to sub-angular, Gravel pred f g , up to 4.5 cm in length, dry 16% Gravel, 28% Sand, 34% Silt, 22% Clay
ML	Sandy Silt with some clay and gravel (2 8-4 3') Same as reference interval (0 2-2 2') above with a large cobble of silica-cemented quartz sandstone No recovery (3 3-4 0')
SM	Gravelly Sand with some silt and clay (4 3-4 7') Strong brown (7 5 YR 5/6) Sand f g to c g , sub-rounded Gravel pred f g , no visible bedding, dry 25% Gravel, 43% Sand, 19% Silt, 13% Clay
NO RECOVERY	No recovery (4 7-6 0')
ML	Clayey Silt with some sand and gravel (6 0-8 3') Mottled light gray (10 YR 7/2) and yellowish brown (10 YR 5/6) Sand and gravel same as reference interval (0 2-2 2') above No visible bedding, irregular mixture, dry 15% Gravel, 22% Sand, 38% Silt, 25% Clay No recovery (6 8-8 0')
SM	Gravelly Sand with some silt and clay (8 3-8 9') Same as reference interval (4 3-4 9') above
NO RECOVERY	No recovery (8 9-10 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 00	GROUND ELEVATION (FT) 5928 00	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	751315	AREA BUFFER ZONE, N OF PA	CASING DIAMETER (IN) 1 00	GEOLOGIST K R MIYOSHI	45093
EAST	2085545	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 04/05/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY BY K R MIYOSHI CORE LOGGING BY J C. EVANS

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY



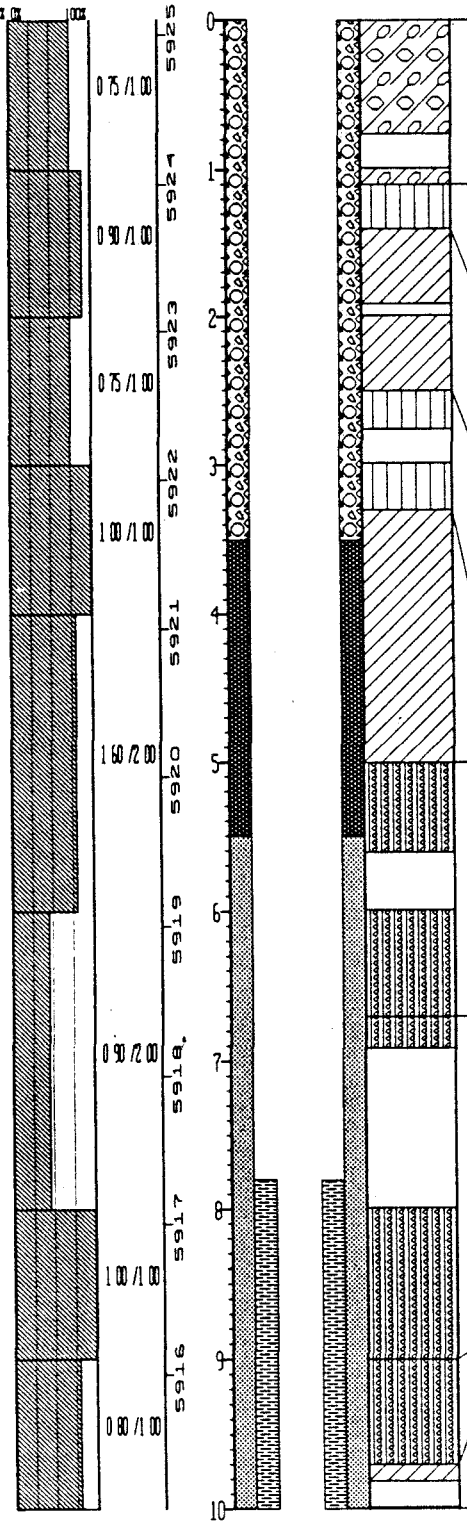
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Sandy Silt with some clay and gravel (10 0-10 3') Same as reference interval (2 8-4 3') above
NO RECOVERY	No recovery (10 3-12 0')
CLAYSTONE	Top of Bedrock at 12 0' Claystone with some silt (12 0-16 0') Light olive brown (2 5 Y 5/3), non-friable, faint horizontal bedding from 14 0-14 3', trace caliche nodules and coating on fracture surfaces, trace anhydrite at 15 9' 10% Silt, 90% Clay No recovery (12 8-14 0')

Total Depth Drilled 16 00 Total Depth Casing 13 70
Bottom of Filter Pack 11 70 Top of Seal 2 80

Note No analytical samples collected from 45093 Soil from 44893 utilized to characterize soil from 45093

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 00	GROUND ELEVATION (FT) 5925 10	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	751351	AREA BZ, N OF PA	CASING DIAMETER (IN) 1 00	GEOLOGIST K R MIYOSHI	45293
EAST	2085438	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 01/18/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY BY K R MIYOSHI CORE LOGGING BY J C EVANS

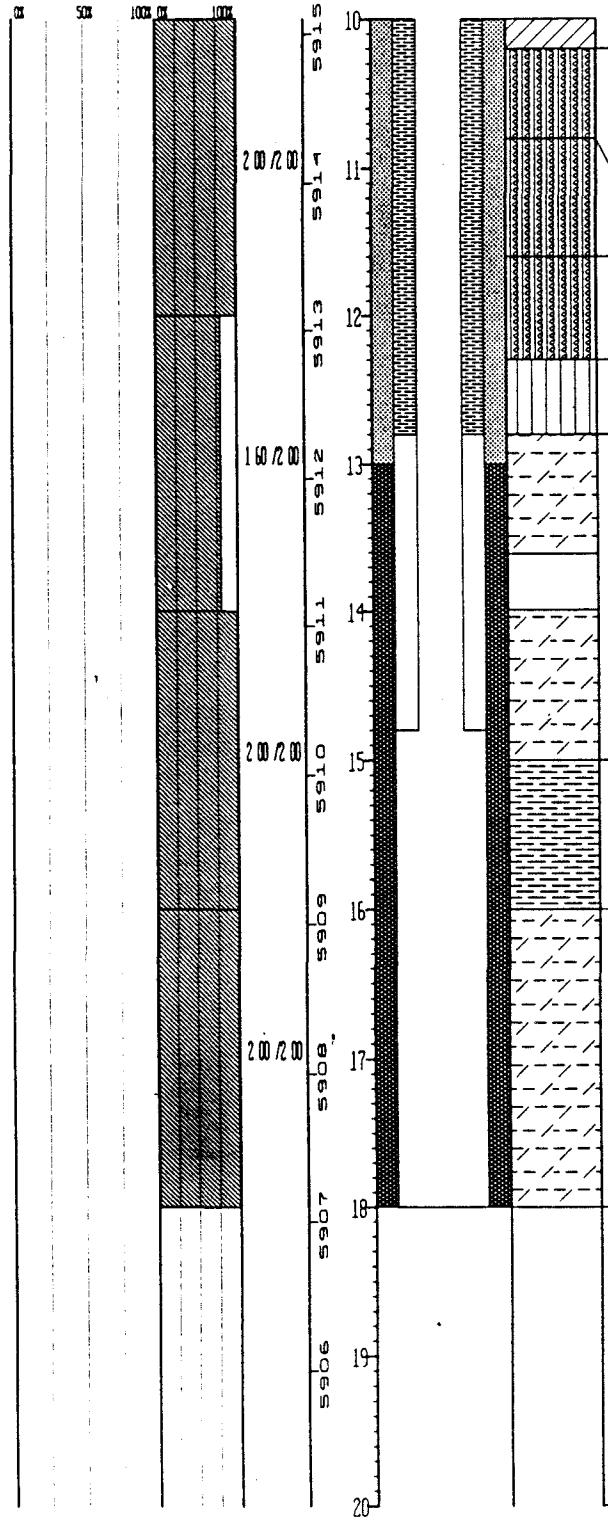


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GC	Clayey Gravel with trace sand and silt (0 0-1 1') Matrix brown (10 YR 5/3) Gravel sub-rounded to angular, c g, abundant roots at top of interval, moist. 85% Gravel, 5% Sand, 4% Silt, 6% Clay No recovery (0 75-1 0')
ML	Sandy Silt with abundant clay (1 1-1 4') Light gray (10 YR 7/1) Sand v f g to f g, sub-rounded, low plasticity fines, moist 33% Sand, 40% Silt, 27% Clay
CL	Silty Clay with some sand and trace gravel (1 4-2 5') Mottled light gray (10 YR 7/1) and yellow (10 YR 7/6), low plasticity fines Sand v f g to f g Gravel rounded, f g Moist 3% Gravel, 7% Sand, 37% Silt, 53% Clay No recovery (1 9-2 0')
ML	Sandy Silt with some clay and gravel (2 5-3 3') Strong brown (7 5 YR 5/6) Sand bi-modal, f g and c g, sub-angualr, pred quartz 6% Gravel, 31% Sand, 44% Silt, 19% Clay No recovery (2 75-3 0')
CL	Silty Clay with some sand and trace gravel (3 7-5 0') Same as reference interval (1 4-2 5') above
SM	Silty Sand with some gravel and clay (5 0-6 7') Reddish yellow (5 YR 6/8) Sand f g to c g, sub-rounded Gravel f g, rounded, moist 17% Gravel, 48% Sand, 21% Silt, 14% Clay No recovery (5 6-6 0')
SM	Silty Sand with some gravel and clay (6 7-9 0') Dark reddish brown (5 YR 3/3) Sand same as reference interval (5 0-6 7') above Gravel c g, moist 22% Gravel, 34% Sand, 31% Silt, 13% Clay No recovery (6 9-8 0')
SM	Silty Sand with some gravel and clay (9 0-9 7') Same as reference interval (5 0-6 7') above
CL	Silty Clay with some sand and trace gravel (9 7-10 2') Same as reference interval (1 4-2 5') above No recovery (9 8-10 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 00	GROUND ELEVATION (FT)	5925 10	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	751351	AREA BZ, N OF PA	CASING DIAMETER (IN)	1 00	GEOLOGIST	K R MIYOSHI	45293
EAST	2085438	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	01/18/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY BY K R MIYOSHI CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRADN SIZE
PERCENT RECOVERY
RECOVERY/INTERVAL
DATUM(FT)
DEPTH(FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE
DESCRIPTION



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Gravelly Sand with some clay and silt (10 2-10 8') Yellowish red (5 YR 5/6) Sand pred. m.g., sub-rounded. Gravel f.g. to c.g., up to 6 cm in length, moist 27% Gravel, 49% Sand, 10% Silt, 14% Clay
SM	Silty Sand with some gravel and clay (10 8-11 6') Same as reference interval (5 0-6 7') above
SM	Gravelly Sand with some clay and silt (11 6-12 3') Same as reference interval (10 2-10 8') above
ML	Sandy Silt with some clay and gravel (12 3-12 8') Same as reference interval (2 5-3 3') above
SILTY CLAYSTONE	Top of Bedrock at 12 8' Silty Claystone with some sand and trace gravel (12 8-15 0') Dark brown (10 YR 4/3) to grayish brown (10 YR 5/2), non-friable, trace (2%) plant roots and f.g. gravel, no visible bedding 1% Gravel, 8% Sand, 23% Silt, 68% Clay No recovery (13 6-14 0')
CLAYSTONE	Claystone with some silt and trace sand (15 0-16 0') Light brownish gray (10 YR 6/2), non-friable, horizontal bedding, trace caliche along bedding planes 2% Sand, 10% Silt, 88% Clay
SILTY CLAYSTONE	Silty Claystone with trace sand (16 0-18 0') Mottled light gray (10 YR 7/2) and yellow (10 YR 7/8), non to slightly friable, abundant Fe-oxide staining (some along horizontal fractures from 17 1-17 4'), no visible bedding, moist 5% Sand, 25% Silt, 70% Clay

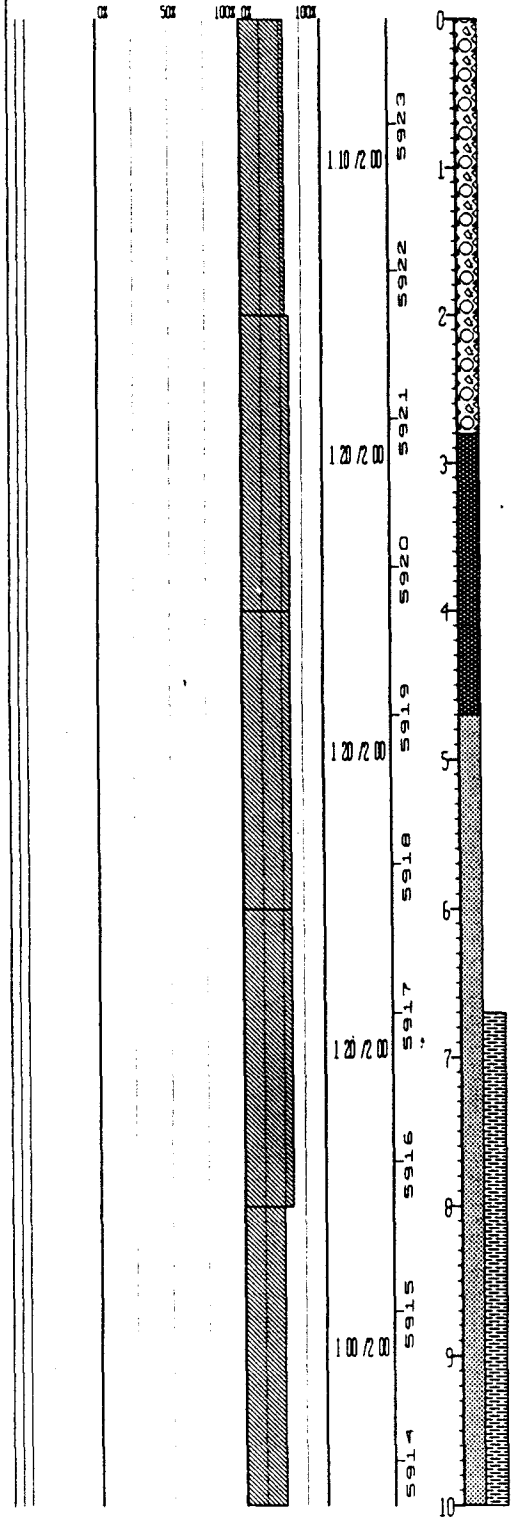
Total Depth Drilled 18 00 Total Depth Casing 14 80
Bottom of Filter Pack 13 00 Top of Seal 3 50
Note Analytical samples were no collected at 45293 Soil characterized by samples collected at 44893

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 22 00	GROUND ELEVATION (FT)	5923 70	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	751367	AREA BZ N of PA	CASING DIAMETER (IN)	1 00	GEOLOGIST	K R MIYOSHI	45393
EAST	2085936	LOCATOR NUMBER M1	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	04/05/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE
PERCENT RECOVERY
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY

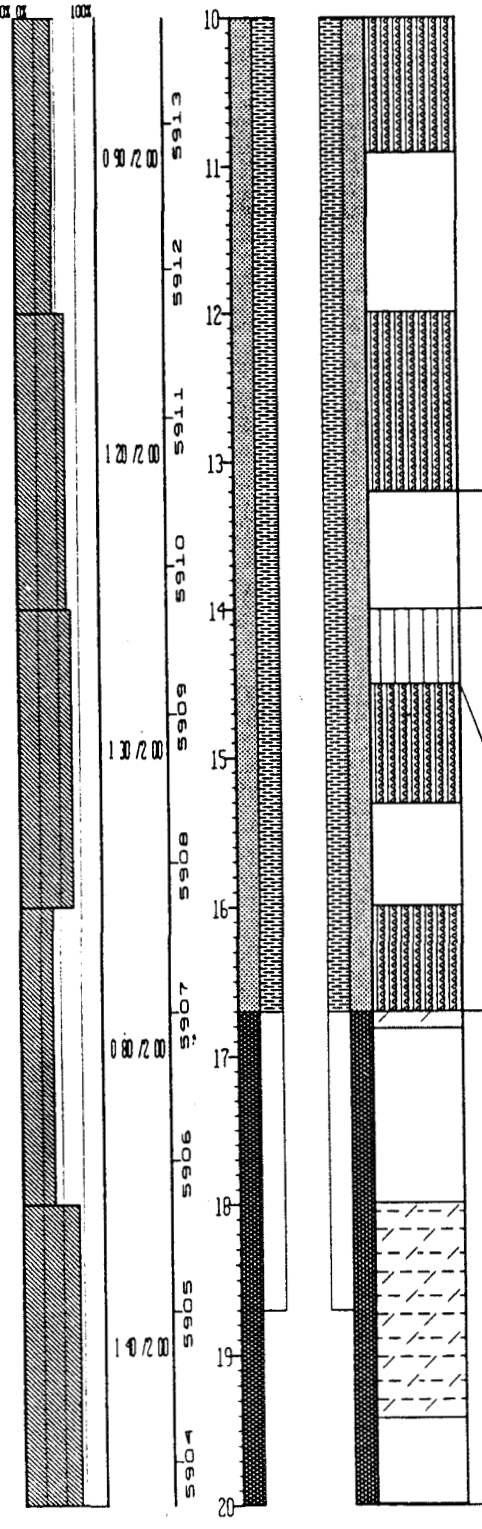
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Sandy Silt with some clay and gravel (0 0-5 0') Color is highly variable and mottled ranging from brownish yellow (10 YR 6/6) to light gray (10 YR 7/1) Sand well graded, v.f g to c g., sub-angular, no visible bedding, dry, low plasticity fines Soil is very mixed - possible reworked alluvium or colluvium/slumped material, includes bedrock sandstone fragments 6% Gravel, 18% Sand, 68% Silt, 8% Clay No recovery (1 1-2 0'), (3 2-4 0')
ML	Clayey Silt with some sand and gravel (5 0-7 2') Same as reference interval (0 0-5 0') above 8% Gravel, 18% Sand, 44% Silt, 30% Clay No recovery (5 2-6 0')
NO RECOVERY	No recovery (7 2-8 0')
ML	Sandy Silt with some clay (8 0-8 3') Dark brown (7 5 YR 4/3) Sand same as reference interval (0 0-5 0') above, no visible bedding, low plasticity fines, abundant (30%) rock fragments 37% Sand, 51% Silt, 12% Clay
SM	Gravelly Sand with some silt and clay (8 3-13 2') Color variable, light brownish gray (10 YR 6/2), reddish yellow (7 5 YR 6/8) and light gray (7 5 YR /N7) Sand f g to c g, well graded sub-angular, pred quartz, some (20%) rock fragments Gravel pred f g, some (10%) c g and up to 7 cm in length, dry, chaotic bedding, highly variable, mixed lithologies (possible reworked alluvium or slump) 25% Gravel, 47% Sand, 20% Silt, 8% Clay No recovery (9 0-10 0'), (10 9-12 0')



STATE PLANE COORDINATE		TOTAL DEPTH (FT) 22 00	GROUND ELEVATION (FT)	5923 70	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	751367	AREA BZ N of PA	CASING DIAMETER (IN)	1 00	GEOLOGIST	K R MIYOSHI	45393
EAST	2085436	LOCATOR NUMBER M1	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	04/05/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (CL 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (13 2-14 0')
ML	Sandy Silt with some clay (14 0-14 5') Dark brown (7 5 YR 3/2) Same as reference interval 8 0-8 3' above Trace (3%) plant roots, pred quartz 30% Sand, 63% Silt, 7% Clay
SM	Gravelly Sand with some silt and clay (14 5-16 7') Same as reference interval 8 3-13 2' above No recovery (15 3-16 0')
SILTY CLAYSTONE	Silty Claystone (16 7-22 0') Top of Bedrock at 16 7' Light olive brown (2 5 Y 5/3), slightly friable, argillaceous cement, no visible bedding, trace healed fractures with Fe-oxide and Mg-oxide coatings, fractures at various angles 10% Silt, 90% Clay No recovery (16 8-18 0'), (19 4-20 0')

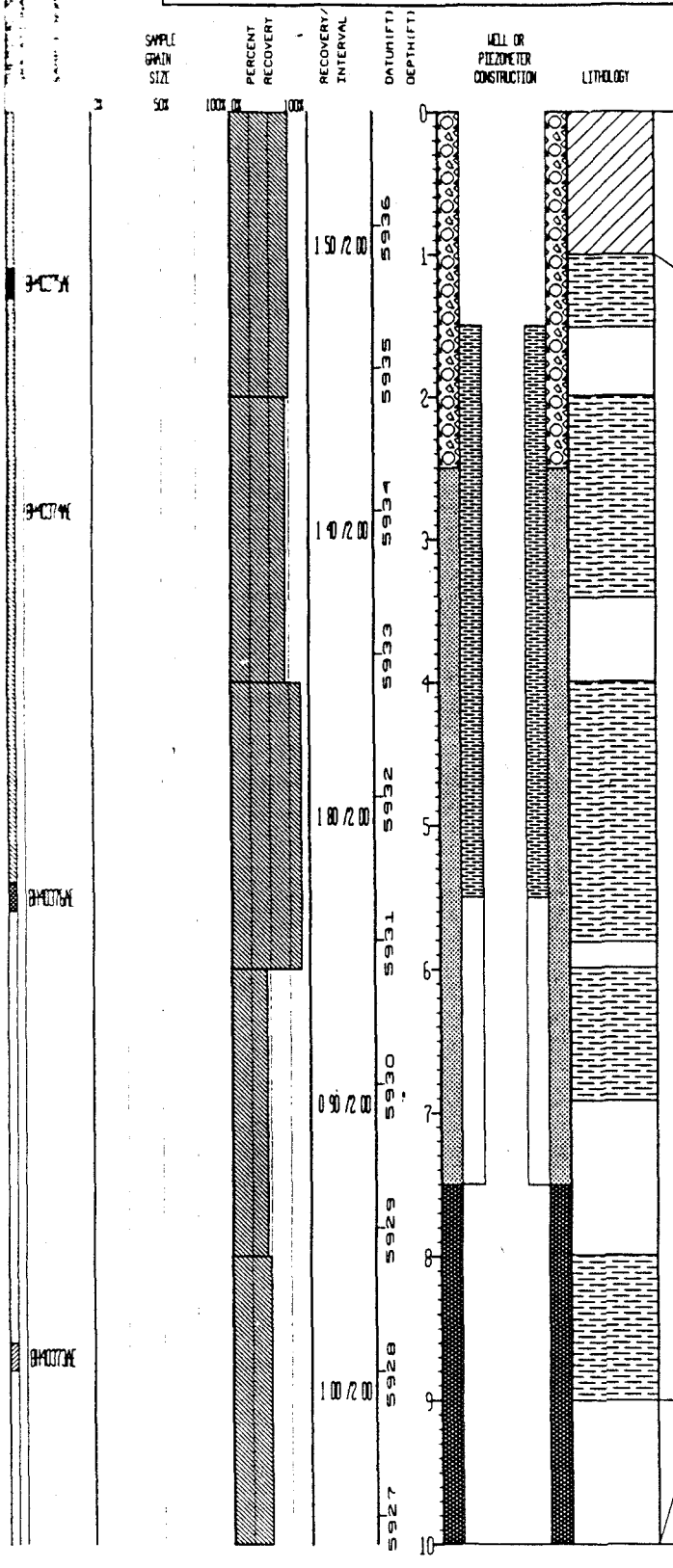
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 22 00	GROUND ELEVATION (FT) 5923 70	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	751367	AREA BZ N of PA	CASING DIAMETER (IN) 1 00	GEOLOGIST K R MIYOSHI	45393
EAST	2085436	LOCATOR NUMBER M1	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 04/05/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY BY K R MIYOSHI, CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		0% 50% 100%	0% 100%	2 00 /2 00	5903 5902 5901 5900 5899 5898 5897 5896 5895 5894	20 21 22 23 24 25 26 27 28 29 30				Total Depth Drilled 22 00 Bottom of Filter Pack 16 70 Total Depth Casing 18 70 Top of Seal 2 80

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 10 00	GROUND ELEVATION (FT)	5936 80	PROJECT NUMBER	0U4-RFI/RI	LOG OF BORING NUMBER
NORTH	751221	AREA BUFFER ZONE	CASING DIAMETER (IN)	1 00	GEOLOGIST	J C EVANS	45693
EAST	2084513	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/19/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CL	Silty Clay with trace gravel and sand (0 0-1 0') Light olive brown (2 5 Y 5/4), non-friable, low plasticity fines, moist, trace (3%) white caliche present in small nodules and surface coatings Gravel pred f g , up to 5 cm in length 5% Gravel, 3% Sand, 7% Silt, 85% Clay
CLAYSTONE	Top of Bedrock at 1 0' Claystone with trace silt (1'0-9 0') Light gray (10 YR 6/1) to dark gray (10 YR 4/1) at base, non-friable, moist, no visible bedding Very pale brown (10 YR 7/3) interval of 3 2-4 3' is calcareous, white caliche nodules present from 1 0-2 7' Fe-oxide staining on microfractures present throughout interval Trace black carbonaceous material 5% Silt, 95% Clay No recovery (1 5-2 0'), (3 4-4 0'), (5 8-6 0'), (6 9-8 0')
NO RECOVERY	No recovery (9 0-10 0')

Total Depth Drilled 10 00 Total Depth Casing 7 50
Bottom of Filter Pack 7 50 Top of Seal 2 50

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 8 50	GROUND ELEVATION (FT)	5950 40	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751139	AREA N OF POND 207C	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	45793
EAST	2084528	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/18/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BORING COMPLETED AS PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 70 /1 00	5950	0			GM	Sandy Gravel with abundant silt and some clay (0 0-1 25') Matrix dark brown (7 5 YR 3/2), well graded cobbles < 10 mm common up to 30 mm present. Sand pred. fine sand, very angular to sub-rounded, clear and granular quartz with common metamorphics, abundant wood fibers and biotite, moist Gravel 35%, Sand 30%, Silt 29%, Clay 6% No recovery (0 7-1 0')
	BH10558NE			0 70 /1 00	5949	1				
	BH10557NE			0 70 /1 00	5948	2			GC	Sandy Gravel with some clay and trace silt (1 25-3 7') Matrix very pale brown (10 YR 7/3), well graded Gravel 5-20 mm abundant, cobbles broken by drlg Sand m g to f g., v angular to sub-rounded, clear and granular quartz with 25% dark minerals Caliche present with trace of biotite Low plasticity fines, dry, no visible bedding Gravel 57%, Sand 25%, Silt 4%, Clay, 14% No recovery (1 7-2 0'), (2 7-3 0')
				0 70 /1 00	5947	3				
						4			NO RECOVERY	No recovery (3 7-4 0')
				0 30 /1 00	5946				SANDY SILTSTONE	Top of Bedrock at 4 0' Sandy Siltstone with some clay (4 0-7 8') Light olive brown (2 5 Y 5/4) with olive yellow (2 5 Y 6/8) mottling f g sand, sub-angular to sub-rounded, frosted quartz, 3% dark minerals, well sorted V f g sand sub-rounded to rounded, frosted quartz, 3% dark minerals, argillaceous cement, moist, no visible bedding f g Sand 21%, V f g Sand 10%, (Total Sand 31%), Silt 52%, Clay 17% No recovery (4 3-5.0'), (5 9-6 0')
	BH10560NE			0 90 /1 00	5945	5				
					5944	6				
				1 80 /2 00	5943	7				
				0 00 /0 50	5942	8			NO RECOVERY	No recovery (7 8-8 5')
					5941	9				Total Depth Drilled 8 50 Total Depth Casing 6 00 Bottom of Filter Pack 4 50 Top of Seal 1 10
						10				

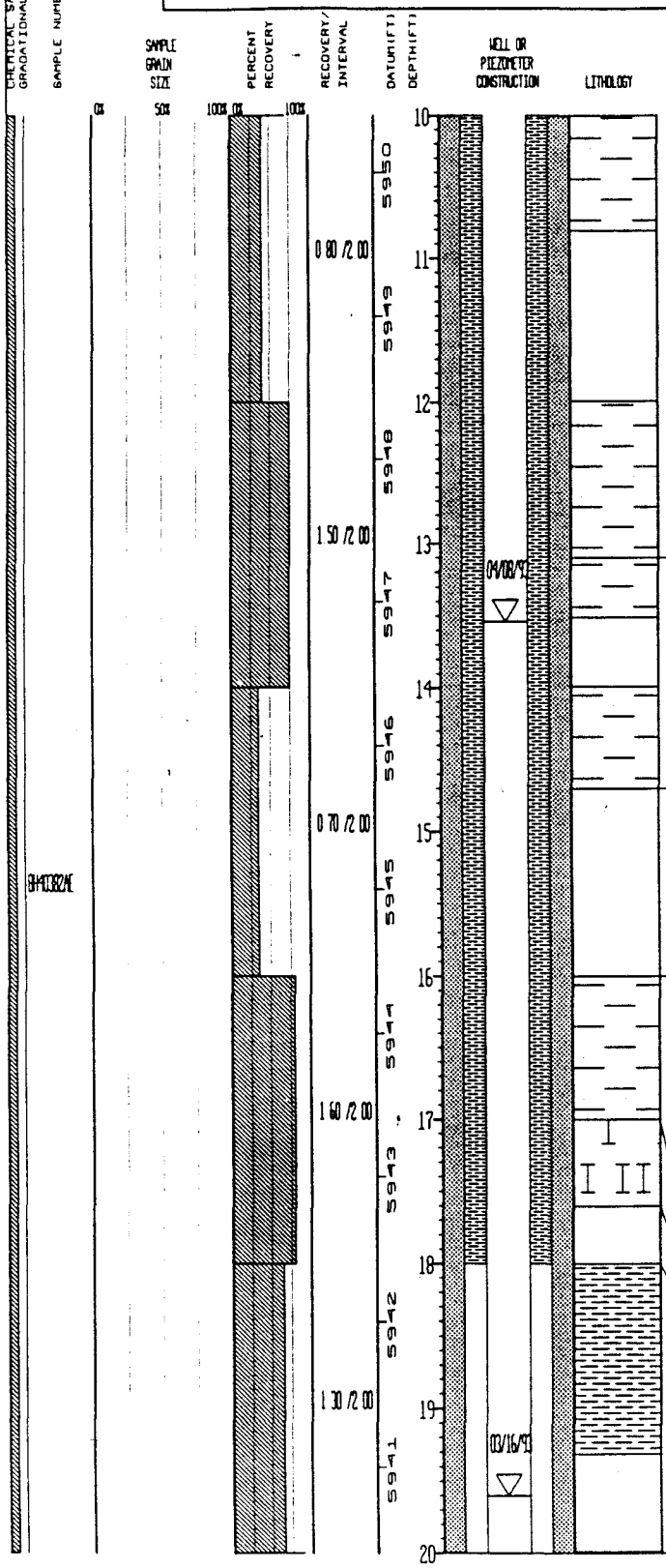
STATE PLANE COORDINATE		TOTAL DEPTH (FT)	22 10	GROUND ELEVATION (FT)	5960 40	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER	
NORTH	751112	AREA N OF POND 207C		CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	45893	
EAST	2084466	LOCATOR NUMBER	L11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/16/93		

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 60 /1 00	5960	0			GM	Sandy Gravel with some silt and trace clay (0 0-2 4') Martrix dark brown (7 5 YR 3/4) Gravel 0 5-1.5 cm common Angular to well rounded. Sand c.g. to f.g., angular to sub-rounded quartz and metamorphic grains common Trace of biotite and pitted quartz grains, well graded. Low plasticity fines No visible bedding, moist Gravel 61%, Sand 19%, Silt 16%, Clay 4% No recovery (0 6-2 0')
				0 00 /1 00	5959	1				
						2				
	BH0037AE			0 60 /1 00	5958				SM	Sandy Silt with some gravel and clay (2 4-6 4')(Colluvium) Light olive brown (2 5 Y 5/6) Gravel sub-rounded to rounded, <1 cm, quartz and metamorphic grains Sand c g to f g., angular to sub-rounded quartz and metamorphic grains with trace of biotite, well graded Low plasticity fines No visible bedding, moist Gravel 16%, Sand 36%, Silt 38%, Clay 10% No recovery (2 6-3 0'), (3 8-4 0'), (4 7-5.0'), (5 7-6 0')
	BH0037AE			0 80 /1 00	5957	3				
				0 70 /1 00	5956	4				
	BH0037AE					5				
	BH0056AE			0 70 /1 00	5955					
				0 90 /1 00	5954	6			CL	Silty Clay with some fine sand (6 4-6 9') Light olive brown (2 5 Y 5/6) F g sand, angular to sub-angular, pred quartz with some dark minerals and biotite Low to med plasticity fines No visible bedding, moist Fine Sand 8%, Silt 18%, Clay 74%
									NO RECOVERY:	No recovery (6 9-7 0')
	BH0080AE			0 20 /1 00	5953	7			ML	Sandy Silt with some clay and gravel (7 0-8 9') Dark yellow brown (10 YR 4/4) Silt and clay stiff to very stiff, low plasticity, faint horiz bedding, moist Sand pred f g, well sorted, sub-rounded Scattered gravel, subrounded up to 1.5 cm in length Gravel 7%, Sand 19%, Silt 52%, Clay 22% No recovery (7 2-8 0')
				0 90 /1 00	5952	8			NO RECOVERY:	No recovery (8 9-9 0')
	BH0081AE			0 70 /1 00	5951	9			CLAYEY SANDSTONE	Top of Bedrock at 9 0' Clayey Sandstone with some silt (9 0-13 1') Olive yellow (2.5 Y 6/6) F g to v f g sand, angular to sub-angular, pred quartz with trace of dark minerals, well sorted, poor visible porosity, friable, some faint horiz bedding, moist F g Sand 52%, V F g Sand 7%, (Total Sand 59%), Silt 8%, Clay 33% No recovery (9 7-10 0'), (10 8-12 0')
						10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 22.10	GROUND ELEVATION (FT)	5960 40	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751112	AREA N OF POND 207C	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	45893
EAST	2084466	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/16/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
CLAYEY SANDSTONE	Clayey Sandstone with some silt (13 1-14 7') Pale yellow (2 5 Y 7/3) Sand pred f g, rounded, well-sorted, trace of well rounded m g, frosted quartz grains, approx 20-25% visible porosity, 2-3% argillaceous cement Very friable to loose, moist Brownish yellow (10 YR 6/8), iron-stone concretions at 14 2' Sand 70%, Silt 9%, Clay 21% No recovery (13 5-14 0')
NO RECOVERY	No recovery (14 7-16 0')
CLAYEY SANDSTONE	Clayey Sandstone with some silt (16 0-17 0') Light yellowish brown (2 5 Y 6/4) and olive yellow (2 5 Y 6/8) Pred f g sand, sub-angular to sub-rounded, frosted and pitted quartz grains V f g sand, angular to sub-angular, trace of frosted quartz grains and dark minerals Well sorted and moderately friable, moist F g Sand 51%, V f g Sand 4%, (Total Sand 55%), Silt 13%, Clay 32%
IRONSTONE	Ironstone (17 0-17 6') Brownish yellow (10 YR 6/6)
NO RECOVERY	No recovery (17 6-18 0')
CLAYSTONE	Claystone (18 0-21 8') Very dark gray (5 Y 3/1) to olive (5 Y 4/3) with olive yellow (2 5 Y 6/6) staining No visible porosity, very stiff, moist, massive bedding Clay 100% No recovery (19 3-20 ')

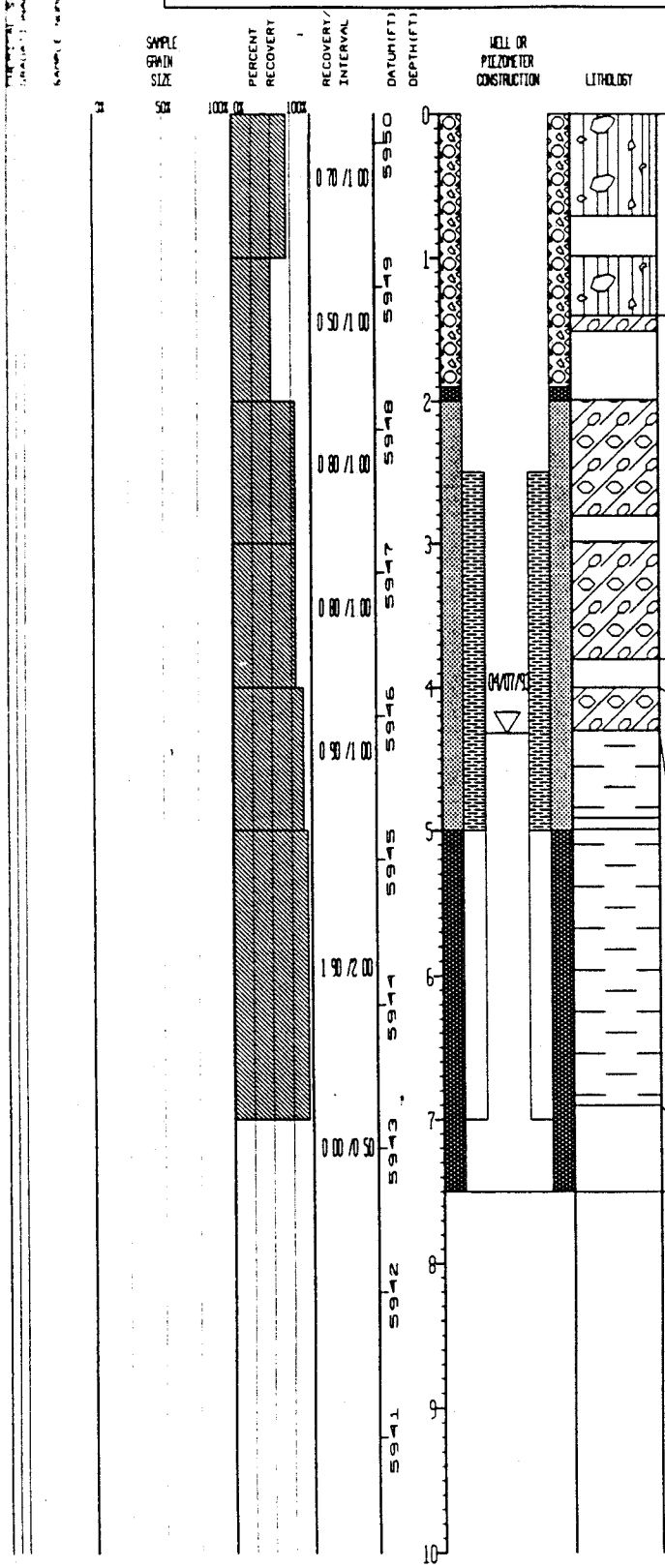
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 22 10	GROUND ELEVATION (FT) 5960 40	PROJECT NUMBER 0U4-RFI/RI	LOG OF BORING NUMBER
NORTH	751112	AREA N OF POND 207C	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	45893
EAST	2084466	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/16/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				1 80 /2 00	5940	20				
					5939	21				
						22			NO RECOVERY	No recovery (20 8-22 1')
					5938					Total Depth Drilled 22 10 Total Depth Casing 20 00 Bottom of Filter Pack 20 00 Top of Seal 5 00
					5937	23				
					5936	24				
					5935	25				
					5934	26				
					5933	27				
					5932	28				
					5931	29				
						30				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 7 50	GROUND ELEVATION (FT) 5950 20	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	751138	AREA PA, N OF POND 207C	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	45993
EAST	2084511	LOCATOR NUMBER L11	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/18/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GM	Sandy Gravel with abundant silt and some clay (0 0-1 4') Matrix dark brown (7 5 R 3/2), well graded cobbles 10-30 mm Sand pred. f g., angular to sub-rounded, clear and granular quartz, common metamorphics 25% wood fibers and biotite Moist Gravel 35%, Sand 30%, Silt 29%, Clay 6% No recovery (0 7-1 0')
GC	Sandy Gravel with some clay and trace silt (1 4-3 8') Matrix very pale brown (10 YR 7/3) Well graded Gravel 5-20 mm abundant, cobbles broken by drilling Sand, m g to f g, very angular to sub-rounded, clear and granular quartz with 25% dark minerals Caliche present Trace of biotite Low plasticity clay, dry, no visible bedding Gravel 57%, Sand 25%, Silt 4%, Clay 14% No recovery (1 5-2 0'), (2 8-3 0')
NO RECOVERY	No recovery (3 8-4 0')
GC	Clayey Gravel with some sand and silt (4 0-4 3') Matrix very pale brown (10 YR 7/3), moderately graded Gravel, angular, poorly sorted, 5-10 mm Sand f g. to c g, very angular to sub-rounded quartz and granite fragments 3% dark minerals, abundant CaCO3 in form of caliche Trace mica flakes Gravel 32%, Sand 24%, Silt 11%, Clay 33%
CLAYEY SANDSTONE	Clayey Sandstone with some silt (4 3-6 9') Top of Bedrock at 4 3' Pale olive (5 Y 6/3) with olive yellow (2 5 Y 6/6) staining Sand v f g to f g, angular to sub-rounded granular quartz with 1% dark minerals, well sorted, abundant CaCO3 cement, approx 15% porosity, sandy sections are friable massive bedding, moist Sand 48%, Silt 10%, Clay 42% No recovery (4 9-5 0')
NO RECOVERY	No recovery (6 9-7 5')

Total Depth Drilled 7 50 Total Depth Casing 7 00
Bottom of Filter Pack 5 00 Top of Seal 1 90

Note Samples collected from 45793 utilized to characterize soil from 45993

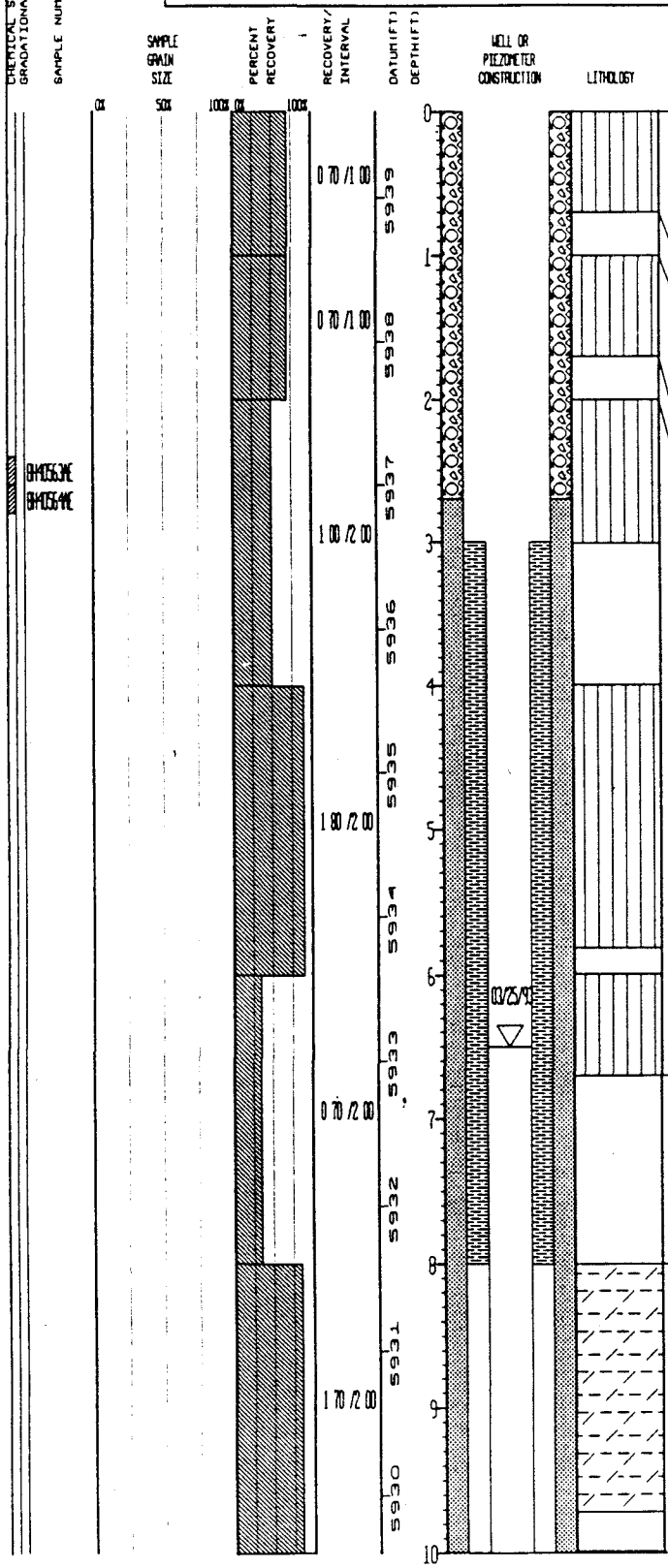
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 10 0	GROUND ELEVATION (FT)	5935 70	PROJECT NUMBER	014-40104	LOG OF BORING NUMBER
NORTH	751219	AREA PA, N of ponds	CASING DIAMETER (IN)	1	GEOLOGIST	JCE/KRM/KMP	46193
EAST	2084858	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8	DATE DRILLED	03/24/93	

REMARKS Hollow Stem Auger and Conventional Coring Borehole completed as a piezometer Rig geology by John Evans, core logging by Kerry Miyoshi and Ken Pacheco

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% – 50%)	PERCENT RECOVERY (100% 0% – 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	BH10366NE BH10561NE			1 00 /1 00	5935	0			ML	Clayey Silt (0 0-2 2') Yellowish red (2.5 YR 4/6), low plasticity fines, pred feldspar/quartz/mica, no visible bedding, re-worked bedrock, moist, mildly calcareous 70% Silt, 30% Clay
				0 60 /1 00	5934	1				No recovery (1 6-2 0')
						2			ML	Clayey Silt (2 0-2 2') Same as above
	BH10562NE BH10563NE			1 70 /2 00	5933	3			SILTY CLAYSTONE	Top of bedrock 2 2' Silty Claystone (2 2-7 0') Light olive brown (2 5 Y 5/3), est 2% porosity, low friability, pred quartz, moist, crude horiz bedding, no caliche, some organic material, some Fe-oxide staining 40% Silt, 60% Clay
					5932	4				No recovery (3 7-4 0')
					5931	5			SILTY CLAYSTONE	Silty Claystone (4 0-4 8') Same as above
				0 80 /2 00	5930	6				No recovery (4 8-6 0')
				2 00 /2 00	5929	7			SILTY CLAYSTONE	Silty Claystone (6 0-8 4') Grayish brown (10 YR 5/2), est 2% porosity, highly friable, pred quartz, moist, crude horiz bedding, no caliche, high amount of organic material 30% Silt, 70% Clay
	BH10387NE				5928	8				
				2 00 /2 00	5927	9			SILTY CLAYSTONE	Silty Claystone (8 4-10 0') Light olive brown (2 5 Y 5/4), est 2% porosity, highly friable, pred quartz, moist, crude horiz bedding, no caliche, organic specks 40% Silt, 60% Clay Total depth drilled 10 0'
					5926	10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 30	GROUND ELEVATION (FT)	5939 60	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751179	AREA PA, N OF PONDS	CASING DIAMETER (IN)	1 00	GEOLOGIST	J C EVANS	46293
EAST	2084859	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/25/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY J C EVANS



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Gravelly Silt with some sand and trace clay (0 0-0 7') Very dark grayish brown (10 YR 3/2) Sand pred f g, poorly graded, pred. quartz, low plasticity fines, trace (5%) plant roots and organic matter, moist 29% Gravel, 22% Sand, 44% Silt, 5% Clay
NO RECOVERY	No recovery (0 7-1 0')
ML	Sandy Silt with some clay and trace gravel (1 0-1 7') Brown (10 YR 5/3) Sand same as reference interval (0 0-0 7') above Trace (3%) plant roots 5% Gravel, 29% Sand, 59% Silt, 7% Clay
NO RECOVERY	No recovery (1 7-2 0')
ML	Sandy Silt with some gravel and clay (2 0-6 7') Pale brown (10 YR 6/3) Slightly to moderately friable Sand pred. f.g. to m.g., sub-rounded, pred. quartz. Gravel pred. f.g., no visible bedding, caliche present throughout interval Sand more abundant from 6 3-6 7' 22% Gravel, 28% Sand, 30% Silt, 20% Clay No recovery (3 0-4 0'), (5 8-6 0')
NO RECOVERY	No recovery (6 7-8 0')
SILTY CLAYSTONE	Top of Bedrock at 8 0' Silty Claystone (8 0-11 5') Olive yellow (2.5 Y 6/8), slightly friable, moist, no visible bedding, caliche filled fractures from 8 0-10 4', approx 15% caliche, Mg-oxide staining on microfractures from 8 0-8 4' 30% Silt, 70% Clay No recovery (9 7-10 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 30	GROUND ELEVATION (FT)	5939 60	PROJECT NUMBER	OU1-RFI/RI	LOG OF BORING NUMBER
NORTH	751179	AREA PA, N OF PONDS	CASING DIAMETER (IN)	1 00	GEOLOGIST	J C EVANS	46293
EAST	2084859	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/25/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY J C EVANS

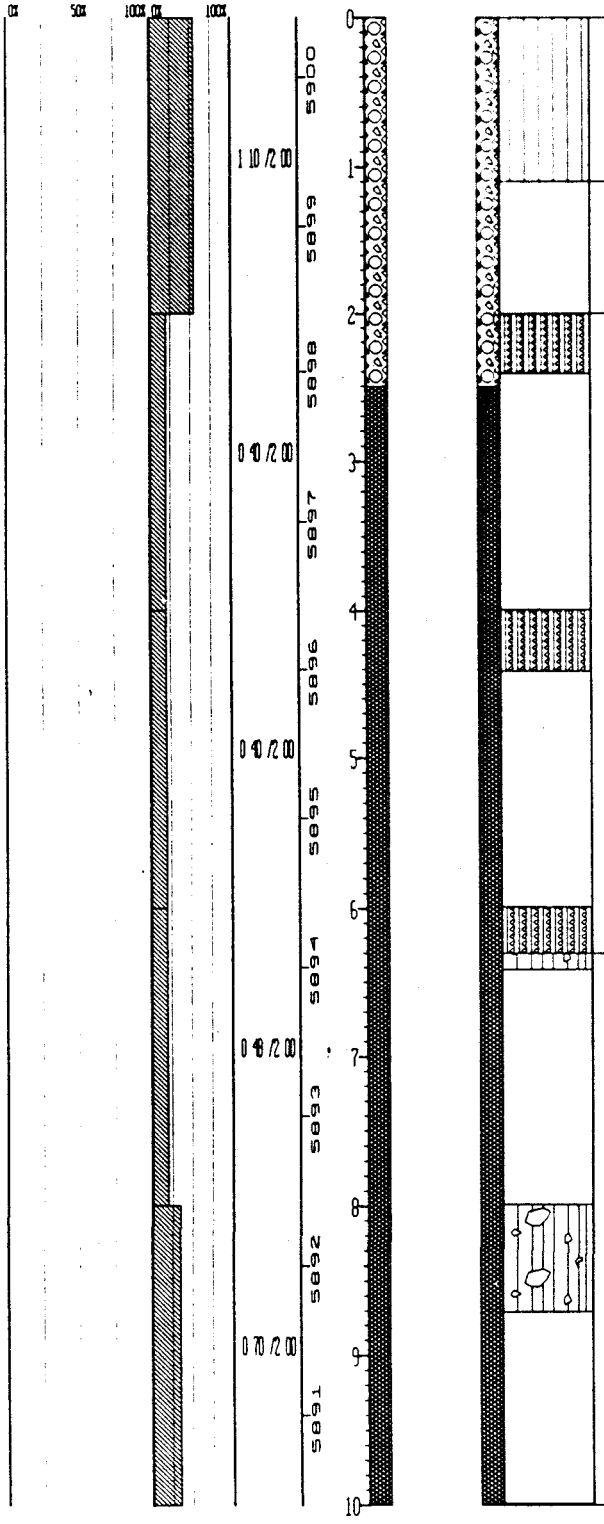
CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
		0% 50%	100% 0% 100%	2 30 /2 30	5929 5928 5927 5926 5925 5924 5923 5922 5921 5920	10 11 12 13 14 15 16 17 18 19 20			SILTY CLAYSTONE	Silty Claystone (11 5-12 3') Light olive brown (2.5 Y 5/4), argillaceous cement, slightly friable, moist, no visible bedding, Fe-oxide staining present along fractures at 12 0' 30% Silt, 70% Clay

Total Depth Drilled 12 30 Total Depth Casing 10 00
Bottom of Filter Pack 10 00 Top of Seal 2 70

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 24 50	GROUND ELEVATION (FT)	5900 40	PROJECT NUMBER	304-RFI/RI	LOG OF BORING NUMBER
NORTH	751573	AREA PA, N OF PONDS	CASING DIAMETER (IN)	1 00	GEOLOGIST	K W PACHECO	46393
EAST	2085418	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	12/29/92	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COPLETED AS A PIEZOMETER RIG GEOLOGST BY K W PACHECO CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH | GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION



ML — Sandy Silt with some gravel and clay (0 0-1 1') Light olive brown (2 5 Y 5/6) Sand v f g to f g, sub-angular to sub-rounded, low plasticity fines, pred quartz, trace Fe-oxide staining, with horozontal bedding Possible displaced bedrock 12% Gravel, 27% Sand, 51% Silt, 10% Clay

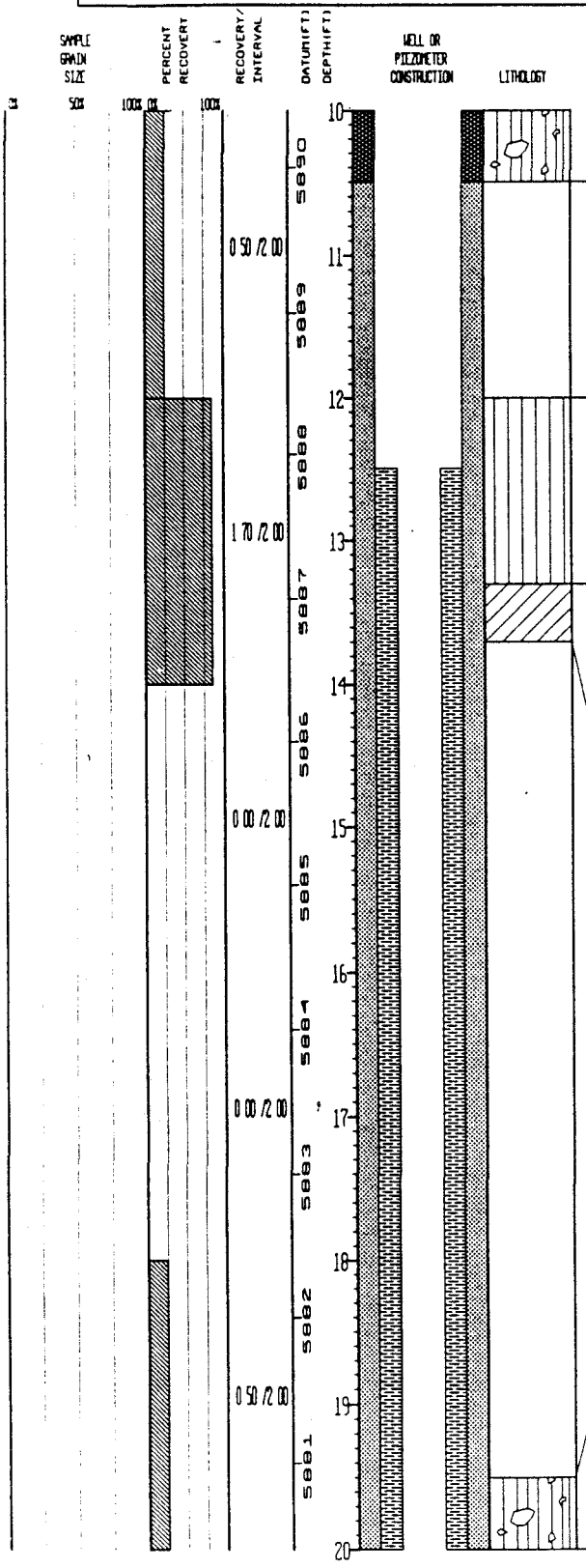
NO RECOVERY — No recovery (1 1-2 0')

SM — Silty Sand with abundant gravel and trace clay (2 0-6 3') Pale yellow (2 5 Y 7/3) Sand v f g to m g, sub-angular to sub-rounded Gravel c g, rounded, pred quartz, trace white caliche, moist Possible displaced bedrock 29% Gravel, 36% Sand, 24% Silt, 11% Clay No recovery (2 4-4 0'), (4 4-6 0')

GM — Silty Gravel with some silt and clay (6 3-10 5') Matrix brownish yellow (10 YR 5/6) Gravel c g, rounded to angular (drilling fractured) Sand f g to c g, pred quartz, moist 50% Gravel, 18% Sand, 22% Silt, 10% Clay No recovery (6 4-8 0'), (8 7-10 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 24 50	GROUND ELEVATION (FT)	5900 40	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751573	AREA PA, N OF PONDS	CASING DIAMETER (IN)	1 00	GEOLOGIST	K W PACHECO	46393
EAST	2085418	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	12/29/92	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COPLETED AS A PIEZOMETER RIG GEOLOGY BY K W PACHECO CORE LOGGING BY J C EVANS

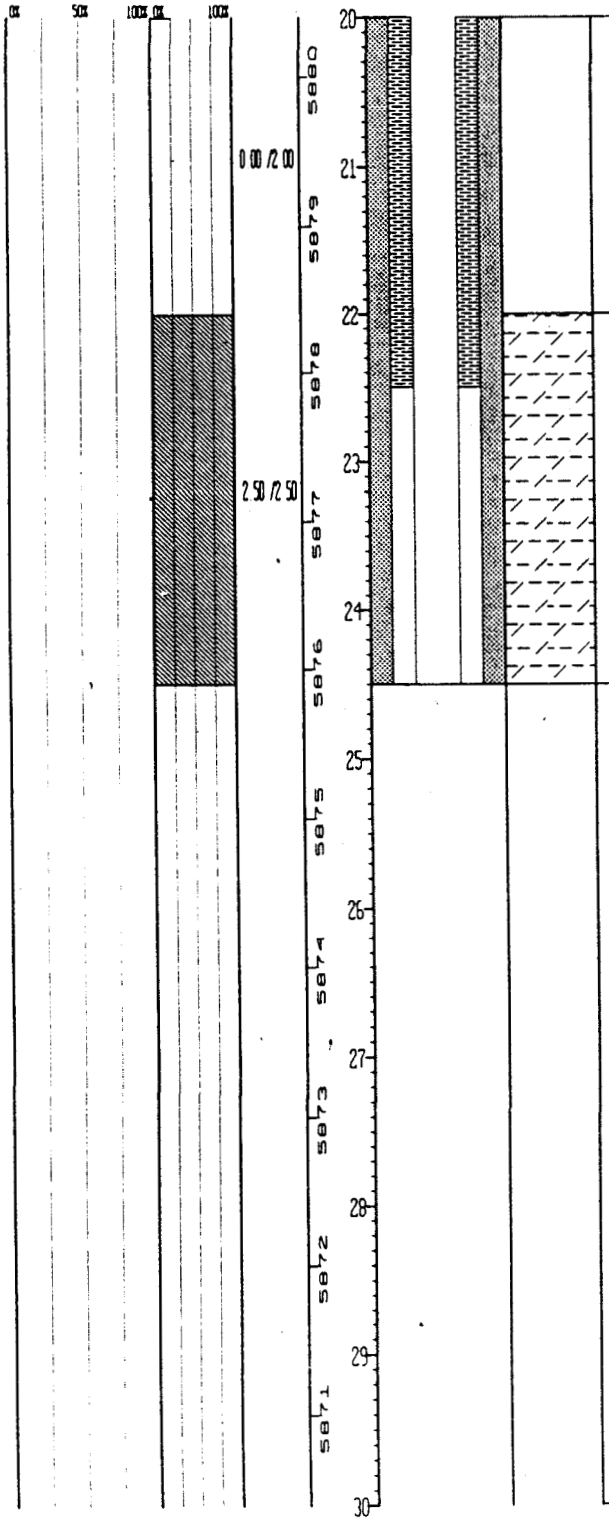


UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
NO RECOVERY	No recovery (10 5-12 0')
ML	Sandy Silt with some gravel and clay (12 0-13 3') Olive yellow (2 5 Y 6/6) Sand f g to c g, sub-rounded, low plasticity fines Gravel f g, trace (5%) small caliche nodules 14% Gravel, 34% Sand, 42% Silt, 10% Clay
CL	Silty Clay with trace sand and gravel (13 3-13 7') Light olive brown (2 5 Y 5/3) Low plasticity fines, no visible bedding, trace plant roots present, moist 3% Gravel, 3% Sand, 27% Silt, 67% Clay
NO RECOVERY	No recovery (13 7-19 5)
GM	Sandy Gravel with some silt and clay (19 5-20 0') Matrix light yellowish brown (2 5 Y 6/3) Gravel rounded to well rounded, c g, up to 4 cm in length Sand pred f g 74% Gravel, 12% Sand, 8% Silt, 6% Clay

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 24 50	GROUND ELEVATION (FT)	5900 40	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	751573	AREA PA, N OF PONDS	CASING DIAMETER (IN)	1 00	GEOLOGIST	K W PACHECO	46393
EAST	2085418	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	12/29/92	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COPLETED AS A PIEZOMETER RIG GEOLOGY BY K W PACHECO CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY
UNIFIED SOILS CLASSIFICATION OR ROCK TYPE
DESCRIPTION



NO RECOVERY — No recovery (18 5-22 0')

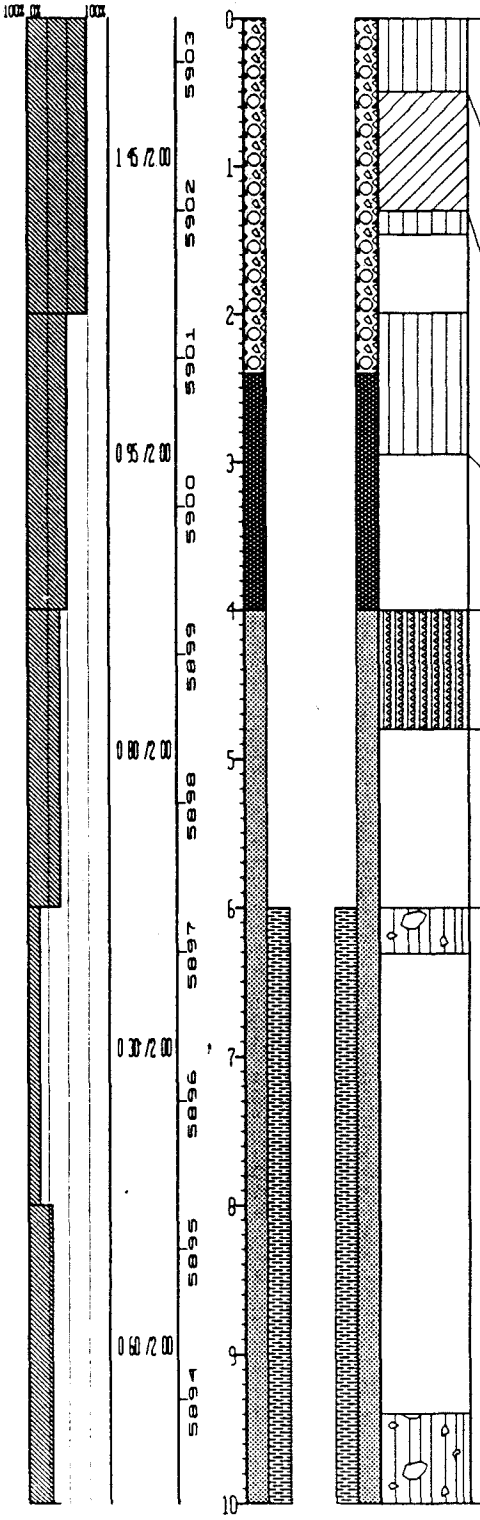
SILTY CLAYSTONE — Top of Bedrock at 22 0' Silty Claystone with trace sand (22 0-24 5') Light olive gray (5 Y 6/2) and yellowish brown (10 YR 5/8) Fe-oxide staining. Non-friable, sub-horizontal bedding present (especially from 23 5-23 8') Fe-oxide staining along bedding planes and micro fractures, trace scattered black carbonaceous material.
3% Sand, 27% Silt, 70% Clay

Total Depth Drilled 24 50 — Total Depth Casing 24 50
Bottom of Filter Pack 24 50 — Top of Seal 2 50

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 00	GROUND ELEVATION (FT)	5903 30	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	751557	AREA BUFFER ZONE	CASING DIAMETER (IN)	1 00	GEOLOGIST	K W PACHECO	46493
EAST	2085394	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	12/28/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIZOMETER RIG GEOLOGY BY K W PACHECO
CORE LOGGING BY J.C EVANS

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIZOMETER CONSTRUCTION
LITHOLOGY



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
ML	Sandy Silt with some gravel and clay (0 0-0 5'). Yellowish brown (10 YR 5/6) Sand f g to c g, pred f g, sub-rounded, gravel c g, low plasticity fines, moist 25% Gravel, 27% Sand, 29% Silt, 19% Clay
CL	Sandy Clay with some silt and trace gravel (0 5-1 3') Light gray (10 YR 7/2), low to medium plasticity fines Sand f g, sub-rounded, moist 3% Gravel, 22% Sand, 15% Silt, 60% Clay
ML	Sandy Silt with some clay (1 3-2 95') Very pale brown (10 YR 8/3) to white (10 YR 8/1), low plasticity fines Sand v f g to f g, sub-rounded, approx 5% small caliche nodules, interval sandier from 2 7-2 95' (possible displaced bedrock) 33% Sand, 47% Silt, 20% Clay No recovery (1 45-2 0')
NO RECOVERY	No recovery (2 95-4 0')
SM	Silty Sand with some clay (4 0-4 8') Very pale brown (10 YR 8/3) to white (10 YR 8/1) Sand bi-modal, f g and c g, angular 51% Sand, 34% Silt, 15% Clay
NO RECOVERY	No recovery (4 8-6 0')
GM	Silty Gravel with some sand and clay (6 0-12 8') Matrix pale brown (10 YR 6/3) Gravel pred c g, rounded to sub-rounded Sand f g to m g, moist, caliche present from 9 4-9 7' and 12 0-12 2' 32% Gravel, 22% Sand, 28% Silt, 18% Clay No recovery (6 3-9 4'), (10 75-12 0')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 18 00	GROUND ELEVATION (FT)	5903 30	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	751557	AREA BUFFER ZONE	CASING DIAMETER (IN)	1 00	GEOLOGIST	K W PACHECO	46493
EAST	2085394	LOCATOR NUMBER M11	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	12/28/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS A PIZOMETER RIG GEOLOGY BY K W PACHECO
CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 75 /2 00	5893	10				
					5892	11				
					5891	12				
				0 80 /2 00	5890	13			NO RECOVERY	No recovery (12 8-15 6')
					5889	14				
				0 40 /2 00	5888	15				
					5887	16			CLAYSTONE	Top of Bedrock at 15 6'. Claystone with some silt (15 6-16 8') Dark grayish brown (10 YR 4/2) Non-friable, no visible bedding, core badly broken, trace plant roots. Note Cobble at 15 8' was pushed down from overlying alluvium Trace 3% small caliche nodules 10% Silt, 90% Clay
				0 80 /2 00	5886	17			NO RECOVERY	No recovery (16 8-18 0')
					5885	18				Total Depth Drilled 18 00 Total Depth Casing 18 00 Bottom of Filter Pack 18.00 Top of Seal 2.40 Note Samples collected from 40193 utilized to characterize soil from 46493
					5884	19				
						20				

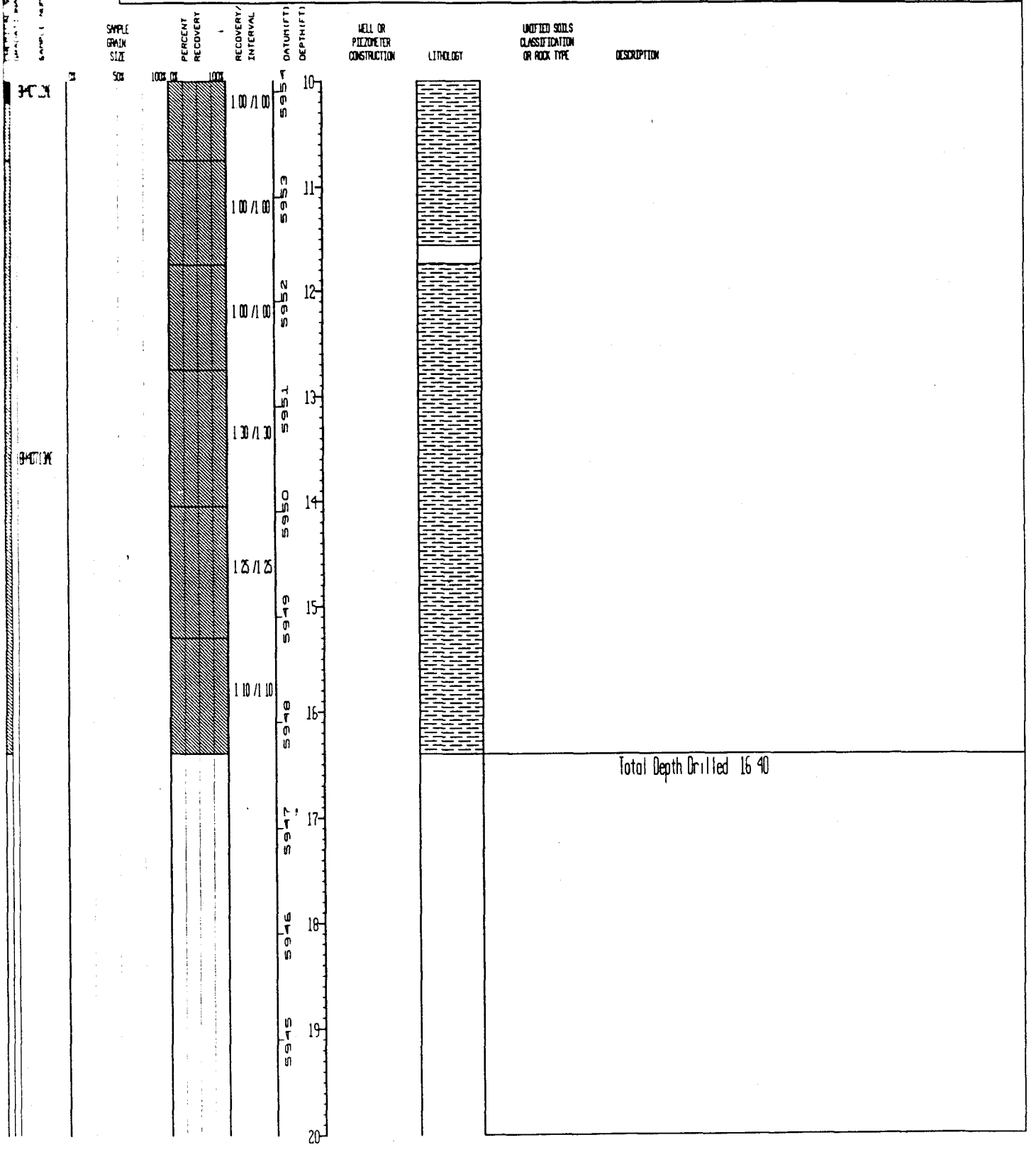
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 15 40	GROUND ELEVATION (FT)	5964 10	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750857	AREA PA, 207B NORTH POND	CASING DIAMETER (IN)		GEOLOGIST	J D BROOKSHIRE	46593
EAST	2085002	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	11/08/93	

REMARKS HOLLOW STEM AUGERING SAMPLES COLLECTED BY SPLIT SPOON SAMPLER DRIVEN 140 LB HAMMER BOREHOLE PLUGGED AND A BANDONED RIG GEOLOGY BY J D BROOKSHIRE CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
										Asphalt (0 0-0 7')
	AS910507AE SS910140AE			0 00 /0 80	5964	0				
										Surficial Soil Sample (0 7-0 8')
					5963	1			GM	Sandy Gravel with some silt and trace clay (0 8-1 4') Matrix dark brown (7 5 YR 3/3) Gravel c g, up to 6 cm in length, sub-rounded Sand f g to m g, pred quartz with trace feldspar and dark minerals, moist 50% Gravel, 30% Sand, 16% Silt, 4% Clay
	BH10700AE			1 85 /1 95	5962	2				
	BH10701AE								GM	Sandy Gravel with some silt and trace clay (1 4-4 25') Matrix brownish yellow (10 YR 6/6) Sand and gravel same as reference interval (0 8-1 4') above, dry 43% Gravel, 42% Sand, 11% Silt, 4% Clay No recovery (2 65-2 75')
	BH10785AE				5961	3				
	BH10786AE BH10702AE			1 50 /2 00	5960	4				
									NO RECOVERY	No recovery (4 25-4 75')
				0 90 /1 00	5959	5	11/08/93		GM	Sandy Gravel with some silt and trace clay (4 75-7 25') Matrix reddish yellow (7 5 YR 6/8) Gravel f g to c g, some cobbles up to 7 cm in length, gray quartzite and granite rock fragments Sand f g to m g, sub-angular, moist to wet Water encountered at 5 75' 45% Gravel, 39% Sand, 10% Silt, 6% Clay No recovery (5 65-5 75'), (6 45-6 75')
	BH10703AE									
	BH10704AE			0 70 /1 00	5958	6				
	BH10787AE									
				0 50 /1 00	5957	7				
									NO RECOVERY	No recovery (7 25-7 75')
	BH10705AE								CLAYSTONE	Top of Bedrock at 7 75' Claystone with some silt (7 75-16 4') Light olive brown (2 5 Y 5/3) to light brownish gray (2.5 Y 6/2) with yellowish brown (10 YR 5/8) mottling, no visible bedding Fe-oxide staining on fracture surfaces throughout interval, white caliche nodules present at 9 2' and 11 8' Slightly silty from 11 3-11 55' and 15 0-15 2', trace Mg-oxide staining, moist 10% Silt, 90% Clay No recovery (8 05-8 75'), (11 55-11 75')
				0 30 /1 00	5956	8				
				1 00 /1 00	5955	9				
	BH10711AE BH10790AE					10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 16 40	GROUND ELEVATION (FT)	5964 10	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750857	AREA PA, 207B NORTH POND	CASING DIAMETER (IN)		GEOLOGIST	J D BROOKSHIRE	46593
EAST	2085002	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	11/08/93	

REMARKS HOLLOW STEM AUGERING SAMPLES COLLECTED BY SPLIT SPOON SAMPLER DRIVEN 140 LB HAMMER BOREHOLE PLUGGED AND A BANDONED RIG GEOLOGY BY J D BROOKSHIRE CORE LOGGING BY J C EVANS



STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 80	GROUND ELEVATION (FT) 5963 20	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750953	AREA PA, 207B NORTH POND	CASING DIAMETER (IN)	GEOLOGIST J D BROOKSHIRE	46693
EAST	2085073	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 11/09/93	

REMARKS HOLLOW STEM AUGERING, SPLIT SPOON SAMPLER DRIVEN BY A 140 LB HAMMER BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J D. BROOKSHIRE
CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	AS4050BAE			0 00 /0 50	5963	0				Asphalt (0 0-0 3')
	SS4014UAE									Surficial Soil Sample (0 3-0 5')
						1			GC	Clayey Gravel with some sand and silt (0 5-1 2') Matrix dark reddish brown (2 5 YR 3/3) Gravel f g to c g, pred c g, sub-rounded, pred gray quartzite Sand f g to c g, sub-angular, pred quartz with some feldspar, low plasticity fines, moist 54% Gravel, 15% Sand, 10% Silt, 21% Clay
	BH0715AE									
	BH0716AE			1 15 /1 35	5962					
						2			GM	Sandy Gravel with some silt and clay (1 2-4 25') Matrix very pale brown (10 YR 7/4) gravel c g., up to 7 cm in length, sub-rounded Sand f g to c g, sub-angular to sub-rounded, pred quartz with some feldspar Moist 42% Gravel, 38% Sand, 12 % Silt, 8% Clay No recovery (1 65-2 25'), (3 15-3 25')
	BH0791AE			0 90 /1 00	5961					
						3				
	BH0717AE				5960					
	BH0792AE									
				1 00 /1 35		4				
					5959					
									NO RECOVERY	No recovery (4 25-4 6')
						5			GM	Sandy Gravel with some silt and trace clay (4 6-6 9') Matrix brownish yellow (10 YR 6/6) to pale yellow (2 5 Y 7/3) Gravel and sand same as reference interval (1 2-4 25') above Trace caliche present, especially as grain coating on gravel Moist 44% Gravel, 38% Sand, 13% Silt, 5% Clay No recovery (5 4-5 6'), (6 2-6 6')
				0 80 /1 00	5958					
	BH0718AE									
	BH0719AE			0 60 /1 00	5957	6				
						7			CLAYSTONE	Top of Bedrock at 6 9' Claystone (6 9-14 8') Light brownish gray (10 YR 6/2) to brownish yellow (10 YR 6/6) Contorted, high angle bedding visible in lower part of interval (contorted bedding due to claystone being squeezed post cobble into sampler) Caliche nodule at 7 3', Fe-oxide concretion at 11 6', trace Mg-oxide staining, moist 100% Clay No recovery (7 6-10 8')
	BH0726AE			1 00 /1 00	5956					
	BH0756AE									
				0 00 /1 20	5955	8				
						9				
				0 00 /1 00	5954					
						10				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 80	GROUND ELEVATION (FT) 5963 20	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER
NORTH	750953	AREA PA, 207B NORTH POND	CASING DIAMETER (IN)	GEOLOGIST J D BROOKSHIRE	46693
EAST	2085073	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 11/09/93	

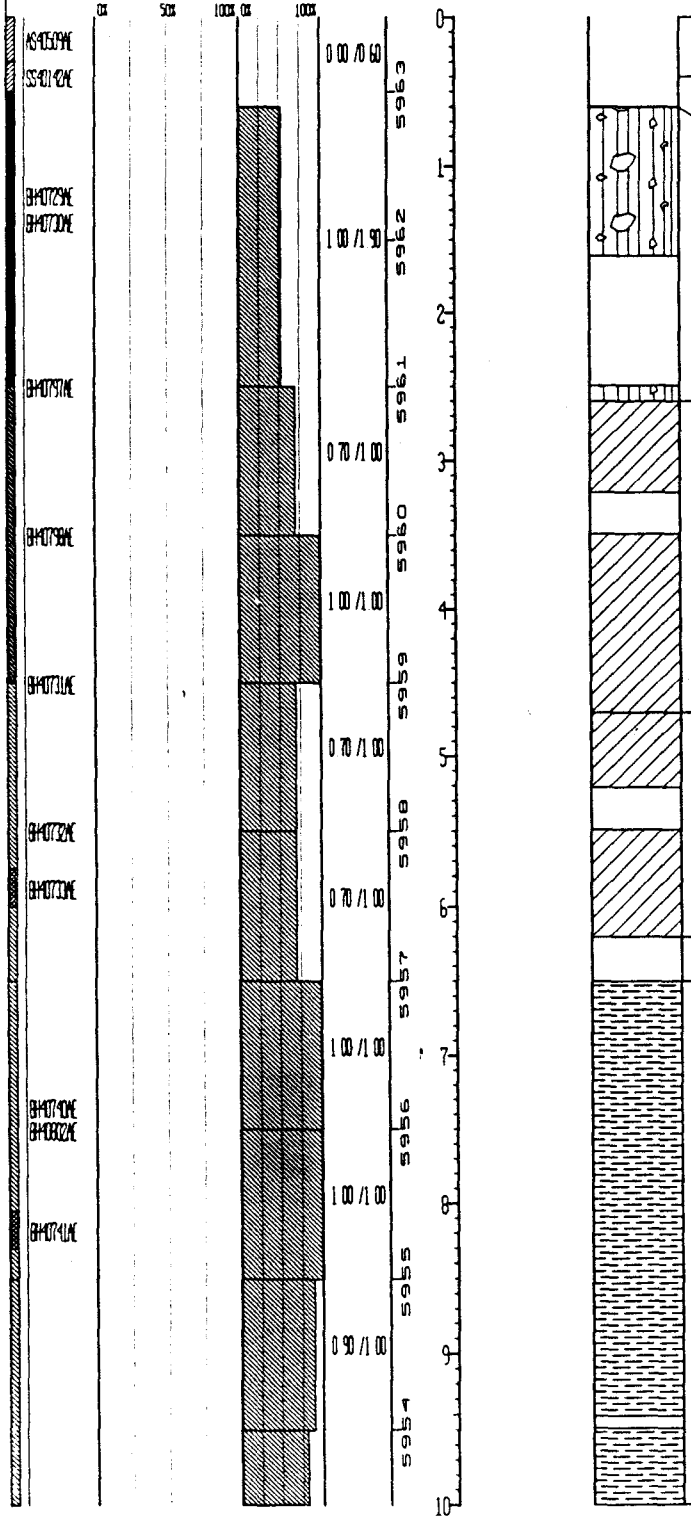
REMARKS HOLLOW STEM AUGERING, SPLIT SPOON SAMPLER DRIVEN BY A 140 LB HAMMER BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J D BROOKSHIRE
CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 00 /1 00	5953	10				
				1 00 /1 00	5952	11				
	GH0728NE			1 00 /1 00	5951	12				
				1 00 /1 00	5950	13				
				1 00 /1 00	5949	14				
	GH0727NE				5948	15				Total Depth Drilled 14 80
					5947	16				
					5946	17				
					5945	18				
					5944	19				
						20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14.70	GROUND ELEVATION (FT)	5963.50	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	750888	AREA PA, 207B NORTH POND	CASING DIAMETER (IN)		GEOLOGIST	J D BROOKSHIRE	46793
EAST	2035113	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	3.00	DATE DRILLED	11/10/93	

REMARKS SAMPLES COLLECTED WITH SPLIT SPOON SAMPLER DRIVEN WITH 140 LB HAMMER, AUGERS NOT USED BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J D BROOKSHIRE CORE LOGGING BY J C EVANS

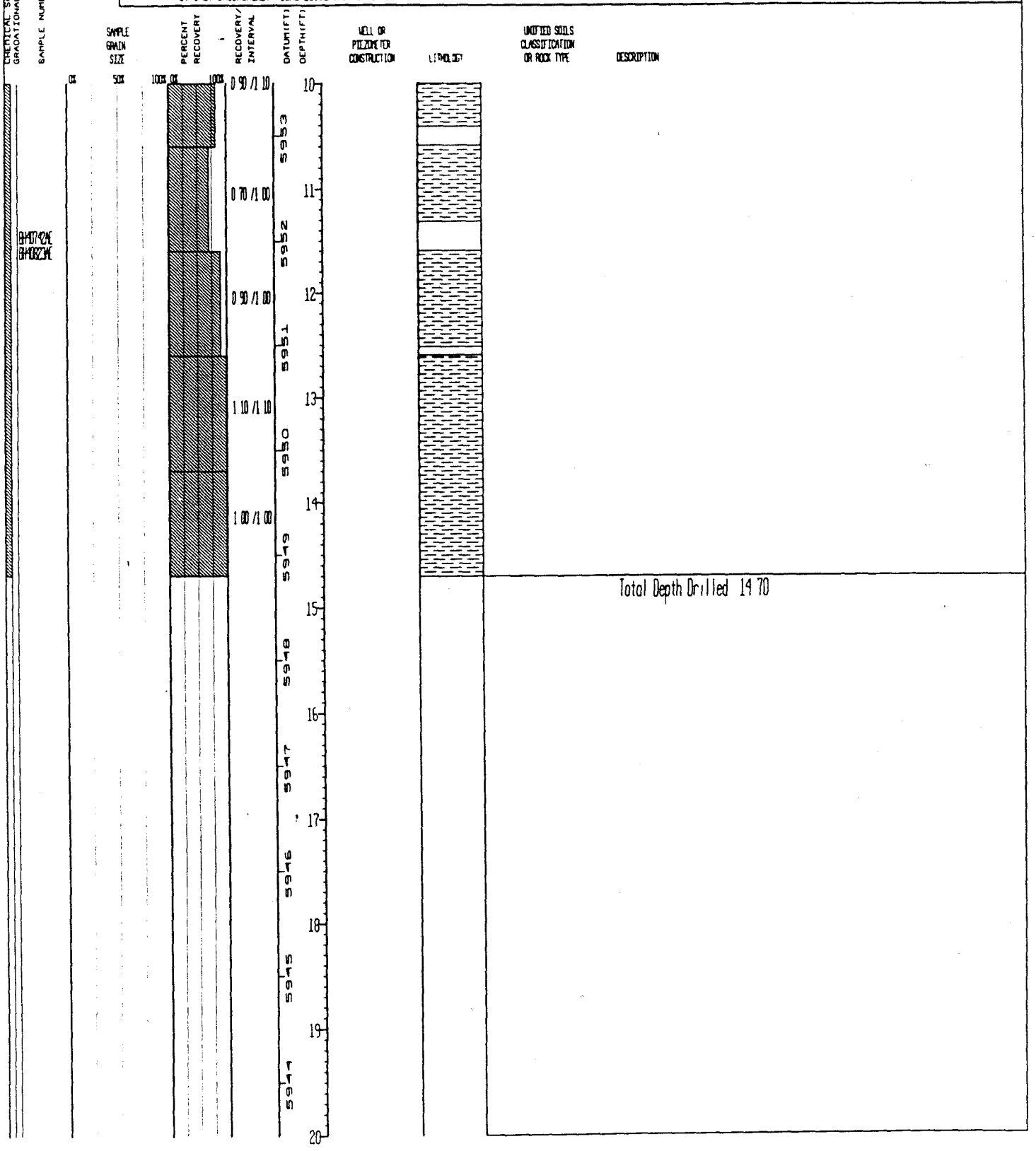
CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH / SAMPLE NUMBER / SAMPLE GRAIN SIZE (0% 50% 100%) / PERCENT RECOVERY (0% 100%) / RECOVERY/INTERVAL / DATUM (FT) / DEPTH (FT) / WELL OR PIEZOMETER CONSTRUCTION / LITHOLOGY / UNIFIED SOILS CLASSIFICATION OR ROCK TYPE / DESCRIPTION



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	Asphalt (0.0-0.4')
	Surficial soil sample (0.4-0.6')
GM	Sandy Gravel with some silt and clay (0.6-2.6') Matrix dark brown (7.5 YR 4/3) Gravel pred f.g., sub-rounded to angular (drilling fractured), pred gray quartzite Sand f.g. to c.g., low plasticity fines, dry 50% Gravel, 23% Sand, 16% Silt, 11% Clay No recovery (1.6-2.5')
CL	Gravelly Clay with some sand and silt (2.6-4.7') White (10 YR 8/1) to light gray (10 YR 7/1) Predominately (50%) caliche Gravel angular (drilling fractured), gray quartzite Sand f.g. to c.g., trace plant roots, low plasticity fines, dry 35% Gravel, 9% Sand, 6% Silt, 50% Clay No recovery (3.2-3.5')
CL	Clay with some silt and trace sand and gravel (4.7-6.2') White (10 YR 8/1) Predominately (85%) caliche, low plasticity fines, dry 4% Gravel, 3% Sand, 8% Silt, 85% Clay No recovery (5.2-5.5')
NO RECOVERY	No recovery (6.2-6.5')
CLAYSTONE	Top of Bedrock at 6.5' Claystone with some silt (6.5-14.7') Grayish brown (2.5 Y 5/2) with brownish yellow (10 YR 6/8) mottling Non-friable Caliche fracture filling and nodules from 6.5 to 10.0' Fe-oxide fracture filling from 12.6 to 14.4' Mg-oxide fracture filling at 13.1' Interval silty from 12.6 to 13.5' Crystalline fracture fill material (anhydrite?) from 9.5 to 9.7' Moist, core intensely fractured from 10.3 to 14.7' 5% Silt, 95% Clay No recovery (9.4-9.5'), (10.4-10.6'), (11.3-11.6') No recovery (12.5-12.6')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 70	GROUND ELEVATION (FT)	5963 50	PROJECT NUMBER	004-RFI/RI	LOG OF BORING NUMBER
NORTH	750888	AREA PA, 207B NORTH POND	CASING DIAMETER (IN)		GEOLOGIST	J D BROOKSHIRE	46793
EAST	2035113	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	3 00	DATE DRILLED	11/10/93	

REMARKS SAMPLES COLLECTED WITH SPLIT SPOON SAMPLER DRIVEN WITH 140 LB HAMMER, AUGERS NOT USED BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J D BROOKSHIRE CORE LOGGING BY J C EVANS



QC, JCE, 1-6-97 Pending Survey Data

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STATE PLANE COORDINATE	TOTAL DEPTH (FT) 12 50	GROUND ELEVATION (FT) 9999 90	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH 9999999	AREA PA, 207B CENTER POND	CASING DIAMETER (IN)	GEOLOGIST J D BROOKSHIRE	46893
EAST 99999999	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 3 00	DATE DRILLED 11/19/93	

REMARKS SAMPLES COLLECTED WITH SPLIT SPOON SAMPLER DRIVEN BY A 140 LB HAMMER, AUGERS NOT USED BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J D BROOKSHIRE CORE LOGGING BY J C EVANS

SAMPLE	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
									Asphalt (0 0-0 3')
									Surficial soil sample (0 3-0 5')
			0 00 /0 50	9999	0			GC	Sandy Gravel with some clay and silt (0 5-1 35') Matrix yellowish brown (10 YR 5/8) Gravel f g, angular, pred gray quartzite Sand f g to c g, dry, with approx 10% caliche, low plasticity fines 39% Gravel, 29% Sand, 13% Silt, 19% Clay
			1 30 /2 00	9998	1			GC	Sandy Gravel with some clay and silt (1 6-3 5') Matrix dark reddish brown (5 YR 3/3) Gravel c g, up to 9 cm in length, angular (drilling fractured) Sand f g to c g, sub-angular, dry 68% Gravel, 14% Sand, 7% Silt, 11% Clay No recovery (1 8-2 5')
			0 90 /1 10	9997	2				
			1 00 /1 00	9996	3			NO RECOVERY	No recovery (3 5-3 6')
			0 90 /1 00	9995	4			GM	Sandy Gravel with some silt and clay (3 6-4 6') Matrix yellowish brown (10 YR 5/8) Gravel f g to c g, approx 20% caliche, low plasticity fines, dry 54% Gravel, 27% Sand, 11% Silt, 8% Clay
			0 80 /1 00	9994	5			SM	Gravelly Sand with some silt and clay (4 6-6 15') Brownish yellow (10 YR 6/8) Sand f g to c g, pred m g, well graded, sub-angular to sub-rounded Gravel pred f g, approx 20% caliche, dry 35% Gravel, 36% Sand, 17% Silt, 12% Clay No recovery (5 5-5 6')
			0 90 /0 90	9993	6			GM	Sandy Gravel with some silt and clay (6 15-6 9') Same as reference interval (3 6-4 6') above No recovery (6 4-6 6')
			1 00 /1 00	9992	7			GM	Sandy Gravel with some silt and clay (6 9-7 5') Matrix brownish yellow (10 YR 6/8) Gravel c g, sand pred m g to f g, dry 47% Gravel, 32% Sand, 13% Silt, 8% Clay
			1 00 /1 00	9991	8			GM	Sandy Gravel with some silt and clay (7 5-8 5') Same as reference interval (3 6-4 6') above
			1 00 /1 00	9990	9	11/19/93		GM	Sandy Gravel with some silt and clay (8 5-11 2') Same as reference interval (6 9-7 5') above Moist to wet (water encountered at 9 6')
			1 00 /1 00	9989	10				

QC, JLE, 1-6-94 Pending Survey Data

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STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 50	GROUND ELEVATION (FT)	9999 90	PROJECT NUMBER	OU4-RFI/RI	LOG OF BORING NUMBER
NORTH	9999999	AREA PA, 207B CENTER POND	CASING DIAMETER (IN)		GEOLOGIST	J D BROOKSHIRE	46893
EAST	99999999	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	3 00	DATE DRILLED	11/19/33	

REMARKS SAMPLES COLLECTED WITH SPLIT SPOON SAMPLER DRIVEN BY A 140 LB HAMMER, AUGERS NOT USED BOREHOLE PLUGGED AND ABANDONED RIG GEOLOGY BY J D BROOKSHIRE CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50%)	PERCENT RECOVERY (100% 0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	BH4075OAE			1 00 /1 00		10				
				0 70 /1 00	9989	11				
									NO RECOVERY	No recovery (11 2-11 5')
	BH4075AAE BH4080BAE BH4075SAE			0 90 /1 00	9988	12			CLAYSTONE	Top of Bedrock at 11 5' (possibly as shallow as 11 0') Claystone with some silt (11 5-12 4') Light gray (10 YR 6/8) with brownish yellow (10 YR 6/8) mottling Non-friable, no visible bedding, wet 10% Silt, 90% Clay
					9987	13			NO RECOVERY	No recovery (12 4-12 5')
										Total Depth Drilled 12 50
					9986	14				
					9985	15				
					9984	16				
					9983	17				
					9982	18				
					9981	19				
					9980	20				

NOTE: SURVEY DATA PENDING

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STATE PLANE COORDINATE	TOTAL DEPTH (FT) 13 80	GROUND ELEVATION (FT)	9999 90	PROJECT NUMBER	004-RFI/RI
NORTH 9999999	AREA PA, 207B CENTER POND	CASING DIAMETER (IN)		GEOLOGIST	J C EVANS
EAST 99999999	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	3 00	DATE DRILLED	11/22/93

LOG OF BORING NUMBER **46993**

REMARKS SAMPLES COLLECTED BY SPLIT SPOON SAMPLER DRIVEN BY 140 LB HAMMER, AUGERS NOT USED BOREHOLE PLUGGED AND ABANDONED
RIG GEOLOGY AND CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE (0% 50% 100%)	PERCENT RECOVERY (0% 100%)	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
						0				Asphalt (0 0-0 8')
	AS4051LAE			0 00 /1 30	9999					
	SS4014AE SS4016AE					1				Surficial soil sample (0 8-1 3')
					9999				SM	Silty Sand with some gravel and clay (1 3-3 1') Brownish yellow (10 YR 6/6) Sand f g to c g, sub-angular, pred quartz, trace feldspar and hornblende, low plasticity fines, moist 20% Gravel, 50% Sand, 21% Silt, 9% Clay
	GH4075AE GH4080AE			1 80 /2 00		2				
	GH4082AE									
	GH4075BAE				9999					
	GH4089AE GH4081AE					3				
									NO RECOVERY	No recovery (3 1-3 3')
				0 70 /1 00	9999	4			GM	Sandy Gravel with some silt and trace clay (3 3-5 5') Matrix light gray (10 YR 7/2) Gravel f g to c g, up to 6 cm in length, sub-rounded, pred gray quartzite Sand m g to c g, sub-angular, caliche present at 5 5', low plasticity fines, moist 55% Gravel, 32% Sand, 8% Silt, 5% Clay No recovery (4 0-4 3'), (5 0-5 2')
	GH4079AE									
				0 70 /0 90	9999	5				
				0 80 /1 00	9994	6			CLAYSTONE	Top of Bedrock at 5 5' Claystone with some silt (5 5-13 1') Light olive brown (2 5 Y 5/3) with olive yellow (2 5 Y 6/6) mottling, no visible bedding, scattered caliche nodules from 5 5' to 9 0', Fe-oxide concretions at 5 9' and 6 3', traces of Mg-oxide staining throughout interval, moist 10% Silt, 90% Clay No recovery (6 0-6 2'), (7 0-7 2'), (7 7-8 3'), (9 3-9 5') No recovery (10 3-10 7'), (11 5-11 8')
	GH4076AE GH4081AE									
	GH4076BAE			0 80 /1 00	9993	7				
				0 50 /1 10	9992	8				
				1 00 /1 20	9991	9				
					9990	10				

UC, JCE, 1-7-97

NOTE: SURVEY DATA PENDING

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STATE PLANE COORDINATE	TOTAL DEPTH (FT) 13 80	GROUND ELEVATION (FT) 9999 90	PROJECT NUMBER 014-RFI/RI	LOG OF BORING NUMBER	
NORTH 9999999	AREA PA, 207B CENTER POND	CASING DIAMETER (IN)	GEOLOGIST J C EVANS	46993	
EAST 99999999	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 3 00	DATE DRILLED 11/22/93		

REMARKS SAMPLES COLLECTED BY SPLIT SPOON SAMPLER DRIVEN BY 140 LB HAMMER, AUGERS NOT USED BOREHOLE PLUGGED AND ABANDONED
RIG GEOLOGY AND CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	BH4770AC	0% 50% 100%	0% 100%	0 80 /1 20	9966	10				
				0 80 /1 10	9965	11				
					9964	12				
				1 30 /2 00	9963	13				
									NO RECOVERY	No recovery (13 1-13 8')
					9962	14				Total Depth Drilled 13 80
					9961	15				
					9960	16				
					9959	17				
					9958	18				
					9957	19				
					9956	20				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 9 30	GROUND ELEVATION (FT)	5964 70	PROJECT NUMBER	OU1-RFI/RI
NORTH	750656	AREA PA, 207B CENTER POND	CASING DIAMETER (IN)		GEOLOGIST	J D BROOKSHIRE
EAST	2085047	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	11/17/93

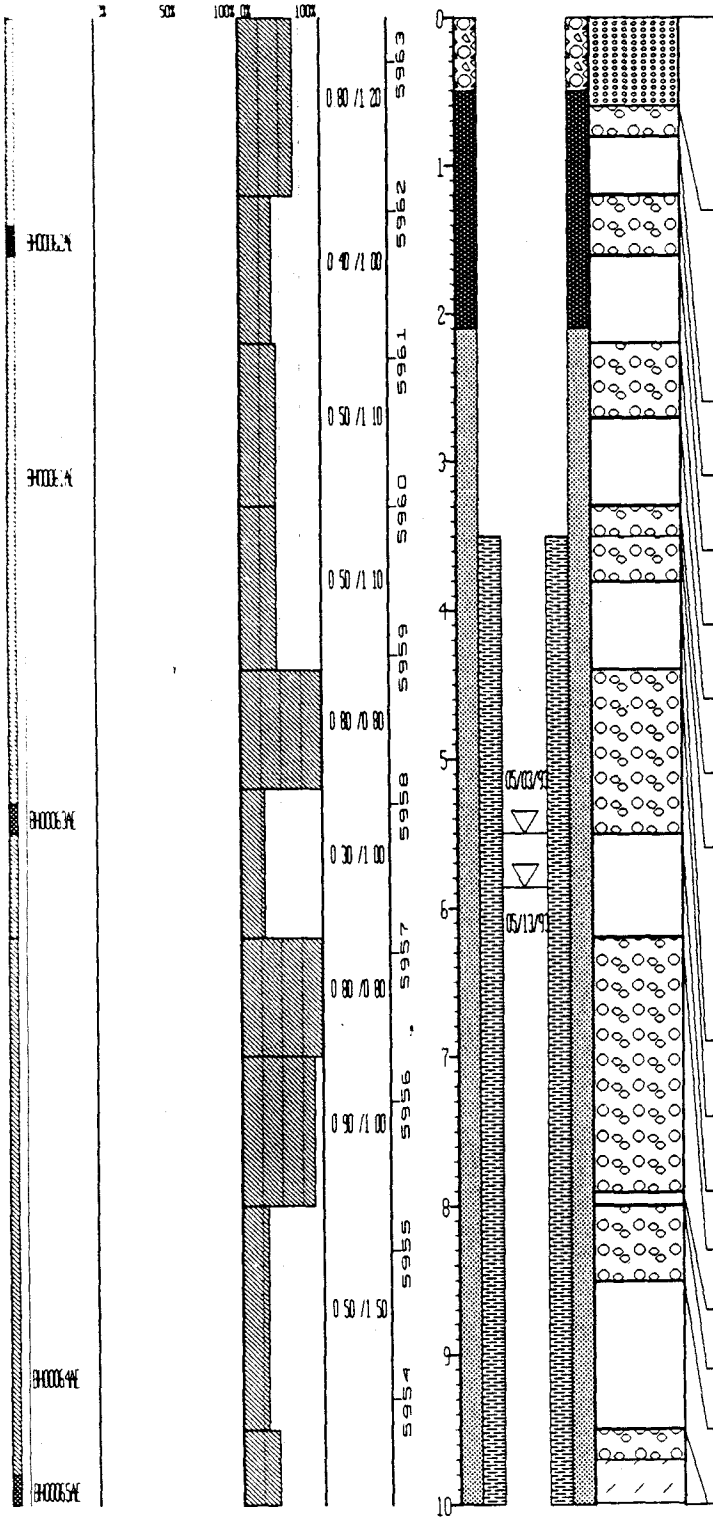
LOG OF BORING NUMBER 47093

REMARKS HOLLOW STEM AUGERING SAMPLES COLLECTED WITH SPLIT SPOON SAMPLER DRIVEN BY A 140 LB HAMMER BOREHOLE PLUGGED AND ABANDONED
RIG GEOLOGY BY J D BROOKSHIRE CORE LOGGING BY J C EVANS

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
						0				Asphalt (0 0-0 5')
				0 00 /0 70						Surficial soil sample (0 5-0 7')
	BS9051 2AE				5964				SM	Gravelly Sand with some silt and clay (0 7-1 2') Dark brown (7 5 YR 3/2) to yellowish brown (10 YR 5/6) Sand f g to c g, sub-angular to sub-rounded. Gravel f g, low plasticity fines, dry 31% Gravel, 42% Sand, 19% Silt, 8% Clay
	BS9011 5AE					1				
				1 50 /2 00	5963					
	BH0771AE									
	BH0772AE					2			GM	Sandy Gravel with some silt and clay (1 2-3 7') Matrix light gray (10 YR 7/2) Gravel c g, up to 6 5 cm in length, pred gray quartzite Sand f g to c g, abundant (30%) caliche from 2 7-3 4', low plasticity fines, dry 55% Gravel, 30% Sand, 9% Silt, 6% Clay No recovery (2 2-2 7')
	BH0815AE				5962					
	BH0824AE									
				1 00 /1 00		3				
	BH0773AE									
	BH0816AE				5961					
				1 10 /1 10		4			GM/gw	Sandy Gravel with trace silt and clay (3 7-4 8') Matrix very pale brown (10 YR 7/4) Gravel c g up to 6 cm in length, sub-rounded, pred gray quartzite Sand f g to c g well graded, dry 75% Gravel, 19% Sand, 5% Silt, 1% Clay
					5960					
				1 00 /1 00		5			GM/gw	Sandy Gravel with trace silt and clay (4 8-7 8') Matrix brownish yellow (10 YR 6/6) Gravel f g to c g, up to 7 cm in length Sand f g to c g, moist to wet, water encountered at 6 0' 65% Gravel, 26% Sand, 5% Silt, 4% Clay
	BH0774AE				5959		11/17/93			
				1 00 /1 00		6				
	BH0775AE									
	BH0817AE				5958					
						7				
				1 00 /1 00						
	BH0776AE				5957				NO RECOVERY	No recovery (7 8-9 8')
						8				
				0 00 /1 00						
					5956					
						9				
				0 00 /1 00						
					5955	10				Total Depth Drilled 9 80

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 50	GROUND ELEVATION (FT) 5963 30	PROJECT NUMBER OU4-WARP	LOG OF BORING NUMBER
NORTH	750804	AREA PA, Around Ponds	CASING DIAMETER (IN)	GEOLOGIST KWP/KRM	05093
EAST	2085231	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 12 00	DATE DRILLED 04/30/93	

REMARKS Replacement for old well no 2886 Hollow stem auger and conventional coring Rig geology by Ken Pacheco, core logging by Kerry Miyoshi Well completed as alluvial monitoring well



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SW	Gravelly SAND with some silt (0 0-0 6') Dark yellowish brown (10 YR 4/4), sand well graded, f g to c g, angular to sub-angular, pred quartz/feldspar, caliche present (HCl react), low plasticity fines, no visible bedding, caliche nodules, dry 17% Gravel, 73% Sand, 9% Silt, 1% Clay
GW	Sandy GRAVEL with some silt (0 6-3 5') Red (2 5 YR 4/6), sand well graded, f g to c g, angular to sub-angular, pred quartz/feldspar, trace caliche (slightly HCl react), low plasticity fines, no visible bedding, dry 47% Gravel, 45% Sand, 6% Silt, 2% Clay
	No recovery (0 8-1 2')
GW	Sandy GRAVEL with some silt (1 2-1 6') Same as above
	No recovery (1 6-2 2')
GW	Sandy GRAVEL with some silt (2 2-2 7') Same as above
	No recovery (2 7-3 3')
GW	Sandy GRAVEL with some silt (3 3-3 5') Same as above
GW	Sandy GRAVEL with trace silt (3 5-9 7') Yellowish brown (10 YR 5/8), sand well graded f g to c g, sub-angular to sub-rounded, pred quartz/feldspar Caliche present (HCl react), low plasticity fines, no visible bedding, dry 67% Gravel, 29% Sand, 4% Silt, trace Clay
	No recovery (3 8-4 4')
GW	Sandy GRAVEL with trace silt (4 4-5 5') Same as above
	No recovery (5 5-6 2')
GW	Sandy GRAVEL with trace silt (6 2-7 9') Same as above
	No recovery (7 9-8 0')
GW	Sandy GRAVEL with trace silt (8 0-8 5') Same as above
	No recovery (8 5-9 5')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 12 50	GROUND ELEVATION (FT) 5963 30	PROJECT NUMBER 004-WARP	LOG OF BORING NUMBER
NORTH	750804	AREA PA, Around Ponds	CASING DIAMETER (IN)	GEOLOGIST KWP/KRM	05093
EAST	2085231	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 12 00	DATE DRILLED 04/30/93	

REMARKS Replacement for old well no 2886 Hollow stem auger and conventional coring Rig geology by Ken Pacheco, core logging by Kerry Miyoshi Well completed as alluvial monitoring well

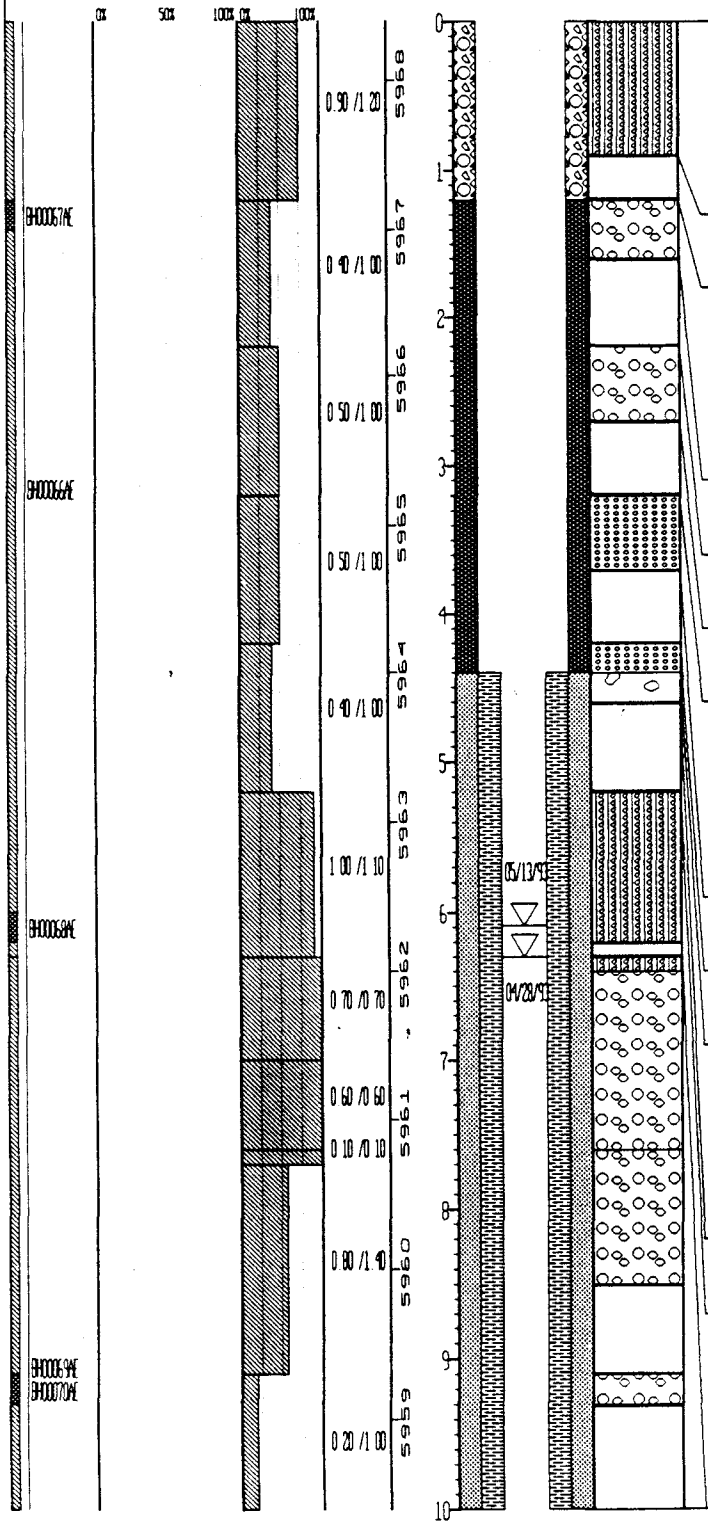
CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL (0 50 /1 10; 1 50 /1 90)
DATUM (FT) 5953 5952 5951 5950 5949 5948 5947 5946 5945 5944
DEPTH (FT) 10 11 12 13 14 15 16 17 18 19 20
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	No recovery (10 0-10 6')
SILTY SANDSTONE	Clayey Silty Sandstone (9 7-11 4') Light yellowish brown (10 YR 6/4), v f g to c g, poorly sorted, sub-angular to sub-rounded, pred quartz/feldspar, 2% porosity estimated, argillaceous cement, no caliche present, low friability, hard-dry, some Fe-oxide staining, no visible bedding 75% Sand, 18% Silt, 7% Clay
SILTY SANDSTONE	Clayey Silty Sandstone (11 4-12 1') Light yellowish brown (2 5 Y 6/3), v f g to c g, poorly sorted, sub-angular to sub-rounded, pred quartz/feldspar, 2% porosity estimated, argillaceous cement, no caliche present, highly friable, hard-dry, some Fe-oxide staining, no visible bedding 57% Sand, 34% Silt, 9% Clay
	No recovery (12 1-12 5')
	Total depth drilled 12 5' Total depth casing 12 5' Base of Filter 10 5'

Total Depth Drilled 12 50 Total Depth Casing 12 50
Bottom of Filter Pack 10 50 Top of Seal 0 50

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 10	GROUND ELEVATION (FT) 5968 40	PROJECT NUMBER OU4-WARP	LOG OF BORING NUMBER
NORTH	750484	AREA PM, 8-Pond Area	CASING DIAMETER (IN)	GEOLOGIST KWP/KRM	05193
EAST	2085225	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 04/28/93	

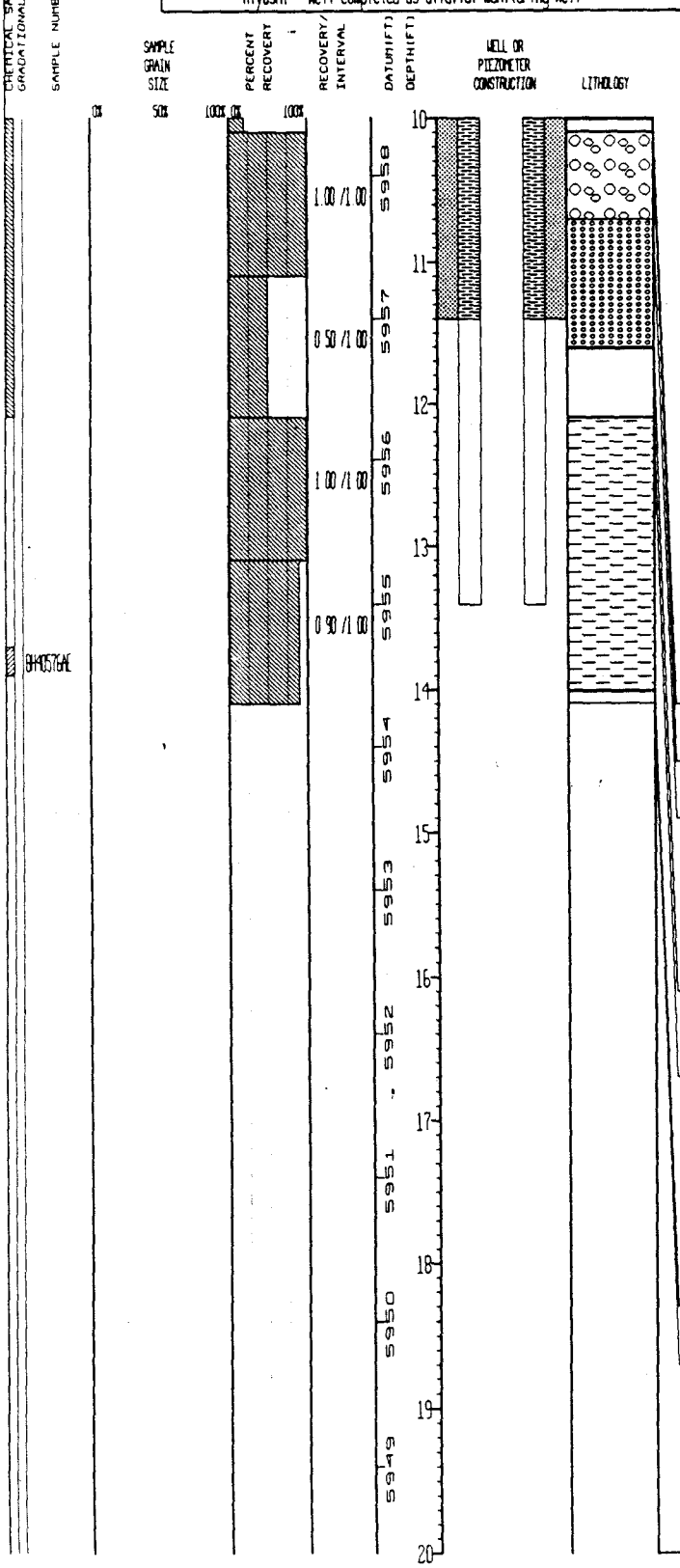
REMARKS Replacement for old well no 3787 Hollow stem auger and conventional coring Rig geology by Ken Pacheco, core logging by Kerry Miyoshi Well completed as alluvial monitoring well



Sample number	Unified Soils Classification or Rock Type	Description
	SM	Gravelly SAND with some silt (0 0-0 9') Yellowish brown (10 YR 5/4), sand poorly graded, v f g to c g, sub-rounded to rounded, pred. quartz/feldspar/caliche, low plasticity fines, no visible bedding, dry 27% Gravel, 54% Sand, 18% Silt, 1% Clay
		No recovery (0 9-1 2')
GH00067AE	GW	Sandy GRAVEL with some silt (1 2-1 6') Reddish brown (5 YR 4/4), sand well graded, v f g to c g, sub-angular to sub-rounded, pred quartz/feldspar, some caliche, no visible bedding, low plasticity fines, dry 61% Gravel, 32% Sand, 6% Silt, 1% Clay
		No recovery (1 6-2 2')
GH00066AE	GW	Sandy GRAVEL with some silt (2 2-2 7') Same as above
		No recovery (2 7-3 2')
	SW	Gravelly SAND with some silt (3 2-4 4') Weak red (10 YR 4/4), sand well graded, v f g to c g, sub-angular to sub-rounded, pred quartz/feldspar, no caliche, low plasticity fines, no visible bedding, dry-hard 22% Gravel, 67% Sand, 10% Silt, 1% Clay
		No recovery (3 7-4 2')
GH00068AE	SW	Gravelly SAND with some silt (4 2-4 4') Same as above
	GP	Sandy GRAVEL with trace silt (4 4-4 6') Yellowish brown (10 YR 5/6), sand poorly graded, v f g to c g, sub-angular to sub-rounded, pred quartz/feldspar, no caliche, low plasticity fines, no visible bedding, dry 61% Gravel, 33% Sand, 5% Silt, 1% Clay
		No recovery (4 6-5 2')
GH00069AE GH00070AE	SM	Silty SAND with some gravel (5 2-6 4') Very pale brown (10 YR 7/3), sand poorly graded, v f g to c g, sub-angular to sub-rounded, pred quartz/feldspar, abundant caliche, low plasticity fines, no visible bedding, dry 15% Gravel, 63% Sand, 20% Silt, 2% Clay

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 14 10	GROUND ELEVATION (FT) 5968 40	PROJECT NUMBER 014-WARP	LOG OF BORING NUMBER
NORTH	750484	AREA PM, 8-Pond Area	CASING DIAMETER (IN)	GEOLOGIST KWP/KRM	05193
EAST	2085225	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 04/28/93	

REMARKS Replacement for old well no 3787 Hollow stem auger and conventional coring Rig geology by Ken Pacheco, core logging by Kerry Miyoshi Well completed as alluvial monitoring well



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	No recovery (9 3-10 1')
GW	Sandy Gravel (10 1-10 7') Same as above
SW	Gravelly SAND with some silt (10 7-11 6') Brownish yellow (10 YR 6/6), sand well graded, v f g to c g, sub-angular to sub-rounded, no caliche present, interval previously wet, low plasticity fines, pred. quartz/feldspar, no visible bedding 35% Gravel, 52% Sand, 12% Silt, 1% Clay
	No recovery (11 6-12 1') Top of bedrock at 12 1'
SANDY CLAYSTONE	Sandy Claystone (12 1-14 0') Light yellowish brown (2 5 Y 6/4), sand poorly sorted, v f g to m g, sub-angular to sub-rounded, pred quartz/feldspar, dry, 2% porosity estimated, argillaceous cement, no caliche, some Fe-oxide staining, some organic material throughout interval, small friable zone at 12 9-13 1' 48% Sand, trace Silt, 52% Clay
	No recovery (14 0-14 1')
	Total depth drilled 14 1' Total depth casing 13 4' Base of Filter 11 4'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 10 30	GROUND ELEVATION (FT) 5980 70	PROJECT NUMBER 004-WARP	LOG OF BORING NUMBER
NORTH	750198	AREA PA, Around Ponds	CASING DIAMETER (IN)	GEOLOGIST KRM/KRM	05293
EAST	2084490	LOCATOR NUMBER [illegible]10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 05/12/93	

REMARKS Replacement for old well no P207489 Hollow stem auger and conventional coring Rig geology by Kerry Miyoshi and core logging by Kerry Miyoshi Well completed as alluvial monitoring well

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				0 80 /1 30	5980	0			SM	Silty SAND (0 0-0 8') Yellowish brown (10 YR 5/4), sand poorly graded, v f g to m g, sub-angular to sub-rounded, pred quartz/feldspar, trace caliche (slight HCl reaction), low plasticity fines, no visible bedding, dry, Fe-oxide staining, reworked bedrock, large rock at base begins next lithology 0% Gravel, 57% Sand, 41% Silt, 2% Clay
	BH00072AE			0 60 /0 90	5979	1				No recovery (0 8-1 3')
	BH00071AE			1 10 /1 30	5978	2			GW	Sandy GRAVEL with trace silt (1 3-3 2') Reddish brown (5 YR 4/4), sand well graded, v f g to c g, sub-angular to sub-rounded, pred quartz/feldspar, some caliche (HCl reaction), low plasticity fines, no visible bedding, dry 64% Gravel, 31% Sand, 4% Silt, 1% Clay
						3				No recovery (1 9-2 2')
				1 00 /1 00	5977	4			GW	Sandy GRAVEL with trace silt (2 2-3 [illegible] Same as above
	BH00073AE			0 50 /0 50	5976	5			GM	Sandy GRAVEL with some silt (3 2-5 2') Light yellowish brown (10 YR 6/4), sand well graded, v f g to c g, sub-rounded to rounded, pred quartz/feldspar, abundant caliche (high HCl react), low plasticity fines, no visible bedding, dry 54% Gravel, 33% Sand, 12% Silt, 1% Clay
				0 20 /0 20						
				0 80 /1 20	5975	6				No recovery (3 3-3 5')
									GM	Sandy GRAVEL with some silt (3 5-5 2') Same as above
					5974	7			GM	Sandy GRAVEL with some silt (5 2-6 6') Very pale brown (10 YR 7/3), sand well graded, v f to c g, sub-angular, subrounded, pred quartz/feldspar, abundant caliche (high HCl react), low plasticity fines, no visible bedding, dry 54% Gravel, 33% Sand, 12% Silt, 1% Clay
	BH00074AE			1 60 /2 80	5973	8				No recovery (6 0-6 4')
									GM	Sandy GRAVEL with some silt (6 4-6 6') Same as above Top of bedrock at 6 6'
					5972	9			SILTY SANDSTONE	Silty Sandstone (6 6-7 8') White (10 YR 8/2), v f g to c g, poorly sorted, subrounded, pred quartz/caliche/feldspar, 5% porosity estimated, argillaceous cement, high amount of caliche (HCl react), low friability, moist, some Fe-oxide staining, no visible bedding, fractures filled with caliche 58% Sand, 38% Silt, 4% Clay
	BH00075AE			1 00 /1 10	5971	10				

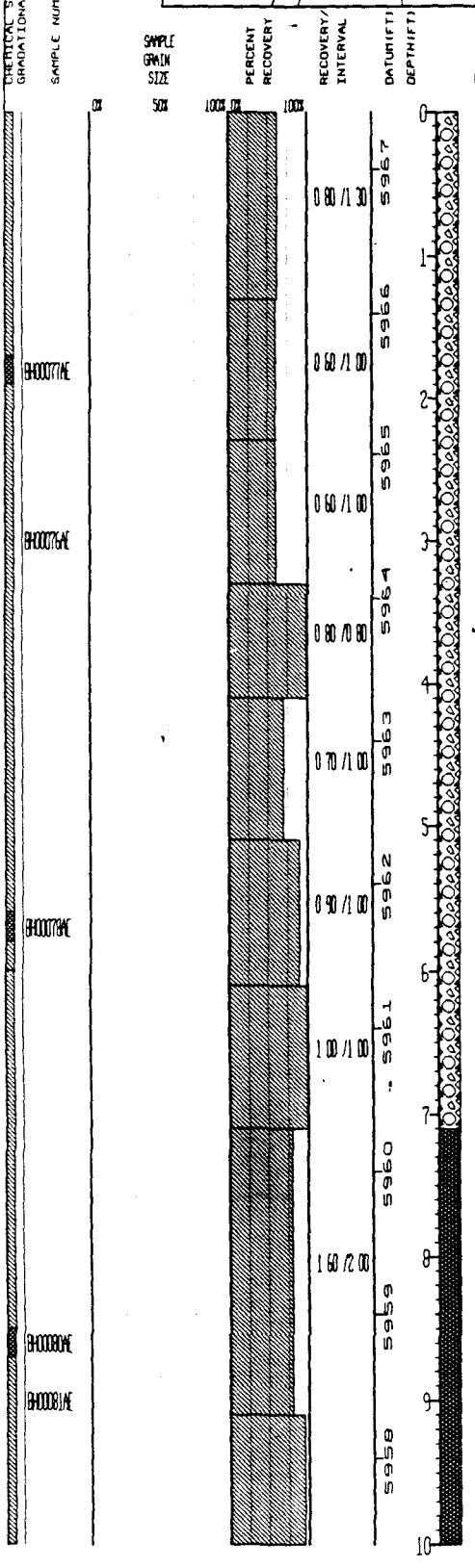
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 10 30	GROUND ELEVATION (FT) 5980 70	PROJECT NUMBER 0U4-WARP	LOG OF BORING NUMBER
NORTH	750198	AREA PA, Around Ponds	CASING DIAMETER (IN)	GEOLOGIST KRM/KRM	05293
EAST	2084490	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 05/12/93	

REMARKS Replacement for old well no P207489 Hollow stem auger and conventional coring Rig geology by Kerry Miyoshi and core logging by Kerry Miyoshi Well completed as alluvial monitoring well

SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/ INTERVAL	DATUM(FT)	DEPTH(FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
50%	100%	100%	5970, 5969, 5968, 5967, 5966, 5965, 5964, 5963, 5962, 5961	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20				SANDY SILTSTONE Sandy Siltstone (9 2-10 2') Same as above No recovery (10 2-10 3') Total depth drilled 10.3' Total depth casing 9 7' Base of filter 7 7'

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 29 10	GROUND ELEVATION (FT) 5967 40	PROJECT NUMBER 004-WARP	LOG OF BORING NUMBER
NORTH	750549	AREA PA, Around Ponds	CASING DIAMETER (IN)	GEOLOGIST KRM/KRM	05393
EAST	2085223	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 05/04/93	

REMARKS Replacement for old well no P2L0289 Hollow stem auger and conventional coring Rig geology by Kerry Miyoshi and core logging by Kerry Miyoshi Well completed as bedrock monitoring well



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SM	Silty SAND with some gravel (0 0-0 6') Dark reddish brown (5 YR 3/3) sand poorly graded, f g to m g, sub-angular to sub-rounded, pred quartz/feldspar/caliche, caliche present (HCl react), low plasticity fines, no visible bedding, dry 14% Gravel, 79% Sand, 4% Silt, 3% Clay
GW	Sandy GRAVEL with some silt (0 6-2 5') Dark reddish brown (5 YR 3/2), sand well graded, f g to c g, sub-angular to sub-rounded, pred quartz/feldspar/caliche, slight amount caliche present (HCl react), low plasticity fines, no visible bedding, dry 60% Gravel, 32% Sand, 6% Silt, 2% Clay
	No recovery (0 8-1 3')
GW	Sandy GRAVEL with some silt (1 3-1 9') Same as above
	No recovery (1 9-2 3')
GW	Sandy GRAVEL with some silt (2 3-2 5') Same as above
SW	Gravelly SAND with some silt (2 5-3 6') Dark red (2 5 YR 3/6), sand well graded, f g to c g, angular to sub-angular, pred quartz/feldspar/caliche, slight amount of caliche present (HCl react), low plasticity fines, no visible bedding, moist, sticky 28% Gravel, 62% Sand, 9% silt, 1% Clay
	No recovery (2 9-3 3')
SW	Gravelly SAND with some silt (3 3-3 6') Same as above
SP	Clayey SAND (3 6-4 8') White (10 YR 8/2), v f g to m g, poorly graded, sub-angular to sub-rounded, pred quartz/caliche, high amount caliche (HCl react), no visible bedding, dry, calcareous cement 8% Gravel, 75% Sand, trace Silt, 25% Clay
	No recovery (4 8-5 1')
SP	Clayey SAND (5 1-6 0') Same as above At 5 1-5 2' caliche mixed with slump
	No recovery (6 0-6 1')
SP	Clayey SAND (6 1-6 2') Same as above

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 24 10	GROUND ELEVATION (FT) 5967 40	PROJECT NUMBER 014-WARP	LOG OF BORING NUMBER
NORTH	750549	AREA PA, Around Ponds	CASING DIAMETER (IN)	GEOLOGIST KRM/KRM	05393
EAST	2085223	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 05/04/93	

REMARKS Replacement for old well no P210289 Hollow stem auger and conventional coring Rig geology by Kerry Miyoshi and core logging by Kerry Miyoshi Well completed as bedrock monitoring well

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
				2 00 /2 10	5957	10			SANDY SILTSTONE	Clayey Sandy Siltstone (9 1-10 6') Same as above
					5956	11			SANDY CLAYSTONE	Silty Sandy Claystone (10 6-13 2') Light yellowish brown (10 YR 6/4) V f g to f g, well sorted, sub-angular to sub-rounded, pred quartz/feldspar, 2% porosity estimated, argillaceous cement, some caliche (slight HCl react), low friability, some Fe-oxide staining, dry-moist, organic material at 13 2' 32% Sand, 27% Silt 41% Clay
				2 00 /2 00	5955	12				
					5954	13				
				1 90 /1 90	5953	14				No recovery (11 1-11 2')
	EH00084AE				5952	15			SANDY CLAYSTONE	Silty Sandy Claystone (11 2-13 2') Same as above
				2 00 /2 00	5951	16			SANDY CLAYSTONE	Silty Sandy Claystone (13 2-17 0') Ligh gray (2 5 Y 7/2), v f g to f g, well sorted, sub-angular to sub-rounded, pred. quartz/feldspar, 2% porosity estimated, argillaceous cement, trace caliche (trace HCl react), low friability, abundant Fe-oxide staining, dry-moist, 10 degree caliche filled fracture at 14 6', 80 degree Fe-oxide filled fracture at 16 0' 29% Sand, 21% Silt, 50% Clay
					5950	17			SANDY SILTSTONE	Clayey Sandy Siltstone (17 0-24 1') Light brownish gray (10 YR 6/2), v f to f g, well sorted, sub-angular to sub-rounded, pred quartz/feldspar, dry, estimated 5% porosity, argillaceous cement, very slightly calcareous (little HCl react), very friable, Fe-oxide staining, high amount of organic matter 39% Sand, 46% Silt, 15% Clay
				2 10 /2 10	5949	18				
					5948	19				
						20				

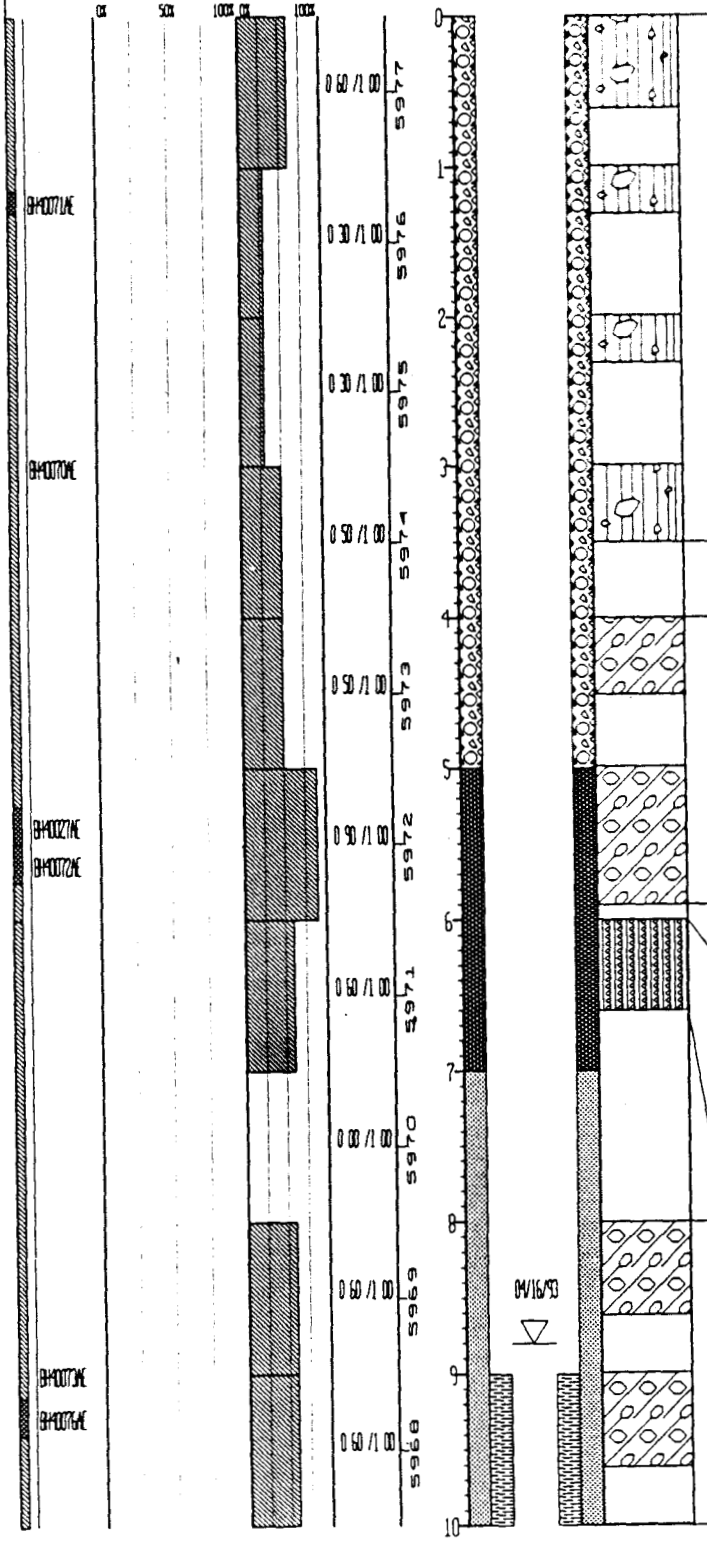
STATE PLANE COORDINATE		TOTAL DEPTH (FT) 24 10	GROUND ELEVATION (FT) 5967 40	PROJECT NUMBER OU4-WARP	LOG OF BORING NUMBER
NORTH	750549	AREA PA, Around Ponds	CASING DIAMETER (IN)	GEOLOGIST KRM/KRM	05393
EAST	2085223	LOCATOR NUMBER M10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 05/04/93	

REMARKS Replacement for old well no P210289 Hollow stem auger and conventional coring Rig geology by Kerry Miyoshi and core logging by Kerry Miyoshi Well completed as bedrock monitoring well.

CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE GRAIN SIZE	PERCENT RECOVERY	RECOVERY/INTERVAL	DATUM (FT)	DEPTH (FT)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
	BH00079AE	0% 50% 100%	0% 100%	2 00 /2 00	5947	20			SANDY SILTSTONE	Clayey Sandy Siltstone (17 0-24 1') Same as above
				0 90 /0 90	5946	21				
					5945	22				
				2 00 /2 00	5944	23				
					5943	24				Total depth drilled 24 1' Total depth casing 24 1' Base of filter 22 1'
					5942	25				
					5941	26				
					5940	27				
					5939	28				
					5938	29				
						30				

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 19 40	GROUND ELEVATION (FT)	5977 50	PROJECT NUMBER	014-RFI/RI	LOG OF BORING NUMBER
NORTH	750452	AREA SW Corner Pond 207A	CASING DIAMETER (IN)	1 00	GEOLOGIST	C D MURRAY	43893
EAST	2084655	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN)	8 00	DATE DRILLED	03/11/93	

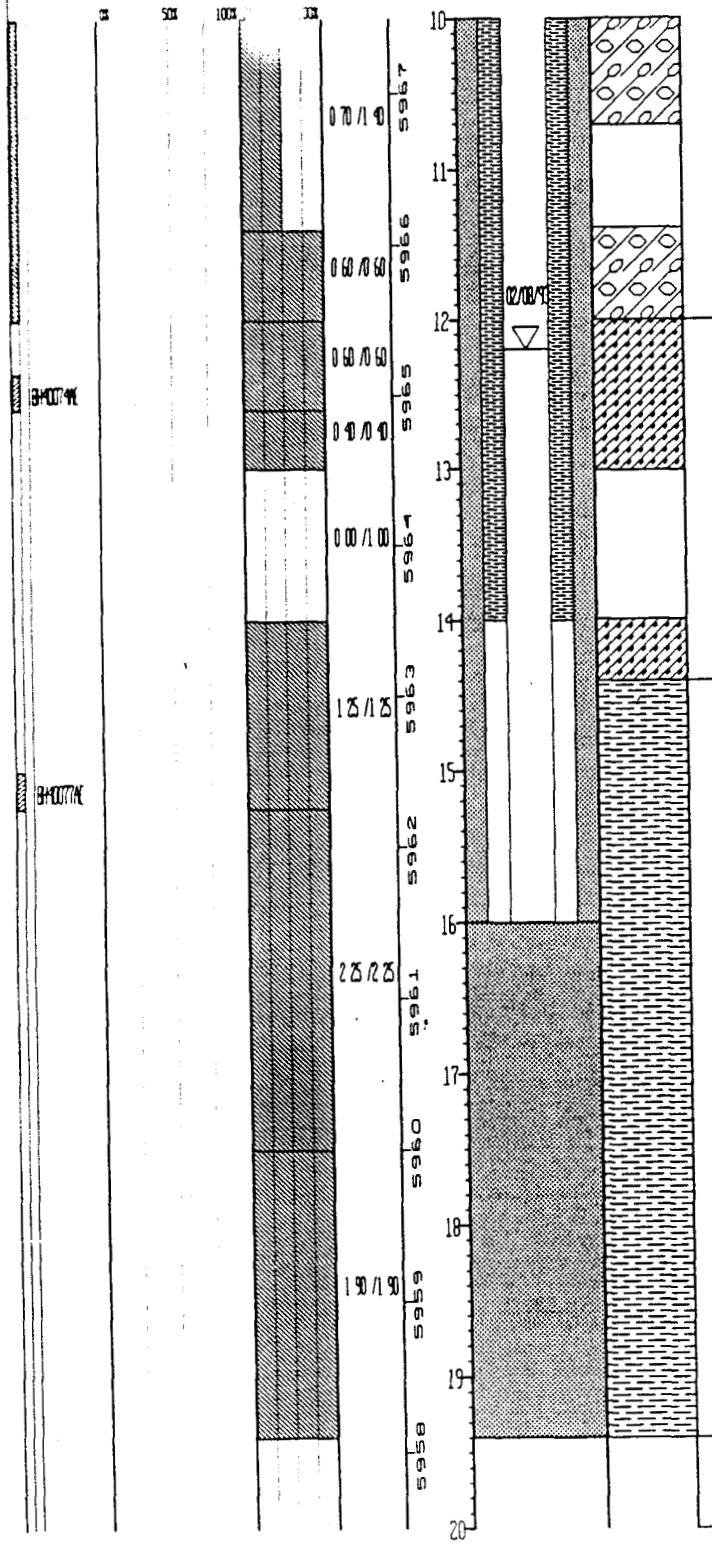
REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
GM	Sandy Gravel with some silt and trace of clay (0 0-3 5') Matrix brown (7 5 YR 5/2) Gravel and cobbles, well-rounded to angular (broken by drlg) Sand fine to coarse grained, angular to sub-angular Abundant qtz and feldspar, hornblend and biotite common, moist Gravel and Cobbles 75%, Sand 15%, Silt 8%, Clay 2% No recovery (0 6-1 0'), (1 3-2 0'), (2 3-3 0')
NO RECOVERY	No recovery (3 5-4 0')
GC	Sandy Gravel with some clay and trace silt (4 0-5 9') Gravel and cobbles, well rounded to angular (broken by drilling) Sand f g to c g, very angular to sub-angular, abundant quartz, moist Gravel 78%, Sand 10%, Silt 4%, Clay 8% No recovery (4 5-5 0')
NO RECOVERY	No recovery (5 9-6 0')
SM	Gravelly Sand with some silt and clay (6 0-6 6') Matrix light olive brown (2 5 Y 5/6) Gravel, sub-angular to sub-rounded, metamorphic grains common Sand f g to c g, sub-angular to sub-rounded, metamorphics common Low plasticity fines Moist Gravel 20%, Sand 56%, Silt 12%, Clay 12%
NO RECOVERY	No recovery (6 6-8 0')
GC	Sandy Gravel with some clay and trace silt (8 0-12 0') Matrix light yellowish brown (2 5 Y 6/3) Gravel and cobbles sub-rounded, 10-20 mm common Large cobbles broken by drilling Metamorphics common Sand f g to c g, angular to sub-angular quartz, common and metamorphics abundant Biotite common, moist Gravel 58%, Sand 29%, Silt 3%, Clay 10% No recovery (8 6-9 0'), (9 6-10 0'), (10 7-11 4')

STATE PLANE COORDINATE		TOTAL DEPTH (FT) 19 40	GROUND ELEVATION (FT) 5977 50	PROJECT NUMBER 004-RFI/RI	LOG OF BORING NUMBER
NORTH	750452	AREA SW Corner Pond 207A	CASING DIAMETER (IN) 1 00	GEOLOGIST C D MURRAY	43893
EAST	2084655	LOCATOR NUMBER L10	BOREHOLE DIAMETER (IN) 8 00	DATE DRILLED 03/11/93	

REMARKS HOLLOW STEM AUGER AND CONVENTIONAL CORING BOREHOLE COMPLETED AS PIEZOMETER RIG GEOLOGY AND CORE LOGGING BY C D MURRAY (AE)



UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
SC	Gravelly Sand with some clay and silt (12 0-14 4') Pale brown (10 YR 6/3) Gravel, 10 mm, pred metamorphics Sand f g to c g, sub-rounded, pred quartz, common metamorphics and some biotite and hornblend, low plasticity fines, wet Gravel 40%, Sand 42%, Silt 6%, Clay 12% No recovery (13 0-14 0')
CLAYSTONE	Top of Bedrock at 14 4' Claystone with a trace of silt (14 4-19 4') Light brownish gray (2 5 Y 6/2) with olive yellow (2 5 Y 6/6) mottling and staining Massive bedding Low plasticity, wet Silt 5%, Clay 95%

Total Depth Drilled 19 40 Total Depth Casing 16 00
Bottom of Filter Pack 16 00 Top of Seal 5 00

APPENDIX II.J

QA RECORDS TRANSMITTAL FORMS

40093

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- 022393-1

Page 1 of 3

To: EMD records center,
Project Manager, and

54 total pages counted JKH 2/23/93

verified: CLW 2/23/93

From: Rust Environment & Infrastructure (Formerly Applied Environmental)
No. 2 Garden Center, Ste. 200
Broomfield, Co. 80020-1730

Field Data File for borehole 40093

Number	Title	Date
Form 1.1B (1)	Prework Survey	1/12/93
Form 1.1B (2)	Post-Activity Survey	1/14/93
Form 1.1B (3)	Contamination Survey	1/14/93
Form 1.1B (4)	Contamination Survey	1/13/93
Form FO.3A	Equipment Decon/Wash Checklist (2 page)	[1/13/93] [1/14/93]
Form FO.4A	Heavy Equipment Decon/Wash Checklist (3 page)	1-19-93
Form FO.8A(1)	Field Monitoring Results of Cuttings or Core	1-13-93
Form FO.8A(2)	Field Monitoring Results of Cuttings or Core	1-14-93
Form FO.8C	Record of Drilling Fluids and Cuttings	1-14-93
Form FO.10A(1)	Drum Field Log	1-13-93
Form FO.10A(2)	Drum Field Log	1-13-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice K. Herrmann	Janice K. Herrmann	2/23/93

Received By EMD Document Custodian

Name (Print)	Signature	Date
Randy T. Ogg	Randy T. Ogg	2/23/93

(4011-910-0079-919)(FO.2REV.3)(05/18/92)

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- 022393-1

Field Data File for borehole 40093

Number	Title	Date
Form FO.10A (3)	Drum Field Log	1/13/93
Form FO.10C (1)	Contaminant Characterization Form for Gray Drums	1/13/93
Form FO.10C (2)	" " " " " "	1/13/93
Form FO.10C (3)	" " " " " "	1/13/93
Form FO.14C	Surface Soil Sample Collection Form	1/13/93
Form FO.14E (1)	Subsurface Soil Sample Collection Form	1/13/93
Form FO.14E (2)	" " " " "	1/13/93
Form FO.14E (3)	" " " " "	1/13/93
Form FO.14E (4)	" " " " "	1/14/93
Form FO.14E (5)	" " " " "	1/14/93
Form FO.16A	Results of Radiological Measurements in the Field (2 pages)	1/14/93
Form GT.1B	Preliminary Well-site Field Log (2 pages)	1/13/93 & 1/14/93
Form GT.2B	Hollow-Stem Auger Drilling Field Activities Report	1/13/93 & 1/14/93
Form GT.5A	Borehole Abandonment Field Activities Report	1/14/93
Form GT.8C	Surface Soil Sampling Field Activities Report	1/13/93
Form GT.9A (1)	Photoionization Detector Field Data Form	1/13/93
Form GT.9A (2)	Photoionization Detector Field Data Form	1/14/93
RGFLB	Rig Geologist Field Log book entries	1/13/93 & 1/14/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO-2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- 02L2393-1

Field Data File for borehole 40093

Number	Title	Date
CHKLST 40093	Internal Rust E&I documents for QA of file (2 pages)	3/19/93
HSTFLB (1)	Health and Safety Technician Field Logbook Entries (3 pages)	1/08/93
HSTFLB (2)	" " " " " " "	1/13/93 : 1/14/93
HSTFLB (3)	" " " " " " " (2 pages)	1/13/93 : 1/14/93
HSTFLB (4)	" " " " " " " (4 pages)	2/1/93 : 2/3/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-010794-1

Page 1 of 2

To: EMD records center,
Project Manager, and

From:

RUST Environment & Infrastructure
QA Record No: _____ Page 1 of 64

QA Checked By: LRD Date 1/7/94

Number	Title	Date
NOT Designated (2)	OU4 Daily Drilling Forms checklist	2-25-93
Form 1.1B	Contamination survey	1-19-93
Form 1.1B	Pre-work survey	1-20-93
Form 1.1B	Contamination survey	1-20-93
Form 1.1B	Contamination survey	1-21-93
Form 1.1B	Contamination survey	1-22-93
Form 1.1B	Post activity survey	1-22-93
Form FO.3A (2)	Equipment decon and wash checklist	2-19-93
Form FO.4A (3)	Heavy equipment decon/wash checklist	1-25-93
Form FO.8A	Field monitoring results at cuttings or core	1-20-93
Form FO.6C	Record of drilling fluids and cuttings	1-20-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-010794-1

RUST Environment & Infrastructure
QA Record No: _____ Page 2 of 61

QA Checked By: LRD Date 1/7/94

Number	Title	Date
Form FO.10A	Drum Field Log	1-20-93
Form FO.10C	Contaminated/Radioactivity for gray drums	1-20-93
Form FO.14C	Sample Collection form	1-20-93
Form FO.14E (3)	Sample Collection form	1-20-93
Form FO.16A	Results of radiological measurements in field	1-20-93
Form FO.16B	Results of radiological measurements in field	1-20-93
GT.1A	Rocky Flats Plant Borehole log	2-24-93
GT.1B	Preliminary well-site field log	1-20-93
GT.2A	Hollow stem Auger drilling field activities report	1-20-93
GT.3A	Surface Casing installation field activities report	3-17-94
GT.8A	Surface Soil data collection form	1-20-93
GT.8B	Surface Soil sampling field activities report	1-20-93
GT.8C	Surface Soil sampling field activities report	1-20-93
GT.9A	Photoionization detector field data form	1-20-93
not Designated	Borehole construction diagram	1-22-93
not Designated (2)	CAT monitoring system	1-21-93
HSTLB	Health & Safety tech. log book	1-21-93
RGFLB	RIG [illegible] field log book	1-19-93
Photo	core log of 40293	1-22-93

40693

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- JRH-0330937

Page 1 of 3

To: EMD records center,
Project Manager, and

From: Rust Environment and Infrastructure
#2 Garden Center Ste. 200
Broomfield, Co. 80020

Number	Title	Date
1.1B(1)	Prework Survey	12/15/93
1.1B(2)	Contamination Survey (2 pages)	12/15/93
1.1B(3)	" "	12/17/93
1.1B(4)	Postwork Survey	12/18/93
FO.3A	Equipt decon and Wash Checklist (2 pages)	12/15/93
FO.8A	Field Monitoring Results of Cuttings or Core	12/15/93
FO.8B	Verification of Organic Vapor Monitoring Results	12/15/93
FO.8C	Record of Drilling Fluid and Cuttings	12/15/93
FO.10A(1)	Drum Field Log Form	12/15/93
FO.10A(2)	Drum Field Log Form	12/15/93
FO.10C(1)	Contaminant Characterization Form for Gray Drums	12/15/93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Janice K. Hermann	Janice K. Hermann	3/30/93
Name (Print)	Signature	Date

Received By EMD Document Custodian

Randy T. Oss	Randy T. Oss	3/31/93
Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JLH-033093-1

Page 2 of 3

Number	Title	Date
FO.10C(2)	Contaminant Characterization Form for Gray Drums	12/15/92
FO.14C	Surface Soil Sample Form	12/15/92
FO.14E(1)	Subsurface Soil Sample Form	12/15/92
FO.14E(2)	" " " "	12/15/92
FO.14E(3)	" " " "	12/15/92
FO.14E(4)	" " " "	12/15/92
FO.16A	Results of Radiological Measurements in the Field	12/15/92
GT.1B	Preliminary well site log (2 pages)	12/15/92
GT.2A	Hollow-stem Auger Drilling Field Activities Report	12/15/92
GT.5A	Borehole Abandonment Field Activities Report	12/17/92
GT.8A	Surface Soil Data Collection Form	12/15/92
GT.8B	Surface Soil Sampling Field Activities Report	12/15/92
GT.8C	Surface Soil " " " "	12/15/92
GT.9A	Photoionization Detector Field Data Form	12/15/92
RGLB(1)	Rig Geologist Logbook Notes (2 pages)	12/17/92
RGLB(2)	" " " " (3 pages)	12/15/92 / 12/17/92
HSLB(1)	Health and Safety Logbook Notes (7 pages)	12/15/92 / 12-17-92 / 12-18-92

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-033093-1

Page 3 of 3

Number	Title	Date
HSLB(2)	Health and Safety Logbook Water (3 pages)	12-15-93 / 12-17-93
DLB	Drillers Log book (2 pages	

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRO-092293-1

To: EMD records center, Project Manager, and

From:

Engineering Science, Inc.
QA Record No: _____ Page 2 of 36

QA Checked By: LRO Date 12/29/93

Number	Title	Date
~~ESHS HT-1~~	~~File Checklist (Internal Document)~~ LRO	12/29/93
Form 1.1B	Contamination Survey	1-20-93
Form 1.1B	Post-Activity Survey	1-20-93
Form FO.8A	Field monitoring results of cuttings or core	1-19-93
Form FO.10A (3)	Drum Field Log Form	1-19-93
Form FO.10C (3)	Contaminant Characterization Form for Gray Drums	1-19-93
Form FO.14G	Well Installation Form	1-19-93
Form FO.16A	Results of Radiological Measurements in Field	1-19-93
Form ~~FO.~~ GT.1B (2)	Preliminary Well-Site Field Log	1-19-93
Form GT.2A	Hollow Stem Auger Drilling Field Activities	1-19-93
Form GT.3A	Surface Casing Installation Field Activities	3-17-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date

Received By EMD Document Custodian

Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

Engineering Science, Inc.
QA Record No:_____ Page 1 of 36

ATTACHMENT 2

QA Checked By: LRD Date 12/29/93

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-092293-1

Page 2 of 2

Number	Title	Date
Form GT.6A	Groundwater monitoring well & Piezometer report	1-19-93
Form GT.9A	Photoionization Detector Field data form	1-19-93
HSTFLB	Health & Safety tech. Field Log Book (D.B.)	1-19-93
RGFLB	Rig Geologist Field Log Book (K.M.)	1-19-93
Form FO.3A(2)	Equipment Decon/wash checklist and Record	1-19-93
Form FO.8C	Record of Drilling Fluids and Cuttings	1-20-93
Form GT.8A (2)	Rocky Flats Plant Borehole Log	1-19-93

45593

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- LRD-092293-1

Page ___ of ___

To: EMD records center,
Project Manager, and

Engineering Science, Inc.
QA Record No: _____ Page 1 of 8

From:

QA Checked By: LRD Date 12/29/93

Number	Title	Date
~~[illegible]~~	~~File check sheet is [illegible] document~~	LRD 12-29-93
Form GT.2A	Hollow Stem Auger Drilling activities report	3-22-93
Form GT.3A	Protective Casing installation field activities report	4-28-93
Form GT.6A	Groundwater Monitoring Well + Piezometer report	3-22-93
RGFLB	Rig Geologist Field log book (C.M.)	3-22-93
Form FO.14G	RFEDS Well installation Form	3-22-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

45793

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- LRD-01069 4-1

Page 1 of 2

To: EMD records center,
Project Manager, and

From:

RUST Environment & Infrastructure
QA Record No: _____ Page 1 of 28

QA Checked By: LRD Date 1/6/94

Number	Title	Date
Not Designated (3)	OU4 Daily Drilling Forms Checklist	3-25-93
Form LPB	Contamination Survey	3-18-93
Form FO.8A	Field monitoring results of Cuttings or Core	3-17-93
Form FO.8C	Record of drilling fluids and cuttings	3-18-93
Form FO.10A	Drum field log form	3-18-93
Form FO.10C	Contaminant characterization for gray drums	3-18-93
Form FO.14C	Sample Collection Form	3-18-93
Form FO.14E (3)	Sample Collection Form	3-18-93
Form FO.14G	RFEDS Well installation form	3-18-93
Form FO.16A	Results of Radiological measurements in field	3-17-93
Form GT.1A	Rocky Flats Borehole log	6-4-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

4593

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

RUST Environment & Infrastructure
QA Record No: _____ Page 2 of 28

QA Checked By: LRD Date 1/6/94

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- LRD-010694-1

Page 2 of 2

Number	Title	Date
Form GT.1B	Preliminary well site field log	3-18-93
Form GT.2A	Hollow Stem Auger drilling field activities report	3-18-93
Form GT.3A	Protective casing installation field activities report	4-26-93
Form GT.3A	Surface casing installation field activities report	3-18-93
~~Form GT.3A~~	~~Protective casing installation field activities report~~	~~3-17-93~~ LRD 1-6-94
Form GT.6A	Groundwater monitoring well & Piezometer report	3-18-93
Form GT.8A	Surface soil data collection form	3-18-93
Form GT.8B	Surface Soil Sampling field activities report	3-18-93
Form GT.8C	Surface Soil Sampling field activities report	3-18-93
Form GT.9A	Photoionization detector field data form	3-18-93
RGFLB	Rig Geologist field log book	3-18-93

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- 022393-1 Page 1 of 3

To: EMD records center, Project Manager, and

54 total pages counted JKH 2/23/93
verified: CLW 2/23/93

From: Rust Environment & Infrastructure (Formerly Applied Environmental)
No. 2 Garden Center, Ste. 200
Broomfield, Co. 80020-1730

Field Data File for borehole 40093

Number	Title	Date
Form 1.1B (1)	Prework Survey	1/12/93
Form 1.1B (2)	Post-Activity Survey	1/14/93
Form 1.1B (3)	Contamination Survey	1/14/93
Form 1.1B (4)	Contamination Survey	1/13/93
Form FO.3A	Equipment Decon/Wash Checklist (2 page)	[1/13/93] [1/14/93]
Form FO.4A	Heavy Equipment Decon/Wash Checklist (3 page)	1-19-93
Form FO.8A(1)	Field Monitoring Results of Cuttings or Core	1-13-93
Form FO.8A(2)	Field Monitoring Results of Cuttings or Core	1-14-93
Form FO.8C	Record of Drilling Fluids and Cuttings	1-14-93
Form FO.10A(1)	Drum Field Log	1-13-93
Form FO.10A(2)	Drum Field Log	1-13-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Janice K. Herrmann — Janice K. Herrmann — 2/23/93
Name (Print) — Signature — Date

Received By EMD Document Custodian

Randy T. Ogg — Randy T. Ogg — 2/23/93
Name (Print) — Signature — Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-022593-1

Page 1 of 3

To: EMD records center,
Project Manager, and

counted 60 pages AW 2/25/93
verified JKH 2/25/93

From: Rust Environment and Infrastruce (formerly Applied Environmen
2 Garden Center #200
Broomfield, CO 80020-1730

FIELD DATA FILE FOR 40193

Number	Title	Date
ECHKSHT1 (2pp)	File Checksheet (Internal Document)	2/24/93
Form 1.1B(1)	Contamination Survey	1/7/93
Form 1.1B (2)(2pp)	Contamination Survey	1/6/93
Form FO.3A (1)(2pp)	Equipment Decontamination/Wash Checklist Record	1/5/93 & 1/6/93
Form FO.3A(2)(2pp)	Equipment Decontamination/Wash Checklist Record	1/5/93
Form FO.8a	Field Monitering Resuts of Cuttings or Core	1/6/93
Form FO.8c(Rev2)	Record of Drilling Fluids & Cuttings	1/6/93
Form FO.10A(Rev2)(1)	Drum Field Log Form	1/7/93
Form FO.10C (Rev2)(1)	Contaminant Characterization Form For Gray Drums	1/7/93
Form FO.10A(Rev2)(2)	Drum Field Log Form	1/6/93
Form FO.10C(Rev2)(2)	Contaminant Checkterization Form For Gray Drums	1/6/93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Janice K. Herrmann	Janice K. Herrmann	2/25/93
Name (Print)	Signature	Date

Received By EMD Document Custodian

Randy T. Ogg	Randy T. Ogg	2/25/93
Name (Print)	Signature	Date

(4011-910-0079-910)(FO2REV.3)(05/18/92)

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JRH-022593-1 Page 2 of 3

FIELD DATA FILE FOR 40193

Number	Title	Date
Form FO.10A(Rev2)(3)	Drum Field Log Form	1/6/93
Form FO.10C(Rev2)(3)	Contaminant Characterization Form for Gray Drums	1/6/93
Form FO.10A(Rev2)(4)	Drum Field Log Form	1/6/93
Form FO.10C(Rev2)(4)	Contaminant Characterization Form for Gray Drums	1/6/93
Form FO.10A(Rev2)(5)	Drum Field Log Form	1/6/93
Form FO.10C(Rev2)(5)	Contaminant Characterization Form for Gray Drums	1/6/93
Form FO.14C	US Department of Energy Sample Collection Form	1/5/93
Form FO.14G	Well Installation Form	1/7/93
Form FO.14E(1)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(2)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(3)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(4)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(5)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(6)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(7)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(8)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(9)	US Department of Energy Sample Collection Form	1/6/93
Form FO.14E(10)	US Department of Energy Sample Collection Form	1/6/93

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JRH-022593-1 Page 3 of 3

FIELD DATA FILE FOR 40193

Number	Title	Date
Form FO.14E (11)	US Department of Energy Sample Collection Form	1/6/93
Form FO.16A (Rev 2)	Results of Radiological Measurement in the Field	1/6/93
Form FO.16B (Rev 2)	Results of Radiological Measurement in the Field	2/24/93
Form GT.1B (3pp)	Rocky Flats Plant Borehole Log	1/6/93
Form GT.2A (Rev 0)	Hollow-Stem Auger Drilling Field Activities Report	1/6/93
Form GT.6A (Rev 2)	Groundwater Monitoring Well & Piezometer Report	1/7/93
Form GT.8A (Rev 2)	Surface Soil Data Collection Form	1/5/93
Form GT.8B (Rev 0)	Surface Soil Sampling Field Activities Report	1/5/93
Form GT.8C (Rev 2)	Surface Soil Sampling Field Activities Report	1/5/93
Form GT.9A (Rev 2)	Photoionization Detector Field Data Form	1/6/93
RGFLB (1) (3pp)	Rig Geologist Field Log Book	1/4/93
RGFLB (2) (2pp)	Rig Geologist Field Log Book	1/7/93
HSTFLB (1) (2pp)	Health & Safety Technician Field Log Book	1/5/93
HSTFLB (2) (2pp)	Health & Safety Technician Field Log Book	1/6/93
HSTFLB (3) (3pp)	Health & Safety Technician Field Log Book	1/7/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JRH-022593-2

Page 1 of 3

To: EMD records center,
Project Manager, and

Counted 51 pages JKH 2/25/93
counted 51 pages KM 2/25/93

From: Rust Environment and Infrastructure (formerly Applied Environmental
2 Garden Center #200
Broomfield, CO 80020-1730

FIELD DATA FILE FOR 40393

Number	Title	Date
Form 1.1B (1)	Pre Work Survey	1/27/93
Form 1.1B (2)	Post Activity Survey	2/2/93
Form 1.1B (3)	Contamination Survey	1/29/93
Form 1.1B(4)(App)	Contamination Survey	2/1/93
Form FO.8C (Rev2)	Record of Drilling Fluids and Cuttings	1/28/93
Form FO.10C (Rev2)(1)	Contaminant Characterization Form for Gray Drums	1/29/93
Form FO.10A (Rev2)(1)	Drum Field Log Form	1/29/93
Form FO.10C (Rev2)(2)	Contaminant Characterization Form for Gray Drums	1/29/93
Form FO.10A (Rev2)(2)	Drum Field Log Form	1/29/93
Form FO.10C (Rev2)(3)	Contaminant Characterization Form for Gray Drums	1/29/93
Form FO.10A (Rev2)(3)	Drum Field Log Form	1/29/93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Janice K. Herrmann	Janice K. Herrmann	2/25/93
Name (Print)	Signature	Date

Received By EMD Document Custodian

Randy T. Ogg	Randy T. Ogg	2/25/93
Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-022593-2 Page 2 of 3

FIELD DATA FILE FOR 40393

Number	Title	Date
Form FO.8A(2pp)	Equipment Decontamination/Wash Checklist & Record	1/28/93
Form FO.8A	Field Monitoring Results of Cuttings & Core	1/29/93
Form FO.14C	Sample Collection Form	1/28/93
Form FO.14E(1)	Sample Collection Form	1/29/93
Form FO.14E(2)	Sample Collection Form	1/29/93
Form FO.14E(3)	Sample Collection Form	1/29/93
Form FO.14E(4)	Sample Collection Form	1/29/93
Form FO.14E(5)	Sample Collection Form	1/29/93
Form FO.16A(Rev3)	Results of Radiological Measurements in Field	1/29/93
Form FO.16B(Rev3)	Results of Radiological Measurements in Field	2/22/93
Form GT.1B(Rev2)(2pp)	Preliminary Well-Site Field Log	1/29/93
Form GT.2A(Rev2)	Hollow-Stem Auger Drilling Field Activities Rpt	1/29/93
Form GT.8A(Rev2)	Surface Soil Data Collection Form	1/28/93
Form GT.8B(Rev2)	Surfaces Soil Sampling Field Activities Rpt	1/28/93
Form GT.8C(Rev2)	Surface Soil Sampling Field Activities Rpt	1/28/93
Form GT.9A(Rev2)	Photoionization Detector Field Data Form	1/29/93
FLCHKSHT1(2pp)	File Checksheet	2/24/93
BAT 1 (2pp)	BAT Groundwater Monitoring System	1/30/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-022593-2.

Page 3 of 3

FIELD DATA FILE FOR 40393

Number	Title	Date
BAT2	BAT Groundwater Monitoring System	1/30/93
V2MB1	Vadose Zone Monitoring Borehole Construction-Solar Ponds	2/5/9
RGFLB (3pp)	Rig Geologist Field Log Book	1/29/93
V2FLB (3pp)	Vadose Zone Field Log Book	2/2/93
HSTFLB(1)(2pp)	Health & Safety Technician Field Log Book	1/27/93
HSTFLB(2)(4pp)	Health & Safety Technician Field Log Book	2/1/93

Field Copy

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-032493-1

To: EMD records center,
Project Manager, and

From: Rust Environment & Infrastructure
#2 Garden Center Ste. 200
Broomfield Co. 80020

FIELD DATA FILE FOR 40493

Number	Title	Date
Form 1.1B	Contamination Survey	1/8/93
Form FO.3A	Equipment Decon/Wash Checklist (2 pages)	1/8/93
Form FO.4A	Heavy Equip Decon/Wash Checklist (3 pages)	1/13/93
Form FO.8A	Field Monitoring Results of Cuttings or Core	1/8/93
Form FO.10A	Drum Field Log Form	1/8/93
Form FO.10C	Contaminant Characterization Form for Gray Drums	1/8/93
Form FO.14C	Surface Soil Sample Collection Form	1/7/93
Form FO.14E(1)	Subsurface Soil Sample Collection Form	1/8/93
Form FO.14E(2)	" " " " "	1/8/93
Form FO.14E(3)	" " " " "	1/8/93
Form FO.9B	Verification of Organic Vapor Monitoring Results	1/8/93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice K. Hermann	Janice K. Hermann	3/24/93

Received By EMD Document Custodian

Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-032493-1

Page 2 of 2

FIELD DATA FILE FOR 40493

Number	Title	Date
FO.8C	Record of Drilling Fluids and Cuttings	1/8/93
FO.16A	Results of Radiological Measurements in the Field	1/8/93
GT.1B	Preliminary Well-site Field Log	1/8/93
GT.2A	Hollow-stem Auger Drilling Field Activities Report	1/8/93
GT.3A	Surface Casing Installation Field Activities	1/8/93
GT.5A	Borehole Abandonment Field Activities	1/8/93
GT.8A	Surface Soil Data Collection Form	1/7/93
GT.8B	Surface Soil Sampling Field Activities Report	1/7/93
GT.8C	Surface Soil Sampling Field Activities Report	1/7/93
# DLB	Drillers Log book (4 pages)	1/8/93
# G LB	Geologist Log book (2 pages)	1/8/93
# H SLB(1)	Health & Safety Log book(1) (4 pages)	2/1/93 & 2/2/93
H SLB(2)	" " " (6 pages)	1/7/93 & 1/8/93

(4011-910-0079-910)(FO2REV3)(05/18/92)

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- JKH-032293-1

Page 1 of ~~4~~ 3 JKH 3-29-93

To: EMD records center,
Project Manager, and

From: Rust Environment and Infrastructure

FIELD DATA FILE FOR 40593

Number	Title	Date
1.1B(1)	Contamination Survey	1/22/93
1.1B(2)	Prework Survey	1/22/93
1.1B(3)	Contamination Survey	1/25/93
1.1B(4)	Contamination Survey (2 pages)	1/26/93
1.1B(5)	Contamination Survey (5 pages)	1/28/93
1.1B(6)	Post-Activity Survey	2/2/93
FO.3A	Equipment decon / wash checklist record (2 pages)	1/24/93
FO.4A	Heavy Equip decon / wash checklist record (3 pages)	1/25/93
FO.8A(1)	Field monitoring results of cuttings or core (1 page)	1/27/93
FO.8A(2)	" " " " " " " (2 pages)	1/26/93
FO.8C	Record of Drilling Fluids and Cuttings	1/22/93 / 1/29/93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice K. Hormann	Janice K. Hormann	3/22/93

Received By EMD Document Custodian

Name (Print)	Signature	Date
Randy T. Ogg	Randy T. Ogg	3/26/93

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-082293-1 Page 2 of 3

FIELD DATA FILE - 40593

Number	Title	Date
FO.10A (1)	Drum Field Log Form	1/27/93
FO.10C (1)	Contaminant Characterization for Gray Drums	1/27/93
FO.10A (2)	Drum Field Log Form	1/26/93
FO.10C (2)	Contaminant Characterization for Gray Drums	1/26/93
FO.10A (3)	Drum Field Log Form	1/26/93
FO.10A (4)	" " " "	1/26/93
FO.10C (4)	Contaminant Characterization for Gray Drums	1/27/93
FO.10C (3)	" " " " "	1/26/93
FO.10A (5)	Drum Field Log Form	1/27/93
FO.10C (5)	Contaminant Characterization Form for Gray Drums	1/27/93
FO.14C	Surface Soil Sample Collection Form	1/22/93
FO.14E (1)	Subsurface Soil Sample Collection Form	1/26/93
FO.14E (2)	Subsurface Soil Sample Collection Form	1/26/93
FO.14E (3)	" " " " "	1/27/93
FO.14E (4)	" " " " "	1/27/93
FO.14E (5)	" " " " "	1/27/93
FO.14E (6)	" " " " "	1/26/93
FO.14E (7)	" " " " "	1/26/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKH-032293-1

Page 3 of ___

FIELD DATA FILE FOR 40593

Number.	Title	Date
FO.14E(8)	Subsurface Sample Collection Form	1/26/93
FO.14E(9)	Subsurface Sample Collection Form	1/26/93
FO.14E(10)	" " " "	1/26/93
FO.14E(11)	" " " "	1/26/93
FO.14E(12)	" " " "	1/26/93
FO.14E(13)	" " " "	1/26/93
FO.14E(14)	" " " "	1/26/93
FO.14E(15)	" " " "	1/27/93
FO.14E(16)	" " " "	1/27/93
FO.14E(17)	" " " "	1/26/93
(2 pages) FO.16A(1) ~~FO.14E(18)~~ JKH 3-22-93	Results of Radiological Measurements in the Field (2 pages)	1/26/93
FO.16A(2 pages)	" " " " " " "	1/27/93
FO.16B	" " " " " " "	1/26/93
GT.6B(3 pages)	Preliminary Well-site Field Log (3 pages)	1/26/93 / 1/27/93
GT.2A(1)	Hollow-Stem Auger Drilling Field Activities Report	1/26/93
GT.2A(2)	Hollow-Stem Auger Drilling Field Activities Report	1/27/93
GT.3A	Surface Casing Installation Field Activities Report	1/27/93
GT.6A	Groundwater Monitoring Well and Piezometer Report	1/27/93

(4011-910-0079-910)(FO2REV.3)(05/18/92)

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKH-032293-1 Page 4 of ___

FIELD DATA FILE FOR 40593

Number	Title	Date
GT.8A	Surface Soil Data Collection Form	1/22/93
GT.8C	Surface Soil Sampling Field Activities Report	1/22/93
GT.8B	Surface Soil Sampling Field Activities Report	1/22/93
GT.9A	Photoionization Detector Field Data Form (2 pages)	1/26/93
BGMS(1)	BAT Groundwater Monitoring Sigation (3 pages)	1/26/93
BGMS(2)	" " " " (2 pages)	1/27/93
BGMS(3)	" " " " (2 pages)	1/27/93
VFLB(1)	Vadose Zone log book notes (5 pages) 1/24/93 1/27/93	1/25/93 1/26/93 1/27/
VFLB(2)	Vadose Zone Logbook notes (6 pages) 1/26/93	1/25/93 1/26/93
HSLB(1)	Health & Safety Logbook notes (2 pages)	1/22/93
DLB(1)	Drillers Logbook (2 pages)	1/22/93
HSLB(2)	Health & Safety Log book notes (14 pages) 1/26/93	1/27/93 1/28/93 1/29/93
RGLB	Rig Geologist Log book notes (9 pages) 1/25/93	1/26 1/22/93 1/29/9
HSLB(3)	Health & Safety Log book notes (2 pages)	1/25/93
HSLB(4)	Health & Safety Log book notes (3 pages)	1/25/93 1/28/93
VFLB(3)	Vadose Zone log book notes	3/19/93
GT.9H	PID Data Form (2 pages)	1/26/93

Field Copy

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-032593-1

To: EMD records center,
Project Manager, and

From: Rust Environment : Infrastructure
#2 Garden Center
Broomfield, Co. 80020

FIELD DATA FILE FOR 40693

Number	Title	Date
Form 1.1B (1)	Prework Survey	2/25/93
Form 1.1B(2)	Contamination Survey	2/26/93
Form 1.1B(3)	Post-Activity Survey	3/2/93
FO.3A	Equipment/Decon/Wash Check list (2 pages)	2/26/93
FO.4A	Heavy Equip Decon/Wash Check list (3 pages)	3/1/93
FO.8A	Field Monitoring Results of Cuttings or Core	2/26/93
FO.8C	Record of Drilling Fluids and Cuttings	2/26/93
FO.10A	Drum Field Log Form	2/26/93
FO.10C	Contamination Characterization Form for Gray Drums	2/26/93
GT.2A	Hollow-stem Auger Drilling Field Activities Report	2/26/93
FO.14C	Surface Soil Sample Collection Form	2/25/93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice K. Herrmann	Janice K. Herrmann	3/24/93

Received By EMD Document Custodian

Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-032593-1

FIELD DATA FILE FOR 40693

Number	Title	Date
FO.14E(1)	Subsurface Soil Sample Form	2/26/93
FO.14E(2)	" " " "	2/26/93
FO.14E(3)	" " " "	2/26/93
FO.16A	Results of Radiological Measurements in the Field	2/26/93
FO.16B	" " " " " " "	2/26/93
GT.8C	Surface Soil Sampling Field Activities Report	2/25/93
GT.9A	Photoionization Detector Field Data Form	2/26/93
GT.8A	Surface Soil Data Collection Form	2/25/93
GT.8B	" " Sampling Field Activities Report	2/25/93
GT.1B	Preliminary Well-site Field Log	2/26/93
VZMBCD	Vadose Zone Monitoring Borehole Construction Diagram	2/26/93
BGMS	BAT Groundwater Monitoring System	2/26/93
DLB	Drillers Logbook Notes	2/25/93 / 2/26/93
RGLB	Rig Geologist Logbook Notes (4 pages)	2/25/93 / 2/25/93 / 2/26/9
VZLB	Vadose Zone Logbook Notes	2/26/93
HSLB	Health and Safety Logbook Notes (5 pages)	2/25/93 / 2/26/93 / 3/2/9

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-061693-1 Page 1 of 3

To: EMD records center,
Project Manager, and

From: Rust Environmental & Infrastructure
2 Garden Center #200
Broomfield Co, 80020-1730

FIELD DATA FILE FOR 40793

Number	Title	Date
ECHKSHT 1	File checksheet (Internal document	
Form 1.1B	Pre work survey	2-25-93
Form 1.1B	Contamination Survey	3-1-93
Form 1.1B (2 pg.)	Contamination Survey	3-2-93
Form FO.3A (2 pg.)	Equipment decon/wash checklist and record	3-2-93
Form FO.3A (2 pg.)	"	3-1-93
Form FO.8A	Field monitoring results of Cuttings or Core	3-1-93
Form FO.8A	"	3-2-93
Form FO.10A (2)	Drum field log form	3-1-93
Form FO.10C (2)	Contaminant Characterization Form for Grey Drums	3-1-93
Form FO.14C	U.S. DOE Sample Collection form	2-25-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Lee DLUG		6-16-93

Received By EMD Document Custodian

Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-061693-1

Page 2 of 3

FIELD DATA FILE FOR 40793

Number	Title	Date
Form FO.14E (5)	U.S. DOE Sample Collection form	3-1-93
Form FO.14E (4)	"	3-2-93
Form FO.16A	Rusults of Radiological measurements in Field	3-2-93
Form FO.16A	"	3-1-93
Form FO.16B	Results of Radiological Measurements in The Field	3-1-93
Form FO.16B	"	3-2-93
Form ~~FO~~ LRD GT.1B	Preliminary Well-Site Field Log	3-1-93
Form GT.1B (2)	"	3-2-93
Form GT.2A	Hollow-Stem Auger Drilling Field Activities Report	3-1-93
Form GT.2A	"	3-2-93
Form GT.3A	Protective Casing installation Field activities Report	4-26-93
Form GT.6A	Groundwater Monitoring Well & Piezometer Report	4-26-93
Form GT.8A	Surface soil data collection Form	2-25-93
Form GT.8B	Surface soil sampling Field activities Report	2-25-93
Form GT.8C	Surface soil sampling field activities report	2-25-93
Form GT.9A	Photoionization detector field data form	3-1-93
Form GT.9A	"	3-2-93
Figure 2	Vadose Zone monitoring Borehole construction Diagram Solar Ponds-004	4-7-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-061693-1

Page 3 of 3

FIELD DATA FILE FOR 40793

Number	Title	Date
not designated	BAT Groundwater monitoring system form	3-1-93
not designated	"	3-2-93
not designated	BAT in situ permeability test printout	3-1-93
not designated	BAT in situ permeability test printout	3-2-93
RGFLB (7)	Rig Geologist field log book (K.M.)	2-24-93
RGFLB (2)	" (E.L.)	3-1-93
HSTFLB (6)	Health and Safety tech. field log book (D.B.)	3-1-93

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-061793-1 Page 1 of 3

To: EMD records center,
Project Manager, and

From: Rust Environmental • Infrastructure
2 Garden Center #200
Broomfield Co. 80020-1130

FIELD DATA FILE FOR 40993

Number	Title	Date
Form 1.1B	Prework Survey	2-26-93
Form 1.1B	Contamination Survey	2-26-93
Form 1.1B (4)	Contamination Survey	3-3-93
Form 1.1B	Contamination Survey	3-4-93
Form 1.1B	Contamination Survey	3-8-93
Form 1.1B	Contamination Survey	4-9-93
Form 1.1B	Contamination Survey	4-16-93
Form 1.1B	Contamination Survey	5-12-93
Form FO.3A	Equipment decon/wash checklist and record	3-3-93
Form FO.3A	Equipment decon/wash checklist and record	3-5-93
Form FO.4A	Heavy Equipment decon/wash checklist & record	3-10-93
FCHKSHT 1	File Check sheet Internal document	

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-061793-1 Page 2 of 3

FIELD DATA FILE FOR 40993

Number	Title	Date
Form FO.8A (2)	Field monitoring results of cuttings or Core	3-3-93
Form FO.8B	Verification of Organic Vapor monitoring results	3-3-93
Form FO.8C	Record of Drilling fluids & cuttings	3-5-93
Form FO.10A (4)	Drum Field Log Form	3-3-93
Form FO.10A (2)	Drum Field Log Form	3-5-93
Form FO.10C (4)	Contaminant characterization - Grey drums	3-3-93
Form FO.10C (2)	Contaminant Characterization - Grey drums	3-5-93
Form FO.14C (2)	Surface Soil sample form	3-26-93
Form FO.14E (7)	Subsurface Soil Sample Form	3-3-93
Form FO.14E (4)	Subsurface Soil Sampling Form	3-5-93
Form FO.16A	Results of Radiological Measurments in the field	3-3-93
Form FO.16B	Results of Radiological Measurements in the field	3-5-93
Form ~~FO~~ LRD GT.1A	Rocky Flats Plant Borehole Log	3-23-93
Form GT.1A (3)	Rocky Flats Plant Borehole Log	4-2-93
Form GT.1B (2)	Preliminary Well-site Field Log	3-3-93
Form GT.1B (2)	Preliminary Well-site Field Log	3-5-93
Form GT.2A	Hollow stem Auger Drilling Field activities report	3-3-93
Form GT.3A	Surface Casing Installation field activities report	4-29-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-061793-1

Page 3 of 3

FIELD DATA FILE FOR 40993

Number	Title	Date
Form GT.8B	Surface Soil Sampling field activities report	3-3-93
Form GT.8C	Surface Soil Sampling field activities report	3-3-93
Form GT.9A	Photoionization detector field data form	3-3-93
NOT Designated	BAT Groundwater monitoring form	3-3-93
NOT Designated	BAT In situ Permeability test printout	3-3-93
RGFLB	Rig Geologist Field Log Book (J.E.)	3-5-93
RGFLB	" (C.M.)	3-5-93
HSTFLB (4)	Health and Safety tech. Field Log Book (D.B.)	3-4-93
HSTFLB (12)	" (V.R.)	2-25-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-040793-2 Page 1 of ___

To: EMD records center.
Project Manager, and

From: Rust Environment and Infrastructure
#2 Garden Center Ste. 200
Broomfield, Co. 80020

FIELD DATA FILE FOR 41193

Number	Title	Date
41193 1.1B(1)	Prework Survey	1-28-93
1.1B(2)	Contamination Survey	1-28-93
1.1B(3)	Contamination Survey	1-29-93
1.1B(4)	Postwork Survey	1-29-93
F0.3A	Equip Decon/Wash Checklist (2 pages)	1-28-93
F0.4A	Heavy Equip Decon/Wash Checklist (3 pages)	2-2-93
F0.8A	Field Monitoring Results of Cuttings or Core	1-28-93
F0.8C	Record of Drilling Fluids and Cuttings	1-28/93/1-29-93
F0.10A(1)	Drum Field Log Form	1-28-93
F0.10A(2)	Drum Field Log Form	1-28-93
F0.10C(1)	Contaminated Characterization Form for Gray Drums	1-28-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Janice K. Herrmann	Janice K. Herrmann	4/7/93
Name (Print)	Signature	Date

Received By EMD Document Custodian

Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKH-040793-2 Page 2 of ___

FIELD DATA FILE FOR 41193

Number	Title	Date
FO.14C	Surface Soil Collection Form	1-28-93
FO.14E(1)	Subsurface Soil Sample Form	1-28-93
FO.14E(2)	Subsurface Soil Sample Form	1-28-93
FO.14E(3)	" " " "	1-28-93
FO.14E(4)	" " " "	1-28-93
FO.14E(5)	" " " "	1-28-93
FO.16A	Results of Radiological Measurements in the Field	1-28-93
GT.1B	Preliminary Well-site Field Log (2 page)	1-28-93
GT.2A	Hollow-Stem Auger Drilling Field Activities Report	1-28-93
GT.6A	Groundwater Monitoring Well and Piezometer Report	1-29-93
GT.8A	Surface Soil Data Collection Form	1-28-93
GT.8B	" " Sampling Field Activities Report	1-28-93
GT.8C	" " " " " "	1-28-93
GT.9A	Photoionization Detector Field Data Form	1-28-93
RGLB	Rig Geologist Logbook Water	1-28-93
HSLB	Health & Safety Logbook Water	2-8-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-031993-1

To: EMD records center,
Project Manager, and

RUST ENVIRONMENT & INFRASTRUCTURE

QA Record No: FQT-JKH-031993-1 Page 1 of 53

QA Checked By: JKH Date 3/19/93

From: Rust Environment and Infrastructure
#2 Garden Center Ste 200
Broomfield, Co. 80020

FIELD DATA FILE FOR 41293

Number	Title	Date
1.1B(1)	Contamination Survey	2/23/93
1.1B(2)	Contamination Survey	2/23/93
1.1B(3)	Contamination Survey	2/24/93
1.1B(4)	Contamination Survey	2/24/93
FO.3A (2 pages)	Equipment decon/wash checklist and Record	2/23/93 / 2/24/93
FO.4A (3 pages)	Heavy equipment decon/wash checklist and Record	2/25/93
FO.8A(1)	Field Monitoring Results of Cuttings or Core	2/23/93
FO.8A(2)	" " " " " " "	2/24/93
FO.8C	Record of Drilling Fluids and Cuttings	2/23/93 / 2/24/93
FO.10A	Drum Field Log Form	2/24/93
FO.10C	Contaminant Characterization Form for Gray Drums	2/24/93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Janice K. Herrmann	Janice K. Herrmann	3/19/93
Name (Print)	Signature	Date

Received By EMD Document Custodian

Randy T. Ogg	Randy T. Ogg	3/26/93
Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FQT-031993-1 page 2 of 3

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-031993-1

Page 2 of 3

FIELD DATA FILE FOR 41293

Number	Title	Date
FO.14C	Sample Collection Form for Surface Soil	2/23/93
FO.14E(1)	Subsurface Soil Sample Collection Form	2/23/93
FO.14E(2)	" " " " "	2/24/93
FO.14E(3)	" " " " "	2/23/93
FO.14E(4)	" " " " "	2/23/93
FO.14E(5)	" " " " "	2/23/93
FO.16A(1)	Results of Radiological Measurements in the Field	2/23/93
FO.16A(2)	" " " " " " "	2/24/93
GT.1B	Preliminary Well-site Field Log	2/23/93 / 2/24/93
GT.2A(1)	Hollow-stem Auger Drilling Field Activities Report	2/23/93
GT.2A(2)	" " " " " " "	2/24/93
GT.8A	Surface Soil Data Collection Form	2/23/93
GT.8B	Surface Soil Sampling Field Activities Report	2/23/93
GT.8C	" " " " " "	2/23/93
GT.9A(1)	Photoionization Detector Field Data Form	2/24/93
GT.9A(2)	" " " " "	2/23/93
VZMBCD1	Vadose Zone Monitoring Borehole Construction Diagram	2/24/93 / 2/25/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet) FQT-031993-1 page 3 of 5

Transmission Form Number FQT- JKA-031993-1 page 3 of ____ Page 3 of 3

FIELD DATA FILE FOR 41293

Number	Title	Date
BGMS1	BAT Groundwater Monitoring System	2/23/93
INSPT1	In situ permeability test	2/23/93
VZLB (4 page)	Vadose Zone logbook entries	2/23/93/2/24/93
HSLB (8 page)	Health and Safety Logbook entries	2/23/93/2/24/9
FCKST1 (2 pag)	File Checksheet (Internal Document)	3/18/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-06-2393-1 Page 1 of 2

To: EMD records center,
Project Manager, and

From: Rust Environment & Infrastructure
2 Garden Center #200
Broomfield, Co. 80020-1730

FIELD DATA FILE FOR 41593

Number FChkst#1(2p)	File checksheet Title (Internal document)	Date
EMLG 3.2A	Record of Property leaving RCA	4-7-93
Form 1.1B	Pre-work survey	4-6-93
Form 1.1B	Contamination survey	4-7-93
Form 1.1B	Post work survey	4-9-93
Form FO.8A	Field monitoring results of Cuttings or Core	4-6-93
Form FO.8B	Verification of organic vapor monitoring results	4-6-93
Form FO.8C	Record of drilling fluids & Cuttings	4-6-93
Form FO.10A (4)	Drum field log Form	4-6-93
Form FO.10C (4)	Contaminant characterization form/Grey drums	4-6-93
Form FO.14C (2)	U.S. DOE Sample collection form	4-6-93
Form FO.14E (8)	U.S. DOE Sample Collection form	4-6-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-06-24-93 Page 2 of 2

FIELD DATA FILE FOR 41593

Number	Title	Date
Form FQ16B	Results of radiological measurements in the field	4-7-93
Form GT.1B	Preliminary wellsite field log	4-6-93
Form GT.2A	Hollow Stem Auger drilling field activities report	4-8-93
Form GT.3A	Surface Casing Installation field activities report	
Form GT.6A	Groundwater monitoring well/Piezometer report	
Form GT.8B	Surface Soil Sampling field activities report	4-8-93
Form GT.8C	Surface soil sampling field activities report	4-6-93
Form GT.9A	Photoionization detector field data form	4-6-93
not designated	Vadose Zone monitoring borehole diagram	4-7-93
RGFLB	Rig Geologist field log book (JCE)	4-6-93
HSTFLB	Health & Safety techn. field log book (V.R.)	4-6-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-062493-~~93~~ 1

Page___ of ___

To: EMD records center.
Project Manager, and

From: Rust Environmental + Infrastructure
2 Garden Center #200
Broomfield, Co. 80020-1730

FIELD DATA FILE FOR 41693

Number	Title	Date
ECHKSHT I (2)	File Checksheet (internal document)	6-24-93
Form 1.1B (2)	prework Survey	2-12-93
Form 1.1B	Contamination survey	2-12-93
Form FO.3A (2)	Equipment decon/wash checklist	2-22-93
Form FO.8A	Field monitoring results of cutting or core	2-22-93
Form FO.8C	Record of drilling fluids and cuttings	2-22-93
Form FO.10A	Drum Field log form	2-15-93
Form FO.10A (2)	"	2-22-93
Form FO.10A	"	2-23-93
Form FO.10C (4)	Containment Characterization for Grey Drums	~~2-15-93~~ 3-8-9
Form FO.14A	REEDS Field data transmittal form	2-22-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRO-062493-1 Page 2 of ___

FIELD DATA FILE FOR 41693

Number	Title	Date
Form FO.14C	U.S DOE Sample collection Form	2-12-93
Form FO.14E (6)	U.S. DOE "	2-22-93
Form FO.14G	U.S. DOE RFEDS well installation form	2-22-93
Form FO.16A	Results of radiological measurements in the field	2-22-93
Form GT.1B (2)	U.S DOE Preliminary well site Field log	2-22-93
Form GT.2A	Hollow Stem Auger drilling field activities report	2-22-93
Form GT.3A	Surface Casing installation field activities report	4-29-93
Form GT.6A	Ground water Monitoring Well & Piezometer report	2-23-93
Form GT.9A	Photoionization detector field data form	2-22-93
HST FLB	Health & Safety techn. field log book	2-22-93

Field Copy
E7.5

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JtH-032993-1

Page 1 of 3

To: EMD records center,
Project Manager, and

From: Rust Environment & Infrastructure
#2 Garden Center
Broomfield, Co 80020

41793 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Contamination Survey	2/9/93
1.1B(2)	Contamination Survey	2/19/93
1.1B(3)	Post-Activity Survey	2/22/93
1.1B(4)	Contamination Survey	2/22/93
FO.3A(1)	Equip Decon/Wash checklist (2 pages)	2/09/93
FO.3A(2)	Equip Decon/Wash Checklist (2 page)	2/22/93
FO.3A(3)	" " " " (2 pages)	2/19/93
FO.4A	Heavy Equip Decon/Wash Checklist (3 pages)	2/25/93
FO.8A(1)	Field Monitoring Results of cuttings or Core	2/19/93
FO.8A(2)	" " " " " " "	2/22/93
FO.8C	Record of Drilling Fluids and Cuttings	2/19/93 / 2/22/93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice Herrmann	Janice K. Herrmann	3/29/93

Received By EMD Document Custodian

Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-032993-1

Page 2 of 3

41793 FIELD DATA FILE

Number	Title	Date
FO.10A(1)	Drum Field Log Form	2/22/93
FO.10A(2)	" " " "	2/22/93
FO.10C(1)	Contaminant Characterization Form for Gray Drums	2/22/93
FO.10C(2)	" " " " " "	2/22/93
FO.14C(1)	Surface Soil Sample Collection Form	2/19/93
FO.14C(2)	" " " " "	2/19/93
FO.14E(1)	Subsurface " " " "	2/19/93
FO.14E(2)	" " " " "	2/19/93
FO.14E(3)	" " " " "	2/19/93
FO.14E(4)	" " " " "	2/19/93
FO.14E(5)	" " " " "	2/19/93
FO.14E(6)	" " " " "	2/22/93
FO.16A(1)	Results of Radiological Measurements in the Field	2/19/93
FO.16A(2)	" " " " " " "	2/22/93
GT.1B	Preliminary Well-site Field Log (2 pages)	2/19/93 / 2/22/93
GT.2A(1)	Hollow-stem Auger Drilling Field Activities Report	2/19/93
GT.2A(2)	" " " " " " "	2/22/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JK4-032493-1

41793 FIELD DATA FILE

Number	Title	Date
GT.3A	Surface-Casing Installation Field Activities Report	2-22-93
GT.8A(1)	Surface Soil Data Collection Form	2/9/93
GT.8A(2)	" " " " "	2/9/93
GT.8B	" " Sampling Field Activities Report	2/9/93
GT.8C(1)	Surface Soil Sampling Field Activities Report	2/9/93
GT.8C(2)	" " " " " "	2/9/93
GT.9A(1)	Photoionization Detector Field Data Form	2/19/93
GT.9A(2)	" " " " "	2/22/93
GT. VZMBCD	Vadose Zone Monitoring Borehole Construction Diagram	2/22/93 / 2-23-93
RGLB(1)	Rig Geologist Logbook Notes	2/9/93
RGLB(2)	" " " " (4 pages)	2/19/93 / 2/22/93 / 2/23/9
DLB	Drillers Logbook Notes	2/19/93 / 2/22/93
HSLB(1)	Health and Safety Logbook Notes (3 pages)	2/9/93
HSLB(2)	" " " " " (7 pages)	2/18/93 / 2/19/93 / 2/22/93 / 2/2
VZLB	Vadose Zone Logbook Notes (3 pages)	2/19/93 / 2/22/93 / 2/23

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-10593-1

Page 1 of ___

To: EMD records center,
Project Manager, and

From:

41893 FIELD DATA FILE

Number	Title	Date
FCHKSHT1	File checksheet (Internal Document)	
Form 1.1B	Prework Survey	10-[illegible]
Form FO.3A(2)	Equipment Decon/Wash Checklist and Record	1-18-93
Form FO.14C	U.S. DOE Sample Collection Form	1-18-93
Form GT.8A	Surface Soil Data Collection Form	1-18-93
Form GT.8B	Field activities report surface soil sampling	1-18-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

Field Copy

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

BH 41993

Transmission Form Number FQT-JIH-040793-1

To: EMD records center,
Project Manager, and

From: Rust Environment and Infrastructure
#2 Garden Center Ste. 200
Broomfield Co. 80020

41993 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Survey	1/13/93
1.1B(2)	Contamination Survey	1/13/93
1.1B(3)	Contamination Survey (2 pages)	1/14/93
1.1B(4)	" "	1/19/93
FO.3A	Equipment Decon / Wash Check list (2 pages)	1/13/93
FO.8A(1)	Field Monitoring Results of Cuttings or Core	1/13/93
FO.8A(2)	" " " " " " "	1/14/93
FO.8C	Record of Drilling Fluids and Cuttings	1-13-93/1-14-93
FO.10A(1)	Drum Field Log Form	1-19-93
FO.10C(1)	Contaminant Characterization Form For Gray Drums	1-19-93
FO.10A(2)	Drum Field Log Form	1-14-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice Hermann	Janice K. Hermann	4-7-93

Received By EMD Document Custodian

Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JLH-040793-1

A1993 FIELD DATA FILE

Number	Title	Date
FO.10C(2)	Contaminant Characterization Form for Gray Drums	1-14-93
FO.10A(3)	Drum Field Log Form	1-14-93
FO.10A(4)	" " " "	1-12-93
FO.10C(3)	Contaminant Characterization Form For Gray Drums	1-12-93
FO.10C(4)	" " " " " "	1-13-93
FO.14C	Surface Soil Sample Forms	1-13-93
FO.14E(1)	subsurface Soil Sample Form	1-13-93
FO.14E(2)	Subsurface Soil Sample Form	1-13-93
FO.14E(3)	" " " "	1-13-93
FO.14E(4)	" " " "	1-13-93
FO.14E(5)	" " " "	1-14-93
FO.14E(6)	" " " "	1-14-93
FO.16A	Results of Radiological Measurement in the Field	1-14-93
GT.2A	Hollow-stem Auger Drilling Field Activities Report	1-12-93/1-14-93
GT.6A	Groundwater Monitoring Well and Piezometer Report	1-19-93
GT.8B	Surface Soil Sampling Field Activities Report	1-13-93
GT.8C	" " " " " "	1-13-93

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-040793-1

41993 FIELD DATA FILE

Number	Title	Date
GT.8A	Surface Soil Data Collection Form	1-13-93
GT.9A (1)	Photoionization Detector Field Data Form	1-13-93
GT.9A (2)	" " " " "	1-14-93
GT.1B	Preliminary Well-site Field Log (2 pages)	1-13-93 / 1-14-
DCBL	Draft Copy of Bore logs (3 pages)	1-13-93 / 1-14-93
RGLB	Rig Geologist Logbook Notes (4 pages)	1-13/93 / 1-14-93
DLB	Drillers Logbook Entries (2 pages)	1-15-93
HSLB	Health and Safety Logbook Entries (20 pages)	1-13-93/1-14/1-15/1-14/1-15/1-19
GT.1A	RFP Borehole Log (2 pages)	1-25-93 / 1-27-28/
FO.4A	Heavy Equip Decon / Wash checklist	1-15-93

Field Copy

BH 42093

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-041293-1

To: EMD records center,
Project Manager, and

From: Rust Environment & Infrastructure
#2 Garden Center Ste 200
Broomfield, Co. 80020

42093 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Survey	1/8/93
1.1B(2)	Contamination Survey	1/12/93
FO.3A	Equip Decon / Wash Check list (2 pages)	1-8-93 / 1/12/93
FO.4A	Heavy Equip decon / Wash Check list (3 pages)	1-15-93
FO.8A(1)	Field Monitoring Results of Cuttings or Core	1-8-93
FO.8A(2)	" " " " " " "	1-12-93
FO.8C	Record of Drilling Fluids and Cuttings	1-8-93 / 1-12-93
FO.10A(1)	Drum Field Log Form	1-8-93
FO.10A(2)	" " " "	1-12-93
FO.10C(1)	Contaminant Characterization Form for Gray Drums	1-8-93
FO.10C(2)	" " " " " "	1-12-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice K. Herrmann	Janice K. Herrmann	4-12-93

Received By EMD Document Custodian

Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKH-04/293-1

Page 2 of 3

42093 FIELD DATA FILE

Number	Title	Date
FO.14C (1)	Surface Soil Sample Form	1-8-93
FO.14C (2)	" " " "	1-8-93
FO.14E (1)	Subsurface " " "	1-8-93
FO.14E (2)	" " " "	1-8-93
FO.14E (3)	" " " "	1-8-93
FO.14E (4)	" " " "	1-8-93
JKH 4-6-93 ~~FO.14F~~ FO.16A	Results of Radiological Measurements in the Field	1-12-93
GT.1B	Preliminary well-site Field Log	1-8-93 / 1-12-93
GT.2A (1)	Hollow-stem Auger Drilling Field Activities Report	1-8-93 / ~~1-12-93~~ JKH
GT.2A (2)	" " " " " " "	1-12-93
GT.5A	Borehole Abandonment Field Activities Report	1-12-93
GT.8A (1)	Surface Soil Data Collection Form	1-8-93
GT.8A (2)	" " " " "	1-8-93
GT.8B	" " Sampling Field Activities Report	1-8-93
GT.8C	" " " " " "	1-8-93
GT.9A	Photoionization Detector Field Data Form	1-12-93
RGLB (1)	Rig Geologist Log book Walk (2 pages)	1-8-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKN-041295-1

42093 FIELD DATA FILE

Number	Title	Date
RGLB (2)	Rig Geologist Log book Notes (3 pages)	1-12-93
HSLB (1)	Health and Safety Log book Notes (2 pages)	1-8-93
HSLB (2)	" " " " " " (2 pages)	1-12-93

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-063093-1 Page 1 of 3

To: EMD records center,
Project Manager, and

From: Rust Environmental and Infrastructure
2 Garden Center #200
Broomfield, Co. 80020-1730

42193 FIELD DATA FILE

Number	Title	Date
FQCSHT 1	File Checksheet (Internal document)	
Form 1.1B	Prework Survey	4-9-93
Form 1.1B	Prework Survey	3-8-93
Form 1.1B	Contamination Survey	4-5-93
Form 1.1B (2)	Contamination Survey	3-19-93
Form FO.3A	Equipment Decontamination/Waste checklist	3-30-93
Form FO.8A	Field monitoring results of Cuttings or Core	3-22-93
Form FO.8A	Field Monitoring results of Cuttings or Core	3-19-93
Form FO.8C	Record of Drilling Fluids and Cuttings	3-19-93
Form FO.8C	Record of Drilling Fluids and Cuttings	3-22-93
Form FO.10A (4) (6)	Drum Field Log Form	3-31-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRO-063093-1

42193 FIELD DATA FILE

Number	Title	Date
Form FO.10A (3)	Drum Field Log Form	3-22-93
Form FO.10A	Drum Field Log Form	3-19-93
Form FO.10 c (6)	Contaminant characterization form for Grey Drums	3-31-93
Form FO.10 c (3)	"	3-22-93
Form FO.10 c	"	3-19-93
Form FO.14C	U.S. DOE Sample collection Form	3-10-93
Form FO.14E (9)	U.S. DOE Sample collection Form	3-19-93
Form FO.14E (3)	U.S. DOE Sample collection Form	3-30-93
Form FO.14E	U.S. DOE Sample Collection Form	3-31-93
Form FO.16A	Results of Radiological measurements in the field	3-22-93
Form FO.16B	Results of Radiological measurements in the field	3-19-93
Form FO.16B	Results of Radiological measurements in the field	4-7-93
Form GT.1A (4)	Rocky Flats Plant Borehole log	3-31-93
Form GT.1B	Preliminary Well-site Field Log	3-19-93
Form GT.1B (2)	Preliminary Well-Site Field Log	3-30-93
Form GT.1B	Preliminary Well-Site Field Log	3-31-93
Form GT.3A	Surface Casing installation field activities log	3-22-93
Form GT.5A	Borehole Abandonment Field activities report	4-5-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-063093-1 Page 3 of 3

42193 FIELD DATA FILE

Number	Title	Date
Form GT.8A	Surface Soil Data Collection Form	3-10-93
Form GT.8B	Surface Soil Sampling field activities report	3-10-93
Form GT.8C		
Form GT.9A	Photoionization detector field data form	3-19-93
RGFLB (8)	Rig Geologist Field Log Book (K.M.)	LD 6-[illegible] ~~4-2-93~~ 3-19-93
HSTFLB (5)	Health and Safety Tech. Field Log Book (P.G.)	3-19-93

(4011-910-0079-910)(FO2B REV 3/05/18/93)

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRO-070193-1

Page 1 of 3

To: EMD records center,
Project Manager, and

From: Rust Environmental & Infrastructure
2 Garden Center #200
Broomfield Co. 80020-1730

42293 FIELD DATA FILE

Number	Title	Date
FCHKSHT 1	File checksheet (Internal document)	
Form 3.2.A	Record of Property leaving radiologically controlled area	4-20-93
Form 3.2.A	"	4-15-93
Form 1.1.B	Pre Work survey	4-15-93
Form 1.1.B (2)	Contamination Survey	4-15-93
Form 1.1.B (4)	Contamination Survey	4-16-93
Form 1.1.B (2)	Contamination survey	4-20-93
Form 1.1.B	Post-Activity Survey	4-22-93
Form FO.8A	Field monitoring results of Cuttings or Core	4-15-93
Form FO.8A	"	4-20-93
Form FO.8B	Verification of Organic Vapor monitoring results	4-15-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-070193-1

42293 FIELD DATA FILE

Number	Title	Date
Form FO.8C	Record of Drilling Fluids and cuttings	4-20-93
Form FO.8C	"	4-15-93
Form FO.10A	Drum Field Log	4-16-93
Form FO.10C	Containment Characterization form for Grey drums	
Form FO.14C	US DOE Sample Collection Form	4-15-93
Form FO.14E (5)	US DOE Sample Collection Form	4-15-93
Form FO.14E	US. DOE Sample Collection Form	4-20-93
Form FO.16A	Results of Radiological measurements in the field	4-15-93
Form FO.16A	"	4-20-93
Form FO.16B	Results of Radiological measurements in the field	4-20-93
Form FO.16 B	"	4-15-93
Form GT.1B	Preliminary well-site field Log	4-15-93
Form GT.1B	Preliminary well-site field Log	4-15-93
Form GT.2A	Hollow-Stem Auger drilling Field activities report	4-20-93
Form GT.5A	Borehole Abandonment field activities report	4-20-93
Form GT.8A	Surface soil data collection Form	4-15-93
Form GT.8B	Surface Soil sampling field activities report	4-15-93
Form GT.8C	Surface Soil sampling field activities report	4-15-93

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRO-070193-1

42293 FIELD DATA FILE

Number	Title	Date
Form GT.9A	Photoionization detector field data form	4-20-93
Form GT.9B	Flame ionization detector field data form	4-15-93
RGFLB (5)	Rsq Geologist field log book (K.M.)	4-13-93
HSTFLB (4)	Health & Safety Techn. field log book (V.R.)	4-16-93

Field Logs

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-041493-1

BH 42393

To: EMD records center,
Project Manager, and

From: Rust Environment and Infrastructure
#2 Garden Center Ste. 200
Broomfield, Co. 80020.

42393 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Survey	1-27-93
1.1B(2)	Contamination Survey (2 pages)	1-27-93
1.1B(3)	Postwork Survey	1-28-93
FO.3A	Equipt. Decon / wash checklist (2 pages)	1-28-93
FO.4A	Heavy Equip Decon / Wash checklist (3 pages)	4-6-93
FO.8A	Field Monitoring Results of Cuttings or Core	1-27-93
FO.8C	Record of Drilling Fluid/Cuttings or	
FO.10A(1)	Drum Field Log Form	1-27-93
FO.10A(2)	" " " "	1-27-93
FO.10C(1)	Contaminated Characterization Form for Gray Drums	1-27-93
FO.10C(2)	" " " " " "	1-27-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Janice K. Herrmann	Janice K. Herrmann	4-14-93
Name (Print)	Signature	Date

Received By EMD Document Custodian

Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-041493-1

42393 FIELD DATA FILE

Number	Title	Date
FO.14C	Surface Soil Sample Form	JKH ~~4-13-93~~ 1-2
FO.14E(1)	Subsurface Soil Sample Form	1-27-93
FO.14E(2)	" " " "	1-27-93
FO.14E(3)	" " " "	1-27-93
FO.14E(4)	" " " "	1-27-93
FO.14E(5)	" " " "	1-27-93
FO.16A	Results of Radiological Measurements in the Field	1-27-93
GT.1A	RFP Borehole Log (2 pages)	2-4-93
GT.1B	Preliminary Well-site Field Log (2 pages)	1-27-93
GT.2A	Hollow-stem Auger Drilling Field Activities Report	1-27-93
GT.6A	Groundwater Monitoring Well and Piezometer Report	1-28-93
GT.8A	Surface Soil Data Collection Form	1-27-93
GT.8B	Surface Soil Sampling Field Activities Report	1-27-93
GT.8C	" " " " " "	1-27-93
DCBL	Draft Copy of Borehole Log (2 pages)	2-4-93
GT.9A	Photoionization Detector Field Data Form	1-27-93
RGLB(1)	Rig Geologist Log book Write	1-27-93/1-28-9

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKH-041993-1

42393 FIELD DATA FILE

Number	Title	Date
RGLB(2)	Rig Geologist Logbook Notes	1-27-93
RGLB(3)	" " " "	1-7-93 / 1-8-93
HSLB	Health & Safety Logbook Notes (11 pages)	1-27-93/1-28-93/1-29-93
DLB	Drillers Log book Note	1-28-93

Field Copy

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-041693-1

Page 1 of 3

To: EMD records center,
Project Manager, and

BH 42493

From: Rust Environment and Infrastructure
#2 Garden Center Ste. 200
Broomfield, Co. 80020

42493 FIELD DATA FILE

Number	Title	Date
1.1B (1)	Prework Survey	3-8-93
1.1B (2)	Contamination Survey (2 pages)	5-8-93
1.1B (3)	Contamination Survey (2 pages)	3-23-93
1.1B (4)	" " (2 pages)	3-23-93
FO.3A	Equip Decon / Wash Checklist (2 pages)	3-8-93 / 3-23-93
FO.4A	Heavy Equip Decon / Wash Checklist (3 pages)	4-6-93
FO.8A	Field Monitoring Results of Cuttings or Core	3-23-93
FO.8C	Record of Drilling Fluids and Cuttings	3-23-93 / 3-26-93
FO.10A (1)	Drum Field Log Form	~~4-14-93~~ 3-24-
FO.10A (2)	" " " "	3-23-93
FO.10A (3)	" " " "	3-23-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice Herrman	Janice K. Herrman	4-20-93

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Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.28

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-_____

BH 42493

42493 FIELD DATA FILE

Number	Title	Date
FO.10C(1)	Contaminant Characterization Form for Gray Drums	3-24-93
FO.10C(2)	" " " " " "	3-23-93
FO.10C	" " " " " "	3-23-93
FO.14C	Surface Soil Sample Form	3-8-93
FO.14E(1)	Subsurface Soil Sample Form	3-23-93
FO.14E(2)	" " " "	3-23-93
FO.14E(3)	" " " "	3-23-93
FO.14E(4)	" " " "	3-23-93
FO.14E(5)	" " " "	3-23-93
FO.14E(6)	" " " "	3-23-93
FO.14E(7)	" " " "	3-23-93
FO.14E(8)	" " " "	3-23-93
FO.14E(9)	" " " "	3-23-93
FO.14E(10)	" " " "	3-23-93
FO.16A	Results of Radiological Measurements in Field	3-23-93
FO.16	Preliminary Well-site Field Log	3-23-93
PSP	Pond 207A Sampling Plan	3-23-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-_____

Page 3 of 3

BH 42493

42493 FIELD DATA FILE

Number	Title	Date
GT.2A	Hollow-Stem Auger Drilling Field Activities Report	3-23-93
GT.8A	Surface Soil Data Collection Form	3-8-93
GT.8B	" " Sampling Field Activities Report	3-8-93
GT.8C	" " " " "	3-8-93
VZMBCD	Vadose Zone Monitoring Borehole Construction Diagram	3-24/3-25-93
RGLB	Rig Geologist Logbook Notes (3 pages)	3-23/93/3-24-93
VZLB	Vadose Zone Logbook Notes (5 pages)	3-22-93/3-24/3-25/3
HSLB(1)	Health & Safety Logbook Notes (5 pages)	3-8-93/3-23-93
HSLB(2)	" " " " (3 pages)	3-23-93
DLB	Drillers Logbook Notes (4 pages) 3-25-93/3-26-93/	3-23-93/3-22-93/

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRO-020893-1

Page 1 of 3

To: EMD records center,
Project Manager, and

From:

42593 FIELD DATA FILE

Number	Title	Date
FChkSht 1	File checksheet (Internal document)	
Form 1.1B	Pre-work Survey	4-9-93
Form 1.1B (2)	Contamination Survey	3-26-93
Form 1.1B	Contamination Survey	3-8-93
Form FO.3A (2)	Equipment decontamination/wash checklist	3-16-93
Form FO.8A	Field monitoring results of cuttings or core	3-16-93
Form FO.8A	" "	3-17-93
Form FO.8A	"	3-26-93
Form FO.8C	Record of drilling fluids and cuttings	3-26-93
Form FO.10A (2)	Drum field log form	3-16-93
Form FO.10A (4)	Drum field log form	3-17-93

Authentication:

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Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRO-070893-1

42593 FIELD DATA FILE

Number	Title	Date
Form FO.10C (a)	Contaminant characterization form for grey drums	3-16-93
Form FO.10C (H)	"	3-17-93
Form FO.14C	U.S. DOE Sample collection form	3-9-93
Form FO.14E (11)	U.S. DOE Sample collection form	3-16-93
Form FO.14E	U.S. DOE Sample collection form	3-26-93
Form FO.16A	Results of Radiological measurements in the field	3-16-93
Form FO.16A	"	3-17-93
Form FO.16A	"	3-26-93
Form FO.16B	Results of Radiological measurements in the field	3-16-93
Form FO.16B	"	3-17-93
Form GT.1B	Preliminary Well-site field log	3-16-93
Form GT.1B	"	3-26-93
Form GT.2A	Hollow-Stem Auger drilling field activities report	3-16-93
Form GT.3A	Surface Casing installation field activities report	3-17-93
Form GT.5A	Borehole Abandonment field activities report	3-26-93
Form GT.8A	Surface Soil data collection form	3-9-93
Form GT.8B	Surface Soil Sampling field activities report	3-9-93
Form GT.8C	Surface Soil Sampling field activities report	3-9-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-070893-1

42593 FIELD DATA FILE

Number	Title	Date
Form GT.9A	Photoionization detector field data form	3-16-93
Form GT.9A	"	3-17-93
Form GT.9A	"	3-26-93
HSTFLB (2)	Health & Safety techn. field log book (P.G.)	3-26-93
HSTFLB (14)	" " (V.R.)	3-8-93
HSTFLB (10)	" (D.B.) ~~(K.M.)~~	~~3-16-93~~ 3-3-93
RGFLB	Rig Geologist field log book (K.M.)	3-16-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-041693-1

Page 1 of 2

To: EMD records center,
Project Manager, and Asst. Project Manager

BH 42693

From: Rust Environment & Infrastructure
#2 Garden Center Ste. 200
Broomfield, Co. 80020

42693 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Survey	2-2-93
1.1B(2)	Contamination Survey	2-3-93
1.1B(3)	Postwork Survey	2-4-93
FO.3A	Equipment Decon / Wash Checklist (2 pages)	2-3-93
FO.4A	Heavy Equipment Decon / Wash Checklist (3 pages)	4-6-93
FO.8A	Field Monitoring Results of Cuttings or Core	2-3-93
FO.8C	Record of Drilling Fluids and Cuttings	2-3-93
FO.10A	Drum Field Log Form	2-3-93
FO.10C	Contaminated Characteristic Form For Gray Drums	2-2-93
FO.14C	Surface Soil Sample Form	2-2-93
FO.16A	Results of Radiological Measurements in the Field	2-3-93

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Name (Print)	Signature	Date
Janice Herrmann	Janice K. Herrmann	4-16-93

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Name (Print)	Signature	Date
Steven M. PARIS	[signature]	4-22-93

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- TKH-041693-1 Page 2 of 2

42693 FIELD DATA FILE

Number	Title	Date
GT.1B	Preliminary Well-site Field Log	2-3-93
GT.2A	Hollow-Stem Drilling Field Activities Report	2-3-93
GT.5A	Borehole Abandonment Field Activities Report	2-3-93
GT.8A	Surface Soil Data Collection Form	2-2-93
GT.8B	" " Sampling Field Activities Report	2-2-93
GT.8C	" " " " " "	2-2-93
GT.9A	Photoionization Detector Field Data Form	2-3-93
STLB	Sample Technician Logbook notes (2 pages)	2-2-93/2-3-93
RGLB	Rig Geologist Logbook Notes	2-3-93
HSLB	Health & Safety Logbook Notes (6 pages)	2-2-93/2-3-93/2-4-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-071493-1

Page___ of ___

To: EMD records center,
Project Manager, and

From:

FIELD DATA FILE 42893

Number	Title	Date
ECHKSHT 1	File Checksheet (Internal doc.)	
Form FO.3A (2)	Equipment decontamination/waste checklist record	3-12-93
Form FO.10A (2)	DCUM Field log form	3-11-93
Form FO.10C (2)	Contaminant characterization form - Grey drums	3-11-93
Form FO.14E	U.S. DOE Sample collection form	3-11-93
Form FO.16B	Results of Radiological measurements in field	3-12-93
Form GT.1A (2)	Rocky Flats Plant Borehole log	3-11-93
Form GT.1B	Preliminary well-site field log	3-11-93
Form GT.2A	Hollow stem Auger drilling field activities report	3-11-93
not designated	Vadose zone monitoring Borehole construction diagram	3-11-93
REFMB	Rig Geologist Field Log Book (K.M.)	3-11-93

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Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRO-071493-1

Page___ of ___

42893 FIELD DATA FILE

Number	Title	Date
HSFFLB	Health and Safety field Log Book (E.L.)	3-12-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- LRD-071493-1

Page 1 of ___

To: EMD records center,
Project Manager, and

From:

42993 FIELD DATA FILE

Number	Title	Date
FCHKSHT 1	File Checksheet (internal document)	
Form 1.1B	Pre Work Survey	1-12-93
Form 1.1B	Contamination Survey	1-25-93
Form 1.1B	Contamination Survey	1-28-93
Form 1.1B	Contamination Survey	1-20-93
Form 1.1B (3)	Post Work Survey	1-25-93
Form FO.3A (2)	Equipment decontamination/Wash checklist record	1-20-93
Form FO.4A	Heavy Equip. decon/wash checklist record	
Form FO.8A	Field monitoring results of cuttings or Core	1-20-93
Form FO.8C	Record of Drilling fluids and Cuttings	1-20-93
Form FO.10A (3)	Drum Field Log Form	1-20-93

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The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date

Received By EMD Document Custodian

Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-071493-1 Page 2 of __

42993 FIELD DATA FILE

Number	Title	Date
Form FO.10 A	Drum Field Log Form	1-25-93
Form FO.10C (3)	Contaminant Characterization form for Grey Drums	1-20-93
Form FO.10C	Contaminant Characterization form for Grey Drums	1-25-93
Form FO.14C	U.S. DOE Sample Collection Form	1-18-93
Form FO.14E (8)	U.S. DOE Sample Collection Form	1-20-93
Form FO.14G	US DOE RFEDS well installation Form	1-20-93
Form FO.16A	Results of Radiological measurements in field	1-20-93
Form GT.1A (2)	Rocky Flats Plant Borehole Log	2-5-93
Form GT.1B (2)	Preliminary Well-site Field Log	1-20-93
Form GT.2A	Hollow-Stem Auger Drilling Field activities	1-20-93
Form GT.3A	Surface Casing Installation Field activities	
Form GT.6A	Groundwater Monitoring well and Piezometer report	1-25-93
Form GT.8A	Surface Soil Data Collection Form	1-18-93
Form GT.8B	Surface Soil Sampling Field activities report	
Form GT.8C	Surface Soil Sampling Field activities report	
Form GT.9A	Photoionization Detector Field data Form	1-20-93
RGFLB	Rig Geologist Field Log Book (C.M.)	1-20-93
HSTFLB	Health and Safety Field Log Book (V.R.)	1-20-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRO-071593-1

Page 1 of ___

To: EMD records center,
Project Manager, and

From:

43193 FIELD DATA FILE

Number	Title	Date
FCHKSHT 1	File Checksheet (internal document)	
Form 1.1B	Prework survey	2-9-93
Form 1.1B	Contamination Survey	2-12-93
Form 1.1B	Contamination Survey	2-15-93
Form FO.8A	Field Monitoring results of cuttings or Core	2-12-93
Form FO.8A	Field monitoring results of cuttings or Core	2-15-93
Form FO.10A (2)	Drum Field Log Form	2-15-93
Form FO.10C	Contaminant Characterization Form for Gray Drums	2-18-93
Form FO.14C	U.S. DOE Sample Collection Form	2-9-93
Form FO.14E (6)	U.S. DOE Sample Collection Form	2-12-93
Form FO.14E	U.S. DOE Sample Collection Form	2-15-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-071593-1 Page 2 of __

43193 FIELD DATA FILE

Number	Title	Date
Form FO.16A	Results of Radiological Measurements in the Field	2-12-93
Form FO.16A	Results of Radiological measurements in the Field	2-15-93
Form GT.1A (2)	Rocky Flats Plant Borehole log	2-15-93
Form GT.1B (2)	Preliminary well-site Field Log	2-12-93
Form GT.2A	Hollow-Stem Auger drilling Field activities report	2-12-93
Form GT.2A	Hollow-Stem Auger drilling Field activities report	2-15-93
Form GT.3A	Surface Casing installation Field activities report	3-13-93
Form GT.8A	Surface Soil Data collection Form	2-9-93
Form GT.8B	Surface Soil sampling field activities report	2-9-93
Form GT.8C	Surface Soil Sampling field activities report	2-9-93
Form GT.9A	Photoionization detector field data form	2-12-93
Form GT.9A	Photoionization detector Field Data Form	2-15-93
Figure 2	Vadose Zone monitoring Borehole construction diagram	2-18-93
HSTFLB	Health and Safety Techn. Field Log Book (D.B.)	2-12-93
VCFLB	Vadose crew field log book (M.J.K.)	4-21-93
RGFLB	Rig Geologist Field Log Book (K.M.)	2-9-93

Field Log 8

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- JKH-041693-2

To: EMD records center, Project Manager, and

BH 43293

From: Rust Environment and Infrastructure
#2 Garden Center Ste. 200
Broomfield, Co. 80020

43293 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Survey	1-29-93
1.1B(2)	Contamination Survey (2 page)	1-29-93
1.1B(3)	Contamination Survey (1 page)	2-2-93
1.1B(4)	Postwork Survey	2-4-93
FO.3A	Equip Decon / Wash Checklist (2 pages)	2-2-93/1-29-93
FO.4A	Heavy Equipment Decon / Wash Checklist (3 pages)	4-6-93
FO.8A(1)	Field Monitoring Results of Cuttings or Core	1-29-93
FO.8A(2)	Field Monitoring Results of Cuttings or Core	2-2-93
FO.9C	Record of Drilling Fluids and Cuttings	1-29-93/2-2-93
FO.10A(1)	Drum Field Log Form	1-29-93
FO.10A(2)	" " " "	1-29-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice K. Hermann	Janice K. Hermann	4-16-93

Received By EMD Document Custodian

Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

BH 43293

Transmission Form Number FQT- JKH - 04693 - 2 Page 2 of 3

43293 FIELD DATA FILE

Number	Title	Date
FO.10A(3)	Drum Field Log Form	2-2-93
FO.10C	Contaminant Characterization Form for Gray Drums	1-29-93
FO.14C	Surface Soil Sample Form	1-29-93
FO.14E(1)	Subsurface Soil Sample Form	1-29-93
FO.14E(2)	" " " "	1-29-93
FO.14E(3)	" " " "	1-29-93
FO.14E(4)	" " " "	1-29-93
FO.14E(5)	" " " "	1-29-93
FO.16A(1)	Results of Radiological Measurements in the Field	1-29-93
FO.16A(2)	" " " " " " "	1-29-93
GT.1B	Preliminary Well-Site Field Log (2 pages)	1-29-93/2-2-93
GT.2A	Hollow-Stem Auger Drilling Field Activities Report	1-29-93/2-2-93
GT.6A	Groundwater Monitoring Well and Piezometer Report	2-2-93
GT.8A	Surface Soil Data Collection Form	1-29-93
GT.8B	" " Sampling Field Activities Report	1-29-93
GT.8C	" " " " " "	1-29-93
GT.9A(1)	Photoionization Detector Field Data Form	1-29-93

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

BH 43293

Transmission Form Number FQT-JKH-041693-2

Number	Title	Date
GT.9A (2)	Photoionization Detector Field Data Form	2-2-93
RGLB	Rig Geologist Logbook Notes (2 pages)	1-29-93/2-2-93
HSLB(1)	Health & Safety Logbook Note (13 pages)	1-29-93/2-2-93/2-4-93
HSLB(2)	" " " " (4 pages)	2-8-93
DLB	DLB Drillers Logbook Note (2 pages)	1-29-93/2-2-93
—	Core Photographs (3 pages)	2-2-93

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-071693-1 Page 1 of ___

To: EMD records center,
Project Manager, and

From:

43393 FIELD DATA FILE

Number	Title	Date
FCHKSHT1	File checksheet (internal document)	
Form 1.1B	Prework survey	4-9-93
Form FO.8A	Field monitoring results of cuttings or core	3-18-93
Form FO.8C	Record of drilling fluids & cuttings	3-18-93
Form FO.10A (2)	Drum Field Log Form	3-18-93
Form FO.10C (2)	Contaminant Characterization Form for Grey Drums	3-18-93
Form FO.14C	U.S. DOE Sample Collection form	3-9-93
Form FO.14E (10)	U.S. DOE Sample Collection form	3-18-93
Form FO.16A	Results of Radiological measurements in the Field	3-18-93
Form GT.1B (2)	Preliminary well-site Field log	3-18-93
Form GT.2A	Hollow-Stem Auger Drilling Field activities report	3-18-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

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Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-071693-1 Page___ of ___

43393 FIELD DATA FILE

Number	Title	Date
Form GT.5A	Borehole Abandonment field activities report	3-18-93
Form GT.8A	Surface Soil data collection Form	3-9-93
Form GT.8B	Surface Soil Sampling Field activities report	3-9-93
Form GT.8C	Surface Soil Sampling Field activities report	3-9-93
Form GT.9A	Photoionization detector Field data Form	3-18-93
RGFLB	Rig Geologist Field Log Book (K.M.T.)	3-17-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRO-072393-1

Page 1 of ___

To: EMD records center,
Project Manager, and

From:

43493 FIELD DATA FILE

Number	Title	Date
FCHKSHT1	File checksheet (internal document)	
Form ~~EM~~ 3.2A	Record of Property leaving Radiologically Controlled area	4-21-93
Form 1.1B	Pre-activity Contamination survey	4-21-93
Form 1.1B (4)	Contamination Survey	4-21-93
Form 1.1B (6)	Contamination Survey	4-22-93
Form 1.1B	Post-activity Contamination Survey	4-22-93
Form FO.8A	Field monitoring results of cuttings of core	4-21-93
Form FO.8C	Record of drilling fluids and cuttings	4-21-93
Form FO.10A	Drum Field Log Form	4-22-93
Form FO.10C	Containment Characterization Form for Grey Drums	4-22-93
Form FO.14C	U.S. DOE Sample Collection Form	4-21-93

Authentication:

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Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-072393-1 Page 2 of __

43493 FIELD DATA FILE

Number	Title	Date
Form FO.14E (1)	U.S. DOE Sample Collection Form	4-21-93
Form FO.14E	U.S. DOE Sample Collection Form	4-22-93
Form FO.16A	Results of Radiological measurements in the Field	4-21-93
Form FO.16B	Results of Radiological measurements in the Field	4-21-93
Form GT.1B (2)	Preliminary Well-Site Field Log	4-21-93
Form GT.2A	Hollow-Stem Auger Drilling Field activities report	4-12-93
Form GT.5A	Borehole Abandonment Field activities report	4-28-93
Form GT.9A	Photoionization detector Field Data Form	4-21-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1

FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- JKH-042393-1

To: EMD records center,
Project Manager, and

BH 43593

From: Rust Environment & Infrastructure
#2 Garden Center
Broomfield, Co. 80020

43593 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Contamination Survey	1-26-93
1.1B(2)	Contamination Survey	1-27-93
1.1B(3)	Postwork Survey	1-27-93
1.1B(4)	Contamination Survey	3-09-93
F0.5A	Equipment Decon/Wash Checklist (2 pages)	1-26-93
F0.4A	Heavy Equipment Decon/Wash Checklist (3 pages)	2-2-93
F0.8A	Field Monitoring Results of Cuttings or Core	1-26-93
F0.8C	JKH 4-23-93 ~~Field Monitoring Results of~~ Record of Drilling Fluids and Cuttings	1-26-93
F0.10A(1)	Drum Field Log	1-26-93
F0.10A(2)	" " "	1-26-93
F0.10A(3)	" " "	1-27-93

Authentication:

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Name (Print)	Signature	Date
Janice K. Herrmann	Janice K. Herrmann	4-23-93

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Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKH-042393-1

43593 FIELD DATA FILE

Number	Title	Date
FO.10C(1)	Contaminant Characterization Form for Grey Drums	1-26-93
FO.10 C(2)	" " " " " "	1-26-93
FO.10C(3)	" " " " " "	1-26-93
FO.14 C(1)	Surface Soil Sample Form	1-25-93
FO.14C(2)	" " " Form (Rinsate)	1-25-93
FO.14E(1)	Subsurface Soil Sample Form	1-26-93
FO.14E(2)	" " " "	1-26-93
FO.14E(3)	" " " "	1-26-93
FO.14E(4)	" " " "	1-26-93
FO.16A	Results of Radiological Measurements in the Field	1-26-93
GT.1B	Preliminary Well-site Field Log (2 pages)	1-26-93
GT.2A	Hollow-stem Auger Drilling Field Activities Report	1-26-93
GT.6A	Groundwater Monitoring Well and Piezometer Report	1-26-93
GT.8A	Surface Soil Data Collection Form	1-25-93
GT.8B	Surface Soil Sampling Field Activities Report	1-25-93
GT.8C	" " " " " "	1-25-93
GT.9A	Photoionization Detector Field Data Form	1-25-93

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JICH-042393-1 Page 3 of 3

43593 FIELD DATA FILE

Number	Title	Date
—	Color Photographs of Core (2 pages)	4-23-93
RGLB	Rig Geologist Logbook Notes (3 pages)	1-25/1-26/1-27-93
HSLB	Health & Safety Logbook Notes (13 pages)	1-25/1-26/1-27-93/3-9-
DLB	Drillers Logbook Note	1-26-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-072793-1

Page___ of ___

To: EMD records center, ___
Project Manager, and ___

From: _____

43693 FIELD DATA FILE

Number	Title	Date
FCKHSHT-1	File Checksheet (internal document)	
Form 1.1B (2)	Contamination Survey	3-25-93
Form 1.1B (2)	Contamination Survey	4-7-93
Form 1.1B	Post activity survey	4-7-93
Form FO.3A (2)	Equipment Decon/wash Checklist and Record	3-25-93
Form FO.4A (3)	Heavy Equipment decon/wash Checklist and Record	4-6-93
Form FO.10A (2)	Drum Field log Form	3-24-93
Form FO.10A	Drum Field log Form	3-25-93
Form FO.10C (2)	Containment Characterization Form for Gray Drums	3-24-93
Form FO.10C	Containment Characterization Form for Gray Drums	3-25-93
Form FO.14C	U.S. DOE Sample Collection form	3-10-93

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Name (Print) Signature Date

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Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-072793-1 Page___ of ___

43693 FIELD DATA FILE

Number	Title	Date
Form FO.HE (5)	U.S. DOE Sample Collection Form	3-24-93
Form FO.HE (7)	U.S. DOE Sample Collection Form	3-25-93
Form GT.1B	Preliminary Well-Site Field Log	3-24-93
Form GT.1B	Preliminary Well-Site Field Log	3-25-93
Form GT.2A	Hollow-Stem Auger Drilling Field report	3-24-93
Form GT.2A	Hollow-Stem Auger Drilling Field report	3-25-93
not designated	Borehole Construction diagram	3-26-93
not designated	BAT Groundwater Monitoring System	3-25-93
RGFLB	Rig Geologist Field log Book (L.M.)	3-24-93
HSTFLB	Health & Safety Technician Field Log Book (D.B.)	4-7-93
"	" CANE	4-7-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-042293-1

Page 1 of 3

To: EMD records center,
Project Manager, and

BH43793

From: Rust Environment and Infrastructure
#2 Garden Center
Broomfield, Co. 80020

43793 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Survey	2-12-93
1.1B(2)	Contamination Survey	2-12-93
1.1B(3)	Contamination Survey (3 pags)	2-23-93
1.1B(4)	Postwork Survey	2-24-93
1.1B(5)	Contamination Survey	2-24-93
1.1B(6)	" "	2-25-93
1.1B(7)	" "	2-25-93
1.1B(8)	" "	2-25-93
1.1B(9)	" " (3 pags)	2-26-93
FO.3A	Equipment Decon / Wash Check list	2-24-93
FO.4A	Heavy Equipment / Wash Checklist	2-23-93

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Name (Print)	Signature	Date
Janice K. Herrmann	Janice K. Herrmann	4-22-93

Received By EMD Document Custodian

Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKH-042293-1 Page 2 of 3

43793 FIELD DATA FILE

Number	Title	Date
FO.10A(1)	Drum Field Log Form	2-24-93
FO.10A(2)	" " " "	2-25-93
FO.10A(3)	" " " "	2-24-93
FO.10C(1)	Contaminant Characterization Form For Gray Drums	2-24-93
FO.10C(2)	" " " " " "	2-24-93
FO.10C(3)	" " " " " "	2-25-93
JKH 4-22-93 ~~FO.10C(~~		
FO.14C	Surface Soil Sample Form	2-12-93
FO.14E(1)	Subsurface Soil Sample Form	2-23-93
FO.14E(2)	" " " "	2-24-93
FO.14E(3)	" " " "	2-22-93
FO.14E(4)	" " " "	2-23-93
FO.14E(5)	" " " "	JKH 4-22-93 ~~2-24-93~~ 2-23-9
FO.14E(6)	" " " "	2-24-93
FO.14E(7)	" " " "	2-23-93
FO.16A	Results of Radiological Measurements in the Field	2-23-93
FO.16A	" " " " " "	2-24-93

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-042293-1 Page 3 of 3

43793 FIELD DATA FILE

Number	Title	Date
GT.1B	Preliminary Well-Site Field Log	2-23-93
GT.2A	Hollow-stem Auger Drilling Field Activities Report	2-23-93
GT.8A	Surface Soil Data Collection Form	2-12-93
GT.8B	" " Field Activities Report	2-12-93
GT.8C	" " " " "	2-12-93
GT.9A(1)	Photoionization Detector Field Data	2-23-93
GT.9A(2)	" " " "	2-24-93
VZCD	Vadose Zone Monitoring Borehole Construction Diagram	2-25-93/3-9-93
—	Color Photographs of Core (2 pages)	2-24-93
RGLB	Rig Geologist Logbook Notes (2 pages)	2-24/2-25-93
VZLB(1)	Vadose Zone Logbook entries	2-24-93
VZLB(2)	Vadose Zone Logbook entries (2 pages)	2-24-93
HSLB(1)	Health & Safety Logbook entries (8 pages)	2-23/2-24/2-25/3-9-93
HSLB(2)	Health: Safety Logbook entries (2 pages)	2-24-93
HSLB(3)	" " " "	2-22-93
DLB	Drillers Logbook Notes (1 page)	2-24-93

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-042793-1 Page 1 of 3

To: EMD records center,
Project Manager, and

BH 43893

From: Rust Environment and Infrastructure
#2 Garden Center Ste 200
Broomfield, Co. 80020

43893 FIELD DATA FILE

Number	Title	Date
1-1B(1)	Prework Survey	2-5-93
1-1B(2)	Contamination Survey	2-5-93
1-1B(3)	" " (2 pages)	2-5-93
1-1B(4)	" " (2 pages)	2-8-93
1-1B(5)	" " (2 pages)	2-8-93
1-1B(6)	Postwork Survey	2-8-93
1-1B(7)	Contamination Survey	2-10-93
FO.8A(1)	Field Monitoring Results of Cuttings or Core	2-5-93
FO.8A(2)	" " " " " " "	2-8-93
FO.8C	Record of Drilling Fluids and Cuttings	2-5-93/2-8-93
FO.4A	Heavy Equip Decon / Wash Checklist (2 pages)	3-23-93

Authentication:

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Name (Print)	Signature	Date
Janice K. Herrmann	Janice K. Herrmann	4-28-93

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Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-042793-1 Page 2 of 3

43893 FIELD DATA FILE

Number	Title	Date
FO.3A (2 page)	Equipment Decontamination / Wash Checklist	2-5-93/2-8-93
FO.10A(1)	Drum Field Log Form	2-5-93
FO.10A(2)	" " " "	2-8-93
FO.10A(3)	" " " "	2-8-93
FO.10C(1)	Contaminant Characterization Form For Gray Drums	2-8-93
FO.10C(2)	" " " " " "	2-5-93
FO.10C(3)	" " " " " "	2-8-93
FO.14C	Surface Soil Sample Form	2-5-93
FO.14E(1)	Subsurface Soil Sample Form	2-5-93
FO.14E(2)	" " " "	2-8-93
FO.14E(3)	" " " "	2-5-93
FO.14E(4)	" " " "	2-5-93
FO.14E(5)	" " " "	2-5-93
FO.14E(6)	" " " "	2-5-93
FO.14E(7)	" " " "	2-8-93
FO.14E(8)	" " " "	2-5-93
FO.14E(9)	" " " "	2-8-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-042793-1

Page 3 of 3

43893 FIELD DATA FILE

Number	Title	Date
FO.16A(1)	Results of Radiological Measurements in the Field	2-8-93
FO.16A(2)	" " " " " " "	2-5-93
GT.1A	RFP Borehole Log (2 pages)	3-11-93
GT.1B	Preliminary Well-site (2 pages)	2-5-93/2-8-93
GT.2A	Hollow-Stem Auger Drilling Field Report	2-5-93/2-8-93
GT.8A	Surface Soil Data Collection Form	2-5-93
GT.8B	" " Field Activities Report	2-5-93
GT.8C	" " " " "	2-5-93
GT.9A(1)	Photoionization Detector Field Data Form	2-5-93
GT.9A(2)	" " " " "	2-8-93
—	Color Photographs of Core (2 pages)	2-8-93
RGLB	Rig Geologist Logbook Notes (2 pages)	2-5-93/2-8-93
HSLB(1)	Health and Safety Logbook Notes (4 pages)	2-5-93/2-8-93/2-9-93/2-10-93
HSLB(2)	" " " " " (4 pages)	2-5-93/2-8-93/2-9-9

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- JKH-042993-2

Page 1 of 3

To: EMD records center,
Project Manager, and

From: Rust Environment
#2 Garden Center Ste. 200
Broomfield, Co. 80020

43993 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Survey	2-4-93
1.1B(2)	Contamination Survey	2-4-93
1.1B(3)	Contamination Survey	2-4-93
1.1B(4)	Contamination Survey (2 pages)	2-10-93
1.1B(5)	" "	2-10-93
1.1B(6)	" "	2-11-93
1.1B(7)	" "	2-11-93
1.1B(8)	" "	2-12-93
1.1B(9)	" " (2 pages)	2-15-93
1.1B(10)	" "	2-15-93
FO.3A	Equipment Decon / Wash Checklist (2 pages)	2/10/2+11/2-15/2-22-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice Hermann	Janice K. Hermann	4-29-93

Received By EMD Document Custodian

Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH - 042993-2

43993 FIELD DATA FILE

Number	Title	Date
FO.8A(1)	Field Monitoring Results of Cuttings or Core	2-10-93
FO.8A(2)	" " " " " " "	2-11-93
FO.8A(3)	" " " " " " "	2-10-93/2-18-93
JKH 4-29-93 ~~FO.14C~~		
FO.8C	Record of Drilling Fluids and Cuttings	2-10-93/2-18-93
FO.10A(1)	Drum Field Log Form	2-11-93
FO.10A(2)	" " " "	2-18-93
FO.10A(3)	" " " "	2-10-93
FO.10C(1)	Contaminant Characterization Form for Gray Drums	2-11-93
FO.10C(2)	" " " " " "	2-18-93
FO.10C(3)	" " " " " "	2-10-93
FO.14C	Surface Soil Sample Form JKH 4-29-93	~~4-29-93~~ 2-4-9
FO.14E(1)	Subsurface Soil Sample Form	2-10-93
FO.14E(2)	" " " "	2-10-93
FO.14E(3)	" " " "	2-10-93
FO.16A(1)	Results of Radiological Measurements in the Field	2-10-93
FO.16A(2)	" " " " " "	2-11-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JK4-042993-2

43993 FIELD DATA FILE

Number	Title	Date
FO.16A(3)	Results of Radiological Measurements in the Field	2-15-93
GT.1B	Preliminary Well-site Log (2 pages)	2-10-93
GT.2A	Hollow-stem Auger Drilling Field Activities	2-10-93
GT.6A	Groundwater Monitoring Well and Piezometer	2-18-93
GT.8A	Surface Soil Data Collection Form	2-4-93
GT.8B	Surface Soil Field Activities Form	2-4-93
GT.8C	" " " " "	2-4-93
GT.9A(1)	Photoionization Detector Field Form	2-10-93
GT.9A(2)	" " " "	2-11-93
GT.9A(3)	" " " "	2-15-93
—	Color Photographs of Core	2-15-93
RGLB	Rig Geologist Logbook Notes	2-10-93/2-15/2-18-93
HSLB(1)	Health & Safety Logbook Notes	2-10-93/ 2-4-93/2-11-93/2-18-93
HSLB(2)	Health & Safety Logbook Notes	2-1-93 / 2-19-93
HSLB(3)	" " " "	2-4 / 2-10 / 2-11-93
DLB	Drillers Logbook Notes	2-4-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- JKH-043093-1

Page 1 of 3

To: EMD records center,
Project Manager, and

From: Rust Environment
#2 Garden Center Ste 200
Broomfield, Co. 80020

FIELD DATA FILE-44093

Number	Title	Date
1.1B(1)	Prework Survey	2-9-93
1.1B(2)	Contamination Survey	2-9-93
1.1B(3)	Contamination Survey	2-10-93
1.1B(4)	Contamination Survey	2-11-93
1.1B(5)	Post-Activity Survey	2-11-93
FO.3A	Equipment Decon / Wash Check list (2 pages)	2-9-93 / 2-10-93
FO.4A	Heavy Equip Decon / Wash Checklist (3 pages)	3-1-93
FO.8A(1)	Field Monitoring Results of Cuttings or Core	2-9-93
FO.8A(2)	Field Monitoring " " " " "	2-10-93
FO.10A(1)	Drum Field Log Form	2-10-93
FO.10A(2)	" " " "	2-10-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice K. Hermann	Janice K. Hermann	4-30-93

Received By EMD Document Custodian

Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKA-043093-1

44093 FIELD DATA FILE

Number	Title	Date
FO.10C(1)	Contaminant Characterization Form For Gray Drum	2-10-93
FO.10C(2)	" " " " " "	2-10-93
FO.14C	Surface Soil Sample Form	2-9-93
FO.14E(1)	Subsurface Soil Sample Form	2-9-93
FO.14E(2)	" " " "	2-9-93
FO.14E(3)	" " " "	2-9-93
FO.14E(4)	" " " "	2-9-93
FO.14E(5)	" " " "	2-10-93
FO.16A(1)	Results of Radiological Measurements in the Field	2-9-93
FO.16A(2)	" " " " " " "	2-10-93
FO.8C	Record of Drilling Fluids and Cuttings	2-9-93/2-10-93
GT.1B	Preliminary Well-site Field Log	2-9-93/2-10-93
GT.2A	Hollow-stem Auger Drilling Field Activities	2-9-93/2-10-93/
GT.9A	Surface Soil Data Collection Form	2-9-93
GT.8B	Surface Soil Sampling Field Activities Report	2-9-93
GT.8C	" " " " " "	2-9-93
GT.9A(1)	Photoionization Detector Field Data Form	2-9-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JRH-043093-1 Page 3 of 3

44093 FIELD DATA FIELD FILE

Number	Title	Date
GT.9A(2)	Photoionization Detector Field Data	2-10-93
BGMS	BAT Groundwater Monitoring System	2-10-93
VZMB	Vadose Zone Monitoring Borehole Diagram	2-12-93
HSLB(1)	Health and Safety Log book notes (25 pages)	2-9/2-10/2-11/2-12-
HSLB(2)	" " " " " " (3 pages)	2-9-93
RGLB(1)	Rig Geologist Logbook Notes (2 pages)	2-9/2-11-93
RGLB(2)	" " " " (4 pages)	2-9-93/2-10-93
VZLB	Vadose Zone Logbook Notes	3-15-93
DLB	Drillers Logbook Notes	2-9/2-10-93

(4011-910-0079-910)FO2B.RV 3/05/1[illegible]

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- LRO - 072893-1 Page 1 of ___

To: EMD records center,
Project Manager, and

From:

44193 FIELD DATA FILE

Number	Title	Date
ECKHSHT 2	File check sheet 2 (internal document	
Form 1.1B	Prework Survey	12-28-93
Form 1.1B	Contamination Survey	12-21-93
Form 1.1B	Contamination Survey	1-5-93
Form 1.1B	Contamination Survey	1-6-93
Form FO.8A	Field monitoring results of cuttings or core	12-21-92
Form FO.8C	Record of drilling fluids and cuttings	4-7-93
Form FO.10A (2)	U.S. DOE - DRUM Field log form	12-21-93
Form FO.10A	"	1-4-93
Form FO.10A	"	1-5-93
Form FO.10A (8)	"	1-6-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-072893-1

Page 2 of __

44193 FIELD DATA FILE

Number	Title	Date
Form FO.10A (2)	U.S. DOE Drum Field Log Form	3-30-93
Form FO.10A (3)	"	3-31-93
Form FO.10C (2)	U.S. DOE Contaminant Characterization for Gray Drums	12-21-92
Form FO.10C	"	1-4-93
Form FO.10C	"	1-5-93
Form FO.10C (8)	"	1-6-93
Form FO.10C (2)	"	3-30-93
Form FO.10C (3)	"	3-31-93
Form FO.14C	U.S. DOE Sample Collection Form	12-18-92
Form FO.14E (6)	U.S. DOE Sample Collection Form	12-21-92
Form FO.14E (10)	"	3-31-93
Form GT.1A (2)	Rocky Flats Plant Borehole Log	12-21-92
Form GT.1A (2)	"	1-19-93
Form GT.1A (4)	"	3-30-93
Form GT.1B	Preliminary well-site field Log	3-29-93
Form GT.1B (2)	"	3-30-93
Form GT.1B	"	3-31-93
Form GT.2A	Hollow-Stem Auger Drilling Field activities report	3-31-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- LRD-072893-1

Page 3 of ___

44193 FIELD DATA FILE

Number	Title	Date
Form GT.9A	Photoionization detector field data form	12-21-92
HSTFLB	Health and Safety Tech. field log book (D.H.)	12-10-92
RGFLB	Rig Geologist field log (C.M.)	12-21-92
RGFLB	" (K.P.)	12-18-92
HSTFLB	Health and Safety Tech. field log book (V.R.)	12-17-92

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-081393-1

Page 1 of __

To: EMD records center,
Project Manager, and

From:

44393 FIELD DATA FILE

Number	Title	Date
FCheckSht 7	File checksheet (internal document)	
Form 1.1B	Prework Survey	12-15-92
Form 1.1B	Prework Survey	2-4-93
Form 1.1B	Prework Survey	2-8-93
Form 1.1B (2)	Contamination Survey	2-5-93
Form 1.1B (2)	Contamination Survey	2-8-93
Form 1.1B (2)	Contamination Survey	2-5-93
Form FO.8A	Field monitoring results of cuttings or Core	2-5-93
Form FO.8A	"	2-8-93
Form FO.10A (3)	Drum Field Log Form	2-4-93
Form FO.10C (3)	Contaminant Characterization form for Grey Drums	2-4-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRD-081393-1 Page 2 of __

44393 FIELD DATA FILE

Number	Title	Date
Form FO.14C	U.S. DOE Sample Collection Form	1-18-93
Form FO.14E (2)	U.S. DOE Sample Collection Form	2-5-93
Form FO.14E (5)	U.S. DOE Sample Collection Form	2-8-93
Form FO.16A	Results of radiological measurements in field	2-5-93
Form FO.16A	"	2-8-93
Form GT.1A (2)	Rocky Flats Plant Borehole Log	2-8-93
Form GT.1B (2)	Preliminary Well-Site field Log	2-8-93
Form GT.2A	Hollow-Stem Augers Drilling field activities report	2-5-93
Form GT.2A	"	2-8-93
Form GT.3A	Protective Casing installation field activities	4-27-93
Form GT.5A	Borehole Abandonment field activities report	2-5-93
Form GT.8A	Surface Soil data collection form	1-18-93
Form GT.8B	Surface soil sampling field activities report	
Form GT.8C	Surface Soil Sampling field activities report	
Form GT.9A	Photoionization detector field data form	2-5-93
Form GT.9A	"	2-8-93
Figure 2	Borehole Construction diagram	2-8-93
not designated (3)	BAT groundwater monitoring printout	2-5-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRO-081393-1

Page 3 of ___

44393 FIELD DATA FILE

Number	Title	Date
Not designated (3)	BAT groundwater monitoring protocol	2-8-93
HSTFLB	Health and Safety tech. Field Log Book (D.B.)	2-5-93
RGFLB	Rig Geologist Field Log Book	2-8-93

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-081793-1 Page 1 of ___

To: EMD records center,
Project Manager, and

From:

44593 FIELD DATA FILE

Number	Title	Date
ECKSHT 1	File Checksheet (internal document)	
Form 1.1B	Pre work Survey	12-11-92
Form 1.1B	Contamination Survey	12-11-92
Form 1.1B (2)	Contamination Survey	12-14-92
Form 1.1B	Contamination Survey	12-18-92
Form 1.1B	Post work Survey	12-18-92
Form FO.8C	Record of Drilling fluids and cuttings	12-14-92
Form FO.10A (3)	Drum Field Log Form	12-14-92
Form FO.10C (3)	Contaminant characterization form for Gray drums	12-14-92
Form FO.14C	U.S. DOE Sample Collection Form	12-11-92
Form FO.14E (6)	U.S. DOE Sample Collection Form	12-14-92

Authentication:

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Name (Print)	Signature	Date

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Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- LRD-081793-1

Page 2 of ___

44593 FIELD DATA FILE

Number	Title	Date
Form FO.16A	Results of Radiological measurements in field	12-14-92
Form GT.1A (2)	Rocky Flats Plant Borehole log	1-18-93
Form GT.1B (2)	Rocky Flats Plant Borehole log	12-14-93
Form GT. 2A	Hollow-Stem Auger drilling field activities report	12-14-93
Form GT. 5A	Borehole Abandonment field activities report	12-18-93
Form GT.8A	Surface Soil data collection form	12-11-93
HSTFLB	Health and Safety tech. field log book (V.R.)	12-11-93
RGFLB	Rsg Geologist Field Log Book (J.E.)	12-11-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-LRD-082693-1

Page 1 of ___

To: EMD records center,
Project Manager, and

From:

44693 FIELD DATA FILE

Number	Title	Date
ECHSHT 1	Exit checksheet (internal document)	
Form 1.1B	Prework survey	12-28-92
Form 1.1B	"	1-4-93
Form 1.1B (2)	Contamination survey	1-4-93
Form 1.1B	"	1-5-93
Form FO.3A (2)	Equipment decon/wash checklist and record	1-4-93
Form FO.8A	Field monitoring results of cuttings or core	1-4-93
Form FO.8C	Record of drilling fluids and cuttings	1-4-93
Form FO.10A (2)	Drum Field Log Form	1-4-93
Form FO.10A (2)	"	1-5-93
Form FO.10C	Contaminant characterization form for Gray Drums	1-4-93

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The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-LRO-082693-1 Page 2 of __

44693 FIELD DATA FILE

Number	Title	Date
Form FO.10C (2)	Containment Characterization Form for Gray Drums	1-5-93
Form FO.14C	U.S DOE Sample Collection Form	1-4-93
Form FO.14E (3)	U.S DOE Sample Collection Form	1-4-93
Form FO.16A	Results of radiological measurements in the field	1-4-93
Form GT.1A (2)	Rocky Flats Plant Borehole Log	1-4-93
Form GT.1A (2)	"	1-21-93
Form GT.2A	Hollow stem augers Drilling field activities report	3-2-93
Form GT.5A	Borehole Abandonment field activities report	1-5-93
Form GT.8A	Surface soil data collection form	1-4-93
Form GT.8B	Surface soil sampling field activities report	1-11-93
Form GT.9A	Photoionization detector field data form	1-4-93
HSTFLB	Health and Safety tech. field log book entries (N.R)	1-5-93
RGFLB	Rig Geologist field log book entries (J.E.)	1-4-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- LRD-082593-1

Page 2 of __

44793 FIELD DATA FILE

Number	Title	Date
Form GT.1A	Rocky Flats Plant Borehole Log	1-12-93
Form GT.1A (2)	"	2-15-93
Form GT.1B ( )	Preliminary well site field log	1-12-93
Form GT.2A	Hollow Stem Auger Drilling Field activities	1-13-93
Form GT.5A	Borehole Abandonment field activities report	1-13-93
Form GT.8B	Surface Soil Sampling field activities report	1-11-93
Form GT.8C	Surface Soil sampling field activities report	1-11-93
Form GT.9A (2)	Photoionization detector field data form	1-12-93
HSTFLB	Health and Safety tech. field log Book (V.R.)	1-11-93
RGFLB	Rig Geologist Field Log Book (K.M.)	1-11-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-050593-1

To: EMD records center,
Project Manager, and

BH44893

From: Rust Environment & Infrastructure
#2 Garden Center Ste. 200
Broomfield, Co. 80020

44893 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Prework Survey	1-14-93
1.1B(2)	Contamination Survey	1-14-93
1.1B(3)	Contamination Survey	1-15-93
FO.3A	Equip Decon / Wash Checklist (2 pages)	1-14-93
FO.4A	Heavy Equip Decon/Wash Check (3 pages)	1-19-93
FO.8A(1)	Field Monitoring: Results of Cuttings or Core	1-14-93
FO.8A(2)	" " " " " " "	1-15-93
FO.10A(1)	Drum Field Log Form	1-15-93
FO.10A(2)	" " " "	1-15-93
FO.10A(3)	" " " "	1-15-93
FO.10A(4)	" " " "	1-15-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date
Janice K. Herrmann	Janice K. Herrmann	5-6-93

Received By EMD Document Custodian

Name (Print)	Signature	Date
Steven M. Paris	S M. P	5/14/93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-050593-1

Page 2 of 3

44893 FIELD DATA FILE

Number	Title	Date
FO.10C(1)	Contaminant Characterization Form For Gray Drums	1-15-93
FO.10C(2)	" " " " " "	1-15-93
FO.10C(3)	" " " " " "	1-15-93
FO.10C(4)	" " " " " "	1-15-93
FO.14(C)	Surface Soil Sample Form.	1-14-93
FO.14E(1)	Subsurface Soil Sample Form	1-14-93
FO.14E(2)	" " " "	1-14-93
FO.14E(3)	" " " "	1-14-93
FO.14E(4)	" " " "	1-14-93
FO.14E(5)	" " " "	1-15-93
FO.14E(6)	" " " "	1-15-93
FO.14E(7)	" " " "	1-15-93
FO.14E(8)	" " " "	1-14-93
GT.1A	RFP Borehole Log (3 pages)	2-16-93
	Draft Copy Borehole Log (3 pages)	1-15-93
GT.1B	Preliminary Well-site Field Log (2 pages)	1-14-93
GT.2A(1)	Hollow-stem Auger Drilling Field Activities	1-14-93

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-050593-1

44893 FIELD DATA FILE

Number	Title	Date
GT.2A(2)	Hollow-Stem Auger Drilling Field Activities	1-15-93
GT.6A	Groundwater Monitoring Well and Piezometer Report	1-15-93
GT.8A	Surface Soil Data Collection Form	1-14-93
GT.8B	Surface Soil Sampling Field Activities	1-14-93
GT.8C	" " " " "	1-14-93
GT.9A(1)	Photoionization Detector Field Data Form	1-15-93
GT.9A(2)	" " " " "	1-15-93
FO.16A(1)	Results of Radiological Measurements in the Field	1-14-93
FO.16A(2)	" " " " " " "	1-15-93
	Color Photographs of Core (2 pages)	2-3-9
HSLB(1)	Health & Safety Logbook Notes (9 pages)	1/14/93/1-15-93/1-18-93
HSLB(2)	Health & Safety Logbook Notes	1-18-93
RGLB(1)	Rig Geologist Logbook Notes	1-14-93
HSLB(3)	Health & Safety Logbook Notes	1-14-93
RGLB(2)	Rig Geologist Logbook Notes	1-14-93
RGLB(3)	" " " " (2 pages)	1-15-93
DLB	Drillers Logbook Notes (3 pages)	1-15-93
FO.8C	Record of Drilling Fluids and Cuttings	1-14-93/1-15-93

Borehole # 2

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2A

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT- JKH-051493-1

Page 1 of 2

To: EMD records center,
Project Manager, and

BH 45293

From: Rust Environment
#2 Garden Center
Broomfield, Co. 80020

45293 FIELD DATA FILE

Number	Title	Date
1.1B (1)	Post-Activity Survey	1-18-93
1.1B(2)	Contamination Survey	1-18-93
FO.3A	Equip Decon / Work Checklist (2 pages)	1-18-93
FO.4A	Worker Equip / Work Checklist (3 pages)	1-18-93
FO.8A	Field Monitoring Results of Cuttings or Core	1-18-93
FO.8C	Record of Drilling Fluid and Cuttings	1-18-93
FO.10A(1)	Drum Field Log Form	1-18-93
FO.10A(2)	Drum Field Log Form	1-18-93
FO.10A(3)	Drum Field Log Form	1-18-93
FO.10A(4)	Drum Field Log Form	1-18-93
FO.10C(1)	Contaminant Characterization Form	1-18-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Janice K. Herrmann	Janice K. Herrmann	5-14-93
Name (Print)	Signature	Date

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Steven Paris	[signature]	5/14/93
Name (Print)	Signature	Date

U.S. DEPARTMENT OF ENERGY ROCKY FLATS PLANT

FORM FO.2B

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT- JKH-051493-1

Page 2 of 2

45293 FIELD DATA FILE

Number	Title	Date
FO.10C(2)	Contaminant Characterization Form	1-18-93
FO.10C(3)	" " "	1-18-93
FO.10C(4)	" " "	1-18-93
~~FO.10CC~~	"	
FO.16A	Results of Radiological Measurements in the Field	1-18-93
GT.1B	Preliminary Well Site Field Log (2 pages)	1-18-93
GT.2A	Hollow-Stem Auger Drilling	1-18-93
GT.6A	Groundwater Monitoring Well and Piezometer	1-18-93
GT.9A	Photoionization Detector Field Data Form	1-18-93
	Color Photographs of Core (2 pages)	1-18-93
RGLB	Rig Geologist Logbook Note (2 pages)	1-18-93
HSLB	Health & Safety Logbook Notes (3 pages)	1-18-93
DLB	Drillers Logbook Note	1-18-93

JKH 5-14-93

(4011-910-0079-910)(FO2REV 3)(05/18/92)

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH-052193-1 Page 1 of ___

To: EMD records center,
Project Manager, and

From: Rust Environment & Infrastructure
#2 Garden Center
Broomfield, Co. 80020

45693 FIELD DATA FILE

Number	Title	Date
FCHKSHT1	File checksheet (internal document)	
Form 1.1B	Contamination Survey	3-22-93
Form FO.3A (2)	Equipment decon/wash checklist and record	3-19-93
Form FO.8A	Field monitoring results of cuttings or core	3-19-93
Form FO.8B	Verification of Organic Vapor monitoring results	3-19-93
Form FO.10A	U.S. DOE Drum Field Log Form	3-19-93
Form FO.10C	Containment Characterization form for gray drums	3-19-93
Form FO.14C	U.S. DOE Sample Collection form	3-19-93
Form FO.14E (4)	U.S. DOE Sample Collection form	3-19-93
Form FO.14G	REEDS Well installation form	3-19-93
Form GT.1B	Preliminary well-site field log	3-19-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print)	Signature	Date

Received By EMD Document Custodian

Name (Print)	Signature	Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-052193-1 Page 2 of ___

45693 FIELD DATA FILE

Number	Title	Date
Form GT.2A	Hollow-Stem Auger Drilling field activities report	3-19-93
Form GT.3A	Protective Casing installation field activities report	4-27-93
Form GT.6A	Groundwater monitoring wells Piezometer report	3-22-93
Form GT.9A	Photoionization detector field data Form	3-19-93
REFLB	Rig Geologist field Log book (J.E.) (C.M.)	3-19-93/3-22-93

ATTACHMENT 1
FIELD QA RECORDS TRANSMISSION FORM

Transmission Form Number FQT-JKH. 052093-1 Page 1 of ___

To: EMD records center,
Project Manager, and

From: Rust Environment and Infrastructure
#2 Garden Center Ste 200
Broomfield, Co. 80020

45893 FIELD DATA FILE

Number	Title	Date
1.1B(1)	Contamination Survey (2 pages)	3-16-93
FCKSHT1	(Internal Document) Field Checksheet	
Form 1.1R	Contamination Survey	3-17-93
Form FO.3A	Equipment Decon/Wash Checklist and Record	3-16-93
Form FO.8A(2)	Field monitoring results of Cuttings or Core	3-16-93
Form FO.8B	Verification of Organic Vapor monitoring results	3-16-93
Form FO.8C	Record of Drilling Fluids & Cuttings	3-17-93
Form FO.10A(2)	Drum Field Log Form	3-16-93
Form FO10A	Drum Field Logs Form	3-17-93
Form FO.10C(2)	Contaminant Characterization form for Gray drums	3-16-93
Form FO.10C	"	3-17-93

Authentication:

The signature below indicates that the requirements specified in OPS GEN1.2 have been complied with for completion of this form and attached QA records listed on this form including the specified continuation pages.

Name (Print) Signature Date

Received By EMD Document Custodian

Name (Print) Signature Date

ATTACHMENT 2

FIELD QA RECORDS TRANSMISSION FORM
ENVIRONMENTAL MONITORING DEPARTMENT

(Continuation Sheet)

Transmission Form Number FQT-JKH-052093-1 Page 2 of ___

45893 FIELD DATA FILE

Number	Title	Date
Form FO.14E (9)	O.S.DOE Sample Collection form	3-16-93
Form FO14G	RFEDS Well Installation form	3-16-93
Form GT.2A	Hollow-Stem Auger drilling activities report	3-17-93
Form GT.6A	Groundwater monitoring well + Piezometer report	3-17-93
RGFLB	Rig Geologist field log-book (c.m.)	3-15-93

APPENDIX II.K

DEFICIENCY REPORTS AND CORRECTIVE ACTIONS

DATA TRANSMITTAL

RE: OU4 - Response to Notice of Deficiency, Form GT.6A

To: Michelle McKee

From: John Evans

Date: October 6, 1993

Enclosed, please find completed forms GT.6A for piezometers listed below.

40193
41193
41693
41993
42393
42993
43293
43593
43893
43993
44893
44993
45093
45293
45393
45693
45793
45893
45993
46193
46293
46393
46493

DATA TRANSMITTAL

RE: OU4 - Response to Notice of Deficiency, Form GT.6A

To: Michelle McKee

From: John Evans

Subject: GT.6A-Forms

Date: October 11, 1993

Michelle,

With the original stack of GT.6A forms delivered last week I forgot to include piezometers 45593 and 46093. These piezometers consist of 2 inch diameter stainless steel wells screens, galvanized steel casing and a cone-shaped point on the bottom of the screen. The casing was installed by pushing it into the ground with the drill rig hydraulics. As a result no hole was drilled, no samples were taken and no sand filter pack was installed. The screen is in direct contact with native soil. The following list includes the forms delivered last week plus forms for 45593 and 46093. Please call 5892 with questions. JCE

40193
41193
41693
41993
42393
42993
43293
43593
43893
43993
44893
44993
45093
45293
45393
45593
45693
45793
45893
45993
46093
46193
46293
46393
46493

APPENDIX II.L

ASPHALT LINER SAMPLING ANALYTICAL RESULTS

Copy 1 of 2 8/26/93

ANALYTICAL REPORT

TO: EG&G ROCKY FLATS

PROJECT: 6RF100000

DATE: Friday, August 6, 1993

REQUISITION(S): 11859

PREPARED BY:

CHEM-NUCLEAR GEOTECH ANALYTICAL LABORATORY
2597 B 3/4 ROAD
P.O. BOX 14000
GRAND JUNCTION, COLORADO 81502-5504
(303-248-6165)

Chem-Nuclear Geotech, Inc.
P.O. Box 14000
2597 B¾ Road
Grand Junction, Colorado 81502-5504
[illegible]248-6000
[illegible]3:248-6040

A Waste Management Company

August 16, 1993

Mr. Paul J. White
EG&G Rocky Flats, Inc.
Rocky Flats Plant
P.O. Box 464
Golden, CO 80402-0464

Subject: Analytical Reports for Requisition 11859

Dear Mr. White:

Enclosed are the analytical results for six asphalt samples. The analytical summary accompanying this requisition explains the methods used for analysis and reporting.

If you have any questions please contact me at (303) 248-6166.

Sincerely,

G L Winkelmann FOR RBC

Ronald B. Chessmore
Manager, Analytical Lab

rbc/bld
Enclosure

ANALYTICAL REPORT INDEX

This report is the final data package for Requisition 11859 generated by the Analytical Laboratory for the Rocky Flats Operable Unit 4 Phase I RFI/RI investigation. It is the official record, and requestors are responsible for proper record-keeping in compliance with project requirements.

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, project, or process disclosed in this report, or represents that its use would not infringe privately owned rights. Reference therein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

This report includes the following documents:

Cover Page
Analytical Report Index
Analytical Summary
Sample Index

Section I
Analytical Data Summary

Section II
Inorganic Data Section

Section III
Receiving Documentation

ANALYTICAL SUMMARY

This report contains the results for six asphalt samples received under Project Number 5RF100000, Requisition Number 11859, on June 23, 1993.

The samples were submitted for the determination of CLP total metals, radiochemical analytes, and cyanide in accordance with the scope on work sent from P. White to R. Chessmore on April 22, 1993. Cyanide, gross alpha and gross beta, and tritium were later dropped from the analyte suite, as requested by Randy Ogg in the memo on page 3 of Section III. This requisition contains the data from the metals analyses. The radiochemical analyses will be reported on Requisition 11858.

Aluminum, antimony, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lithium, magnesium, manganese, molybdenum, nickel, potassium, silver, sodium, strontium, vanadium, and zinc were determined by Geotech Standard Operating Procedure (SOP) AS-5, which is the laboratory SOP for inductively coupled plasma spectrometry (ICP). Arsenic, lead, selenium, and thallium were determined by Geotech SOP AS-2, which is the laboratory SOP for graphite furnace atomic absorption spectrometry (GFAA). Cesium and tin were determined by Geotech SOP AS-6, which is the laboratory SOP for inductively coupled plasma/mass spectrometry (ICP/MS).

The duplicate analyses for cadmium and lead were not within the control limits, as indicated by the "*" qualifier. The spiked sample recovery for manganese was not within the control limits, as indicated by the "N" qualifier. The "W" qualifiers beside the selenium result for sample 213984 and the arsenic result for sample 213988 indicate that the analytical spike recoveries for the graphite furnace analyses were out of the control limits (85-115%), while the sample concentrations were less than 50% of the spike concentration. The reported values for lead for samples 213985, 213986, and 213987 were obtained by the method of standard addition (MSA), as indicated by the "S" qualifier. The correlation coefficient for the MSA for the lead analysis of sample 213988 was less than 0.995, as indicated by the "+" qualifier.

The MSA is required for a graphite furnace analysis if the analytical spike recovery is outside the control limits (85-115%) and the sample concentration is greater than or equal to 50% of the spike concentration.

All other applicable quality control parameters were met.

RELEASE OF THE DATA CONTAINED IN THIS REPORT HAS BEEN AUTHORIZED BY THE LABORATORY MANAGER OR THE MANAGER'S DESIGNEE

Gwendolyn Dunlap for RRC 8/12/93
LABORATORY MANAGER DATE

John Kee 8/12/93
PREPARED BY DATE

CHEM-NUCLEAR GEOTECH ANALYTICAL LABORATORY

REQUISITION(S): 11859

CUSTOMER ID	LAB ID	
AS40501AE	213987	
AS40502AE	213989	
AS40503AE	213984	
AS40504AE	213985	
AS40505AE	213986	
AS40506AE	213988	

(SECTION I)

ANALYTICAL DATA SUMMARY

This section contains 6 pages, not including this page.

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO.

213984

: _213984__ Matrix: SOIL__

e Received: _06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3510			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	1.6	B		F
7440-39-3	Barium	50.1			P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.83	B	*	P
7440-70-2	Calcium	1730			P
7440-47-3	Chromium	7.4			P
7440-48-4	Cobalt	3.4	B		P
7440-50-8	Copper	9.9			P
7440-46-2	Cesium	0.71	B		PM
7439-89-6	Iron	7170			P
7439-92-1	Lead	80.4		*	F
7439-93-2	Lithium	4.7			P
7439-95-4	Magnesium	2000			P
7439-96-5	Manganese	124		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	9.2			P
7440-09-7	Potassium	1420			P
7782-49-2	Selenium	0.60	U	W	F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	233	B		P
7440-24-6	Strontium	11.1	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.41	B		PM
7440-62-2	Vanadium	24.1			P
7440-66-6	Zinc	40.2			P

or Before: BLACK____ Clarity Before: _____ Texture: COARSE

or After: BLACK____ Clarity After: _____ Artifacts: _____

ments:

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO.

213985

: _213984__ Matrix: SOIL__

e Received: _06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2850			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	1.5	B		F
7440-39-3	Barium	37.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.80	U	*	P
7440-70-2	Calcium	1100			P
7440-47-3	Chromium	5.9			P
7440-48-4	Cobalt	2.2	B		P
7440-50-8	Copper	7.7			P
7440-46-2	Cesium	0.67	B		PM
7439-89-6	Iron	5940			P
7439-92-1	Lead	11.4		S*	F
7439-93-2	Lithium	3.8	B		P
7439-95-4	Magnesium	1650			P
7439-96-5	Manganese	104		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	8.8			P
7440-09-7	Potassium	1010			P
7782-49-2	Selenium	0.60	U		F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	135	B		P
7440-24-6	Strontium	7.1	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.31	B		PM
7440-62-2	Vanadium	20.7			P
7440-66-6	Zinc	21.1			P

or Before: BLACK____ Clarity Before: _____ Texture: COARSE

or After: BLACK____ Clarity After: _____ Artifacts: _____

ments:

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO.

213986

No.: 213984 Matrix: SOIL

Date Received: 06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3060			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	1.7	B		F
7440-39-3	Barium	26.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.80	U	*	P
7440-70-2	Calcium	1390			P
7440-47-3	Chromium	8.4			P
7440-48-4	Cobalt	2.8	B		P
7440-50-8	Copper	4.4	B		P
7440-46-2	Cesium	0.43	B		PM
7439-89-6	Iron	5660			P
7439-92-1	Lead	26.5		S*	F
7439-93-2	Lithium	6.5			P
7439-95-4	Magnesium	1920			P
7439-96-5	Manganese	101		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	11.4			P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	0.60	U		F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	472	B		P
7440-24-6	Strontium	5.4	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.34	B		PM
7440-62-2	Vanadium	16.3			P
7440-66-6	Zinc	19.9			P

Color Before: BLACK Clarity Before: Texture: COARSE

Color After: BLACK Clarity After: Artifacts:

Comments:

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO. 213987

No.: 213984 Matrix: SOIL

Received: 06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2420			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	0.74	B		F
7440-39-3	Barium	29.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	2.8		*	P
7440-70-2	Calcium	832	B		P
7440-47-3	Chromium	5.7			P
7440-48-4	Cobalt	1.4	U		P
7440-50-8	Copper	7.0			P
7440-46-2	Cesium	0.53	B		PM
7439-89-6	Iron	5350			P
7439-92-1	Lead	107		S*	F
7439-93-2	Lithium	4.1			P
7439-95-4	Magnesium	1320			P
7439-96-5	Manganese	95.8		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	8.7			P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	0.60	U		F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	189	B		P
7440-24-6	Strontium	5.4	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.37	B		PM
7440-62-2	Vanadium	19.4			P
7440-66-6	Zinc	30.8			P

Color Before: BLACK Clarity Before: Texture: COARSE

Color After: BLACK Clarity After: Artifacts:

Comments:

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO.
213988

No.: 213984 Matrix: SOIL

Received: 06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4520			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	1.2	B	W	F
7440-39-3	Barium	57.7			P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	9.9		*	P
7440-70-2	Calcium	2010			P
7440-47-3	Chromium	37.5			P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	22.1			P
7440-46-2	Cesium	0.98	B		PM
7439-89-6	Iron	9340			P
7439-92-1	Lead	74.2		+*	F
7439-93-2	Lithium	13.4			P
7439-95-4	Magnesium	2350			P
7439-96-5	Manganese	122		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	15.1			P
7440-09-7	Potassium	2050			P
7782-49-2	Selenium	0.60	U		F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	473	B		P
7440-24-6	Strontium	14.8	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.51	B		PM
7440-62-2	Vanadium	37.8			P
7440-66-6	Zinc	74.0			P

Color Before: BLACK Clarity Before: Texture: COARSE

Color After: BLACK Clarity After: Artifacts:

Comments:

INORGANIC DATA SECTION INVENTORY SHEET

RUST Geotech Inc. Grand Junction, Colorado

SDG No.: 213984 REQ. No.:11859

(SECTION II)

Page Numbers From	To	Document Description
1	1	Inventory Sheet
2	2	Cover Page
3	3	Definition of Qualifiers and Flags
4	9	Inorganic Analysis Data Sheet (Form 1)
10	13	Initial & Continuing Calibration Verification (Form 2A)
14	14	CRDL Standards For AA and ICP (Form 2B)
15	16	Blanks (Form 3)
17	18	ICP Interference Check Sample (Form 4)
19	19	Spike Sample Recovery (Form 5A)
20	20	Post Digest Spike Sample Recovery (Form 5B)
21	21	Duplicates (Form 6)
22	22	Laboratory Control Sample (Form 7)
23	23	Standard Addition Results (Form 8)
24	24	Serial Dilutions (Form 9)
25	27	Instrument Detection Limits (Form 10)
28	29	ICP Linear Ranges (Form 12)
30	31	Preparation Log (Form 13)
32	49	Analysis Run Logs (Form 14)
50	50	General Information For Raw Data
51	86	ICP Raw Data
87	120	ICP–MS Raw Data
121	187	Furnace AA Raw Data
188	189	Preparation Logs Raw Data

QCed SEB 8/3/93

Prepared by:

Brian V. Dang
Scientist
July 30, 1993
BVD 7-30-93

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

COVER PAGE

2

SDG No.: _213984____

(SECTION II)

Lab Sample No.

_213984_____
_213984D_____
_213984S_____
_213985_____
_213986_____
_213987_____
_213988_____
_213989_____

re ICP interelement corrections applied ? Yes/No NO_

re ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

mments:

DEFINITION OF QUALIFIERS (SECTION II)

C (Concentration) Qualifiers

B The reported value was obtained from a reading that was less than the Required Detection Limit (RDL) but greater than or equal to the actual Detection Limit (DL).

U The analyte was not detected. The value reported is the DL corrected for any dilution in the sample preparation process and for percent solids if the sample is a solid.

Q Qualifiers

E The reported value is estimated because of the possible presence of interference. The E qualifier is present if the result for the ICP serial dilution is not within control limits or if the analytical (post–digestion) spike recovery for graphite furnace is less than 40% on both the original and the diluted sample.

M Duplicate injection precision for graphite furnace was not met. This qualifier is present if the result is greater than the RDL and the relative standard deviation of the duplicate injections was greater than 20% for both the original analysis and the repeated analysis.

N Spiked sample recovery is not within control limits.

S The reported value was obtained by the Method of Standard Additions (MSA).

W Analytical (post–digestion) spike recovery for graphite furnace analysis is out of the control limits (85–115%), while the sample concentration is less than 50% of spike concentration.

• Duplicate analysis is not within control limits.

+, Correlation coefficient for the MSA is less than 0.995.

The "S", "W", and "+" qualifiers are mutually exclusive. No combination of these qualifiers can appear in the same field for an analyte.

M (Method) Qualifiers

P ICP Atomic Emission Spectroscopy
PM ICP Mass Spectrometry
F Graphite Furnace Atomic Absorption Spectroscopy
CV Cold Vapor Atomic Absorption Spectroscopy
A Flame Atomic Absorption Spectroscopy
C Spectrophotometric
IC Ion Chromatography
NR The analysis is not required.

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO.

213984

No.: _213984__ Matrix: SOIL__

Received: _06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3510			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	1.6	B		F
7440-39-3	Barium	50.1			P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.83	B	*	P
7440-70-2	Calcium	1730			P
7440-47-3	Chromium	7.4			P
7440-48-4	Cobalt	3.4	B		P
7440-50-8	Copper	9.9			P
7440-46-2	Cesium	0.71	B		PM
7439-89-6	Iron	7170			P
7439-92-1	Lead	80.4		*	F
7439-93-2	Lithium	4.7			P
7439-95-4	Magnesium	2000			P
7439-96-5	Manganese	124		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	9.2			P
7440-09-7	Potassium	1420			P
7782-49-2	Selenium	0.60	U	W	F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	233	B		P
7440-24-6	Strontium	11.1	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.41	B		PM
7440-62-2	Vanadium	24.1			P
7440-66-6	Zinc	40.2			P

r Before: BLACK____ Clarity Before: _____ Texture: COARSE

r After: BLACK____ Clarity After: _____ Artifacts: _____

ents:

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO.
213985

; No.: _213984__ Matrix: SOIL__

te Received: _06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2850			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	1.5	B		F
7440-39-3	Barium	37.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.80	U	*	P
7440-70-2	Calcium	1100			P
7440-47-3	Chromium	5.9			P
7440-48-4	Cobalt	2.2	B		P
7440-50-8	Copper	7.7			P
7440-46-2	Cesium	0.67	B		PM
7439-89-6	Iron	5940			P
7439-92-1	Lead	11.4		S*	F
7439-93-2	Lithium	3.8	B		P
7439-95-4	Magnesium	1650			P
7439-96-5	Manganese	104		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	8.8			P
7440-09-7	Potassium	1010			P
7782-49-2	Selenium	0.60	U		F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	135	B		P
7440-24-6	Strontium	7.1	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.31	B		PM
7440-62-2	Vanadium	20.7			P
7440-66-6	Zinc	21.1			P

.or Before: BLACK____ Clarity Before: _____ Texture: COARSE

.or After: BLACK____ Clarity After: _____ Artifacts: _____

ments:

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT 6

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO.

213986

; No.: _213984__ Matrix: SOIL__

te Received: _06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3060			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	1.7	B		F
7440-39-3	Barium	26.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.80	U	*	P
7440-70-2	Calcium	1390			P
7440-47-3	Chromium	8.4			P
7440-48-4	Cobalt	2.8	B		P
7440-50-8	Copper	4.4	B		P
7440-46-2	Cesium	0.43	B		PM
7439-89-6	Iron	5660			P
7439-92-1	Lead	26.5		S*	F
7439-93-2	Lithium	6.5			P
7439-95-4	Magnesium	1920			P
7439-96-5	Manganese	101		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	11.4			P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	0.60	U		F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	472	B		P
7440-24-6	Strontium	5.4	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.34	B		PM
7440-62-2	Vanadium	16.3			P
7440-66-6	Zinc	19.9			P

or Before: BLACK____ Clarity Before: _____ Texture: COARSE

or After: BLACK____ Clarity After: _____ Artifacts: _____

ments:

FORM 1
INORGANIC ANALYSES DATA SHEET

LAB SAMPLE NO.

213989

G No.: 213984 Matrix: SOIL

te Received: 06/23/93 % Solids: 100.0

(SECTION II)

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4250			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	1.0	B		F
7440-39-3	Barium	47.7			P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	3.6		*	P
7440-70-2	Calcium	1040			P
7440-47-3	Chromium	10.2			P
7440-48-4	Cobalt	2.6	B		P
7440-50-8	Copper	11.5			P
7440-46-2	Cesium	0.97	B		PM
7439-89-6	Iron	7950			P
7439-92-1	Lead	7.9		*	F
7439-93-2	Lithium	8.1			P
7439-95-4	Magnesium	1800			P
7439-96-5	Manganese	117		N	P
7439-98-7	Molybdenum	6.2	U		P
7440-02-0	Nickel	9.6			P
7440-09-7	Potassium	2370			P
7782-49-2	Selenium	0.60	U		F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	1000			P
7440-24-6	Strontium	6.4	B		P
7440-28-0	Thallium	1.0	U		F
7440-31-5	Tin	0.49	B		PM
7440-62-2	Vanadium	20.2			P
7440-66-6	Zinc	25.6			P

lor Before: BLACK Clarity Before: Texture: COARSE

lor After: BLACK Clarity After: Artifacts:

nments:

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

10

3 No.: _213984__

itial Calibration Source: PLASMACHEM_____

ntinuing Calibration Source: INORGANIC VEN__

(SECTION II)

Concentration Units: ug/L

alyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
uminum	10000.0	10046.57	100.5	40000.0	40142.77	100.4	40088.95	100.2	P
timony	3000.0	2907.98	96.9	2500.0	2474.19	99.0	2444.90	97.8	P
senic	60.0	64.00	106.7	50.0	55.00	110.0	51.40	102.8	F
rium	3000.0	3181.89	106.1	10000.0	10107.71	101.1	10021.17	100.2	P
eryllium	250.0	267.03	106.8	250.0	251.63	100.7	251.01	100.4	P
dmium	1000.0	1058.62	105.9	2500.0	2562.37	102.5	2567.23	102.7	P
lcium	25000.0	25734.06	102.9	75000.0	74756.29	99.7	74386.48	99.2	P
romium	1000.0	1052.62	105.3	2500.0	2501.39	100.1	2487.32	99.5	P
b[illegible]	1000.0	1066.15	106.6	2500.0	2542.42	101.7	2525.29	101.0	P
[illegible]	1000.0	1053.08	105.3	2500.0	2529.55	101.2	2540.17	101.6	P
[illegible]um	60.0	61.28	102.1	50.0	49.82	99.6	49.62	99.2	PM
on	3000.0	3135.22	104.5	40000.0	40429.17	101.1	40212.66	100.5	P
ad	60.0	59.70	99.5	50.0	50.30	100.6	48.90	97.8	F
thium	3000.0	3111.06	103.7	2500.0	2570.03	102.8	2593.67	103.7	P
gnesium	25000.0	26237.68	105.0	50000.0	50068.30	100.1	50131.67	100.3	P
nganese	1000.0	1038.78	103.9	2500.0	2523.03	100.9	2480.35	99.2	P
lybdenum	1000.0	1038.58	103.9	2500.0	2503.10	100.1	2453.75	98.2	P
ckel	1000.0	1054.63	105.5	2500.0	2527.64	101.1	2528.11	101.1	P
tassium	50000.0	51101.62	102.2	50000.0	50671.84	101.3	50078.33	100.2	P
lenium	60.0	63.70	106.2	50.0	51.00	102.0	50.50	101.0	F
lver	500.0	541.32	108.3	2500.0	2606.07	104.2	2597.31	103.9	P
dium	25000.0	25653.31	102.6	50000.0	49506.96	99.0	50077.05	100.2	P
rontium	1000.0	1013.02	101.3	2500.0	2521.27	100.9	2488.55	99.5	P
allium	60.0	61.10	101.8	50.0	49.10	98.2	52.00	104.0	F
n	60.0	61.12	101.9	50.0	48.06	96.1	47.64	95.3	PM
nadium	1000.0	1033.37	103.3	2500.0	2525.14	101.0	2513.32	100.5	P
nc	1000.0	1051.31	105.1	2500.0	2518.71	100.7	2502.93	100.1	P

ntrol Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

11

No.: _213984__

tial Calibration Source: PLASMACHEM_____

tinuing Calibration Source: INORGANIC VEN__

(SECTION II)

Concentration Units: ug/L

alyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
uminum				40000.0	40167.17	100.4			P
timony				2500.0	2488.29	99.5			P
senic				50.0	50.80	101.6	52.50	105.0	F
rium				10000.0	9921.19	99.2			P
yllium				250.0	251.96	100.8			P
imium				2500.0	2567.24	102.7			P
lcium				75000.0	74670.02	99.6			P
romium				2500.0	2488.24	99.5			P
r				2500.0	2524.10	101.0			P
				2500.0	2532.67	101.3			P
sium				50.0	47.64	95.3			PM
on				40000.0	39990.50	100.0			P
ad				50.0	51.20	102.4	49.40	98.8	F
thium				2500.0	2610.33	104.4			P
gnesium				50000.0	50114.38	100.2			P
nganese				2500.0	2434.08	97.4			P
ybdenum				2500.0	2450.38	98.0			P
ckel				2500.0	2516.14	100.6			P
tassium				50000.0	49931.90	99.9			P
enium				50.0	48.90	97.8	47.00	94.0	F
ver				2500.0	2579.74	103.2			P
dium				50000.0	50097.47	100.2			P
rontium				2500.0	2442.50	97.7			P
allium				50.0	52.20	104.4			F
n				50.0	46.73	93.5			PM
nadium				2500.0	2520.34	100.8			P
nc				2500.0	2498.38	99.9			P

trol Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

; No.: _213984__

.tial Calibration Source: PLASMACHEM_____

:tinuing Calibration Source: INORGANIC VEN__

(SECTION II)

Concentration Units: ug/L

.alyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
uminum__									NR
timony__									NR
senic__				50.0	52.60	105.2	52.20	104.4	F_
rium__									NR
ryllium_									NR
dmium__									NR
lcium__									NR
r um__									NR
-									NR
pper__									NR
sium__									NR
on__									NR
ad__				50.0	46.00	92.0			F_
thium__									NR
gnesium_									NR
nganese_									NR
lybdenum									NR
ckel__									NR
tassium_									NR
lenium__				50.0	50.30	100.6	49.70	99.4	F_
lver__									NR
dium__									NR
rontium_									NR
allium__									NR
n__									NR
nadium__									NR
nc__									NR

ɔntrol Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 2B
CRDL STANDARD FOR AA AND ICP

13

; No.: _213984__

CRDL Standard Source: INORGANIC VE

> CRDL Standard Source: INORGANIC VE

(SECTION II)

Concentration Units: ug/L

ıalyte	CRDL Standard for AA True	Found	%R	CRDL Standard for ICP Initial True	Initial Found	Initial %R	Final Found	Final %R
.uminum								
ıtimony								
:senic	10.0	9.00	90.0					
ırium								
ıryllium								
ıdmium								
.lcium								
r um								
). .c								
›pper								
ısium				20.0	19.84	99.2	19.68	98.4
ron								
ıad	3.0	2.80	93.3					
.thium								
.gnesium								
ınganese								
ılybdenum								
.ckel								
›tassium								
ılenium	5.0	4.20	84.0					
.lver								
›dium								
:rontium								
.allium	10.0	9.40	94.0					
.n				20.0	19.97	99.8	19.60	98.0
ınadium								
.nc								

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 2B
CRDL STANDARD FOR AA AND ICP

14

; No.: _213984__

CRDL Standard Source: _____

CRDL Standard Source: INORGANIC VE

(SECTION II)

Concentration Units: ug/L

alyte	CRDL Standard for AA True	Found	%R	CRDL Standard for ICP True	Initial Found	%R	Final Found	%R
uminum								
timony				120.0	68.47	57.1	58.32	48.6
senic								
rium								
ryllium				10.0	9.76	97.6	9.64	96.4
dmium				10.0	9.23	92.3	9.97	99.7
lcium								
um				20.0	20.09	100.4	19.92	99.6
				100.0	100.73	100.7	95.05	95.0
pper				50.0	46.95	93.9	43.31	86.6
sium								
on								
ad								
thium				40.0	37.38	93.4	35.44	88.6
gnesium								
nganese				30.0	30.50	101.7	30.27	100.9
lybdenum				100.0	108.84	108.8	92.25	92.2
ckel				80.0	87.86	109.8	85.72	107.2
tassium								
lenium								
lver				20.0	16.86	84.3	18.53	92.6
dium								
rontium				200.0	201.30	100.6	196.43	98.2
allium								
n								
nadium				100.0	95.56	95.5	98.36	98.4
nc				40.0	44.10	110.2	41.91	104.8

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 3
BLANKS

(SECTION II)

G No.: _213984__

eparation Blank Matrix (soil/water): SOIL__

eparation Blank Concentration Units (ug/L or mg/kg): MG/KG

nalyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
luminum	14.0	U	14.0	U	19.6	B	18.0	B	2.904	B	P
ntimony	56.0	U	56.0	U	56.0	U	56.0	U	11.200	U	P
rsenic	3.0	U	3.0	U	-3.2	B	3.0	U	0.600	U	F
arium	4.0	B	2.0	U	4.2	B	5.5	B	0.922	B	P
eryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
m	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
um	17.0	U	17.0	U	17.0	U	17.0	U	3.400	U	P
hromium	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
obalt	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
opper	5.0	U	5.0	U	5.1	B	5.0	U	1.000	U	P
esium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	PM
ron	4.0	U	4.0	U	4.0	U	4.0	U	1.333	B	P
ead	1.0	U	1.0	U	-1.1	B	1.0	U	-0.200	B	F
ithium	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
agnesium	67.0	U	67.0	U	67.0	U	67.0	U	13.400	U	P
anganese	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
olybdenum	31.0	U	31.0	U	31.0	U	31.0	U	6.200	U	P
ickel	14.0	U	14.0	U	14.0	U	14.0	U	2.800	U	P
otassium	906.0	U	906.0	U	906.0	U	906.0	U	181.200	U	P
elenium	3.0	U	3.0	U	3.1	B	3.0	U	0.600	U	F
ilver	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
odium	54.0	U	54.0	U	54.0	U	54.0	U	10.800	U	P
trontium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
hallium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	F
in	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	PM
anadium	8.0	U	8.0	U	8.0	U	8.0	U	1.600	U	P
inc	3.0	U	4.3	B	3.2	B	3.0	U	0.600	U	P

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 3
BLANKS

10

; No.: _213984__

(SECTION II)

eparation Blank Matrix (soil/water): _____

eparation Blank Concentration Units (ug/L or mg/kg): _____

alyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
uminum											NR
timony											NR
senic			3.0	U	3.0	U	3.1	B			F
rium											NR
ryllium											NR
m											NR
m											NR
romium											NR
balt											NR
pper											NR
sium											NR
on											NR
ad			1.0	U	-1.3	B					F
thium											NR
gnesium											NR
nganese											NR
lybdenum											NR
ckel											NR
tassium											NR
lenium			3.0	U	3.0	U	3.0	U			F
lver											NR
dium											NR
rontium											NR
allium											NR
n											NR
nadium											NR
nc											NR

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 4
ICP INTERFERENCE CHECK SAMPLE

17

; No.: _213984__

ID Number: P2_____ ICS Source: INORGANIC VE

(SECTION II)

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	511816	513038.8	102.6	512382	512899.5	102.6
Antimony	0	1000	-67	951.6	95.2	-44	982.7	98.3
Arsenic								
Barium	0	500	4	477.6	95.5	5	469.8	94.0
Beryllium	0	500	0	487.9	97.6	0	485.5	97.1
Cadmium	0	1000	2	980.6	98.1	12	987.4	98.7
Calcium	500000	500000	489285	486406.9	97.3	484732	483852.2	96.8
Chromium	0	500	-2	487.2	97.4	1	478.9	95.8
lt	0	500	-2	467.5	93.5	1	460.2	92.0
per	0	500	3	486.5	97.3	-1	492.2	98.4
Cesium								
Iron	200000	200000	188786	187769.2	93.9	185920	186349.1	93.2
Lead								
Lithium	0	1000	-2	1012.8	101.3	-1	1029.0	102.9
Magnesium	500000	500000	497236	497132.9	99.4	498764	496982.5	99.4
Manganese	0	500	4	489.7	97.9	5	475.5	95.1
Molybdenum	0	1000	-3	953.7	95.4	5	956.4	95.6
Nickel	0	1000	8	928.1	92.8	8	938.3	93.8
Potassium	0	0	71	-145.8		-150	418.7	
Selenium								
Silver	0	1000	-2	1032.2	103.2	0	1017.7	101.8
Sodium	0	0	430	449.7		414	422.2	
Strontium	0	1000	18	1013.6	101.4	17	984.4	98.4
Thallium								
Tin								
Vanadium	0	500	5	476.8	95.4	5	477.5	95.5
Zinc	0	1000	26	973.2	97.3	24	957.9	95.8

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 4
ICP INTERFERENCE CHECK SAMPLE

: No.: _213984__

P ID Number: ELAN5000____ ICS Source: I.V. & ICS1_

Concentration Units: ug/L (SECTION II)

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
[illegible]lt								
[illegible]er								
Cesium	0	100	0	97.7	97.7	0	95.5	95.5
Iron								
Lead								
Lithium								
Magnesium								
Manganese								
Molybdenum								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Strontium								
Thallium								
Tin	0	100	0	103.8	103.8	0	100.5	100.5
Vanadium								
Zinc								

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 5A
SPIKE SAMPLE RECOVERY

10

LAB SAMPLE NO.

(SECTION II)

213984S

; No.: _213984__ Matrix: SOIL_ % Solids for Sample: _100.0

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
uminum									NR
ntimony	75-125	85.1618		11.2000	U	100.00	85.2		P
rsenic	75-125	9.4800		1.6200	B	8.00	98.2		F
rium	75-125	442.6374		50.0636		400.00	98.1		P
eryllium	75-125	10.3664		0.2000	U	10.00	103.7		P
dmium	75-125	10.9444		0.8290	B	10.00	101.2		P
lcium									NR
romium	75-125	44.5248		7.3926		40.00	92.8		P
[illegible]	75-125	105.5962		3.3686	B	100.00	102.2		P
[illegible]	75-125	59.1766		9.8828		50.00	98.6		P
esium	75-125	10.8238		0.7124	B	10.00	101.1		PM
ron									NR
ead		19.4400		80.4000		4.00	-1524.0		F
thium	75-125	201.9492		4.7246		200.00	98.6		P
gnesium									NR
nganese	75-125	160.2526		123.5272		100.00	36.7	N	P
olybdenum	75-125	101.3716		6.2000	U	100.00	101.4		P
ckel	75-125	111.0204		9.2486		100.00	101.8		P
otassium									NR
lenium	75-125	2.1200		0.6000	U	2.00	106.0		F
lver	75-125	9.9818		1.4000	U	10.00	99.8		P
odium									NR
rontium	75-125	208.2934		11.0606	B	200.00	98.6		P
allium	75-125	11.0600		1.0000	U	10.00	110.6		F
n	75-125	11.3918		0.4068	B	10.00	109.8		PM
nadium	75-125	112.3302		24.1368		100.00	88.2		P
nc	75-125	131.1228		40.1996		100.00	90.9		P

ments:

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 5B
POST DIGEST SPIKE SAMPLE RECOVERY

20

LAB SAMPLE NO.

(SECTION II)

213984A

G No.: _213984__ Matrix: SOIL_

Concentration Units: _ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
luminum									NR
ntimony									NR
rsenic									NR
arium									NR
eryllium									NR
admium									NR
alcium									NR
hromium									NR
[illegible]									NR
[illegible]									NR
esium									NR
ron									NR
ead									NR
ithium									NR
agnesium									NR
anganese		1838.66		617.64		1000.0	122.1		P
olybdenum									NR
ickel									NR
otassium									NR
elenium									NR
ilver									NR
odium									NR
trontium									NR
hallium									NR
in									NR
anadium									NR
inc									NR

mments:

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 6
DUPLICATES

LAB SAMPLE NO.

213984D

(SECTION II)

No.: 213984

Matrix: SOIL

olids for Sample: 100.0

% Solids for Duplicate: 100.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		3505.4760		3908.7760		10.9		P
Antimony		11.2000	U	11.2000	U			P
Arsenic		1.6200	B	1.0400	B	43.6		F
Barium	40.0	50.0636		55.0074		9.4		P
Beryllium		0.2000	U	0.2000	U			P
Cadmium	1.0	0.8290	B	2.8198		109.1	*	P
Calcium	1000.0	1728.1712		1679.0694		2.9		P
Chromium	2.0	7.3926		8.6206		15.3		P
Cobalt		3.3686	B	2.5588	B	27.3		P
per	5.0	9.8828		9.9334		0.5		P
ium		0.7124	B	0.8178	B	13.8		PM
Iron		7168.0420		7777.1280		8.2		P
Lead		80.4000		20.5390		118.6	*	F
Lithium	4.0	4.7246		3.6374	B	26.0		P
Magnesium	1000.0	1995.1438		2151.0840		7.5		P
Manganese		123.5272		143.9648		15.3		P
Molybdenum		6.2000	U	6.2000	U			P
Nickel	8.0	9.2486		11.5500		22.1		P
Potassium	1000.0	1423.6932		1485.2184		4.2		P
Selenium		0.6000	U	0.6000	U			F
Silver		1.4000	U	1.4000	U			P
Sodium		232.5874	B	228.5040	B	1.8		P
Strontium		11.0606	B	11.0058	B	0.5		P
Thallium		1.0000	U	1.0000	U			F
Tin		0.4068	B	0.6416	B	44.8		PM
Vanadium	10.0	24.1368		28.8626		17.8		P
Zinc		40.1996		39.1944		2.5		P

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 7
LABORATORY CONTROL SAMPLE

G No.: 213984

lid LCS Source: LCS04

ueous LCS Source:

(SECTION II)

nalyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
luminum				325.0	292.5		225.0	424.0	90.0
ntimony				211.0	275.7		127.0	294.0	130.7
rsenic				917.0	1002.0		635.0	1199.0	109.3
arium				4.8	5.4	B	0.0	40.0	112.5
eryllium				19.4	19.0		16.5	22.3	97.9
admium				45.4	47.6		35.7	55.1	104.8
alcium				196200.0	203830.2		166800.0	225600.0	103.9
[illegible]um				99.6	105.2		79.2	120.0	105.6
[illegible]				144.0	152.1		119.0	169.0	105.6
opper				6910.0	7479.5		6006.0	7820.0	108.2
esium									
ron				22430.0	22722.7		17770.0	27080.0	101.3
ead				236.0	234.4		188.0	285.0	99.3
ithium									
agnesium				118100.0	122917.6		100400.0	129900.0	104.1
anganese				208.0	220.7		177.0	239.0	106.1
olybdenum									
ickel				60.9	63.1		49.2	72.6	103.6
otassium				50.0	181.2	U	0.0	1000.0	0.0
elenium				39.2	37.0		19.1	59.4	94.4
ilver				22.2	22.9		15.5	29.0	103.2
odium				50.0	67.8	B	0.0	1000.0	135.6
trontium									
hallium				39.0	40.5		24.6	53.5	103.8
in									
anadium				65.8	67.4		51.7	79.9	102.4
inc				187.0	187.6		138.0	236.0	100.3

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 8
STANDARD ADDITION RESULTS

; No.: _213984__

Concentration Units: ug/L (SECTION II)

Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
.3984D_	PB	0.043	10.00	0.061	20.00	0.082	30.00	0.104	20.5	0.9990	-
.3985__	PB	0.025	10.00	0.043	20.00	0.068	30.00	0.087	11.4	0.9981	-
.3986__	PB	0.028	10.00	0.052	20.00	0.070	30.00	0.094	13.2	0.9985	-
.3987__	PB	0.057	10.00	0.076	20.00	0.097	30.00	0.120	26.7	0.9991	-
.3988__	PB	0.039	10.00	0.048	20.00	0.070	30.00	0.094	18.6	0.9826	+
.3988__	PB	0.040	10.00	0.046	20.00	0.078	30.00	0.098	16.8	0.9726	+

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT 24

FORM 9
SERIAL DILUTION

LAB SAMPLE NO.

213984L

3 No.: 213984 Matrix: SOIL

Concentration Units: ug/L (SECTION II)

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	17527.38		17246.12		1.6		P
Antimony	56.00	U	280.00	U			P
Arsenic							
Barium	250.32		253.08	B	1.1		P
Beryllium	1.00	U	5.00	U			P
Cadmium	4.14	B	20.00	U	100.0		P
Calcium	8640.86		8428.96	B	2.5		P
Chromium	36.96		33.81	B	8.5		P
Cobalt	16.84	B	35.00	U	100.0		P
Copper	49.41		33.92	B	31.3		P
Cesium	3.56	B	5.00	U	100.0		PM
Iron	35840.21		35885.22		0.1		P
Lead							
Lithium	23.62		35.00	U	100.0		P
Magnesium	9975.72		9831.50	B	1.4		P
Manganese	617.64		614.04		0.6		P
Molybdenum	31.00	U	155.00	U			P
Nickel	46.24		70.00	U	100.0		P
Potassium	7118.47		6682.39	B	6.1		P
Selenium							
Silver	7.00	U	35.00	U			P
Sodium	1162.94	B	1185.06	B	1.9		P
Strontium	55.30	B	55.24	B	0.1		P
Thallium							
Tin	2.03	B	5.00	U	100.0		PM
Vanadium	120.68		102.22	B	15.3		P
Zinc	201.00		212.58		5.8		P

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 10
Instrument Detection Limits (Quarterly)

No.: _213984__

ID Number: P2_____ Expiration Date: 10/01/93

me AA ID Number : _____

nace AA ID Number : _____

(SECTION II)

Analyte	Wave-length or Isotope	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	396.15		200	14.0	P
Antimony	217.58		60	56.0	P
Arsenic			10		
Barium	233.53		200	2.0	P
Beryllium	313.11		5	1.0	P
Cadmium	214.44		5	4.0	P
Calcium	317.93		5000	17.0	P
Chromium	267.72		10	4.0	P
Cobalt	228.62		50	7.0	P
Copper	324.75		25	5.0	P
Cesium			10		
Iron	238.20		100	4.0	P
Lead			5		
Lithium	670.78		20	7.0	P
Magnesium	383.23		5000	67.0	P
Manganese	257.61		15	1.0	P
Molybdenum	202.03		50	31.0	P
Nickel	231.60		40	14.0	P
Potassium	769.90		5000	906.0	P
Selenium			5		
Silver	328.07		10	7.0	P
Sodium	589.59		5000	54.0	P
Strontium	421.55		100	1.0	P
Thallium			10		
Tin			5		
Vanadium	292.40		50	8.0	P
Zinc	213.86		20	3.0	P

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s_for_wavelength_are_nm_and_units_for_isotope_are_m/z.

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 10
Instrument Detection Limits (Quarterly)

20

No.: _213984__

ID Number: ELAN5000____ Expiration Date: 10/01/93

ne AA ID Number : _____

nace AA ID Number : _____

(SECTION II)

Analyte	Wave-length or Isotope	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		
Antimony			60		
Arsenic			10		
Barium			200		
Beryllium			5		
Cadmium			5		
Calcium			5000		
Chromium			10		
Cobalt			50		
Copper			25		
Cesium	133.00		10	1.0	PM
Iron			100		
Lead			5		
Lithium			20		
Magnesium			5000		
Manganese			15		
Molybdenum			50		
Nickel			40		
Potassium			5000		
Selenium			5		
Silver			10		
Sodium			5000		
Strontium			100		
Thallium			10		
Tin	120.00		5	1.0	PM
Vanadium			50		
Zinc			20		

nents:
_for_wavelength_are_nm_and_units_for_isotope_are_m/z.

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 10
Instrument Detection Limits (Quarterly)

27

G No.: _213984__

P ID Number: _____ Expiration Date: 10/01/93

ame AA ID Number : _____

rnace AA ID Number : Z5100_____

(SECTION II)

Analyte	Wave-length or Isotope	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		
Antimony			60		
Arsenic	193.70	BZ	10	3.0	F
Barium			200		
Beryllium			5		
Cadmium			5		
Calcium			5000		
Chromium			10		
Cobalt			50		
Copper			25		
Cesium			10		
Iron			100		
Lead	283.30	BZ	5	1.0	F
Lithium			20		
Magnesium			5000		
Manganese			15		
Molybdenum			50		
Nickel			40		
Potassium			5000		
Selenium	196.00	BZ	5	3.0	F
Silver			10		
Sodium			5000		
Strontium			100		
Thallium	276.80	BZ	10	5.0	F
Tin			5		
Vanadium			50		
Zinc			20		

ments:
_" s_for_wavelength_are_nm_and_units_for_isotope_are_m/z._____
_ _____
_____
_____

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 12
ICP Linear Ranges (Quarterly)

23

(SECTION II)

No.: _213984__

ID Number: P2_____ Expiration Date: 10/01/93

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	0.30	160000.0	P
Antimony	0.60	10000.0	P
Arsenic	0.40	10000.0	P
Barium	0.20	40000.0	P
Beryllium	0.10	1000.0	P
Cadmium	0.50	10000.0	P
Calcium	0.10	300000.0	P
Chromium	0.30	10000.0	P
Cobalt	0.30	10000.0	P
Copper	0.15	10000.0	P
Cesium			NR
Iron	0.15	160000.0	P
Lead	0.40	30000.0	P
Lithium	0.30	10000.0	P
Magnesium	0.10	200000.0	P
Manganese	0.20	10000.0	P
Molybdenum	0.20	10000.0	P
Nickel	0.30	10000.0	P
Potassium	0.30	200000.0	P
Selenium	0.60	10000.0	P
Silver	0.30	10000.0	P
Sodium	0.10	200000.0	P
Strontium	0.15	10000.0	P
Thallium			NR
Tin			NR
Vanadium	0.20	10000.0	P
Zinc	0.40	10000.0	P

ments:

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 12
ICP Linear Ranges (Quarterly)

G No.: _213984__

(SECTION II)

P ID Number: ELAN5000____ Expiration Date: 10/01/93

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum			NR
Antimony	1.00	1000.0	PM
Arsenic			NR
Barium	1.00	1000.0	PM
Beryllium			NR
Cadmium	1.00	1000.0	PM
Calcium			NR
Chromium			NR
Cobalt	1.00	1500.0	PM
Copper			NR
Cesium	1.00	1000.0	PM
Iron			NR
Lead	1.00	1000.0	PM
Lithium	1.00	1000.0	PM
Magnesium			NR
Manganese			NR
Molybdenum	1.00	1000.0	PM
Nickel			NR
Potassium			NR
Selenium			NR
Silver			NR
Sodium			NR
Strontium			NR
Thallium	1.00	1000.0	PM
Tin	1.00	1000.0	PM
Vanadium			NR
Zinc			NR

ments:

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 13
PREPARATION LOG

30

; No.: _213984__

(SECTION II)

:hod: P_

Sample No.	Preparation Date	Weight (gram)	Volume (mL)
213984	07/16/93	1.00	200
213984D	07/16/93	1.00	200
213984S	07/16/93	1.00	200
213985	07/16/93	1.00	200
213986	07/16/93	1.00	200
213987	07/16/93	1.00	200
213988	07/16/93	1.00	200
213989	07/16/93	1.00	200
LCS04	07/16/93	1.00	200
PBS	07/16/93	1.00	200

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 13
PREPARATION LOG

No.: _213984__

(SECTION II)

ıod: F_

Sample No.	Preparation Date	Weight (gram)	Volume (mL)
213984	07/16/93	1.00	200
213984D	07/16/93	1.00	200
213984S	07/16/93	1.00	200
213985	07/16/93	1.00	200
213986	07/16/93	1.00	200
213987	07/16/93	1.00	200
213988	07/16/93	1.00	200
213989	07/16/93	1.00	200
LCS04	07/16/93	1.00	200
PBS	07/16/93	1.00	200

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

No.: _213984__

trument ID Number: P2_____ Method: P_

rt Date: 07/19/93 End Date: 07/19/93

ample No.	D/F	Time	% R	AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
	1.00	1016		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
50208	1.00	1020		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
	1.00	1025		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
	1.00	1031		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
V	1.00	1037		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
B	1.00	1042		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
I	1.00	1047						X			X	X	X						X		X			X		X	
SA	1.00	1052		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
SAB	1.00	1057		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
V	1.00	1103		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
	1.00	1108		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
S	1.00	1114		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
S04	1.00	1119		X			X	X			X	X			X				X		X	X		X	X	X	
S04	10.00	1123								X			X					X									
3984	1.00	1127		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
3984D	1.00	1133		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
3984L	5.00	1138		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
3984S	1.00	1143					X	X			X	X	X						X		X			X		X	
3985	1.00	1148		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
3986	1.00	1154		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
3987	1.00	1159		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
V	1.00	1205		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
B	1.00	1210		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
3988	1.00	1216		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
3989	1.00	1221		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
3984A	1.00	1226																	X								
ZZZZ	1.00	1228																									
ZZZZ	1.00	1230																									
I	1.00	1233						X			X	X	X						X		X			X		X	
SA	1.00	1238		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
SAB	1.00	1243		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	
V	1.00	1249		X			X	X		X	X	X	X		X			X	X		X	X		X	X	X	

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

: No.: _213984__

:trument ID Number: P2_____ Method: P_

.rt Date: 07/19/93 End Date: 07/19/93

ample No.	D/F	Time	% R	Analytes																							
				SN	V	ZN																					
	1.00	1016			X	X																					
50208	1.00	1020			X	X																					
	1.00	1025			X	X																					
	1.00	1031			X	X																					
V	1.00	1037			X	X																					
B	1.00	1042			X	X																					
I	1.00	1047			X	X																					
SA	1.00	1052			X	X																					
SAB	1.00	1057			X	X																					
V	1.00	1103			X	X																					
	1.00	1108			X	X																					
S	1.00	1114			X	X																					
S04	1.00	1119			X	X																					
S04	10.00	1123																									
3984	1.00	1127			X	X																					
3984D	1.00	1133			X	X																					
3984L	5.00	1138			X	X																					
3984S	1.00	1143			X	X																					
3985	1.00	1148			X	X																					
3986	1.00	1154			X	X																					
3987	1.00	1159			X	X																					
V	1.00	1205			X	X																					
B	1.00	1210			X	X																					
3988	1.00	1216			X	X																					
3989	1.00	1221			X	X																					
3984A	1.00	1226																									
ZZZZ	1.00	1228																									
ZZZZ	1.00	1230																									
I	1.00	1233			X	X																					
SA	1.00	1238			X	X																					
SAB	1.00	1243			X	X																					
V	1.00	1249			X	X																					

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

; No.: _213984__

strument ID Number: P2_____ Method: P_

rt Date: 07/19/93 End Date: 07/19/93

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
:B	1.00	1254		X	_	_	X	X	_	X	X	X	X	_	X	_	_	X	X	_	X	X	_	X	X	X	_
				_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
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RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

G No.: _213984__

strument ID Number: P2_____ Method: P_

art Date: 07/19/93 End Date: 07/19/93

Sample No.	D/F	Time	% R	Analytes																							
				SN	V	ZN																					
CB	1.00	1254			X	X																					

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

No.: _213984__

trument ID Number: P2_____ Method: P_

rt Date: 07/20/93 End Date: 07/20/93

ample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
	1.00	1112			X				X								X			X							
50208	1.00	1115			X				X								X			X							
	1.00	1120			X				X								X			X							
	1.00	1125			X				X								X			X							
V	1.00	1130			X				X								X			X							
B	1.00	1135			X				X								X			X							
I	1.00	1140			X				X								X			X							
SA	1.00	1146			X				X								X			X							
SAB	1.00	1151			X				X								X			X							
7	1.00	1156			X				X								X			X							
	1.00	1201			X				X								X			X							
S	1.00	1206			X				X								X			X							
504	1.00	1211			X				X								X			X							
3984	1.00	1216			X				X								X			X							
3984D	1.00	1221			X				X								X			X							
3984L	5.00	1227			X				X								X			X							
3984S	1.00	1232			X				X								X			X							
3985	1.00	1237			X				X								X			X							
3986	1.00	1242			X				X								X			X							
3987	1.00	1247			X				X								X			X							
3988	1.00	1252			X				X								X			X							
7	1.00	1257			X				X								X			X							
3	1.00	1303			X				X								X			X							
3989	1.00	1308			X				X								X			X							
I	1.00	1313			X				X								X			X							
SA	1.00	1318			X				X								X			X							
SAB	1.00	1323			X				X								X			X							
7	1.00	1328			X				X								X			X							
3	1.00	1333			X				X								X			X							

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

37

(SECTION II)

No.: _213984__

trument ID Number: ELAN5000_____ Method: PM

rt Date: 07/21/93 End Date: 07/21/93

ample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
50208	1.00	0928		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
0	1.00	0931		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
00	1.00	0933		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
V	1.00	0935		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
B	1.00	0938		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
I	1.00	0940		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
SA	1.00	0943		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
SAB	1.00	0945		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
V	1.00	0948		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
B	1.00	0950		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.00	0952		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
S04	1.00	0955		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3984	1.00	0957		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3984D	1.00	1000		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3984L	5.00	1002		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3984S	1.00	1005		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3985	1.00	1007		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3986	1.00	1010		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3987	1.00	1012		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3988	1.00	1014		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
V	1.00	1017		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
B	1.00	1019		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
3989	1.00	1022		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
I	1.00	1024		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
SA	1.00	1027		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
SAB	1.00	1029		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
V	1.00	1031		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
B	1.00	1034		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
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RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

; No.: _213984__

strument ID Number: ELAN5000_____ Method: PM

rt Date: 07/21/93 End Date: 07/21/93

Sample No.	D/F	Time	% R	Analytes																							
				SN	V	ZN																					
50208	1.00	0928		X																							
50	1.00	0931		X																							
.00	1.00	0933		X																							
V	1.00	0935		X																							
B	1.00	0938		X																							
I	1.00	0940		X																							
SA	1.00	0943		X																							
SAB	1.00	0945		X																							
V	1.00	0948		X																							
B	1.00	0950		X																							
	1.00	0952		X																							
504	1.00	0955		X																							
.3984	1.00	0957		X																							
.3984D	1.00	1000		X																							
.3984L	5.00	1002		X																							
.3984S	1.00	1005		X																							
.3985	1.00	1007		X																							
.3986	1.00	1010		X																							
.3987	1.00	1012		X																							
.3988	1.00	1014		X																							
V	1.00	1017		X																							
B	1.00	1019		X																							
.3989	1.00	1022		X																							
I	1.00	1024		X																							
SA	1.00	1027		X																							
SAB	1.00	1029		X																							
V	1.00	1031		X																							
B	1.00	1034		X																							

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

; No.: _213984__

:trument ID Number: Z5100_____ Method: F_

:rt Date: 07/22/93 End Date: 07/22/93

Sample No.	D/F	Time	% R	AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
				Analytes																							
) 40099	1.00	1418		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	1.00	1421		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.0	1.00	1424		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
25	1.00	1427		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
50	1.00	1431		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.00	1.00	1434		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
:V	1.00	1437		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
:B	1.00	1441		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
:A	1.00	1444		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:A	1.00	1447		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
:	1.00	1450		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
:L	1.00	1453		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
:ZZZZ	1.00	1455		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1457		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1458		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1500		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1504		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZA	1.00	1507	90.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1510		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZA	1.00	1513	94.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1517		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZA	1.00	1520	88.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1523		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZA	1.00	1527	88.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:V	1.00	1530		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
:B	1.00	1534		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
:ZZZZ	1.00	1537		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZA	1.00	1540	95.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1544		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZA	1.00	1547	93.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:ZZZZ	1.00	1551		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
:V	1.00	1554		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

40

(SECTION II)

; No.: _213984__

strument ID Number: Z5100_____ Method: F_

art Date: 07/22/93 End Date: 07/22/93

Sample No.	D/F	Time	% R	AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
				Analytes																							
CB	1.00	1557		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
BS	1.00	1601		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
BSA	1.00	1604	93.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
CS04	5.00	1607		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
CS04A	5.00	1611	90.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3984	1.00	1614		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-
.3984A	1.00	1617	68.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.3984D	1.00	1620		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3984DA	1.00	1624	83.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
[illegible]4S	1.00	1627		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
	1.00	1630		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
CB	1.00	1634		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3984	1.00	1637		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3984A	1.00	1640	82.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3985	1.00	1644		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.3985A	1.00	1647	75.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.3986	1.00	1651		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3986A	1.00	1654	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3987	1.00	1657		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.3987A	1.00	1701	103.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.3988	1.00	1704		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.3988A	1.00	1707	73.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CV	1.00	1711		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
CB	1.00	1714		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3985	1.00	1717		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3985A	1.00	1721	102.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3987	1.00	1724		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3987A	1.00	1728	98.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3988	1.00	1731		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3988A	1.00	1734	94.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3989	1.00	1738		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
.3989A	1.00	1741	85.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

; No.: _213984__

strument ID Number: Z5100_____ Method: F_

rt Date: 07/22/93 End Date: 07/22/93

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
CV	1.00	1744		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
CB	1.00	1748		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

No.: _213984__

trument ID Number: Z5100_____ Method: F_

rt Date: 07/26/93 End Date: 07/26/93

ample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
40099	1.00	1117				X																					
0	1.00	1120				X																					
5	1.00	1123				X																					
0	1.00	1126				X																					
5	1.00	1130				X																					
00	1.00	1133				X																					
V	1.00	1136				X																					
B	1.00	1139				X																					
A	1.00	1142				X																					
V	1.00	1145				X																					
	1.00	1148				X																					
ZZZZ	1.00	1151																									
ZZZZ	1.00	1152																									
ZZZZ	1.00	1154																									
ZZZZ	1.00	1155																									
ZZZZ	1.00	1157																									
ZZZZ	1.00	1159																									
ZZZZ	1.00	1200																									
ZZZZ	1.00	1202																									
ZZZZ	1.00	1204																									
ZZZZ	1.00	1205																									
ZZZZ	1.00	1207																									
ZZZZ	1.00	1209																									
ZZZZ	1.00	1210																									
ZZZZ	1.00	1212																									
ZZZZ	1.00	1213																									
ZZZZ	1.00	1215																									
ZZZZ	1.00	1216																									
ZZZZ	1.00	1218																									
ZZZZ	1.00	1219																									
ZZZZ	1.00	1221																									
V	1.00	1224				X																					

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

G No.: _213984__

strument ID Number: Z5100_____ Method: F_

art Date: 07/26/93 End Date: 07/26/93

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
CB_____	1.00	1228		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1234		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1236		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1237		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1239		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1240		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1242		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1243		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1245		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1247		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[illegible]__	1.00	1248		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1250		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1251		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1253		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1254		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1256		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1258		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1259		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CV_____	1.00	1303		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CB_____	1.00	1306		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1308		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1309		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1311		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1312		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1314		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1315		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1317		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1319		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1320		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1322		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1323		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZZZZ__	1.00	1325		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

44

(SECTION II)

; No.: _213984__

strument ID Number: Z5100_____ Method: F_

rt Date: 07/26/93 End Date: 07/26/93

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
ZZZZ__	1.00	1327		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZ__	1.00	1328		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZ__	1.00	1330		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZ__	1.00	1332		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V_____	1.00	1336		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B_____	1.00	1339		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S_____	1.00	1342		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SA_____	1.00	1345	101.0	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S04____	100.00	1348		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S[illegible]__	100.00	1352	73.0	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[illegible]__	1.00	1355		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984A_	1.00	1358	86.5	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984D_	1.00	1401		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984DA	1.00	1404	108.5	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984S_	1.00	1407		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V_____	1.00	1410		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B_____	1.00	1414		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3985__	1.00	1417		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3985A_	1.00	1420	99.0	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3986__	1.00	1423		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3986A_	1.00	1427	105.0	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3987__	1.00	1430		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3987A_	1.00	1433	106.5	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3988__	1.00	1436		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3988A_	1.00	1440	117.5	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3989__	1.00	1443		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3989A_	1.00	1446	114.0	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V_____	1.00	1449		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B_____	1.00	1453		-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

No.: _213984__

trument ID Number: Z5100_____ Method: F_

rt Date: 07/28/93 End Date: 07/28/93

ample No.	D/F	Time	% R	AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
				Analytes																							
40099	1.00	0920		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
	1.00	0923		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
0	1.00	0926		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
0	1.00	0928		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
5	1.00	0931		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
00	1.00	0934		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
V	1.00	0937		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
B	1.00	0939		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
A	1.00	0942		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
V	1.00	0944		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
	1.00	0947		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
S	1.00	0950		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
SA	1.00	0952	97.0	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
S04	20.00	0955		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
S04A	20.00	0957	76.5	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
3984	1.00	1000		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984A	1.00	1003	-9999.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984D	1.00	1005		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984DA	1.00	1008	56.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984S	1.00	1011		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
V	1.00	1013		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
B	1.00	1016		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
3985	1.00	1019		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3985A	1.00	1022	78.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3986	1.00	1024		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3987	1.00	1027		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3988	1.00	1030		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3989	1.00	1033		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
3989A	1.00	1036	86.5	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
3984	10.00	1040		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
3984A	10.00	1042	87.0	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
V	1.00	1045		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

40

(SECTION II)

No.: _213984__

trument ID Number: Z5100_____ Method: F_

rt Date: 07/28/93 End Date: 07/28/93

ample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
B_____	1.00	1048		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
3986__	2.00	1051		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3986A_	2.00	1053	83.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3987__	10.00	1056		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3987A_	10.00	1059	78.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3988__	10.00	1102		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3988A_	10.00	1104	54.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3984D0	5.00	1106		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
3984D1	5.00	1108		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
3[illegible] D2	5.00	1109		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
[illegible] D3	5.00	1110		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39850_	5.00	1112		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39851_	5.00	1113		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39852_	5.00	1114		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39853_	5.00	1116		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
V_____	1.00	1119		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
B_____	1.00	1121		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39860_	10.00	1123		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39861_	10.00	1125		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39862_	10.00	1126		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39863_	10.00	1127		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39870_	20.00	1129		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39871_	20.00	1130		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39872_	20.00	1132		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39873_	20.00	1133		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39880_	20.00	1134		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39881_	20.00	1135		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39882_	20.00	1137		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39883_	20.00	1138		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
39880_	20.00	1140		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39881_	20.00	1141		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39882_	20.00	1142		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

G No.: _213984__

strument ID Number: Z5100_____ Method: F_

art Date: 07/28/93 End Date: 07/28/93

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
139883_	20.00	1144		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CV_____	1.00	1147		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CB_____	1.00	1150		-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
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RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

G No.: _213984__

strument ID Number: Z5100_____ Method: F_

art Date: 07/28/93 End Date: 07/28/93

Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
0 40099	1.00	1456																									X
10	1.00	1459																									X
25	1.00	1502																									X
50	1.00	1505																									X
75	1.00	1508																									X
CV	1.00	1511																									X
CB	1.00	1515																									X
RA	1.00	1518																									X
CV	1.00	1521																									X
CB	1.00	1524																									X
	1.00	1527																									X
BSA	1.00	1530	96.5																								X
CS04	5.00	1533																									X
CS04A	5.00	1537	68.0																								X
13984	1.00	1540																									X
13984A	1.00	1543	98.5																								X
13984D	1.00	1546																									X
13984DA	1.00	1550	109.5																								X
13984S	1.00	1553																									X
CV	1.00	1556																									X
CB	1.00	1559																									X
13985	1.00	1603																									X
13985A	1.00	1606	100.5																								X
13986	1.00	1609																									X
13986A	1.00	1613	92.5																								X
13987	1.00	1616																									X
13987A	1.00	1619	99.0																								X
13988	1.00	1623																									X
13988A	1.00	1626	94.5																								X
13989	1.00	1629																									X
13989A	1.00	1632	102.5																								X
CV	1.00	1636																									X

RUST GEOTECH INC. - INORGANIC ANALYSIS REPORT

FORM 14
ANALYSIS RUN LOG

(SECTION II)

No.: _213984__

trument ID Number: Z5100_____ Method: F_

rt Date: 07/28/93 End Date: 07/28/93

ample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	CS	FE	PB	LI	MG	MN	MO	NI	K	SE	AG	NA	SR	TL
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GENERAL INFORMATION FOR RAW DATA

JST Geotech Inc. Grand Junction, Colorado (SECTION II)

Samples designated in the raw data as CCVx, CCBx, CRIx, CRAx, ICSAx, and ICSABx, where x is an integer, refer to separate analyses of CCV, CCB, CRI, CRA, ICSA, and ICSAB standards.

Samples that were diluted before analysis are designated in the raw data with DFx where DF stands for Dilution Factor and x is the dilution factor. The diluent used is indicated on the standards preparation log sheet for the analysis.

The known value of an LCS is used to determine if dilution of an LCS is required to keep the result within the linear or calibration range.

The following tables list the volumes used to obtain the most common dilutions for ICP-AES, ICP-MS, and graphite furnace AA. If dilutions other than those listed below are used, the volumes used are given in the raw data.

Dilutions Used For ICP-AES and ICP-MS

Dilution Factor	Sample Vol. (mL)	Diluent Vol. (mL)	Final Vol. (mL)
2	5	5	10
5	2	8	10
10	1	9	10
20	0.5	9.5	10
50	0.2	9.8	10
100	0.1	9.9	10

Dilutions Used For Graphite Furnace AA

Dilution Factor	Sample Vol. (mL)	Diluent Vol. (mL)	Final Vol. (mL)
2	0.5	0.5	1
4	0.25	0.75	1
5	0.2	0.8	1
10	0.1	0.9	1
50	0.05	0.95	1
100	0.1	9.9	10

If the method of standard additions (MSA) is used for a sample that requires dilution, the standard is added to the sample as part of the dilution process. In this case, 0.1 mL of spiking standard is used and the final sample volume is 1 mL. If MSA is used for a sample that does not require dilution, addition of the spiking standard dilutes the sample by a factor of 1.1 because 0.1 mL of standard is added to 1 mL of sample. In this case, the unspiked sample is diluted with water by the same factor. The concentration of spiking standard is always 10 times the spike amount.

The instruments used for all ICP-AES, graphite furnace AA, and cold vapor AA work are the P2, Z5100, and PE560/MHS20 respectively. The instrument used for ICP-MS is either the ELAN250 or ELAN5000. The actual instrument used for ICP-MS is documented in the raw data.

TANDARDS PREPARATION LOG SHEET

51 RUST Geotech Inc.

nalyst [signature] Preparation Date: 7/19/93 Time: 0830 Page 1 of 1

Standard Name	Components	Volume Used	Final Volume	Diluent
nt Blank	1% HNO_3 5% HCl	--	--	--
0, Calib.Blk., ICB, CCB	1% HNO_3 5% HCl	--	--	--
, Calibration Standard	I.V. CAL-1A Lot H-MEB17014 Exp 11/1/93	2 mL	20 mL	Calib. Blk.
	I.V. 1000 mg/L Ag Lot H-AG0129 Exp 11/1/93	0.1 mL		
CV	Plasmachem ICV-1 Lot O2MICV1N Exp 11/30/93	1 mL	10 mL	Calib. Blk.
RI	I.V. CRI-1 Lot I-MEB22044 Exp 7/1/94	0.05 mL	50 mL	Calib. Blk.
CSA	I.V. ICS-A Lot H-MEB08099 Exp 11/1/93	2 mL	20 mL	Calib. Blk.
CSAB	I.V. ICS-A Lot H-MEB08099 Exp 11/1/93	2 mL	20 mL	Calib. Blk.
	I.V. ICSB-1 Lot I-MEB22041 Exp 7/1/94	0.2 mL		
CV	I.V. CAL-1A Lot H-MEB17014 Exp 11/1/93	2 mL	40 mL	Calib. Blk.
	I.V. 1000 mg/L Ag Lot H-AG0129 Exp 11/1/93	0.1 mL		

ere all automatic pipets calibrated according to QC-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

Co ents

ation 11859. SDG 213984.

V. stands for Inorganic Ventures. Exp. stands for expires. Calib. Blk. stands for Calibration Blank. All standards and amples, except the mt Blank, were spiked with 0.05 mL of I.V. 10000 mg/L Sc lot H-SC0162 exp. 4-1-94 per 10 mL olume to serve as an internal standard. Analysis by method AS-5 R04.

07/19/93 10:14
cal std 5

rep	1	Mn_c	em	33933.9	conc	5000.0	
rep	1	Zn_c	em	13437.8	conc	5000.0	
rep	1	Cr_c	em	10548.7	conc	5000.0	
rep	1	Co_c	em	6014.4	conc	5000.0	
rep	1	Ag_c	em	4757.0	conc	5000.0	
rep	1	Ni_c	em	9961.6	conc	5000.0	
rep	1	Sr_c	em	53479.3	conc	5000.0	
rep	1	Ba_c	em	14571.7	conc	20000.0	
rep	1	Na_c	em	42892.9	conc	100000	
rep	1	Fe_c	em	24473.4	conc	80000.0	
rep	1	V_c	em	4225.9	conc	5000.0	
rep	1	Be_c	em	7563.3	conc	500.0	
rep	1	K_c	em	5059.6	conc	100000	
rep	1	Ca_c	em	24663.9	conc	150000	
rep	1	Cu_c	em	6478.3	conc	5000.0	
rep	1	Mg_c	em	8377.8	conc	100000	
rep	1	Al_c	em	21525.1	conc	80000.0	
rep	2	Mn_c	em	35423.6	conc	5000.0	
rep	2	Zn_c	em	16875.5	conc	5000.0	
rep	2	Co_c	em	6379.7	conc	5000.0	
rep	2	Cr_c	em	10718.5	conc	5000.0	
rep	2	Ni_c	em	10761.7	conc	5000.0	
rep	2	Ag_c	em	4943.5	conc	5000.0	
rep	2	Ba_c	em	14737.4	conc	20000.0	
rep	2	Sr_c	em	54901.6	conc	5000.0	
rep	2	Fe_c	em	24589.8	conc	80000.0	
rep	2	Na_c	em	42580.9	conc	100000	
rep	2	V_c	em	4240.5	conc	5000.0	
rep	2	Be_c	em	7806.0	conc	500.0	
rep	2	Ca_c	em	25548.7	conc	150000	
rep	2	K_c	em	5009.7	conc	100000	
rep	2	Cu_c	em	6595.3	conc	5000.0	
rep	2	Mg_c	em	8665.6	conc	100000	
rep	2	Al_c	em	21767.4	conc	80000.0	

cal std 5
07/19/93 10:16

Mn_c	av	34678.75	sd	1053.357	%cv	3.04	conc	5000.0
Zn_c	av	15156.68	sd	2430.790	%cv	16.04	conc	5000.0
Co_c	av	6197.04	sd	258.320	%cv	4.17	conc	5000.0
Cr_c	av	10633.57	sd	120.053	%cv	1.13	conc	5000.0
Ni_c	av	10361.66	sd	565.765	%cv	5.46	conc	5000.0
Ag_c	av	4850.26	sd	131.847	%cv	2.72	conc	5000.0
Ba_c	av	14654.58	sd	117.195	%cv	0.80	conc	20000.
Sr_c	av	54190.48	sd	1005.702	%cv	1.86	conc	5000.0
Fe_c	av	24531.57	sd	82.305	%cv	0.34	conc	80000.
Na_c	av	42736.86	sd	220.601	%cv	0.52	conc	100000
V_c	av	4233.22	sd	10.312	%cv	0.24	conc	5000.0
Be_c	av	7684.65	sd	171.662	%cv	2.23	conc	500.0
Ca_c	av	25106.30	sd	625.671	%cv	2.49	conc	150000
K_c	av	5034.65	sd	35.238	%cv	0.70	conc	100000
Cu_c	av	6536.82	sd	82.755	%cv	1.27	conc	5000.0
Mg_c	av	8521.70	sd	203.450	%cv	2.39	conc	100000
Al_c	av	21646.27	sd	171.330	%cv	0.79	conc	80000.

07 /93 10:20
blank 5

rep	1	Mn_c	em	194.5
rep	1	Zn_c	em	261.1
rep	1	Co_c	em	270.7
rep	1	Cr_c	em	399.8

(SECTION II)

rep	1	Ni_c	em	666.6	
rep	1	Ag_c	em	236.1	
rep	1	Ba_c	em	80.7	
rep	1	Sr_c	em	149.9	
rep	1	Fe_c	em	58.6	
rep	1	Na_c	em	355.5	
rep	1	V_c	em	142.6	
rep	1	Be_c	em	216.1	
rep	1	Ca_c	em	71.6	
rep	1	K_c	em	1348.0	
rep	1	Cu_c	em	204.9	
rep	1	Mg_c	em	218.9	
rep	1	Al_c	em	202.0	

07/19/93 10:24
blank

rep	1	Mn_c	ratio	0.0032	
rep	1	Zn_c	ratio	0.0043	
rep	1	Co_c	ratio	0.0042	
rep	1	Cr_c	ratio	0.0032	
rep	1	Ni_c	ratio	-0.0057	window edge
rep	1	Ag_c	ratio	0.0028	
rep	1	Ba_c	ratio	0.0012	
rep	1	Sr_c	ratio	0.0003	
rep	1	Fe_c	ratio	0.0009	
rep	1	Na_c	ratio	0.0061	
rep	1	V_c	ratio	0.0011	
rep	1	Be_c	ratio	0.0033	
rep	1	Ca_c	ratio	0.0017	
rep	1	K_c	ratio	0.0219	
rep	1	Cu_c	ratio	0.0032	
rep	1	Mg_c	ratio	0.0038	
rep	1	Al_c	ratio	-0.0006	window edge
rep	2	Mn_c	ratio	0.0013	
rep	2	Zn_c	ratio	-0.0066	window edge
rep	2	Co_c	ratio	0.0020	
rep	2	Cr_c	ratio	0.0010	
rep	2	Ni_c	ratio	0.0059	
rep	2	Ag_c	ratio	0.0006	window edge
rep	2	Ba_c	ratio	-0.0010	window edge
rep	2	Sr_c	ratio	0.0002	
rep	2	Fe_c	ratio	0.0002	
rep	2	Na_c	ratio	0.0069	
rep	2	V_c	ratio	-0.0011	window edge
rep	2	Be_c	ratio	0.0055	
rep	2	Ca_c	ratio	0.0018	
rep	2	K_c	ratio	0.0264	
rep	2	Cu_c	ratio	0.0045	
rep	2	Mg_c	ratio	0.0031	
rep	2	Al_c	ratio	0.0011	

(SECTION II)

blank
07/19/93 10:25

Mn_c	av	0.0022	sd	0.00138	%cv	61.43
Zn_c	av	-0.0011	sd	0.00767	%cv	677.9
Co_c	av	0.0031	sd	0.00159	%cv	51.41
Cr_c	av	0.0021	sd	0.00154	%cv	73.49
Ni_c	av	0.0001	sd	0.00823	%cv	7938.
Ag_c	av	0.0017	sd	0.00156	%cv	91.40
Ba_c	av	0.0001	sd	0.00158	%cv	1259.
Sr_c	av	0.0003	sd	0.00009	%cv	36.93
Fe_c	av	0.0005	sd	0.00046	%cv	87.15
Na_c	av	0.0065	sd	0.00058	%cv	8.92

V_c	av	0.0000	sd	0.00159	%cv	9335.	
Be_c	av	0.0044	sd	0.00155	%cv	35.41	
Ca_c	av	0.0018	sd	0.00006	%cv	3.57	
K_c	av	0.0242	sd	0.00318	%cv	13.16	
Cu_c	av	0.0038	sd	0.00092	%cv	24.12	
Mg_c	av	0.0035	sd	0.00047	%cv	13.57	
Al_c	av	0.0002	sd	0.00121	%cv	578.6	

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07/19/93 10:29

standard 5	rep	1	Mn_c	ratio	17.2705	conc	5000.0 µg/L
	rep	1	Zn_c	ratio	6.4483	conc	5000.0
	rep	1	Co_c	ratio	2.4509	conc	5000.0
	rep	1	Cr_c	ratio	4.9766	conc	5000.0
	rep	1	Ni_c	ratio	4.0580	conc	5000.0
	rep	1	Ag_c	ratio	2.3710	conc	5000.0
	rep	1	Ba_c	ratio	5.6980	conc	20000.0
	rep	1	Sr_c	ratio	26.6058	conc	5000.0
	rep	1	Fe_c	ratio	9.5639	conc	80000.0
	rep	1	Na_c	ratio	20.2520	conc	100000
	rep	1	V_c	ratio	1.6252	conc	5000.0
	rep	1	Be_c	ratio	3.0396	conc	500.0
	rep	1	Ca_c	ratio	9.6846	conc	150000
	rep	1	K_c	ratio	2.5346	conc	100000
	rep	1	Cu_c	ratio	2.5641	conc	5000.0
	rep	1	Mg_c	ratio	3.3448	conc	100000
	rep	1	Al_c	ratio	8.4222	conc	80000.0
	rep	2	Mn_c	ratio	17.3835	conc	5000.0
	rep	2	Zn_c	ratio	6.4841	conc	5000.0
	rep	2	Co_c	ratio	2.4572	conc	5000.0
	rep	2	Cr_c	ratio	4.9966	conc	5000.0
	rep	2	Ni_c	ratio	4.0525	conc	5000.0
	rep	2	Ag_c	ratio	2.3641	conc	5000.0
	rep	2	Ba_c	ratio	5.7302	conc	20000.0
	rep	2	Sr_c	ratio	26.7981	conc	5000.0
	rep	2	Fe_c	ratio	9.5495	conc	80000.0
	rep	2	Na_c	ratio	20.2493	conc	100000
	rep	2	V_c	ratio	1.6220	conc	5000.0
	rep	2	Be_c	ratio	3.0290	conc	500.0
	rep	2	Ca_c	ratio	9.6658	conc	150000
	rep	2	K_c	ratio	2.4756	conc	100000
	rep	2	Cu_c	ratio	2.5650	conc	5000.0
	rep	2	Mg_c	ratio	3.3287	conc	100000
	rep	2	Al_c	ratio	8.4358	conc	80000.0

(SECTION II)

standard 5
07/19/93 10:31

Mn_c	av	17.3270	sd	0.07991	%cv	0.46	conc 5000.0 µg
Zn_c	av	6.4662	sd	0.02529	%cv	0.39	conc 5000.0
Co_c	av	2.4540	sd	0.00449	%cv	0.18	conc 5000.0
Cr_c	av	4.9866	sd	0.01414	%cv	0.28	conc 5000.0
Ni_c	av	4.0552	sd	0.00388	%cv	0.10	conc 5000.0
Ag_c	av	2.3675	sd	0.00489	%cv	0.21	conc 5000.0
Ba_c	av	5.7141	sd	0.02274	%cv	0.40	conc 20000.
Sr_c	av	26.7019	sd	0.13603	%cv	0.51	conc 5000.0
Fe_c	av	9.5567	sd	0.01023	%cv	0.11	conc 80000.
Na_c	av	20.2507	sd	0.00191	%cv	0.01	conc 100000
V_c	av	1.6236	sd	0.00225	%cv	0.14	conc 5000.0
Be_c	av	3.0343	sd	0.00745	%cv	0.25	conc 500.0
Ca_c	av	9.6752	sd	0.01326	%cv	0.14	conc 150000
K_c	av	2.5051	sd	0.04176	%cv	1.67	conc 100000
Cu_c	av	2.5645	sd	0.00062	%cv	0.02	conc 5000.0

Mg_c	av	3.3368	sd	0.01139	%cv	0.34	conc	100000
Al_c	av	8.4290	sd	0.00964	%cv	0.11	conc	80000

07/19/93 10:35

ICV

rep	1	Mn_c	conc	1037.8	ug/L
rep	1	Zn_c	conc	1048.3	ug/L
rep	1	Co_c	conc	1062.4	ug/L
rep	1	Cr_c	conc	1051.7	ug/L
rep	1	Ni_c	conc	1060.0	ug/L
rep	1	Ag_c	conc	563.1	ug/L
rep	1	Ba_c	conc	3158.5	ug/L
rep	1	Sr_c	conc	1015.4	ug/L
rep	1	Fe_c	conc	3154.2	ug/L
rep	1	Na_c	conc	25685	ug/L
rep	1	V_c	conc	1036.4	ug/L
rep	1	Be_c	conc	267.9	ug/L
rep	1	Ca_c	conc	25761	ug/L
rep	1	K_c	conc	50036	ug/L
rep	1	Cu_c	conc	1051.9	ug/L
rep	1	Mg_c	conc	26036	ug/L
rep	1	Al_c	conc	10016.1	ug/L
rep	2	Mn_c	conc	1039.7	ug/L
rep	2	Zn_c	conc	1054.3	ug/L
rep	2	Co_c	conc	1069.9	ug/L
rep	2	Cr_c	conc	1053.5	ug/L
rep	2	Ni_c	conc	1049.3	ug/L
rep	2	Ag_c	conc	519.5	ug/L
rep	2	Ba_c	conc	3205.3	ug/L
rep	2	Sr_c	conc	1010.7	ug/L
rep	2	Fe_c	conc	3116.2	ug/L
rep	2	Na_c	conc	25621	ug/L
rep	2	V_c	conc	1030.4	ug/L
rep	2	Be_c	conc	266.1	ug/L
rep	2	Ca_c	conc	25707	ug/L
rep	2	K_c	conc	52167	ug/L
rep	2	Cu_c	conc	1054.3	ug/L
rep	2	Mg_c	conc	26439	ug/L
rep	2	Al_c	conc	10077.1	ug/L

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(SECTION II)

ICV

07/19/93 10:37

Mn_c	av	1038.8 ug/L	sd	1.32	%cv	0.13
Zn_c	av	1051.3 ug/L	sd	4.21	%cv	0.40
Co_c	av	1066.2 ug/L	sd	5.25	%cv	0.49
Cr_c	av	1052.6 ug/L	sd	1.31	%cv	0.12
Ni_c	av	1054.6 ug/L	sd	7.59	%cv	0.72
Ag_c	av	541.3 ug/L	sd	30.83	%cv	5.69
Ba_c	av	3181.9 ug/L	sd	33.13	%cv	1.04
Sr_c	av	1013.0 ug/L	sd	3.34	%cv	0.33
Fe_c	av	3135.2 ug/L	sd	26.90	%cv	0.86
Na_c	av	25653 ug/L	sd	45.1	%cv	0.18
V_c	av	1033.4 ug/L	sd	4.23	%cv	0.41
Be_c	av	267.0 ug/L	sd	1.25	%cv	0.47
Ca_c	av	25734 ug/L	sd	38.7	%cv	0.15
K_c	av	51102 ug/L	sd	1506.9	%cv	2.95
Cu_c	av	1053.1 ug/L	sd	1.66	%cv	0.16
Mg_c	av	26238 ug/L	sd	284.9	%cv	1.09
Al_c	av	10046.6 ug/L	sd	43.10	%cv	0.43

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ICB	rep	1	Mn_c	conc	0.2 ug/L

rep	1	Zn_c	conc	2.9 ug/L	
rep	1	Cr_c	conc	-0.7 ug/L	
rep	1	Co_c	conc	8.0 ug/L	
rep	1	Ni_c	conc	8.1 ug/L	
rep	1	Ag_c	conc	-4.4 ug/L	
rep	1	Ba_c	conc	4.4 ug/L	
rep	1	Sr_c	conc	-0.2 ug/L	50
rep	1	Fe_c	conc	0.4 ug/L	
rep	1	Na_c	conc	-5 ug/L	
rep	1	V_c	conc	-0.4 ug/L	
rep	1	Be_c	conc	-0.3 ug/L	
rep	1	Ca_c	conc	-18 ug/L	
rep	1	K_c	conc	-15 ug/L	
rep	1	Cu_c	conc	3.0 ug/L	
rep	1	Mg_c	conc	-15 ug/L	
rep	1	Al_c	conc	9.9 ug/L	
rep	2	Mn_c	conc	0.0 ug/L	
rep	2	Zn_c	conc	-0.8 ug/L	window edge
rep	2	Co_c	conc	1.4 ug/L	
rep	2	Cr_c	conc	0.1 ug/L	
rep	2	Ni_c	conc	10.4 ug/L	
rep	2	Ag_c	conc	0.6 ug/L	
rep	2	Ba_c	conc	3.6 ug/L	
rep	2	Sr_c	conc	0.1 ug/L	
rep	2	Fe_c	conc	0.3 ug/L	
rep	2	Na_c	conc	-4 ug/L	(SECTION II)
rep	2	V_c	conc	3.0 ug/L	
rep	2	Be_c	conc	0.0 ug/L	
rep	2	Ca_c	conc	0 ug/L	
rep	2	K_c	conc	-582 ug/L	
rep	2	Cu_c	conc	4.3 ug/L	
rep	2	Mg_c	conc	-27 ug/L	
rep	2	Al_c	conc	4.7 ug/L	

ICB
07/19/93 10:42

Mn_c	av	0.1 ug/L	sd	0.14	%cv	221.3
Zn_c	av	1.1 ug/L	sd	2.67	%cv	251.3
Co_c	av	4.7 ug/L	sd	4.69	%cv	99.80
Cr_c	av	-0.3 ug/L	sd	0.51	%cv	173.6
Ni_c	av	9.2 ug/L	sd	1.65	%cv	17.87
Ag_c	av	-1.9 ug/L	sd	3.57	%cv	186.0
Ba_c	av	4.0 ug/L	sd	0.59	%cv	14.77
Sr_c	av	0.0 ug/L	sd	0.18	%cv	503.7
Fe_c	av	0.3 ug/L	sd	0.04	%cv	10.09
Na_c	av	-5 ug/L	sd	1.0	%cv	22.83
V_c	av	1.3 ug/L	sd	2.41	%cv	186.5
Be_c	av	-0.1 ug/L	sd	0.15	%cv	108.5
Ca_c	av	-9 ug/L	sd	12.6	%cv	135.3
K_c	av	-299 ug/L	sd	401.2	%cv	134.3
Cu_c	av	3.7 ug/L	sd	0.91	%cv	24.69
Mg_c	av	-21 ug/L	sd	8.9	%cv	42.70
Al_c	av	7.3 ug/L	sd	3.66	%cv	50.04

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CF	rep	1	Mn_c	conc	30.7 ug/L
	rep	1	Zn_c	conc	45.5 ug/L
	rep	1	Co_c	conc	104.2 ug/L
	rep	1	Cr_c	conc	18.9 ug/L
	rep	1	Ni_c	conc	93.4 ug/L
	rep	1	Ag_c	conc	15.2 ug/L

rep	1	V_c	conc	95.1	ug/L
rep	1	Sr_c	conc	202.1	ug/L
rep	1	Be_c	conc	9.8	ug/L
rep	1	Cu_c	conc	45.0	ug/L
rep	2	Mn_c	conc	30.3	ug/L
rep	2	Zn_c	conc	42.7	ug/L
rep	2	Cr_c	conc	21.2	ug/L
rep	2	Co_c	conc	97.3	ug/L
rep	2	Ag_c	conc	18.5	ug/L
rep	2	Ni_c	conc	82.3	ug/L
rep	2	Sr_c	conc	200.5	ug/L
rep	2	V_c	conc	94.9	ug/L
rep	2	Be_c	conc	9.7	ug/L
rep	2	Cu_c	conc	48.9	ug/L

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(SECTION II)

CRI
07/19/93 10:47

Mn_c	av	30.5 ug/L	sd	0.31	%cv	1.01
Zn_c	av	44.1 ug/L	sd	2.04	%cv	4.63
Cr_c	av	20.1 ug/L	sd	1.62	%cv	8.07
Co_c	av	100.7 ug/L	sd	4.86	%cv	4.83
Ag_c	av	16.9 ug/L	sd	2.36	%cv	14.02
Ni_c	av	87.9 ug/L	sd	7.81	%cv	8.89
Sr_c	av	201.3 ug/L	sd	1.18	%cv	0.59
V_c	av	95.5 ug/L	sd	0.81	%cv	0.85
Be_c	av	9.8 ug/L	sd	0.06	%cv	0.65
Cu_c	av	46.9 ug/L	sd	2.76	%cv	5.89

07/19/93 10:50
ICSA

rep	1	Mn_c	conc	4.3	ug/L	
rep	1	Zn_c	conc	27.3	ug/L	
rep	1	Cr_c	conc	0.1	ug/L	
rep	1	Co_c	conc	-3.1	ug/L	window edge
rep	1	Ag_c	conc	-5.0	ug/L	window edge
rep	1	Ni_c	conc	5.3	ug/L	
rep	1	Sr_c	conc	17.7	ug/L	
rep	1	Ba_c	conc	8.1	ug/L	
rep	1	Fe_c	conc	188825.0	ug/L	
rep	1	Na_c	conc	449	ug/L	
rep	1	V_c	conc	2.9	ug/L	window edge
rep	1	Be_c	conc	-0.1	ug/L	
rep	1	Ca_c	conc	491191	ug/L	
rep	1	K_c	conc	-251	ug/L	
rep	1	Cu_c	conc	2.9	ug/L	
rep	1	Mg_c	conc	496288	ug/L	
rep	1	Al_c	conc	510465.7	ug/L	
rep	2	Mn_c	conc	3.1	ug/L	
rep	2	Zn_c	conc	25.1	ug/L	
rep	2	Co_c	conc	-1.6	ug/L	
rep	2	Cr_c	conc	-4.9	ug/L	window edge
rep	2	Ni_c	conc	10.9	ug/L	
rep	2	Ag_c	conc	1.3	ug/L	
rep	2	Ba_c	conc	0.5	ug/L	window edge
rep	2	Sr_c	conc	17.6	ug/L	
rep	2	Fe_c	conc	188746.4	ug/L	
rep	2	Na_c	conc	412	ug/L	
rep	2	V_c	conc	8.0	ug/L	window edge
rep	2	Be_c	conc	-0.3	ug/L	
rep	2	Ca_c	conc	487379	ug/L	
rep	2	K_c	conc	393	ug/L	
rep	2	Cu_c	conc	3.2	ug/L	

rep	2	Mg_c	conc	498185	ug/L
rep	2	Al_c	conc	513165.5	ug/L

ICSA
07/19/93 10:52

Mn_c	av	3.7	ug/L	sd	0.88	%cv	23.78
Zn_c	av	26.2	ug/L	sd	1.51	%cv	5.76
Co_c	av	-2.4	ug/L	sd	1.10	%cv	46.64
Cr_c	av	-2.4	ug/L	sd	3.54	%cv	147.4
Ni_c	av	8.1	ug/L	sd	3.97	%cv	48.81
Ag_c	av	-1.8	ug/L	sd	4.48	%cv	242.6
Ba_c	av	4.3	ug/L	sd	5.42	%cv	126.1
Sr_c	av	17.6	ug/L	sd	0.07	%cv	0.40
Fe_c	av	188785.7	ug/L	sd	55.55	%cv	0.03
Na_c	av	430	ug/L	sd	26.2	%cv	6.08
V_c	av	5.4	ug/L	sd	3.61	%cv	66.79
Be_c	av	-0.2	ug/L	sd	0.12	%cv	71.89
Ca_c	av	489285	ug/L	sd	2695.8	%cv	0.55
K_c	av	71	ug/L	sd	455.3	%cv	644.8
Cu_c	av	3.1	ug/L	sd	0.28	%cv	9.07
Mg_c	av	497237	ug/L	sd	1341.2	%cv	0.27
Al_c	av	511815.6	ug/L	sd	1909.05	%cv	0.37

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ICSAB

rep	1	Mn_c	conc	490.3	ug/L
rep	1	Zn_c	conc	970.0	ug/L
rep	1	Co_c	conc	469.6	ug/L
rep	1	Cr_c	conc	488.6	ug/L
rep	1	Ni_c	conc	923.9	ug/L
rep	1	Ag_c	conc	1031.7	ug/L
rep	1	Ba_c	conc	475.7	ug/L
rep	1	Sr_c	conc	1013.8	ug/L
rep	1	Fe_c	conc	187790.2	ug/L
rep	1	Na_c	conc	439	ug/L
rep	1	V_c	conc	481.0	ug/L
rep	1	Be_c	conc	487.8	ug/L
rep	1	Ca_c	conc	484242	ug/L
rep	1	K_c	conc	225	ug/L
rep	1	Cu_c	conc	487.8	ug/L
rep	1	Mg_c	conc	496324	ug/L
rep	1	Al_c	conc	513079.7	ug/L
rep	2	Mn_c	conc	489.1	ug/L
rep	2	Zn_c	conc	976.4	ug/L
rep	2	Co_c	conc	465.3	ug/L
rep	2	Cr_c	conc	485.8	ug/L
rep	2	Ni_c	conc	932.3	ug/L
rep	2	Ag_c	conc	1032.8	ug/L
rep	2	Ba_c	conc	479.4	ug/L
rep	2	Sr_c	conc	1013.4	ug/L
rep	2	Fe_c	conc	187748.2	ug/L
rep	2	Na_c	conc	461	ug/L
rep	2	V_c	conc	472.6	ug/L
rep	2	Be_c	conc	488.1	ug/L
rep	2	Ca_c	conc	488571	ug/L
rep	2	K_c	conc	-516	ug/L
rep	2	Cu_c	conc	485.3	ug/L
rep	2	Mg_c	conc	497942	ug/L
rep	2	Al_c	conc	512997.9	ug/L

(SECTION II)

ICSAB
07/19/93 10:57

Mn_c	av	489.7	ug/L	sd	0.85	%cv	0.17

Zn_c	av	973.2	ug/L	sd	4.47	%cv	0.46
Co_c	av	467.5	ug/L	sd	3.08	%cv	0.66
Cr_c	av	487.2	ug/L	sd	1.94	%cv	0.40
Ni_c	av	928.1	ug/L	sd	5.95	%cv	0.64
Ag_c	av	1032.2	ug/L	sd	0.73	%cv	0.07
[illegible]_c	av	477.6	ug/L	sd	2.60	%cv	0.55
[illegible]r_c	av	1013.6	ug/L	sd	0.28	%cv	0.03
Fe_c	av	187769.2	ug/L	sd	29.67	%cv	0.02
Na_c	av	450	ug/L	sd	15.5	%cv	3.44
V_c	av	476.8	ug/L	sd	5.94	%cv	1.25
Be_c	av	487.9	ug/L	sd	0.22	%cv	0.04
Ca_c	av	486407	ug/L	sd	3061.1	%cv	0.63
K_c	av	-146	ug/L	sd	523.7	%cv	359.1
Cu_c	av	486.5	ug/L	sd	1.77	%cv	0.36
Mg_c	av	497133	ug/L	sd	1143.9	%cv	0.23
Al_c	av	513038.8	ug/L	sd	57.81	%cv	0.01

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CV

rep	1	Mn_c	conc	2521.9	ug/L
rep	1	Zn_c	conc	2512.5	ug/L
rep	1	Co_c	conc	2533.9	ug/L
rep	1	Cr_c	conc	2500.7	ug/L
rep	1	Ni_c	conc	2494.5	ug/L
rep	1	Ag_c	conc	2609.7	ug/L
rep	1	Ba_c	conc	10078.9	ug/L
rep	1	Sr_c	conc	2518.0	ug/L
rep	1	Fe_c	conc	40468.3	ug/L
rep	1	Na_c	conc	49578	ug/L
rep	1	V_c	conc	2519.5	ug/L
rep	1	Be_c	conc	251.5	ug/L
rep	1	Ca_c	conc	74776	ug/L
rep	1	K_c	conc	50096	ug/L
rep	1	Cu_c	conc	2525.6	ug/L
rep	1	Mg_c	conc	50103	ug/L
rep	1	Al_c	conc	40104.8	ug/L
rep	2	Mn_c	conc	2524.1	ug/L
rep	2	Zn_c	conc	2525.0	ug/L
rep	2	Co_c	conc	2550.9	ug/L
rep	2	Cr_c	conc	2502.0	ug/L
rep	2	Ni_c	conc	2560.7	ug/L
rep	2	Ag_c	conc	2602.4	ug/L
rep	2	Ba_c	conc	10136.6	ug/L
rep	2	Sr_c	conc	2524.5	ug/L
rep	2	Fe_c	conc	40390.1	ug/L
rep	2	Na_c	conc	49436	ug/L
rep	2	V_c	conc	2530.8	ug/L
rep	2	Be_c	conc	251.7	ug/L
rep	2	Ca_c	conc	74736	ug/L
rep	2	K_c	conc	51248	ug/L
rep	2	Cu_c	conc	2533.5	ug/L
rep	2	Mg_c	conc	50034	ug/L
rep	2	Al_c	conc	40180.7	ug/L

(SECTION II)

CV

7/19/93 11:03

[illegible]_c	av	2523.0	ug/L	sd	1.54	%cv	0.06
[illegible]n_c	av	2518.7	ug/L	sd	8.83	%cv	0.35
Co_c	av	2542.4	ug/L	sd	12.03	%cv	0.47
Cr_c	av	2501.4	ug/L	sd	0.92	%cv	0.04
Ni_c	av	2527.6	ug/L	sd	46.80	%cv	1.85
Ag_c	av	2606.1	ug/L	sd	5.16	%cv	0.20

Ba_c	av	10107.7	ug/L	sd	40.80	%cv	0.40
Sr_c	av	2521.3	ug/L	sd	4.59	%cv	0.18
Fe_c	av	40429.2	ug/L	sd	55.33	%cv	0.14
Na_c	av	49507	ug/L	sd	100.1	%cv	0.20
V_c	av	2525.1	ug/L	sd	8.03	%cv	0.32
Be_c	av	251.6	ug/L	sd	0.16	%cv	0.06
Ca_c	av	74756	ug/L	sd	28.1	%cv	0.04
K_c	av	50672	ug/L	sd	814.8	%cv	1.61
Cu_c	av	2529.5	ug/L	sd	5.60	%cv	0.22
Mg_c	av	50068	ug/L	sd	49.0	%cv	0.10
Al_c	av	40142.8	ug/L	sd	53.65	%cv	0.13

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CB

rep	1	Mn_c	conc	-0.2	ug/L	
rep	1	Zn_c	conc	4.7	ug/L	
rep	1	Co_c	conc	-9.5	ug/L	window edge
rep	1	Cr_c	conc	0.2	ug/L	
rep	1	Ni_c	conc	7.7	ug/L	
rep	1	Ag_c	conc	-2.1	ug/L	
rep	1	Ba_c	conc	-3.4	ug/L	window edge
rep	1	Sr_c	conc	0.1	ug/L	
rep	1	Fe_c	conc	1.8	ug/L	
rep	1	Na_c	conc	-2	ug/L	
rep	1	V_c	conc	-4.1	ug/L	window edge
rep	1	Be_c	conc	-0.2	ug/L	
rep	1	Ca_c	conc	-2	ug/L	
rep	1	K_c	conc	-546	ug/L	
rep	1	Cu_c	conc	-1.9	ug/L	
rep	1	Mg_c	conc	19	ug/L	
rep	1	Al_c	conc	9.4	ug/L	
rep	2	Mn_c	conc	0.0	ug/L	
rep	2	Zn_c	conc	4.0	ug/L	
rep	2	Co_c	conc	3.4	ug/L	
rep	2	Cr_c	conc	1.8	ug/L	
rep	2	Ni_c	conc	7.2	ug/L	
rep	2	Ag_c	conc	-0.9	ug/L	
rep	2	Ba_c	conc	1.9	ug/L	
rep	2	Sr_c	conc	0.1	ug/L	
rep	2	Fe_c	conc	-2.4	ug/L	
rep	2	Na_c	conc	-28	ug/L	window edge
rep	2	V_c	conc	-4.9	ug/L	window edge
rep	2	Be_c	conc	-0.1	ug/L	
rep	2	Ca_c	conc	-10	ug/L	
rep	2	K_c	conc	134	ug/L	
rep	2	Cu_c	conc	-0.7	ug/L	
rep	2	Mg_c	conc	-21	ug/L	
rep	2	Al_c	conc	-0.3	ug/L	

(SECTION II)

CB

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Mn_c	av	-0.1	ug/L	sd	0.12	%cv	93.82
Zn_c	av	4.3	ug/L	sd	0.51	%cv	11.85
Co_c	av	-3.1	ug/L	sd	9.12	%cv	296.1
Cr_c	av	1.0	ug/L	sd	1.12	%cv	109.5
Ni_c	av	7.5	ug/L	sd	0.35	%cv	4.76
Ag_c	av	-1.5	ug/L	sd	0.80	%cv	53.46
Ba_c	av	-0.7	ug/L	sd	3.77	%cv	503.7
Sr_c	av	0.1	ug/L	sd	0.06	%cv	59.78
Fe_c	av	-0.3	ug/L	sd	2.90	%cv	963.3
Na_c	av	-15	ug/L	sd	18.6	%cv	125.7
V_c	av	-4.5	ug/L	sd	0.60	%cv	13.22

Be_c	av	-0.1 ug/L	sd	0.11	%cv	79.96
Ca_c	av	-6 ug/L	sd	5.3	%cv	85.34
K_c	av	-206 ug/L	sd	480.8	%cv	233.8
Cu_c	av	-1.3 ug/L	sd	0.84	%cv	67.30
Mg_c	av	-1 ug/L	sd	27.8	%cv	2815.
Al_c	av	4.6 ug/L	sd	6.83	%cv	149.1

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PBS 213984	rep	1	Mn_c	conc	0.5 ug/L	
	rep	1	Zn_c	conc	3.0 ug/L	
	rep	1	Co_c	conc	-3.7 ug/L	window edge
	rep	1	Cr_c	conc	1.8 ug/L	
	rep	1	Ni_c	conc	8.5 ug/L	
	rep	1	Ag_c	conc	-2.4 ug/L	window edge
	rep	1	Ba_c	conc	4.1 ug/L	
	rep	1	Sr_c	conc	0.2 ug/L	
	rep	1	Fe_c	conc	6.1 ug/L	
	rep	1	Na_c	conc	13 ug/L	
	rep	1	V_c	conc	3.7 ug/L	
	rep	1	Be_c	conc	-0.1 ug/L	
	rep	1	Ca_c	conc	-6 ug/L	
	rep	1	K_c	conc	-321 ug/L	
	rep	1	Cu_c	conc	4.0 ug/L	
	rep	1	Mg_c	conc	-7 ug/L	
	rep	1	Al_c	conc	18.8 ug/L	
	rep	2	Mn_c	conc	0.4 ug/L	
	rep	2	Zn_c	conc	1.5 ug/L	
	rep	2	Cr_c	conc	1.8 ug/L	
	rep	2	Co_c	conc	-1.9 ug/L	
	rep	2	Ni_c	conc	5.7 ug/L	
	rep	2	Ag_c	conc	-2.9 ug/L	
	rep	2	Ba_c	conc	5.1 ug/L	
	rep	2	Sr_c	conc	-0.2 ug/L	window edge
	rep	2	Fe_c	conc	7.2 ug/L	
	rep	2	Na_c	conc	-11 ug/L	
	rep	2	V_c	conc	-5.0 ug/L	window edge
	rep	2	Be_c	conc	-0.3 ug/L	
	rep	2	Ca_c	conc	-12 ug/L	
	rep	2	K_c	conc	-310 ug/L	
	rep	2	Cu_c	conc	2.5 ug/L	
	rep	2	Mg_c	conc	-24 ug/L	
	rep	2	Al_c	conc	10.3 ug/L	

(SECTION II)

PBS 213984
07/19/93 11:14

Mn_c	av	0.4 ug/L	sd	0.07	%cv	16.44
Zn_c	av	2.3 ug/L	sd	1.02	%cv	45.31
Cr_c	av	1.8 ug/L	sd	0.01	%cv	0.43
Co_c	av	-2.8 ug/L	sd	1.27	%cv	45.31
Ni_c	av	7.1 ug/L	sd	2.00	%cv	28.09
Ag_c	av	-2.7 ug/L	sd	0.36	%cv	13.69
Ba_c	av	4.6 ug/L	sd	0.74	%cv	16.16
Sr_c	av	0.0 ug/L	sd	0.28	%cv	880.5
Fe_c	av	6.7 ug/L	sd	0.73	%cv	10.97
Na_c	av	1 ug/L	sd	16.7	%cv	1354.
V_c	av	-0.6 ug/L	sd	6.12	%cv	954.1
Be_c	av	-0.2 ug/L	sd	0.15	%cv	89.96
Ca_c	av	-9 ug/L	sd	4.0	%cv	43.90
K_c	av	-316 ug/L	sd	8.1	%cv	2.58
Cu_c	av	3.3 ug/L	sd	1.07	%cv	32.85
Mg_c	av	-16 ug/L	sd	11.6	%cv	74.63

Al_c	av	14.5 ug/L		sd	6.00 %cv	41.34	

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CS04 213984	rep	1	Mn_c	conc	1102.1	ug/L
	rep	1	Zn_c	conc	939.5	ug/L
	rep	1	Co_c	conc	755.4	ug/L
	rep	1	Cr_c	conc	524.7	ug/L
	rep	1	Ni_c	conc	317.1	ug/L
	rep	1	Ag_c	conc	114.4	ug/L
	rep	1	Ba_c	conc	27.9	ug/L
	rep	1	Sr_c	conc	288.6	ug/L
	rep	1	Fe_c	conc	113697.0	ug/L
	rep	1	Na_c	conc	341	ug/L
	rep	1	V_c	conc	333.5	ug/L
	rep	1	Be_c	conc	95.6	ug/L
	rep	1	Ca_c	conc	929370	ug/L
	rep	1	K_c	conc	-611	ug/L
	rep	1	Cu_c	conc	34104.4	ug/L
	rep	1	Mg_c	conc	571046	ug/L
	rep	1	Al_c	conc	1447.7	ug/L
	rep	2	Mn_c	conc	1104.5	ug/L
	rep	2	Zn_c	conc	936.6	ug/L
	rep	2	Co_c	conc	765.9	ug/L
	rep	2	Cr_c	conc	527.7	ug/L
	rep	2	Ni_c	conc	313.7	ug/L
	rep	2	Ag_c	conc	115.0	ug/L
	rep	2	Ba_c	conc	26.2	ug/L
	rep	2	Sr_c	conc	290.3	ug/L
	rep	2	Fe_c	conc	113530.3	ug/L
	rep	2	Na_c	conc	338	ug/L
	rep	2	V_c	conc	340.5	ug/L
	rep	2	Be_c	conc	94.7	ug/L
	rep	2	Ca_c	conc	939980	ug/L
	rep	2	K_c	conc	214	ug/L
	rep	2	Cu_c	conc	34076.1	ug/L
	rep	2	Mg_c	conc	571632	ug/L
	rep	2	Al_c	conc	1477.1	ug/L

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(SECTION II)

CS04 213984
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Mn_c	av	1103.3 ug/L	sd	1.68 %cv	0.15
Zn_c	av	938.0 ug/L	sd	2.04 %cv	0.22
Co_c	av	760.7 ug/L	sd	7.40 %cv	0.97
Cr_c	av	526.2 ug/L	sd	2.14 %cv	0.41
Ni_c	av	315.4 ug/L	sd	2.42 %cv	0.77
Ag_c	av	114.7 ug/L	sd	0.40 %cv	0.35
Ba_c	av	27.1 ug/L	sd	1.19 %cv	4.40
Sr_c	av	289.4 ug/L	sd	1.23 %cv	0.42
Fe_c	av	113613.6 ug/L	sd	117.92 %cv	0.10
Na_c	av	339 ug/L	sd	2.2 %cv	0.66
V_c	av	337.0 ug/L	sd	4.96 %cv	1.47
Be_c	av	95.2 ug/L	sd	0.63 %cv	0.66
Ca_c	av	934675 ug/L	sd	7502.3 %cv	0.80
K_c	av	-198 ug/L	sd	583.2 %cv	294.0
Cu_c	av	34090.3 ug/L	sd	20.01 %cv	0.06
Mg_c	av	571339 ug/L	sd	414.2 %cv	0.07
Al_c	av	1462.4 ug/L	sd	20.83 %cv	1.42

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CS04 DF10	rep	1	Ca_c	conc	102348 ug/L
	rep	1	Cu_c	conc	3758.2 ug/L

	rep	1	Mg_c	conc	61452	ug/L
	rep	2	Ca_c	conc	101483	ug/L
	rep	2	Cu_c	conc	3721.3	ug/L
	rep	2	Mg_c	conc	61465	ug/L

LCS04 DF10
'9/93 11:23

Ca_c	av	101915	ug/L	sd	611.7	%cv 0.60
Cu_c	av	3739.7	ug/L	sd	26.14	%cv 0.70
Mg_c	av	61459	ug/L	sd	8.9	%cv 0.01

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213984

rep	1	Mn_c	conc	616.1	ug/L
rep	1	Zn_c	conc	198.0	ug/L
rep	1	Co_c	conc	13.3	ug/L
rep	1	Cr_c	conc	38.1	ug/L
rep	1	Ni_c	conc	51.2	ug/L
rep	1	Ag_c	conc	-0.4	ug/L
rep	1	Ba_c	conc	249.9	ug/L
rep	1	Sr_c	conc	55.0	ug/L
rep	1	Fe_c	conc	35785.5	ug/L
rep	1	Na_c	conc	1159	ug/L
rep	1	V_c	conc	118.7	ug/L
rep	1	Be_c	conc	0.7	ug/L
rep	1	Ca_c	conc	8561	ug/L
rep	1	K_c	conc	7317	ug/L
rep	1	Cu_c	conc	47.7	ug/L
rep	1	Mg_c	conc	10017	ug/L
rep	1	Al_c	conc	17509.8	ug/L
rep	2	Mn_c	conc	619.2	ug/L
rep	2	Zn_c	conc	203.9	ug/L
rep	2	Co_c	conc	20.4	ug/L
rep	2	Cr_c	conc	35.8	ug/L
rep	2	Ni_c	conc	41.3	ug/L
rep	2	Ag_c	conc	-0.6	ug/L
rep	2	Ba_c	conc	250.8	ug/L
rep	2	Sr_c	conc	55.6	ug/L
rep	2	Fe_c	conc	35895.0	ug/L
rep	2	Na_c	conc	1167	ug/L
rep	2	V_c	conc	122.6	ug/L
rep	2	Be_c	conc	0.7	ug/L
rep	2	Ca_c	conc	8721	ug/L
rep	2	K_c	conc	6920	ug/L
rep	2	Cu_c	conc	51.2	ug/L
rep	2	Mg_c	conc	9935	ug/L
rep	2	Al_c	conc	17544.9	ug/L

(SECTION II)

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Mn_c	av	617.6	ug/L	sd	2.21	%cv 0.36
Zn_c	av	201.0	ug/L	sd	4.17	%cv 2.08
Co_c	av	16.8	ug/L	sd	4.99	%cv 29.64
Cr_c	av	37.0	ug/L	sd	1.60	%cv 4.32
Ni_c	av	46.2	ug/L	sd	7.01	%cv 15.16
Ag_c	av	-0.5	ug/L	sd	0.15	%cv 32.09
Ba_c	av	250.3	ug/L	sd	0.65	%cv 0.26
Sr_c	av	55.3	ug/L	sd	0.38	%cv 0.69
Fe_c	av	35840.2	ug/L	sd	77.43	%cv 0.22
Na_c	av	1163	ug/L	sd	5.4	%cv 0.47
V_c	av	120.7	ug/L	sd	2.78	%cv 2.30
Be_c	av	0.7	ug/L	sd	0.01	%cv 0.88
Ca_c	av	8641	ug/L	sd	112.9	%cv 1.31

K_c	av	7118 ug/L	sd	281.4	%cv	3.95
Cu_c	av	49.4 ug/L	sd	2.48	%cv	5.01
Mg_c	av	9976 ug/L	sd	58.1	%cv	0.58
Al_c	av	17527.4 ug/L	sd	24.81	%cv	0.14

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84D

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rep	1	Mn_c	conc	721.1	ug/L	
rep	1	Zn_c	conc	194.4	ug/L	
rep	1	Co_c	conc	6.8	ug/L	
rep	1	Cr_c	conc	46.7	ug/L	
rep	1	Ni_c	conc	54.8	ug/L	
rep	1	Ag_c	conc	-3.1	ug/L	window edge
rep	1	Ba_c	conc	273.5	ug/L	
rep	1	Sr_c	conc	55.2	ug/L	
rep	1	Fe_c	conc	38797.6	ug/L	
rep	1	Na_c	conc	1161	ug/L	
rep	1	V_c	conc	149.2	ug/L	
rep	1	Be_c	conc	0.3	ug/L	
rep	1	Ca_c	conc	8353	ug/L	
rep	1	K_c	conc	6950	ug/L	
rep	1	Cu_c	conc	50.2	ug/L	
rep	1	Mg_c	conc	10945	ug/L	
rep	1	Al_c	conc	19523.5	ug/L	
rep	2	Mn_c	conc	718.5	ug/L	
rep	2	Zn_c	conc	197.6	ug/L	
rep	2	Co_c	conc	18.8	ug/L	
rep	2	Cr_c	conc	39.5	ug/L	
rep	2	Ni_c	conc	60.7	ug/L	
rep	2	Ag_c	conc	-0.7	ug/L	
rep	2	Ba_c	conc	276.6	ug/L	
rep	2	Sr_c	conc	54.8	ug/L	
rep	2	Fe_c	conc	38973.7	ug/L	
rep	2	Na_c	conc	1124	ug/L	
rep	2	V_c	conc	139.4	ug/L	
rep	2	Be_c	conc	1.1	ug/L	
rep	2	Ca_c	conc	8438	ug/L	
rep	2	K_c	conc	7903	ug/L	
rep	2	Cu_c	conc	49.2	ug/L	
rep	2	Mg_c	conc	10566	ug/L	
rep	2	Al_c	conc	19564.3	ug/L	

(SECTION II)

13984D

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Mn_c	av	719.8 ug/L	sd	1.87	%cv	0.26
Zn_c	av	196.0 ug/L	sd	2.25	%cv	1.15
Co_c	av	12.8 ug/L	sd	8.50	%cv	66.44
Cr_c	av	43.1 ug/L	sd	5.11	%cv	11.85
Ni_c	av	57.7 ug/L	sd	4.18	%cv	7.23
Ag_c	av	-1.9 ug/L	sd	1.71	%cv	90.43
Ba_c	av	275.0 ug/L	sd	2.23	%cv	0.81
Sr_c	av	55.0 ug/L	sd	0.27	%cv	0.49
Fe_c	av	38885.6 ug/L	sd	124.49	%cv	0.32
Na_c	av	1143 ug/L	sd	26.1	%cv	2.28
V_c	av	144.3 ug/L	sd	6.91	%cv	4.79
Be_c	av	0.7 ug/L	sd	0.55	%cv	76.34
Ca_c	av	8395 ug/L	sd	59.8	%cv	0.71
K_c	av	7426 ug/L	sd	673.9	%cv	9.07
Cu_c	av	49.7 ug/L	sd	0.69	%cv	1.39
Mg_c	av	10755 ug/L	sd	268.1	%cv	2.49
Al_c	av	19543.9 ug/L	sd	28.84	%cv	0.15

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213984L DF5

rep	1	Mn_c	conc	122.7	ug/L	
rep	1	Zn_c	conc	44.8	ug/L	
rep	1	Co_c	conc	1.3	ug/L	
rep	1	Cr_c	conc	8.1	ug/L	
rep	1	Ni_c	conc	12.3	ug/L	
rep	1	Ag_c	conc	-3.9	ug/L	window edge
rep	1	Ba_c	conc	51.2	ug/L	
rep	1	Sr_c	conc	11.1	ug/L	
rep	1	Fe_c	conc	7175.8	ug/L	
rep	1	Na_c	conc	234	ug/L	
rep	1	V_c	conc	20.0	ug/L	
rep	1	Be_c	conc	-0.1	ug/L	
rep	1	Ca_c	conc	1688	ug/L	
rep	1	K_c	conc	1367	ug/L	
rep	1	Cu_c	conc	7.7	ug/L	
rep	1	Mg_c	conc	2028	ug/L	
rep	1	Al_c	conc	3467.9	ug/L	
rep	2	Mn_c	conc	123.0	ug/L	
rep	2	Zn_c	conc	40.2	ug/L	
rep	2	Co_c	conc	-2.1	ug/L	
rep	2	Cr_c	conc	5.4	ug/L	
rep	2	Ni_c	conc	6.6	ug/L	
rep	2	Ag_c	conc	-2.9	ug/L	window edge
rep	2	Ba_c	conc	50.1	ug/L	
rep	2	Sr_c	conc	11.0	ug/L	
rep	2	Fe_c	conc	7178.3	ug/L	
rep	2	Na_c	conc	240	ug/L	
rep	2	V_c	conc	20.9	ug/L	
rep	2	Be_c	conc	-0.3	ug/L	
rep	2	Ca_c	conc	1684	ug/L	
rep	2	K_c	conc	1306	ug/L	
rep	2	Cu_c	conc	5.8	ug/L	
rep	2	Mg_c	conc	1905	ug/L	
rep	2	Al_c	conc	3430.5	ug/L	

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(SECTION II)

213984L DF5
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Mn_c	av	122.8 ug/L	sd	0.22	%cv	0.18
Zn_c	av	42.5 ug/L	sd	3.28	%cv	7.72
Co_c	av	-0.4 ug/L	sd	2.40	%cv	543.6
Cr_c	av	6.8 ug/L	sd	1.91	%cv	28.30
Ni_c	av	9.4 ug/L	sd	3.98	%cv	42.18
Ag_c	av	-3.4 ug/L	sd	0.67	%cv	19.74
Ba_c	av	50.6 ug/L	sd	0.76	%cv	1.50
Sr_c	av	11.0 ug/L	sd	0.12	%cv	1.11
Fe_c	av	7177.0 ug/L	sd	1.75	%cv	0.02
Na_c	av	237 ug/L	sd	3.8	%cv	1.59
V_c	av	20.4 ug/L	sd	0.59	%cv	2.90
Be_c	av	-0.2 ug/L	sd	0.17	%cv	86.08
Ca_c	av	1686 ug/L	sd	3.1	%cv	0.18
K_c	av	1336 ug/L	sd	43.0	%cv	3.22
Cu_c	av	6.8 ug/L	sd	1.36	%cv	20.08
Mg_c	av	1966 ug/L	sd	86.8	%cv	4.41
Al_c	av	3449.2 ug/L	sd	26.41	%cv	0.77

[illegible]/93 11:42
[illegible]984S

rep	1	Mn_c	conc	799.4	ug/L
rep	1	Zn_c	conc	651.9	ug/L
rep	1	Co_c	conc	529.4	ug/L
rep	1	Cr_c	conc	223.7	ug/L

	rep	1	Ni_c	conc	555.0	ug/L
	rep	1	Ag_c	conc	48.7	ug/L
	rep	1	Ba_c	conc	2212.4	ug/L
	rep	1	Sr_c	conc	1042.5	ug/L
	rep	1	V_c	conc	560.7	ug/L
	rep	1	Be_c	conc	51.9	ug/L
	rep	1	Cu_c	conc	293.8	ug/L
	rep	2	Mn_c	conc	803.1	ug/L
	rep	2	Zn_c	conc	659.4	ug/L
	rep	2	Cr_c	conc	221.6	ug/L
	rep	2	Co_c	conc	526.6	ug/L
	rep	2	Ag_c	conc	51.1	ug/L
	rep	2	Ni_c	conc	555.2	ug/L
	rep	2	Sr_c	conc	1040.4	ug/L
	rep	2	Ba_c	conc	2214.0	ug/L
	rep	2	V_c	conc	562.6	ug/L
	rep	2	Be_c	conc	51.8	ug/L
	rep	2	Cu_c	conc	298.0	ug/L

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Mn_c	av	801.3 ug/L	sd	2.66	%cv	0.33
Zn_c	av	655.6 ug/L	sd	5.30	%cv	0.81
Cr_c	av	222.6 ug/L	sd	1.47	%cv	0.66
Co_c	av	528.0 ug/L	sd	1.98	%cv	0.38
Ag_c	av	49.9 ug/L	sd	1.75	%cv	3.51
Ni_c	av	555.1 ug/L	sd	0.16	%cv	0.03
Sr_c	av	1041.5 ug/L	sd	1.45	%cv	0.14
Ba_c	av	2213.2 ug/L	sd	1.16	%cv	0.05
V_c	av	561.7 ug/L	sd	1.32	%cv	0.23
Be_c	av	51.8 ug/L	sd	0.04	%cv	0.08
Cu_c	av	295.9 ug/L	sd	2.99	%cv	1.01

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13985

rep	1	Mn_c	conc	522.6	ug/L	
rep	1	Zn_c	conc	106.8	ug/L	
rep	1	Cr_c	conc	29.3	ug/L	
rep	1	Co_c	conc	7.8	ug/L	
rep	1	Ag_c	conc	-2.4	ug/L	window edge
rep	1	Ni_c	conc	39.5	ug/L	
rep	1	Sr_c	conc	35.4	ug/L	
rep	1	Ba_c	conc	188.3	ug/L	
rep	1	Fe_c	conc	29654.2	ug/L	
rep	1	Na_c	conc	673	ug/L	
rep	1	V_c	conc	101.7	ug/L	
rep	1	Be_c	conc	0.4	ug/L	
rep	1	Ca_c	conc	5497	ug/L	
rep	1	K_c	conc	4735	ug/L	
rep	1	Cu_c	conc	40.1	ug/L	
rep	1	Mg_c	conc	8273	ug/L	
rep	1	Al_c	conc	14260.3	ug/L	
rep	2	Mn_c	conc	521.3	ug/L	
rep	2	Zn_c	conc	104.3	ug/L	
rep	2	Co_c	conc	14.4	ug/L	
rep	2	Cr_c	conc	29.8	ug/L	
rep	2	Ni_c	conc	48.2	ug/L	
rep	2	Ag_c	conc	-1.8	ug/L	
rep	2	Ba_c	conc	187.0	ug/L	
rep	2	Sr_c	conc	35.7	ug/L	
rep	2	Fe_c	conc	29769.5	ug/L	
rep	2	Na_c	conc	674	ug/L	

rep	2	V_c	conc	104.9	ug/L	
rep	2	Be_c	conc	0.6	ug/L	
rep	2	Ca_c	conc	5456	ug/L	
rep	2	K_c	conc	5345	ug/L	
rep	2	Cu_c	conc	36.4	ug/L	
rep	2	Mg_c	conc	8195	ug/L	
rep	2	Al_c	conc	14268.4	ug/L	

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Mn_c	av	522.0	ug/L	sd	0.89	%cv 0.17
Zn_c	av	105.6	ug/L	sd	1.79	%cv 1.69
Co_c	av	11.1	ug/L	sd	4.72	%cv 42.54
Cr_c	av	29.5	ug/L	sd	0.40	%cv 1.36
Ni_c	av	43.9	ug/L	sd	6.18	%cv 14.08
Ag_c	av	-2.1	ug/L	sd	0.41	%cv 19.41
Ba_c	av	187.6	ug/L	sd	0.89	%cv 0.47
Sr_c	av	35.6	ug/L	sd	0.17	%cv 0.48
Fe_c	av	29711.8	ug/L	sd	81.48	%cv 0.27
Na_c	av	673	ug/L	sd	0.9	%cv 0.13
V_c	av	103.3	ug/L	sd	2.29	%cv 2.22
Be_c	av	0.5	ug/L	sd	0.17	%cv 35.73
Ca_c	av	5476	ug/L	sd	28.8	%cv 0.53
K_c	av	5040	ug/L	sd	430.9	%cv 8.55
Cu_c	av	38.3	ug/L	sd	2.57	%cv 6.72
Mg_c	av	8234	ug/L	sd	55.1	%cv 0.67
Al_c	av	14264.4	ug/L	sd	5.74	%cv 0.04

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13986

rep	1	Mn_c	conc	501.9	ug/L	
rep	1	Zn_c	conc	98.0	ug/L	
rep	1	Co_c	conc	12.6	ug/L	
rep	1	Cr_c	conc	41.9	ug/L	
rep	1	Ni_c	conc	49.9	ug/L	
rep	1	Ag_c	conc	-1.7	ug/L	
rep	1	Ba_c	conc	134.9	ug/L	
rep	1	Sr_c	conc	26.7	ug/L	
rep	1	Fe_c	conc	28263.0	ug/L	
rep	1	Na_c	conc	2391	ug/L	
rep	1	V_c	conc	82.8	ug/L	
rep	1	Be_c	conc	0.4	ug/L	
rep	1	Ca_c	conc	6957	ug/L	
rep	1	K_c	conc	5150	ug/L	
rep	1	Cu_c	conc	21.3	ug/L	
rep	1	Mg_c	conc	9647	ug/L	
rep	1	Al_c	conc	15306.2	ug/L	
rep	2	Mn_c	conc	505.0	ug/L	
rep	2	Zn_c	conc	101.2	ug/L	
rep	2	Co_c	conc	15.6	ug/L	
rep	2	Cr_c	conc	41.8	ug/L	
rep	2	Ni_c	conc	64.4	ug/L	
rep	2	Ag_c	conc	-5.4	ug/L	window edge
rep	2	Ba_c	conc	134.4	ug/L	
rep	2	Sr_c	conc	27.2	ug/L	
rep	2	Fe_c	conc	28318.0	ug/L	
rep	2	Na_c	conc	2330	ug/L	
rep	2	V_c	conc	80.5	ug/L	
rep	2	Be_c	conc	0.5	ug/L	
rep	2	Ca_c	conc	6930	ug/L	
rep	2	K_c	conc	5349	ug/L	
rep	2	Cu_c	conc	22.7	ug/L	

(SECTION II)

rep	2	Mg_c	conc	9551	ug/L
rep	2	Al_c	conc	15309.1	ug/L

13986
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Mn_c	av	503.5	ug/L	sd	2.20	%cv	0.44
Zn_c	av	99.6	ug/L	sd	2.30	%cv	2.31
Co_c	av	14.1	ug/L	sd	2.16	%cv	15.28
Cr_c	av	41.8	ug/L	sd	0.04	%cv	0.10
Ni_c	av	57.1	ug/L	sd	10.27	%cv	17.98
Ag_c	av	-3.6	ug/L	sd	2.60	%cv	72.95
Ba_c	av	134.7	ug/L	sd	0.31	%cv	0.23
Sr_c	av	26.9	ug/L	sd	0.35	%cv	1.30
Fe_c	av	28290.5	ug/L	sd	38.93	%cv	0.14
Na_c	av	2360	ug/L	sd	43.0	%cv	1.82
V_c	av	81.6	ug/L	sd	1.58	%cv	1.94
Be_c	av	0.4	ug/L	sd	0.07	%cv	15.62
Ca_c	av	6943	ug/L	sd	19.4	%cv	0.28
K_c	av	5250	ug/L	sd	140.9	%cv	2.68
Cu_c	av	22.0	ug/L	sd	0.98	%cv	4.45
Mg_c	av	9599	ug/L	sd	67.9	%cv	0.71
Al_c	av	15307.6	ug/L	sd	2.06	%cv	0.01

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13987

rep	1	Mn_c	conc	479.0	ug/L	
rep	1	Zn_c	conc	153.3	ug/L	
rep	1	Co_c	conc	3.6	ug/L	
rep	1	Cr_c	conc	29.2	ug/L	
rep	1	Ni_c	conc	42.1	ug/L	
rep	1	Ag_c	conc	-6.1	ug/L	window edge
rep	1	Ba_c	conc	146.7	ug/L	
rep	1	Sr_c	conc	27.0	ug/L	
rep	1	Fe_c	conc	26686.7	ug/L	
rep	1	Na_c	conc	925	ug/L	
rep	1	V_c	conc	99.7	ug/L	
rep	1	Be_c	conc	0.9	ug/L	
rep	1	Ca_c	conc	4151	ug/L	
rep	1	K_c	conc	4926	ug/L	
rep	1	Cu_c	conc	35.6	ug/L	
rep	1	Mg_c	conc	6595	ug/L	
rep	1	Al_c	conc	12113.1	ug/L	
rep	2	Mn_c	conc	479.4	ug/L	
rep	2	Zn_c	conc	154.7	ug/L	
rep	2	Co_c	conc	6.9	ug/L	
rep	2	Cr_c	conc	28.3	ug/L	
rep	2	Ni_c	conc	45.1	ug/L	
rep	2	Ag_c	conc	-3.9	ug/L	
rep	2	Ba_c	conc	149.1	ug/L	
rep	2	Sr_c	conc	27.0	ug/L	
rep	2	Fe_c	conc	26768.2	ug/L	
rep	2	Na_c	conc	964	ug/L	
rep	2	V_c	conc	94.3	ug/L	
rep	2	Be_c	conc	0.3	ug/L	
rep	2	Ca_c	conc	4165	ug/L	
rep	2	K_c	conc	5622	ug/L	
rep	2	Cu_c	conc	34.7	ug/L	
rep	2	Mg_c	conc	6562	ug/L	
rep	2	Al_c	conc	12100.0	ug/L	

(SECTION II)

213987
07/19/93 11:59

Mn_c	av	479.2	ug/L	sd	0.31	%cv	0.06

Zn_c	av	154.0	ug/L	sd	0.96	%cv	0.63
Co_c	av	5.3	ug/L	sd	2.34	%cv	44.31
Cr_c	av	28.7	ug/L	sd	0.64	%cv	2.24
Ni_c	av	43.6	ug/L	sd	2.11	%cv	4.83
Ag_c	av	-5.0	ug/L	sd	1.56	%cv	31.09
Ba_c	av	147.9	ug/L	sd	1.66	%cv	1.12
Sr_c	av	27.0	ug/L	sd	0.06	%cv	0.21
Fe_c	av	26727.5	ug/L	sd	57.65	%cv	0.22
Na_c	av	944	ug/L	sd	27.8	%cv	2.94
V_c	av	97.0	ug/L	sd	3.76	%cv	3.87
Be_c	av	0.6	ug/L	sd	0.41	%cv	67.04
Ca_c	av	4158	ug/L	sd	10.0	%cv	0.24
K_c	av	5274	ug/L	sd	492.0	%cv	9.33
Cu_c	av	35.2	ug/L	sd	0.64	%cv	1.82
Mg_c	av	6579	ug/L	sd	23.0	%cv	0.35
Al_c	av	12106.5	ug/L	sd	9.27	%cv	0.08

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07/19/93 12:03

CCV

rep	1	Mn_c	conc	2480.4	ug/L
rep	1	Zn_c	conc	2505.3	ug/L
rep	1	Co_c	conc	2528.7	ug/L
rep	1	Cr_c	conc	2491.9	ug/L
rep	1	Ni_c	conc	2537.9	ug/L
rep	1	Ag_c	conc	2600.2	ug/L
rep	1	Ba_c	conc	10021.9	ug/L
rep	1	Sr_c	conc	2483.3	ug/L
rep	1	Fe_c	conc	40158.2	ug/L
rep	1	Na_c	conc	50119	ug/L
rep	1	V_c	conc	2514.4	ug/L
rep	1	Be_c	conc	250.1	ug/L
rep	1	Ca_c	conc	74260	ug/L
rep	1	K_c	conc	50931	ug/L
rep	1	Cu_c	conc	2542.6	ug/L
rep	1	Mg_c	conc	50109	ug/L
rep	1	Al_c	conc	40078.3	ug/L
rep	2	Mn_c	conc	2480.3	ug/L
rep	2	Zn_c	conc	2500.6	ug/L
rep	2	Co_c	conc	2521.9	ug/L
rep	2	Cr_c	conc	2482.8	ug/L
rep	2	Ni_c	conc	2518.3	ug/L
rep	2	Ag_c	conc	2594.4	ug/L
rep	2	Ba_c	conc	10020.5	ug/L
rep	2	Sr_c	conc	2493.8	ug/L
rep	2	Fe_c	conc	40267.1	ug/L
rep	2	Na_c	conc	50035	ug/L
rep	2	V_c	conc	2512.3	ug/L
rep	2	Be_c	conc	251.9	ug/L
rep	2	Ca_c	conc	74513	ug/L
rep	2	K_c	conc	49226	ug/L
rep	2	Cu_c	conc	2537.7	ug/L
rep	2	Mg_c	conc	50154	ug/L
rep	2	Al_c	conc	40099.6	ug/L

(SECTION II)

CCV

07/19/93 12:05

Mn_c	av	2480.3	ug/L	sd	0.05	%cv	0.00
Zn_c	av	2502.9	ug/L	sd	3.30	%cv	0.13
Co_c	av	2525.3	ug/L	sd	4.77	%cv	0.19
Cr_c	av	2487.3	ug/L	sd	6.41	%cv	0.26
Ni_c	av	2528.1	ug/L	sd	13.80	%cv	0.55
Ag_c	av	2597.3	ug/L	sd	4.10	%cv	0.16

Ba_c	av	10021.2 ug/L	sd	0.98	%cv	0.01
Sr_c	av	2488.5 ug/L	sd	7.45	%cv	0.30
Fe_c	av	40212.7 ug/L	sd	77.04	%cv	0.19
Na_c	av	50077 ug/L	sd	59.3	%cv	0.12
[illegible]_c	av	2513.3 ug/L	sd	1.48	%cv	0.06
[illegible]_c	av	251.0 ug/L	sd	1.29	%cv	0.52
Ca_c	av	74386 ug/L	sd	178.9	%cv	0.24
K_c	av	50078 ug/L	sd	1206.0	%cv	2.41
Cu_c	av	2540.2 ug/L	sd	3.48	%cv	0.14
Mg_c	av	50132 ug/L	sd	31.8	%cv	0.06
Al_c	av	40088.9 ug/L	sd	15.13	%cv	0.04

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7/19/93 12:08

CB

rep	1	Mn_c	conc	0.0 ug/L	
rep	1	Zn_c	conc	1.7 ug/L	
rep	1	Co_c	conc	1.4 ug/L	
rep	1	Cr_c	conc	1.5 ug/L	
rep	1	Ni_c	conc	15.8 ug/L	
rep	1	Ag_c	conc	-0.9 ug/L	
rep	1	Ba_c	conc	2.8 ug/L	
rep	1	Sr_c	conc	0.0 ug/L	window edge
rep	1	Fe_c	conc	0.5 ug/L	
rep	1	Na_c	conc	-11 ug/L	
rep	1	V_c	conc	3.5 ug/L	
rep	1	Be_c	conc	-0.3 ug/L	
rep	1	Ca_c	conc	-3 ug/L	
rep	1	K_c	conc	-506 ug/L	
rep	1	Cu_c	conc	5.3 ug/L	
rep	1	Mg_c	conc	-52 ug/L	
rep	1	Al_c	conc	18.0 ug/L	
rep	2	Mn_c	conc	0.1 ug/L	
rep	2	Zn_c	conc	4.7 ug/L	
rep	2	Co_c	conc	-4.0 ug/L	
rep	2	Cr_c	conc	-0.2 ug/L	
rep	2	Ni_c	conc	9.3 ug/L	
rep	2	Ag_c	conc	-1.9 ug/L	
rep	2	Ba_c	conc	5.6 ug/L	
rep	2	Sr_c	conc	0.1 ug/L	
rep	2	Fe_c	conc	-4.4 ug/L	window edge
rep	2	Na_c	conc	4 ug/L	
rep	2	V_c	conc	-1.1 ug/L	window edge
rep	2	Be_c	conc	0.0 ug/L	
rep	2	Ca_c	conc	5 ug/L	
rep	2	K_c	conc	-1030 ug/L	
rep	2	Cu_c	conc	4.9 ug/L	
rep	2	Mg_c	conc	-32 ug/L	
rep	2	Al_c	conc	21.2 ug/L	

(SECTION II)

CB

/19/93 12:10

Mn_c	av	0.1 ug/L	sd	0.08	%cv	121.7
Zn_c	av	3.2 ug/L	sd	2.08	%cv	64.86
Co_c	av	-1.3 ug/L	sd	3.80	%cv	295.5
Cr_c	av	0.6 ug/L	sd	1.20	%cv	196.6
[illegible]_c	av	12.6 ug/L	sd	4.61	%cv	36.65
[illegible]_c	av	-1.4 ug/L	sd	0.73	%cv	53.15
[illegible]a_c	av	4.2 ug/L	sd	1.99	%cv	47.53
Sr_c	av	0.1 ug/L	sd	0.06	%cv	80.31
Fe_c	av	-2.0 ug/L	sd	3.48	%cv	176.8
Na_c	av	-4 ug/L	sd	11.0	%cv	301.4
V_c	av	1.2 ug/L	sd	3.23	%cv	276.7

Be_c	av	-0.2 ug/L	sd	0.24	%cv	150.5
Ca_c	av	1 ug/L	sd	5.9	%cv	494.5
K_c	av	-768 ug/L	sd	370.4	%cv	48.25
Cu_c	av	5.1 ug/L	sd	0.24	%cv	4.70
Mg_c	av	-42 ug/L	sd	14.0	%cv	33.09
l_c	av	19.6 ug/L	sd	2.26	%cv	11.56

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7/19/93 12:14

13988	rep	1	Mn_c	conc	607.2	ug/L
	rep	1	Zn_c	conc	371.6	ug/L
	rep	1	Co_c	conc	16.9	ug/L
	rep	1	Cr_c	conc	190.7	ug/L
	rep	1	Ni_c	conc	79.4	ug/L
	rep	1	Ag_c	conc	-0.4	ug/L
	rep	1	Ba_c	conc	288.6	ug/L
	rep	1	Sr_c	conc	74.0	ug/L
	rep	1	Fe_c	conc	46631.1	ug/L
	rep	1	Na_c	conc	2367	ug/L
	rep	1	V_c	conc	184.4	ug/L
	rep	1	Be_c	conc	0.4	ug/L
	rep	1	Ca_c	conc	10026	ug/L
	rep	1	K_c	conc	10187	ug/L
	rep	1	Cu_c	conc	112.4	ug/L
	rep	1	Mg_c	conc	11782	ug/L
	rep	1	Al_c	conc	22589.0	ug/L
	rep	2	Mn_c	conc	611.5	ug/L
	rep	2	Zn_c	conc	368.3	ug/L
	rep	2	Co_c	conc	14.8	ug/L
	rep	2	Cr_c	conc	184.2	ug/L
	rep	2	Ni_c	conc	71.3	ug/L
	rep	2	Ag_c	conc	0.7	ug/L
	rep	2	Ba_c	conc	288.0	ug/L
	rep	2	Sr_c	conc	73.7	ug/L
	rep	2	Fe_c	conc	46795.8	ug/L
	rep	2	Na_c	conc	2361	ug/L
	rep	2	V_c	conc	193.1	ug/L
	rep	2	Be_c	conc	0.3	ug/L
	rep	2	Ca_c	conc	10058	ug/L
	rep	2	K_c	conc	10283	ug/L
	rep	2	Cu_c	conc	108.7	ug/L
	rep	2	Mg_c	conc	11742	ug/L
	rep	2	Al_c	conc	22639.5	ug/L

(SECTION II)

13988
7/19/93 12:16

Mn_c	av	609.4 ug/L	sd	3.06	%cv	0.50
Zn_c	av	369.9 ug/L	sd	2.35	%cv	0.63
Co_c	av	15.9 ug/L	sd	1.50	%cv	9.46
Cr_c	av	187.5 ug/L	sd	4.60	%cv	2.45
Ni_c	av	75.3 ug/L	sd	5.72	%cv	7.59
Ag_c	av	0.2 ug/L	sd	0.78	%cv	412.8
Ba_c	av	288.3 ug/L	sd	0.47	%cv	0.16
Sr_c	av	73.9 ug/L	sd	0.21	%cv	0.28
Fe_c	av	46713.5 ug/L	sd	116.45	%cv	0.25
Na_c	av	2364 ug/L	sd	4.2	%cv	0.18
_c	av	188.8 ug/L	sd	6.16	%cv	3.26
e_c	av	0.4 ug/L	sd	0.07	%cv	16.89
Ca_c	av	10042 ug/L	sd	22.7	%cv	0.23
K_c	av	10235 ug/L	sd	68.3	%cv	0.67
Cu_c	av	110.6 ug/L	sd	2.62	%cv	2.37
Mg_c	av	11762 ug/L	sd	27.7	%cv	0.24

Al_c	av	22614.3 ug/L		sd	35.70	%cv	0.16

7/19/93 12:19

13989	rep	1	Mn_c	conc	581.5	ug/L
	rep	1	Zn_c	conc	129.3	ug/L
	rep	1	Co_c	conc	13.3	ug/L
	rep	1	Cr_c	conc	50.3	ug/L
	rep	1	Ni_c	conc	45.8	ug/L
	rep	1	Ag_c	conc	-2.5	ug/L
	rep	1	Ba_c	conc	238.9	ug/L
	rep	1	Sr_c	conc	32.1	ug/L
	rep	1	Fe_c	conc	39800.2	ug/L
	rep	1	Na_c	conc	5018	ug/L
	rep	1	V_c	conc	100.8	ug/L
	rep	1	Be_c	conc	0.9	ug/L
	rep	1	Ca_c	conc	5211	ug/L
	rep	1	K_c	conc	11676	ug/L
	rep	1	Cu_c	conc	59.2	ug/L
	rep	1	Mg_c	conc	9011	ug/L
	rep	1	Al_c	conc	21247.6	ug/L
	rep	2	Mn_c	conc	588.6	ug/L
	rep	2	Zn_c	conc	126.6	ug/L
	rep	2	Co_c	conc	12.4	ug/L
	rep	2	Cr_c	conc	52.2	ug/L
	rep	2	Ni_c	conc	49.7	ug/L
	rep	2	Ag_c	conc	-1.3	ug/L
	rep	2	Ba_c	conc	238.0	ug/L
	rep	2	Sr_c	conc	32.0	ug/L
	rep	2	Fe_c	conc	39740.7	ug/L
	rep	2	Na_c	conc	5019	ug/L
	rep	2	V_c	conc	100.8	ug/L
	rep	2	Be_c	conc	0.7	ug/L
	rep	2	Ca_c	conc	5165	ug/L
	rep	2	K_c	conc	12004	ug/L
	rep	2	Cu_c	conc	55.4	ug/L
	rep	2	Mg_c	conc	8968	ug/L
	rep	2	Al_c	conc	21228.0	ug/L

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(SECTION II)

13989
7/19/93 12:21

Mn_c	av	585.1	ug/L	sd	5.04	%cv	0.86
Zn_c	av	128.0	ug/L	sd	1.92	%cv	1.50
Co_c	av	12.8	ug/L	sd	0.61	%cv	4.78
Cr_c	av	51.2	ug/L	sd	1.34	%cv	2.61
Ni_c	av	47.8	ug/L	sd	2.80	%cv	5.87
Ag_c	av	-1.9	ug/L	sd	0.87	%cv	46.51
Ba_c	av	238.5	ug/L	sd	0.62	%cv	0.26
Sr_c	av	32.1	ug/L	sd	0.07	%cv	0.22
Fe_c	av	39770.4	ug/L	sd	42.11	%cv	0.11
Na_c	av	5018	ug/L	sd	0.9	%cv	0.02
V_c	av	100.8	ug/L	sd	0.01	%cv	0.01
Be_c	av	0.8	ug/L	sd	0.15	%cv	18.98
Ca_c	av	5188	ug/L	sd	32.3	%cv	0.62
K_c	av	11840	ug/L	sd	232.2	%cv	1.96
Cu_c	av	57.3	ug/L	sd	2.68	%cv	4.68
g_c	av	8989	ug/L	sd	30.7	%cv	0.34
l_c	av	21237.8	ug/L	sd	13.84	%cv	0.07

7/19/93 12:26

13984A	rep	1	Mn_c	conc	1833.0	ug/L
	rep	2	Mn_c	conc	1844.3	ug/L

213964A
07/19/93 12:26

Mn_c	av	1838.7 ug/L	sd	8.04	%cv	0.44

07/19/93 12:27

(SECTION II)

rep	1	Zn_c	conc	3349.2	ug/L
rep	2	Zn_c	conc	3349.2	ug/L

BS-5
07/19/93 12:28

Zn_c	av	3349.2 ug/L	sd	0.02	%cv	0.00

07/19/93 12:29
BS-6

rep	1	Zn_c	conc	3282.1	ug/L
rep	2	Zn_c	conc	3289.6	ug/L

NOT PART OF THIS SDG

BS-6
07/19/93 12:30

Zn_c	av	3285.9 ug/L	sd	5.31	%cv	0.16

AD 7-30-93

07/19/93 12:32
CRI

rep	1	Mn_c	conc	30.3	ug/L
rep	1	Zn_c	conc	39.2	ug/L
rep	1	Cr_c	conc	19.6	ug/L
rep	1	Co_c	conc	98.4	ug/L
rep	1	Ag_c	conc	16.9	ug/L
rep	1	Ni_c	conc	85.5	ug/L
rep	1	Sr_c	conc	196.9	ug/L
rep	1	V_c	conc	99.1	ug/L
rep	1	Be_c	conc	9.9	ug/L
rep	1	Cu_c	conc	43.5	ug/L
rep	2	Mn_c	conc	30.3	ug/L
rep	2	Zn_c	conc	44.6	ug/L
rep	2	Cr_c	conc	20.2	ug/L
rep	2	Co_c	conc	91.7	ug/L
rep	2	Ag_c	conc	20.2	ug/L
rep	2	Ni_c	conc	85.9	ug/L
rep	2	Sr_c	conc	196.0	ug/L
rep	2	V_c	conc	97.6	ug/L
rep	2	Be_c	conc	9.4	ug/L
rep	2	Cu_c	conc	43.1	ug/L

CRI
07/19/93 12:33

Mn_c	av	30.3 ug/L	sd	0.03	%cv	0.09
Zn_c	av	41.9 ug/L	sd	3.83	%cv	9.15
Cr_c	av	19.9 ug/L	sd	0.43	%cv	2.17
Co_c	av	95.1 ug/L	sd	4.73	%cv	4.98
Ag_c	av	18.5 ug/L	sd	2.35	%cv	12.69
Ni_c	av	85.7 ug/L	sd	0.27	%cv	0.31
Sr_c	av	196.4 ug/L	sd	0.67	%cv	0.34
V_c	av	98.4 ug/L	sd	1.02	%cv	1.04
Be_c	av	9.6 ug/L	sd	0.31	%cv	3.21
Cu_c	av	43.3 ug/L	sd	0.30	%cv	0.70

07/19/93 12:36
ICV

rep	1	Mn_c	conc	5.4	ug/L
rep	1	Zn_c	conc	26.5	ug/L
rep	1	Cr_c	conc	2.2	ug/L
rep	1	Co_c	conc	0.8	ug/L
rep	1	Ag_c	conc	1.0	ug/L
rep	1	Ni_c	conc	5.6	ug/L
rep	1	Sr_c	conc	17.7	ug/L

rep	1	Ba_c	conc	4.7	ug/L	
rep	1	Fe_c	conc	185783.0	ug/L	
rep	1	Na_c	conc	431	ug/L	
rep	1	V_c	conc	6.0	ug/L	window edge
rep	1	Be_c	conc	-0.2	ug/L	
rep	1	Ca_c	conc	483110	ug/L	
rep	1	K_c	conc	-674	ug/L	
rep	1	Cu_c	conc	-1.4	ug/L	
rep	1	Mg_c	conc	498943	ug/L	
rep	1	Al_c	conc	513447.5	ug/L	
rep	2	Mn_c	conc	3.9	ug/L	
rep	2	Zn_c	conc	22.2	ug/L	
rep	2	Co_c	conc	1.6	ug/L	
rep	2	Cr_c	conc	0.6	ug/L	
rep	2	Ni_c	conc	10.8	ug/L	
rep	2	Ag_c	conc	-0.2	ug/L	
rep	2	Ba_c	conc	5.4	ug/L	
rep	2	Sr_c	conc	17.3	ug/L	
rep	2	Fe_c	conc	186057.1	ug/L	
rep	2	Na_c	conc	397	ug/L	
rep	2	V_c	conc	4.3	ug/L	window edge
rep	2	Be_c	conc	-0.3	ug/L	
rep	2	Ca_c	conc	486354	ug/L	
rep	2	K_c	conc	374	ug/L	
rep	2	Cu_c	conc	-1.1	ug/L	
rep	2	Mg_c	conc	498584	ug/L	
rep	2	Al_c	conc	511316.3	ug/L	

7½

(SECTION II)

ICSA
07/19/93 12:38

Mn_c	av	4.6	ug/L	sd	1.11	%cv	23.97
Zn_c	av	24.4	ug/L	sd	3.07	%cv	12.60
Co_c	av	1.2	ug/L	sd	0.59	%cv	49.51
Cr_c	av	1.4	ug/L	sd	1.12	%cv	78.37
Ni_c	av	8.2	ug/L	sd	3.66	%cv	44.70
Ag_c	av	0.4	ug/L	sd	0.87	%cv	200.0
Ba_c	av	5.0	ug/L	sd	0.51	%cv	10.13
Sr_c	av	17.5	ug/L	sd	0.28	%cv	1.60
Fe_c	av	185920.0	ug/L	sd	193.77	%cv	0.10
Na_c	av	414	ug/L	sd	24.5	%cv	5.91
V_c	av	5.1	ug/L	sd	1.17	%cv	22.87
Be_c	av	-0.2	ug/L	sd	0.13	%cv	53.08
Ca_c	av	484732	ug/L	sd	2294.1	%cv	0.47
K_c	av	-150	ug/L	sd	741.0	%cv	494.5
Cu_c	av	-1.3	ug/L	sd	0.20	%cv	15.84
Mg_c	av	498764	ug/L	sd	254.3	%cv	0.05
Al_c	av	512381.9	ug/L	sd	1506.97	%cv	0.29

07/19/93 12:41
ICSAB

rep	1	Mn_c	conc	473.9	ug/L
rep	1	Zn_c	conc	955.7	ug/L
rep	1	Co_c	conc	459.8	ug/L
rep	1	Cr_c	conc	476.5	ug/L
rep	1	Ni_c	conc	938.0	ug/L
rep	1	Ag_c	conc	1014.0	ug/L
rep	1	Ba_c	conc	463.8	ug/L
rep	1	Sr_c	conc	985.6	ug/L
rep	1	Fe_c	conc	186369.4	ug/L
rep	1	Na_c	conc	401	ug/L
rep	1	V_c	conc	476.0	ug/L
rep	1	Be_c	conc	483.6	ug/L

(SECTION II)

rep	1	Ca_c	conc	484985	ug/L
rep	1	K_c	conc	49	ug/L
rep	1	Cu_c	conc	488.9	ug/L
rep	1	Mg_c	conc	498772	ug/L
rep	1	Al_c	conc	513191.7	ug/L
rep	2	Mn_c	conc	477.1	ug/L
rep	2	Zn_c	conc	960.0	ug/L
rep	2	Co_c	conc	460.7	ug/L
rep	2	Cr_c	conc	481.3	ug/L
rep	2	Ni_c	conc	938.6	ug/L
rep	2	Ag_c	conc	1021.4	ug/L
rep	2	Ba_c	conc	475.9	ug/L
rep	2	Sr_c	conc	983.2	ug/L
rep	2	Fe_c	conc	186328.8	ug/L
rep	2	Na_c	conc	443	ug/L
rep	2	V_c	conc	479.0	ug/L
rep	2	Be_c	conc	487.4	ug/L
rep	2	Ca_c	conc	482719	ug/L
rep	2	K_c	conc	788	ug/L
rep	2	Cu_c	conc	495.4	ug/L
rep	2	Mg_c	conc	495193	ug/L
rep	2	Al_c	conc	512607.4	ug/L

ICSAB
07/19/93 12:43

Mn_c	av	475.5	ug/L	sd	2.24	%cv	0.47
Zn_c	av	957.9	ug/L	sd	3.06	%cv	0.32
Co_c	av	460.2	ug/L	sd	0.67	%cv	0.14
Cr_c	av	478.9	ug/L	sd	3.41	%cv	0.71
Ni_c	av	938.3	ug/L	sd	0.42	%cv	0.04
g_c	av	1017.7	ug/L	sd	5.25	%cv	0.52
Ba_c	av	469.8	ug/L	sd	8.54	%cv	1.82
Sr_c	av	984.4	ug/L	sd	1.70	%cv	0.17
Fe_c	av	186349.1	ug/L	sd	28.71	%cv	0.02
Na_c	av	422	ug/L	sd	29.8	%cv	7.05
V_c	av	477.5	ug/L	sd	2.12	%cv	0.44
Be_c	av	485.5	ug/L	sd	2.70	%cv	0.56
Ca_c	av	483852	ug/L	sd	1602.3	%cv	0.33
K_c	av	419	ug/L	sd	522.9	%cv	124.9
Cu_c	av	492.2	ug/L	sd	4.58	%cv	0.93
Mg_c	av	496983	ug/L	sd	2531.3	%cv	0.51
Al_c	av	512899.5	ug/L	sd	413.16	%cv	0.08

07/19/93 12:47
ICV

rep	1	Mn_c	conc	2429.1	ug/L
rep	1	Zn_c	conc	2506.0	ug/L
rep	1	Co_c	conc	2531.0	ug/L
rep	1	Cr_c	conc	2491.7	ug/L
rep	1	Ni_c	conc	2521.9	ug/L
rep	1	Ag_c	conc	2583.0	ug/L
rep	1	Ba_c	conc	9929.0	ug/L
rep	1	Sr_c	conc	2440.9	ug/L
rep	1	Fe_c	conc	39876.0	ug/L
rep	1	Na_c	conc	50111	ug/L
rep	1	V_c	conc	2516.4	ug/L
rep	1	Be_c	conc	251.8	ug/L
rep	1	Ca_c	conc	74768	ug/L
rep	1	K_c	conc	50597	ug/L
rep	1	Cu_c	conc	2540.2	ug/L
rep	1	Mg_c	conc	50087	ug/L
rep	1	Al_c	conc	40203.3	ug/L

rep	2	Mn_c	conc	2439.0	ug/L	
rep	2	Zn_c	conc	2490.7	ug/L	
rep	2	Co_c	conc	2517.2	ug/L	
rep	2	Cr_c	conc	2484.8	ug/L	
rep	2	Ni_c	conc	2510.3	ug/L	
rep	2	Ag_c	conc	2576.5	ug/L	
rep	2	Ba_c	conc	9913.3	ug/L	
rep	2	Sr_c	conc	2444.0	ug/L	
rep	2	Fe_c	conc	40105.0	ug/L	
rep	2	Na_c	conc	50084	ug/L	
rep	2	V_c	conc	2524.3	ug/L	
rep	2	Be_c	conc	252.1	ug/L	
rep	2	Ca_c	conc	74572	ug/L	
rep	2	K_c	conc	49267	ug/L	
rep	2	Cu_c	conc	2525.1	ug/L	
rep	2	Mg_c	conc	50142	ug/L	
rep	2	Al_c	conc	40131.1	ug/L	

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(SECTION II)

CCV
07/19/93 12:49

Mn_c	av	2434.1	ug/L	sd	7.01	%cv	0.29
Zn_c	av	2498.4	ug/L	sd	10.81	%cv	0.43
Co_c	av	2524.1	ug/L	sd	9.76	%cv	0.39
Cr_c	av	2488.2	ug/L	sd	4.86	%cv	0.20
Ni_c	av	2516.1	ug/L	sd	8.19	%cv	0.33
Ag_c	av	2579.7	ug/L	sd	4.64	%cv	0.18
Ba_c	av	9921.2	ug/L	sd	11.11	%cv	0.11
Sr_c	av	2442.5	ug/L	sd	2.19	%cv	0.09
Fe_c	av	39990.5	ug/L	sd	161.89	%cv	0.40
Na_c	av	50097	ug/L	sd	18.6	%cv	0.04
V_c	av	2520.3	ug/L	sd	5.63	%cv	0.22
Be_c	av	252.0	ug/L	sd	0.19	%cv	0.08
Ca_c	av	74670	ug/L	sd	139.0	%cv	0.19
K_c	av	49932	ug/L	sd	940.1	%cv	1.88
Cu_c	av	2532.7	ug/L	sd	10.68	%cv	0.42
Mg_c	av	50114	ug/L	sd	39.4	%cv	0.08
Al_c	av	40167.2	ug/L	sd	51.02	%cv	0.13

07/19/93 12:53
CCB

rep	1	Mn_c	conc	0.4	ug/L	
rep	1	Zn_c	conc	2.8	ug/L	
rep	1	Co_c	conc	-5.0	ug/L	window edge
rep	1	Cr_c	conc	-0.7	ug/L	
rep	1	Ni_c	conc	7.9	ug/L	
rep	1	Ag_c	conc	-1.2	ug/L	window edge
rep	1	Ba_c	conc	5.1	ug/L	
rep	1	Sr_c	conc	0.1	ug/L	
rep	1	Fe_c	conc	2.3	ug/L	
rep	1	Na_c	conc	20	ug/L	
rep	1	V_c	conc	1.3	ug/L	
rep	1	Be_c	conc	-0.6	ug/L	
rep	1	Ca_c	conc	6	ug/L	
rep	1	K_c	conc	331	ug/L	
rep	1	Cu_c	conc	2.2	ug/L	
rep	1	Mg_c	conc	-60	ug/L	
rep	1	Al_c	conc	16.7	ug/L	
rep	2	Mn_c	conc	-1.0	ug/L	window edge
rep	2	Zn_c	conc	2.5	ug/L	
rep	2	Co_c	conc	-2.6	ug/L	
rep	2	Cr_c	conc	0.8	ug/L	
rep	2	Ni_c	conc	-4.9	ug/L	window edge

rep	2	Ag_c	conc	-1.7	ug/L
rep	2	Ba_c	conc	5.8	ug/L
rep	2	Sr_c	conc	0.2	ug/L
rep	2	Fe_c	conc	5.0	ug/L
rep	2	Na_c	conc	22	ug/L
rep	2	V_c	conc	1.0	ug/L
rep	2	Be_c	conc	0.2	ug/L
rep	2	Ca_c	conc	4	ug/L
rep	2	K_c	conc	-244	ug/L
rep	2	Cu_c	conc	2.2	ug/L
rep	2	Mg_c	conc	-8	ug/L
rep	2	Al_c	conc	19.2	ug/L

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(SECTION II)

CB
7/19/93 12:54

Mn_c	av	-0.3 ug/L	sd	0.97	%cv	345.2
Zn_c	av	2.6 ug/L	sd	0.23	%cv	8.73
Co_c	av	-3.8 ug/L	sd	1.66	%cv	43.86
Cr_c	av	0.0 ug/L	sd	1.04	%cv	3876.
Ni_c	av	1.5 ug/L	sd	9.00	%cv	597.6
Ag_c	av	-1.5 ug/L	sd	0.36	%cv	24.04
Ba_c	av	5.5 ug/L	sd	0.48	%cv	8.82
Sr_c	av	0.2 ug/L	sd	0.05	%cv	30.46
Fe_c	av	3.7 ug/L	sd	1.92	%cv	52.16
Na_c	av	21 ug/L	sd	1.7	%cv	8.08
V_c	av	1.2 ug/L	sd	0.15	%cv	13.21
Be_c	av	-0.2 ug/L	sd	0.58	%cv	281.9
Ca_c	av	5 ug/L	sd	1.3	%cv	25.89
K_c	av	44 ug/L	sd	406.6	%cv	929.0
Cu_c	av	2.2 ug/L	sd	0.02	%cv	0.74
g_c	av	-34 ug/L	sd	36.6	%cv	107.2
l_c	av	18.0 ug/L	sd	1.77	%cv	9.82

End of analytical run.
STM 7/19/93

STANDARDS PREPARATION LOG SHEET (SECTION II)

RUST Geotech Inc.

Analyst [illegible] Preparation Date: 7/20/93 Time: 0900 Page 1 of 1

Standard Name	Components	Volume Used	Final Volume	Diluent
mt Blank	1% HNO_3 5% HCl	--	--	--
30, Calib.Blk., ICB, CCB	1% HNO_3 5% HCl	--	--	--
5, Calibration Standard	I.V. CAL-1A Lot H-MEB17014 Exp 11/1/93	2 mL	20 mL	Calib. Blk.
	I.V. 1000 mg/L Li Lot G-LI0121 Exp 11/1/93	0.1 mL		
CV	Plasmachem ICV-1 Lot O2MICV1N Exp 11/30/93	1 mL	10 mL	Calib. Blk.
	MS-ICVb Lot STM061193 Exp 4/5/94	1 mL		
0 ppm Li	I.V. 1000 mg/L Li Lot G-LI0121 Exp 11/1/93	0.1 mL	10 mL	Calib. Blk.
CRI	I.V. CRI-1 Lot I-MEB22044 Exp 7/1/94	0.05 mL	50 mL	Calib. Blk.
	10 ppm Li Standard listed above	0.2 mL		
CSA	I.V. ICS-A Lot H-MEB08099 Exp 11/1/93	2 mL	20 mL	Calib. Blk.
	I.V. ICS-A Lot H-MEB08099 Exp 11/1/93	2 mL	20 mL	Calib. Blk.
	I.V. ICSB-1 Lot I-MEB22041 Exp 7/1/94	0.2 mL		
	10 ppm Li Standard listed above	2 mL		
CV	I.V. CAL-1A Lot H-MEB17014 Exp 11/1/93	2 mL	40 mL	Calib. Blk.
	I.V. 1000 mg/L Li Lot G-LI0121 Exp 11/1/93	0.1 mL		

ere all automatic pipets calibrated according to QC-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

C ents

s sition 11859. SDG 213984.

V. stands for Inorganic Ventures. Exp. stands for expires. Calib. Blk. stands for Calibration Blank. All standards and

amples, except the mt Blank, were spiked with 0.05 mL of I.V. 10000 mg/L Sc lot H-SC0162 exp. 4-1-94 per 10 mL

lume to serve as an internal standard. Analysis by method AS-5 R04.

7/20/93 11:10

cal std 5	rep	1	Sb_c	em	6893.4	conc	5000.0	ug/L
	rep	1	Mo_c	em	6582.2	conc	5000.0	
	rep	1	Cd_c	em	17491.3	conc	5000.0	
	rep	1	Li_c	em	12405.4	conc	5000.0	
	rep	2	Sb_c	em	11320.3	conc	5000.0	
	rep	2	Mo_c	em	6547.0	conc	5000.0	
	rep	2	Cd_c	em	17650.4	conc	5000.0	
	rep	2	Li_c	em	12647.2	conc	5000.0	

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cal std 5

7/20/93 11:12

Sb_c	av	9106.87	sd	3130.273	%cv	34.37	conc	5000.0 ug/L
Mo_c	av	6564.58	sd	24.868	%cv	0.38	conc	5000.0
Cd_c	av	17570.85	sd	112.440	%cv	0.64	conc	5000.0
Li_c	av	12526.30	sd	171.032	%cv	1.37	conc	5000.0

7/20/93 11:15

t blank 5pb	rep	1	Sb_c	em	2934.3
	rep	1	Mo_c	em	425.7
	rep	1	Cd_c	em	297.4
	rep	1	Li_c	em	415.8

7/20/93 11:18

lank 5pb	rep	1	Sb_c	ratio	0.0522
	rep	1	Mo_c	ratio	0.0020
	rep	1	Cd_c	ratio	0.0007
	rep	1	Li_c	em	18.9
	rep	2	Sb_c	ratio	0.0431
	rep	2	Mo_c	ratio	0.0058
	rep	2	Cd_c	ratio	0.0026
	rep	2	Li_c	em	23.1

(SECTION II)

5pb

7/20/93 11:20

Sb_c	av	0.0476	sd	0.00642	%cv	13.48
Mo_c	av	0.0039	sd	0.00264	%cv	67.62
Cd_c	av	0.0016	sd	0.00131	%cv	79.77
Li_c	av	21.01	sd	2.930	%cv	13.95

7/20/93 11:23

tandard 5	rep	1	Sb_c	ratio	5.0767	conc	5000.0	ug/L
	rep	1	Mo_c	ratio	3.0345	conc	5000.0	
	rep	1	Cd_c	ratio	8.1000	conc	5000.0	
	rep	1	Li_c	em	12139.3	conc	5000.0	
	rep	2	Sb_c	ratio	5.1407	conc	5000.0	
	rep	2	Mo_c	ratio	2.9993	conc	5000.0	
	rep	2	Cd_c	ratio	8.0763	conc	5000.0	
	rep	2	Li_c	em	12082.6	conc	5000.0	

tandard 5

7/20/93 11:25

Sb_c	av	5.1087	sd	0.04530	%cv	0.89	conc	5000.0 ug/L
Mo_c	av	3.0169	sd	0.02485	%cv	0.82	conc	5000.0
Cd_c	av	8.0882	sd	0.01678	%cv	0.21	conc	5000.0
Li_c	av	12110.9	sd	40.11	%cv	0.33	conc	5000.0

7/20/93 11:29

C'	rep	1	Sb_c	conc	2903.5 ug/L
	rep	1	Mo_c	conc	1058.3 ug/L
	rep	1	Cd_c	conc	1059.5 ug/L
	rep	1	Li_c	conc	3128.6 ug/L
	rep	2	Sb_c	conc	2912.5 ug/L
	rep	2	Mo_c	conc	1018.8 ug/L

	rep	2	Cd_c	conc	1057.7 ug/L	
	rep	2	Li_c	conc	3093.5 ug/L	

ICV
07/20/93 11:30

Sb_c	av	2908.0 ug/L	sd	6.38	%cv	0.22
Mo_c	av	1038.6 ug/L	sd	27.92	%cv	2.69
Cd_c	av	1058.6 ug/L	sd	1.28	%cv	0.12
Li_c	av	3111.1 ug/L	sd	24.83	%cv	0.80

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07/20/93 11:34

ICB	rep	1	Sb_c	conc	-56.3 ug/L
	rep	1	Mo_c	conc	31.1 ug/L
	rep	1	Cd_c	conc	0.5 ug/L
	rep	1	Li_c	conc	-3.1 ug/L
	rep	2	Sb_c	conc	-8.6 ug/L
	rep	2	Mo_c	conc	21.8 ug/L
	rep	2	Cd_c	conc	0.2 ug/L
	rep	2	Li_c	conc	-0.3 ug/L

(SECTION II)

ICB
07/20/93 11:35

Sb_c	av	-32.4 ug/L	sd	33.76	%cv	104.1
Mo_c	av	26.4 ug/L	sd	6.55	%cv	24.80
Cd_c	av	0.3 ug/L	sd	0.20	%cv	66.16
Li_c	av	-1.7 ug/L	sd	2.01	%cv	120.2

07/20/93 11:39

CRI	rep	1	Sb_c	conc	97.7 ug/L
	rep	1	Mo_c	conc	110.0 ug/L
	rep	1	Cd_c	conc	9.8 ug/L
	rep	1	Li_c	conc	38.7 ug/L
	rep	2	Sb_c	conc	39.2 ug/L
	rep	2	Mo_c	conc	107.7 ug/L
	rep	2	Cd_c	conc	8.6 ug/L
	rep	2	Li_c	conc	36.0 ug/L

CRI
7/20/93 11:40

Sb_c	av	68.5 ug/L	sd	41.37	%cv	60.43
Mo_c	av	108.8 ug/L	sd	1.63	%cv	1.50
Cd_c	av	9.2 ug/L	sd	0.84	%cv	9.05
Li_c	av	37.4 ug/L	sd	1.90	%cv	5.09

7/20/93 11:44

CSA	rep	1	Sb_c	conc	-83.5 ug/L	window edge
	rep	1	Mo_c	conc	6.0 ug/L	
	rep	1	Cd_c	conc	-12.5 ug/L	window edge
	rep	1	Li_c	conc	-1.0 ug/L	
	rep	2	Sb_c	conc	-49.6 ug/L	window edge
	rep	2	Mo_c	conc	-11.3 ug/L	window edge
	rep	2	Cd_c	conc	16.3 ug/L	
	rep	2	Li_c	conc	-2.3 ug/L	window edge

CSA
7/20/93 11:46

Sb_c	av	-66.6 ug/L	sd	23.98	%cv	36.03
Mo_c	av	-2.7 ug/L	sd	12.23	%cv	456.0
Cd_c	av	1.9 ug/L	sd	20.39	%cv	1090.
Li_c	av	-1.6 ug/L	sd	0.95	%cv	58.33

7/20/93 11:49

CSAB	rep	1	Sb_c	conc	941.9 ug/L
	rep	1	Mo_c	conc	944.1 ug/L

	rep	1	Cd_c	conc	982.1	ug/L
	rep	1	Li_c	conc	1010.0	ug/L
	rep	2	Sb_c	conc	961.2	ug/L
	rep	2	Mo_c	conc	963.3	ug/L
	rep	2	Cd_c	conc	979.2	ug/L
	rep	2	Li_c	conc	1015.5	ug/L

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ICSAB
07/20/93 11:51

Sb_c	av	951.6 ug/L	sd	13.66	%cv	1.44
Mo_c	av	953.7 ug/L	sd	13.61	%cv	1.43
Cd_c	av	980.6 ug/L	sd	2.08	%cv	0.21
Li_c	av	1012.8 ug/L	sd	3.86	%cv	0.38

07/20/93 11:54

CCV	rep	1	Sb_c	conc	2495.8	ug/L
	rep	1	Mo_c	conc	2510.1	ug/L
	rep	1	Cd_c	conc	2571.2	ug/L
	rep	1	Li_c	conc	2583.1	ug/L
	rep	2	Sb_c	conc	2452.6	ug/L
	rep	2	Mo_c	conc	2496.1	ug/L
	rep	2	Cd_c	conc	2553.5	ug/L
	rep	2	Li_c	conc	2557.0	ug/L

(SECTION III)

CCV
07/20/93 11:56

Sb_c	av	2474.2 ug/L	sd	30.58	%cv	1.24
Mo_c	av	2503.1 ug/L	sd	9.88	%cv	0.39
Cd_c	av	2562.4 ug/L	sd	12.54	%cv	0.49
Li_c	av	2570.0 ug/L	sd	18.48	%cv	0.72

07/20/93 11:59

	rep	1	Sb_c	conc	-43.9	ug/L
	rep	1	Mo_c	conc	-11.5	ug/L
	rep	1	Cd_c	conc	0.6	ug/L
	rep	1	Li_c	conc	-4.0	ug/L
	rep	2	Sb_c	conc	-59.6	ug/L
	rep	2	Mo_c	conc	14.5	ug/L
	rep	2	Cd_c	conc	-0.8	ug/L
	rep	2	Li_c	conc	0.2	ug/L

ICB
07/20/93 12:01

Sb_c	av	-51.8 ug/L	sd	11.08	%cv	21.39
Mo_c	av	1.5 ug/L	sd	18.39	%cv	1231.
Cd_c	av	-0.1 ug/L	sd	0.98	%cv	730.9
Li_c	av	-1.9 ug/L	sd	2.98	%cv	157.7

07/20/93 12:04

LCS 213984	rep	1	Sb_c	conc	-42.3	ug/L	
	rep	1	Mo_c	conc	23.8	ug/L	
	rep	1	Cd_c	conc	0.8	ug/L	
	rep	1	Li_c	conc	-1.0	ug/L	
	rep	2	Sb_c	conc	-57.2	ug/L	window edge
	rep	2	Mo_c	conc	-4.5	ug/L	window edge
	rep	2	Cd_c	conc	1.6	ug/L	
	rep	2	Li_c	conc	-0.5	ug/L	

LCS 13984
07/20/93 12:06

Sb_c	av	-49.8 ug/L	sd	10.55	%cv	21.18
Mo_c	av	9.6 ug/L	sd	20.03	%cv	207.8
Cd_c	av	1.2 ug/L	sd	0.58	%cv	49.90
Li_c	av	-0.7 ug/L	sd	0.32	%cv	44.29

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(SECTION II)

7/20/93 12:10

CS04 213984	rep	1	Sb_c	conc	1377.3 ug/L	
	rep	1	Mo_c	conc	299.6 ug/L	
	rep	1	Cd_c	conc	238.8 ug/L	
	rep	1	Li_c	conc	2.2 ug/L	
	rep	2	Sb_c	conc	1380.0 ug/L	
	rep	2	Mo_c	conc	296.6 ug/L	
	rep	2	Cd_c	conc	236.8 ug/L	
	rep	2	Li_c	conc	-1.3 ug/L	

CS04 213984
7/20/93 12:11

Sb_c	av	1378.7 ug/L	sd	1.92	%cv	0.14
Mo_c	av	298.1 ug/L	sd	2.10	%cv	0.70
Cd_c	av	237.8 ug/L	sd	1.45	%cv	0.61
Li_c	av	0.5 ug/L	sd	2.44	%cv	520.4

7/20/93 12:15

13984	rep	1	Sb_c	conc	-45.0 ug/L	
	rep	1	Mo_c	conc	2.9 ug/L	
	rep	1	Cd_c	conc	4.0 ug/L	
	rep	1	Li_c	conc	19.6 ug/L	
	rep	2	Sb_c	conc	-59.4 ug/L	window edge
	rep	2	Mo_c	conc	3.1 ug/L	window edge
	rep	2	Cd_c	conc	4.3 ug/L	
	rep	2	Li_c	conc	27.6 ug/L	

13984
7/20/93 12:16

Sb_c	av	-52.2 ug/L	sd	10.22	%cv	19.59
Mo_c	av	3.0 ug/L	sd	0.16	%cv	5.30
Cd_c	av	4.1 ug/L	sd	0.24	%cv	5.73
Li_c	av	23.6 ug/L	sd	5.67	%cv	24.01

7/20/93 12:20

13984D	rep	1	Sb_c	conc	-54.4 ug/L	window edge
	rep	1	Mo_c	conc	3.1 ug/L	
	rep	1	Cd_c	conc	13.9 ug/L	
	rep	1	Li_c	conc	17.1 ug/L	
	rep	2	Sb_c	conc	-51.5 ug/L	window edge
	rep	2	Mo_c	conc	10.2 ug/L	
	rep	2	Cd_c	conc	14.3 ug/L	
	rep	2	Li_c	conc	19.3 ug/L	

13984D
7/20/93 12:21

Sb_c	av	-53.0 ug/L	sd	2.11	%cv	3.99
Mo_c	av	6.7 ug/L	sd	5.02	%cv	75.16
Cd_c	av	14.1 ug/L	sd	0.33	%cv	2.35
Li_c	av	18.2 ug/L	sd	1.58	%cv	8.70

7/20/93 12:25

13984L DF5	rep	1	Sb_c	conc	-28.1 ug/L	
	rep	1	Mo_c	conc	9.6 ug/L	
	rep	1	Cd_c	conc	0.7 ug/L	
	rep	1	Li_c	conc	5.5 ug/L	
	rep	2	Sb_c	conc	-56.0 ug/L	
	rep	2	Mo_c	conc	-9.7 ug/L	window edge
	rep	2	Cd_c	conc	2.4 ug/L	
	rep	2	Li_c	conc	1.2 ug/L	

13984L DF5
7/20/93 12:27

Sb_c	av	-42.1 ug/L		sd	19.67 %cv	46.77	
Mo_c	av	0.0 ug/L		sd	13.63 %cv	27607	
Cd_c	av	1.6 ug/L		sd	1.19 %cv	74.83	
Li_c	av	3.3 ug/L		sd	3.10 %cv	92.45	

/93 12:30

64S	rep	1	Sb_c	conc	409.7 ug/L	
	rep	1	Mo_c	conc	492.9 ug/L	
	rep	1	Cd_c	conc	55.9 ug/L	
	rep	1	Li_c	conc	1001.6 ug/L	
	rep	2	Sb_c	conc	442.0 ug/L	
	rep	2	Mo_c	conc	520.8 ug/L	
	rep	2	Cd_c	conc	53.5 ug/L	
	rep	2	Li_c	conc	1017.9 ug/L	

80

(SECTION II)

13984S
7/20/93 12:32

Sb_c	av	425.8 ug/L		sd	22.84 %cv	5.36
Mo_c	av	506.9 ug/L		sd	19.71 %cv	3.89
Cd_c	av	54.7 ug/L		sd	1.69 %cv	3.09
Li_c	av	1009.7 ug/L		sd	11.50 %cv	1.14

7/20/93 12:35

13985	rep	1	Sb_c	conc	-93.9 ug/L	window edge
	rep	1	Mo_c	conc	-1.3 ug/L	
	rep	1	Cd_c	conc	4.0 ug/L	
	rep	1	Li_c	conc	18.2 ug/L	
	rep	2	Sb_c	conc	-43.7 ug/L	
	rep	2	Mo_c	conc	-11.0 ug/L	window edge
	rep	2	Cd_c	conc	2.8 ug/L	
	rep	2	Li_c	conc	19.7 ug/L	

3
/20/93 12:37

Sb_c	av	-68.8 ug/L		sd	35.49 %cv	51.60
Mo_c	av	-6.1 ug/L		sd	6.84 %cv	111.5
Cd_c	av	3.4 ug/L		sd	0.84 %cv	24.81
Li_c	av	18.9 ug/L		sd	1.00 %cv	5.30

7/20/93 12:40

13986	rep	1	Sb_c	conc	-61.7 ug/L	window edge
	rep	1	Mo_c	conc	13.9 ug/L	
	rep	1	Cd_c	conc	0.9 ug/L	
	rep	1	Li_c	conc	32.1 ug/L	
	rep	2	Sb_c	conc	-53.8 ug/L	window edge
	rep	2	Mo_c	conc	23.5 ug/L	
	rep	2	Cd_c	conc	0.9 ug/L	
	rep	2	Li_c	conc	33.4 ug/L	

13986
7/20/93 12:42

Sb_c	av	-57.8 ug/L		sd	5.60 %cv	9.69
Mo_c	av	18.7 ug/L		sd	6.80 %cv	36.30
Cd_c	av	0.9 ug/L		sd	0.01 %cv	0.68
Li_c	av	32.7 ug/L		sd	0.94 %cv	2.87

7/20/93 12:45

13 7	rep	1	Sb_c	conc	-85.4 ug/L	window edge
	rep	1	Mo_c	conc	9.8 ug/L	
	rep	1	Cd_c	conc	13.9 ug/L	
	rep	1	Li_c	conc	20.1 ug/L	
	rep	2	Sb_c	conc	-19.0 ug/L	window edge
	rep	2	Mo_c	conc	10.0 ug/L	

	rep	2	Cd_c	conc	14.0 ug/L		
	rep	2	Li_c	conc	20.7 ug/L		
213987							
07/20/93 12:47							
Sb_c	av	-52.2 ug/L		sd	46.98 %cv	89.98	
Mo_c	av	9.9 ug/L		sd	0.19 %cv	1.87	
Cd_c	av	14.0 ug/L		sd	0.06 %cv	0.41	84
Li_c	av	20.4 ug/L		sd	0.38 %cv	1.84	
07/20/93 12:51							
213988	rep	1	Sb_c	conc	-69.6 ug/L		window edge
	rep	1	Mo_c	conc	9.7 ug/L		
	rep	1	Cd_c	conc	47.3 ug/L		
	rep	1	Li_c	conc	65.8 ug/L		
	rep	2	Sb_c	conc	-46.2 ug/L		
	rep	2	Mo_c	conc	10.6 ug/L		
	rep	2	Cd_c	conc	51.7 ug/L		
	rep	2	Li_c	conc	68.2 ug/L		
213988							
07/20/93 12:52							
Sb_c	av	-57.9 ug/L		sd	16.54 %cv	28.59	
Mo_c	av	10.1 ug/L		sd	0.65 %cv	6.36	
Cd_c	av	49.5 ug/L		sd	3.13 %cv	6.33	
Li_c	av	67.0 ug/L		sd	1.72 %cv	2.57	
07/20/93 12:56							
CCV	rep	1	Sb_c	conc	2462.1 ug/L		
	rep	1	Mo_c	conc	2451.6 ug/L		
	rep	1	Cd_c	conc	2559.4 ug/L		
	rep	1	Li_c	conc	2575.4 ug/L		
	rep	2	Sb_c	conc	2427.7 ug/L		
	rep	2	Mo_c	conc	2455.9 ug/L		
	rep	2	Cd_c	conc	2575.1 ug/L		
	rep	2	Li_c	conc	2611.9 ug/L		
CCV							
07/20/93 12:57							
Sb_c	av	2444.9 ug/L		sd	24.26 %cv	0.99	
Mo_c	av	2453.7 ug/L		sd	3.06 %cv	0.12	
Cd_c	av	2567.2 ug/L		sd	11.08 %cv	0.43	
Li_c	av	2593.7 ug/L		sd	25.81 %cv	1.00	
07/20/93 13:01							
CCB	rep	1	Sb_c	conc	-30.5 ug/L		
	rep	1	Mo_c	conc	6.4 ug/L		
	rep	1	Cd_c	conc	1.1 ug/L		
	rep	1	Li_c	conc	-2.3 ug/L		
	rep	2	Sb_c	conc	-48.6 ug/L		
	rep	2	Mo_c	conc	7.2 ug/L		
	rep	2	Cd_c	conc	0.5 ug/L		
	rep	2	Li_c	conc	-0.5 ug/L		
CCB							
07/20/93 13:03							
Sb_c	av	-39.6 ug/L		sd	12.74 %cv	32.21	
Mo_c	av	6.8 ug/L		sd	0.57 %cv	8.44	
Cd_c	av	0.8 ug/L		sd	0.42 %cv	50.67	
Li_c	av	-1.4 ug/L		sd	1.27 %cv	88.48	
07/20/93 13:06							
213989	rep	1	Sb_c	conc	-27.7 ug/L		window edge
	rep	1	Mo_c	conc	8.9 ug/L		

(SECTION II)

rep	1	Cd_c	conc	17.0 ug/L		
rep	1	Li_c	conc	39.9 ug/L		
rep	2	Sb_c	conc	-63.4 ug/L		window edge
rep	2	Mo_c	conc	-8.9 ug/L		window edge
rep	2	Cd_c	conc	18.9 ug/L		
rep	2	Li_c	conc	41.4 ug/L		

213989
07/20/93 13:08

Sb_c	av	-45.6 ug/L	sd	25.22 %cv	55.32
Mo_c	av	0.0 ug/L	sd	12.56 %cv	32271
Cd_c	av	17.9 ug/L	sd	1.33 %cv	7.41
Li_c	av	40.6 ug/L	sd	1.03 %cv	2.54

85

07/20/93 13:11

CRI	rep	1	Sb_c	conc	46.8 ug/L
	rep	1	Mo_c	conc	91.7 ug/L
	rep	1	Cd_c	conc	10.0 ug/L
	rep	1	Li_c	conc	35.2 ug/L
	rep	2	Sb_c	conc	69.8 ug/L
	rep	2	Mo_c	conc	92.8 ug/L
	rep	2	Cd_c	conc	9.9 ug/L
	rep	2	Li_c	conc	35.7 ug/L

(SECTION II)

CRI
07/20/93 13:13

Sb_c	av	58.3 ug/L	sd	16.28 %cv	27.92
Mo_c	av	92.2 ug/L	sd	0.72 %cv	0.78
Cd_c	av	10.0 ug/L	sd	0.06 %cv	0.59
Li_c	av	35.4 ug/L	sd	0.36 %cv	1.03

/93 13:16

	rep	1	Sb_c	conc	-47.4 ug/L	window edge
	rep	1	Mo_c	conc	-12.8 ug/L	
	rep	1	Cd_c	conc	12.5 ug/L	
	rep	1	Li_c	conc	-1.7 ug/L	
	rep	2	Sb_c	conc	-39.9 ug/L	window edge
	rep	2	Mo_c	conc	22.0 ug/L	
	rep	2	Cd_c	conc	10.6 ug/L	
	rep	2	Li_c	conc	-0.5 ug/L	

CSA
7/20/93 13:18

Sb_c	av	-43.6 ug/L	sd	5.27 %cv	12.08
Mo_c	av	4.6 ug/L	sd	24.60 %cv	532.1
Cd_c	av	11.6 ug/L	sd	1.34 %cv	11.60
Li_c	av	-1.1 ug/L	sd	0.79 %cv	71.64

7/20/93 13:21

CSAB	rep	1	Sb_c	conc	947.5 ug/L
	rep	1	Mo_c	conc	961.9 ug/L
	rep	1	Cd_c	conc	985.9 ug/L
	rep	1	Li_c	conc	1021.8 ug/L
	rep	2	Sb_c	conc	1018.0 ug/L
	rep	2	Mo_c	conc	950.9 ug/L
	rep	2	Cd_c	conc	989.0 ug/L
	rep	2	Li_c	conc	1036.3 ug/L

0/93 13:23

Sb_c	av	982.7 ug/L	sd	49.86 %cv	5.07
Mo_c	av	956.4 ug/L	sd	7.76 %cv	0.81
Cd_c	av	987.4 ug/L	sd	2.19 %cv	0.22
Li_c	av	1029.0 ug/L	sd	10.22 %cv	0.99

7/20/93 13:26

CV	rep	1	Sb_c	conc	2490.4	ug/L
	rep	1	Mo_c	conc	2445.7	ug/L
	rep	1	Cd_c	conc	2562.1	ug/L
	rep	1	Li_c	conc	2604.5	ug/L
	rep	2	Sb_c	conc	2486.2	ug/L
	rep	2	Mo_c	conc	2455.1	ug/L
	rep	2	Cd_c	conc	2572.4	ug/L
	rep	2	Li_c	conc	2616.2	ug/L

8C

CV
7/20/93 13:28

Sb_c	av	2488.3 ug/L	sd	2.96	%cv	0.12
Mo_c	av	2450.4 ug/L	sd	6.63	%cv	0.27
Cd_c	av	2567.2 ug/L	sd	7.27	%cv	0.28
Li_c	av	2610.3 ug/L	sd	8.26	%cv	0.32

7/20/93 13:32

CB	rep	1	Sb_c	conc	-43.8 ug/L
	rep	1	Mo_c	conc	-6.6 ug/L
	rep	1	Cd_c	conc	3.0 ug/L
	rep	1	Li_c	conc	-6.5 ug/L
	rep	2	Sb_c	conc	1.7 ug/L
	rep	2	Mo_c	conc	10.2 ug/L
	rep	2	Cd_c	conc	0.3 ug/L
	rep	2	Li_c	conc	-3.1 ug/L

(SECTION III)
window edge

CB
7/20/93 13:33

Sb_c	av	-21.1 ug/L	sd	32.18	%cv	152.5
Mo_c	av	1.8 ug/L	sd	11.84	%cv	662.8
Cd_c	av	1.6 ug/L	sd	1.93	%cv	118.4
Li_c	av	-4.8 ug/L	sd	2.47	%cv	51.45

End of analytical run.

STM 7/20/93

STANDARDS PREPARATION LOG SHEET

RUST Geotech, Inc.

Analyst [signature] Preparation Date: 7/21/93 Time: 0900 Page 1 of 1

Standard Name	Components	Volume Used	Final Volume	Diluent
0, Calib.Blk., ICB, CCB	5% HCl 1% HNO_3	--	--	--
50, Calibration Standard, CCV	ELAN CAL STD Lot STM120192 Exp 11/1/93	0.1 mL	20 mL	Calib. Blk.
100, Calibration Standard	ELAN CAL STD Lot STM120192 Exp 11/1/93	0.1 mL	10 mL	Calib. Blk.
CV stock	MS-ICVb Lot STM061193 Expires 4-5-94	1 mL	10 mL	Calib. Blk.
CV	ICV stock listed above	0.2 mL	10 mL	Calib. Blk.
RI	MS-CRI Lot STM120192 Expires 11/1/93	0.1 mL	10 mL	Calib. Blk.
CSA	ICS Solution 1 Lot JFG092192 Exp 9/21/93	2.5 mL	10 mL	Calib. Blk.
	I.V. 1000 mg/L Mo Lot H-MO0130 Exp. 11/1/93	0.1 mL		
CSAB	ICS Solution 1 Lot JFG092192 Exp 9/21/93	2.5 mL	10 mL	Calib. Blk.
	I.V. 1000 mg/L Mo Lot H-MO0130 Exp. 11/1/93	0.1 mL		
	ELAN CAL STD Lot STM120192 Exp 11/1/93	0.1 mL		

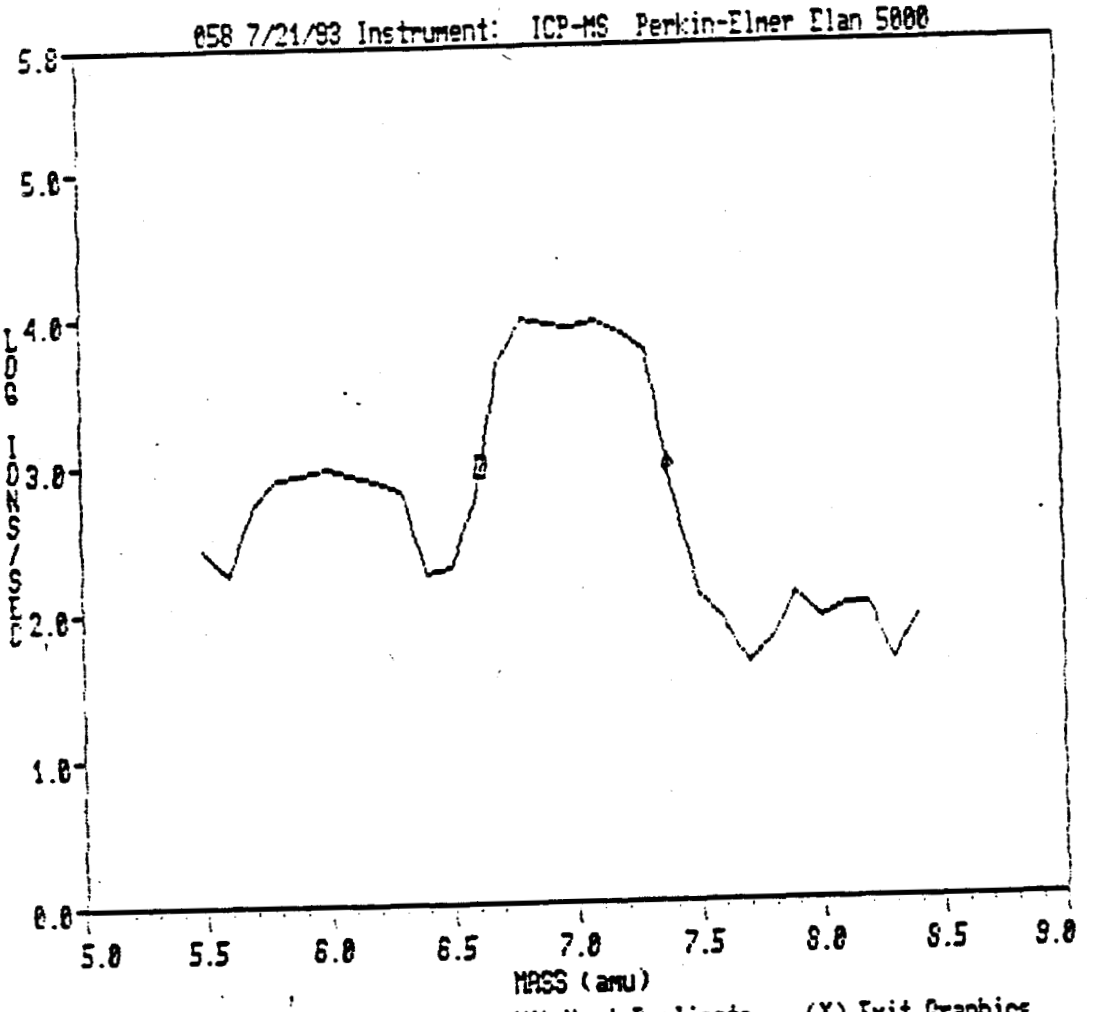
ere all automatic pipets calibrated according to QC-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

ments

isition 11859. SDG 213984.

.V. stands for Inorganic Ventures. Exp. stands for expires. Calib. Blk. stands for Calibration Blank. All standards and amples were spiked with 0.1 mL of ELAN-IS (10 mg/L Ge, Y, In, U^{235}; Lot STM070793 exp 11/1/93) per 10 mL of volume serve as an internal standard. Method AS-5 R04

(SECTION II)



CURRENT INTENSITY: 9360.0
CURRENT MASS: 6.800
CURSOR STEP SIZE: MEASURED MASS

(N) Next Replicate
(A) All Replicates
(C) Clear Prev. Reps
(H) Hardcopy Screen

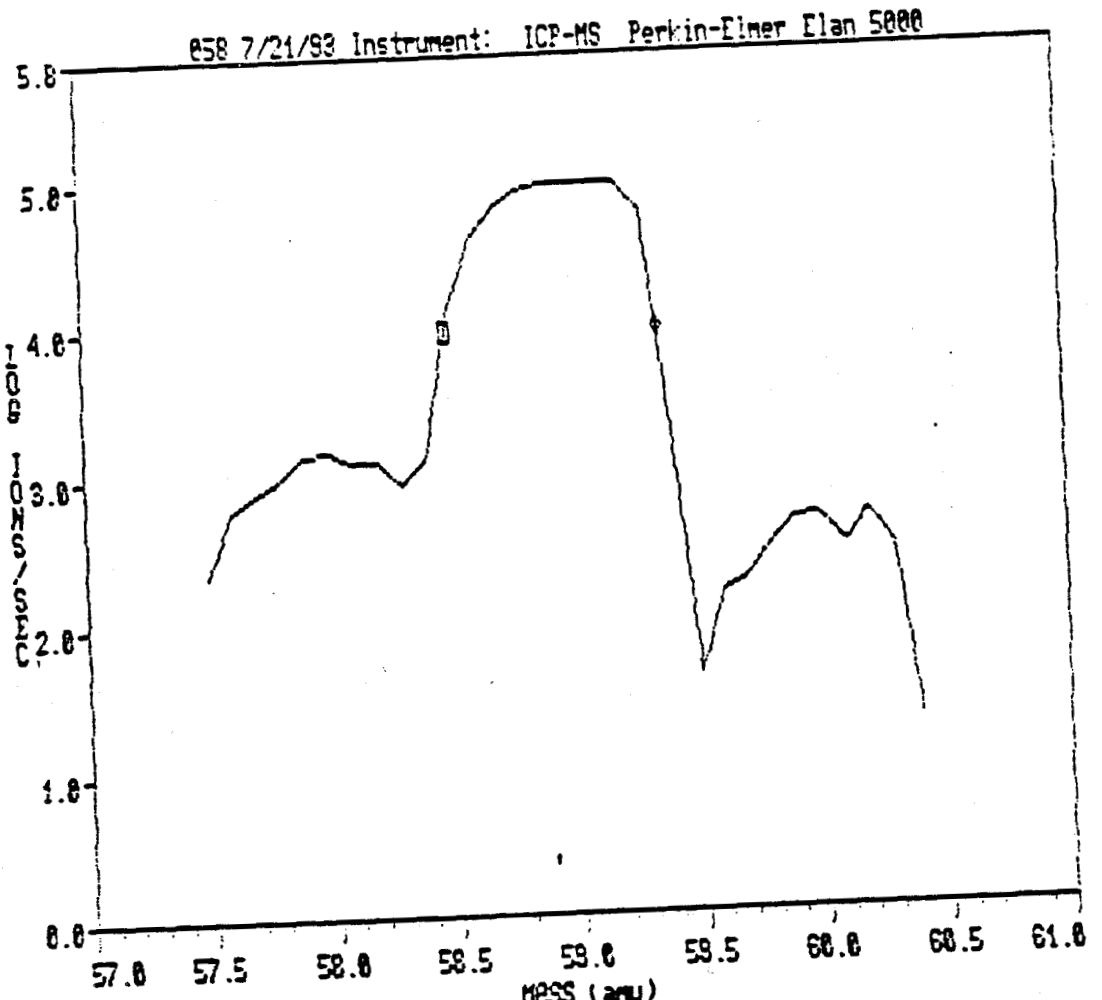
(X) Exit Graphics
(M) Mark Mass
(S) Cursor Step Size
(W) Peak Width Average

Peak Width = 7.379 - 6.621 = 0.758

Peak Centre = 7.000

STM
7/21/93

(SECTION II)



CURRENT INTENSITY: 90300.0
CURRENT MASS: 59.000
CURSOR STEP SIZE: MEASURED MASS

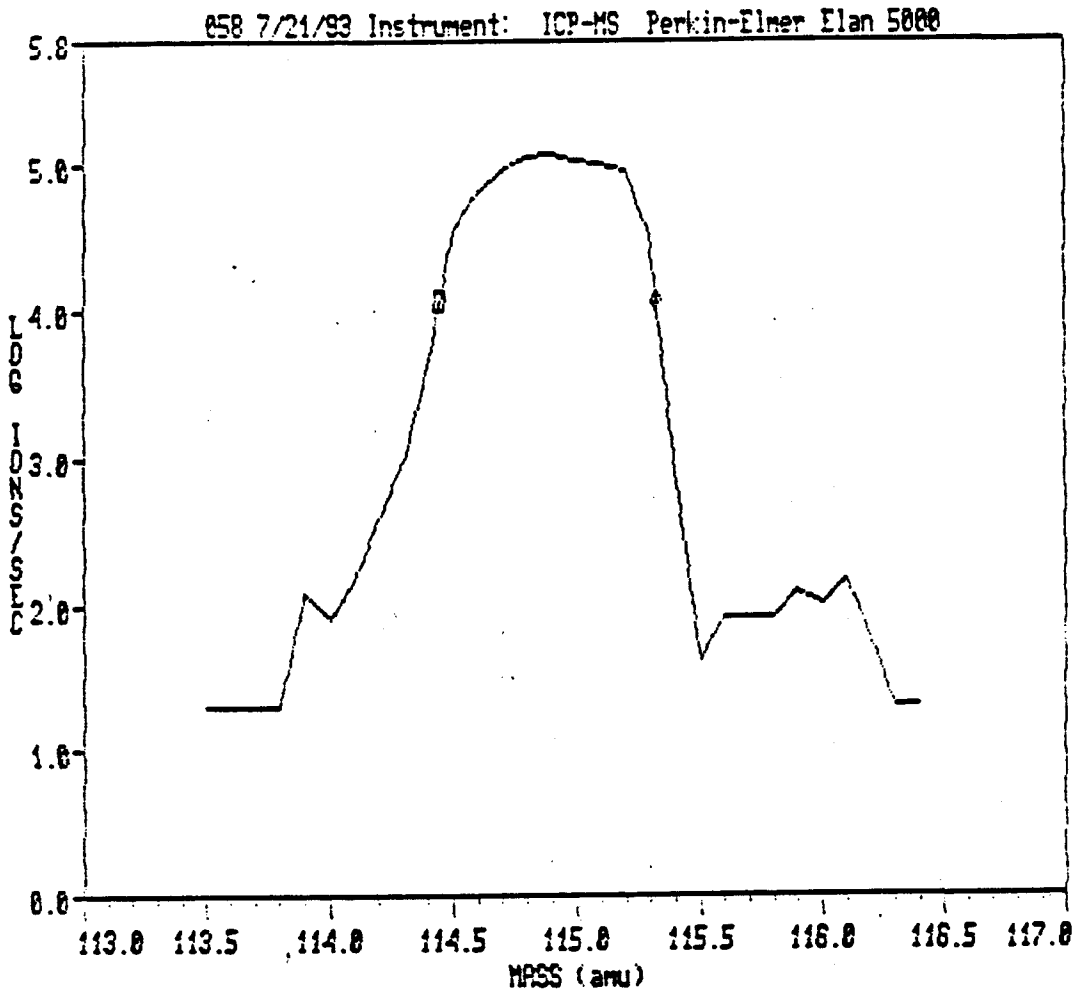
(N) Next Replicate
(A) All Replicates
(C) Clear Prev. Reps
(H) Hardcopy Screen

(X) Exit Graphics
(M) Mark Mass
(S) Cursor Step Size
(W) Peak Width Average

Peak Width = 59.353 - 58.486 = 0.867

Peak Centre = 58.920

STM
7/21/93



CURRENT INTENSITY: 115180.0
CURRENT MASS: 114.900
CURSOR STEP SIZE: MEASURED MASS

(N) Next Replicate
(A) All Replicates
(C) Clear Prev. Reps
(H) Hardcopy Screen

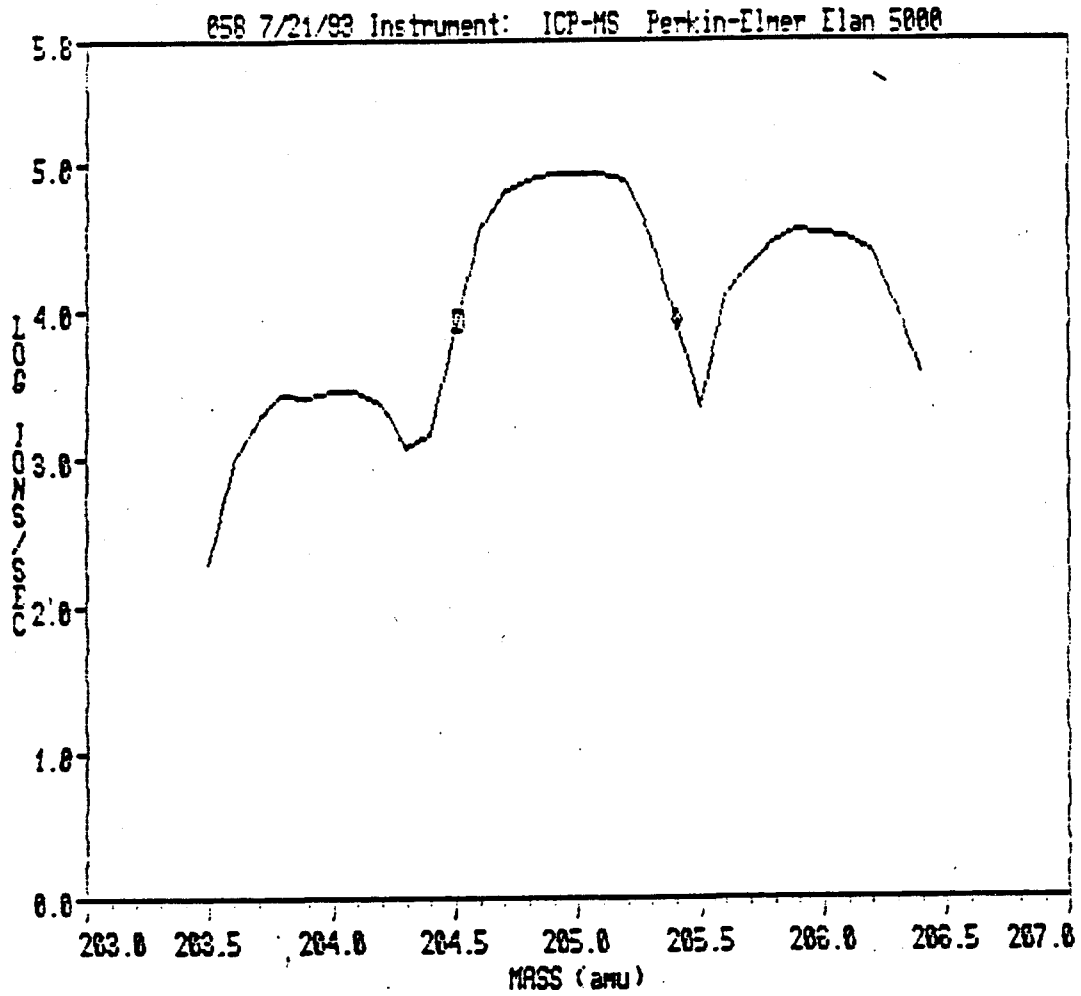
(X) Exit Graphics
(M) Mark Mass
(S) Cursor Step Size
(W) Peak Width Average

Peak Width = 115.328 - 114.449 = 0.880

Peak Centre = 114.889

STM
7/21/93

(SECTION II)



CURRENT INTENSITY: 85960.0
CURRENT MASS: 204.900
CURSOR STEP SIZE: MEASURED MASS

(N) Next Replicate
(A) All Replicates
(C) Clear Prev. Reps
(H) Hardcopy Screen

(X) Exit Graphics
(M) Mark Mass
(S) Cursor Step Size
(W) Peak Width Average

Peak Width = 205.404 - 204.511 = 0.893

Peak Centre = 204.958

STM
7/21/93

10:34:54 Jul 21 1993

QUANTITATIVE ANALYSIS: CALIBRATION REPORT

(SECTION II)
92

Set: 11859-CsSn
Set Description: 6FR100000
alibration File: [Untitled]
alibration: External Standard

nalyte		Slope	Intercept	Root Mean Square	Correlation Coefficient	Units	
r 88		0.360000	34.666668	1.632993	0.997949	ug/L	L
d 108		2.640000	9.999996	3.265995	0.999847	ug/L	L
o 96		87.138519	107.994591	182.472412	0.999562	ug/L	L
						ions/sec	
n 115	<						
n 120	]	0.003263	0.005799	7.433120E-04	0.999995	ug/L	L
s 133	]	0.012484	0.003058	0.006404	0.999974	ug/L	L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

...et Set:	11859-CsSn
...et Description:	6FR100000
...eter File:	CsSn
...ample ID:	S0
...ample Description:	
...ample Type:	Standard
...equence Number:	006
...lank:	Not Subtracted
...ilution Factor:	1
...umber of Repeats:	3
...ime:	09:28:45 Jul 21 1993
...ignal Profile Processing:	Average
...pectral Peak Processing:	Average
...alibration File:	[Untitled]
...alibration:	External Standard

9J

(SECTION II)

...EPLICATES:

...nalyte	Intensity	Net Intensity	Concentration	Units
...EPEAT: 1				
...r 88	44	44.0		ug/L
...d 108	12	12.0		ug/L
...o 96	25	25.1		ug/L
...n 115	54088	54088.0		ions/sec
...n 120	308	0.005694		ug/L
...s 133	20	3.697676E-04		ug/L
...EPEAT: 2				
...r 88	20	20.0		ug/L
...d 108	12	12.0		ug/L
	34	33.5		ug/L
...n 115	51350	51349.7		ions/sec
...n 120	284	0.005531		ug/L
...s 133	26	5.063323E-04		ug/L
...EPEAT: 3				
...r 88	38	38.0		ug/L
...d 108	10	10.0		ug/L
...o 96	42	41.9		ug/L
...n 115	52835	52835.3		ions/sec
...n 120	278	0.005262		ug/L
...s 133	24	4.542415E-04		ug/L

...EAN VALUES:

...nalyte	Intensity	Net Intensity	Entered Conc.	Conc.	Units
...r 88	34	34	0.0000		ug/L
...d 108	11	11	0.0000		ug/L
...o 96	34	34	0.0000		ug/L
...n 115	52758	52758	0.0000		ions/sec
...n 120	0.005496	0.005496	0.0000		ug/L
...s 133	4.434471E-04	4.434471E-04	0.0000		ug/L

...TANDARD DEVIATIONS:

...nalyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
...r	12.5	12.5		ug/L
...d	1.2	1.2		ug/L
	8.4	8.4		ug/L
...n 115	1370.9	1370.9		ions/sec
...n 120	2.185209E-04	2.185209E-04		ug/L
...s 133	6.891948E-05	6.891948E-05		ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set:	11859-CsSn
Set Description:	6FR100000
eter File:	CsSn
ample ID:	S50
ample Description:	
ample Type:	Standard
equence Number:	007
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	09:31:09 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
alibration File:	[Untitled]
alibration:	External Standard

94

(SECTION II)

EPLICATES:

nalyte	Intensity	Net Intensity	Concentration	Units
EPEAT: 1				
r 88	66	66.0		ug/L
d 108	102	102.0		ug/L
o 96	4663	4662.8		ug/L
n 115 <	50154	50154.0		ions/sec
n 120]	8354	0.166567		ug/L
s 133]	31232	0.622722		ug/L
EPEAT: 2				
r 88	46	46.0		ug/L
d 108	170	170.0		ug/L
	4633	4633.1		ug/L
n 115 <	48712	48712.2		ions/sec
n 120]	8202	0.168377		ug/L
s 133]	31052	0.637459		ug/L
EPEAT: 3				
r 88	50	50.0		ug/L
d 108	146	146.0		ug/L
o 96	4546	4545.9		ug/L
n 115 <	48897	48896.6		ions/sec
n 120]	8494	0.173714		ug/L
s 133]	31158	0.637222		ug/L

EAN VALUES:

nalyte	Intensity	Net Intensity	Entered Conc.	Conc.	Units
r 88	54	54	50.0000	50.000000	ug/L
d 108	139	139	50.0000	50.000000	ug/L
o 96	4614	4614	50.0000	50.000000	ug/L
n 115 <	49254	49254	50.0000		ions/sec
n 120]	0.169552	0.169552	50.0000	50.000000	ug/L
s 133]	0.632468	0.632468	50.0000	50.000000	ug/L

TANDARD DEVIATIONS:

nalyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
r	10.6	10.6	26.457512	ug/L
d 8	34.5	34.5	13.471373	ug/L
	60.8	60.8	0.663172	ug/L
n 115 <	784.8	784.8		ions/sec
n 120]	0.003716	0.003716	1.132411	ug/L
s 133]	0.008442	0.008442	0.667833	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Set:	11859-CsSn
Set Description:	6FR100000
meter File:	CsSn
ample ID:	S100
ample Description:	
ample Type:	Standard
equence Number:	008
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	09:33:34 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
alibration File:	[Untitled]
alibration:	External Standard

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(SECTION II)

EPLICATES:

nalyte	Intensity	Net Intensity	Concentration	Units
EPEAT: 1				
r 88	76	76.0	105.000000	ug/L
d 108	278	278.0	104.166672	ug/L
o 96	8830	8829.7	96.019760	ug/L
n 115	46991	46991.0		ions/sec
n 120	15596	0.331894	99.477066	ug/L
s 133	58882	1.253049	99.094727	ug/L
EPEAT: 2				
r 88	74	74.0	100.000000	ug/L
d 108	276	276.0	103.385422	ug/L
8774	8773.6	95.407898	ug/L	
n 115	47565	47565.0		ions/sec
n 120	15688	0.329822	98.845840	ug/L
s 133	60250	1.266688	100.173691	ug/L
EPEAT: 3				
r 88	60	60.0	65.000000	ug/L
d 108	272	272.0	101.822922	ug/L
o 96	8639	8638.7	93.935074	ug/L
n 115	47481	47480.9		ions/sec
n 120	15842	0.333650	100.012383	ug/L
s 133	58244	1.226683	97.008865	ug/L

EAN VALUES:

nalyte	Intensity	Net Intensity	Entered Conc.	Conc.	Units
r 88	70	70	100.0000	98.148140	ug/L
d 108	275	275	100.0000	100.505051	ug/L
o 96	8747	8747	100.0000	99.145111	ug/L
n 115	47346	47346	100.0000		ions/sec
n 120	0.331789	0.331789	100.0000	99.906998	ug/L
s 133	1.248807	1.248807	100.0000	99.790588	ug/L

TANDARD DEVIATIONS:

nalyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
r	8.7	8.7	24.216105	ug/L
8	3.1	3.1	1.157216	ug/L
	98.1	98.1	1.126365	ug/L
n 115	309.7	309.7		ions/sec
n 120	0.001920	0.001920	0.588383	ug/L
s 133	0.020336	0.020336	1.629036	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

:t* Set:	11859-CsSn
Set Description:	6FR100000
:ter File:	CsSn
:mple ID:	ICV
:mple Description:	
:mple Type:	Sample
:quence Number:	009
ank:	Not Subtracted
lution Factor:	1
:mber of Repeats:	3
:me:	09:35:59 Jul 21 1993
gnal Profile Processing:	Average
ectral Peak Processing:	Average
:libration File:	[Untitled]
:libration:	External Standard

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(SECTICN II)

:PLICATES:

:alyte		Intensity	Net Intensity	Concentration	Units
:PEAT: 1					
88		8766	8766.0	24253.703125	ug/L
108		66	66.0	21.212122	ug/L
96		1739	1739.1	18.718822	ug/L
115	<	44489	44489.0		ions/sec
120	]	9104	0.204635	60.937843	ug/L
133		34358	0.772281	61.618572	ug/L
:PEAT: 2					
88		8950	8950.0	24764.814453	ug/L
108		72	72.0	23.484850	ug/L
		1735	1735.4	18.676058	ug/L
115	<	44642	44641.8		ions/sec
120	]	9202	0.206130	61.395973	ug/L
133		34438	0.771430	61.550381	ug/L
:PEAT: 3					
88		8968	8968.0	24814.814453	ug/L
108		52	52.0	15.909092	ug/L
96		1711	1710.5	18.390728	ug/L
115	<	45556	45556.2	-	ions/sec
120	]	9336	0.204934	61.029392	ug/L
133		34648	0.760555	60.679249	ug/L

:AN VALUES:

:alyte		Intensity	Net Intensity	Conc.	Units
88		8895	8895	24611.111328	ug/L
108		63	63	20.202021	ug/L
96		1728	1728	18.595203	ug/L
115	<	44896	44896		ions/sec
120	]	0.205233	0.205233	61.121067	ug/L
133		0.768089	0.768089	61.282734	ug/L

ANDARD DEVIATIONS:

:alyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
		111.8	111.8	310.531860	ug/L
		10.3	10.3	3.887577	ug/L
		15.5	15.5	0.178368	ug/L
115	<	577.0	577.0		ions/sec
120	]	7.910969E-04	7.910969E-04	0.242450	ug/L
133		0.006540	0.006540	0.523852	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Set:	11859-CsSn
Set Description:	6FR100000
Parameter File:	CsSn
Sample ID:	ICB
Sample Description:	
Sample Type:	Sample
Sequence Number:	010
Blank:	Not Subtracted
Dilution Factor:	1
Number of Repeats:	3
Time:	09:38:24 Jul 21 1993
Signal Profile Processing:	Average
Spectral Peak Processing:	Average
Calibration File:	[Untitled]
Calibration:	External Standard

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(SECTION II)

REPLICATES:

Analyte	Intensity	Net Intensity	Concentration	Units
REPEAT: 1				
Cr 88	34	34.0	-1.851855	ug/L
Cd 108	14	14.0	1.515153	ug/L
Co 96	33	33.3	-0.856669	ug/L
In 115	51823	51823.4		ions/sec
Sn 120	360	0.006947	0.351717	ug/L
Cs 133	42	8.104449E-04	-0.180017	ug/L
REPEAT: 2				
Cr 88	32	32.0	-7.407411	ug/L
Cd 8	4	4.0	-2.272726	ug/L
Co	12	12.1	-1.100314	ug/L
In 115	52446	52445.9		ions/sec
Sn 120	314	0.005987	0.057641	ug/L
Cs 133	34	6.482870E-04	-0.193006	ug/L
REPEAT: 3				
Cr 88	30	30.0	-12.962966	ug/L
Cd 108	14	14.0	1.515153	ug/L
Co 96	23	23.0	-0.975007	ug/L
In 115	52959	52958.8		ions/sec
Sn 120	274	0.005174	-0.191608	ug/L
Cs 133	48	9.063657E-04	-0.172333	ug/L

MEAN VALUES:

Analyte	Intensity	Net Intensity	Conc.	Units
Cr 88	32	32	-7.407411	ug/L
Cd 108	11	11	0.252527	ug/L
Co 96	23	23	-0.977330	ug/L
In 115	52409	52409		ions/sec
Sn 120	0.006036	0.006036	0.072583	ug/L
Cs 133	7.883659E-04	7.883659E-04	-0.181785	ug/L

STANDARD DEVIATIONS:

Analyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
Cr	2.0	2.0	5.555555	ug/L
Cd 3	5.8	5.8	2.186933	ug/L
Co	10.6	10.6	0.121839	ug/L
In 115	569.0	569.0		ions/sec
Sn 120	8.874224E-04	8.874224E-04	0.271971	ug/L
Cs 133	1.304481E-04	1.304481E-04	0.010450	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

a Set:	11859-CsSn
Set Description:	6FR100000
meter File:	CsSn
ample ID:	CRI
ample Description:	2XCRDL
Sample Type:	Sample
Sequence Number:	011
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
Time:	09:40:49 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
Calibration File:	[Untitled]
Calibration:	External Standard

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(SECTION II)

EPLICATES:

nalyte	Intensity	Net Intensity	Concentration	Units
EPEAT: 1				
r 88	54	54.0	53.703697	ug/L
d 108	62	62.0	19.696970	ug/L
o 96	10070	10069.8	114.321152	ug/L
n 115	53459	53458.9		ions/sec
n 120	3728	0.069736	19.594912	ug/L
s 133	13488	0.252306	19.966022	ug/L
EPEAT: 2				
r 88	46	46.0	31.481476	ug/L
d 108	50	50.0	15.151516	ug/L
o	9762	9761.8	110.786583	ug/L
n 115	53389	53389.0		ions/sec
n 120	3824	0.071625	20.173939	ug/L
s 133	13498	0.252823	20.007462	ug/L
EPEAT: 3				
r 88	44	44.0	25.925920	ug/L
d 108	42	42.0	12.121213	ug/L
o 96	10035	10035.1	113.923065	ug/L
n 115	53538	53538.2		ions/sec
n 120	3828	0.071500	20.135658	ug/L
s 133	13236	0.247225	19.559006	ug/L

EAN VALUES:

nalyte	Intensity	Net Intensity	Conc.	Units
r 88	48	48	37.037033	ug/L
d 108	51	51	15.656566	ug/L
o 96	9956	9956	113.010269	ug/L
n 115	53462	53462		ions/sec
n 120	0.070954	0.070954	19.968170	ug/L
s 133	0.250785	0.250785	19.844162	ug/L

TANDARD DEVIATIONS:

nalyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88	5.3	5.3	14.698617	ug/L
d 8	10.1	10.1	3.813048	ug/L
o	168.7	168.7	1.935973	ug/L
n 115	73.5	73.5		ions/sec
n 120	0.001056	0.001056	0.323773	ug/L
s 133	0.003095	0.003095	0.247902	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

at Set: 11859-CsSn
Set Description: 6FR100000
meter File: CsSn

ample ID: ICSA
ample Description:
ample Type: Sample
equence Number: 012
lank: Not Subtracted
ilution Factor: 1
umber of Repeats: 3
ime: 09:43:16 Jul 21 1993
ignal Profile Processing: Average
pectral Peak Processing: Average

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alibration File: [Untitled]
alibration: External Standard

(SECTION II)

EPLICATES:

nalyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
r 88		164	164.0	359.259247	ug/L
d 108		484	484.0	179.545456	ug/L
o 96		899667	899667.3	10323.325195	ug/L
n 115	<	53024	53023.8		ions/sec
n 120	]	286	0.005394	-0.124195	ug/L
s 133	]	50	9.429724E-04	-0.169401	ug/L
EPEAT: 2					
r 88		188	188.0	425.925903	ug/L
d 108		514	514.0	190.909088	ug/L
r	>	2999987	> 2999986.8	> 34426.550781	ug/L
n 115	<	52685	52684.8		ions/sec
n 120	]	270	0.005125	-0.206632	ug/L
s 133	]	46	8.731168E-04	-0.174997	ug/L
EPEAT: 3					
r 88		184	184.0	414.814789	ug/L
d 108		496	496.0	184.090897	ug/L
o 96		918006	918005.9	10533.778320	ug/L
n 115	<	53681	53681.3		ions/sec
n 120	]	288	0.005365	-0.133022	ug/L
s 133	]	56	0.001043	-0.161372	ug/L

EAN VALUES:

nalyte		Intensity	Net Intensity	Conc.	Units
r 88		179	179	400.000000	ug/L
d 108		498	498	184.848480	ug/L
o 96	>	1605887	1605887	> 18427.884766	ug/L
n 115	<	53130	53130		ions/sec
n 120	]	0.005295	0.005295	-0.154617	ug/L
s 133	]	9.530946E-04	9.530946E-04	-0.168590	ug/L

TANDARD DEVIATIONS:

nalyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88		12.9	12.9	35.717224	ug/L
d 9		15.1	15.1	5.719571	ug/L
		1207360.8	1207360.8	13855.649414	ug/L
n 115	<	506.8	506.8		ions/sec
n 120	]	1.477009E-04	1.477009E-04	0.045266	ug/L
s 133	]	8.548870E-05	8.548870E-05	0.006848	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Data Set:	11859-CsSn
Data Set Description:	6FR100000
Parameter File:	CsSn
Sample ID:	ICSAB
Sample Description:	
Sample Type:	Sample
Sequence Number:	013
Blank:	Not Subtracted
Dilution Factor:	1
Number of Repeats:	3
Time:	09:45:45 Jul 21 1993
Signal Profile Processing:	Average
Spectral Peak Processing:	Average
Calibration File:	[Untitled]
Calibration:	External Standard

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(SECTION II)

REPLICATES:

Analyte		Intensity		Net Intensity		Concentration	Units
REPEAT: 1							
Sr 88		176		176.0		392.592560	ug/L
Cd 108		828		828.0		309.848480	ug/L
Mo 96		950783		950783.4		10909.933594	ug/L
In 115	<	54311		54311.1			ions/sec
Sn 120	]	19166		0.352893		106.374893	ug/L
Cs 133	]	67458		1.242067		99.250679	ug/L
REPEAT: 2							
Sr 88		154		154.0		331.481476	ug/L
Cd 108		738		738.0		275.757568	ug/L
Mo 96	>	2999988	>	2999988.3	>	34426.570313	ug/L
In 115	<	54674		54674.4			ions/sec
Sn 120	]	18562		0.339867		102.382759	ug/L
Cs 133	]	65826		1.203965		96.198532	ug/L
REPEAT: 3							
Sr 88		182		182.0		409.259247	ug/L
Cd 108		830		830.0		310.606049	ug/L
Mo 96		950565		950564.9		10907.424805	ug/L
In 115	<	54736		54736.1			ions/sec
Sn 120	]	18630		0.340361		102.534119	ug/L
Cs 133	]	66892		1.222083		97.649902	ug/L

MEAN VALUES:

Analyte		Intensity		Net Intensity		Conc.	Units
Sr 88		171		171		377.777771	ug/L
Cd 108		799		799		298.737366	ug/L
Mo 96	>	1633779		1633779	>	18747.976563	ug/L
In 115	<	54574		54574			ions/sec
Sn 120	]	0.344373		0.344373		103.763924	ug/L
Cs 133	]	1.222705		1.222705		97.699699	ug/L

STANDARD DEVIATIONS:

Analyte		Intensity Deviation		Net Deviation		Conc. Deviation	Units
Sr 88		14.7		14.7		40.950634	ug/L
Cd 108		52.5		52.5		19.904692	ug/L
Mo 96		1183172.0		1183172.0		13578.059570	ug/L
In 115	<	228.5		228.5			ions/sec
Sn 120	]	0.007382		0.007382		2.262430	ug/L
Cs 133	]	0.019058		0.019058		1.526626	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set: 11859-CsSn
a Set Description: 6FR100000
eter File: CsSn

ample ID: CCV
ample Description:
ample Type: Sample
equence Number: 014
lank: Not Subtracted
ilution Factor: 1
umber of Repeats: 3
ime: 09:48:11 Jul 21 1993
ignal Profile Processing: Average
pectral Peak Processing: Average

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alibration File: [Untitled]
alibration: External Standard

(SECTION II)

EPLICATES:

nalyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
r 88		42	42.0	20.370365	ug/L
d 108		194	194.0	69.696968	ug/L
o 96		6164	6164.0	69.498718	ug/L
n 115	<	57827	57827.3		ions/sec
n 120	]	9506	0.164386	48.602650	ug/L
s 133		36154	0.625207	49.837181	ug/L
EPEAT: 2					
r 88		56	56.0	59.259254	ug/L
d 108		190	190.0	68.181816	ug/L
o [illegible]		5878	5877.8	66.213623	ug/L
r 5	<	56373	56373.1		ions/sec
n 120	]	9024	0.160076	47.281811	ug/L
s 133		35338	0.626859	49.969540	ug/L
EPEAT: 3					
r 88		60	60.0	70.370361	ug/L
d 108		172	172.0	61.363636	ug/L
o 96		5781	5781.4	65.107742	ug/L
n 115	<	57584	57583.8		ions/sec
n 120	]	9410	0.163414	48.304726	ug/L
s 133		35880	0.623092	49.667770	ug/L

EAN VALUES:

nalyte		Intensity	Net Intensity	Conc.	Units
r 88		53	53	49.999996	ug/L
d 108		185	185	66.414139	ug/L
o 96		5941	5941	66.940025	ug/L
n 115	<	57261	57261		ions/sec
n 120	]	0.162625	0.162625	48.063061	ug/L
s 133		0.625053	0.625053	49.824829	ug/L

TANDARD DEVIATIONS:

nalyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88		9.5	9.5	26.254532	ug/L
d 108		11.7	11.7	4.438989	ug/L
o		199.0	199.0	2.283918	ug/L
n [illegible]5	<	779.1	779.1		ions/sec
n 120	]	0.002261	0.002261	0.692859	ug/L
s 133		0.001872	0.001872	0.149976	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

)ata Set:	11859-CsSn
ata Set Description:	6FR100000
·· neter File:	CsSn
ample ID:	CCB
ample Description:	
ample Type:	Sample
equence Number:	015
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	09:50:35 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
alibration File:	[Untitled]
alibration:	External Standard

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(SECTION II)

EPLICATES:

nalyte	Intensity	Net Intensity	Concentration	Units
EPEAT: 1				
r 88	34	34.0	-1.851855	ug/L
d 108	16	16.0	2.272729	ug/L
o 96	172	172.4	0.738779	ug/L
n 115	56814	56813.8		ions/sec
n 120	338	0.005949	0.046038	ug/L
s 133	60	0.001056	-0.160340	ug/L
EPEAT: 2				
r 88	24	24.0	-29.629631	ug/L
d 108	10	10.0	1.444961E-06	ug/L
o 96	133	133.1	0.288431	ug/L
5	55668	55667.6		ions/sec
n 120	254	0.004563	-0.378877	ug/L
s 133	36	6.466951E-04	-0.193134	ug/L
EPEAT: 3				
r 88	34	34.0	-1.851855	ug/L
d 108	18	18.0	3.030304	ug/L
o 96	84	84.1	-0.274128	ug/L
n 115	54812	54812.3		ions/sec
n 120	316	0.005765	-0.010393	ug/L
s 133	48	8.757160E-04	-0.174788	ug/L

EAN VALUES:

nalyte	Intensity	Net Intensity	Conc.	Units
r 88	31	31	-11.111116	ug/L
d 108	15	15	1.767678	ug/L
o 96	130	130	0.251027	ug/L
n 115	55765	55765		ions/sec
n 120	0.005426	0.005426	-0.114411	ug/L
s 133	8.594976E-04	8.594976E-04	-0.176087	ug/L

TANDARD DEVIATIONS:

nalyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88	5.8	5.8	16.037508	ug/L
d 108	4.2	4.2	1.577020	ug/L
o	44.2	44.2	0.507489	ug/L
n 115	1004.3	1004.3		ions/sec
n 120	7.529741E-04	7.529741E-04	0.230766	ug/L
s 133	2.051744E-04	2.051744E-04	0.016435	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set: 11859-CsSn
Da Set Description: 6FR100000
Pa eter File: CsSn

ample ID: PBS 213984
ample Description:
ample Type: Sample
equence Number: 016
lank: Not Subtracted
ilution Factor: 1
umber of Repeats: 3
ime: 09:52:58 Jul 21 1993
ignal Profile Processing: Average
pectral Peak Processing: Average

alibration File: [Untitled]
alibration: External Standard

100

(SECTION II)

EPLICATES:

nalyte	Intensity	Net Intensity	Concentration	Units
EPEAT: 1				
r 88	52	52.0	48.148144	ug/L
d 108	16	16.0	2.272729	ug/L
o 96	135	135.1	0.311264	ug/L
n 115	59569	59568.6		ions/sec
n 120	192	0.003223	-0.789434	ug/L
s 133	70	0.001175	-0.150805	ug/L
EPEAT: 2				
r 88	48	48.0	37.037033	ug/L
d 108	8	8.0	-0.757574	ug/L
o 96	93	92.9	-0.173021	ug/L
115	59532	59532.4		ions/sec
n 120	186	0.003124	-0.819721	ug/L
s 133	80	0.001344	-0.137292	ug/L
EPEAT: 3				
r 88	58	58.0	64.814812	ug/L
d 108	10	10.0	1.444961E-06	ug/L
o 96	66	66.0	-0.482064	ug/L
n 115	57804	57804.2		ions/sec
n 120	182	0.003149	-0.812301	ug/L
s 133	66	0.001142	-0.153475	ug/L

EAN VALUES:

nalyte	Intensity	Net Intensity	Conc.	Units
r 88	53	53	49.999996	ug/L
d 108	11	11	0.505052	ug/L
o 96	98	98	-0.114607	ug/L
n 115	58968	58968		ions/sec
n 120	0.003165	0.003165	-0.807152	ug/L
s 133	0.001220	0.001220	-0.147191	ug/L

TANDARD DEVIATIONS:

nalyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88	5.0	5.0	13.981174	ug/L
d 108	4.2	4.2	1.577020	ug/L
o	34.8	34.8	0.399877	ug/L
n 115	1008.5	1008.5		ions/sec
n 120	5.150507E-05	5.150507E-05	0.015785	ug/L
s 133	1.083056E-04	1.083056E-04	0.008676	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Data Set: 11859-CsSn
Data Set Description: 6FR100000
Parameter File: CsSn

Sample ID: LCS04 213984
Sample Description:
Sample Type: Sample
Sequence Number: 017
Blank: Not Subtracted
Dilution Factor: 1
Number of Repeats: 3
Time: 09:55:22 Jul 21 1993
Signal Profile Processing: Average
Spectral Peak Processing: Average

Calibration File: [Untitled]
Calibration: External Standard

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(SECTION III)

REPLICATES:

Analyte	Intensity	Net Intensity	Concentration	Units
REPEAT: 1				
Sr 88	199312	199312.0	5.535481E+05	ug/L
Cd 108	1056	1056.0	396.212097	ug/L
Mo 96	39627	39627.0	453.519165	ug/L
In 115	70101	70101.4		ions/sec
Sn 120	9074	0.129441	37.892956	ug/L
Cs 133	256	0.003652	0.047594	ug/L
REPEAT: 2				
Sr 88	210764	210764.0	5.853593E+05	ug/L
Cd 108	978	978.0	366.666656	ug/L
Mo 96	42004	42003.9	480.797180	ug/L
In 115	73735	73734.9		ions/sec
Sn 120	9630	0.130603	38.249077	ug/L
Cs 133	278	0.003770	0.057079	ug/L
REPEAT: 3				
Sr 88	216798	216798.0	6.021204E+05	ug/L
Cd 108	1070	1070.0	401.515137	ug/L
Mo 96	42703	42702.6	488.814728	ug/L
In 115	76775	76775.2		ions/sec
Sn 120	9880	0.128687	37.661976	ug/L
Cs 133	274	0.003569	0.040946	ug/L

MEAN VALUES:

Analyte	Intensity	Net Intensity	Conc.	Units
Sr 88	208958	208958	5.803426E+05	ug/L
Cd 108	1035	1035	388.131287	ug/L
Mo 96	41445	41445	474.377014	ug/L
In 115	73537	73537		ions/sec
Sn 120	0.129577	0.129577	37.934669	ug/L
Cs 133	0.003664	0.003664	0.048540	ug/L

STANDARD DEVIATIONS:

Analyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
Sr 88	8881.8	8881.8	24671.652344	ug/L
Cd 108	49.6	49.6	18.777082	ug/L
Mo 96	1612.4	1612.4	18.503403	ug/L
In 115	3341.3	3341.3		ions/sec
Sn 120	9.649394E-04	9.649394E-04	0.295728	ug/L
Cs 133	1.012133E-04	1.012133E-04	0.008108	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Data Set: 11859-CsSn
Data Set Description: 6FR100000
Parameter File: CsSn

Sample ID: 213984
Sample Description:
Sample Type: Sample
Sequence Number: 018
Blank: Not Subtracted
Dilution Factor: 1
Number of Repeats: 3
Time: 09:57:47 Jul 21 1993
Signal Profile Processing: Average
Spectral Peak Processing: Average

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Calibration File: [Untitled]
Calibration: External Standard

(SECTION II)

REPLICATES:

Analyte		Intensity	Net Intensity	Concentration	Units
REPEAT: 1					
Sr 88		43952	43952.0	1.219926E+05	ug/L
Cd 108		50	50.0	15.151516	ug/L
Mo 96		714	713.7	6.951623	ug/L
In 115	<	83369	83369.5		ions/sec
Sn 120	]	1092	0.013098	2.237031	ug/L
Cs 133	]	3832	0.045964	3.437009	ug/L
REPEAT: 2					
Sr 88		43854	43854.0	1.217204E+05	ug/L
Cd 108		22	22.0	4.545456	ug/L
Mo 96		538	538.4	4.938907	ug/L
In 115	<	81540	81539.9		ions/sec
Sn 120	]	980	0.012019	1.906144	ug/L
Cs 133	]	3900	0.047829	3.586428	ug/L
REPEAT: 3					
Sr 88		44214	44214.0	1.227204E+05	ug/L
Cd 108		38	38.0	10.606062	ug/L
Mo 96		514	514.4	4.663921	ug/L
In 115	<	85012	85012.0		ions/sec
Sn 120	]	1036	0.012187	1.957589	ug/L
Cs 133	]	4146	0.048770	3.661746	ug/L

MEAN VALUES:

Analyte		Intensity	Net Intensity	Conc.	Units
Sr 88		44007	44007	1.221444E+05	ug/L
Cd 108		37	37	10.101011	ug/L
Mo 96		589	589	5.518150	ug/L
In 115	<	83307	83307		ions/sec
Sn 120	]	0.012434	0.012434	2.033588	ug/L
Cs 133	]	0.047521	0.047521	3.561728	ug/L

STANDARD DEVIATIONS:

Analyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
Sr 88		186.1	186.1	517.005066	ug/L
Cd 108		14.0	14.0	5.321037	ug/L
Mo 96		108.8	108.8	1.249016	ug/L
In 115	<	1736.7	1736.7		ions/sec
Sn 120	]	5.809874E-04	5.809874E-04	0.178057	ug/L
Cs 133	]	0.001428	0.001428	0.114378	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set: 11859-CsSn
a Set Description: 6FR100000
ater File: CsSn

ample ID: 213984D
ample Description:
ample Type: Sample
equence Number: 019
lank: Not Subtracted
ilution Factor: 1
umber of Repeats: 3
ime: 10:00:13 Jul 21 1993
ignal Profile Processing: Average
pectral Peak Processing: Average

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alibration File: [Untitled]
alibration: External Standard

(SECTION II)

EPLICATES:

nalyte	Intensity	Net Intensity	Concentration	Units
EPEAT: 1				
r 88	41602	41602.0	1.154648E+05	ug/L
d 108	62	62.0	19.696970	ug/L
o 96	508	507.9	4.589243	ug/L
n 115 <	76040	76039.6		ions/sec
n 120]	1254	0.016491	3.276918	ug/L
s 133]	4226	0.055576	4.206994	ug/L
EPEAT: 2				
r 88	41996	41996.0	1.165593E+05	ug/L
d 108	62	62.0	19.696970	ug/L
o 96	488	488.4	4.366018	ug/L
n 115 <	79192	79192.3		ions/sec
n 120]	1328	0.016769	3.362087	ug/L
s 133]	4288	0.054147	4.092474	ug/L
EPEAT: 3				
r 88	42336	42336.0	1.175037E+05	ug/L
d 108	56	56.0	17.424244	ug/L
o 96	509	509.1	4.602509	ug/L
n 115 <	79433	79433.1		ions/sec
n 120]	1234	0.015535	2.983836	ug/L
s 133]	4176	0.052573	3.966382	ug/L

EAN VALUES:

nalyte	Intensity	Net Intensity	Conc.	Units
r 88	41978	41978	1.165093E+05	ug/L
d 108	60	60	18.939394	ug/L
o 96	502	502	4.519257	ug/L
n 115 <	78222	78222		ions/sec
n 120]	0.016265	0.016265	3.207613	ug/L
s 133]	0.054098	0.054098	4.088616	ug/L

TANDARD DEVIATIONS:

nalyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88	367.3	367.3	1020.363586	ug/L
d 108	3.5	3.5	1.312160	ug/L
o	11.6	11.6	0.132871	ug/L
n 115 <	1893.4	1893.4		ions/sec
n 120]	6.474602E-04	6.474602E-04	0.198429	ug/L
s 133]	0.001502	0.001502	0.120351	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set:	11859-CsSn
a Set Description:	6FR100000
eter File:	CsSn
ample ID:	213984L
ample Description:	DF5
ample Type:	Sample
equence Number:	020
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	10:02:40 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
alibration File:	[Untitled]
alibration:	External Standard

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(SECTION III)

EPLICATES:

nalyte	Intensity	Net Intensity	Concentration	Units
EPEAT: 1				
r 88	6986	6986.0	19309.257813	ug/L
d 108	12	12.0	0.757577	ug/L
o 96	127	126.7	0.214701	ug/L
n 115	63041	63041.0		ions/sec
n 120	390	0.006186	0.118731	ug/L
s 133	626	0.009930	0.550508	ug/L
EPEAT: 2				
r 88	6998	6998.0	19342.591797	ug/L
d 108	20	20.0	3.787880	ug/L
o 5	105	105.2	-0.032641	ug/L
5	62259	62258.5		ions/sec
n 120	356	0.005718	-0.024809	ug/L
s 133	642	0.010312	0.581092	ug/L
EPEAT: 3				
r 88	6822	6822.0	18853.703125	ug/L
d 108	6	6.0	-1.515150	ug/L
o 96	107	107.0	-0.011107	ug/L
n 115	63688	63687.6		ions/sec
n 120	352	0.005527	-0.083381	ug/L
s 133	654	0.010269	0.577649	ug/L

EAN VALUES:

nalyte	Intensity	Net Intensity	Conc.	Units
r 88	6935	6935	19168.517578	ug/L
d 108	13	13	1.010103	ug/L
o 96	113	113	0.056984	ug/L
n 115	62996	62996		ions/sec
n 120	0.005811	0.005811	0.003514	ug/L
s 133	0.010170	0.010170	0.569750	ug/L

TANDARD DEVIATIONS:

nalyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88	98.3	98.3	273.146576	ug/L
d 108	7.0	7.0	2.660519	ug/L
o	11.9	11.9	0.137010	ug/L
n 15	716.0	716.0		ions/sec
n 120	3.393026E-04	3.393026E-04	0.103987	ug/L
s 133	2.091102E-04	2.091102E-04	0.016751	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set:	11859-CsSn
a- Set Description:	6FR100000
a eter File:	CsSn
ample ID:	213984S
ample Description:	
ample Type:	Sample
equence Number:	021
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	10:05:07 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
alibration File:	[Untitled]
alibration:	External Standard

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(SECTION II)

EPLICATES:

alyte	Intensity	Net Intensity	Concentration	Units
EPEAT: 1				
r 88	29356	29356.0	81448.148438	ug/L
d 108	198	198.0	71.212120	ug/L
96	5867	5867.5	66.095703	ug/L
n 115	58442	58441.9		ions/sec
n 120	11070	0.189419	56.274509	ug/L
s 133	39328	0.672942	53.660988	ug/L
EPEAT: 2				
r 88	30232	30232.0	83881.476563	ug/L
d 108	206	206.0	74.242424	ug/L
6065	6065.5	68.367981	ug/L	
5	58826	58826.1		ions/sec
20	11416	0.194063	57.697945	ug/L
s 133	39678	0.674496	53.785503	ug/L
EPEAT: 3				
r 88	31232	31232.0	86659.257813	ug/L
d 108	232	232.0	84.090904	ug/L
96	6133	6133.4	69.147926	ug/L
n 115	58672	58671.6		ions/sec
n 120	11234	0.191473	56.903938	ug/L
s 133	40398	0.688545	54.910866	ug/L

EAN VALUES:

alyte	Intensity	Net Intensity	Conc.	Units
r 88	30273	30273	83996.296875	ug/L
d 108	212	212	76.515152	ug/L
96	6022	6022	67.870537	ug/L
n 115	58647	58647		ions/sec
n 120	0.191652	0.191652	56.958794	ug/L
s 133	0.678661	0.678661	54.119118	ug/L

ANDARD DEVIATIONS:

alyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
88	938.7	938.7	2607.451904	ug/L
108	17.8	17.8	6.733480	ug/L
138.2	138.2	1.585657	ug/L	
5	193.8	193.8		ions/sec
n 120	0.002329	0.002329	0.713902	ug/L
s 133	0.008597	0.008597	0.688675	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

..ta Set:	11859-CsSn
at Set Description:	6FR100000
a ..ter File:	CsSn
.mple ID:	213985
ample Description:	
ample Type:	Sample
.quence Number:	022
ank:	Not Subtracted
.lution Factor:	1
umber of Repeats:	3
ime:	10:07:36 Jul 21 1993
gnal Profile Processing:	Average
ectral Peak Processing:	Average
alibration File:	[Untitled]
.libration:	External Standard

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(SECTION III)

EPLICATES:

alyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
- 88		25788	25788.0	71537.031250	ug/L
d 108		34	34.0	9.090910	ug/L
96		412	412.0	3.488486	ug/L
115	<	74860	74860.1		ions/sec
120	]	788	0.010526	1.448777	ug/L
133	]	3500	0.046754	3.500277	ug/L
EPEAT: 2					
- 88		26346	26346.0	73087.031250	ug/L
d 108		10	10.0	1.444961E-06	ug/L
		427	427.3	3.664608	ug/L
5	<	75087	75086.5		ions/sec
120	]	838	0.011160	1.643130	ug/L
133	]	3348	0.044589	3.326825	ug/L
EPEAT: 3					
- 88		26504	26504.0	73525.921875	ug/L
d 108		42	42.0	12.121213	ug/L
96		400	399.8	3.349322	ug/L
115	<	74754	74754.3		ions/sec
120	]	814	0.010889	1.559936	ug/L
133	]	3172	0.042432	3.154101	ug/L

EAN VALUES:

alyte		Intensity	Net Intensity	Conc.	Units
- 88		26213	26213	72716.664063	ug/L
d 108		29	29	7.070708	ug/L
96		413	413	3.500805	ug/L
115	<	74900	74900		ions/sec
120	]	0.010859	0.010859	1.558614	ug/L
133	]	0.044592	0.044592	3.327067	ug/L

ANDARD DEVIATIONS:

alyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
88		376.2	376.2	1044.892456	ug/L
d 108		16.7	16.7	6.308078	ug/L
		13.8	13.8	0.158013	ug/L
115	<	170.7	170.7		ions/sec
120	]	3.181960E-04	3.181960E-04	0.097519	ug/L
133	]	0.002161	0.002161	0.173094	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Data Set: 11859-CsSn
Data Set Description: 6FR100000
Parameter File: CsSn

Sample ID: 213986
Sample Description:
Sample Type: Sample
Sequence Number: 023
Blank: Not Subtracted
Dilution Factor: 1
Number of Repeats: 3
Time: 10:10:05 Jul 21 1993
Signal Profile Processing: Average
Spectral Peak Processing: Average

Calibration File: [Untitled]
Calibration: External Standard

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(SECTION II)

REPLICATES:

Analyte		Intensity	Net Intensity	Concentration	Units
REPEAT: 1					
Sr 88		18596	18596.0	51559.257813	ug/L
Cd 108		18	18.0	3.030304	ug/L
Mo 96		232	232.4	1.428037	ug/L
In 115	<	72866	72866.3		ions/sec
Sn 120	]	850	0.011665	1.797817	ug/L
Cs 133	]	2166	0.029726	2.136234	ug/L
REPEAT: 2					
Sr 88		19232	19232.0	53325.921875	ug/L
Cd 108		12	12.0	0.757577	ug/L
Mo 96		269	268.9	1.845999	ug/L
In 115	<	75261	75261.1		ions/sec
Sn 120	]	848	0.011267	1.675916	ug/L
Cs 133	]	2204	0.029285	2.100911	ug/L
REPEAT: 3					
Sr 88		19382	19382.0	53742.589844	ug/L
Cd 108		16	16.0	2.272729	ug/L
Mo 96		281	281.3	1.989129	ug/L
In 115	<	74144	74143.9		ions/sec
Sn 120	]	824	0.011114	1.628745	ug/L
Cs 133	]	2334	0.031479	2.276711	ug/L

MEAN VALUES:

Analyte		Intensity	Net Intensity	Conc.	Units
Sr 88		19070	19070	52875.921875	ug/L
Cd 108		15	15	2.020203	ug/L
Mo 96		261	261	1.754388	ug/L
In 115	<	74090	74090		ions/sec
Sn 120	]	0.011349	0.011349	1.700826	ug/L
Cs 133	]	0.030163	0.030163	2.171285	ug/L

STANDARD DEVIATIONS:

Analyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
Sr 88		417.3	417.3	1159.142334	ug/L
Cd 108		3.1	3.1	1.157216	ug/L
Mo 96		25.4	25.4	0.291551	ug/L
In 115	<	1198.4	1198.4		ions/sec
Sn 120	]	2.846946E-04	2.846946E-04	0.087251	ug/L
Cs 133	]	0.001161	0.001161	0.092994	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set: 11859-CsSn
a Set Description: 6FR100000
ameter File: CsSn

ample ID: 213987
ample Description:
ample Type: Sample
equence Number: 024
lank: Not Subtracted
ilution Factor: 1
umber of Repeats: 3
ime: 10:12:32 Jul 21 1993
ignal Profile Processing: Average
pectral Peak Processing: Average

alibration File: [Untitled]
alibration: External Standard

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(SECTION II)

EPLICATES:

nalyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
r 88		19826	19826.0	54975.921875	ug/L
d 108		70	70.0	22.727274	ug/L
o 96		360	359.8	2.889723	ug/L
n 115	<	73170	73170.2		ions/sec
n 120	]	900	0.012300	1.992397	ug/L
s 133	]	2542	0.034741	2.537982	ug/L
EPEAT: 2					
r 88		19150	19150.0	53098.144531	ug/L
d 108		74	74.0	24.242424	ug/L
o		354	354.2	2.825913	ug/L
r 5	<	73852	73851.9		ions/sec
n 120	]	880	0.011916	1.874605	ug/L
s 133	]	2706	0.036641	2.690180	ug/L
EPEAT: 3					
r 88		19684	19684.0	54581.480469	ug/L
d 108		76	76.0	25.000000	ug/L
o 96		333	332.9	2.580934	ug/L
n 115	<	75022	75022.2		ions/sec
n 120	]	840	0.011197	1.654233	ug/L
s 133	]	2714	0.036176	2.652934	ug/L

EAN VALUES:

nalyte		Intensity	Net Intensity	Conc.	Units
r 88		19553	19553	54218.519531	ug/L
d 108		73	73	23.989901	ug/L
o 96		349	349	2.765523	ug/L
n 115	<	74015	74015		ions/sec
n 120	]	0.011804	0.011804	1.840412	ug/L
s 133	]	0.035853	0.035853	2.627032	ug/L

TANDARD DEVIATIONS:

nalyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88		356.4	356.4	990.110474	ug/L
d 108		3.1	3.1	1.157216	ug/L
o		14.2	14.2	0.163010	ug/L
n 5	<	936.9	936.9		ions/sec
n 120	]	5.600833E-04	5.600833E-04	0.171650	ug/L
s 133	]	9.904611E-04	9.904611E-04	0.079341	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Data Set: 11859-CsSn
Data Set Description: 6FR100000
Parameter File: CsSn

Sample ID: 213988
Sample Description:
Sample Type: Sample
Sequence Number: 025
Blank: Not Subtracted
Dilution Factor: 1
Number of Repeats: 3
Time: 10:14:55 Jul 21 1993
Signal Profile Processing: Average
Spectral Peak Processing: Average

Calibration File: [Untitled]
Calibration: External Standard

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(SECTION II)

REPLICATES:

Analyte	Intensity	Net Intensity	Concentration	Units
REPEAT: 1				
Sr 88	53272	53272.0	1.478815E+05	ug/L
Cd 108	176	176.0	62.878788	ug/L
Mo 96	709	709.0	6.896554	ug/L
In 115	73130	73130.1		ions/sec
Sn 120	1070	0.014631	2.706899	ug/L
Cs 133	4672	0.063886	4.872658	ug/L
REPEAT: 2				
Sr 88	54580	54580.0	1.515148E+05	ug/L
Cd 108	210	210.0	75.757576	ug/L
Mo 96	760	759.8	7.480478	ug/L
In 115	75963	75963.1		ions/sec
Sn 120	1068	0.014059	2.531594	ug/L
Cs 133	4966	0.065374	4.991827	ug/L
REPEAT: 3				
Sr 88	52096	52096.0	1.446148E+05	ug/L
Cd 108	218	218.0	78.787880	ug/L
Mo 96	629	628.9	5.977362	ug/L
In 115	77332	77331.5		ions/sec
Sn 120	1066	0.013785	2.447421	ug/L
Cs 133	4924	0.063674	4.855654	ug/L

MEAN VALUES:

Analyte	Intensity	Net Intensity	Conc.	Units
Sr 88	53316	53316	1.480037E+05	ug/L
Cd 108	201	201	72.474747	ug/L
Mo 96	699	699	6.784798	ug/L
In 115	75475	75475		ions/sec
Sn 120	0.014159	0.014159	2.561971	ug/L
Cs 133	0.064311	0.064311	4.906713	ug/L

STANDARD DEVIATIONS:

Analyte	Intensity Deviation	Net Deviation	Conc. Deviation	Units
Sr 88	1242.6	1242.6	3451.623047	ug/L
Cd 108	22.3	22.3	8.447337	ug/L
Mo	66.0	66.0	0.757764	ug/L
In 115	2143.1	2143.1		ions/sec
Sn 120	4.319339E-04	4.319339E-04	0.132376	ug/L
Cs 133	9.265892E-04	9.265892E-04	0.074224	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

at= Set:	11859-CsSn
a Set Description:	6FR100000
; eter File:	CsSn
ample ID:	CCV
ample Description:	
ample Type:	Sample
equence Number:	026
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	10:17:19 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
alibration File:	[Untitled]
alibration:	External Standard

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(SECTION II)

EPLICATES:

nalyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
r 88		50	50.0	42.592587	ug/L
d 108		164	164.0	58.333332	ug/L
o 96		5138	5138.2	57.726227	ug/L
n 115	<	53710	53709.8		ions/sec
n 120	]	8752	0.162950	48.162502	ug/L
s 133	]	33528	0.624244	49.760075	ug/L
EPEAT: 2					
r 88		52	52.0	48.148144	ug/L
d 108		168	168.0	59.848484	ug/L
o		5141	5141.4	57.763382	ug/L
r 15	<	54515	54514.8		ions/sec
n 120	]	8672	0.159076	46.975304	ug/L
s 133	]	32738	0.600535	47.860821	ug/L
EPEAT: 3					
r 88		56	56.0	59.259254	ug/L
d 108		158	158.0	56.060604	ug/L
o 96		5122	5122.0	57.540966	ug/L
n 115	<	52871	52871.1		ions/sec
n 120	]	8552	0.161752	47.795368	ug/L
s 133	]	33970	0.642506	51.222977	ug/L

EAN VALUES:

nalyte		Intensity	Net Intensity	Conc.	Units
r 88		53	53	49.999996	ug/L
d 108		163	163	58.080807	ug/L
o 96		5134	5134	57.676857	ug/L
n 115	<	53699	53699		ions/sec
n 120	]	0.161259	0.161259	47.644394	ug/L
s 133	]	0.622428	0.622428	49.614628	ug/L

TANDARD DEVIATIONS:

nalyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88		3.1	3.1	8.486251	ug/L
d 108		5.0	5.0	1.906524	ug/L
o		10.3	10.3	0.118326	ug/L
n 115	<	822.0	822.0		ions/sec
n 120	]	0.001983	0.001983	0.607785	ug/L
s 133	]	0.021044	0.021044	1.685708	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set:	11859-CsSn
ata Set Description:	6FR100000
Pr meter File:	CsSn
a..le ID:	CCB
ample Description:	
Sample Type:	Sample
Sequence Number:	027
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	10:19:43 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
Calibration File:	[Untitled]
Calibration:	External Standard

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(SECTION II)

EPLICATES:

nalyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
r 88		26	26.0	-24.074076	ug/L
d 108		22	22.0	4.545456	ug/L
o 96		40	40.3	-0.776489	ug/L
n 115	<	51430	51429.6		ions/sec
n 120	]	302	0.005872	0.022393	ug/L
s 133	]	56	0.001089	-0.157714	ug/L
EPEAT: 2					
r 88		32	32.0	-7.407411	ug/L
d 108		6	6.0	-1.515150	ug/L
o 96		42	42.4	-0.752373	ug/L
5	<	53190	53189.5		ions/sec
n 20	]	244	0.004587	-0.371345	ug/L
s 133	]	52	9.776360E-04	-0.166624	ug/L
EPEAT: 3					
r 88		16	16.0	-51.851852	ug/L
d 108		12	12.0	0.757577	ug/L
o 96		40	39.9	-0.781603	ug/L
n 115	<	51796	51796.1		ions/sec
n 120	]	290	0.005599	-0.061344	ug/L
s 133	]	18	3.475168E-04	-0.217100	ug/L

EAN VALUES:

nalyte		Intensity	Net Intensity	Conc.	Units
r 88		25	25	-27.777782	ug/L
d 108		13	13	1.262627	ug/L
o 96		41	41	-0.770155	ug/L
n 115	<	52138	52138		ions/sec
n 120	]	0.005353	0.005353	-0.136765	ug/L
s 133	]	8.046735E-04	8.046735E-04	-0.180479	ug/L

TANDARD DEVIATIONS:

nalyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88		8.1	8.1	22.452509	ug/L
d 108		8.1	8.1	3.061706	ug/L
o		1.4	1.4	0.015611	ug/L
5	<	928.5	928.5		ions/sec
n 120	]	6.768035E-04	6.768035E-04	0.207422	ug/L
s 133	]	3.997968E-04	3.997968E-04	0.032026	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set:	11859-CsSn
at Set Description:	6FR100000
r eter File:	CsSn
ample ID:	213989
ample Description:	
ample Type:	Sample
equence Number:	028
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	10:22:08 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
alibration File:	[Untitled]
alibration:	External Standard

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(SECTION II)

EPLICATES:

nalyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
r 88		22172	22172.0	61492.589844	ug/L
d 108		104	104.0	35.606060	ug/L
o 96		1071	1071.0	11.051559	ug/L
n 115	<	70080	70080.4		ions/sec
n 120	]	968	0.013813	2.455972	ug/L
s 133	]	4250	0.060645	4.612995	ug/L
EPEAT: 2					
r 88		21896	21896.0	60725.921875	ug/L
d 108		72	72.0	23.484850	ug/L
o 96		1064	1064.3	10.974589	ug/L
r 5	<	70135	70135.1		ions/sec
n 120	]	982	0.014002	2.513848	ug/L
s 133	]	4730	0.067441	5.157440	ug/L
EPEAT: 3					
r 88		22264	22264.0	61748.144531	ug/L
d 108		90	90.0	30.303030	ug/L
o 96		1105	1104.9	11.440883	ug/L
n 115	<	72315	72315.2		ions/sec
n 120	]	966	0.013358	2.316676	ug/L
s 133	]	4482	0.061979	4.719860	ug/L

EAN VALUES:

nalyte		Intensity	Net Intensity	Conc.	Units
r 88		22111	22111	61322.218750	ug/L
d 108		89	89	29.797979	ug/L
o 96		1080	1080	11.155678	ug/L
n 115	<	70844	70844		ions/sec
n 120	]	0.013724	0.013724	2.428832	ug/L
s 133	]	0.063355	0.063355	4.830098	ug/L

TANDARD DEVIATIONS:

nalyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88		191.5	191.5	531.981323	ug/L
d 108		16.0	16.0	6.076368	ug/L
o		21.8	21.8	0.249951	ug/L
n 5	<	1274.7	1274.7		ions/sec
n 120	]	3.306733E-04	3.306733E-04	0.101342	ug/L
s 133	]	0.003601	0.003601	0.288478	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Data Set:	11859-CsSn
Data Set Description:	6FR100000
Parameter File:	CsSn
Sample ID:	CRI
Sample Description:	
Sample Type:	Sample
Sequence Number:	029
Blank:	Not Subtracted
Dilution Factor:	1
Number of Repeats:	3
Time:	10:24:34 Jul 21 1993
Signal Profile Processing:	Average
Spectral Peak Processing:	Average
Calibration File:	[Untitled]
Calibration:	External Standard

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(SECTION II)

REPLICATES:

Analyte		Intensity	Net Intensity	Concentration	Units
REPEAT: 1					
Sr 88		62	62.0	75.925919	ug/L
Cd 108		34	34.0	9.090910	ug/L
Mo 96		9571	9570.6	108.593132	ug/L
In 115	<	52264	52264.2		ions/sec
Sn 120	]	3514	0.067235	18.828568	ug/L
Cs 133		12614	0.241351	19.088442	ug/L
REPEAT: 2					
Sr 88		32	32.0	-7.407411	ug/L
Cd 108		42	42.0	12.121213	ug/L
Mo 96		9913	9912.7	112.519051	ug/L
In 115	<	52658	52657.6		ions/sec
Sn 120	]	3692	0.070113	19.710581	ug/L
Cs 133		13196	0.250600	19.829346	ug/L
REPEAT: 3					
Sr 88		40	40.0	14.814811	ug/L
Cd 108		54	54.0	16.666668	ug/L
Mo 96		9915	9914.7	112.541100	ug/L
In 115	<	50898	50898.1		ions/sec
Sn 120	]	3658	0.071869	20.248690	ug/L
Cs 133		12942	0.254273	20.123558	ug/L

MEAN VALUES:

Analyte		Intensity	Net Intensity	Conc.	Units
Sr 88		45	45	27.777777	ug/L
Cd 108		43	43	12.626263	ug/L
Mo 96		9799	9799	111.217766	ug/L
In 115	<	51940	51940		ions/sec
Sn 120	]	0.069739	0.069739	19.595947	ug/L
Cs 133		0.248741	0.248741	19.680449	ug/L

STANDARD DEVIATIONS:

Analyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
Sr 88		15.5	15.5	43.152519	ug/L
Cd 108		10.1	10.1	3.813048	ug/L
Mo		198.1	198.1	2.273024	ug/L
In 115	<	923.5	923.5		ions/sec
Sn 120	]	0.002339	0.002339	0.716923	ug/L
Cs 133		0.006658	0.006658	0.533377	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set: 11859-CsSn
ata Set Description: 6FR100000
eter File: CsSn

ample ID: ICSA
ample Description:
ample Type: Sample
equence Number: 030
lank: Not Subtracted
ilution Factor: 1
umber of Repeats: 3
ime: 10:27:01 Jul 21 1993
ignal Profile Processing: Average
pectral Peak Processing: Average

alibration File: [Untitled]
alibration: External Standard

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(SECTION II)

EPLICATES:

nalyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
r 88		152	152.0	325.925903	ug/L
d 108		672	672.0	250.757568	ug/L
b 96		828848	828847.6	9510.599609	ug/L
n 115	<	48433	48433.1		ions/sec
n 120	]	258	0.005327	-0.144687	ug/L
s 133	]	46	9.497642E-04	-0.168857	ug/L
EPEAT: 2					
r 88		148	148.0	314.814789	ug/L
d 108		616	616.0	229.545441	ug/L
b 96		816627	816627.4	9370.361328	ug/L
5	<	48137	48137.3		ions/sec
n 120	]	258	0.005360	-0.134654	ug/L
s 133	]	36	7.478616E-04	-0.185030	ug/L
EPEAT: 3					
r 86		124	124.0	248.148132	ug/L
d 108		772	772.0	288.636353	ug/L
b 96		872197	872197.3	10008.080078	ug/L
n 115	<	49878	49878.5		ions/sec
n 120	]	268	0.005373	-0.130552	ug/L
s 133	]	36	7.217544E-04	-0.187121	ug/L

EAN VALUES:

nalyte		Intensity	Net Intensity	Conc.	Units
r 88		141	141	296.296265	ug/L
d 108		687	687	256.313141	ug/L
b 96		839224	839224	9629.679688	ug/L
n 115	<	48816	48816		ions/sec
n 120	]	0.005353	0.005353	-0.135631	ug/L
s 133	]	8.064600E-04	8.064600E-04	-0.180336	ug/L

TANDARD DEVIATIONS:

nalyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88		15.1	15.1	42.065987	ug/L
d 108		79.0	79.0	29.934628	ug/L
b		29201.2	29201.2	335.112152	ug/L
n 5	<	931.6	931.6		ions/sec
n 120	]	2.376523E-05	2.376523E-05	0.007283	ug/L
s 133	]	1.247898E-04	1.247898E-04	0.009996	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Data Set:	11859-CsSn
Data Set Description:	6FR100000
Parameter File:	CsSn
Sample ID:	ICSAB
Sample Description:	
Sample Type:	Sample
Sequence Number:	031
Blank:	Not Subtracted
Dilution Factor:	1
Number of Repeats:	3
Time:	10:29:30 Jul 21 1993
Signal Profile Processing:	Average
Spectral Peak Processing:	Average
Calibration File:	[Untitled]
Calibration:	External Standard

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(SECTION II)

REPLICATES:

Analyte		Intensity	Net Intensity	Concentration	Units
REPEAT: 1					
Sr 88		146	146.0	309.259247	ug/L
Cd 108		996	996.0	373.484833	ug/L
Mo 96		853406	853406.3	9792.434570	ug/L
In 115	<	47972	47971.7		ions/sec
Sn 120		15890	0.331237	99.737946	ug/L
Cs 133		57542	1.199499	95.840805	ug/L
REPEAT: 2					
Sr 88		172	172.0	381.481476	ug/L
Cd 108		926	926.0	346.969696	ug/L
Mo 96	>	2999990	> 2999989.8	> 34426.585938	ug/L
In 115	<	47361	47361.1		ions/sec
Sn 120		15826	0.334156	100.632462	ug/L
Cs 133		56474	1.192412	95.273094	ug/L
REPEAT: 3					
Sr 88		126	126.0	253.703690	ug/L
Cd 108		880	880.0	329.545441	ug/L
Mo 96		858301	858300.6	9848.602539	ug/L
In 115	<	47946	47946.0		ions/sec
Sn 120		16094	0.335669	101.096321	ug/L
Cs 133		57288	1.194844	95.467926	ug/L

MEAN VALUES:

Analyte		Intensity	Net Intensity	Conc.	Units
Sr 88		148	148	314.814789	ug/L
Cd 108		934	934	350.000000	ug/L
Mo 96	>	1570566	1570566	> 18022.541016	ug/L
In 115	<	47760	47760		ions/sec
Sn 120		0.333687	0.333687	100.488914	ug/L
Cs 133		1.195585	1.195585	95.527275	ug/L

STANDARD DEVIATIONS:

Analyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
Sr 88		23.1	23.1	64.069786	ug/L
Cd 108		58.4	58.4	22.125881	ug/L
Mo 96		1237920.1	1237920.1	14206.347656	ug/L
In 115	<	345.6	345.6		ions/sec
Sn 120		0.002251	0.002251	0.689881	ug/L
Cs 133		0.003606	0.003606	0.288857	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

ata Set:	11859-CsSn
a Set Description:	6FR100000
eter File:	CsSn
ample ID:	CCV
ample Description:	
ample Type:	Sample
equence Number:	032
lank:	Not Subtracted
ilution Factor:	1
umber of Repeats:	3
ime:	10:31:58 Jul 21 1993
ignal Profile Processing:	Average
pectral Peak Processing:	Average
alibration File:	[Untitled]
alibration:	External Standard

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(SECTION II)

EPLICATES:

nalyte		Intensity	Net Intensity	Concentration	Units
EPEAT: 1					
r 88		52	52.0	48.148144	ug/L
d 108		182	182.0	65.151512	ug/L
o 96		5284	5284.2	59.401836	ug/L
n 115	<	48695	48694.8		ions/sec
n 120	]	7678	0.157676	46.546154	ug/L
s 133	]	30092	0.617971	49.257584	ug/L
EPEAT: 2					
r 88		52	52.0	48.148144	ug/L
d 108		194	194.0	69.696968	ug/L
o		5529	5529.1	62.211933	ug/L
.5	<	51598	51598.5		ions/sec
n 120	]	7892	0.152950	45.097858	ug/L
s 133	]	30318	0.587575	46.822723	ug/L
EPEAT: 3					
r 88		42	42.0	20.370365	ug/L
d 108		172	172.0	61.363636	ug/L
o 96		5258	5258.0	59.101013	ug/L
n 115	<	51385	51385.4		ions/sec
n 120	]	8438	0.164210	48.548725	ug/L
s 133	]	30196	0.587638	46.827747	ug/L

EAN VALUES:

nalyte		Intensity	Net Intensity	Conc.	Units
r 88		49	49	38.888885	ug/L
d 108		183	183	65.404037	ug/L
o 96		5357	5357	60.238255	ug/L
n 115	<	50560	50560		ions/sec
n 120	]	0.158279	0.158279	46.730915	ug/L
s 133	]	0.597728	0.597728	47.636017	ug/L

TANDARD DEVIATIONS:

nalyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
r 88		5.8	5.8	16.037508	ug/L
d 108		11.0	11.0	4.172402	ug/L
o		149.5	149.5	1.715984	ug/L
.5	<	1618.2	1618.2		ions/sec
n 120	]	0.005654	0.005654	1.732913	ug/L
s 133	]	0.017532	0.017532	1.404363	ug/L

QUANTITATIVE ANALYSIS: COMPREHENSIVE SAMPLE REPORT

Data Set:	11859-CsSn
Data Set Description:	6FR100000
Parameter File:	CsSn
Sample ID:	CCB
Sample Description:	
Sample Type:	Sample
Sequence Number:	033
Blank:	Not Subtracted
Dilution Factor:	1
Number of Repeats:	3
Time:	10:34:22 Jul 21 1993
Signal Profile Processing:	Average
Spectral Peak Processing:	Average
Calibration File:	[Untitled]
Calibration:	External Standard

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(SECTION II)

REPLICATES:

Analyte		Intensity	Net Intensity	Concentration	Units
REPEAT: 1					
Sr 88		32	32.0	-7.407411	ug/L
Cd 108		4	4.0	-2.272726	ug/L
Mo 96		153	153.4	0.521140	ug/L
In 115	<	49306	49305.6		ions/sec
Sn 120		294	0.005963	0.050192	ug/L
Cs 133		52	0.001055	-0.160455	ug/L
REPEAT: 2					
Sr 88		52	52.0	48.148144	ug/L
Cd 108		8	8.0	-0.757574	ug/L
Mo 96		108	107.7	-0.003093	ug/L
In 115	<	50032	50031.9		ions/sec
Sn 120		304	0.006076	0.084920	ug/L
Cs 133		24	4.796944E-04	-0.206512	ug/L
REPEAT: 3					
Sr 88		18	18.0	-46.296299	ug/L
Cd 108		12	12.0	0.757577	ug/L
Mo 96		102	101.7	-0.071864	ug/L
In 115	<	50531	50531.1		ions/sec
Sn 120		244	0.004829	-0.297380	ug/L
Cs 133		38	7.520125E-04	-0.184698	ug/L

MEAN VALUES:

Analyte		Intensity	Net Intensity	Conc.	Units
Sr 88		34	34	-1.851855	ug/L
Cd 108		8	8	-0.757574	ug/L
Mo 96		121	121	0.148728	ug/L
In 115	<	49956	49956		ions/sec
Sn 120		0.005623	0.005623	-0.054089	ug/L
Cs 133		7.621182E-04	7.621182E-04	-0.183888	ug/L

STANDARD DEVIATIONS:

Analyte		Intensity Deviation	Net Deviation	Conc. Deviation	Units
Sr 88		17.1	17.1	47.466682	ug/L
Cd 108		4.0	4.0	1.515152	ug/L
Mo 96		28.3	28.3	0.324346	ug/L
In 115	<	616.6	616.6		ions/sec
Sn 120		6.898190E-04	6.898190E-04	0.211411	ug/L
Cs 133		2.876100E-04	2.876100E-04	0.023039	ug/L

End of analytical run. STM 7/21/93

GRAPHITE FURNACE ANALYSIS SUMMARY

RUST Geotech Inc. Grand Junction, Colorado

ANALYTICAL CONDITIONS (SECTION II)

	Arsenic	Lead	Selenium	Thallium
Sample Volume (µL)	5	5	10	5
Matrix Modifier	20 mg/L Fe	1% $NH_4H_2PO_4$	3000 mg/L Pd	50 mg/L Fe
Modifier Volume (µL)	5	5	5	5
Wavelength (nm)	193.7	283.3	196.0	276.8
Slit Width (nm)	0.7	0.7	2.0	0.7
Integration Time (s)	5	5	5	5
Injection Temperature (°C)	90	90	90	20
Dry Temperature (°C)	120	120	120	110
Dry Ramp Time (s)	1	1	1	1
Dry Hold Time (s)	20	20	20	38
Char Temperature (°C)	300	None Used	1000	None Used
Char Ramp Time (s)	1	—	4	—
Char Hold Time (s)	14	—	15	—
Atomize Temp. (°C)	2100	1700	2200	1750
Atomize Ramp Time (s)	0	0	0	0
omize Hold Time (s)	5	5	5	5
lean Temperature (°C)	2650	2650	2650	2650
Clean Ramp Time (s)	1	1	1	1
Clean Hold Time (s)	4	4	4	4
Per-digestion Spike (µg/L)	40	20	10	50
Analytical Spike (µg/L)	20	20	10	20

Type of background correction: Zeeman (BZ).

Peak area was used for quantification. Concentration data is used to make decisions in the MSA decision tree.

The concentration of the CCV is 50 µg/L.

For the analytical spikes, 5 µL of 20 µg/L standard is pipeted into the furnace with the samples. Five µL of 1% nitric acid is added to the unspiked samples.

The computer that controls the spectrometer calculates spike recoveries for the spiked samples. However, it always uses the actual result obtained for the unspiked sample in the calculation. The EPA CLP SOW says that zero must be used as the unspiked result if the unspiked result is less than the IDL. The computer also es more digits in calculating recoveries than it prints. For these reasons, the spike recovery printed by the nputer often differs from the recovery listed on the analysis run log. In this case, the recovery calculated by the computer is crossed-out and the correct recovery is written on the instrument print-out.

(SECTION II)

TANDARDS PREPARATION LOG SHEET

122 RUST Geotech Inc.

nalyst Mary Damian Preparation Date: 07-22-93 Time: 1400 Page 1 of 1

Standard Name	Components	Volume Used	Final Volume	Diluent
100,100 µg/L Se Standard	I.V. CAL-1A lot H-MEB17014 exp. 11/01/93	0.20 mL	100 mL	1% HNO_3
50 and CCV	100 µg/L Se Standard listed above	0.50 mL	1 mL	1% HNO_3
25	100 µg/L Se Standard listed above	0.25 mL	1 mL	1% HNO_3
0 µg/L Spiking Standard	100 µg/L Se Standard listed above	0.20 ml	1 mL	1% HNO_3
10	100 µg/L Se Standard listed above	0.10 mL	1 mL	1% HNO_3
5 and CRA	100 µg/L Se Standard listed above	0.05 mL	1 mL	1% HNO_3
0, ICB, and CCB	1% HNO_3	--	--	1% HNO_3
CV	ICV-1 (PlasmaChem) lot O2MICV1N exp. 11/30/93	0.20 mL	100 mL	1% HNO_3

ere all automatic pipets calibrated according to QC-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

or ents

s for Inorganic Ventures. Exp. stands for expires.

ectroscopic Analysis by AS-2 R05

lement File: SECLP.GEL Element: Se Wavelength: 196.0
Date: 07/22/93 Time: 14:14 Slit: 2.00 L
Data File: SE23574B.DAT ID/Wt File: 213574.IDW Lamp Current: 0
echnique: HGA Calib. Type: Linear Energy: 43

---

e ID: S0 ug/L Seq. No.: 00001 A/S Pos.: 1 Date: 07/22/93

Replicate 1 Time: 14:16 120
eak Area (A-s): 0.002 Peak Height (A): 0.012
ackground Pk Area (A-s): 0.019 Background Pk Height (A): 0.015
Blank Corrected Pk Area (A-s): 0.002

eplicate 2 Time: 14:18
Peak Area (A-s): 0.001 Peak Height (A): 0.010
ackground Pk Area (A-s): 0.017 Background Pk Height (A): 0.014
lank Corrected Pk Area (A-s): 0.001

ean Pk Area (A-s): 0.001 SD: 0.0011 RSD(%): 78.34

uto-zero performed.

(SECTION II)

---

e ID: S5 ug/L Seq. No.: 00002 A/S Pos.: 2 Date: 07/22/93

eplicate 1 Time: 14:19
eak Area (A-s): 0.014 Peak Height (A): 0.025
ackground Pk Area (A-s): 0.023 Background Pk Height (A): 0.019
lank Corrected Pk Area (A-s): 0.012

cate 2 Time: 14:21
eak Area (A-s): 0.011 Peak Height (A): 0.024
ackground Pk Area (A-s): 0.021 Background Pk Height (A): 0.017
lank Corrected Pk Area (A-s): 0.009

ean Pk Area (A-s): 0.011 SD: 0.0022 RSD(%): 20.18

tandard number 1 applied. [5.0]
orrelation coefficient: 1.00000 Slope: 0.0022

---

e ID: S10 ug/L Seq. No.: 00003 A/S Pos.: 3 Date: 07/22/93

eplicate 1 Time: 14:23
eak Area (A-s): 0.022 Peak Height (A): 0.041
ackground Pk Area (A-s): 0.024 Background Pk Height (A): 0.020
lank Corrected Pk Area (A-s): 0.021
oncentration (ug/L): 9.6

eplicate 2 Time: 14:24
eak Area (A-s): 0.031 Peak Height (A): 0.042
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.018
lank Corrected Pk Area (A-s): 0.030
oncentration (ug/L): 13.9

e Conc (ug/L): 11.7 SD: 3.04 RSD(%): 25.95

tandard number 2 applied. [10.0]

Correlation coefficient: 0.98168 Slope: 0.0025

Se ID: S25 ug/L Seq. No.: 00004 A/S Pos.: 4 Date: 07/22/93

124

Replicate 1 Time: 14:26
Peak Area (A-s): 0.067 Peak Height (A): 0.079
Background Pk Area (A-s): 0.027 Background Pk Height (A): 0.024
Blank Corrected Pk Area (A-s): 0.065
Concentration (ug/L): 26.4

Replicate 2 Time: 14:27
Peak Area (A-s): 0.069 Peak Height (A): 0.090
Background Pk Area (A-s): 0.026 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 27.4

Mean Conc (ug/L): 26.9 SD: 0.69 RSD(%): 2.57

Standard number 3 applied. [25.0]
Correlation coefficient: 0.99771 Slope: 0.0026

(SECTION II)

Se ID: S50 ug/L Seq. No.: 00005 A/S Pos.: 5 Date: 07/22/93

Replicate 1 Time: 14:29
Peak Area (A-s): 0.129 Peak Height (A): 0.163
Background Pk Area (A-s): 0.038 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): 0.127
Concentration (ug/L): 48.4

Replicate 2 Time: 14:31
Peak Area (A-s): 0.134 Peak Height (A): 0.158
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.033
Blank Corrected Pk Area (A-s): 0.132
Concentration (ug/L): 50.4

Mean Conc (ug/L): 49.4 SD: 1.39 RSD(%): 2.81

Standard number 4 applied. [50.0]
Correlation coefficient: 0.99956 Slope: 0.0026

Se ID: S100 ug/L Seq. No.: 00006 A/S Pos.: 6 Date: 07/22/93

Replicate 1 Time: 14:32
Peak Area (A-s): 0.267 Peak Height (A): 0.299
Background Pk Area (A-s): 0.054 Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.266
Concentration (ug/L): 102.1

Replicate 2 Time: 14:34
Peak Area (A-s): 0.260 Peak Height (A): 0.301
Background Pk Area (A-s): 0.061 Background Pk Height (A): 0.056
Blank Corrected Pk Area (A-s): 0.258
Concentration (ug/L): 99.2

Mean Conc (ug/L): 100.7 SD: 2.04 RSD(%): 2.03

tandard number 5 applied. [100.0]
Correlation coefficient: 0.99990 Slope: 0.0026

---

e ID: ICV Seq. No.: 00007 A/S Pos.: 7 Date: 07/22/93

125

eplicate 1 Time: 14:36
eak Area (A-s): 0.170 Peak Height (A): 0.217
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.039
lank Corrected Pk Area (A-s): 0.169
oncentration (ug/L): 64.6

Replicate 2 Time: 14:37
eak Area (A-s): 0.166 Peak Height (A): 0.210
ackground Pk Area (A-s): 0.042 Background Pk Height (A): 0.042
lank Corrected Pk Area (A-s): 0.164
oncentration (ug/L): 62.9

ean Conc (ug/L): 63.7 SD: 1.23 RSD(%): 1.93

C sample is within range 54 - 66

(SECTION II)

---

e ID: ICB Seq. No.: 00008 A/S Pos.: 8 Date: 07/22/93

eplicate 1 Time: 14:39
eak Area (A-s): 0.004 Peak Height (A): 0.019
ackground Pk Area (A-s): 0.022 Background Pk Height (A): 0.018
lank Corrected Pk Area (A-s): 0.002
oncentration (ug/L): 0.8

eplicate 2 Time: 14:41
eak Area (A-s): 0.004 Peak Height (A): 0.015
ackground Pk Area (A-s): 0.013 Background Pk Height (A): 0.014
lank Corrected Pk Area (A-s): 0.002
oncentration (ug/L): 0.8

ean Conc (ug/L): 0.8 SD: 0.01 RSD(%): 1.71

C sample is within range -5 - 5

---

e ID: CRA Seq. No.: 00009 A/S Pos.: 9 Date: 07/22/93

eplicate 1 Time: 14:42
eak Area (A-s): 0.013 Peak Height (A): 0.022
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.016
lank Corrected Pk Area (A-s): 0.012
oncentration (ug/L): 4.6

eplicate 2 Time: 14:44
eak Area (A-s): 0.019 Peak Height (A): 0.025
ackground Pk Area (A-s): 0.016 Background Pk Height (A): 0.015
lank Corrected Pk Area (A-s): 0.018
oncentration (ug/L): 6.8

ean Conc (ug/L): 5.7 SD: 1.56 RSD(%): 27.26

MD 7/22/93

Se ID: CRA Sec. No.: 00010 A/S Pos.: 9 Date: 07/22/93

eplicate 1 Time: 14:45
Pe Area (A-s): 0.012 Peak Height (A): 0.021
Ba round Pk Area (A-s): 0.020 Background Pk Height (A): 0.015
lank Corrected Pk Area (A-s): 0.011
Concentration (ug/L): 4.1

120

eplicate 2 Time: 14:47
eak Area (A-s): 0.013 Peak Height (A): 0.029
Background Pk Area (A-s): 0.020 Background Pk Height (A): 0.015
lank Corrected Pk Area (A-s): 0.011
oncentration (ug/L): 4.3

ean Conc (ug/L): 4.2 SD: 0.18 RSD(%): 4.27

C sample is within range

(SECTION II)

---

e ID: CCV Seq. No.: 00011 A/S Pos.: 39 Date: 07/22/93

eplicate 1 Time: 14:48
eak Area (A-s): 0.138 Peak Height (A): 0.159
ackground Pk Area (A-s): 0.040 Background Pk Height (A): 0.036
lank Corrected Pk Area (A-s): 0.136
oncentration (ug/L): 52.2

eplicate 2 Time: 14:50
e Area (A-s): 0.132 Peak Height (A): 0.154
a round Pk Area (A-s): 0.042 Background Pk Height (A): 0.033
lank Corrected Pk Area (A-s): 0.130
oncentration (ug/L): 49.9

ean Conc (ug/L): 51.0 SD: 1.63 RSD(%): 3.20

C sample is within range 45 - 55

---

e ID: CCB Seq. No.: 00012 A/S Pos.: 40 Date: 07/22/93

eplicate 1 Time: 14:52
eak Area (A-s): 0.005 Peak Height (A): 0.012
ackground Pk Area (A-s): 0.017 Background Pk Height (A): 0.014
lank Corrected Pk Area (A-s): 0.004
oncentration (ug/L): 1.6

eplicate 2 Time: 14:53
eak Area (A-s): 0.000 Peak Height (A): 0.011
ackground Pk Area (A-s): 0.016 Background Pk Height (A): 0.014
lank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.5

ean Conc (ug/L): 0.5 SD: 1.44 RSD(%): 264.09

C mple is within range -5 - 5

Recovery is ~~[illegible]~~ MD 7/22/93 88.0% MD 7/22/93 NOT PART OF THIS SDG

Se ID: CCV Seq. No.: 00025 A/S Pos.: 39 Date: 07/22/93

Replicate 1 Time: 15:29
Peak Area (A-s): 0.133 Peak Height (A): 0.132
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.030
Blank Corrected Pk Area (A-s): 0.132
Concentration (ug/L): 50.3

127

Replicate 2 Time: 15:30
Peak Area (A-s): 0.134 Peak Height (A): 0.139
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.028
Blank Corrected Pk Area (A-s): 0.133
Concentration (ug/L): 50.7

Mean Conc (ug/L): 50.5 SD: 0.28 RSD(%): 0.56

QC sample is within range 45 - 55

(SECTION II)

Se ID: CCB Seq. No.: 00026 A/S Pos.: 40 Date: 07/22/93

Replicate 1 Time: 15:32
Peak Area (A-s): 0.010 Peak Height (A): 0.017
Background Pk Area (A-s): 0.013 Background Pk Height (A): 0.015
Blank Corrected Pk Area (A-s): 0.009
Concentration (ug/L): 3.4

Replicate 2 Time: 15:34
Peak Area (A-s): 0.009 Peak Height (A): 0.013
Background Pk Area (A-s): 0.011 Background Pk Height (A): 0.012
Blank Corrected Pk Area (A-s): 0.008
Concentration (ug/L): 2.9

Mean Conc (ug/L): 3.1 SD: 0.34 RSD(%): 10.97

QC sample is within range -5 - 5

Se ID: 213586D Seq. No.: 00027 A/S Pos.: 32 Date: 07/22/93

Replicate 1 Time: 15:35
Peak Area (A-s): -0.004 Peak Height (A): 0.010
Background Pk Area (A-s): 0.016 Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): -0.006
Concentration (ug/L): -2.1

Replicate 2 Time: 15:37
Peak Area (A-s): 0.001 Peak Height (A): 0.011
Background Pk Area (A-s): 0.014 Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

NOT PART OF THIS SDG

Mean Conc (ug/L): -1.1 SD: 1.41 RSD(%): 124.85

MD 7/22/93

eak Area (A-s): 0.028 Peak Height (A): 0.038
Background Pk Area (A-s): 0.018 Background Pk Height (A): 0.018
lank Corrected Pk Area (A-s): 0.027
oncentration (ug/L): 10.4

120

P. cate 2 Time: 15:51
eak Area (A-s): 0.028 Peak Height (A): 0.039
Background Pk Area (A-s): 0.020 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): 0.026
oncentration (ug/L): 10.1

NOT PART OF THIS SDG

Mean Conc (ug/L): 10.2 SD: 0.21 RSD(%): 2.10

MD 7/22/93

Se ID: CCV Seq. No.: 00032 A/S Pos.: 39 Date: 07/22/93

eplicate 1 Time: 15:52
Peak Area (A-s): 0.128 Peak Height (A): 0.129
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.029
lank Corrected Pk Area (A-s): 0.127
oncentration (ug/L): 48.4

(SECTION II)

eplicate 2 Time: 15:54
eak Area (A-s): 0.130 Peak Height (A): 0.139
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.028
lank Corrected Pk Area (A-s): 0.129
oncentration (ug/L): 49.3

Mean Conc (ug/L): 48.9 SD: 0.65 RSD(%): 1.33

C mple is within range 45 - 55

---

e ID: CCB Seq. No.: 00033 A/S Pos.: 40 Date: 07/22/93

eplicate 1 Time: 15:56
eak Area (A-s): 0.003 Peak Height (A): 0.014
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.015
lank Corrected Pk Area (A-s): 0.001
oncentration (ug/L): 0.6

eplicate 2 Time: 15:57
eak Area (A-s): 0.001 Peak Height (A): 0.010
ackground Pk Area (A-s): 0.017 Background Pk Height (A): 0.013
lank Corrected Pk Area (A-s): -0.000
oncentration (ug/L): -0.2

ean Conc (ug/L): 0.2 SD: 0.51 RSD(%): 256.43

C sample is within range -5 - 5

---

e ID: PBS 213984 Seq. No.: 00034 A/S Pos.: 10 Date: 07/22/93

e cate 1 Time: 15:59
e Area (A-s): 0.001 Peak Height (A): 0.012
ackground Pk Area (A-s): 0.016 Background Pk Height (A): 0.015
lank Corrected Pk Area (A-s): -0.000
oncentration (ug/L): -0.2

eplicate 2 Time: 16:01
Peak Area (A-s): -0.001 Peak Height (A): 0.011
Background Pk Area (A-s): 0.016 Background Pk Height (A): 0.014
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.9

120

ean Conc (ug/L): -0.5 SD: 0.50 RSD(%): 97.40

---

e ID: PBSA213984 Seq. No.: 00035 A/S Pos.: 10 Date: 07/22/93

eplicate 1 Time: 16:03
eak Area (A-s): 0.025 Peak Height (A): 0.036
ackground Pk Area (A-s): 0.016 Background Pk Height (A): 0.015
lank Corrected Pk Area (A-s): 0.024
oncentration (ug/L): 9.1

(SECTION II)

eplicate 2 Time: 16:04
eak Area (A-s): 0.026 Peak Height (A): 0.043
ackground Pk Area (A-s): 0.014 Background Pk Height (A): 0.013
lank Corrected Pk Area (A-s): 0.025
oncentration (ug/L): 9.5

ean Conc (ug/L): 9.3 SD: 0.29 RSD(%): 3.11

ecovery is ~~98.3%~~ 93.0% MD 7/22/93

---

e ID: LCS04 213984 DF5 Seq. No.: 00036 A/S Pos.: 11 Date: 07/22/93

cate 1 Time: 16:06
eak Area (A-s): 0.097 Peak Height (A): 0.100
ackground Pk Area (A-s): 0.039 Background Pk Height (A): 0.025
lank Corrected Pk Area (A-s): 0.096
oncentration (ug/L): 36.6

eplicate 2 Time: 16:07
eak Area (A-s): 0.099 Peak Height (A): 0.092
ackground Pk Area (A-s): 0.042 Background Pk Height (A): 0.027
lank Corrected Pk Area (A-s): 0.098
oncentration (ug/L): 37.3

ean Conc (ug/L): 37.0 SD: 0.48 RSD(%): 1.31

---

e ID: LCS04A213984 DF5 Seq. No.: 00037 A/S Pos.: 11 Date: 07/22/93

eplicate 1 Time: 16:09
eak Area (A-s): 0.121 Peak Height (A): 0.128
ackground Pk Area (A-s): 0.038 Background Pk Height (A): 0.029
lank Corrected Pk Area (A-s): 0.119
oncentration (ug/L): 45.6

eplicate 2 Time: 16:11
eak Area (A-s): 0.122 Peak Height (A): 0.133
ackground Pk Area (A-s): 0.036 Background Pk Height (A): 0.029
lank Corrected Pk Area (A-s): 0.121
oncentration (ug/L): 46.3

Mean Conc (ug/L): 46.0 SD: 0.46 RSD(%): 1.0

Recovery is ~~88.9%~~ MD 7/22/93
90.0%

130

Se ID: 213984 Seq. No.: 00038 A/S Pos.: 12 Date: 07/2

Replicate 1 Time: 16:12
Peak Area (A-s): 0.006 Peak Height (A): 0.014
Background Pk Area (A-s): 0.025 Background Pk Height (A): 0.018
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 1.7

(SECTION II)

Replicate 2 Time: 16:14
Peak Area (A-s): 0.010 Peak Height (A): 0.014
Background Pk Area (A-s): 0.021 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.009
Concentration (ug/L): 3.5

Mean Conc (ug/L): 2.6 SD: 1.25 RSD(%): 48.

Se ID: 213984 A Seq. No.: 00039 A/S Pos.: 12 Date: 07/2

Replicate 1 Time: 16:16
Peak Area (A-s): 0.022 Peak Height (A): 0.034
Background Pk Area (A-s): 0.022 Background Pk Height (A): 0.018
Blank Corrected Pk Area (A-s): 0.021
Concentration (ug/L): 7.9

RSD GREATER THAN 20%

Replicate 2 Time: 16:17
Peak Area (A-s): 0.016 Peak Height (A): 0.023
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.020
Blank Corrected Pk Area (A-s): 0.015
Concentration (ug/L): 5.7

Mean Conc (ug/L): 6.8 SD: 1.54 RSD(%): 22.

Recovery is ~~41.9%~~ MD 7/22/93
68.0%

MD 7/22/93

Se ID: 213984D Seq. No.: 00040 A/S Pos.: 13 Date: 07/

Replicate 1 Time: 16:19
Peak Area (A-s): 0.005 Peak Height (A): 0.012
Background Pk Area (A-s): 0.017 Background Pk Height (A): 0.014
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 1.2

Replicate 2 Time: 16:20
Peak Area (A-s): -0.002 Peak Height (A): 0.011
Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.5

Mean Conc (ug/L): -0.1 SD: 1.89 RSD(%): 13

Peak Area (A-s): 0.001 Peak Height (A): 0.015
Background Pk Area (A-s): 0.016 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

132

F icate 2 Time: 16:34
Peak Area (A-s): 0.003 Peak Height (A): 0.014
Background Pk Area (A-s): 0.017 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.4

Mean Conc (ug/L): 0.1 SD: 0.40 RSD(%): 268.19

DC sample is within range -5 - 5

(SECTION II)

Se ID: 213984 Seq. No.: 00045 A/S Pos.: 12 Date: 07/22/93

Replicate 1 Time: 16:36
Peak Area (A-s): 0.001 Peak Height (A): 0.012
Background Pk Area (A-s): 0.029 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

Replicate 2 Time: 16:37
Peak Area (A-s): 0.011 Peak Height (A): 0.019
Background Pk Area (A-s): 0.025 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): 0.010
Concentration (ug/L): 3.6

Conc (ug/L): 1.8 SD: 2.63 RSD(%): 146.95

Se ID: 213984 A Seq. No.: 00046 A/S Pos.: 12 Date: 07/22/93

Replicate 1 Time: 16:39
Peak Area (A-s): 0.021 Peak Height (A): 0.035
Background Pk Area (A-s): 0.027 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.020
Concentration (ug/L): 7.5

Replicate 2 Time: 16:40
Peak Area (A-s): 0.025 Peak Height (A): 0.039
Background Pk Area (A-s): 0.030 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): 0.023
Concentration (ug/L): 8.9

Mean Conc (ug/L): 8.2 SD: 0.98 RSD(%): 11.95

Recovery is ~~63.8%~~ 82.0% MD 7/22/93

Se ID: 213985 Seq. No.: 00047 A/S Pos.: 15 Date: 07/22/93

Re icate 1 Time: 16:42
P Area (A-s): 0.002 Peak Height (A): 0.016
Background Pk Area (A-s): 0.029 Background Pk Height (A): 0.020
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.3

~~RSD GREATER THAN 20%~~

MD 7/22/93

eplicate 2 Time: 16:44
eak Area (A-s): 0.002 Peak Height (A): 0.014
ackground Pk Area (A-s): 0.028 Background Pk Height (A): 0.019
lank Corrected Pk Area (A-s): 0.001
oncentration (ug/L): 0.4

130

e Conc (ug/L): 0.4 SD: 0.04 RSD(%): 10.06

---

e ID: 213985 A Seq. No.: 00048 A/S Pos.: 15 Date: 07/22/93

eplicate 1 Time: 16:45
eak Area (A-s): 0.018 Peak Height (A): 0.034
ackground Pk Area (A-s): 0.036 Background Pk Height (A): 0.022
lank Corrected Pk Area (A-s): 0.016
oncentration (ug/L): 6.2

(SECTION II)

eplicate 2 Time: 16:47
eak Area (A-s): 0.024 Peak Height (A): 0.034
ackground Pk Area (A-s): 0.031 Background Pk Height (A): 0.022
lank Corrected Pk Area (A-s): 0.023
oncentration (ug/L): 8.7

RSD GREATER THAN 20%

ean Conc (ug/L): 7.5 SD: 1.74 RSD(%): ~~23.35~~

ecovery is ~~71.0%~~ 75.0% MD 7/22/93 MD 7/22/93

---

e ID: 213986 Seq. No.: 00049 A/S Pos.: 16 Date: 07/22/93

eplicate 1 Time: 16:49
eak Area (A-s): 0.002 Peak Height (A): 0.012
ackground Pk Area (A-s): 0.030 Background Pk Height (A): 0.019
lank Corrected Pk Area (A-s): 0.000
oncentration (ug/L): 0.1

eplicate 2 Time: 16:51
eak Area (A-s): -0.001 Peak Height (A): 0.012
ackground Pk Area (A-s): 0.029 Background Pk Height (A): 0.024
lank Corrected Pk Area (A-s): -0.002
oncentration (ug/L): -0.8

ean Conc (ug/L): -0.4 SD: 0.66 RSD(%): 187.03

---

e ID: 213986 A Seq. No.: 00050 A/S Pos.: 16 Date: 07/22/93

eplicate 1 Time: 16:52
eak Area (A-s): 0.026 Peak Height (A): 0.036
ackground Pk Area (A-s): 0.030 Background Pk Height (A): 0.024
lank Corrected Pk Area (A-s): 0.025
oncentration (ug/L): 9.4

eplicate 2 Time: 16:54
eak Area (A-s): 0.029 Peak Height (A): 0.042
ackground Pk Area (A-s): 0.027 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.028
oncentration (ug/L): 10.6

ean Conc (ug/L): 10.0 SD: 0.82 RSD(%): 8.26

Recovery is ~~103.4%~~ MD 7/22/93
100.0%

134

Se ID: 213987 Seq. No.: 00051 A/S Pos.: 17 Date: 07/22/93

eplicate 1
eak Area (A-s): 0.005
Background Pk Area (A-s): 0.026
lank Corrected Pk Area (A-s): 0.004
oncentration (ug/L): 1.5

Time: 16:56
Peak Height (A): 0.013
Background Pk Height (A): 0.020

(SECTION II)

eplicate 2
eak Area (A-s): 0.005
Background Pk Area (A-s): 0.023
lank Corrected Pk Area (A-s): 0.003
oncentration (ug/L): 1.3

Time: 16:57
Peak Height (A): 0.013
Background Pk Height (A): 0.017

ean Conc (ug/L): 1.4 SD: 0.11 RSD(%): 8.20

Se ID: 213987A Seq. No.: 00052 A/S Pos.: 17 Date: 07/22/93

eplicate 1
eak Area (A-s): 0.033
ackground Pk Area (A-s): 0.024
lank Corrected Pk Area (A-s): 0.031
oncentration (ug/L): 11.9

Time: 16:59
Peak Height (A): 0.033
Background Pk Height (A): 0.022

e cate 2
a Area (A-s): 0.024
ackground Pk Area (A-s): 0.025
lank Corrected Pk Area (A-s): 0.023
oncentration (ug/L): 8.6

Time: 17:01
Peak Height (A): 0.037
Background Pk Height (A): 0.018

RSD GREATER THAN 20%

ean Conc (ug/L): 10.3 SD: 2.36 RSD(%): 22.95

ecovery is ~~86.0%~~ MD 7/22/93
103.0%

MD
7/22/93

---

e ID: 213988 Seq. No.: 00053 A/S Pos.: 18 Date: 07/22/93

eplicate 1
eak Area (A-s): 0.004
ackground Pk Area (A-s): 0.023
lank Corrected Pk Area (A-s): 0.002
oncentration (ug/L): 0.9

Time: 17:02
Peak Height (A): 0.012
Background Pk Height (A): 0.019

eplicate 2
eak Area (A-s): -0.002
ackground Pk Area (A-s): 0.030
lank Corrected Pk Area (A-s): -0.003
oncentration (ug/L): -1.2

Time: 17:04
Peak Height (A): 0.010
Background Pk Height (A): 0.020

RSD GREATER THAN 20%

e Conc (ug/L): -0.2 SD: 1.49 RSD(%): 785.55

MD
7/22/93

e ID: 213988A Seq. No.: 00054 A/S Pos.: 18 Date: 07/22/93

eplicate 1 Time: 17:06
eak Area (A-s): 0.018 Peak Height (A): 0.030
ackground Pk Area (A-s): 0.034 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.016
oncentration (ug/L): 6.2

135

eplicate 2 Time: 17:07
eak Area (A-s): 0.024 Peak Height (A): 0.039
ackground Pk Area (A-s): 0.031 Background Pk Height (A): 0.022
lank Corrected Pk Area (A-s): 0.022
oncentration (ug/L): 8.5

RSD GREATER THAN 20%

ean Conc (ug/L): 7.3 SD: 1.59 RSD(%): 21.64

ecovery is ~~75.4%~~ 73.0% MD 7/22/93

(SECTION II) MD 7/22/93

---

e ID: CCV Seq. No.: 00055 A/S Pos.: 39 Date: 07/22/93

eplicate 1 Time: 17:09
eak Area (A-s): 0.136 Peak Height (A): 0.149
ackground Pk Area (A-s): 0.031 Background Pk Height (A): 0.027
lank Corrected Pk Area (A-s): 0.135
oncentration (ug/L): 51.6

eplicate 2 Time: 17:11
eak Area (A-s): 0.130 Peak Height (A): 0.143
ackground Pk Area (A-s): 0.037 Background Pk Height (A): 0.033
lank Corrected Pk Area (A-s): 0.128
oncentration (ug/L): 49.0

ean Conc (ug/L): 50.3 SD: 1.85 RSD(%): 3.67

C sample is within range 45 - 55

---

e ID: CCB Seq. No.: 00056 A/S Pos.: 40 Date: 07/22/93

eplicate 1 Time: 17:12
eak Area (A-s): 0.002 Peak Height (A): 0.016
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.015
lank Corrected Pk Area (A-s): 0.000
oncentration (ug/L): 0.2

eplicate 2 Time: 17:14
eak Area (A-s): 0.011 Peak Height (A): 0.014
ackground Pk Area (A-s): 0.008 Background Pk Height (A): 0.014
lank Corrected Pk Area (A-s): 0.010
oncentration (ug/L): 3.7

ean Conc (ug/L): 1.9 SD: 2.46 RSD(%): 127.63

C ple is within range -5 - 5

ɔe ID: 213985 Seq. No.: 00057 A/S Pos.: 15 Date: 07/22/93

eplicate 1 Time: 17:16
eak Area (A-s): 0.003 Peak Height (A): 0.013
B ground Pk Area (A-s): 0.026 Background Pk Height (A): 0.022
k Corrected Pk Area (A-s): 0.002
oncentration (ug/L): 0.7

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Replicate 2 Time: 17:17
eak Area (A-s): 0.001 Peak Height (A): 0.012
background Pk Area (A-s): 0.026 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.2

(SECTION III)

Mean Conc (ug/L): 0.2 SD: 0.67 RSD(%): 269.71

Se ID: 213985 A Seq. No.: 00058 A/S Pos.: 15 Date: 07/22/93

eplicate 1 Time: 17:19
eak Area (A-s): 0.031 Peak Height (A): 0.040
ackground Pk Area (A-s): 0.023 Background Pk Height (A): 0.019
lank Corrected Pk Area (A-s): 0.030
oncentration (ug/L): 11.5

eplicate 2 Time: 17:21
eak Area (A-s): 0.025 Peak Height (A): 0.035
ackground Pk Area (A-s): 0.026 Background Pk Height (A): 0.019
lank Corrected Pk Area (A-s): 0.023
ntration (ug/L): 8.9

Mean Conc (ug/L): 10.2 SD: 1.80 RSD(%): 17.64

ecovery is ~~55.7%~~ 102.0% → 7/22/93

---

e ID: 213987 Seq. No.: 00059 A/S Pos.: 17 Date: 07/22/93

eplicate 1 Time: 17:23
eak Area (A-s): 0.006 Peak Height (A): 0.012
ackground Pk Area (A-s): 0.024 Background Pk Height (A): 0.017
lank Corrected Pk Area (A-s): 0.004
oncentration (ug/L): 1.6

eplicate 2 Time: 17:24
eak Area (A-s): 0.001 Peak Height (A): 0.014
ackground Pk Area (A-s): 0.031 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): -0.000
oncentration (ug/L): -0.1

ean Conc (ug/L): 0.8 SD: 1.21 RSD(%): 158.71

---

e ID: 213987 A Seq. No.: 00060 A/S Pos.: 17 Date: 07/22/93

e, cate 1 Time: 17:26
eak Area (A-s): 0.027 Peak Height (A): 0.036
ackground Pk Area (A-s): 0.029 Background Pk Height (A): 0.021

lank Corrected Pk Area (A-s): 0.026
oncentration (ug/L): 9.9

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eplicate 2 Time: 17:28
eak Area (A-s): 0.027 Peak Height (A): 0.038
a round Pk Area (A-s): 0.023 Background Pk Height (A): 0.017
i Corrected Pk Area (A-s): 0.026
oncentration (ug/L): 9.8

ean Conc (ug/L): 9.8 SD: 0.08 RSD(%): 0.81

ecovery is ~~99.6%~~ 98.0% MD 7/22/93

(SECTION II)

---

e ID: 213988 Seq. No.: 00061 A/S Pos.: 18 Date: 07/22/93

eplicate 1 Time: 17:29
eak Area (A-s): 0.001 Peak Height (A): 0.014
ackground Pk Area (A-s): 0.030 Background Pk Height (A): 0.020
lank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.2

eplicate 2 Time: 17:31
eak Area (A-s): 0.005 Peak Height (A): 0.013
ackground Pk Area (A-s): 0.029 Background Pk Height (A): 0.018
lank Corrected Pk Area (A-s): 0.004
oncentration (ug/L): 1.3

ean Conc (ug/L): 0.6 SD: 1.11 RSD(%): 199.04

---

e ID: 213988 A Seq. No.: 00062 A/S Pos.: 18 Date: 07/22/93

eplicate 1 Time: 17:33
eak Area (A-s): 0.024 Peak Height (A): 0.040
ackground Pk Area (A-s): 0.033 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.022
oncentration (ug/L): 8.5

eplicate 2 Time: 17:34
eak Area (A-s): 0.028 Peak Height (A): 0.033
ackground Pk Area (A-s): 0.026 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.027
oncentration (ug/L): 10.3

ean Conc (ug/L): 9.4 SD: 1.24 RSD(%): 13.18

ecovery is ~~88.5%~~ 94.0% MD 7/22/93

---

e ID: 213989 Seq. No.: 00063 A/S Pos.: 19 Date: 07/22/93

eplicate 1 Time: 17:36
eak Area (A-s): 0.005 Peak Height (A): 0.012
ackground Pk Area (A-s): 0.023 Background Pk Height (A): 0.020
l Corrected Pk Area (A-s): 0.004
oncentration (ug/L): 1.4

eplicate 2 Time: 17:38

Peak Area (A-s): 0.002 Peak Height (A): 0.011
Background Pk Area (A-s): 0.029 Background Pk Height (A): 0.020
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.2

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M Conc (ug/L): 0.8 SD: 0.84 RSD(%): 101.59

Se ID: 213989A Seq. No.: 00064 A/S Pos.: 19 Date: 07/22/93

Replicate 1 Time: 17:39
Peak Area (A-s): 0.023 Peak Height (A): 0.038
Background Pk Area (A-s): 0.026 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.022
Concentration (ug/L): 8.3

(SECTION II)

Replicate 2 Time: 17:41
Peak Area (A-s): 0.024 Peak Height (A): 0.040
Background Pk Area (A-s): 0.031 Background Pk Height (A): 0.018
Blank Corrected Pk Area (A-s): 0.023
Concentration (ug/L): 8.8

Mean Conc (ug/L): 8.5 SD: 0.31 RSD(%): 3.66

Recovery is ~~77.0%~~ 85.0% MD 7/22/93

---

e ID: CCV Seq. No.: 00065 A/S Pos.: 39 Date: 07/22/93

Replicate 1 Time: 17:43
Peak Area (A-s): 0.128 Peak Height (A): 0.151
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.028
Blank Corrected Pk Area (A-s): 0.126
Concentration (ug/L): 48.3

Replicate 2 Time: 17:44
Peak Area (A-s): 0.135 Peak Height (A): 0.149
Background Pk Area (A-s): 0.032 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): 0.134
Concentration (ug/L): 51.1

Mean Conc (ug/L): 49.7 SD: 1.96 RSD(%): 3.95

C sample is within range 45 - 55

---

e ID: CCB Seq. No.: 00066 A/S Pos.: 40 Date: 07/22/93

Replicate 1 Time: 17:46
Peak Area (A-s): 0.002 Peak Height (A): 0.017
Background Pk Area (A-s): 0.018 Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.4

Replicate 2 Time: 17:48
Peak Area (A-s): -0.000 Peak Height (A): 0.011
Background Pk Area (A-s): 0.018 Background Pk Height (A): 0.014
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.6

Mean Conc (ug/L): -0.1 SD: 0.71 RSD(%): 536.91

QC sample is within range -5 - 5

End analysis sum. MD 7/22/93

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(SECTION II)

TANDARDS PREPARATION LOG SHEET (SECTION II) 140 RUST Geotech Inc.

nalyst Mary Dennison Preparation Date: 07-26-93 Time: 1100 Page 1 of 1

Standard Name	Components	Volume Used	Final Volume	Diluent
100, 100 µg/L As Standard	I.V. CAL-1A lot H-MEB17014 exp. 11/01/93	0.20 mL	100 mL	1% HNO_3
75	100 µg/L As Standard listed above	0.75 mL	1 mL	1% HNO_3
50 and CCV	100 µg/L As Standard listed above	0.50 mL	1 mL	1% HNO_3
25	100 µg/L As Standard listed above	0.25 mL	1 mL	1% HNO_3
µg/L Spiking Standard	100 µg/L As Standard listed above	0.20 mL	1 mL	1% HNO_3
0 and CRA	100 µg/L As Standard listed above	0.10 mL	1 mL	1% HNO_3
, Calibration Blank and CCB	1% HNO_3	--	--	1% HNO_3
V	ICV-1 (PlasmaChem) lot O2MICV1N exp. 11/30/93	0.20 mL	100 mL	1% HNO_3

re all automatic pipets calibrated according to QC-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

or ents

s for Inorganic Ventures. Exp. stands for expires.

ectroscopic Analysis by AS-2 R05

lement File: ASCLP.GEL Element: As Wavelength: 193.7
ate: 07/26/93 Time: 11:14 Slit: 0.70 L
ata File: AS13491D.DAT ID/Wt File: 213491A.IDW Lamp Current: 0
e ique: HGA Calib. Type: Linear Energy: 41

s ID: S0 ug/L Seq. No.: 00001 A/S Pos.: 1 Date: 07/26/93

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eplicate 1 Time: 11:15
eak Area (A-s): 0.001 Peak Height (A): 0.016
ackground Pk Area (A-s): 0.015 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.3

(SECTION II)

eplicate 2 Time: 11:17
eak Area (A-s): 0.001 Peak Height (A): 0.012
ackground Pk Area (A-s): 0.012 Background Pk Height (A): 0.023
lank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.6

ean Conc (ug/L): -0.5 SD: 0.25 RSD(%): 54.77

uto-zero performed.

s ID: S10 ug/L Seq. No.: 00002 A/S Pos.: 2 Date: 07/26/93

eplicate 1 Time: 11:19
ea rea (A-s): 0.020 Peak Height (A): 0.029
a ound Pk Area (A-s): 0.018 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.019
oncentration (ug/L): 9.7

eplicate 2 Time: 11:20
eak Area (A-s): 0.030 Peak Height (A): 0.031
ckground Pk Area (A-s): 0.015 Background Pk Height (A): 0.020
lank Corrected Pk Area (A-s): 0.029
oncentration (ug/L): 14.6

ean Conc (ug/L): 12.2 SD: 3.49 RSD(%): 28.69

andard number 1 applied. [10.0]
orrelation coefficient: 1.00000 Slope: 0.0024

s ID: S25 ug/L Seq. No.: 00003 A/S Pos.: 3 Date: 07/26/93

eplicate 1 Time: 11:22
eak Area (A-s): 0.052 Peak Height (A): 0.066
ckground Pk Area (A-s): 0.022 Background Pk Height (A): 0.024
lank Corrected Pk Area (A-s): 0.051
oncentration (ug/L): 21.2

er ate 2 Time: 11:23
ea rea (A-s): 0.055 Peak Height (A): 0.063
ckground Pk Area (A-s): 0.012 Background Pk Height (A): 0.023
ank Corrected Pk Area (A-s): 0.054
oncentration (ug/L): 22.2

ean Conc (ug/L): 21.7 SD: 0.72 RSD(%): 3.31

tandard number 2 applied. [25.0]
orrelation coefficient: 0.99157 Slope: 0.0021

(SECTION II)

---

s ID: S50 ug/L Seq. No.: 00004 A/S Pos.: 4 Date: 07/26/93

142

eplicate 1 Time: 11:25
eak Area (A-s): 0.095 Peak Height (A): 0.124
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.094
oncentration (ug/L): 44.0

eplicate 2 Time: 11:26
eak Area (A-s): 0.097 Peak Height (A): 0.125
ackground Pk Area (A-s): 0.022 Background Pk Height (A): 0.025
lank Corrected Pk Area (A-s): 0.096
oncentration (ug/L): 44.6

ean Conc (ug/L): 44.3 SD: 0.45 RSD(%): 1.02

tandard number 3 applied. [50.0]
orrelation coefficient: 0.99343 Slope: 0.0020

---

s ID: S75 ug/L Seq. No.: 00005 A/S Pos.: 5 Date: 07/26/93

eplicate 1 Time: 11:28
ea Area (A-s): 0.145 Peak Height (A): 0.175
ackground Pk Area (A-s): 0.022 Background Pk Height (A): 0.024
lank Corrected Pk Area (A-s): 0.144
oncentration (ug/L): 73.4

eplicate 2 Time: 11:30
eak Area (A-s): 0.152 Peak Height (A): 0.176
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.018
lank Corrected Pk Area (A-s): 0.151
oncentration (ug/L): 77.0

ean Conc (ug/L): 75.2 SD: 2.54 RSD(%): 3.37

tandard number 4 applied. [75.0]
orrelation coefficient: 0.99781 Slope: 0.0020

---

s ID: S100 ug/L Seq. No.: 00006 A/S Pos.: 6 Date: 07/26/93

eplicate 1 Time: 11:31
eak Area (A-s): 0.204 Peak Height (A): 0.258
ackground Pk Area (A-s): 0.022 Background Pk Height (A): 0.023
lank Corrected Pk Area (A-s): 0.204
oncentration (ug/L): 103.5

eplicate 2 Time: 11:33
eak Area (A-s): 0.210 Peak Height (A): 0.249
ackground Pk Area (A-s): 0.016 Background Pk Height (A): 0.022
lank Corrected Pk Area (A-s): 0.209
oncentration (ug/L): 106.2

ean Conc (ug/L): 104.8 SD: 1.91 RSD(%): 1.82

tandard number 5 applied. [100.0]
orrelation coefficient: 0.99802 Slope: 0.0020 (SECTION II)

---

s ID: ICV Seq. No.: 00007 A/S Pos.: 7 Date: 07/26/93

143

eplicate 1 Time: 11:35
eak Area (A-s): 0.133 Peak Height (A): 0.145
ackground Pk Area (A-s): 0.017 Background Pk Height (A): 0.023
lank Corrected Pk Area (A-s): 0.132
oncentration (ug/L): 65.3

eplicate 2 Time: 11:36
eak Area (A-s): 0.127 Peak Height (A): 0.154
ackground Pk Area (A-s): 0.022 Background Pk Height (A): 0.022
lank Corrected Pk Area (A-s): 0.127
oncentration (ug/L): 62.7

ean Conc (ug/L): 64.0 SD: 1.81 RSD(%): 2.82

C sample is within range 54 - 66

---

s ID: ICB Seq. No.: 00008 A/S Pos.: 8 Date: 07/26/93

eplicate 1 Time: 11:38
eak Area (A-s): -0.008 Peak Height (A): 0.012
ar round Pk Area (A-s): 0.020 Background Pk Height (A): 0.024
l Corrected Pk Area (A-s): -0.008
oncentration (ug/L): -4.2

eplicate 2 Time: 11:39
eak Area (A-s): 0.002 Peak Height (A): 0.015
ackground Pk Area (A-s): 0.012 Background Pk Height (A): 0.023
lank Corrected Pk Area (A-s): 0.001
oncentration (ug/L): 0.5

ean Conc (ug/L): -1.8 SD: 3.33 RSD(%): 184.33

C sample is within range -10 - 10

---

s ID: CRA Seq. No.: 00009 A/S Pos.: 9 Date: 07/26/93

eplicate 1 Time: 11:40
eak Area (A-s): 0.020 Peak Height (A): 0.033
ackground Pk Area (A-s): 0.009 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.019
oncentration (ug/L): 9.5

eplicate 2 Time: 11:42
eak Area (A-s): 0.018 Peak Height (A): 0.031
ac ound Pk Area (A-s): 0.017 Background Pk Height (A): 0.022
l Corrected Pk Area (A-s): 0.017
oncentration (ug/L): 8.5

ean Conc (ug/L): 9.0 SD: 0.75 RSD(%): 8.29

C sample is within range

(SECTION II)

---

s ID: CCV Seq. No.: 00010 A/S Pos.: 39 Date: 07/26/93

R icate 1 Time: 11:43
Area (A-s): 0.111 Peak Height (A): 0.142
ackground Pk Area (A-s): 0.016 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.110
oncentration (ug/L): 54.3

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Replicate 2 Time: 11:45
Peak Area (A-s): 0.113 Peak Height (A): 0.141
ackground Pk Area (A-s): 0.019 Background Pk Height (A): 0.024
Blank Corrected Pk Area (A-s): 0.112
oncentration (ug/L): 55.7

ean Conc (ug/L): 55.0 SD: 0.98 RSD(%): 1.78

C sample is out of range 45 - 55

---

s ID: CCB Seq. No.: 00011 A/S Pos.: 40 Date: 07/26/93

eplicate 1 Time: 11:47
eak Area (A-s): 0.005 Peak Height (A): 0.015
ackground Pk Area (A-s): 0.014 Background Pk Height (A): 0.023
lank Corrected Pk Area (A-s): 0.004
oncentration (ug/L): 2.2

e cate 2 Time: 11:48
e Area (A-s): -0.002 Peak Height (A): 0.014
ackground Pk Area (A-s): 0.014 Background Pk Height (A): 0.026
lank Corrected Pk Area (A-s): -0.003
oncentration (ug/L): -1.5

ean Conc (ug/L): 0.3 SD: 2.59 RSD(%): 749.78

C sample is within range -10 - 10

Sample run by MSA

s ID: 213507 O DF1.1 Seq. No.: 00013 A/S Pos.: 10 Date: 07/26/93

eplicate 1 Time: 11:51
eak Area (A-s): 0.010 Peak Height (A): 0.033
ackground Pk Area (A-s): 0.065 Background Pk Height (A): 0.109
lank Corrected Pk Area (A-s): 0.009
oncentration (ug/L): 4.6

NOT PART OF THIS SDG

Refer to MSA Data Summary

---

s ID: 213507 1 DF1.1 Seq. No.: 00014 A/S Pos.: 11 Date: 07/26/93

50ug/L As std

eplicate 1 Time: 11:52
eak Area (A-s): 0.033 Peak Height (A): 0.053
ar round Pk Area (A-s): 0.064 Background Pk Height (A): 0.112
l Corrected Pk Area (A-s): 0.032
o ntration (ug/L): 15.8

MD
7/26/93

As ID: 213512 3 DF1.1 Seq. No.: 00028 A/S Pos.: 25 Date: 07/26/93

150 ug/L As std

Replicate 1 Time: 12:15
Peak Area (A-s): 0.047 Peak Height (A): 0.080
B ground Pk Area (A-s): 0.061 Background Pk Height (A): 0.104
B k Corrected Pk Area (A-s): 0.046
Concentration (ug/L): 22.7

(SECTION II)

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Sample run by MSA

As ID: 213513 DF1.1 Seq. No.: 00029 A/S Pos.: 26 Date: 07/26/93

Replicate 1 Time: 12:16
Peak Area (A-s): 0.022 Peak Height (A): 0.033
Background Pk Area (A-s): 0.059 Background Pk Height (A): 0.096
Blank Corrected Pk Area (A-s): 0.021
Concentration (ug/L): 10.2

Refer to MSA Data Summary

As ID: 213513 1 DF1.1 Seq. No.: 00030 A/S Pos.: 27 Date: 07/26/93

50 ug/L As std

Replicate 1 Time: 12:18
Peak Area (A-s): 0.024 Peak Height (A): 0.043
Background Pk Area (A-s): 0.058 Background Pk Height (A): 0.095
Blank Corrected Pk Area (A-s): 0.023
Concentration (ug/L): 11.3

NOT PART OF THIS SDG

As ID: 213513 2 DF1.1 Seq. No.: 00031 A/S Pos.: 28 Date: 07/26/93

100 ug/L As std

Replicate 1 Time: 12:19
Peak Area (A-s): 0.034 Peak Height (A): 0.055
Background Pk Area (A-s): 0.070 Background Pk Height (A): 0.104
Blank Corrected Pk Area (A-s): 0.033
Concentration (ug/L): 16.3

s ID: 213513 3 DF1.1 Seq. No.: 00032 A/S Pos.: 29 Date: 07/26/93

150 ug/L As std

Replicate 1 Time: 12:21
Peak Area (A-s): 0.048 Peak Height (A): 0.072
Background Pk Area (A-s): 0.064 Background Pk Height (A): 0.105
Blank Corrected Pk Area (A-s): 0.047
Concentration (ug/L): 23.5

17D
7/26/93

s ID: CCV Seq. No.: 00033 A/S Pos.: 39 Date: 07/26/93

Replicate 1 Time: 12:23
Peak Area (A-s): 0.107 Peak Height (A): 0.122
Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.107
Concentration (ug/L): 52.8

Replicate 2 Time: 12:24
Peak Area (A-s): 0.102 Peak Height (A): 0.120
Background Pk Area (A-s): 0.016 Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): 0.101
Concentration (ug/L): 50.1

an Conc (ug/L): 51.4 SD: 1.93 RSD(%): 3.75

sample is within range 45 - 55

(SECTION II)

ID: CCB Seq. No.: 00034 A/S Pos.: 40 Date: 07/26/93

140

plicate 1 Time: 12:26
ak Area (A-s): -0.006 Peak Height (A): 0.011
ckground Pk Area (A-s): 0.021 Background Pk Height (A): 0.022
ank Corrected Pk Area (A-s): -0.007
ncentration (ug/L): -3.5

plicate 2 Time: 12:28
ak Area (A-s): -0.005 Peak Height (A): 0.012
ckground Pk Area (A-s): 0.018 Background Pk Height (A): 0.024
ank Corrected Pk Area (A-s): -0.006
ncentration (ug/L): -3.0

an Conc (ug/L): -3.2 SD: 0.38 RSD(%): 11.80

sample is within range -10 - 10

ID: BS-5 Seq. No.: 00035 A/S Pos.: 10 Date: 07/26/93

plicate 1 Time: 12:34
ak Area (A-s): 0.011 Peak Height (A): 0.027
ckground Pk Area (A-s): 0.067 Background Pk Height (A): 0.112
ank Corrected Pk Area (A-s): 0.010
ncentration (ug/L): 5.1

NOT PART OF THIS SDG

ID: BS-5 Seq. No.: 00036 A/S Pos.: 11 Date: 07/26/93

plicate 1 Time: 12:36
ak Area (A-s): 0.025 Peak Height (A): 0.051
ckground Pk Area (A-s): 0.066 Background Pk Height (A): 0.121
ank Corrected Pk Area (A-s): 0.024
ncentration (ug/L): 11.9

Wrong samples in autosampler

ID: BS-5 Seq. No.: 00037 A/S Pos.: 12 Date: 07/26/93

plicate 1 Time: 12:37
ak Area (A-s): 0.027 Peak Height (A): 0.057
ckground Pk Area (A-s): 0.082 Background Pk Height (A): 0.125
ank Corrected Pk Area (A-s): 0.026
ncentration (ug/L): 13.0

ID: BS-5 Seq. No.: 00038 A/S Pos.: 13 Date: 07/26/93

plicate 1 Time: 12:39
ak Area (A-s): 0.036 Peak Height (A): 0.069
ckground Pk Area (A-s): 0.079 Background Pk Height (A): 0.127
ank Corrected Pk Area (A-s): 0.035
ncentration (ug/L): 17.2

MD
7/26/93

As ID: CCV Seq. No.: 00053 A/S Pos.: 39 Date: 07/26/93

'eplicate 1 Time: 13:01
Area (A-s): 0.100 Peak Height (A): 0.117
Background Pk Area (A-s): 0.024 Background Pk Height (A): 0.025
lank Corrected Pk Area (A-s): 0.099
Concentration (ug/L): 48.9

14?

eplicate 2 Time: 13:03
eak Area (A-s): 0.107 Peak Height (A): 0.121
Background Pk Area (A-s): 0.019 Background Pk Height (A): 0.024
lank Corrected Pk Area (A-s): 0.107
oncentration (ug/L): 52.8

Mean Conc (ug/L): 50.8 SD: 2.80 RSD(%): 5.50

C sample is within range 45 - 55

(SECTION II)

s ID: CCB Seq. No.: 00054 A/S Pos.: 40 Date: 07/26/93

eplicate 1 Time: 13:04
eak Area (A-s): 0.008 Peak Height (A): 0.014
Background Pk Area (A-s): 0.018 Background Pk Height (A): 0.025
lank Corrected Pk Area (A-s): 0.007
oncentration (ug/L): 3.6

eplicate 2 Time: 13:06
Area (A-s): 0.005 Peak Height (A): 0.012
round Pk Area (A-s): 0.017 Background Pk Height (A): 0.027
lank Corrected Pk Area (A-s): 0.004
oncentration (ug/L): 1.8

ean Conc (ug/L): 2.7 SD: 1.24 RSD(%): 45.43

C sample is within range -10 - 10

Sample run by MSA

s ID: BS-5 0 DF10 Seq. No.: 00055 A/S Pos.: 10 Date: 07/26/93

eplicate 1 Time: 13:08
eak Area (A-s): 0.041 Peak Height (A): 0.059
ackground Pk Area (A-s): 0.020 Background Pk Height (A): 0.022
lank Corrected Pk Area (A-s): 0.040
oncentration (ug/L): 20.0

NOT PART OF THIS SDG

Refer to MSA Data Summary

s ID: BS-5 1 DF10 Seq. No.: 00056 A/S Pos.: 11 Date: 07/26/93

100 ug/L As std

eplicate 1 Time: 13:09
eak Area (A-s): 0.048 Peak Height (A): 0.086
ackground Pk Area (A-s): 0.029 Background Pk Height (A): 0.028
lank Corrected Pk Area (A-s): 0.047
o ntration (ug/L): 23.3

s ID: BS-5 2 DF10 Seq. No.: 00057 A/S Pos.: 12 Date: 07/26/93

200 ug/L As std

MD
7/26/93

Background Pk Area (A-s): 0.026 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.102
Concentration (ug/L): 50.5

NOT PART OF THIS SDG

MD 7/26/93

ID: CCV Seq. No.: 00071 A/S Pos.: 39 Date: 07/26/93

140

Replicate 1 Time: 13:34
Peak Area (A-s): 0.111 Peak Height (A): 0.130
Background Pk Area (A-s): 0.014 Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): 0.110
Concentration (ug/L): 54.5

(SECTION II)

Replicate 2 Time: 13:36
Peak Area (A-s): 0.103 Peak Height (A): 0.119
Background Pk Area (A-s): 0.024 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.102
Concentration (ug/L): 50.5

Mean Conc (ug/L): 52.5 SD: 2.83 RSD(%): 5.39

QC sample is within range 45 - 55

ID: CCB Seq. No.: 00072 A/S Pos.: 40 Date: 07/26/93

Replicate 1 Time: 13:37
Peak Area (A-s): 0.002 Peak Height (A): 0.013
Background Pk Area (A-s): 0.015 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.7

Replicate 2 Time: 13:39
Peak Area (A-s): -0.000 Peak Height (A): 0.011
Background Pk Area (A-s): 0.015 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.5

Mean Conc (ug/L): 0.1 SD: 0.80 RSD(%): 897.24

QC sample is within range -10 - 10

ID: PBS 213984 Seq. No.: 00073 A/S Pos.: 10 Date: 07/26/93

Replicate 1 Time: 13:41
Peak Area (A-s): -0.004 Peak Height (A): 0.012
Background Pk Area (A-s): 0.017 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -2.3

Replicate 2 Time: 13:42
Peak Area (A-s): 0.004 Peak Height (A): 0.014
Background Pk Area (A-s): 0.009 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 1.5

Mean Conc (ug/L): -0.4 SD: 2.68 RSD(%): 621.86

As ID: PBSA213984 Seq. No.: 00074 A/S Pos.: 10 Date: 07/26/93

eplicate 1 Time: 13:44
Area (A-s): 0.045 Peak Height (A): 0.048
ground Pk Area (A-s): 0.013 Background Pk Height (A): 0.019
lank Corrected Pk Area (A-s): 0.044
oncentration (ug/L): 21.9

eplicate 2 Time: 13:45
eak Area (A-s): 0.038 Peak Height (A): 0.051
Background Pk Area (A-s): 0.017 Background Pk Height (A): 0.020
lank Corrected Pk Area (A-s): 0.037
oncentration (ug/L): 18.5

140

(SECTION III)

ean Conc (ug/L): 20.2 SD: 2.45 RSD(%): 12.15

ecovery is ~~100.2%~~ MD 7/26/93
101.0%

s ID: LCS04 213984 DF100 Seq. No.: 00075 A/S Pos.: 11 Date: 07/26/93

eplicate 1 Time: 13:47
eak Area (A-s): 0.108 Peak Height (A): 0.111
Background Pk Area (A-s): 0.015 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.107
oncentration (ug/L): 52.8

eplicate 2 Time: 13:48
Area (A-s): 0.096 Peak Height (A): 0.116
round Pk Area (A-s): 0.019 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.096
oncentration (ug/L): 47.4

ean Conc (ug/L): 50.1 SD: 3.87 RSD(%): 7.72

s ID: LCS04A213984 DF100 Seq. No.: 00076 A/S Pos.: 11 Date: 07/26/93

eplicate 1 Time: 13:50
eak Area (A-s): 0.132 Peak Height (A): 0.148
Background Pk Area (A-s): 0.025 Background Pk Height (A): 0.023
lank Corrected Pk Area (A-s): 0.131
oncentration (ug/L): 64.9

eplicate 2 Time: 13:52
eak Area (A-s): 0.131 Peak Height (A): 0.148
Background Pk Area (A-s): 0.021 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.130
oncentration (ug/L): 64.6

ean Conc (ug/L): 64.7 SD: 0.23 RSD(%): 0.36

ecovery is ~~79.1%~~ MD 7/26/93
73.0%

s ID: 213984 Seq. No.: 00077 A/S Pos.: 12 Date: 07/26/93

eplicate 1 Time: 13:53

eak Area (A-s): 0.019 Peak Height (A): 0.035
ackground Pk Area (A-s): 0.033 Background Pk Height (A): 0.041
lank Corrected Pk Area (A-s): 0.018
oncentration (ug/L): 9.0

150

ate 2 Time: 13:55
eak Area (A-s): 0.015 Peak Height (A): 0.027
ackground Pk Area (A-s): 0.035 Background Pk Height (A): 0.047
lank Corrected Pk Area (A-s): 0.015
oncentration (ug/L): 7.2

(SECTION II)

ean Conc (ug/L): 8.1 SD: 1.28 RSD(%): 15.77

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s ID: 213984A Seq. No.: 00078 A/S Pos.: 12 Date: 07/26/93

plicate 1 Time: 13:56
eak Area (A-s): 0.054 Peak Height (A): 0.093
ackground Pk Area (A-s): 0.037 Background Pk Height (A): 0.051
ank Corrected Pk Area (A-s): 0.053
oncentration (ug/L): 26.4

plicate 2 Time: 13:58
ak Area (A-s): 0.050 Peak Height (A): 0.091
ackground Pk Area (A-s): 0.041 Background Pk Height (A): 0.050
ank Corrected Pk Area (A-s): 0.049
oncentration (ug/L): 24.4

ean Conc (ug/L): 25.4 SD: 1.44 RSD(%): 5.66

ry is ~~86.3%~~ 86.5% mD 7/26/93

ID: 213984D Seq. No.: 00079 A/S Pos.: 13 Date: 07/26/93

plicate 1 Time: 13:59
ak Area (A-s): 0.010 Peak Height (A): 0.029
ackground Pk Area (A-s): 0.036 Background Pk Height (A): 0.033
lank Corrected Pk Area (A-s): 0.010
oncentration (ug/L): 4.7

plicate 2 Time: 14:01
ak Area (A-s): 0.012 Peak Height (A): 0.023
ckground Pk Area (A-s): 0.029 Background Pk Height (A): 0.034
lank Corrected Pk Area (A-s): 0.012
oncentration (ug/L): 5.7

ean Conc (ug/L): 5.2 SD: 0.70 RSD(%): 13.41

ID: 213984DA Seq. No.: 00080 A/S Pos.: 13 Date: 07/26/93

plicate 1 Time: 14:02
ak Area (A-s): 0.057 Peak Height (A): 0.086
ackground Pk Area (A-s): 0.028 Background Pk Height (A): 0.035
Corrected Pk Area (A-s): 0.056
ncentration (ug/L): 28.0

plicate 2 Time: 14:04

eak Area (A-s): 0.053 Peak Height (A): 0.092
ackground Pk Area (A-s): 0.033 Background Pk Height (A): 0.044
lank Corrected Pk Area (A-s): 0.052
entration (ug/L): 25.8

151

Conc (ug/L): 26.9 SD: 1.50 RSD(%): 5.58

ecovery is 108.5%

(SECTION II)

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s ID: 213984S Seq. No.: 00081 A/S Pos.: 14 Date: 07/26/93

plicate 1 Time: 14:06
ak Area (A-s): 0.096 Peak Height (A): 0.158
ackground Pk Area (A-s): 0.043 Background Pk Height (A): 0.050
ank Corrected Pk Area (A-s): 0.095
oncentration (ug/L): 47.1

plicate 2 Time: 14:07
ak Area (A-s): 0.097 Peak Height (A): 0.157
ackground Pk Area (A-s): 0.040 Background Pk Height (A): 0.050
lank Corrected Pk Area (A-s): 0.096
oncentration (ug/L): 47.8

ean Conc (ug/L): 47.4 SD: 0.49 RSD(%): 1.03

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s ID: CCV Seq. No.: 00082 A/S Pos.: 39 Date: 07/26/93

ate 1 Time: 14:09
ea Area (A-s): 0.107 Peak Height (A): 0.124
ackground Pk Area (A-s): 0.023 Background Pk Height (A): 0.026
ank Corrected Pk Area (A-s): 0.106
oncentration (ug/L): 52.5

plicate 2 Time: 14:10
ak Area (A-s): 0.107 Peak Height (A): 0.123
ackground Pk Area (A-s): 0.019 Background Pk Height (A): 0.028
lank Corrected Pk Area (A-s): 0.107
oncentration (ug/L): 52.8

ean Conc (ug/L): 52.6 SD: 0.20 RSD(%): 0.38

sample is within range 45 - 55

ID: CCB Seq. No.: 00083 A/S Pos.: 40 Date: 07/26/93

plicate 1 Time: 14:12
ak Area (A-s): 0.004 Peak Height (A): 0.016
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.026
lank Corrected Pk Area (A-s): 0.003
ncentration (ug/L): 1.4

ate 2 Time: 14:14
a area (A-s): -0.005 Peak Height (A): 0.011
ckground Pk Area (A-s): 0.021 Background Pk Height (A): 0.025
lank Corrected Pk Area (A-s): -0.006
oncentration (ug/L): -2.9

lean Conc (ug/L): -0.8 SD: 3.10 RSD(%): 413.59

DC sample is within range -10 - 10

152

.s ID: 213985 Seq. No.: 00084 A/S Pos.: 15 Date: 07/26/93

Replicate 1
Peak Area (A-s): 0.014
Background Pk Area (A-s): 0.043
Blank Corrected Pk Area (A-s): 0.013
Concentration (ug/L): 6.5

Time: 14:15
Peak Height (A): 0.026
Background Pk Height (A): 0.057

(SECTION II)

Replicate 2
Peak Area (A-s): 0.017
Background Pk Area (A-s): 0.033
Blank Corrected Pk Area (A-s): 0.017
Concentration (ug/L): 8.2

Time: 14:17
Peak Height (A): 0.029
Background Pk Height (A): 0.054

lean Conc (ug/L): 7.3 SD: 1.20 RSD(%): 16.44

.s ID: 213985 A Seq. No.: 00085 A/S Pos.: 15 Date: 07/26/93

Replicate 1
Peak Area (A-s): 0.053
Background Pk Area (A-s): 0.039
Blank Corrected Pk Area (A-s): 0.052
Concentration (ug/L): 25.8

Time: 14:19
Peak Height (A): 0.087
Background Pk Height (A): 0.056

.t .cate 2
Peak Area (A-s): 0.058
Background Pk Area (A-s): 0.038
Blank Corrected Pk Area (A-s): 0.057
Concentration (ug/L): 28.3

Time: 14:20
Peak Height (A): 0.093
Background Pk Height (A): 0.050

ean Conc (ug/L): 27.1 SD: 1.79 RSD(%): 6.60

Recovery is ~~[illegible]~~ 99.0% MD 7/26/93

.s ID: 213986 Seq. No.: 00086 A/S Pos.: 16 Date: 07/26/93

eplicate 1
Peak Area (A-s): 0.020
Background Pk Area (A-s): 0.051
Blank Corrected Pk Area (A-s): 0.019
Concentration (ug/L): 9.5

Time: 14:22
Peak Height (A): 0.041
Background Pk Height (A): 0.075

eplicate 2
Peak Area (A-s): 0.017
Background Pk Area (A-s): 0.055
Blank Corrected Pk Area (A-s): 0.016
Concentration (ug/L): 8.0

Time: 14:23
Peak Height (A): 0.037
Background Pk Height (A): 0.076

.t Conc (ug/L): 8.7 SD: 1.05 RSD(%): 12.04

As ID: 213986 A Seq. No.: 00087 A/S Pos.: 16 Date: 07/26/93

Replicate 1 Time: 14:25 153
Area (A-s): 0.063 Peak Height (A): 0.086
Background Pk Area (A-s): 0.051 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 30.8

(SECTION II)

Replicate 2 Time: 14:27
Peak Area (A-s): 0.059 Peak Height (A): 0.090
Background Pk Area (A-s): 0.058 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 28.7

Mean Conc (ug/L): 29.7 SD: 1.51 RSD(%): 5.08

Recovery is 105.0%

As ID: 213987 Seq. No.: 00088 A/S Pos.: 17 Date: 07/26/93

Replicate 1 Time: 14:28
Peak Area (A-s): 0.012 Peak Height (A): 0.034
Background Pk Area (A-s): 0.030 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): 0.011
Concentration (ug/L): 5.4

Replicate 2 Time: 14:30
Area (A-s): 0.005 Peak Height (A): 0.018
Background Pk Area (A-s): 0.031 Background Pk Height (A): 0.028
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 2.1

Mean Conc (ug/L): 3.7 SD: 2.35 RSD(%): 63.02

As ID: 213987 A Seq. No.: 00089 A/S Pos.: 17 Date: 07/26/93

Replicate 1 Time: 14:32
Peak Area (A-s): 0.052 Peak Height (A): 0.085
Background Pk Area (A-s): 0.031 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): 0.051
Concentration (ug/L): 25.1

Replicate 2 Time: 14:33
Peak Area (A-s): 0.051 Peak Height (A): 0.084
Background Pk Area (A-s): 0.027 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.050
Concentration (ug/L): 24.8

Mean Conc (ug/L): 25.0 SD: 0.18 RSD(%): 0.73

Recovery is ~~106.2%~~ mD 7/26/93
106.5%

As ID: 213988 Seq. No.: 00090 A/S Pos.: 18 Date: 07/26/93

Replicate 1 Time: 14:35

eak Area (A-s): 0.012
Background Pk Area (A-s): 0.052
Blank Corrected Pk Area (A-s): 0.011
oncentration (ug/L): 5.6

Peak Height (A): 0.036
Background Pk Height (A): 0.055

Pe cate 2
eak Area (A-s): 0.015
Background Pk Area (A-s): 0.056
Blank Corrected Pk Area (A-s): 0.014
oncentration (ug/L): 6.8

Time: 14:36
Peak Height (A): 0.039
Background Pk Height (A): 0.069

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(SECTION II)

Mean Conc (ug/L): 6.2 SD: 0.87 RSD(%): 14.02

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s ID: 213988 A Seq. No.: 00091 A/S Pos.: 18 Date: 07/26/93

eplicate 1
eak Area (A-s): 0.057
Background Pk Area (A-s): 0.045
Blank Corrected Pk Area (A-s): 0.056
oncentration (ug/L): 27.9

Time: 14:38
Peak Height (A): 0.094
Background Pk Height (A): 0.057

Replicate 2
eak Area (A-s): 0.065
Background Pk Area (A-s): 0.047
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L): 31.5

Time: 14:40
Peak Height (A): 0.096
Background Pk Height (A): 0.060

Conc (ug/L): 29.7 SD: 2.58 RSD(%): 8.69

Recovery is ~~117.4%~~ 117.5% MD 7/26/93

---

s ID: 213989 Seq. No.: 00092 A/S Pos.: 19 Date: 07/26/93

eplicate 1
eak Area (A-s): 0.015
Background Pk Area (A-s): 0.051
Blank Corrected Pk Area (A-s): 0.014
oncentration (ug/L): 7.0

Time: 14:41
Peak Height (A): 0.027
Background Pk Height (A): 0.066

eplicate 2
eak Area (A-s): 0.007
Background Pk Area (A-s): 0.049
Blank Corrected Pk Area (A-s): 0.006
oncentration (ug/L): 3.1

Time: 14:43
Peak Height (A): 0.024
Background Pk Height (A): 0.067

ean Conc (ug/L): 5.0 SD: 2.80 RSD(%): 55.45

---

s ID: 213989 A Seq. No.: 00093 A/S Pos.: 19 Date: 07/26/93

eplicate 1
eak Area (A-s): 0.057
Background Pk Area (A-s): 0.044
Blank Corrected Pk Area (A-s): 0.056
oncentration (ug/L): 27.6

Time: 14:45
Peak Height (A): 0.092
Background Pk Height (A): 0.068

eplicate 2 Time: 14:46
eak Area (A-s): 0.057 Peak Height (A): 0.090
ackground Pk Area (A-s): 0.049 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.056
oncentration (ug/L): 28.0

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Conc (ug/L): 27.8 SD: 0.26 RSD(%): 0.94

ecovery is ~~115.7%~~ 114.0% mD 7/26/93

(SECTION II)

---

s ID: CCV Seq. No.: 00094 A/S Pos.: 39 Date: 07/26/93

eplicate 1 Time: 14:48
eak Area (A-s): 0.101 Peak Height (A): 0.118
ackground Pk Area (A-s): 0.026 Background Pk Height (A): 0.024
lank Corrected Pk Area (A-s): 0.101
oncentration (ug/L): 49.9

eplicate 2 Time: 14:49
eak Area (A-s): 0.111 Peak Height (A): 0.123
ackground Pk Area (A-s): 0.024 Background Pk Height (A): 0.028
lank Corrected Pk Area (A-s): 0.110
oncentration (ug/L): 54.5

ean Conc (ug/L): 52.2 SD: 3.29 RSD(%): 6.30

C sample is within range 45 - 55

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s ID: CCB Seq. No.: 00095 A/S Pos.: 40 Date: 07/26/93

eplicate 1 Time: 14:51
eak Area (A-s): 0.013 Peak Height (A): 0.017
ackground Pk Area (A-s): 0.015 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.012
oncentration (ug/L): 5.8

eplicate 2 Time: 14:53
eak Area (A-s): 0.002 Peak Height (A): 0.014
ackground Pk Area (A-s): 0.017 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.001
oncentration (ug/L): 0.4

ean Conc (ug/L): 3.1 SD: 3.82 RSD(%): 124.83

C sample is within range -10 - 10

End analysis run. mD 7/26/93

(SECTION II)

TANDARDS PREPARATION LOG SHEET

RUST Geotech Inc.

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nalyst Mary Denman Preparation Date: 07-28-93 Time: 0900 Page 1 of 1

Standard Name	Components	Volume Used	Final Volume	Diluent
100, 100 µg/L Pb Standard	I.V. CAL-1A lot H-MEB17014 exp. 11/01/93	0.20 mL	100 mL	1% HNO_3
75	100 µg/L Pb Standard listed above	0.75 mL	1 mL	1% HNO_3
50 and CCV	100 µg/L Pb Standard listed above	0.50 mL	1 mL	1% HNO_3
20, 20 µg/L Spiking Standard	100 µg/L Pb Standard listed above	0.20 mL	1 mL	1% HNO_3
0 µg/L Pb Standard	100 µg/L Pb Standard listed above	3 mL	10 mL	1% HNO_3
3 and CRA	30 µg/L Pb Standard listed above	0.10 mL	1 mL	1% HNO_3
0, Calibration Blank and CCB	1% HNO_3	--	--	1% HNO_3
V	ICV-1 (PlasmaChem) lot O2MICV1N exp. 11/30/93	0.20 mL	100 mL	1% HNO_3
0 mg/L Pb Standard	I.V. CAL-1A lot H-MEB17014 exp. 11/01/93	2 mL	10 mL	1% HNO_3
00 µg/L Pb Standard	10 mg/L Pb Standard listed above	0.10 mL	10 mL	1% HNO_3
00 µg/L Pb Standard	10 mg/L Pb Standard listed above	0.20 mL	10 mL	1% HNO_3
00 µg/L Pb Standard	10 mg/L Pb Standard listed above	0.30 mL	10 mL	1% HNO_3

ere all automatic pipets calibrated according to QC-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

omments

ds for Inorganic Ventures. Exp. stands for expires.

pectroscopic Analysis by AS-2 R05

Element File: PBCLP.GEL Element: Pb Wavelength: 283.3
Date: 07/28/93 Time: 09:17 Slit: 0.70 L
Data File: PB213984.DAT ID/Wt File: 213984.IDW Lamp Current: 10
Technique: HGA Calib. Type: Linear Energy: 58

Pb ID: S0 ug/L Seq. No.: 00001 A/S Pos.: 1 Date: 07/28/93

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Replicate 1 Time: 09:19
Peak Area (A-s): 0.004 Peak Height (A): 0.008
Background Pk Area (A-s): 0.426 Background Pk Height (A): 0.306
Blank Corrected Pk Area (A-s): 0.004

(SECTION II)

Replicate 2 Time: 09:20
Peak Area (A-s): 0.004 Peak Height (A): 0.008
Background Pk Area (A-s): 0.254 Background Pk Height (A): 0.303
Blank Corrected Pk Area (A-s): 0.004

Mean Pk Area (A-s): 0.004 SD: 0.0000 RSD(%): 1.28

Auto-zero performed.

Pb ID: S3 ug/L Seq. No.: 00002 A/S Pos.: 2 Date: 07/28/93

Replicate 1 Time: 09:22
Peak Area (A-s): 0.011 Peak Height (A): 0.018
Background Pk Area (A-s): 0.288 Background Pk Height (A): 0.277
Blank Corrected Pk Area (A-s): 0.008

Replicate 2 Time: 09:23
Peak Area (A-s): 0.009 Peak Height (A): 0.021
Background Pk Area (A-s): 0.245 Background Pk Height (A): 0.305
Blank Corrected Pk Area (A-s): 0.005

Mean Pk Area (A-s): 0.006 SD: 0.0016 RSD(%): 24.56

Standard number 1 applied. [3.0]
Correlation coefficient: 1.00000 Slope: 0.0021

Pb ID: S20 ug/L Seq. No.: 00003 A/S Pos.: 3 Date: 07/28/93

Replicate 1 Time: 09:24
Peak Area (A-s): 0.048 Peak Height (A): 0.087
Background Pk Area (A-s): 0.244 Background Pk Height (A): 0.296
Blank Corrected Pk Area (A-s): 0.044
Concentration (ug/L): 20.7

Replicate 2 Time: 09:26
Peak Area (A-s): 0.047 Peak Height (A): 0.085
Background Pk Area (A-s): 0.254 Background Pk Height (A): 0.307
Blank Corrected Pk Area (A-s): 0.044
Concentration (ug/L): 20.3

Mean Conc (ug/L): 20.5 SD: 0.30 RSD(%): 1.46

Standard number 2 applied. [20.0]

orrelation coefficient: 0.99998 Slope: 0.0022

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b ID: S50 ug/L Seq. No.: 00004 A/S Pos.: 4 Date: 07/28/93

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Re cate 1 Time: 09:27
eak Area (A-s): 0.118 Peak Height (A): 0.217
ackground Pk Area (A-s): 0.245 Background Pk Height (A): 0.299
Blank Corrected Pk Area (A-s): 0.115
Concentration (ug/L): 52.1

(SECTION II)

Replicate 2 Time: 09:28
Peak Area (A-s): 0.115 Peak Height (A): 0.214
ackground Pk Area (A-s): 0.269 Background Pk Height (A): 0.310
lank Corrected Pk Area (A-s): 0.112
Concentration (ug/L): 50.7

ean Conc (ug/L): 51.4 SD: 0.98 RSD(%): 1.91

tandard number 3 applied. [50.0]
orrelation coefficient: 0.99989 Slope: 0.0023

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b ID: S75 ug/L Seq. No.: 00005 A/S Pos.: 5 Date: 07/28/93

eplicate 1 Time: 09:30
eak Area (A-s): 0.168 Peak Height (A): 0.309
ackground Pk Area (A-s): 0.273 Background Pk Height (A): 0.301
lank Corrected Pk Area (A-s): 0.165
oncentration (ug/L): 73.1

eplicate 2 Time: 09:31
eak Area (A-s): 0.172 Peak Height (A): 0.310
ackground Pk Area (A-s): 0.269 Background Pk Height (A): 0.303
lank Corrected Pk Area (A-s): 0.169
oncentration (ug/L): 74.8

ean Conc (ug/L): 74.0 SD: 1.21 RSD(%): 1.64

tandard number 4 applied. [75.0]
orrelation coefficient: 0.99990 Slope: 0.0022

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b ID: S100 ug/L Seq. No.: 00006 A/S Pos.: 6 Date: 07/28/93

eplicate 1 Time: 09:32
eak Area (A-s): 0.226 Peak Height (A): 0.401
ackground Pk Area (A-s): 0.295 Background Pk Height (A): 0.303
lank Corrected Pk Area (A-s): 0.222
oncentration (ug/L): 99.7

eplicate 2 Time: 09:34
eak Area (A-s): 0.223 Peak Height (A): 0.395
ackground Pk Area (A-s): 0.301 Background Pk Height (A): 0.299
lank Corrected Pk Area (A-s): 0.220
c ntration (ug/L): 98.5

ean Conc (ug/L): 99.1 SD: 0.86 RSD(%): 0.87

Standard number 5 applied. [100.0]
Correlation coefficient: 0.99992 Slope: 0.0022

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Pb ID: ICV Seq. No.: 00007 A/S Pos.: 7 Date: 07/28/93

Replicate 1 Time: 09:36
Peak Area (A-s): 0.136 Peak Height (A): 0.230
Background Pk Area (A-s): 0.396 Background Pk Height (A): 0.314
Blank Corrected Pk Area (A-s): 0.132
Concentration (ug/L): 59.6

(SECTION II)

Replicate 2 Time: 09:37
Peak Area (A-s): 0.136 Peak Height (A): 0.231
Background Pk Area (A-s): 0.292 Background Pk Height (A): 0.315
Blank Corrected Pk Area (A-s): 0.133
Concentration (ug/L): 59.8

Mean Conc (ug/L): 59.7 SD: 0.14 RSD(%): 0.23

QC sample is within range 54 - 66

Pb ID: ICB Seq. No.: 00008 A/S Pos.: 8 Date: 07/28/93

Replicate 1 Time: 09:38
Peak Area (A-s): 0.006 Peak Height (A): 0.009
Background Pk Area (A-s): 0.265 Background Pk Height (A): 0.314
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 1.1

Replicate 2 Time: 09:39
Peak Area (A-s): 0.002 Peak Height (A): 0.008
Background Pk Area (A-s): 0.278 Background Pk Height (A): 0.325
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.8

Mean Conc (ug/L): 0.1 SD: 1.32 RSD(%): 1093.38

QC sample is within range -3 - 3

Pb ID: CRA Seq. No.: 00009 A/S Pos.: 9 Date: 07/28/93

Replicate 1 Time: 09:40
Peak Area (A-s): 0.009 Peak Height (A): 0.017
Background Pk Area (A-s): 0.267 Background Pk Height (A): 0.315
Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 2.2

Replicate 2 Time: 09:42
Peak Area (A-s): 0.011 Peak Height (A): 0.018
Background Pk Area (A-s): 0.270 Background Pk Height (A): 0.312
Blank Corrected Pk Area (A-s): 0.007
Concentration (ug/L): 3.3

Mean Conc (ug/L): 2.8 SD: 0.76 RSD(%): 27.27

QC sample is within range

ᵖb ID: CCV Seq. No.: 00010 A/S Pos.: 39 Date: 07/28/93

eplicate 1 Time: 09:43
e Area (A-s): 0.118 Peak Height (A): 0.218 100
3a round Pk Area (A-s): 0.313 Background Pk Height (A): 0.305
lank Corrected Pk Area (A-s): 0.115
oncentration (ug/L): 51.6

(SECTION II)

eplicate 2 Time: 09:44
eak Area (A-s): 0.113 Peak Height (A): 0.210
Background Pk Area (A-s): 0.319 Background Pk Height (A): 0.302
lank Corrected Pk Area (A-s): 0.109
oncentration (ug/L): 49.1

ean Conc (ug/L): 50.3 SD: 1.80 RSD(%): 3.58

C sample is within range 45 - 55

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b ID: CCB Seq. No.: 00011 A/S Pos.: 40 Date: 07/28/93

eplicate 1 Time: 09:46
eak Area (A-s): 0.004 Peak Height (A): 0.008
Background Pk Area (A-s): 0.292 Background Pk Height (A): 0.306
Blank Corrected Pk Area (A-s): 0.001
oncentration (ug/L): 0.3

eplicate 2 Time: 09:47
eak Area (A-s): 0.004 Peak Height (A): 0.007
round Pk Area (A-s): 0.289 Background Pk Height (A): 0.315
Blank Corrected Pk Area (A-s): 0.001
oncentration (ug/L): 0.2

ean Conc (ug/L): 0.3 SD: 0.07 RSD(%): 26.29

C sample is within range -3 - 3

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b ID: ~~PBS 2-213118~~ PBS 213984 wrong sample ID in IDW file 7/28/93 Seq. No.: 00012 A/S Pos.: 10 Date: 07/28/93

Replicate 1 Time: 09:48
eak Area (A-s): 0.003 Peak Height (A): 0.008
Background Pk Area (A-s): 0.257 Background Pk Height (A): 0.310
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

eplicate 2 Time: 09:50
Peak Area (A-s): -0.001 Peak Height (A): 0.007
Background Pk Area (A-s): 0.274 Background Pk Height (A): 0.310
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -2.0

ean Conc (ug/L): -1.0 SD: 1.37 RSD(%): 134.18

ID: PBSA213984 Seq. No.: 00013 A/S Pos.: 10 Date: 07/28/93

Replicate 1 Time: 09:51

eak Area (A-s): 0.045 Peak Height (A): 0.078
ackground Pk Area (A-s): 0.216 Background Pk Height (A): 0.236
Blank Corrected Pk Area (A-s): 0.041
oncentration (ug/L): 18.5

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R cate 2 Time: 09:52
ea Area (A-s): 0.049 Peak Height (A): 0.082
ackground Pk Area (A-s): 0.218 Background Pk Height (A): 0.237
Blank Corrected Pk Area (A-s): 0.045
oncentration (ug/L): 20.4

(SECTION II)

ean Conc (ug/L): 19.4 SD: 1.36 RSD(%): 7.01

ecovery is ~~102.3%~~ 97.0% MD 7/28/93

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o ID: LCS04 213984 DF20 Seq. No.: 00014 A/S Pos.: 11 Date: 07/28/93

eplicate 1 Time: 09:53
eak Area (A-s): 0.135 Peak Height (A): 0.172
ackground Pk Area (A-s): 0.270 Background Pk Height (A): 0.275
lank Corrected Pk Area (A-s): 0.132
oncentration (ug/L): 59.3

eplicate 2 Time: 09:55
eak Area (A-s): 0.132 Peak Height (A): 0.174
ackground Pk Area (A-s): 0.284 Background Pk Height (A): 0.284
lank Corrected Pk Area (A-s): 0.129
oncentration (ug/L): 58.0

Conc (ug/L): 58.6 SD: 0.91 RSD(%): 1.55

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b ID: LCS04A213984 DF20 Seq. No.: 00015 A/S Pos.: 11 Date: 07/28/93

eplicate 1 Time: 09:56
eak Area (A-s): 0.167 Peak Height (A): 0.213
ackground Pk Area (A-s): 0.233 Background Pk Height (A): 0.215
lank Corrected Pk Area (A-s): 0.164
oncentration (ug/L): 73.7

eplicate 2 Time: 09:57
eak Area (A-s): 0.168 Peak Height (A): 0.213
ackground Pk Area (A-s): 0.235 Background Pk Height (A): 0.217
lank Corrected Pk Area (A-s): 0.165
oncentration (ug/L): 74.2

ean Conc (ug/L): 73.9 SD: 0.35 RSD(%): 0.47

ecovery is 76.5%

ID: 213984 Seq. No.: 00016 A/S Pos.: 12 Date: 07/28/93

ample abs. is greater than that of the largest standard.
e cate 1 Time: 09:59
Area (A-s): 0.676 Peak Height (A): 0.872
ackground Pk Area (A-s): 0.381 Background Pk Height (A): 0.287
lank Corrected Pk Area (A-s): 0.672

RESULT BEYOND CALIBRATION RANGE

MD 7/28/93

Concentration (ug/L): 302.6

Sample abs. is greater than that of the largest standard.
Replicate 2 Time: 10:00
Peak Area (A-s): 0.668 Peak Height (A): 0.845
Background Pk Area (A-s): 0.419 Background Pk Height (A): 0.290
Blank Corrected Pk Area (A-s): 0.664
Concentration (ug/L): 299.2

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(SECTION III)

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 300.9 SD: 2.42 RSD(%): 0.80

Pb ID: 213984 A Seq. No.: 00017 A/S Pos.: 12 Date: 07/28/93

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:01
Peak Area (A-s): 0.677 Peak Height (A): 0.924
Background Pk Area (A-s): 0.345 Background Pk Height (A): 0.316
Blank Corrected Pk Area (A-s): 0.674
Concentration (ug/L): 303.4

Sample abs. is greater than that of the largest standard.
Replicate 2 Time: 10:03
Peak Area (A-s): 0.679 Peak Height (A): 0.883
Background Pk Area (A-s): 0.343 Background Pk Height (A): 0.290
Blank Corrected Pk Area (A-s): 0.675
Concentration (ug/L): 304.1

RESULT BEYOND CALIBRATION RANGE

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 303.7 SD: 0.48 RSD(%): 0.16

Recovery is 14.2%

MD 7/28/93

Pb ID: 213984D Seq. No.: 00018 A/S Pos.: 13 Date: 07/28/93

Replicate 1 Time: 10:04
Peak Area (A-s): 0.193 Peak Height (A): 0.313
Background Pk Area (A-s): 0.270 Background Pk Height (A): 0.280
Blank Corrected Pk Area (A-s): 0.189
Concentration (ug/L): 85.3

Replicate 2 Time: 10:05
Peak Area (A-s): 0.189 Peak Height (A): 0.288
Background Pk Area (A-s): 0.278 Background Pk Height (A): 0.275
Blank Corrected Pk Area (A-s): 0.186
Concentration (ug/L): 83.6

SPIKE RECOVERY DICTATES MSA

Mean Conc (ug/L): 84.5 SD: 1.25 RSD(%): 1.48

Pb ID: 213984D A Seq. No.: 00019 A/S Pos.: 13 Date: 07/28/93

Replicate 1 Time: 10:07
Peak Area (A-s): 0.215 Peak Height (A): 0.339
Background Pk Area (A-s): 0.237 Background Pk Height (A): 0.196
Blank Corrected Pk Area (A-s): 0.212
Concentration (ug/L): 95.3

MD 7/28/93

he background signal is changing during BOC measurement.

eplicate 2 Time: 10:08
Peak Area (A-s): 0.217 Peak Height (A): 0.325 100
ackground Pk Area (A-s): 0.248 Background Pk Height (A): 0.201
lank Corrected Pk Area (A-s): 0.214
C entration (ug/L): 96.3 SPIKE RECOVERY DICTATES MSA

ean Conc (ug/L): 95.8 SD: 0.66 RSD(%): 0.69

Recovery is ~~56.8%~~ MD 7/28/93
56.5% MD 7/28/93

Pb ID: 213984S Seq. No.: 00020 A/S Pos.: 14 Date: 07/28/93

(SECTION II)

eplicate 1 Time: 10:09
Peak Area (A-s): 0.219 Peak Height (A): 0.294
ackground Pk Area (A-s): 0.369 Background Pk Height (A): 0.278
lank Corrected Pk Area (A-s): 0.216
Concentration (ug/L): 97.1

eplicate 2 Time: 10:11
eak Area (A-s): 0.220 Peak Height (A): 0.307
Background Pk Area (A-s): 0.322 Background Pk Height (A): 0.268
lank Corrected Pk Area (A-s): 0.216
oncentration (ug/L): 97.3

ean Conc (ug/L): 97.2 SD: 0.09 RSD(%): 0.10

Pb ID: CCV Seq. No.: 00021 A/S Pos.: 39 Date: 07/28/93

cate 1 Time: 10:12
Peak Area (A-s): 0.112 Peak Height (A): 0.205
ackground Pk Area (A-s): 0.369 Background Pk Height (A): 0.312
lank Corrected Pk Area (A-s): 0.109
Concentration (ug/L): 49.0

eplicate 2 Time: 10:13
Peak Area (A-s): 0.112 Peak Height (A): 0.202
ackground Pk Area (A-s): 0.350 Background Pk Height (A): 0.305
lank Corrected Pk Area (A-s): 0.108
oncentration (ug/L): 48.8

ean Conc (ug/L): 48.9 SD: 0.15 RSD(%): 0.31

QC sample is within range 45 - 55

Pb ID: CCB Seq. No.: 00022 A/S Pos.: 40 Date: 07/28/93

eplicate 1 Time: 10:15
eak Area (A-s): 0.003 Peak Height (A): 0.008
Background Pk Area (A-s): 0.337 Background Pk Height (A): 0.315
lank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.4

icate 2 Time: 10:16
eak Area (A-s): -0.001 Peak Height (A): 0.007
Background Pk Area (A-s): 0.348 Background Pk Height (A): 0.316

Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.8

Mean Conc (ug/L): -1.1 SD: 1.00 RSD(%): 89.35

(ample is within range -3 - 3

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Pb ID: 213985 Seq. No.: 00023 A/S Pos.: 15 Date: 07/28/93

Replicate 1 Time: 10:17
Peak Area (A-s): 0.121 Peak Height (A): 0.184
Background Pk Area (A-s): 0.253 Background Pk Height (A): 0.269
Blank Corrected Pk Area (A-s): 0.117
Concentration (ug/L): 52.8

Replicate 2 Time: 10:19
Peak Area (A-s): 0.123 Peak Height (A): 0.175
Background Pk Area (A-s): 0.349 Background Pk Height (A): 0.278
Blank Corrected Pk Area (A-s): 0.120
Concentration (ug/L): 54.0

Mean Conc (ug/L): 53.4 SD: 0.80 RSD(%): 1.50

Pb ID: 213985A Seq. No.: 00024 A/S Pos.: 15 Date: 07/28/93

The background signal is changing during BOC measurement.
Replicate 1 Time: 10:20
Peak Area (A-s): 0.157 Peak Height (A): 0.226
F ground Pk Area (A-s): 0.287 Background Pk Height (A): 0.197
B k Corrected Pk Area (A-s): 0.154
Concentration (ug/L): 69.2

SPIKE RECOVERY DICTATES MSA

The background signal is changing during BOC measurement.
Replicate 2 Time: 10:22
Peak Area (A-s): 0.157 Peak Height (A): 0.231
Background Pk Area (A-s): 0.270 Background Pk Height (A): 0.199
Blank Corrected Pk Area (A-s): 0.153
Concentration (ug/L): 69.0

Mean Conc (ug/L): 69.1 SD: 0.12 RSD(%): 0.17

Recovery is 78.5%

MD 7/28/93

Pb ID: 213986 Seq. No.: 00025 A/S Pos.: 16 Date: 07/28/93

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:23
Peak Area (A-s): 0.280 Peak Height (A): 0.393
Background Pk Area (A-s): 0.311 Background Pk Height (A): 0.268
Blank Corrected Pk Area (A-s): 0.276
Concentration (ug/L): 124.4

RESULT BEYOND CALIBRATION RANGE

S e abs. is greater than that of the largest standard.
icate 2 Time: 10:24
Peak Area (A-s): 0.277 Peak Height (A): 0.402
Background Pk Area (A-s): 0.380 Background Pk Height (A): 0.268

MD 7/28/93

Blank Corrected Pk Area (A-s): 0.273
Concentration (ug/L): 123.1

RESULT BEYOND CALIBRATION RANGE

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Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 123.7 SD: 0.94 RSD(%): 0.76

Pb ID: 213987 Seq. No.: 00026 A/S Pos.: 17 Date: 07/28/93

Sample abs. is greater than that of the largest standard.

(SECTION II)

Replicate 1 Time: 10:26
Peak Area (A-s): 0.777 Peak Height (A): 0.957
Background Pk Area (A-s): 0.540 Background Pk Height (A): 0.386
Blank Corrected Pk Area (A-s): 0.774
Concentration (ug/L): 348.4

Sample abs. is greater than that of the largest standard.
Replicate 2 Time: 10:27
Peak Area (A-s): 0.786 Peak Height (A): 0.956
Background Pk Area (A-s): 0.559 Background Pk Height (A): 0.380
Blank Corrected Pk Area (A-s): 0.783
Concentration (ug/L): 352.5

RESULT BEYOND CALIBRATION RANGE

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 350.5 SD: 2.90 RSD(%): 0.83

Pb ID: 213988 Seq. No.: 00027 A/S Pos.: 18 Date: 07/28/93

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:29
Peak Area (A-s): 0.605 Peak Height (A): 0.787
Background Pk Area (A-s): 0.443 Background Pk Height (A): 0.284
Blank Corrected Pk Area (A-s): 0.601
Concentration (ug/L): 270.6

RESULT BEYOND CALIBRATION RANGE

Sample abs. is greater than that of the largest standard.
Replicate 2 Time: 10:30
Peak Area (A-s): 0.619 Peak Height (A): 0.763
Background Pk Area (A-s): 0.487 Background Pk Height (A): 0.284
Blank Corrected Pk Area (A-s): 0.615
Concentration (ug/L): 277.1

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 273.9 SD: 4.57 RSD(%): 1.67
MD 7/28/93

Pb ID: 213989 Seq. No.: 00028 A/S Pos.: 19 Date: 07/28/93

Replicate 1 Time: 10:32
Peak Area (A-s): 0.094 Peak Height (A): 0.133
Background Pk Area (A-s): 0.306 Background Pk Height (A): 0.262
Blank Corrected Pk Area (A-s): 0.091
Concentration (ug/L): 40.8

Replicate 2 Time: 10:33
Peak Area (A-s): 0.089 Peak Height (A): 0.138
Background Pk Area (A-s): 0.356 Background Pk Height (A): 0.266
Blank Corrected Pk Area (A-s): 0.085

oncentration (ug/L): 38.4

ean Conc (ug/L): 39.6 SD: 1.64 RSD(%): 4.14

P ID: 213989A Seq. No.: 00029 A/S Pos.: 19 Date: 07/28/93

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(SECTION II)

eplicate 1 Time: 10:34
Peak Area (A-s): 0.129 Peak Height (A): 0.209
ackground Pk Area (A-s): 0.271 Background Pk Height (A): 0.197
lank Corrected Pk Area (A-s): 0.126
Concentration (ug/L): 56.7

eplicate 2 Time: 10:36
eak Area (A-s): 0.130 Peak Height (A): 0.183
Background Pk Area (A-s): 0.272 Background Pk Height (A): 0.186
lank Corrected Pk Area (A-s): 0.127
oncentration (ug/L): 57.1

ean Conc (ug/L): 56.9 SD: 0.31 RSD(%): 0.55

ecovery is 86.5%

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b ID: 213984 DF10 Seq. No.: 00030 A/S Pos.: 12 Date: 07/28/93

eplicate 1 Time: 10:38
eak Area (A-s): 0.095 Peak Height (A): 0.164
Background Pk Area (A-s): 0.279 Background Pk Height (A): 0.300
lank Corrected Pk Area (A-s): 0.091
ntration (ug/L): 41.1

eplicate 2 Time: 10:40
eak Area (A-s): 0.091 Peak Height (A): 0.154
Background Pk Area (A-s): 0.415 Background Pk Height (A): 0.310
lank Corrected Pk Area (A-s): 0.087
oncentration (ug/L): 39.3

ean Conc (ug/L): 40.2 SD: 1.30 RSD(%): 3.23

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b ID: 213984A DF10 Seq. No.: 00031 A/S Pos.: 12 Date: 07/28/93

eplicate 1 Time: 10:41
eak Area (A-s): 0.127 Peak Height (A): 0.220
Background Pk Area (A-s): 0.365 Background Pk Height (A): 0.245
lank Corrected Pk Area (A-s): 0.124
oncentration (ug/L): 55.7

eplicate 2 Time: 10:42
eak Area (A-s): 0.135 Peak Height (A): 0.228
Background Pk Area (A-s): 0.414 Background Pk Height (A): 0.259
lank Corrected Pk Area (A-s): 0.132
oncentration (ug/L): 59.4

Conc (ug/L): 57.6 SD: 2.60 RSD(%): 4.52

ecovery is ~~86.7%~~ 87.0% 7/28/93

-b ID: CCV Seq. No.: 00032 A/S Pos.: 39 Date: 07/28/93

:eplicate 1 Time: 10:44
.eak Area (A-s): 0.117 Peak Height (A): 0.212
E ground Pk Area (A-s): 0.463 Background Pk Height (A): 0.335
.. .k Corrected Pk Area (A-s): 0.114
:oncentration (ug/L): 51.2

167

eplicate 2 Time: 10:45
eak Area (A-s): 0.117 Peak Height (A): 0.210
Background Pk Area (A-s): 0.471 Background Pk Height (A): 0.336
Blank Corrected Pk Area (A-s): 0.114
oncentration (ug/L): 51.2

(SECTION II)

Mean Conc (ug/L): 51.2 SD: 0.01 RSD(%): 0.01

C sample is within range 45 - 55

---

b ID: CCB Seq. No.: 00033 A/S Pos.: 40 Date: 07/28/93

Replicate 1 Time: 10:46
eak Area (A-s): 0.006 Peak Height (A): 0.009
Background Pk Area (A-s): 0.455 Background Pk Height (A): 0.339
Blank Corrected Pk Area (A-s): 0.003
oncentration (ug/L): 1.3

Replicate 2 Time: 10:48
Peak Area (A-s): 0.004 Peak Height (A): 0.007
round Pk Area (A-s): 0.473 Background Pk Height (A): 0.350
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): 0.1

Mean Conc (ug/L): 0.7 SD: 0.82 RSD(%): 116.43

C sample is within range -3 - 3

-b ID: 213986 DFR Seq. No.: 00034 A/S Pos.: 16 Date: 07/28/93

Replicate 1 Time: 10:49
Peak Area (A-s): 0.147 Peak Height (A): 0.208
ackground Pk Area (A-s): 0.493 Background Pk Height (A): 0.308
Blank Corrected Pk Area (A-s): 0.144
Concentration (ug/L): 64.7

eplicate 2 Time: 10:51
Peak Area (A-s): 0.147 Peak Height (A): 0.204
Background Pk Area (A-s): 0.430 Background Pk Height (A): 0.300
lank Corrected Pk Area (A-s): 0.143
oncentration (ug/L): 64.5

SPIKE RECOVERY DICTATES MSA

ean Conc (ug/L): 64.6 SD: 0.13 RSD(%): 0.20

ID: 213986A Seq. No.: 00035 A/S Pos.: 16 Date: 07/28/93

Replicate 1 Time: 10:52

MD 7/28/93

eak Area (A-s): 0.184 Peak Height (A): 0.253
ackground Pk Area (A-s): 0.416 Background Pk Height (A): 0.229
lank Corrected Pk Area (A-s): 0.180
oncentration (ug/L): 81.1

166

cate 2 Time: 10:53
e Area (A-s): 0.184 Peak Height (A): 0.249
ackground Pk Area (A-s): 0.387 Background Pk Height (A): 0.215
lank Corrected Pk Area (A-s): 0.181
oncentration (ug/L): 81.5

SPIKE RECOVERY DICTATES MSA

ean Conc (ug/L): 81.3 SD: 0.24 RSD(%): 0.29

ecovery is ~~88.7%~~ MD 7/28/93
83.5%

(SECTION II) MD 7/28/93

---

b ID: 213987 DFID Seq. No.: 00036 A/S Pos.: 17 Date: 07/28/93

eplicate 1 Time: 10:55
eak Area (A-s): 0.116 Peak Height (A): 0.189
ackground Pk Area (A-s): 0.499 Background Pk Height (A): 0.332
lank Corrected Pk Area (A-s): 0.113
oncentration (ug/L): 50.7

eplicate 2 Time: 10:56
eak Area (A-s): 0.110 Peak Height (A): 0.190
ackground Pk Area (A-s): 0.497 Background Pk Height (A): 0.337
lank Corrected Pk Area (A-s): 0.106
oncentration (ug/L): 47.7

Conc (ug/L): 49.2 SD: 2.12 RSD(%): 4.31

---

b ID: 213987 DF ID Seq. No.: 00037 A/S Pos.: 17 Date: 07/28/93

eplicate 1 Time: 10:58
eak Area (A-s): 0.149 Peak Height (A): 0.261
ackground Pk Area (A-s): 0.455 Background Pk Height (A): 0.268
lank Corrected Pk Area (A-s): 0.145
oncentration (ug/L): 65.4

SPIKE RECOVERY DICTATES MSA

eplicate 2 Time: 10:59
eak Area (A-s): 0.146 Peak Height (A): 0.249
ackground Pk Area (A-s): 0.438 Background Pk Height (A): 0.247
lank Corrected Pk Area (A-s): 0.142
oncentration (ug/L): 64.1

ean Conc (ug/L): 64.8 SD: 0.96 RSD(%): 1.48

ecovery is ~~77.5%~~ MD 7/28/93
78.0%

MD 7/28/93

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b ~~ID: 213988~~ DFID Seq. No.: 00038 A/S Pos.: 18 Date: 07/28/93

eplicate 1 Time: 11:00
e Area (A-s): 0.081 Peak Height (A): 0.146
ground Pk Area (A-s): 0.533 Background Pk Height (A): 0.344
lank Corrected Pk Area (A-s): 0.078
oncentration (ug/L): 35.1

SPIKE RECOVERY DICTATES MSA

MD 7/28/93

plicate 2 Time: 11:02
eak Area (A-s): 0.081 Peak Height (A): 0.138
ackground Pk Area (A-s): 0.541 Background Pk Height (A): 0.337
ank Corrected Pk Area (A-s): 0.077
oncentration (ug/L): 34.8

169

Conc (ug/L): 34.9 SD: 0.19 RSD(%): 0.55

ID: 213988A Seq. No.: 00039 A/S Pos.: 18 Date: 07/28/93

(SECTION II)

plicate 1 Time: 11:03
eak Area (A-s): 0.107 Peak Height (A): 0.175
ckground Pk Area (A-s): 0.450 Background Pk Height (A): 0.251
ank Corrected Pk Area (A-s): 0.104
oncentration (ug/L): 46.8

plicate 2 Time: 11:04
eak Area (A-s): 0.103 Peak Height (A): 0.169
ckground Pk Area (A-s): 0.453 Background Pk Height (A): 0.254
ank Corrected Pk Area (A-s): 0.099
oncentration (ug/L): 44.8

SPIKE RECOVERY DICTATES MSA

an Conc (ug/L): 45.8 SD: 1.41 RSD(%): 3.08

ecovery is ~~54.2%~~ 54.5% MD 7/28/93 MD 7/28/93

Sample run by MSA

ID: 213984D0 DFS Seq. No.: 00040 A/S Pos.: 10 Date: 07/28/93

ate 1 Time: 11:06
ea Area (A-s): 0.047 Peak Height (A): 0.080
ackground Pk Area (A-s): 0.475 Background Pk Height (A): 0.311
ank Corrected Pk Area (A-s): 0.043
oncentration (ug/L): 19.6

Refer to MSA Data Summary

ID: 213984D1 DFS Seq. No.: 00041 A/S Pos.: 11 Date: 07/28/93

100 ug/L Pb std

plicate 1 Time: 11:08
eak Area (A-s): 0.064 Peak Height (A): 0.112
ackground Pk Area (A-s): 0.274 Background Pk Height (A): 0.300
ank Corrected Pk Area (A-s): 0.061
oncentration (ug/L): 27.4

ID: 213984D2 DFS Seq. No.: 00042 A/S Pos.: 12 Date: 07/28/93

200 ug/L Pb std

plicate 1 Time: 11:09
eak Area (A-s): 0.086 Peak Height (A): 0.142
ackground Pk Area (A-s): 0.286 Background Pk Height (A): 0.302
ank Corrected Pk Area (A-s): 0.082
oncentration (ug/L): 37.0

ID: 213984D3 DFS Seq. No.: 00043 A/S Pos.: 13 Date: 07/28/93

300 ug/L Pb std

plicate 1 Time: 11:10
eak Area (A-s): 0.107 Peak Height (A): 0.174

Background Pk Area (A-s): 0.296 Background Pk Height (A): 0.306
Blank Corrected Pk Area (A-s): 0.104
Concentration (ug/L): 46.8

170

Sample run by MSA

ID: 2139850 DFS Seq. No.: 00044 A/S Pos.: 14 Date: 07/28/93

Replicate 1 Time: 11:12
Peak Area (A-s): 0.029 Peak Height (A): 0.047
Background Pk Area (A-s): 0.283 Background Pk Height (A): 0.301
Blank Corrected Pk Area (A-s): 0.025
Concentration (ug/L): 11.4

(SECTION II)

Refer to MSA Data Summary

Pb ID: 2139851 DFS Seq. No.: 00045 A/S Pos.: 15 Date: 07/28/93

Replicate 1 Time: 11:13
Peak Area (A-s): 0.047 Peak Height (A): 0.079
Background Pk Area (A-s): 0.286 Background Pk Height (A): 0.295
Blank Corrected Pk Area (A-s): 0.043
Concentration (ug/L): 19.4

Pb ID: 2139852 DFS Seq. No.: 00046 A/S Pos.: 16 Date: 07/28/93

Replicate 1 Time: 11:14
Peak Area (A-s): 0.071 Peak Height (A): 0.113
Background Pk Area (A-s): 0.297 Background Pk Height (A): 0.300
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 30.5

Pb ID: 2139853 DFS Seq. No.: 00047 A/S Pos.: 17 Date: 07/28/93

Replicate 1 Time: 11:16
Peak Area (A-s): 0.090 Peak Height (A): 0.141
Background Pk Area (A-s): 0.310 Background Pk Height (A): 0.303
Blank Corrected Pk Area (A-s): 0.087
Concentration (ug/L): 39.1

Pb ID: CCV Seq. No.: 00048 A/S Pos.: 39 Date: 07/28/93

Replicate 1 Time: 11:17
Peak Area (A-s): 0.111 Peak Height (A): 0.206
Background Pk Area (A-s): 0.411 Background Pk Height (A): 0.325
Blank Corrected Pk Area (A-s): 0.107
Concentration (ug/L): 48.3

Replicate 2 Time: 11:19
Peak Area (A-s): 0.116 Peak Height (A): 0.208
Background Pk Area (A-s): 0.440 Background Pk Height (A): 0.326
Blank Corrected Pk Area (A-s): 0.112
Concentration (ug/L): 50.5

Mean Conc (ug/L): 49.4 SD: 1.55 RSD(%): 3.13

QC sample is within range 45 - 55

-b ID: CCB Seq. No.: 00049 A/S Pos.: 40 Date: 07/28/93

eplicate 1 Time: 11:20 171
eak Area (A-s): 0.004 Peak Height (A): 0.008
B ıround Pk Area (A-s): 0.433 Background Pk Height (A): 0.332
Corrected Pk Area (A-s): 0.001
oncentration (ug/L): 0.3

(SECTION II)

eplicate 2 Time: 11:21
eak Area (A-s): 0.003 Peak Height (A): 0.010
Background Pk Area (A-s): 0.462 Background Pk Height (A): 0.340
Blank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.4

Mean Conc (ug/L): -0.1 SD: 0.53 RSD(%): 724.57

C sample is within range -3 - 3

Sample run by MSA

b ID: 213986O DF10 Seq. No.: 00050 A/S Pos.: 18 Date: 07/28/93

Replicate 1 Time: 11:23
eak Area (A-s): 0.032 Peak Height (A): 0.056
Background Pk Area (A-s): 0.496 Background Pk Height (A): 0.340
Blank Corrected Pk Area (A-s): 0.028
oncentration (ug/L): 12.6

Refer to MSA Data Summary

-b ID: 213986| DF10 Seq. No.: 00051 A/S Pos.: 19 Date: 07/28/93

100 ug/L Pb std

R cate 1 Time: 11:25
Peak Area (A-s): 0.056 Peak Height (A): 0.098
ackground Pk Area (A-s): 0.488 Background Pk Height (A): 0.332
Blank Corrected Pk Area (A-s): 0.052
Concentration (ug/L): 23.6

Pb ID: 213986Q DF10 Seq. No.: 00052 A/S Pos.: 20 Date: 07/28/93

200 ug/L Pb std

eplicate 1 Time: 11:26
Peak Area (A-s): 0.074 Peak Height (A): 0.137
Background Pk Area (A-s): 0.497 Background Pk Height (A): 0.326
lank Corrected Pk Area (A-s): 0.070
Concentration (ug/L): 31.6

---

b ID: 213986S DF10 Seq. No.: 00053 A/S Pos.: 21 Date: 07/28/93

300 ug/L Pb std

Replicate 1 Time: 11:27
eak Area (A-s): 0.098 Peak Height (A): 0.164
Background Pk Area (A-s): 0.530 Background Pk Height (A): 0.320
Blank Corrected Pk Area (A-s): 0.094
oncentration (ug/L): 42.5

Sample run by MSA

ID: 213987O DF20 Seq. No.: 00054 A/S Pos.: 22 Date: 07/28/93

Replicate 1 Time: 11:29

eak Area (A-s): 0.061 Peak Height (A): 0.095
ackground Pk Area (A-s): 0.515 Background Pk Height (A): 0.335
Blank Corrected Pk Area (A-s): 0.057
oncentration (ug/L): 25.8

Refer to MSA Data Summary

---

b ID: 213987 1 DF20 Seq. No.: 00055 A/S Pos.: 23 Date: 07/28/93

Replicate 1 100 ug/L Pb std Time: 11:30 172
eak Area (A-s): 0.080 Peak Height (A): 0.140
ackground Pk Area (A-s): 0.536 Background Pk Height (A): 0.340
lank Corrected Pk Area (A-s): 0.076
oncentration (ug/L): 34.3

(SECTION II)

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b ID: 213987 2 DF20 Seq. No.: 00056 A/S Pos.: 24 Date: 07/28/93

eplicate 1 200 ug/L Pb std Time: 11:32
eak Area (A-s): 0.101 Peak Height (A): 0.175
ackground Pk Area (A-s): 0.584 Background Pk Height (A): 0.358
lank Corrected Pk Area (A-s): 0.097
oncentration (ug/L): 43.8

---

b ID: 213987 3 DF20 Seq. No.: 00057 A/S Pos.: 25 Date: 07/28/93

eplicate 1 300 ug/L Pb std Time: 11:33
eak Area (A-s): 0.124 Peak Height (A): 0.217
ackground Pk Area (A-s): 0.565 Background Pk Height (A): 0.325
lank Corrected Pk Area (A-s): 0.120
ntration (ug/L): 54.1

Sample run by MSA

b ID: 213988 0 DF20 Seq. No.: 00058 A/S Pos.: 26 Date: 07/28/93

eplicate 1 Time: 11:34
eak Area (A-s): 0.043 Peak Height (A): 0.069
ackground Pk Area (A-s): 0.499 Background Pk Height (A): 0.335
lank Corrected Pk Area (A-s): 0.039
oncentration (ug/L): 17.6

Refer to MSA Data Summary

---

b ID: 213988 1 DF20 Seq. No.: 00059 A/S Pos.: 27 Date: 07/28/93

eplicate 1 100 ug/L Pb std Time: 11:35
eak Area (A-s): 0.051 Peak Height (A): 0.098
ackground Pk Area (A-s): 0.502 Background Pk Height (A): 0.292
lank Corrected Pk Area (A-s): 0.048
oncentration (ug/L): 21.6

---

b ID: 213988 2 DF20 Seq. No.: 00060 A/S Pos.: 28 Date: 07/28/93

eplicate 1 200 ug/L Pb std Time: 11:37
eak Area (A-s): 0.073 Peak Height (A): 0.135
ackground Pk Area (A-s): 0.577 Background Pk Height (A): 0.315
Corrected Pk Area (A-s): 0.070
oncentration (ug/L): 31.5

-b ID: 2139883 DF20 Seq. No.: 00061 A/S Pos.: 29 Date: 07/28/93

300 ug/L Pb std

eplicate 1 Time: 11:38

173

e Area (A-s): 0.098 Peak Height (A): 0.172

3 round Pk Area (A-s): 0.537 Background Pk Height (A): 0.312

la Corrected Pk Area (A-s): 0.094

oncentration (ug/L): 42.4

(SECTION II)

Sample run by MSA

b ID: 2139880 DF20 Seq. No.: 00062 A/S Pos.: 26 Date: 07/28/93

eplicate 1 Time: 11:40

eak Area (A-s): 0.043 Peak Height (A): 0.074

ackground Pk Area (A-s): 0.595 Background Pk Height (A): 0.339

lank Corrected Pk Area (A-s): 0.040

oncentration (ug/L): 17.9

Refer to MSA Data Summary

---

b ID: 2139881 DF20 Seq. No.: 00063 A/S Pos.: 27 Date: 07/28/93

100 ug/L Pb std

eplicate 1 Time: 11:41

eak Area (A-s): 0.049 Peak Height (A): 0.084

ackground Pk Area (A-s): 0.620 Background Pk Height (A): 0.285

lank Corrected Pk Area (A-s): 0.046

oncentration (ug/L): 20.6

---

b ID: 2139882 DF20 Seq. No.: 00064 A/S Pos.: 28 Date: 07/28/93

200 ug/L Pb std

ate 1 Time: 11:42

ea Area (A-s): 0.082 Peak Height (A): 0.147

ackground Pk Area (A-s): 0.555 Background Pk Height (A): 0.350

lank Corrected Pk Area (A-s): 0.078

oncentration (ug/L): 35.3

First MSA has a better "r"

---

b ID: 2139883 DF20 Seq. No.: 00065 A/S Pos.: 29 Date: 07/28/93

300 ug/L Pb std

eplicate 1 Time: 11:44

eak Area (A-s): 0.101 Peak Height (A): 0.185

ackground Pk Area (A-s): 0.553 Background Pk Height (A): 0.364

lank Corrected Pk Area (A-s): 0.098

oncentration (ug/L): 44.0

MD 7/28/93

---

b ID: CCV Seq. No.: 00066 A/S Pos.: 39 Date: 07/28/93

eplicate 1 Time: 11:46

eak Area (A-s): 0.113 Peak Height (A): 0.202

ackground Pk Area (A-s): 0.628 Background Pk Height (A): 0.342

lank Corrected Pk Area (A-s): 0.109

oncentration (ug/L): 49.2

eplicate 2 Time: 11:47

e rea (A-s): 0.099 Peak Height (A): 0.175

a ground Pk Area (A-s): 0.515 Background Pk Height (A): 0.294

lank Corrected Pk Area (A-s): 0.095

oncentration (ug/L): 42.9

ean Conc (ug/L): 46.0 SD: 4.48 RSD(%): 9.74

: sample is within range 45 - 55

174

) ID: CCB Seq. No.: 00067 A/S Pos.: 40 Date: 07/28/93

Replicate 1
eak Area (A-s): -0.002
ackground Pk Area (A-s): 0.562
lank Corrected Pk Area (A-s): -0.005
oncentration (ug/L): -2.4

Time: 11:49
Peak Height (A): 0.007
Background Pk Height (A): 0.300

(SECTION II)

Replicate 2
eak Area (A-s): 0.003
ackground Pk Area (A-s): 0.564
lank Corrected Pk Area (A-s): -0.000
oncentration (ug/L): -0.1

Time: 11:50
Peak Height (A): 0.011
Background Pk Height (A): 0.346

ean Conc (ug/L): -1.3 SD: 1.59 RSD(%): 126.05

C sample is within range -3 - 3

End analysis sux. MD 7/28/93

METHOD OF STANDARD ADDITIONS DATA SUMMARY FOR PB

e Number: 213984D Date: 07/28/93 Time: 11:06:59 Units: ug/L
.: -20.5 y-Int.: 0.0419 Slope: 0.0020 r: 0.9990 Dil. Factor: 5.0
nal Result: 102.7 Spike Amounts: 10.0, 20.0, and 30.0

(SECTION III)

mple Number: 213985 Date: 07/28/93 Time: 11:12:09 Units: ug/L
Int.: -11.4 y-Int.: 0.0241 Slope: 0.0021 r: 0.9981 Dil. Factor: 5.0
nal Result: 57.1 Spike Amounts: 10.0, 20.0, and 30.0

mple Number: 213986 Date: 07/28/93 Time: 11:23:41 Units: ug/L
Int.: -13.2 y-Int.: 0.0286 Slope: 0.0022 r: 0.9985 Dil. Factor: 10.0
nal Result: 132.4 Spike Amounts: 10.0, 20.0, and 30.0

mple Number: 213987 Date: 07/28/93 Time: 11:29:19 Units: ug/L
Int.: -26.7 y-Int.: 0.0560 Slope: 0.0021 r: 0.9991 Dil. Factor: 20.0
nal Result: 533.3 Spike Amounts: 10.0, 20.0, and 30.0

mple Number: 213988 Date: 07/28/93 Time: 11:34:35 Units: ug/L
Int.: -18.6 y-Int.: 0.0347 Slope: 0.0019 r: 0.9826 Dil. Factor: 20.0
nal Result: 371.1 Spike Amounts: 10.0, 20.0, and 30.0

Number: 213988 Date: 07/28/93 Time: 11:40:26 Units: ug/L
: -16.8 y-Int.: 0.0346 Slope: 0.0021 r: 0.9726 Dil. Factor: 20.0
nal Result: 335.9 Spike Amounts: 10.0, 20.0, and 30.0

·TANDARDS PREPARATION LOG SHEET (SECTION II) 170 RUST Geotech Inc.

'nalyst Mary Donivan Preparation Date: 07-28-93 Time: 1430 Page 1 of 1

Standard Name	Components	Volume Used	Final Volume	Diluent
00 µg/L Tl Standard	I.V. CAL-1A lot H-MEB17014 exp. 11/01/93	0.20 mL	100 mL	1% HNO_3
·75	100 µg/L Tl Standard listed above	0.75 mL	1 mL	1% HNO_3
S50 and CCV	100 µg/L Tl Standard listed above	0.50 mL	1 mL	1% HNO_3
S25	100 µg/L Tl Standard listed above	0.25 mL	1 mL	1% HNO_3
≤0 µg/L Spiking Standard	100 µg/L Tl Standard listed above	0.20 mL	1 mL	1% HNO_3
10 and CRA	100 µg/L Tl Standard listed above	0.10 mL	1 mL	1% HNO_3
0, ICB, and CCB	1% HNO_3	--	--	1% HNO_3
CV	ICV-1 (PlasmaChem) lot O2MICV1N exp. 11/30/93	0.20 mL	100 mL	1% HNO_3

ere all automatic pipets calibrated according to QC-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

omments

V ds for Inorganic Ventures. Exp. stands for expires.

pectroscopic Analysis by AS-2 R05

Element File: TLCLP.GEL | Element: Tl | Wavelength: 276.8
Date: 07/28/93 | Time: 14:52 | Slit: 0.70 L
Data File: TL213984.DAT | ID/Wt File: 213984.IDW | Lamp Current: 0
Technique: HGA | Calib. Type: Linear | Energy: 43

Tl ID: S0ug/L Seq. No.: 00001 A/S Pos.: 1 Date: 07/28/93

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Replicate 1 Time: 14:54
Peak Area (A-s): -0.002 Peak Height (A): 0.012
Background Pk Area (A-s): 0.001 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.002

Replicate 2 Time: 14:56 (SECTION II)
Peak Area (A-s): 0.001 Peak Height (A): 0.012
Background Pk Area (A-s): 0.002 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): 0.001

Mean Pk Area (A-s): -0.000 SD: 0.0017 RSD(%): 574.11

Auto-zero performed.

Tl ID: S10ug/L Seq. No.: 00002 A/S Pos.: 2 Date: 07/28/93

Replicate 1 Time: 14:57
Peak Area (A-s): 0.020 Peak Height (A): 0.032
Background Pk Area (A-s): 0.011 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.020

Replicate 2 Time: 14:59
Peak Area (A-s): 0.023 Peak Height (A): 0.033
Background Pk Area (A-s): 0.009 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): 0.023

Mean Pk Area (A-s): 0.022 SD: 0.0020 RSD(%): 9.22

Standard number 1 applied. [10.0]
Correlation coefficient: 1.00000 Slope: 0.0022

Tl ID: S25ug/L Seq. No.: 00003 A/S Pos.: 3 Date: 07/28/93

Replicate 1 Time: 15:00
Peak Area (A-s): 0.043 Peak Height (A): 0.070
Background Pk Area (A-s): 0.030 Background Pk Height (A): 0.037
Blank Corrected Pk Area (A-s): 0.044
Concentration (ug/L): 20.3

Replicate 2 Time: 15:02
Peak Area (A-s): 0.043 Peak Height (A): 0.060
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): 0.044
Concentration (ug/L): 20.2

Mean Conc (ug/L): 20.2 SD: 0.07 RSD(%): 0.32

Standard number 2 applied. [25.0]

orrelation coefficient: 0.97999 Slope: 0.0018

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1 ID: S50 ug/L Seq. No.: 00004 A/S Pos.: 4 Date: 07/28/93

Rt cate 1 Time: 15:04 176
ean Area (A-s): 0.098 Peak Height (A): 0.126
ackground Pk Area (A-s): 0.052 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.098
oncentration (ug/L): 54.0

(SECTION II)

eplicate 2 Time: 15:05
eak Area (A-s): 0.102 Peak Height (A): 0.122
ackground Pk Area (A-s): 0.047 Background Pk Height (A): 0.066
lank Corrected Pk Area (A-s): 0.102
oncentration (ug/L): 56.1

ean Conc (ug/L): 55.1 SD: 1.49 RSD(%): 2.71

tandard number 3 applied. [50.0]
orrelation coefficient: 0.99424 Slope: 0.0020

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1 ID: S75 ug/L Seq. No.: 00005 A/S Pos.: 5 Date: 07/28/93

eplicate 1 Time: 15:07
eak Area (A-s): 0.143 Peak Height (A): 0.178
ackground Pk Area (A-s): 0.073 Background Pk Height (A): 0.096
lank Corrected Pk Area (A-s): 0.143
oncentration (ug/L): 73.1

eplicate 2 Time: 15:08
eak Area (A-s): 0.144 Peak Height (A): 0.177
ackground Pk Area (A-s): 0.075 Background Pk Height (A): 0.092
lank Corrected Pk Area (A-s): 0.145
oncentration (ug/L): 73.7

ean Conc (ug/L): 73.4 SD: 0.41 RSD(%): 0.55

tandard number 4 applied. [75.0]
orrelation coefficient: 0.99789 Slope: 0.0019

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1 ID: ICV Seq. No.: 00006 A/S Pos.: 7 Date: 07/28/93

eplicate 1 Time: 15:10
eak Area (A-s): 0.117 Peak Height (A): 0.144
ackground Pk Area (A-s): 0.062 Background Pk Height (A): 0.077
lank Corrected Pk Area (A-s): 0.117
oncentration (ug/L): 60.7

eplicate 2 Time: 15:11
eak Area (A-s): 0.119 Peak Height (A): 0.149
ackground Pk Area (A-s): 0.056 Background Pk Height (A): 0.082
lank Corrected Pk Area (A-s): 0.119
oncentration (ug/L): 61.4

ean Conc (ug/L): 61.1 SD: 0.50 RSD(%): 0.81

)C sample is within range 54 - 66

'1 ID: ICB Seq. No.: 00007 A/S Pos.: 8 Date: 07/28/93

175

R icate 1 Time: 15:13
P. Area (A-s): 0.000 Peak Height (A): 0.010
Background Pk Area (A-s): 0.002 Background Pk Height (A): 0.014
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): 0.2

(SECTION II)

Replicate 2 Time: 15:15
Peak Area (A-s): -0.011 Peak Height (A): 0.008
Background Pk Area (A-s): 0.010 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.011
Concentration (ug/L): -5.5

Mean Conc (ug/L): -2.7 SD: 4.07 RSD(%): 152.59

)C sample is within range -10 - 10

T1 ID: CRA Seq. No.: 00008 A/S Pos.: 9 Date: 07/28/93

Replicate 1 Time: 15:16
Peak Area (A-s): 0.019 Peak Height (A): 0.029
Background Pk Area (A-s): 0.016 Background Pk Height (A): 0.020
Blank Corrected Pk Area (A-s): 0.020
Concentration (ug/L): 10.2

cate 2 Time: 15:18
Pe Area (A-s): 0.016 Peak Height (A): 0.037
Background Pk Area (A-s): 0.013 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): 0.017
Concentration (ug/L): 8.5

Mean Conc (ug/L): 9.4 SD: 1.20 RSD(%): 12.82

)C sample is within range

.1 ID: CCV Seq. No.: 00009 A/S Pos.: 39 Date: 07/28/93

Replicate 1 Time: 15:19
Peak Area (A-s): 0.097 Peak Height (A): 0.125
Background Pk Area (A-s): 0.051 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.097
Concentration (ug/L): 50.2

Replicate 2 Time: 15:21
Peak Area (A-s): 0.093 Peak Height (A): 0.123
Background Pk Area (A-s): 0.057 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.093
Concentration (ug/L): 48.0

Mean Conc (ug/L): 49.1 SD: 1.56 RSD(%): 3.18

)C sample is within range 45 - 55

.1 ID: CCB Seq. No.: 00010 A/S Pos.: 40 Date: 07/28/93

eplicate 1 Time: 15:22
Area (A-s): 0.004 Peak Height (A): 0.015 180
ground Pk Area (A-s): -0.004 Background Pk Height (A): 0.009
Corrected Pk Area (A-s): 0.005
oncentration (ug/L): 2.4

(SECTION II)

Replicate 2 Time: 15:24
eak Area (A-s): -0.002 Peak Height (A): 0.011
ackground Pk Area (A-s): 0.004 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.7

Mean Conc (ug/L): 0.8 SD: 2.17 RSD(%): 264.61

C sample is within range -10 - 10

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1 ID: PBS 213984 Seq. No.: 00011 A/S Pos.: 10 Date: 07/28/93

Replicate 1 Time: 15:26
eak Area (A-s): -0.006 Peak Height (A): 0.013
ackground Pk Area (A-s): 0.004 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.006
oncentration (ug/L): -3.0

eplicate 2 Time: 15:27
Area (A-s): -0.000 Peak Height (A): 0.013
round Pk Area (A-s): 0.002 Background Pk Height (A): 0.014
Corrected Pk Area (A-s): 0.000
oncentration (ug/L): 0.0

ean Conc (ug/L): -1.5 SD: 2.14 RSD(%): 145.31

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1 ID: PBSA213984 Seq. No.: 00012 A/S Pos.: 10 Date: 07/28/93

eplicate 1 Time: 15:29
eak Area (A-s): 0.033 Peak Height (A): 0.048
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.028
lank Corrected Pk Area (A-s): 0.033
oncentration (ug/L): 17.3

eplicate 2 Time: 15:30
eak Area (A-s): 0.041 Peak Height (A): 0.054
ackground Pk Area (A-s): 0.018 Background Pk Height (A): 0.026
lank Corrected Pk Area (A-s): 0.041
oncentration (ug/L): 21.2

ean Conc (ug/L): 19.3 SD: 2.80 RSD(%): 14.52

ecovery is ~~102.7%~~ 96.5% MD 7/28/93

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1 ID: LCS04 213984 DF5 Seq. No.: 00013 A/S Pos.: 11 Date: 07/28/93

eplicate 1 Time: 15:32

eak Area (A-s): 0.079 Peak Height (A): 0.113
ackground Pk Area (A-s): 0.039 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.080
oncentration (ug/L): 41.1

(SECTION II)

101

R icate 2 Time: 15:33
Pk Area (A-s): 0.077 Peak Height (A): 0.103
ackground Pk Area (A-s): 0.036 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.077
Concentration (ug/L): 40.0

ean Conc (ug/L): 40.5 SD: 0.79 RSD(%): 1.94

---

1 ID: LCS04A213984 DFS Seq. No.: 00014 A/S Pos.: 11 Date: 07/28/93

eplicate 1 Time: 15:35
eak Area (A-s): 0.099 Peak Height (A): 0.140
ackground Pk Area (A-s): 0.054 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.100
oncentration (ug/L): 51.5

Replicate 2 Time: 15:37
eak Area (A-s): 0.109 Peak Height (A): 0.143
ackground Pk Area (A-s): 0.054 Background Pk Height (A): 0.078
Blank Corrected Pk Area (A-s): 0.110
oncentration (ug/L): 56.7

ean Conc (ug/L): 54.1 SD: 3.70 RSD(%): 6.84

ery is ~~67.7%~~ 68.0% MD 7/28/93

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1 ID: 213984 Seq. No.: 00015 A/S Pos.: 12 Date: 07/28/93

eplicate 1 Time: 15:38
eak Area (A-s): -0.002 Peak Height (A): 0.013
ackground Pk Area (A-s): 0.005 Background Pk Height (A): 0.010
lank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.7

eplicate 2 Time: 15:40
eak Area (A-s): -0.006 Peak Height (A): 0.011
ackground Pk Area (A-s): 0.007 Background Pk Height (A): 0.014
lank Corrected Pk Area (A-s): -0.005
oncentration (ug/L): -2.8

ean Conc (ug/L): -1.7 SD: 1.47 RSD(%): 85.28

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1 ID: 213984 A Seq. No.: 00016 A/S Pos.: 12 Date: 07/28/93

eplicate 1 Time: 15:41
eak Area (A-s): 0.035 Peak Height (A): 0.063
ackground Pk Area (A-s): 0.027 Background Pk Height (A): 0.033
1 Corrected Pk Area (A-s): 0.036
ntration (ug/L): 18.4

eplicate 2 Time: 15:43

eak Area (A-s): 0.040 Peak Height (A): 0.062
ackground Pk Area (A-s): 0.029 Background Pk Height (A): 0.037
Blank Corrected Pk Area (A-s): 0.041
oncentration (ug/L): 21.0

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M Conc (ug/L): 19.7 SD: 1.83 RSD(%): 9.29

ecovery is ~~107.0%~~ 98.5% → 7/28/93

(SECTION II)

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1 ID: 213984D Seq. No.: 00017 A/S Pos.: 13 Date: 07/28/93

Replicate 1 Time: 15:45
eak Area (A-s): 0.009 Peak Height (A): 0.011
ackground Pk Area (A-s): -0.006 Background Pk Height (A): 0.008
Blank Corrected Pk Area (A-s): 0.010
oncentration (ug/L): 5.0

Replicate 2 Time: 15:46
Peak Area (A-s): -0.004 Peak Height (A): 0.010
ackground Pk Area (A-s): 0.002 Background Pk Height (A): 0.013
lank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.9

ean Conc (ug/L): 1.5 SD: 4.86 RSD(%): 318.56

---

1 ID: 213984D A Seq. No.: 00018 A/S Pos.: 13 Date: 07/28/93

icate 1 Time: 15:48
Area (A-s): 0.044 Peak Height (A): 0.056
ackground Pk Area (A-s): 0.020 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.044
oncentration (ug/L): 22.8

Replicate 2 Time: 15:50
eak Area (A-s): 0.040 Peak Height (A): 0.052
ackground Pk Area (A-s): 0.022 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.041
oncentration (ug/L): 21.0

ean Conc (ug/L): 21.9 SD: 1.26 RSD(%): 5.74

ecovery is ~~102.0%~~ 109.5% → 7/28/93

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1 ID: 213984S Seq. No.: 00019 A/S Pos.: 14 Date: 07/28/93

Replicate 1 Time: 15:51
Peak Area (A-s): 0.106 Peak Height (A): 0.146
ackground Pk Area (A-s): 0.055 Background Pk Height (A): 0.078
lank Corrected Pk Area (A-s): 0.106
Concentration (ug/L): 54.9

eplicate 2 Time: 15:53
Area (A-s): 0.107 Peak Height (A): 0.146
ackground Pk Area (A-s): 0.058 Background Pk Height (A): 0.081
lank Corrected Pk Area (A-s): 0.108
Concentration (ug/L): 55.6

Mean Conc (ug/L): 55.3 SD: 0.50 RSD(%): 0.90

Tl ID: CCV Seq. No.: 00020 A/S Pos.: 39 Date: 07/28/93

Replicate 1 Time: 15:54
Peak Area (A-s): 0.100 Peak Height (A): 0.130
Background Pk Area (A-s): 0.055 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.101
Concentration (ug/L): 52.0

183

(SECTION II)

Replicate 2 Time: 15:56
Peak Area (A-s): 0.100 Peak Height (A): 0.133
Background Pk Area (A-s): 0.053 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.101
Concentration (ug/L): 52.1

Mean Conc (ug/L): 52.0 SD: 0.07 RSD(%): 0.14

QC sample is within range 45 - 55

Tl ID: CCB Seq. No.: 00021 A/S Pos.: 40 Date: 07/28/93

Replicate 1 Time: 15:58
Peak Area (A-s): -0.004 Peak Height (A): 0.009
Background Pk Area (A-s): -0.001 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -2.0

Replicate 2 Time: 15:59
Peak Area (A-s): -0.001 Peak Height (A): 0.013
Background Pk Area (A-s): 0.003 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.6

Mean Conc (ug/L): -1.3 SD: 0.98 RSD(%): 75.83

QC sample is within range -10 - 10

Tl ID: 213985 Seq. No.: 00022 A/S Pos.: 15 Date: 07/28/93

Replicate 1 Time: 16:01
Peak Area (A-s): 0.005 Peak Height (A): 0.013
Background Pk Area (A-s): 0.002 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 2.9

Replicate 2 Time: 16:03
Peak Area (A-s): 0.002 Peak Height (A): 0.014
Background Pk Area (A-s): 0.002 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 1.1

Mean Conc (ug/L): 2.0 SD: 1.32 RSD(%): 65.19

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1 ID: 213985 A Seq. No.: 00023 A/S Pos.: 15 Date: 07/28/93

eplicate 1 Time: 16:04 184
e Area (A-s): 0.035 Peak Height (A): 0.055
a round Pk Area (A-s): 0.026 Background Pk Height (A): 0.033
1 Corrected Pk Area (A-s): 0.035
oncentration (ug/L): 18.2

(SECTION II)

eplicate 2 Time: 16:06
eak Area (A-s): 0.042 Peak Height (A): 0.061
ackground Pk Area (A-s): 0.022 Background Pk Height (A): 0.033
lank Corrected Pk Area (A-s): 0.043
oncentration (ug/L): 22.0

ean Conc (ug/L): 20.1 SD: 2.71 RSD(%): 13.45

ecovery is ~~90.5%~~ 100.5% MD 7/28/93

---

1 ID: 213986 Seq. No.: 00024 A/S Pos.: 16 Date: 07/28/93

eplicate 1 Time: 16:08
eak Area (A-s): -0.000 Peak Height (A): 0.011
ckground Pk Area (A-s): 0.000 Background Pk Height (A): 0.012
lank Corrected Pk Area (A-s): 0.000
oncentration (ug/L): 0.1

eplicate 2 Time: 16:09
eak Area (A-s): -0.005 Peak Height (A): 0.010
round Pk Area (A-s): 0.004 Background Pk Height (A): 0.010
Corrected Pk Area (A-s): -0.005
oncentration (ug/L): -2.6

ean Conc (ug/L): -1.3 SD: 1.89 RSD(%): 149.66

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1 ID: 213986 A Seq. No.: 00025 A/S Pos.: 16 Date: 07/28/93

eplicate 1 Time: 16:11
eak Area (A-s): 0.036 Peak Height (A): 0.061
ckground Pk Area (A-s): 0.022 Background Pk Height (A): 0.033
lank Corrected Pk Area (A-s): 0.036
oncentration (ug/L): 18.7

eplicate 2 Time: 16:13
eak Area (A-s): 0.035 Peak Height (A): 0.060
ckground Pk Area (A-s): 0.026 Background Pk Height (A): 0.037
ank Corrected Pk Area (A-s): 0.035
oncentration (ug/L): 18.3

ean Conc (ug/L): 18.5 SD: 0.29 RSD(%): 1.59

ecovery is ~~98.7%~~ 92.5% MD 7/28/93

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1 ID: 213987 Seq. No.: 00026 A/S Pos.: 17 Date: 07/28/93

eplicate 1 Time: 16:14

Peak Area (A-s): 0.003 Peak Height (A): 0.013
Background Pk Area (A-s): 0.005 Background Pk Height (A): 0.009
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 1.6

Replicate 2 Time: 16:16 185
Peak Area (A-s): 0.004 Peak Height (A): 0.012
Background Pk Area (A-s): 0.002 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 2.0

(SECTION II)

Mean Conc (ug/L): 1.8 SD: 0.31 RSD(%): 17.44

ID: 213987 A Seq. No.: 00027 A/S Pos.: 17 Date: 07/28/93

Replicate 1 Time: 16:18
Peak Area (A-s): 0.037 Peak Height (A): 0.059
Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): 0.037
Concentration (ug/L): 19.0

Replicate 2 Time: 16:19
Peak Area (A-s): 0.039 Peak Height (A): 0.057
Background Pk Area (A-s): 0.020 Background Pk Height (A): 0.028
Blank Corrected Pk Area (A-s): 0.040
Concentration (ug/L): 20.5

Mean Conc (ug/L): 19.8 SD: 1.06 RSD(%): 5.36

Recovery is ~~85.9%~~ 99.0% MD 7/28/93

ID: 213988 Seq. No.: 00028 A/S Pos.: 18 Date: 07/28/93

Replicate 1 Time: 16:21
Peak Area (A-s): 0.002 Peak Height (A): 0.013
Background Pk Area (A-s): 0.005 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.9

Replicate 2 Time: 16:23
Peak Area (A-s): 0.004 Peak Height (A): 0.011
Background Pk Area (A-s): -0.001 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 2.0

Mean Conc (ug/L): 1.5 SD: 0.74 RSD(%): 50.80

ID: 213988 A Seq. No.: 00029 A/S Pos.: 18 Date: 07/28/93

Replicate 1 Time: 16:24
Peak Area (A-s): 0.041 Peak Height (A): 0.059
Background Pk Area (A-s): 0.021 Background Pk Height (A): 0.033
Blank Corrected Pk Area (A-s): 0.041
Concentration (ug/L): 21.2

Replicate 2 Time: 16:26

ak Area (A-s): 0.032 Peak Height (A): 0.065
ckground Pk Area (A-s): 0.026 Background Pk Height (A): 0.030
lank Corrected Pk Area (A-s): 0.032
ncentration (ug/L): 16.7

e Conc (ug/L): 18.9 SD: 3.19 RSD(%): 16.86

covery is ~~97.8%~~ 94.5% mD 7/28/93

(SECTION II)

ID: 213989 Seq. No.: 00030 A/S Pos.: 19 Date: 07/28/93

eplicate 1 Time: 16:28
ak Area (A-s): -0.004 Peak Height (A): 0.012
ckground Pk Area (A-s): 0.002 Background Pk Height (A): 0.015
lank Corrected Pk Area (A-s): -0.003
ncentration (ug/L): -1.7

eplicate 2 Time: 16:29
ak Area (A-s): -0.001 Peak Height (A): 0.013
ckground Pk Area (A-s): 0.001 Background Pk Height (A): 0.010
ank Corrected Pk Area (A-s): -0.001
oncentration (ug/L): -0.6

an Conc (ug/L): -1.1 SD: 0.78 RSD(%): 70.45

ID: 213989A Seq. No.: 00031 A/S Pos.: 19 Date: 07/28/93

eplicate 1 Time: 16:31
rea (A-s): 0.044 Peak Height (A): 0.062
ound Pk Area (A-s): 0.020 Background Pk Height (A): 0.032
lank Corrected Pk Area (A-s): 0.045
ncentration (ug/L): 23.1

eplicate 2 Time: 16:32
ak Area (A-s): 0.034 Peak Height (A): 0.062
ckground Pk Area (A-s): 0.027 Background Pk Height (A): 0.032
ank Corrected Pk Area (A-s): 0.035
oncentration (ug/L): 17.8

an Conc (ug/L): 20.5 SD: 3.68 RSD(%): 18.01

covery is ~~107.8%~~ 102.5% mD 7/25/93

ID: CCV Seq. No.: 00032 A/S Pos.: 39 Date: 07/28/93

eplicate 1 Time: 16:34
ak Area (A-s): 0.107 Peak Height (A): 0.141
ckground Pk Area (A-s): 0.048 Background Pk Height (A): 0.073
ank Corrected Pk Area (A-s): 0.107
oncentration (ug/L): 55.3

plicate 2 Time: 16:36
rea (A-s): 0.095 Peak Height (A): 0.128
ound Pk Area (A-s): 0.048 Background Pk Height (A): 0.068
ank Corrected Pk Area (A-s): 0.095
oncentration (ug/L): 49.1

Mean Conc (ug/L): 52.2 SD: 4.37 RSD(%): 8.37

QC sample is within range 45 - 55

(SECTION II)

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ID: CCB Seq. No.: 00033 A/S Pos.: 40 Date: 07/28/93

Replicate 1
Peak Area (A-s): 0.001
Background Pk Area (A-s): -0.003
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.9

Time: 16:37
Peak Height (A): 0.012
Background Pk Height (A): 0.009

Replicate 2
Peak Area (A-s): -0.002
Background Pk Area (A-s): 0.001
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.9

Time: 16:39
Peak Height (A): 0.016
Background Pk Height (A): 0.011

Mean Conc (ug/L): -0.0 SD: 1.25 RSD(%): 4830.95

QC sample is within range -10 - 10

End analysis sum nD 7/28/93

(SECTION II)

CP DIGESTION LOG SHEET

SDG: 213984 RUST Geotech Inc. 180

...st J Greer Date: 7/16/93 Procedure: L-22D Rev. 00 Page 1 of 1

...sition Number	Sample Name or Number	#	Weight (g)	Final Vol. (mL)	Texture	Color Before	Color After	Artifacts
—	PBS 213984	1	1.0	200	—	—	—	—
—	LCS04 213984	2	1.0	200	—	—	—	—
11859	213984	3	1.0	200	Coarse	Black	Black	None
11859	213984D	4	1.0	200	Coarse	Black	Black	None
11859	213984S	5	1.0	200	Coarse	Black	Black	None
11859	213984(MS)	6	1.0	200	Coarse	Black	Black	None
11859	213985	7	1.0	200	Coarse	Black	Black	None
11859	213986	8	1.0	200	Coarse	Black	Black	None
11859	213987	9	1.0	200	Coarse	Black	Black	None
11859	213988	10	1.0	200	Coarse	Black	Black	None
11859	213989	11	1.0	200	Coarse	Black	Black	None
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ocumentation of Spiking Standards

Standard Name	Volume used	Source	Lot Number	Expiration Date
NG-ICP-1A	2 mL	Inorganic Ventures	I-MEB22042	7/1/94
NG-ICP-2	2 mL	Inorganic Ventures	H-MEB16150	11/1/93
thium	0.2 mL	Inorganic Ventures	G-L10121	11/1/93

ere all automatic pipets calibrated according to QP-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

escribe Any Significant Sample Changes and List Any Other Comments

e balance used was #8. Spiking standard added to 213984(MS) was 1 mL ELAN CAL STD (lot STM120192 expires ./1/93 described in Inorganics Stds Logbook). 213984(MS) designates the sample that was spiked for ICP-MS analysis.

D7U53729 LEB 7/30/93

(SECTION III)

FURNACE DIGESTION LOG SHEET

SDG: 213984 180 RUST Geotech Inc.

Analyst [illegible] Date: 7/16/93 Procedure: L-22C Rev. 00 Page 1 of 1

Digestion Number	Sample Name or Number	#	Weight (g)	Final Vol. (mL)	Texture	Color Before	Color After	Artifacts
—	PBS 213984	1	—	200	—	—	—	—
—	LCS04 213984	2	1.0	200	—	—	—	—
11859	213984	3	1.0	200	—	—	—	—
11859	213984D	4	1.0	200	—	—	—	—
11859	213984S	5	1.0	200	—	—	—	—
11859	213985	6	1.0	200	—	—	—	—
11859	213986	7	1.0	200	—	—	—	—
11859	213987	8	1.0	200	—	—	—	—
11859	213988	9	1.0	200	—	—	—	—
11859	213989	10	1.0	200	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
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—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—

Documentation of Spiking Standards

Standard Name	Volume Used	Source	Lot Number	Expiration Date
Furnace Spike	2 mL	Described in standards log book.	MD062293	11/1/93
—	—	—	—	—

Were all automatic pipets calibrated according to QC-6 with acceptance limits of ±1% of expected volume? Yes [X] No [ ]

Describe Any Significant Sample Changes and List Any Other Comments

Balance used was #8. Texture, color, and artifacts are listed on the ICP digestion log sheet.

D7453794 DEB 7/30/93

(SECTION III)

RECEIVING DOCUMENTATION INDEX

Requisition No. 11859

RECEIVING DOCUMENTATION:	FROM	TO
· Requisition and Log-in Sheet	1	
· Customer Correspondence	2	3
· Chain of Sample Custody	4	5
· Shipping and Receiving Documents	6	8
· Radiological Survey Map	9	
· Gross Gamma Scan	10	
· Lab Sample Tracking Record	11	

Chem-Nuclear Geotech, Inc.

Sample Login Sheet / Request for Analytical Services

Received by (Print Name): L. M. Davis

ved by (Signature): L. M. Davis

ition/Case #: 11859

LAP: _____

: Page 1 of 1 V2.07

Login date: 6-23-93

Requestor: EG&G ROCKY FLATS

Project number: 6RF100000

1. Custody Seal(s): Absent/Intact/Broken
2. Custody Seal No(s): NA
3. Chain of Custody Recs: Present/Absent*
4. Traffic Rpt. Pack Lst. Analytical Req: Present/Absent*
5. Freight Bill: Airbill/Sticker Present/Absent*
6. Freight Bill No(s).: 714-3874-990
7. Sample Tags: Present/Absent*
8. Sample Tag #s on Chain of Cust.: Listed/Not listed
9. Does information on custody records, traffic reports & sample tags agree?: Yes/No
10. Shipping Cont. Temp.: OK
    and Condition: Good

mple pH: Accept/Not Accept / Not Applicable

No.	Ticket	Customer ID	Lab #	ST	Date Sampled	Condition Received	Date Rec'd
1		AS40503AE	213984	A	08MAR93	GOOD	23JUN93
2		AS40504AE	213985	A	09MAR93	GOOD	23JUN93
3		AS40505AE	213986	A	09MAR93	GOOD	23JUN93
4		AS40501AE	213987	A	06APR93	GOOD	23JUN93
5		AS40506AE	213988	A	10MAR93	GOOD	23JUN93
6		AS40502AE	213989	A	10MAR93	GOOD	23JUN93

(SECTION III)

------Analysis Requested-Holding Date----------

est	Hold Dte
AG	-23JUN93
L	-20AUG93
S	-23JUN93
BA	-23JUN93
BE	-23JUN93
A	-23JUN93
D	-23JUN93
O	-23JUN93
CR	-23JUN93
CS	-23JUN93
U	-23JUN93
E-	-23JUN93
K	-23JUN93
LI	-23JUN93
G	-23JUN93
N	-23JUN93
O	-23JUN93
NA	-23JUN93
NI	-23JUN93
B	-23JUN93
B	-23JUN93
SE	-23JUN93
SN	-23JUN93
R	-23JUN93
L	-23JUN93
	JUN93
ZN	JUN93

* Contact Project & attach record of resolution.

NOT REQUIRED

Reviewed by: [signature]

Date: 6/25/93

2

(SECTION III)

EG&G ROCKY FLATS
EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

Date: 6/24/93

FACSIMILE TRANSMITTAL COVER SHEET

To: RB CHESSMORE

FAX No: (303) 248-6240

Organization: RUST-GEOTECH

From: PJ WHITE

(FAX No: (303) 966-8556)

(Verify: (303) 966-5614)

Organization: ERM-SAMPLE MGMT

Phone: 8614

Comments: RON, ATTACHED IS A MEMO AUTHORIZING YOU TO DELETE Cd, GROSS α, β, and Tritium from the requested analytes on the 6 Asphalt Samples. Please include this memo in your data Package - CASE History File. If any other questions arise, Please Call me. Thank you for your support, tell everyone hello for me.

Paul

Total Pages (Including cover sheet): 2

(SECTION III) 3

TO: Paul White, RFEDS, x8614

From: RTO Randy Ogg, Solar Ponds Remediation Programs, x8608

DATE: June 23, 1993

RE: Liner Asphalt Sample Analytical Suite

Liner samples were collected for the OU 4 Phase I RFI/RI investigation and provided to RUST-Geotech for analysis. However it is my understanding that the cyanide samples exceeded the holding times, the samples collected for gross alpha and beta can not be adequately prepared, and tritium is only present in liquids.

Due to the above mentioned facts, please eliminate cyanide, gross alpha and beta, and tritium for the analysis suite.

CONTRACT: IT/RCWI SAMPLERS: Kuaas/[illegible] PROJECT #: 401[illegible]

SITE CONTACT/PHONE: Patty E. Goodman LAB/LOCATION: PLOST

C-O-C NUMBER: AE-100335

EG&G ROCKY FLATS, CHAIN OF CUSTODY

General Chemistry

DATE/TIME		SAMPLE NUMBER	LOCATION	CONTAINER TYPE	NUMBER OF CONTAINERS	MEDIA: S=SOIL, W=WATER	F=FILTERED, U=UNFILTERED	R=TURN AROUND RUSH	OUT OF SPEC REPORTS	COOLED TO 4°C	NAOH	HNO_3	H_2SO_4		VOA - CLP	VOA - 502.2	BNA - CLP	PCB's/PEST. - CLP	CLP TOTAL METALS(1)	CLP DISS. METALS(1)	WATER QUALITY (2)	NO_3/NO_2 as N	Tot. Phosphorus, NH_4	OIL & GREASE	Ortho-Phosphate	NO_2	CYANIDE	TOC	COC	H_2S	Cr VI			
															V	V	B	P	M	M	W	W	W	W	W	W	W	W	W	W				
																D				•	A	B	B	C	D	D	E	H	I	J	K			
																C						C			A									
3/8/93	1410	AS40503AE	40493	Litreglass	1	A				X									X															X
3/9/93	1145	AS40504AE	40593	Litreglass	1	A				X									X															X
4/1/93	1253	AS40505AE	43393	Litreglass	1	A				X									X															X
4/6/93	1130	AS40501AE	41593	Litreglass	1	A				X									X															X
3/6/93	1230	AS40506AE	43693	Litreglass	1	A				X									X															X
4/6/93	1330	AS40509AE	42193	Litreglass	1	A				X									X															X

RELINQUISHED BY	DATE/TIME		RECEIVED BY	DATE/TIME	
Patty Eng	4/6/93	1600	Patty Shaloa	4/6/93	1600
Patty Shaloa	4/8/93	1500	[illegible]	4/8/93	16:00

LABORATORY USE ONLY	Y	N
PCKG REC'D/CUSTODY SEALS INTACT	✓	
SAMPLE LABELS/COCs AGREE	✓	
TEMPERATURE WITHIN SPECIFICATION +10 C		✓
CORRECTED COPY ATTACHED		
PROBLEMS OR DISCREPANCIES		

REMARKS (1) INCLUDES Cs,Li,Sr,Mo,Sl,Sn
(2) TSS,TDS,Cl,F,SO_4,CO_3,HCO_3

SHIPMENT METHOD: FedEx

AIR BILL NO.: 7143874990

SHIP WHITE AND YELLOW COPIES WITH SAMPLES -- RETAIN PINK FIELD COPY

Form: EGGRFP-081292-COCGC-v1.0

(SECTION III)

ANALYSIS	ABBREVIATION	PRESERVATIVE
Volatile Organic Analysis		
CLP Deliverables	VOA-CLP	HCl to extend holding time
Method 502.2	VOA-502.2	$Na_2S_2O_3$ if Cl_2 is present, Cool to 4° C
Method 624/8240	VOA-624	
Semi-Volatile Organic Analysis		
CLP Deliverables	BNA-CLP	$Na_2S_2O_3$ if Cl_2 is present, Cool to 4° C
Method 625/8270	BNA-625	
Organo-Chlorine Pesticides/PCBs		
CLP Deliverables	Pest/PCB-CLP	Cool to 4° C
Method 608/8080	Pest/PCB-608	
Triazine Herbicides		
Method 619	Triazines	Cool to 4° C
Chlorinated Herbicides		
Method 615/8150	Herb-615	Cool to 4° C
Polynuclear Aromatic Hydrocarbons		
Method 610/8100	PAH	$Na_2S_2O_3$ if Cl_2 is present, Cool to 4° C
Dioxin (2,3,7,8 TCDD)		
Method 613/CLP Deliverables	Dioxin	$Na_2S_2O_3$ if Cl_2 is present, Cool to 4° C
Oil and Grease	O &G	H_2SO_4 to pH<2, Cool to 4° C
Metals HSL-TAL		
CLP Deliverables	Metals)	HNO_3 to pH<2, Cool to 4° C, filter for dissolved
Lithium, Molybdenum, Strontium	Li, Mo, Sr)	
Tin, Cesium	Sn, Cs)	
Cyanide	CN	NaOH to pH>12, $C_6H_8O_6$ if Cl_2, Cool to 4° C
Silica	Si	Cool to 4° C
RADIOCHEMISTRY	RADS	HNO_3 to pH<2, filter for dissolved
Gross Alpha/ Beta	Gross A/B	HNO_3 to pH<2, filter for dissolved
Plutonium239/240	Pu239/240)	HNO_3 to pH<2, filter for dissolved
Americium241	Am241)	
Uranium 233, 234, 235/238	U233, 234, 235/238	HNO_3 to pH<2, filter for dissolved
Strontium89/90	Sr89/90)	HNO_3 to pH<2, filter for dissolved
Cesium137	Cs137)	
Radium 226,228	Ra226, 228)	
Tritium	H3	
Curium244	Cm244)	HNO_3 to pH<2, filter for dissolved
Neptunium237	Np237)	
Thorium230/232	Th230/232)	
Dissolved Organic Carbon	DOC	Filtered, Cool to 4° C
Toxicity-Ceriodaphnia,Fathead Minnow	Acute Tox	Cool to 4° C
Biochemical Oxygen Demand		
Carbonaceous 5day	CBOD5	Cool to 4° C
Biochemical Oxygen Demand, 5day	BOD5	Cool to 4° C
Chemical Oxygen Demand	COD	Cool to 4° C
Total Organic Carbon	TOC	Cool to 4° C
Total Dissolved Solids	TDS	Cool to 4° C
Orthophosphate	o-Phos	Cool to 4° C
Total Phosphorous	Tot Phos	H_2SO_4 to pH<2, Cool to 4° C
Nitrate/ Nitrite as N	NO3/NO2	H_2SO_4 to pH<2, Cool to 4° C
Ammonia as N	NH4	H_2SO_4 to pH<2, Cool to 4° C
Total Kjeldahl Nitrogen	TKN	H_2SO_4 to pH<2, Cool to 4° C
Nitrite	NO2	Cool to 4° C
Total Suspended Solids	TSS	Cool to 4° C
NonVolatile Suspended Solids	NVSS	Cool to 4° C
Chloride	Cl	Cool to 4° C
Fluoride	F	Cool to 4° C
Sulfate	SO4	Cool to 4° C
Carbonate	CO3	Cool to 4° C
Bicarbonate	HCO3	Cool to 4° C
Hexavalent Chromium	Cr (VI)	Cool to 4° C
Sulfide as H2S	H2S	NaOH to pH>12, $Zn(C_2H_3O_2)_2$, Cool to 4° C
Total Coliform	Tot Coli	$Na_2S_2O_3$, Cool to 4° C
Fecal Coliform	F-Coli	$Na_2S_2O_3$, Cool to 4° C
Total Bacteria	Tot Bact	Cool to 4° C

(SECTION III)

SAMPLE PACKAGE LOG-IN

(SECTION III)

DATE: 6-23-93

		YES	NO	COMMENTS
1.	FREIGHT BILL PRESENT:	✓		
2.	FREIGHT BILL CARRIER AND NUMBER:	FED. EXP. 714-3874-990		
3.	NUMBER OF PACKAGES ON THIS FREIGHT BILL:		2	
4.	FREIGHT BILL SIGNED, DATED, & TIME:	✓		
5.	CUSTODY SEALS PRESENT:	✓		
6.	CUSTODY SEALS IN-TACT:	✓		
7.	OH&S SCREENING COMPLETE:	✓		
8.	OH&S SCREENING SURVEY ATTACHED:	✓		
9.	PACKAGE(S) UNDAMAGED AND UNOPENED:	✓		
10.	ALL ABOVE DOCUMENTS COPIES AND LEGIBLE:	✓		

[signature]
SPAT RECEIVING SIGNATURE

RECEIPT OF ABOVE PACKAGES AND DOCUMENTS ACKNOWLEDGED:

[signature]
SAMPLE CUSTODIAN SIGNATURE

DATE: 6/23/93 TIME: 10:00

COMMENTS: Airbill Addressed As Follows: Ersel Reid
Rust Geotech
2597 B 3/4 Road
Grand Junction, CO. 81502-5504

Receiving Report

Date	Receiver No.	Purchase Order No
06-23-93	T-40626	9:10am

Received From

SEC DONOHUE
2 GARDEN CENTER, SUITE 200
BROOMFIELD, CO 80020

(SECTION III) 7

Shipped Via	Weight	Charges	Buyer	Receiving Clerk Signature/Date
FED EXP	2 @ 36#TTL.	PPD		TDM 6-23-93

Item	Quantity Ordered	Quantity Rec.B O	U M	Description	Unit Price	Total Price
		2	EA	COOLER OF SAMPLES		
				FREIGHT BILL # 714 3874 990		
				MULTIPLE PACKAGE TRK # 676 3445 516		
				PACKAGING TAPE PRESENT AND INTACT !		
				CUSTODY SEALS PRESENT AND INTACT !		

Inspection Notes:

Item	Org.	Type of Cost/Org./Project	Req.	Requester	Bldg./Room	Date	Received by (Requester)
		COST/PROJECT		E. REID	SAMP. PLANT BLDG. 7	6-23-93	

GJPO 1658
7 92

Distribution: White—Receiver File Canary—Miscellaneous Pink—Requester Gold—Miscellaneous

(SECTION III)

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 7143874990

30708 7143874990

T-40626

RECIPIENT'S COPY

Date 6/29/93

From (Your Name) Please Print: Patty Goodman

Your Phone Number (Very Important): (303)852-1270

Company: [illegible]

Department/Floor No.

Street Address: [illegible]

City: [illegible] State: CO ZIP Required: 40620

To (Recipient's Name) Please Print: Ersel Reid

Recipient's Phone Number (Very Important): (303) [illegible]

Company: POST GeoTech

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 4597 B 3/4 Road

City: Grand Junction State: CO ZIP Required: [illegible]

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice)

[illegible]

PAYMENT 1 ☐ Bill Sender 2 ☐ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card 5 ☐ Cash/Check

IF HOLD FOR PICK-UP, Print FEDEX Address Here

Street Address

City State ZIP Required

SERVICES (Check only one box)

Priority Overnight: 11 ☑ OTHER PACKAGING; 10 ☑ FEDEX LETTER; 12 ☐ FEDEX PAK; 13 ☐ FEDEX BOX; 14 ☐ FEDEX TUBE

Standard Overnight: 51 ☐ OTHER PACKAGING; 56 ☐ FEDEX LETTER; 52 ☐ FEDEX PAK; 53 ☐ FEDEX BOX; 54 ☐ FEDEX TUBE

Economy Two-Day: 39 ☐ ECONOMY

Government Overnight: 46 ☐ GOV'T LETTER; 41 ☐ GOV'T PACKAGE

Freight Service: 70 ☐ OVERNIGHT FREIGHT; 80 ☐ TWO-DAY FREIGHT

DELIVERY AND SPECIAL HANDLING (Check services required)

1 ☐ HOLD FOR PICK-UP (Fill in Box H)
2 ☐ DELIVER WEEKDAY
3 ☐ DELIVER SATURDAY
4 ☐ DANGEROUS GOODS
5 ☐
6 ☐ DRY ICE
7 ☐ OTHER SPECIAL SERVICE
8 ☐
9 ☐ SATURDAY PICK-UP
12 ☐ HOLIDAY DELIVERY

PACKAGES	WEIGHT	YOUR DECLARED VALUE
1	36	
Total 2	Total 36	Total

DIM SHIPMENT (Chargeable Weight) ☐ lbs.

L x W x H

Received At: 1 ☐ Regular Stop 3 ☐ Drop Box 4 ☐ B S C 2 ☐ On Call Stop 5 ☐ Station

Emp. No. Date

☐ Cash Received
☐ Return Shipment
☐ Third Party ☐ Chg. To Del. ☐ Chg. To Hold

Street Address

City State Zip

Received By: X Tony D. McDonald

Date/Time Received: 6-23-93 @ 9:10 AM

FedEx Employee Number

Release Signature:

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

REVISION DATE 11/92 PART #137204 FREM 2/93 FORMAT #155

155

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(SECTION III)

Chem-Nuclear Geotech, Inc.

Radiological Survey Map

Radiation Work Permit No. NA Technican G. Wagner / [illegible] Date/Time 6-23-93 1020

Location Bld 28

Instruments Used: LM-12 / S12045; 44-9 / S12661 = (BX/α)

Activity: N / A

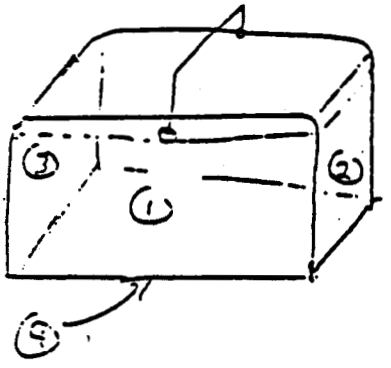
Highest Dose Rates

General Area N

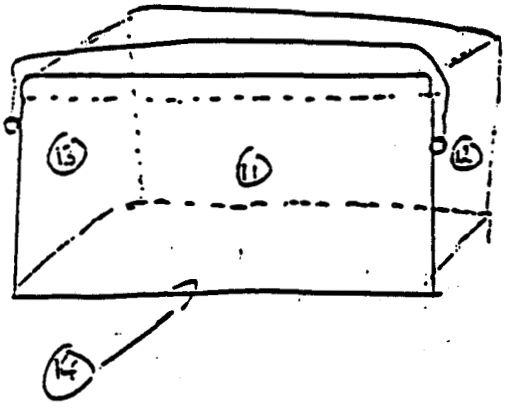
Contact A

Air Sample

	Time	µCi/ml
1.	N	
2.	A	



COPY



Direct Fusk external ≤ Bkgnd.

Contamination Level (dpm/100 cm²)

	Beta	Alpha
1.	≤ Bkgnd	≤ Bkgnd
2.	≤ Bkgnd	≤ Bkgnd
3.	≤ Bkgnd	≤ Bkgnd
4.	≤ Bkgnd	≤ Bkgnd
5.		
6.		
7.	N	
8.		
9.		A
10.		
11.		
12.		
13.	≤ Bkgnd	≤ Bkgnd
14.	≤ Bkgnd	≤ Bkgnd
15.	≤ Bkgnd	≤ Bkgnd
16.	≤ Bkgnd	≤ Bkgnd
17.		
18.		
19.		
20.		
21.	N	
22.		
23.		A
24.		
25.		
26.		
27.		
28.		

Supervisor _____ Date _____

G.IPD 1748
6/92

V1.03 Gross Gamma Scan

Request No. 11959
Date: 6-23-9[illegible]
SIGNATURE [illegible]

10

(SECTION III)

[illegible]0 pCi/g
[illegible]rence Sample
[illegible]nts/Sec.

	Found	Expected
Large Can Gamma	4[illegible]	4622.9
30g Sample	[illegible]	1014.7

10000 pCi/g
Reference Sample
Counts/Sec.

	Found	Expected
Large Can Gamma		
30g Sample		

BKG COUNTS/SEC. 7[illegible]

#	Customer ID	Ticket	Sample Counts/Sec.
[illegible]984	AS40503AE		79
[illegible]985	AS40504AE		62
[illegible]986	AS40505AE		67
[illegible]987	AS40501AE		92
[illegible]988	AS40506AE		77
[illegible]989	AS40502AE		59

LAB SAMPLE TR[illegible] [illegible]ECORD
REQUISITION 11859 BUILDING 2 RECEIVED 23JUN93

RCVD FROM	RCVD BY	DATE	STORAGE LOCATION	FOR	SAMPLES	CHECKOUT DATE	INIT	CHECKIN DATE	INIT	RETURN LOCATION	TYPE O	D	E	C
[illegible]	[illegible]	6/24/93	4	CN	213984-213989 } same container									
—	—	—	—	METLS	213984-213989	7/15/93	JE	7/19/93	JE	4	X			
				ICP	213984-213989			7/19/93	JE	D&ES		X		
				HGA	213984-213989			7/19/93	JE	D&ES		X		
				ICP	213984-989	7/19/93	STM	7/21/93	STM	27		X		
				HGA	213984-989	7/22/93	MD	7/27/93	MD	26		X		
				HGA	213984-989	7/28/93	MD	8/2/93	MD	23		X		

(SECTION III)

11

TYPE CODES: O=ORIGINAL D=DIGEST E=EXTRACT C=CONSUMED

SAMPLES RETURNED: [illegible] / [illegible] / 8-5-93 16:00
BY TO DATE TIME

REQUISITION 11859

REQUISITION 11859 7A